K.0 Appendices

The following appendices have been provided as separate files in support of the proposed project for City of Tucson:

- A.1 NIST Energy Price Indices and Discount Factors
- B.1 Garage Floor Plan Drawings
- B.2 Existing Equipment
- C.1 Utility Account Summary
- C.2 Utility Consumption Data
- C.3 Electricity Rate Sheets
- D.1 Baseline Calculations
- D.2 Savings Calculations
- E.1 New Roadway Equipment Cut-Sheets
- E.2 New Garage Equipment Cut-Sheets
- E.3 Sample Area Lighting Layouts
- E.4 New Roadway Fixture Selections

A.1 NIST Energy Price Indices and Discount Factors

NISTIR 85-3273-30

Energy Price Indices and Discount Factors for Life-Cycle Cost Analysis – 2015

Annual Supplement to NIST Handbook 135

Priya D. Lavappa
Joshua D. Kneifel

This publication is available free of charge from:
http://dx.doi.org/10.6028/NIST.IR.85-3273-30

NIST
National Institute of Standards and Technology
U.S. Department of Commerce

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Energy Price Indices and Discount Factors for Life-Cycle Cost Analysis – 2015
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May 2015

U.S. Department of Commerce
Penny Pritzker, Secretary of Commerce

National Institute of Standards and Technology
Willie May, Under Secretary of Commerce for Standards and Technology and Acting Director

ABSTRACT

This is the 2015 edition of energy price indices and discount factors for performing life-cycle cost analyses of energy and water conservation and renewable energy projects in federal facilities. It will be effective from April 1, 2015 to March 31, 2016. This publication supports the federal life-cycle costing methodology described in 10 CFR 436A and OMB Circular A-94 by updating the energy price projections and discount factors that are described, explained, and illustrated in NIST Handbook 135 (HB 135, Life-Cycle Costing Manual for the Federal Energy Management Program.)

Disclaimer:
Certain trade names or company products are mentioned in the text to specify adequately the software and operating systems used for performing the life-cycle cost analyses. In no case does such identification imply recommendation or endorsement by the National Institute of Standards and Technology, nor does it imply that the software and operating systems are the best available for the purpose.

PREFACE

This is the 2015 Annual Supplement to NIST Handbook 135, Life-Cycle Costing Manual for the Federal Energy Management Program (FEMP). The annual supplement provides energy price indices and discount factors for use with the Federal Energy Management Program's procedures for life-cycle cost analysis, as established by the U.S. Department of Energy (DOE) in Subpart A of Part 436 of Title 10 of the Code of Federal Regulations (10 CFR 436A), and amplified in NIST Handbook 135. These indices and factors are provided as an aid to implementing life-cycle cost evaluations of potential energy and water conservation and renewable energy investments in existing and new federally owned and leased buildings.

The price indices and discount factors are calculated with the most recent energy price projections from DOE's Energy Information Administration (EIA) and the most recent discount rates from FEMP and the Office of Management and Budget (OMB) Circular A-94. This issue of the Annual Supplement is intended for use from April 1, 2015 to March 31, 2016. The updated edition of the NIST Building Life-Cycle Cost (BLCC) and Energy Escalation Rate Calculator (EERC) programs are released at the same time as this Annual Supplement, for use over the same time period. The software products are discussed below.

At the request of a number of users, a text file of the EIA energy price projections underlying this Annual Supplement has been made available by NIST. To obtain this file (ENCOST15.txt), please visit the DOE/FEMP web site at http://energy.gov/eere/femp/life-cycle-cost-analysis-sustainable-buildings.

The life-cycle costing methods and procedures, as set forth in 10 CFR 436A, are to be followed by all federal agencies, unless specifically exempted, for evaluating the cost effectiveness of potential energy and water conservation and renewable energy investments in federally owned and leased buildings. For most other federal LCC analyses OMB Circular A-94 provides the relevant guidelines.

As called for by legislation (Energy Policy and Conservation Act, P.L.94-163, 1975, 92 Stat 3206, 42 USC 8252 et seq), the National Institute of Standards and Technology has provided technical assistance to the U.S. Department of Energy in the development and implementation of life-cycle costing methods and procedures. The following publications and software products provide the methods, data, and computational tools for federal life-cycle cost analysis:

(1) *Life-Cycle Costing Manual for the Federal Energy Management Program*, National Institute of Standards and Technology, Handbook 135 (1995).

This manual is a guide to understanding life-cycle costing and related methods of economic analysis as they are applied to federal decisions, especially those subject to 10 CFR 436A rules. It describes the required procedures and assumptions, defines and explains how to apply and interpret economic performance measures, gives examples of federal decision problems and their solutions, explains how to use energy price indices and discount factors, and provides worksheets and other computational aids and instructions for calculating the required measures.

(2) *Energy Price Indices and Discount Factors for Life-Cycle Cost Analysis, Annual Supplement to NIST Handbook 135*, National Institute of Standards and Technology, NISTIR 85-3273.

This report, which is updated annually, provides the current DOE and OMB discount rates, projected energy price indices, and corresponding discount factors needed to estimate the present values of future energy and non-energy-related project costs.

(3) *BLCC 5.3-15, NIST Building Life-Cycle Cost.* This program uses as default values the same discount factors and energy price projections that underlie the discount factor tables in the Annual Supplement. It is available for Windows, Mac OS X, and Linux.

BLCC 5.3 provides comprehensive economic analysis capabilities for the evaluation of proposed capital investments that are expected to reduce the long-term operating costs of buildings and building systems. It computes the LCC for project alternatives, compares project alternatives in order to determine which has the lowest LCC, performs annual cash flow analysis, and computes net savings (NS), savings-to-investment ratio (SIR), and adjusted internal rate of return (AIRR) for project alternatives over their designated study period. The BLCC program can be used to perform economic analysis of capital investment projects undertaken by federal, state, and local government agencies. In the application to federal energy conservation and renewable energy projects, BLCC5 is consistent with NIST Handbook 135, and the federal life-cycle cost methodology and procedures described in 10 CFR 436A and OMB Circular A-94.

BLCC 5.3 has six modules, all of them consistent with the life-cycle cost methodology of 10 CFR 436A, but programmed to include default inputs and nomenclature for specific uses:

- **FEMP Analysis, Energy Project**
  for energy and water conservation and renewable energy projects under the FEMP rules, agency-funded;

- **Federal Analysis, Financed Project**
  for federal projects financed through Energy Savings Performance Contracts (ESPC) or Utility Energy Services Contracts (UESC) as authorized by Executive Order 13123 (6/99);

- **OMB Analysis, Federal Analysis, Projects subject to OMB Circular A-94**
  for projects subject to OMB Circular A-94 (most other, non-energy, federal government construction projects, but not water resource projects);

- **MILCON Analysis, Energy Project**
  for energy and water conservation and renewable energy projects in military construction, agency-funded;

- **MILCON Analysis, ECIP Project**
  for energy and water conservation projects under the Energy Conservation Investment Program (ECIP).

- **MILCON Analysis, Non-Energy Project**
  for military construction designs that are not primarily for energy or water conservation.

(4) *EERC 2.0-15, Energy Escalation Rate Calculator*, a program that computes an average rate of escalation for a specified time period, which can be used as an escalation rate for contract payments in Energy Savings Performance Contracts (ESPC) and Utility Energy Services Contracts (UESC). Escalation rates can be computed based on the EIA energy price projections used for calculating the FEMP discount factors and on EIA projections adjusted by NIST for potential carbon pricing.

The latest versions of the programs and publications described above can be downloaded from the DOE/FEMP web site at http://energy.gov/eere/femp/building-life-cycle-cost-programs.

In 2014, DOE and NIST developed a 5.5 hour continuing education course, "Fundamentals of Life Cycle Costing for Energy Conservation." This free webcast that introduces the elements of life-cycle cost analysis of energy and water conservation projects is available at the Whole Building Design Guide (WBDG) website at http://www.wbdg.org/education/femp19.php. For in-house training, FEMP-Qualified Instructors are available to conduct LCC workshops on their own account across the United States. For a list of instructors email Joshua Kneifel at joshua.kneifel@nist.gov.

For further information on the Federal Energy Management Program, please visit http://energy.gov/eere/femp/federal-energy-management-program.

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ABBREVIATIONS

A	-	Annual amount
A_0	-	Annual amount at base-date prices
ADAGE	-	Applied Dynamic Analysis of Global Economy
AEO2015	-	Annual Energy Outlook 2015 (DOE-EIA publication)
BLCC	-	NIST Building Life Cycle Cost computer program
CO_2	-	Carbon Dioxide
COAL	-	Coal
d	-	discount rate
DIST	-	Distillate Oil
DOE	-	U.S. Department of Energy
e	-	price escalation rate (annual rate of price change)
EIA	-	Energy Information Administration (DOE)
ELEC	-	Electricity
EPA	-	U.S. Environmental Protection Agency
ESPC	-	Energy Savings Performance Contract
FEMP	-	Federal Energy Management Program
FY	-	Fiscal Year
GASLN	-	Gasoline
kg	-	kilogram
LCC	-	Life-Cycle Cost
LPG	-	Liquefied petroleum gas
N	-	Number of discount periods (in years)
NEMS	-	National Energy Modeling System
NIST	-	National Institute of Standards and Technology
NTGAS	-	Natural Gas
OMB	-	Office of Management and Budget
RESID	-	Residual Oil
SPV	-	Single Present Value (factor)
UESC	-	Utility Energy Services Contract
UPV	-	Uniform Present Value (factor)
UPV^*	-	Modified Uniform Present Value (factor)

INTRODUCTION

This report provides tables of present-value factors for use in the life-cycle cost analysis of capital investment projects for federal facilities. It also provides energy price indices based on Department of Energy (DOE) forecasts from 2015 to 2045. The factors and indices presented in this report are useful for determining the present value of future project-related costs, especially those related to operational energy costs. Discount factors included in this report are based on two different federal sources: (1) the DOE discount rate for projects related to energy conservation, renewable energy resources, and water conservation; and (2) Office of Management and Budget (OMB) discount rates from Circular A-94 for use with most other capital investment projects in federal facilities.

The DOE discount and inflation rates for 2015 are as follows:

Real rate (excluding general price inflation):	3.0 %
Nominal rate (including general price inflation):	3.1 %
Implied long-term average rate of inflation:	0.1 %

The DOE nominal discount rate is based on long-term Treasury bond rates averaged over the 12 months prior to the preparation of this report. The nominal, or market, rate is converted to a real rate to correspond with the constant-dollar analysis approach used in most federal life-cycle cost (LCC) analyses. The method for calculating the real discount rate from the nominal discount rate is described in 10 CFR 436 and uses the projected rates of general inflation published in the most recent Report of the President's Economic Advisors, Analytical Perspectives. The procedure would result in a discount rate for 2015 lower than the 3.0 % floor prescribed in 10 CFR 436. Thus the 3.0 % floor is used as the real discount rate for FEMP analyses in 2015. The implied long-term average rate of inflation was calculated as 0.1 %. Federal agencies and contractors to federal agencies are required by 10 CFR 436 to use the DOE discount rates when conducting LCC analyses related to energy conservation, renewable energy resources, and water conservation projects for federal facilities.

The nominal and real discount rates applicable to general (non-energy or water) capital investments are published annually in OMB Circular A-94, Appendix C. OMB has specified two basic types of discount rates: (1) a discount rate for public investment and regulatory analyses; and (2) a discount rate for cost-effectiveness, lease-purchase, and related analyses. Only discount rates for the second type of analyses are included in this Annual Supplement, since the primary purpose of this report is to support cost-effectiveness studies related to the design and operation of federal facilities.

OMB discount rates for cost-effectiveness and lease-purchase studies are based on interest rates on Treasury Notes and Bonds with maturities ranging from 3 to 30 years. Currently (as of April 2015) six maturities have been specifically identified by OMB, and are shown here with the corresponding real interest rate to be used as the discount rate for studies subject to OMB Circular A-94:

Maturity:	3-year	5-year	7-year	10-year	20-year	30-year
Rate:	0.1 %	0.4 %	0.7 %	0.9 %	1.2 %	1.4 %

OMB suggests that the actual discount rate for an economic analysis be interpolated from these maturities and rates, based on the study period used in the analysis. Due to limitations on the size of this Annual Supplement, discount factors for only two of these maturities are presented: factors for short term analyses (up to 10 years) based on the 7-year real rate (0.7 %), and factors for long-term analyses (longer than 10 years) based on the 30-year real rate (1.4 %). As a result, these discount

factors are for approximation purposes only. It is suggested that the NIST Building Life Cycle Cost (BLCC) program be used to compute the present value factors for the discount rate corresponding to the length of the study period when approximate values are not satisfactory for the project analysis. (See preface for details on obtaining this program.)

The energy price indices and corresponding present value factors published in this report are computed from energy price forecasts provided to NIST by the Department of Energy's Energy Information Administration (EIA). The EIA energy price forecast used in this report was the most recent available at the time this report was prepared. A description of the methodology used by EIA to project energy prices through 2016 is included in section B of this report. DOE has not projected escalation rates for water prices to be used in the LCC analysis of water conservation projects. Water escalation rates should be obtained from the local water utility when possible.

Federal agencies and contractors to federal agencies are encouraged to seek energy price projections from their local utility to use in place of the DOE/EIA regional projections, especially when evaluating alternative fuel types. In such cases the BLCC program can be used to calculate appropriate "modified uniform present value" (UPV*) factors for use in the LCC analysis of federal energy conservation or renewable resource projects. Otherwise, 10 CFR 436 requires the use of the DOE energy price forecasts when conducting LCC analyses of such projects. The UPV* factors for energy costs presented in this report have been precalculated with the DOE forecast data. Thus the use of these UPV* factors automatically ensures that the DOE forecast data have been included in the analysis.

Most financed federal projects, such as Energy Savings Performance Contracts (ESPC), base contract payments on projected annual energy cost savings. When setting up the contract, average rates of energy price escalation over the contract term are a matter of negotiation. One consideration in setting escalation rates is the potential for future carbon pricing. Should carbon pricing legislation be enacted by the U.S. Congress, use of the EIA-based escalation rates—which do not consider carbon pricing—likely would underestimate escalation for contract payments. To assist federal agencies in considering a range of escalation rate scenarios, in 2010 FEMP introduced to the Annual Supplement a new “D” series of tables projecting potential future carbon prices and electricity-related carbon emissions rates under a range of carbon policy scenarios. Average rates of escalation may be calculated for each of these carbon policy scenarios in the Energy Escalation Rate Calculator (EERC 2.0), a BLCC companion program for financed projects. These may be considered by federal agencies for use as energy price escalation rates for contract payments.

All of the tables of discount factors contained in this report are based on real discount rates and are therefore intended for use only with economic analyses conducted in constant dollars (in which the purchasing power of the dollar is held constant). The energy price escalation rates and corresponding energy price indices for federal analyses contained in this report are also expressed in real terms. If nominal discount rates and current dollar costs (which both include inflation) are used in the LCC analyses of federal projects, choose the current-dollar-analysis option in the BLCC computer program, which uses a nominal discount rate and adds the rate of general inflation to all dollar amounts.

This report uses the term "present value" instead of "present worth" for the discount factors presented. The meaning of these two terms is considered to be identical for purposes of economic analysis. This change in terminology was made to be consistent with the terms used in the ASTM International compilation of standards on building economics (ASTM Standards on Building Economics, 7th Edition, ASTM, West Conshohocken, PA, 2012.)

In all of the tables, the “end-of-year” discounting convention is used, that is, all factors and indices are computed to adjust future dollar amounts to present value from the end of the year in which they are expected to occur. The factors and indices in this publication which include energy price escalation rates (e.g., UPV* factors and energy price indices) were calculated using April 1, 2015 as their base date. However, these factors and indices can be used without adjustment for the LCC analysis of projects with other base dates until the release of the next revision of this publication. Adjustment of these factors and indices for differences in the month-specific base date is not generally warranted due to uncertainties in estimating future energy prices.

PART I:
TABLES FOR FEDERAL LIFE-CYCLE COST ANALYSIS

A. Single Present Value and Uniform Present Value Factors for Non-Fuel Costs

Table A-1 presents the single present value (SPV) factors for finding the present value of future non-fuel, non-annually recurring costs, such as repair and replacement costs and salvage values. The formula for finding the present value (P) of a future cost occurring in year t (C_t) is the following:

$$P = C_t \times \frac{1}{(1+d)^t} = C_t \times SPV_t,$$

where d = discount rate, and
t = number of time periods (years) between the present time and the time the cost is incurred.

Table A-2 presents uniform present value (UPV) factors for finding the present value of future non-fuel costs recurring annually, such as routine maintenance costs. The formula for finding the present value (P) of an annually recurring uniform cost (A) is the following:

$$P = A \times \frac{(1+d)^N - 1}{d(1+d)^N} = A \times UPV_N,$$

where d = discount rate, and
N = number of time periods (years) over which A recurs.

Tables A-3 (a,b,c) present modified uniform present value (UPV*) factors for finding the present value of annually recurring non-fuel costs, such as water costs, which are expected to change from year to year at a constant rate of change (or escalation rate) over the study period. The escalation rate can be positive or negative. The formula for finding the present value (P) of an annually recurring cost at base-date prices (A_0) changing at escalation rate e is the following:

$$P = A_0 \times \left(\frac{1+e}{d-e}\right)\left[1 - \left(\frac{1+e}{1+d}\right)^N\right] = A \times UPV^*_N \qquad (d \neq e)$$

or

$$P = A_0 \times N = A \times UPV^*_N \qquad (d = e),$$

where A_0 = annually recurring cost at base-date prices,
d = discount rate,
e = escalation rate, and
N = number of time periods (years) over which A recurs.

Note: if the discount rate is expressed in real terms, i.e., net of general inflation, then the escalation rate must also be expressed in real terms. If the discount rate is expressed in nominal terms, i.e., including general inflation, then the escalation rate must also be expressed in nominal terms.

In tables A-1, A-2, and A-3 (a,b,c) SPV, UPV, and UPV* factors are provided for both the DOE and the OMB Circular A-94 real discount rates current as of the date of this publication. The FEMP SPV, UPV, and UPV* factors were computed using the DOE discount rate. The FEMP factors are for finding the present value of future costs associated with federal energy and water conservation projects and renewable energy projects. The OMB SPV, UPV, and UPV* factors were computed using the OMB discount rates. The OMB factors are for finding the present value of future costs associated with most other federal projects (except those specifically exempted from OMB Circular A-94). The DOE and OMB discount rates used in computing these tables are real rates, exclusive of general price inflation. Thus the resulting discount factors are intended for use with future costs that are stated in constant dollars.

Note: *We have added to table A-3a a column of UPV* factors that incorporate an escalation rate of -0.1 %, the negative of the inflation rate used to calculate the DOE nominal discount rate for 2015. The UPV* factors in this column can be used to calculate present values of fixed dollar amounts when performing a constant-dollar analysis. An example might be a fixed contract payment in an ESPC project. For these fixed amounts, the assumption that in a constant-dollar analysis all cash flows change at the rate of general inflation (so that the differential escalation rate is zero) does not apply. In real terms, fixed amounts change at a differential rate equal to the negative of the inflation rate.*

Examples of How to Use the Factors:

SPV (FEMP): To compute the present value of a replacement cost expected to occur in the 8th year for an energy efficient heating system, go to Table A-1, find the 3.0 % SPV factor for year 8 (0.789), and multiply the factor by the replacement cost as of the base date.

SPV (OMB, Short-term): To compute the present value of a repair cost in the 5th year for a floor covering (non-energy related), go to Table A-1, find the 0.7 % SPV factor for year 5 (0.966), and multiply the factor by the repair cost as of the base date.

SPV (OMB, Long-term): To compute the present value of a repair cost in the 15th year for a floor covering (non-energy related), go to Table A-1, find the 1.4 % SPV factor for year 15 (0.754), and multiply the factor by the repair cost as of the base date.

UPV (FEMP): To compute the present value of an annually recurring maintenance cost for a renewable energy system over 20 years, go to Table A-2, find the 3.0 % UPV factor for 20 years (14.88), and multiply the factor by the annual maintenance cost as of the base date.

UPV (OMB, Short-term): To compute the present value of annually recurring costs of office cleaning over 10 years (for a project not primarily related to energy conservation), go to Table A-2, find the 0.7 % UPV factor for 10 years (9.63), and multiply the factor by the annual cleaning cost as of the base date.

UPV (OMB, Long-term): To compute the present value of annually recurring costs of office cleaning over 25 years (for a project not primarily related to energy conservation), go to Table A-2, find the 1.4 % UPV factor for 25 years (19.75), and multiply the factor by the annual cleaning cost as of the base date.

UPV* (all): To compute the present value of annually recurring costs of water usage which are expected to increase at 2 % faster than the rate of general inflation over 25 years, find the UPV* factor from table A-3 (a ,b, or c as appropriate) that corresponds to 2 % escalation and a 25 year study period. From table A-3a (3.0 % DOE discount rate) the corresponding UPV* factor is 22.08. Multiply this factor by the annual water cost as computed at base year prices to determine the present value of these water costs over the entire 25 years.

UPV* (negative inflation rate): To compute the present value of an annually recurring contract payment that is fixed over a contract period of 10 years, find the UPV* factor from table A-3a that corresponds to an escalation of -0.1 % and a 10-year time period. From table A-3a (3.0 % DOE discount rate) the corresponding UPV* factor is 8.49. Multiply this factor by the annual contract payment as of the base year to determine the present value of these contract payments over the entire 10-year period.

Note: UPV factors are generally applied to costs that recur annually in substantially the same amount. Examples of such costs are routine operating and maintenance costs. UPV factors are generally applied to costs that recur annually but change from year to year at a constant escalation rate. Examples of such costs are water usage costs when they increase from year to year. These costs usually occur every year over the service period of the building life. If there is a planning/design/construction period before the service life begins, during which these annual costs are not incurred, the appropriate UPV (or UPV*) factor for the service period is the difference between the UPV (or UPV*) factor for the entire study period and the UPV (or UPV*) factor for the planning/design/construction period. For example, if the planning/ design/construction period is 3 years and the service period is 25 years, for a total study period of 28 years, the corresponding UPV factor (from Table A-2, DOE 3.0 % discount rate) is 18.76 – 2.83 = 15.93.*

For further explanation and illustration of how to use these factors, see NIST Handbook 135.

Table A-1. SPV factors for finding the present value of future single costs (non-fuel)

	Single Present Value (SPV) Factors		
Number of years from base date	DOE Discount rate 3.0 %	OMB Discount Rates[a] Short term[b] 0.7 %	Long Term[c] 1.4 %
0.25	0.993	0.998	0.995
0.50	0.985	0.997	0.991
0.75	0.978	0.995	0.986
1	0.971	0.993	0.981
2	0.943	0.986	0.963
3	0.915	0.979	0.945
4	0.888	0.972	0.927
5	0.863	0.966	0.910
6	0.837	0.959	0.893
7	0.813	0.952	0.877
8	0.789	0.946	0.860
9	0.766	0.939	0.844
10	0.744	0.933	0.828
11	0.722		0.813
12	0.701		0.798
13	0.681		0.783
14	0.661		0.768
15	0.642		0.754
16	0.623		0.740
17	0.605		0.726
18	0.587		0.713
19	0.570		0.699
20	0.554		0.686
21	0.538		0.674
22	0.522		0.661
23	0.507		0.649
24	0.492		0.637
25	0.478		0.625
26	0.464		0.613
27	0.450		0.602
28	0.437		0.590
29	0.424		0.579
30	0.412		0.569

[a]OMB discount rates as of April 2015.
[b]Short-term discount rate based on OMB discount rate for 7-year study period.
[c]Long-term discount rate based on OMB discount rate for 30-year study period.

Table A-2. UPV factors for finding the present value of annually recurring uniform costs (non-fuel)

	Uniform Present Value (UPV) Factors		
Number of years from base date	DOE Discount rate 3.0 %	OMB Discount Rates[a] Short term[b] 0.7 %	Long Term[c] 1.4 %
1	0.97	0.99	0.98
2	1.91	1.98	1.94
3	2.83	2.96	2.89
4	3.72	3.93	3.82
5	4.58	4.90	4.73
6	5.42	5.86	5.62
7	6.23	6.81	6.50
8	7.02	7.75	7.36
9	7.79	8.69	8.20
10	8.53	9.63	9.03
11	9.25		9.84
12	9.95		10.64
13	10.63		11.42
14	11.30		12.19
15	11.94		12.95
16	12.56		13.69
17	13.17		14.41
18	13.75		15.12
19	14.32		15.82
20	14.88		16.51
21	15.42		17.18
22	15.94		17.84
23	16.44		18.49
24	16.94		19.13
25	17.41		19.75
26	17.88		20.37
27	18.33		20.97
28	18.76		21.56
29	19.19		22.14
30	19.60		22.71

[a]OMB discount rates as of April 2015.
[b]Short-term discount rate based on OMB discount rate for 7-year study period.
[c]Long-term discount rate based on OMB discount rate for 30-year study period.

Table A-3a. UPV* factors for finding the present value of annually recurring costs changing at a constant escalation rate, DOE discount rate.

DOE discount rate = 3.0 %

Modified Uniform Present Value (UPV*) Factors (non-fuel)

Number of years from base date	Annual rate of price change											
	-5 %	-4 %	-3 %	-2 %	-1 %	-0.1 %	0 %	1 %	2 %	3 %	4 %	5 %
1	0.92	0.93	0.94	0.95	0.96	0.97	0.97	0.98	0.99	1.00	1.01	1.02
2	1.77	1.80	1.83	1.86	1.89	1.91	1.91	1.94	1.97	2.00	2.03	2.06
3	2.56	2.61	2.66	2.72	2.77	2.82	2.83	2.88	2.94	3.00	3.06	3.12
4	3.28	3.37	3.45	3.54	3.63	3.71	3.72	3.81	3.90	4.00	4.10	4.20
5	3.95	4.07	4.19	4.32	4.45	4.57	4.58	4.72	4.86	5.00	5.15	5.30
6	4.56	4.72	4.89	5.06	5.24	5.40	5.42	5.61	5.80	6.00	6.21	6.42
7	5.13	5.33	5.55	5.77	5.99	6.21	6.23	6.48	6.73	7.00	7.28	7.57
8	5.66	5.90	6.16	6.44	6.72	6.99	7.02	7.33	7.66	8.00	8.36	8.73
9	6.14	6.44	6.75	7.08	7.42	7.75	7.79	8.17	8.57	9.00	9.45	9.92
10	6.58	6.93	7.30	7.68	8.09	8.49	8.53	8.99	9.48	10.00	10.55	11.13
11	7.00	7.39	7.81	8.26	8.74	9.20	9.25	9.80	10.38	11.00	11.66	12.37
12	7.37	7.82	8.30	8.81	9.36	9.89	9.95	10.59	11.27	12.00	12.78	13.63
13	7.72	8.22	8.76	9.34	9.96	10.57	10.63	11.36	12.15	13.00	13.92	14.91
14	8.05	8.59	9.19	9.83	10.54	11.22	11.30	12.12	13.02	14.00	15.06	16.22
15	8.34	8.94	9.60	10.31	11.09	11.85	11.94	12.87	13.89	15.00	16.22	17.56
16	8.62	9.27	9.98	10.76	11.62	12.46	12.56	13.60	14.74	16.00	17.39	18.92
17	8.87	9.57	10.34	11.19	12.13	13.06	13.17	14.32	15.59	17.00	18.57	20.30
18	9.10	9.85	10.68	11.60	12.62	13.63	13.75	15.02	16.43	18.00	19.76	21.72
19	9.32	10.11	11.00	11.99	13.09	14.19	14.32	15.71	17.26	19.00	20.96	23.16
20	9.52	10.36	11.30	12.36	13.54	14.74	14.88	16.38	18.08	20.00	22.17	24.63
21	9.70	10.59	11.58	12.71	13.98	15.26	15.42	17.05	18.90	21.00	23.39	26.12
22	9.87	10.80	11.85	13.04	14.40	15.77	15.94	17.69	19.70	22.00	24.63	27.65
23	10.03	11.00	12.10	13.36	14.80	16.27	16.44	18.33	20.50	23.00	25.88	29.21
24	10.17	11.18	12.34	13.66	15.18	16.75	16.94	18.96	21.29	24.00	27.14	30.79
25	10.30	11.35	12.56	13.95	15.56	17.21	17.41	19.57	22.08	25.00	28.41	32.41
26	10.42	11.51	12.77	14.23	15.91	17.67	17.88	20.17	22.85	26.00	29.70	34.06
27	10.54	11.66	12.97	14.49	16.26	18.10	18.33	20.76	23.62	27.00	31.00	35.74
28	10.64	11.80	13.16	14.73	16.59	18.53	18.76	21.34	24.38	28.00	32.31	37.45
29	10.74	11.93	13.33	14.97	16.90	18.94	19.19	21.90	25.14	29.00	33.63	39.20
30	10.82	12.05	13.50	15.20	17.21	19.34	19.60	22.46	25.88	30.00	34.97	40.98

Table A-3b. UPV* factors for finding the present value of annually recurring amounts changing at a constant escalation rate, OMB short-term discount rate.

OMB short-term discount rate = 0.7 %[a]

Modified Uniform Present Value (UPV*) Factors (non-fuel)

Number of years from base date	Annual rate of price change										
	-5 %	-4 %	-3 %	-2 %	-1 %	0 %	1 %	2 %	3 %	4 %	5 %
1	0.94	0.95	0.96	0.97	0.98	0.99	1.00	1.01	1.02	1.03	1.04
2	1.83	1.86	1.89	1.92	1.95	1.98	2.01	2.04	2.07	2.10	2.13
3	2.67	2.73	2.78	2.84	2.90	2.96	3.02	3.08	3.14	3.20	3.26
4	3.47	3.55	3.65	3.74	3.83	3.93	4.03	4.13	4.23	4.34	4.45
5	4.21	4.34	4.48	4.61	4.75	4.90	5.04	5.20	5.35	5.51	5.68
6	4.92	5.09	5.27	5.46	5.66	5.86	6.06	6.28	6.50	6.73	6.96
7	5.58	5.81	6.04	6.29	6.54	6.81	7.08	7.37	7.67	7.98	8.30
8	6.21	6.49	6.78	7.09	7.42	7.75	8.11	8.48	8.87	9.27	9.70
9	6.80	7.14	7.50	7.88	8.27	8.69	9.14	9.60	10.09	10.61	11.16
10	7.36	7.76	8.19	8.64	9.12	9.63	10.17	10.74	11.35	11.99	12.68

[a]OMB discount rate as of April 2015.
Short-term discount rate based on OMB discount rate for 7-year study period.

Table A-3c. UPV* factors for finding the present value of annually recurring amounts changing at a constant escalation rate, OMB long-term discount rate.

OMB long-term discount rate = 1.4 %[a]

Modified Uniform Present Value (UPV*) Factors (non-fuel)

Number of years from base date	Annual rate of price change										
	-5 %	-4 %	-3 %	-2 %	-1 %	0 %	1 %	2 %	3 %	4 %	5 %
1	0.93	0.94	0.95	0.96	0.97	0.98	0.99	1.00	1.01	1.02	1.03
2	1.80	1.83	1.86	1.89	1.92	1.94	1.97	2.00	2.03	2.06	2.09
3	2.61	2.67	2.72	2.78	2.83	2.89	2.95	3.01	3.07	3.13	3.19
4	3.37	3.45	3.54	3.63	3.72	3.82	3.91	4.01	4.11	4.21	4.31
5	4.07	4.20	4.32	4.45	4.59	4.73	4.87	5.01	5.16	5.32	5.48
6	4.73	4.89	5.07	5.25	5.43	5.62	5.82	6.02	6.23	6.45	6.67
7	5.34	5.55	5.78	6.01	6.25	6.50	6.76	7.03	7.31	7.60	7.91
8	5.91	6.17	6.45	6.74	7.04	7.36	7.69	8.04	8.40	8.78	9.18
9	6.44	6.76	7.09	7.44	7.81	8.20	8.61	9.04	9.50	9.98	10.49
10	6.94	7.31	7.70	8.12	8.56	9.03	9.53	10.05	10.61	11.21	11.84
11	7.40	7.83	8.28	8.77	9.29	9.84	10.43	11.06	11.74	12.46	13.23
12	7.83	8.32	8.84	9.40	10.00	10.64	11.33	12.08	12.88	13.74	14.66
13	8.23	8.78	9.36	10.00	10.68	11.42	12.22	13.09	14.03	15.04	16.14
14	8.61	9.21	9.87	10.58	11.35	12.19	13.11	14.10	15.19	16.37	17.66
15	8.96	9.62	10.34	11.13	12.00	12.95	13.98	15.12	16.36	17.73	19.22
16	9.28	10.01	10.80	11.67	12.63	13.69	14.85	16.13	17.55	19.11	20.84
17	9.59	10.37	11.23	12.18	13.24	14.41	15.71	17.15	18.75	20.53	22.50
18	9.87	10.71	11.64	12.68	13.84	15.12	16.56	18.17	19.96	21.97	24.22
19	10.13	11.03	12.03	13.16	14.41	15.82	17.41	19.19	21.19	23.45	25.99
20	10.38	11.34	12.41	13.61	14.98	16.51	18.24	20.21	22.43	24.95	27.81
21	10.61	11.62	12.76	14.06	15.52	17.18	19.08	21.23	23.68	26.48	29.68
22	10.82	11.89	13.10	14.48	16.05	17.84	19.90	22.25	24.95	28.05	31.62
23	11.02	12.14	13.42	14.89	16.57	18.49	20.71	23.27	26.23	29.65	33.61
24	11.21	12.38	13.73	15.28	17.07	19.13	21.52	24.30	27.52	31.28	35.66
25	11.38	12.61	14.02	15.66	17.55	19.75	22.32	25.32	28.83	32.95	37.78
26	11.54	12.82	14.30	16.02	18.02	20.37	23.12	26.35	30.15	34.65	39.96
27	11.69	13.02	14.56	16.37	18.48	20.97	23.90	27.37	31.49	36.38	42.20
28	11.83	13.21	14.82	16.70	18.93	21.56	24.68	28.40	32.84	38.15	44.52
29	11.97	13.39	15.05	17.02	19.36	22.14	25.46	29.43	34.21	39.96	46.90
30	12.09	13.55	15.28	17.33	19.78	22.71	26.22	30.46	35.59	41.80	49.36

[a]OMB discount rate as of April 2015.
Long-term discount rate based on OMB discount rate for 30-year study period.

B. Modified Uniform Present Value Factors for Fuel Costs

This section presents FEMP and OMB modified uniform present value (UPV*) discount factors for calculating the present value of energy usage for federal projects. Factors are provided for the four major Census regions and for the overall United States. The factors are modified in the sense that they incorporate energy price escalation rates based on future energy prices projected by DOE for the years 2015 to 2045. There are two sets of UPV* tables: the "Ba" tables present FEMP UPV* factors based on the DOE discount rate (3.0 % real), and the "Bb" tables present OMB UPV* factors based on two OMB discount rates (0.7 % real for short-term study periods of 1 to 10 years, 1.4 % real for long-term study periods of 11 to 30 years). The underlying energy price indices for the years 2015 to 2045, on which these UPV* calculations are based, are shown in tables Ca-1 through Ca-5. The corresponding average energy price escalation rates for selected time intervals between 2015 and 2045 are shown in tables Cb-1 through Cb-5.

Energy Price Projections. The FEMP and OMB UPV* factors incorporate energy price escalation rates computed from future energy prices projected by the Energy Information Administration (EIA) of the U.S. Department of Energy. Energy prices through 2040 were generated by EIA using the National Energy Modeling System (NEMS) and published in the *Annual Energy Outlook 2015*(AEO2015). At the request of FEMP, EIA extended its price projections from 2040 to 2045 based on a combination of the NEMS model and extrapolations from the AEO2015 projections.

NEMS is an energy market model designed to project the impacts of alternative energy policies or assumptions on U.S. energy markets. NEMS produces projections of the U.S. energy future, given current laws and policies and other key assumptions, including macroeconomic indicators from Data Resources, Inc., the production policy of the Organization of Petroleum Exporting Countries, the size of the economically recoverable resource base for fossil fuels, and the rate of development and penetration of new technologies. NEMS balances energy supply and demands with modules representing primary fuel supply, end-use demand for four sectors, and conversion of energy by refineries and electricity generators. Macroeconomic and international oil modules reflect the impacts of energy prices, production, and consumption on world oil markets and the economy.

The EIA energy price projections presented in this report, like those of other forecasts, are dependent on the data, methodologies, and specific assumptions used in their development. Many of the assumptions concerning the future cannot be known with any degree of certainty. Thus, the projections are not statements of what will happen, but what might happen given the particular assumptions and methodologies used. Although EIA has endeavored to make these forecasts as objective, reliable, and useful as possible, these projections should serve as an adjunct to, not a substitute for, the analytical process. The AEO2015 was prepared by EIA as required under statute by federal legislation. The price projections to 2045 were prepared in accordance with a Service Request from the Federal Energy Management Program.

Note: Section 441 of the Energy Independence and Security Act of 2007 (EISA) extends from 25 years to 40 years the maximum service period for conducting FEMP life-cycle cost analyses. To account for the legislated change, the BLCC program now incorporates unofficial projections of

future energy prices beyond 2016 to accommodate FEMP service periods of up to 40 years. The projections are based on simple extrapolations of 2045 growth rates and are not reported here because they are not endorsed by EIA. BLCC users should exercise caution when interpreting energy cost savings beyond 30 years and do sensitivity analyses to test different out-year assumptions.

UPV* Calculation Method. The formula for finding the present value (P) of future energy costs or savings is the following:

$$P = A_0 x \sum_{t=1}^{N} \frac{I_{(2015+t)}}{(1+d)^t} = A_0 x UPV_N^*$$

where A_0 = annual cost of energy as of the base date (April 1, 2015);
t = index used to designate the year of energy usage;
N = number of periods, e.g., years, over which energy costs or savings accrue;
$I_{(2015+t)}$ = projected average fuel price index[1] given in Tables Ca-1 through Ca-5 for the year 2015+t (where $I_{2015} = 1.00$); and
d = the real discount rate.

This formula is based on end-of-year energy prices and end-of-year discounting. Note that annual energy costs as of the base date of the LCC analysis (A_0, to be supplied by the analyst) should reflect the current energy price schedule as of that date, which may not be the same as the energy price itself on that date.[2] That is, the annual energy cost should reflect summer-winter rate differences, time-of-use rates, block rates considerations, and demand charges (as appropriate) anticipated to be in effect that year. If energy and demand costs are calculated separately (as is sometimes done for electricity), the UPV* factor should be applied to both costs.

The data in the tables that follow are reported for the four Census regions and the U.S. average. Figure B-1 presents a map showing the states corresponding to the four Census regions. The Census regions do not include American Samoa, Canal Zone, Guam, Puerto Rico, Trust Territory of the Pacific Islands, or the Virgin Islands. Analysts of federal projects in these areas should use data that are "reasonable under the circumstances," and may refer to the tables with U.S. average data for guidance.

[1] For greater precision, the UPV* factors reported in the Ba and Bb tables were computed using the unrounded form of the indices given in Tables Ca-1 through Ca-5.

[2] While the UPV* factors provided in this publication were computed using energy price indices that correspond to energy prices as of April 1 in the current and future years, the analyst is encouraged to use for determining A_0 the energy prices prevailing as of the base date of the LCC analysis for the project evaluated.

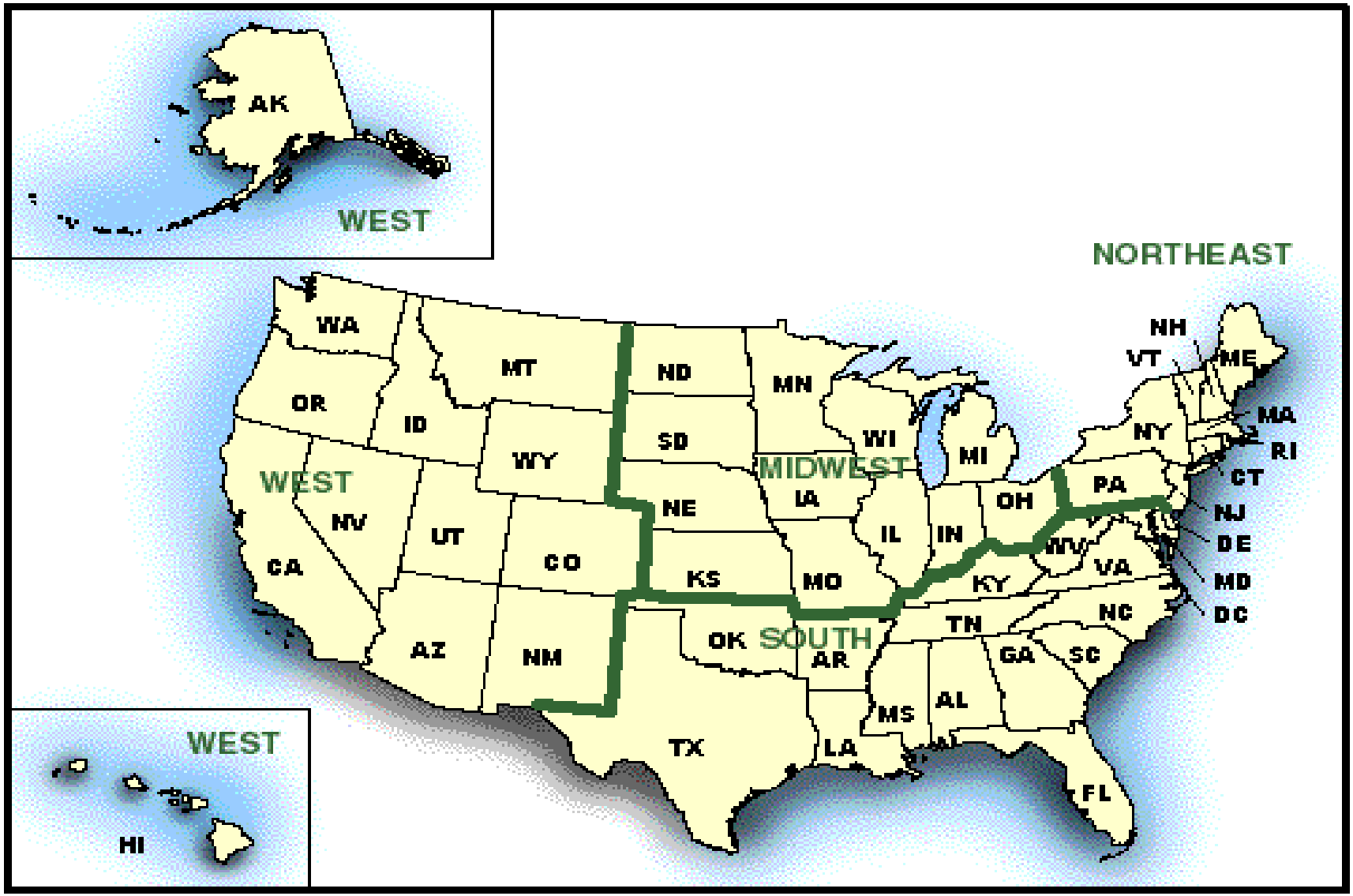

Figure B-1
Source: U.S. Census Bureau

B.1. FEMP Modified Uniform Present Value Factors

The FEMP Modified Uniform Present Value (FEMP UPV*) factors presented in the "Ba" tables, based on the current DOE discount rate (3.0 %), are for calculating the present value of energy costs or savings accruing over 1 to 30 years and are to be used in life-cycle cost analyses of federal energy conservation and renewable energy projects. These factors may be applied to projects with or without planning/design/construction periods, as shown below.

These factors apply only to annual energy usage or energy savings that are assumed to be the same each year over the service period. The BLCC computer program can compute the present value of energy usage and savings that are not the same in each year.

Examples of How to Use the FEMP UPV* Factors:

FEMP UPV*, no planning/design/construction period: To compute the present value of heating with natural gas over 25 years in a federal office building in New Mexico, go to Table Ba-4, find the FEMP UPV* factor for commercial natural gas for 25 years (20.92), and multiply this factor by the annual heating cost at base-date natural gas prices.

FEMP UPV*, with planning/design/construction period: To compute a present value factor for a service period following a planning/design/construction period (1) find the FEMP UPV* factor for the combined length of the planning/design/construction period and the service period, and (2) subtract from (1) the FEMP UPV* factor for the planning/design/ construction period alone. The difference is the FEMP UPV* factor for the years over which energy costs or savings actually accrue. For example, suppose a new federal office building in New York is being evaluated with several energy conserving design options. It is expected to have a planning/design/construction period of 5 years, after which it will be occupied for 25 years. To compute the present value of natural gas costs over 25 years of occupancy, go to Table Ba-1 and find the FEMP UPV* factors for commercial natural gas for 5 years (5.24) and for 30 years (27.99). The difference (22.75) is the FEMP UPV* factor for natural gas costs over 25 years, beginning 5 years after the base date. Multiply 22.75 by the annual natural gas cost at base date prices (not occupancy-date prices) to calculate the present value of natural gas costs over the entire 25-year occupancy period.

Table Ba-1. FEMP UPV* Discount Factors adjusted for fuel price escalation, by end-use sector and fuel type.

Discount rate = 3.0 % (DOE)

Census Region 1 (Connecticut, Maine, Massachusetts, New Hampshire,
New Jersey, New York, Pennsylvania, Rhode Island, Vermont)

	RESIDENTIAL				COMMERCIAL					INDUSTRIAL					TRANSPORT	
N	Elec	Dist	LPG	NtGas	Elec	Dist	Resid	NtGas	Coal	Elec	Dist	Resid	NtGas	Coal	Gasln	N
1	0.96	0.96	0.98	0.97	0.96	0.95	0.98	0.99	0.98	0.93	0.96	0.98	0.99	0.97	0.97	1
2	1.90	1.92	1.95	1.97	1.88	1.90	1.97	2.01	1.94	1.82	1.93	1.99	2.13	1.92	1.98	2
3	2.83	2.87	2.91	2.99	2.79	2.83	2.94	3.04	2.88	2.69	2.88	2.98	3.40	2.83	2.97	3
4	3.76	3.80	3.84	4.05	3.71	3.73	3.90	4.12	3.80	3.56	3.82	3.96	4.80	3.73	3.94	4
5	4.69	4.71	4.75	5.13	4.63	4.63	4.84	5.24	4.70	4.44	4.74	4.92	6.27	4.61	4.88	5
6	5.64	5.61	5.64	6.22	5.57	5.51	5.78	6.38	5.58	5.33	5.65	5.88	7.80	5.49	5.81	6
7	6.58	6.50	6.51	7.31	6.50	6.38	6.71	7.53	6.45	6.22	6.56	6.83	9.35	6.35	6.72	7
8	7.51	7.37	7.35	8.40	7.42	7.25	7.63	8.67	7.29	7.10	7.45	7.77	10.91	7.19	7.62	8
9	8.42	8.25	8.18	9.48	8.32	8.11	8.55	9.80	8.10	7.96	8.34	8.71	12.47	8.00	8.51	9
10	9.32	9.11	8.99	10.54	9.21	8.96	9.47	10.93	8.89	8.81	9.22	9.64	14.02	8.80	9.39	10
11	10.21	9.96	9.77	11.58	10.08	9.81	10.38	12.02	9.66	9.64	10.09	10.57	15.54	9.58	10.25	11
12	11.07	10.81	10.54	12.59	10.93	10.65	11.28	13.07	10.41	10.45	10.95	11.49	16.99	10.34	11.10	12
13	11.91	11.65	11.29	13.55	11.76	11.48	12.18	14.06	11.14	11.24	11.81	12.41	18.35	11.09	11.94	13
14	12.73	12.48	12.03	14.47	12.57	12.30	13.08	15.01	11.86	12.01	12.65	13.33	19.64	11.82	12.77	14
15	13.53	13.30	12.74	15.36	13.35	13.12	13.97	15.92	12.55	12.75	13.49	14.23	20.87	12.53	13.59	15
16	14.30	14.12	13.44	16.23	14.11	13.93	14.85	16.79	13.23	13.46	14.32	15.14	22.05	13.23	14.40	16
17	15.06	14.94	14.13	17.07	14.85	14.74	15.74	17.65	13.89	14.16	15.15	16.04	23.21	13.91	15.20	17
18	15.79	15.74	14.80	17.91	15.57	15.54	16.62	18.49	14.53	14.85	15.96	16.94	24.35	14.58	15.99	18
19	16.51	16.54	15.46	18.72	16.27	16.33	17.49	19.31	15.16	15.51	16.77	17.83	25.47	15.23	16.78	19
20	17.21	17.34	16.10	19.53	16.95	17.13	18.36	20.13	15.77	16.16	17.58	18.72	26.58	15.87	17.55	20
21	17.89	18.13	16.73	20.33	17.62	17.91	19.23	20.92	16.37	16.80	18.38	19.61	27.67	16.49	18.32	21
22	18.56	18.91	17.34	21.12	18.27	18.69	20.10	21.72	16.95	17.42	19.17	20.49	28.77	17.10	19.08	22
23	19.21	19.69	17.94	21.90	18.91	19.47	20.96	22.52	17.51	18.03	19.96	21.37	29.89	17.70	19.84	23
24	19.86	20.46	18.53	22.70	19.55	20.24	21.83	23.32	18.07	18.64	20.75	22.25	31.03	18.29	20.59	24
25	20.49	21.23	19.11	23.49	20.17	21.00	22.71	24.13	18.61	19.24	21.52	23.15	32.18	18.86	21.33	25
26	21.11	21.99	19.67	24.27	20.78	21.76	23.59	24.93	19.14	19.83	22.29	24.05	33.33	19.43	22.07	26
27	21.72	22.74	20.23	25.04	21.38	22.52	24.48	25.71	19.65	20.41	23.06	24.96	34.46	19.98	22.79	27
28	22.31	23.49	20.76	25.79	21.96	23.27	25.36	26.49	20.15	20.97	23.81	25.86	35.58	20.52	23.52	28
29	22.88	24.23	21.29	26.52	22.53	24.01	26.24	27.25	20.64	21.52	24.57	26.75	36.69	21.04	24.23	29
30	23.45	24.97	21.81	27.24	23.09	24.75	27.12	27.99	21.12	22.06	25.31	27.65	37.78	21.56	24.95	30

Table Ba-2. FEMP UPV* Discount Factors adjusted for fuel price escalation, by end-use sector and fuel type.

Discount Rate = 3.0 % (DOE)

Census Region 2 (Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin)

	RESIDENTIAL				COMMERCIAL					INDUSTRIAL					TRANSPORT	
N	Elec	Dist	LPG	NtGas	Elec	Dist	Resid	NtGas	Coal	Elec	Dist	Resid	NtGas	Coal	Gasln	N
1	1.00	0.95	0.98	0.96	0.99	0.95	0.98	0.97	0.98	0.98	0.96	0.98	0.95	0.99	0.98	1
2	2.00	1.90	1.95	1.88	1.97	1.91	1.99	1.90	1.95	1.94	1.90	2.01	1.90	1.98	1.96	2
3	2.98	2.81	2.91	2.79	2.93	2.85	2.98	2.80	2.89	2.87	2.81	3.03	2.88	2.95	2.93	3
4	3.93	3.70	3.84	3.70	3.86	3.77	3.96	3.70	3.82	3.77	3.71	4.04	3.88	3.89	3.86	4
5	4.86	4.59	4.75	4.62	4.77	4.67	4.93	4.61	4.73	4.67	4.60	5.04	4.91	4.83	4.78	5
6	5.79	5.46	5.64	5.55	5.67	5.57	5.89	5.53	5.62	5.55	5.47	6.03	5.95	5.75	5.68	6
7	6.69	6.32	6.50	6.46	6.54	6.45	6.86	6.44	6.49	6.41	6.34	7.03	6.99	6.66	6.57	7
8	7.58	7.17	7.35	7.36	7.40	7.33	7.83	7.33	7.34	7.26	7.21	8.02	8.01	7.55	7.45	8
9	8.44	8.02	8.17	8.24	8.23	8.20	8.79	8.21	8.17	8.08	8.06	9.02	9.01	8.42	8.31	9
10	9.29	8.86	8.98	9.10	9.05	9.06	9.75	9.07	8.98	8.89	8.91	10.01	9.99	9.27	9.16	10
11	10.11	9.69	9.77	9.96	9.84	9.92	10.72	9.91	9.77	9.68	9.75	11.00	10.97	10.11	10.00	11
12	10.92	10.52	10.53	10.79	10.61	10.76	11.68	10.74	10.54	10.45	10.58	11.99	11.92	10.92	10.83	12
13	11.70	11.34	11.28	11.60	11.37	11.61	12.64	11.53	11.29	11.21	11.40	12.98	12.83	11.72	11.65	13
14	12.47	12.16	12.02	12.38	12.10	12.44	13.60	12.30	12.03	11.94	12.22	13.97	13.71	12.50	12.46	14
15	13.21	12.97	12.73	13.14	12.82	13.27	14.56	13.05	12.74	12.65	13.02	14.96	14.56	13.27	13.26	15
16	13.93	13.78	13.43	13.89	13.51	14.09	15.52	13.79	13.45	13.34	13.83	15.95	15.40	14.02	14.04	16
17	14.64	14.58	14.12	14.63	14.18	14.90	16.49	14.51	14.13	14.02	14.62	16.94	16.24	14.75	14.83	17
18	15.32	15.37	14.79	15.36	14.84	15.71	17.44	15.23	14.80	14.68	15.41	17.93	17.06	15.46	15.60	18
19	15.99	16.16	15.44	16.08	15.48	16.51	18.40	15.94	15.45	15.32	16.19	18.92	17.88	16.16	16.37	19
20	16.65	16.95	16.08	16.79	16.11	17.31	19.36	16.63	16.09	15.95	16.97	19.91	18.69	16.85	17.13	20
21	17.28	17.73	16.71	17.49	16.72	18.10	20.32	17.32	16.71	16.57	17.74	20.90	19.48	17.51	17.88	21
22	17.90	18.51	17.32	18.18	17.31	18.89	21.28	17.99	17.32	17.17	18.51	21.89	20.27	18.17	18.63	22
23	18.50	19.28	17.92	18.85	17.89	19.67	22.23	18.66	17.92	17.76	19.27	22.87	21.04	18.80	19.37	23
24	19.09	20.05	18.51	19.53	18.46	20.45	23.20	19.32	18.50	18.34	20.03	23.87	21.83	19.43	20.10	24
25	19.67	20.81	19.09	20.21	19.02	21.22	24.19	19.99	19.07	18.90	20.78	24.89	22.62	20.04	20.83	25
26	20.24	21.56	19.65	20.88	19.56	21.99	25.19	20.65	19.63	19.46	21.53	25.93	23.41	20.64	21.56	26
27	20.79	22.31	20.20	21.53	20.09	22.75	26.19	21.30	20.18	20.01	22.26	26.96	24.18	21.23	22.27	27
28	21.32	23.06	20.74	22.18	20.61	23.50	27.19	21.94	20.72	20.54	23.00	27.99	24.95	21.80	22.99	28
29	21.85	23.80	21.27	22.81	21.12	24.25	28.20	22.56	21.25	21.06	23.72	29.03	25.71	22.37	23.69	29
30	22.36	24.53	21.78	23.43	21.61	24.99	29.20	23.18	21.76	21.57	24.44	30.06	26.46	22.92	24.39	30

Table Ba-3. FEMP UPV* Discount Factors adjusted for fuel price escalation, by end-use sector and fuel type.

Discount Rate = 3.0 % (DOE)

Census Region 3 (Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia)

	RESIDENTIAL				COMMERCIAL					INDUSTRIAL					TRANSPORT	
N	Elec	Dist	LPG	NtGas	Elec	Dist	Resid	NtGas	Coal	Elec	Dist	Resid	NtGas	Coal	Gasln	N
1	1.00	0.95	0.98	0.96	0.98	0.96	0.98	0.95	0.98	0.97	0.95	0.98	0.93	0.98	0.97	1
2	1.98	1.91	1.96	1.87	1.94	1.91	1.99	1.85	1.94	1.92	1.90	1.99	1.88	1.95	1.96	2
3	2.93	2.84	2.91	2.77	2.87	2.85	2.97	2.71	2.87	2.82	2.82	2.98	2.87	2.89	2.93	3
4	3.85	3.76	3.85	3.66	3.77	3.77	3.94	3.57	3.78	3.70	3.73	3.96	3.90	3.81	3.87	4
5	4.75	4.65	4.76	4.58	4.65	4.68	4.90	4.45	4.68	4.57	4.62	4.92	4.99	4.71	4.78	5
6	5.65	5.54	5.66	5.49	5.53	5.57	5.86	5.33	5.56	5.43	5.51	5.88	6.10	5.60	5.69	6
7	6.53	6.42	6.52	6.39	6.38	6.46	6.81	6.20	6.42	6.27	6.38	6.84	7.20	6.47	6.58	7
8	7.39	7.29	7.37	7.28	7.22	7.34	7.76	7.06	7.27	7.09	7.25	7.79	8.29	7.32	7.46	8
9	8.23	8.15	8.20	8.15	8.04	8.21	8.71	7.91	8.09	7.89	8.12	8.74	9.36	8.15	8.33	9
10	9.05	9.00	9.01	9.01	8.84	9.07	9.65	8.75	8.89	8.67	8.97	9.68	10.43	8.96	9.18	10
11	9.85	9.84	9.80	9.86	9.62	9.93	10.59	9.57	9.67	9.44	9.82	10.62	11.49	9.75	10.03	11
12	10.64	10.68	10.58	10.69	10.38	10.78	11.52	10.38	10.43	10.19	10.66	11.56	12.52	10.52	10.86	12
13	11.40	11.51	11.33	11.49	11.12	11.62	12.46	11.16	11.18	10.92	11.49	12.49	13.51	11.27	11.68	13
14	12.13	12.33	12.07	12.28	11.83	12.45	13.38	11.91	11.90	11.63	12.31	13.42	14.47	12.01	12.49	14
15	12.85	13.15	12.79	13.04	12.53	13.28	14.31	12.64	12.61	12.32	13.13	14.35	15.39	12.73	13.30	15
16	13.55	13.96	13.49	13.79	13.20	14.10	15.24	13.35	13.31	12.99	13.94	15.28	16.32	13.43	14.09	16
17	14.23	14.77	14.18	14.53	13.86	14.92	16.16	14.06	13.99	13.65	14.74	16.20	17.23	14.12	14.87	17
18	14.89	15.57	14.86	15.25	14.51	15.73	17.08	14.75	14.65	14.29	15.54	17.12	18.15	14.80	15.65	18
19	15.54	16.36	15.52	15.97	15.14	16.53	18.00	15.44	15.30	14.92	16.34	18.04	19.05	15.45	16.42	19
20	16.18	17.15	16.17	16.68	15.75	17.33	18.91	16.11	15.93	15.53	17.12	18.96	19.95	16.09	17.19	20
21	16.80	17.93	16.80	17.37	16.35	18.13	19.83	16.77	16.54	16.14	17.91	19.87	20.84	16.72	17.94	21
22	17.40	18.71	17.42	18.07	16.93	18.91	20.74	17.43	17.14	16.73	18.69	20.78	21.72	17.33	18.69	22
23	17.99	19.48	18.03	18.76	17.51	19.70	21.65	18.09	17.73	17.31	19.46	21.69	22.60	17.93	19.44	23
24	18.57	20.25	18.62	19.45	18.07	20.48	22.56	18.75	18.31	17.88	20.23	22.60	23.48	18.52	20.18	24
25	19.15	21.02	19.20	20.14	18.63	21.25	23.50	19.41	18.88	18.45	20.99	23.54	24.39	19.09	20.91	25
26	19.71	21.77	19.77	20.83	19.17	22.02	24.44	20.06	19.43	19.00	21.75	24.48	25.30	19.66	21.63	26
27	20.25	22.52	20.33	21.50	19.70	22.78	25.38	20.71	19.97	19.55	22.50	25.42	26.19	20.21	22.35	27
28	20.79	23.27	20.87	22.15	20.22	23.53	26.32	21.34	20.50	20.08	23.24	26.36	27.08	20.75	23.07	28
29	21.31	24.01	21.41	22.80	20.73	24.28	27.26	21.96	21.02	20.60	23.98	27.29	27.95	21.27	23.78	29
30	21.82	24.74	21.93	23.43	21.22	25.03	28.20	22.57	21.52	21.11	24.71	28.23	28.81	21.79	24.48	30

Table Ba-4. FEMP UPV* Discount Factors adjusted for fuel price escalation, by end-use sector and fuel type.

Discount Rate = 3.0 % (DOE)

Census Region 4 (Alaska, Arizona, California, Colorado, Hawaii,
Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming)

	RESIDENTIAL				COMMERCIAL					INDUSTRIAL					TRANSPORT	
N	Elec	Dist	LPG	NtGas	Elec	Dist	Resid	NtGas	Coal	Elec	Dist	Resid	NtGas	Coal	Gasln	N
1	1.00	0.96	0.98	0.94	1.00	0.95	0.98	0.98	0.99	0.99	0.96	0.98	0.96	1.00	0.97	1
2	1.99	1.90	1.96	1.86	1.98	1.92	2.02	1.94	1.97	1.95	1.89	2.02	1.94	1.97	1.98	2
3	2.95	2.82	2.92	2.76	2.92	2.87	3.05	2.86	2.93	2.88	2.80	3.06	2.95	2.92	2.97	3
4	3.87	3.72	3.86	3.66	3.83	3.80	4.07	3.80	3.87	3.77	3.70	4.08	3.99	3.84	3.94	4
5	4.78	4.61	4.77	4.58	4.71	4.71	5.08	4.75	4.78	4.65	4.58	5.09	5.06	4.74	4.88	5
6	5.66	5.49	5.67	5.49	5.58	5.62	6.09	5.70	5.68	5.50	5.45	6.10	6.15	5.63	5.82	6
7	6.52	6.36	6.54	6.40	6.41	6.52	7.10	6.64	6.56	6.33	6.32	7.11	7.23	6.50	6.73	7
8	7.36	7.22	7.39	7.30	7.22	7.41	8.11	7.58	7.43	7.14	7.18	8.12	8.30	7.35	7.63	8
9	8.17	8.07	8.22	8.18	8.01	8.29	9.11	8.49	8.27	7.93	8.04	9.13	9.35	8.19	8.52	9
10	8.97	8.91	9.03	9.04	8.77	9.16	10.12	9.40	9.10	8.70	8.88	10.14	10.39	9.01	9.40	10
11	9.74	9.74	9.82	9.90	9.52	10.02	11.13	10.29	9.91	9.45	9.72	11.15	11.43	9.81	10.26	11
12	10.50	10.57	10.60	10.74	10.24	10.88	12.13	11.17	10.71	10.18	10.55	12.16	12.44	10.59	11.11	12
13	11.23	11.40	11.35	11.55	10.94	11.73	13.14	12.01	11.49	10.89	11.38	13.17	13.40	11.35	11.95	13
14	11.94	12.21	12.09	12.33	11.61	12.57	14.15	12.83	12.25	11.58	12.20	14.18	14.32	12.10	12.78	14
15	12.63	13.02	12.81	13.10	12.27	13.40	15.15	13.62	13.00	12.24	13.01	15.19	15.20	12.83	13.60	15
16	13.30	13.83	13.52	13.85	12.90	14.23	16.16	14.40	13.73	12.89	13.81	16.20	16.06	13.54	14.41	16
17	13.95	14.62	14.21	14.59	13.52	15.05	17.17	15.16	14.45	13.52	14.61	17.21	16.91	14.24	15.21	17
18	14.58	15.42	14.89	15.31	14.11	15.87	18.17	15.92	15.15	14.14	15.40	18.21	17.76	14.93	16.00	18
19	15.20	16.20	15.55	16.03	14.70	16.68	19.18	16.66	15.84	14.74	16.19	19.22	18.59	15.59	16.79	19
20	15.81	16.98	16.20	16.73	15.26	17.48	20.18	17.39	16.52	15.32	16.97	20.23	19.41	16.25	17.57	20
21	16.39	17.76	16.83	17.43	15.81	18.28	21.19	18.11	17.18	15.90	17.74	21.24	20.22	16.88	18.34	21
22	16.97	18.53	17.45	18.11	16.35	19.07	22.19	18.82	17.83	16.46	18.51	22.25	21.02	17.51	19.10	22
23	17.53	19.29	18.05	18.79	16.87	19.86	23.20	19.52	18.47	17.01	19.28	23.26	21.82	18.12	19.85	23
24	18.08	20.05	18.65	19.46	17.39	20.64	24.22	20.22	19.10	17.54	20.04	24.28	22.62	18.71	20.60	24
25	18.61	20.80	19.23	20.13	17.89	21.41	25.26	20.92	19.72	18.07	20.80	25.33	23.41	19.29	21.35	25
26	19.13	21.55	19.80	20.78	18.37	22.18	26.31	21.60	20.33	18.58	21.55	26.38	24.21	19.86	22.08	26
27	19.64	22.29	20.36	21.42	18.84	22.94	27.36	22.27	20.92	19.08	22.29	27.44	24.99	20.42	22.81	27
28	20.14	23.03	20.90	22.06	19.30	23.70	28.42	22.93	21.49	19.57	23.03	28.50	25.76	20.97	23.53	28
29	20.62	23.76	21.43	22.67	19.75	24.45	29.47	23.58	22.06	20.05	23.76	29.56	26.52	21.51	24.25	29
30	21.09	24.48	21.95	23.28	20.18	25.19	30.53	24.22	22.61	20.51	24.49	30.62	27.27	22.04	24.96	30

Table Ba-5. FEMP UPV* Discount Factors adjusted for fuel price escalation, by end-use sector and fuel type.

Discount Rate = 3.0 % (DOE)

United States Average

	RESIDENTIAL				COMMERCIAL					INDUSTRIAL					TRANSPORT	
N	Elec	Dist	LPG	NtGas	Elec	Dist	Resid	NtGas	Coal	Elec	Dist	Resid	NtGas	Coal	Gasln	N
1	0.99	0.96	0.98	0.96	0.98	0.96	0.98	0.97	0.98	0.97	0.96	0.98	0.94	0.99	0.97	1
2	1.97	1.92	1.96	1.89	1.95	1.91	1.98	1.92	1.95	1.92	1.90	2.00	1.91	1.96	1.97	2
3	2.92	2.86	2.92	2.82	2.88	2.85	2.95	2.84	2.90	2.83	2.82	3.01	2.92	2.91	2.94	3
4	3.85	3.79	3.85	3.76	3.79	3.76	3.90	3.77	3.83	3.72	3.72	4.00	3.97	3.84	3.89	4
5	4.77	4.70	4.77	4.71	4.68	4.66	4.85	4.72	4.74	4.59	4.62	4.98	5.07	4.76	4.82	5
6	5.67	5.59	5.66	5.67	5.57	5.56	5.79	5.69	5.63	5.46	5.50	5.96	6.18	5.66	5.73	6
7	6.56	6.48	6.53	6.62	6.44	6.44	6.72	6.65	6.50	6.31	6.37	6.93	7.29	6.54	6.63	7
8	7.43	7.36	7.38	7.56	7.29	7.32	7.65	7.59	7.35	7.14	7.24	7.90	8.38	7.41	7.52	8
9	8.28	8.23	8.21	8.48	8.12	8.19	8.57	8.52	8.18	7.95	8.10	8.86	9.46	8.26	8.39	9
10	9.11	9.09	9.02	9.39	8.92	9.05	9.49	9.44	8.99	8.74	8.95	9.82	10.53	9.09	9.26	10
11	9.92	9.94	9.82	10.28	9.71	9.90	10.40	10.34	9.78	9.52	9.80	10.78	11.59	9.90	10.11	11
12	10.71	10.78	10.59	11.16	10.48	10.75	11.31	11.22	10.56	10.28	10.63	11.73	12.62	10.69	10.95	12
13	11.48	11.62	11.35	12.00	11.23	11.59	12.22	12.06	11.31	11.02	11.46	12.68	13.61	11.46	11.77	13
14	12.23	12.45	12.09	12.81	11.95	12.42	13.12	12.88	12.05	11.74	12.28	13.62	14.56	12.22	12.59	14
15	12.95	13.27	12.81	13.61	12.65	13.25	14.01	13.66	12.77	12.43	13.10	14.57	15.48	12.96	13.40	15
16	13.66	14.09	13.52	14.38	13.34	14.07	14.91	14.43	13.48	13.11	13.91	15.51	16.38	13.68	14.20	16
17	14.35	14.90	14.21	15.15	14.00	14.88	15.80	15.19	14.16	13.77	14.71	16.44	17.28	14.39	14.99	17
18	15.02	15.71	14.89	15.90	14.65	15.69	16.68	15.93	14.84	14.41	15.50	17.38	18.17	15.08	15.77	18
19	15.67	16.51	15.55	16.64	15.28	16.49	17.56	16.67	15.50	15.05	16.29	18.31	19.05	15.76	16.55	19
20	16.31	17.30	16.20	17.37	15.89	17.29	18.44	17.39	16.14	15.66	17.08	19.24	19.92	16.42	17.32	20
21	16.93	18.09	16.84	18.10	16.49	18.08	19.32	18.10	16.77	16.27	17.86	20.17	20.78	17.06	18.08	21
22	17.54	18.87	17.46	18.81	17.07	18.87	20.19	18.80	17.38	16.86	18.63	21.09	21.63	17.70	18.83	22
23	18.13	19.65	18.07	19.52	17.65	19.65	21.06	19.50	17.98	17.44	19.40	22.01	22.48	18.32	19.58	23
24	18.71	20.42	18.67	20.22	18.21	20.43	21.94	20.20	18.57	18.01	20.17	22.94	23.33	18.92	20.32	24
25	19.28	21.19	19.25	20.93	18.76	21.20	22.83	20.90	19.15	18.57	20.93	23.89	24.20	19.52	21.06	25
26	19.84	21.95	19.82	21.63	19.30	21.96	23.72	21.60	19.72	19.12	21.68	24.84	25.07	20.11	21.78	26
27	20.38	22.70	20.38	22.31	19.82	22.72	24.61	22.28	20.27	19.66	22.43	25.80	25.92	20.71	22.51	27
28	20.92	23.45	20.93	22.98	20.33	23.47	25.51	22.95	20.81	20.19	23.17	26.75	26.77	21.28	23.23	28
29	21.43	24.19	21.46	23.63	20.83	24.22	26.40	23.61	21.34	20.70	23.90	27.70	27.60	21.85	23.94	29
30	21.94	24.93	21.99	24.28	21.32	24.96	27.29	24.25	21.86	21.20	24.63	28.65	28.42	22.40	24.64	30

B.2. OMB Modified Uniform Present Value Factors

The OMB Modified Uniform Present Value (OMB UPV*) factors presented in the "Bb" tables, based on the current OMB discount rates (0.7 % short term and 1.4 % long term), are for calculating the present value of energy costs accruing over 1 to 30 years when conducting a life-cycle cost analysis of a federal project not explicitly related to energy or water conservation or renewable resources. These factors apply only to annual energy usage that is assumed to be the same each year over the service period. The BLCC computer program can compute the present value of energy usage and savings that are not the same in each year.

Examples of How to Use the OMB UPV* Factors:

OMB UPV* (OMB discount rate): To compute the present value over 30 years of electricity costs associated with the occupancy of a federal office building in Ohio (where energy conservation is not a specific consideration in the LCC analysis), go to Table Bb-2, find the OMB UPV* factor for commercial electricity for 30 years (25.13), and multiply this factor by the annual electricity cost in base-date dollars.

Note: Because the discount rate used to calculate the Bb tables (OMB discount rate) is usually different for years 1 to 10 than for years 11 to 30, these factors cannot be used with a planning/ design/construction period as shown above for the Ba tables (DOE discount rate). Use the BLCC computer program for this purpose. For further explanation of the use of UPV factors, see NIST Handbook 135.*

Table Bb-1. OMB UPV* Discount Factors adjusted for fuel price escalation, by end-use sector and fuel type.

Discount Rate = 0.7 % (years 1 to 10) and 1.4 % (years 11 to 30), (OMB Circular A-94[a])

Census Region 1 (Connecticut, Maine, Massachusetts, New Hampshire,
New Jersey, New York, Pennsylvania, Rhode Island, Vermont)

	RESIDENTIAL				COMMERCIAL					INDUSTRIAL					TRANSPORT	
N	Elec	Dist	LPG	NtGas	Elec	Dist	Resid	NtGas	Coal	Elec	Dist	Resid	NtGas	Coal	Gasln	N
1	0.99	0.98	1.00	1.00	0.98	0.98	1.00	1.01	1.00	0.95	0.98	1.00	1.01	0.99	1.00	1
2	1.97	1.99	2.02	2.04	1.95	1.97	2.04	2.08	2.01	1.88	1.99	2.06	2.20	1.98	2.05	2
3	2.96	3.00	3.04	3.13	2.92	2.96	3.08	3.19	3.01	2.82	3.02	3.12	3.57	2.96	3.11	3
4	3.97	4.02	4.07	4.29	3.93	3.95	4.12	4.37	4.02	3.77	4.04	4.19	5.09	3.95	4.17	4
5	5.02	5.04	5.09	5.49	4.96	4.95	5.18	5.62	5.03	4.75	5.07	5.27	6.74	4.93	5.22	5
6	6.11	6.07	6.10	6.75	6.03	5.96	6.25	6.92	6.04	5.78	6.12	6.36	8.49	5.93	6.28	6
7	7.21	7.11	7.12	8.03	7.12	6.98	7.34	8.27	7.05	6.82	7.18	7.47	10.31	6.94	7.36	7
8	8.32	8.16	8.13	9.33	8.22	8.02	8.45	9.63	8.05	7.87	8.25	8.60	12.17	7.95	8.43	8
9	9.44	9.23	9.14	10.65	9.33	9.08	9.58	11.02	9.05	8.92	9.34	9.76	14.09	8.95	9.52	9
10	10.57	10.31	10.15	11.99	10.44	10.14	10.72	12.43	10.05	9.99	10.44	10.92	16.04	9.95	10.62	10
11	10.89	10.62	10.40	12.37	10.75	10.45	11.06	12.84	10.29	10.28	10.76	11.27	16.65	10.20	10.92	11
12	11.87	11.58	11.28	13.51	11.71	11.41	12.09	14.04	11.14	11.20	11.74	12.32	18.29	11.07	11.89	12
13	12.84	12.54	12.14	14.62	12.67	12.36	13.13	15.18	11.98	12.11	12.72	13.38	19.86	11.92	12.86	13
14	13.79	13.51	13.00	15.69	13.61	13.32	14.17	16.28	12.81	13.00	13.70	14.44	21.36	12.77	13.82	14
15	14.72	14.48	13.84	16.74	14.53	14.28	15.21	17.35	13.62	13.87	14.69	15.51	22.80	13.61	14.78	15
16	15.64	15.45	14.67	17.76	15.43	15.25	16.27	18.39	14.43	14.72	15.67	16.58	24.21	14.44	15.74	16
17	16.55	16.43	15.49	18.78	16.31	16.21	17.33	19.42	15.22	15.56	16.66	17.67	25.60	15.26	16.70	17
18	17.44	17.41	16.31	19.79	17.19	17.18	18.39	20.44	16.00	16.39	17.65	18.75	26.98	16.07	17.66	18
19	18.32	18.39	17.11	20.79	18.05	18.16	19.47	21.44	16.77	17.21	18.65	19.85	28.35	16.87	18.63	19
20	19.19	19.37	17.91	21.79	18.90	19.14	20.55	22.45	17.53	18.01	19.65	20.95	29.73	17.66	19.59	20
21	20.04	20.36	18.69	22.79	19.73	20.12	21.64	23.45	18.27	18.81	20.65	22.06	31.10	18.44	20.55	21
22	20.89	21.35	19.47	23.79	20.56	21.11	22.73	24.46	19.01	19.60	21.65	23.18	32.49	19.21	21.52	22
23	21.72	22.35	20.24	24.80	21.38	22.11	23.83	25.48	19.74	20.38	22.66	24.30	33.92	19.98	22.48	23
24	22.56	23.35	21.00	25.83	22.20	23.10	24.96	26.52	20.45	21.17	23.68	25.44	35.40	20.74	23.45	24
25	23.39	24.35	21.76	26.86	23.02	24.11	26.11	27.58	21.16	21.95	24.69	26.62	36.91	21.49	24.42	25
26	24.21	25.36	22.50	27.89	23.83	25.11	27.28	28.63	21.86	22.73	25.71	27.82	38.42	22.24	25.40	26
27	25.01	26.37	23.24	28.92	24.62	26.12	28.46	29.68	22.54	23.50	26.73	29.02	39.94	22.97	26.37	27
28	25.81	27.38	23.97	29.93	25.41	27.13	29.66	30.73	23.22	24.26	27.76	30.24	41.45	23.70	27.35	28
29	26.60	28.39	24.69	30.93	26.19	28.14	30.86	31.76	23.89	25.01	28.78	31.46	42.96	24.42	28.33	29
30	27.38	29.40	25.40	31.93	26.95	29.16	32.07	32.79	24.55	25.75	29.81	32.70	44.46	25.13	29.31	30

[a]OMB discount rate as of April 2015.

Table Bb-2. OMB UPV* Discount Factors adjusted for fuel price escalation, by end-use sector and fuel type.

Discount Rate = 0.7 % (years 1 to 10) and 1.4 % (years 11 to 30), (OMB Circular A-94[a])

Census Region 2 (Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin)

	RESIDENTIAL				COMMERCIAL					INDUSTRIAL					TRANSPORT	
N	Elec	Dist	LPG	NtGas	Elec	Dist	Resid	NtGas	Coal	Elec	Dist	Resid	NtGas	Coal	Gasln	N
1	1.03	0.98	1.00	0.98	1.01	0.98	1.00	0.99	1.00	1.00	0.98	1.00	0.97	1.02	1.00	1
2	2.07	1.96	2.02	1.95	2.04	1.98	2.06	1.97	2.01	2.01	1.96	2.08	1.97	2.05	2.03	2
3	3.12	2.94	3.04	2.92	3.06	2.98	3.12	2.93	3.03	3.00	2.94	3.17	3.01	3.08	3.06	3
4	4.16	3.92	4.06	3.91	4.08	3.99	4.19	3.91	4.04	3.99	3.93	4.27	4.10	4.12	4.09	4
5	5.20	4.91	5.08	4.94	5.10	5.00	5.27	4.94	5.06	4.99	4.92	5.39	5.26	5.17	5.11	5
6	6.26	5.90	6.10	6.00	6.13	6.02	6.38	5.99	6.08	6.00	5.92	6.53	6.46	6.22	6.15	6
7	7.32	6.91	7.11	7.08	7.15	7.06	7.51	7.05	7.10	7.01	6.94	7.70	7.67	7.29	7.19	7
8	8.38	7.94	8.12	8.15	8.18	8.11	8.67	8.12	8.12	8.02	7.97	8.89	8.89	8.36	8.24	8
9	9.44	8.97	9.14	9.23	9.20	9.18	9.85	9.19	9.13	9.03	9.02	10.11	10.12	9.42	9.30	9
10	10.50	10.03	10.14	10.31	10.22	10.26	11.06	10.27	10.15	10.05	10.08	11.35	11.35	10.49	10.37	10
11	10.77	10.33	10.40	10.62	10.47	10.57	11.43	10.57	10.40	10.31	10.39	11.74	11.71	10.77	10.66	11
12	11.69	11.27	11.27	11.57	11.35	11.53	12.53	11.51	11.28	11.19	11.33	12.87	12.79	11.69	11.60	12
13	12.59	12.21	12.13	12.49	12.22	12.50	13.63	12.42	12.14	12.05	12.28	14.00	13.84	12.61	12.54	13
14	13.48	13.16	12.98	13.40	13.08	13.47	14.75	13.32	13.00	12.91	13.23	15.15	14.86	13.52	13.48	14
15	14.35	14.12	13.82	14.30	13.91	14.44	15.88	14.19	13.84	13.74	14.18	16.32	15.86	14.42	14.42	15
16	15.21	15.07	14.65	15.19	14.74	15.42	17.02	15.07	14.67	14.56	15.13	17.49	16.86	15.31	15.35	16
17	16.05	16.04	15.48	16.07	15.55	16.39	18.17	15.94	15.49	15.37	16.08	18.68	17.86	16.18	16.29	17
18	16.88	17.00	16.29	16.96	16.35	17.37	19.34	16.81	16.30	16.17	17.04	19.88	18.86	17.05	17.23	18
19	17.71	17.97	17.09	17.84	17.13	18.36	20.51	17.68	17.10	16.96	18.00	21.09	19.86	17.91	18.17	19
20	18.51	18.95	17.89	18.72	17.91	19.35	21.70	18.54	17.89	17.74	18.96	22.32	20.86	18.76	19.11	20
21	19.31	19.92	18.68	19.60	18.67	20.34	22.90	19.40	18.67	18.51	19.93	23.56	21.86	19.59	20.06	21
22	20.09	20.91	19.45	20.47	19.42	21.34	24.11	20.25	19.44	19.27	20.90	24.81	22.86	20.42	21.00	22
23	20.87	21.89	20.22	21.33	20.17	22.34	25.34	21.10	20.21	20.03	21.88	26.07	23.85	21.24	21.95	23
24	21.63	22.89	20.98	22.21	20.90	23.35	26.59	21.96	20.97	20.78	22.86	27.36	24.86	22.04	22.90	24
25	22.39	23.88	21.73	23.10	21.63	24.36	27.89	22.84	21.71	21.52	23.84	28.70	25.90	22.84	23.86	25
26	23.13	24.88	22.48	23.98	22.35	25.37	29.21	23.71	22.45	22.26	24.83	30.07	26.94	23.64	24.81	26
27	23.87	25.89	23.22	24.86	23.06	26.38	30.55	24.58	23.19	22.99	25.81	31.45	27.98	24.42	25.77	27
28	24.59	26.89	23.94	25.73	23.76	27.40	31.90	25.44	23.91	23.71	26.80	32.84	29.01	25.20	26.73	28
29	25.31	27.90	24.66	26.60	24.45	28.42	33.27	26.29	24.63	24.42	27.79	34.26	30.05	25.97	27.70	29
30	26.01	28.91	25.37	27.45	25.13	29.44	34.65	27.15	25.34	25.12	28.79	35.69	31.08	26.74	28.67	30

[a]OMB discount rate as of April 2015.

Table Bb-3. OMB UPV* Discount Factors adjusted for fuel price escalation, by end-use sector and fuel type.

Discount Rate = 0.7 % (years 1 to 10) and 1.4 % (years 11 to 30), (OMB Circular A-94[a])

Census Region 3 (Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia)

	RESIDENTIAL				COMMERCIAL					INDUSTRIAL					TRANSPORT	
N	Elec	Dist	LPG	NtGas	Elec	Dist	Resid	NtGas	Coal	Elec	Dist	Resid	NtGas	Coal	Gasln	N
1	1.02	0.98	1.00	0.98	1.01	0.98	1.00	0.98	1.00	1.00	0.98	1.00	0.95	1.00	1.00	1
2	2.05	1.98	2.02	1.94	2.01	1.98	2.06	1.91	2.00	1.98	1.97	2.06	1.94	2.01	2.03	2
3	3.06	2.97	3.05	2.89	3.00	2.98	3.11	2.83	3.00	2.95	2.95	3.12	3.00	3.02	3.06	3
4	4.07	3.97	4.07	3.88	3.98	3.99	4.17	3.77	4.00	3.92	3.95	4.19	4.13	4.03	4.09	4
5	5.08	4.98	5.10	4.90	4.98	5.00	5.25	4.76	5.00	4.89	4.95	5.27	5.36	5.04	5.12	5
6	6.11	5.99	6.12	5.94	5.98	6.03	6.34	5.77	6.01	5.87	5.96	6.37	6.63	6.05	6.15	6
7	7.14	7.02	7.14	7.00	6.98	7.07	7.46	6.79	7.03	6.85	6.98	7.49	7.91	7.08	7.20	7
8	8.17	8.06	8.15	8.06	7.99	8.12	8.59	7.82	8.04	7.83	8.03	8.63	9.22	8.10	8.25	8
9	9.20	9.11	9.17	9.13	8.99	9.19	9.75	8.86	9.04	8.81	9.08	9.79	10.53	9.12	9.31	9
10	10.23	10.18	10.18	10.21	9.99	10.27	10.93	9.91	10.05	9.80	10.15	10.97	11.87	10.13	10.39	10
11	10.49	10.49	10.44	10.51	10.24	10.58	11.29	10.21	10.30	10.05	10.46	11.33	12.27	10.38	10.68	11
12	11.38	11.44	11.32	11.45	11.10	11.55	12.36	11.12	11.16	10.90	11.42	12.39	13.45	11.26	11.63	12
13	12.26	12.39	12.18	12.38	11.96	12.52	13.43	12.01	12.02	11.74	12.37	13.47	14.59	12.12	12.58	13
14	13.11	13.35	13.04	13.29	12.79	13.49	14.51	12.89	12.86	12.57	13.33	14.55	15.70	12.98	13.52	14
15	13.95	14.31	13.89	14.19	13.60	14.46	15.60	13.75	13.70	13.37	14.29	15.64	16.79	13.82	14.46	15
16	14.78	15.27	14.72	15.07	14.41	15.43	16.70	14.60	14.52	14.17	15.25	16.74	17.88	14.66	15.40	16
17	15.60	16.24	15.55	15.96	15.20	16.41	17.80	15.44	15.34	14.96	16.22	17.85	18.99	15.49	16.34	17
18	16.41	17.21	16.37	16.84	15.98	17.40	18.92	16.29	16.14	15.74	17.19	18.97	20.09	16.30	17.29	18
19	17.20	18.19	17.18	17.72	16.75	18.38	20.05	17.12	16.93	16.51	18.16	20.09	21.21	17.11	18.23	19
20	17.99	19.16	17.98	18.60	17.51	19.37	21.18	17.96	17.71	17.28	19.14	21.23	22.32	17.90	19.18	20
21	18.77	20.14	18.78	19.47	18.26	20.37	22.33	18.79	18.48	18.03	20.12	22.37	23.43	18.69	20.13	21
22	19.53	21.13	19.56	20.35	19.00	21.37	23.48	19.62	19.25	18.78	21.10	23.52	24.55	19.46	21.08	22
23	20.29	22.12	20.34	21.24	19.73	22.37	24.64	20.47	20.00	19.52	22.09	24.68	25.67	20.23	22.03	23
24	21.04	23.12	21.11	22.13	20.46	23.38	25.83	21.31	20.75	20.26	23.09	25.87	26.82	20.99	22.99	24
25	21.79	24.11	21.87	23.04	21.19	24.39	27.05	22.18	21.49	21.00	24.09	27.09	28.00	21.74	23.94	25
26	22.53	25.11	22.62	23.94	21.91	25.40	28.30	23.05	22.22	21.74	25.09	28.33	29.20	22.49	24.90	26
27	23.26	26.12	23.37	24.84	22.62	26.42	29.55	23.91	22.95	22.46	26.09	29.59	30.40	23.22	25.87	27
28	23.98	27.12	24.10	25.72	23.32	27.44	30.82	24.76	23.66	23.18	27.10	30.86	31.59	23.95	26.83	28
29	24.69	28.13	24.83	26.60	24.01	28.46	32.11	25.61	24.36	23.90	28.11	32.14	32.78	24.67	27.80	29
30	25.39	29.14	25.55	27.47	24.70	29.49	33.40	26.45	25.06	24.60	29.12	33.43	33.97	25.38	28.77	30

[a]OMB discount rate as of April 2015.

Table Bb-4. OMB UPV* Discount Factors adjusted for fuel price escalation, by end-use sector and fuel type.

Discount Rate = 0.7 % (years 1 to 10) and 1.4 % (years 11 to 30), (OMB Circular A-94[a])

Census Region 4 (Alaska, Arizona, California, Colorado, Hawaii,
Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming)

	RESIDENTIAL				COMMERCIAL					INDUSTRIAL					TRANSPORT	
N	Elec	Dist	LPG	NtGas	Elec	Dist	Resid	NtGas	Coal	Elec	Dist	Resid	NtGas	Coal	Gasln	N
1	1.03	0.98	1.00	0.96	1.02	0.98	1.00	1.01	1.02	1.01	0.98	1.00	0.98	1.02	1.00	1
2	2.06	1.97	2.03	1.92	2.05	1.99	2.09	2.00	2.04	2.02	1.96	2.09	2.01	2.04	2.05	2
3	3.09	2.95	3.05	2.88	3.06	3.00	3.19	3.00	3.07	3.01	2.93	3.20	3.09	3.05	3.11	3
4	4.10	3.94	4.08	3.87	4.05	4.02	4.31	4.02	4.09	3.99	3.91	4.31	4.23	4.06	4.17	4
5	5.11	4.93	5.11	4.90	5.04	5.04	5.44	5.08	5.12	4.97	4.90	5.45	5.43	5.07	5.23	5
6	6.12	5.94	6.13	5.95	6.03	6.08	6.60	6.17	6.15	5.94	5.90	6.61	6.67	6.08	6.29	6
7	7.13	6.96	7.15	7.01	7.01	7.13	7.78	7.28	7.18	6.92	6.92	7.79	7.93	7.10	7.37	7
8	8.13	7.98	8.17	8.09	7.98	8.20	8.98	8.40	8.21	7.89	7.95	9.00	9.22	8.13	8.45	8
9	9.13	9.03	9.19	9.16	8.94	9.28	10.22	9.52	9.25	8.85	8.99	10.24	10.50	9.16	9.53	9
10	10.12	10.08	10.20	10.25	9.90	10.37	11.48	10.65	10.29	9.82	10.05	11.50	11.81	10.18	10.63	10
11	10.37	10.38	10.46	10.56	10.12	10.68	11.87	10.98	10.55	10.05	10.36	11.90	12.21	10.44	10.93	11
12	11.23	11.33	11.34	11.51	10.95	11.66	13.02	11.97	11.46	10.89	11.31	13.05	13.36	11.33	11.90	12
13	12.07	12.27	12.21	12.44	11.75	12.63	14.17	12.94	12.35	11.70	12.26	14.21	14.46	12.21	12.86	13
14	12.89	13.22	13.07	13.35	12.53	13.61	15.34	13.89	13.24	12.50	13.21	15.38	15.53	13.08	13.83	14
15	13.70	14.17	13.91	14.25	13.30	14.59	16.52	14.82	14.12	13.28	14.16	16.56	16.56	13.94	14.79	15
16	14.50	15.13	14.75	15.14	14.05	15.58	17.72	15.74	14.99	14.05	15.11	17.76	17.58	14.78	15.75	16
17	15.28	16.08	15.58	16.03	14.79	16.56	18.93	16.66	15.85	14.81	16.07	18.97	18.61	15.62	16.71	17
18	16.05	17.04	16.40	16.91	15.52	17.55	20.15	17.58	16.71	15.55	17.03	20.20	19.63	16.45	17.67	18
19	16.81	18.01	17.21	17.79	16.23	18.54	21.38	18.49	17.55	16.29	18.00	21.44	20.65	17.27	18.64	19
20	17.56	18.98	18.02	18.66	16.93	19.54	22.63	19.40	18.39	17.02	18.96	22.69	21.67	18.08	19.60	20
21	18.29	19.95	18.81	19.53	17.62	20.54	23.89	20.30	19.22	17.74	19.94	23.95	22.69	18.88	20.57	21
22	19.02	20.92	19.59	20.40	18.30	21.54	25.16	21.20	20.05	18.44	20.91	25.23	23.70	19.67	21.53	22
23	19.74	21.90	20.37	21.26	18.97	22.55	26.45	22.10	20.87	19.15	21.89	26.52	24.72	20.45	22.50	23
24	20.45	22.88	21.14	22.13	19.64	23.56	27.77	23.00	21.68	19.84	22.88	27.84	25.75	21.22	23.47	24
25	21.15	23.87	21.90	23.00	20.29	24.57	29.13	23.91	22.49	20.53	23.87	29.21	26.80	21.98	24.44	25
26	21.84	24.86	22.65	23.87	20.93	25.59	30.52	24.81	23.29	21.21	24.86	30.61	27.84	22.73	25.42	26
27	22.51	25.85	23.40	24.73	21.56	26.61	31.93	25.71	24.08	21.88	25.85	32.02	28.89	23.48	26.39	27
28	23.18	26.84	24.13	25.58	22.18	27.63	33.35	26.60	24.86	22.54	26.85	33.45	29.93	24.22	27.37	28
29	23.84	27.83	24.86	26.43	22.79	28.65	34.79	27.49	25.62	23.19	27.85	34.90	30.97	24.96	28.34	29
30	24.49	28.83	25.57	27.26	23.39	29.67	36.25	28.36	26.38	23.83	28.85	36.36	32.01	25.68	29.33	30

[a]OMB discount rate as of April 2015.

Table Bb-5. OMB UPV* Discount Factors adjusted for fuel price escalation, by end-use sector and fuel type.

Discount Rate = 0.7 % (years 1 to 10) and 1.4 % (years 11 to 30), (OMB Circular A-94[a])

United States Average

	RESIDENTIAL				COMMERCIAL					INDUSTRIAL					TRANSPORT	
N	Elec	Dist	LPG	NtGas	Elec	Dist	Resid	NtGas	Coal	Elec	Dist	Resid	NtGas	Coal	Gasln	N
1	1.02	0.98	1.00	0.98	1.01	0.98	1.00	0.99	1.01	0.99	0.98	1.00	0.96	1.01	1.00	1
2	2.04	1.99	2.03	1.96	2.01	1.98	2.04	1.98	2.02	1.98	1.97	2.07	1.98	2.03	2.04	2
3	3.06	3.00	3.05	2.95	3.01	2.98	3.08	2.97	3.03	2.96	2.95	3.15	3.06	3.05	3.08	3
4	4.07	4.01	4.08	3.98	4.01	3.98	4.13	3.99	4.05	3.93	3.94	4.23	4.21	4.06	4.12	4
5	5.10	5.02	5.10	5.05	5.01	4.99	5.19	5.06	5.07	4.91	4.94	5.33	5.44	5.09	5.16	5
6	6.14	6.05	6.12	6.14	6.02	6.01	6.26	6.16	6.09	5.90	5.95	6.45	6.71	6.12	6.20	6
7	7.18	7.09	7.14	7.25	7.04	7.05	7.36	7.28	7.11	6.90	6.97	7.59	8.01	7.16	7.26	7
8	8.22	8.14	8.16	8.38	8.06	8.10	8.47	8.41	8.13	7.89	8.01	8.75	9.32	8.20	8.32	8
9	9.26	9.21	9.18	9.51	9.07	9.16	9.60	9.56	9.14	8.89	9.06	9.93	10.64	9.24	9.39	9
10	10.30	10.28	10.20	10.65	10.09	10.24	10.75	10.71	10.16	9.88	10.13	11.13	11.98	10.27	10.47	10
11	10.57	10.59	10.45	10.97	10.34	10.55	11.09	11.03	10.42	10.14	10.44	11.49	12.39	10.54	10.77	11
12	11.47	11.55	11.33	11.96	11.22	11.52	12.13	12.03	11.30	11.00	11.39	12.58	13.56	11.44	11.72	12
13	12.35	12.51	12.20	12.93	12.08	12.48	13.17	13.00	12.16	11.85	12.35	13.67	14.69	12.33	12.67	13
14	13.22	13.48	13.06	13.88	12.92	13.45	14.21	13.95	13.02	12.68	13.30	14.77	15.80	13.20	13.62	14
15	14.07	14.45	13.91	14.81	13.74	14.42	15.27	14.87	13.87	13.50	14.26	15.87	16.87	14.07	14.57	15
16	14.91	15.42	14.75	15.73	14.55	15.39	16.33	15.78	14.71	14.30	15.22	16.99	17.95	14.94	15.52	16
17	15.73	16.39	15.58	16.65	15.35	16.37	17.40	16.69	15.53	15.10	16.18	18.12	19.02	15.79	16.47	17
18	16.54	17.37	16.41	17.56	16.13	17.35	18.47	17.59	16.35	15.88	17.15	19.25	20.10	16.63	17.42	18
19	17.35	18.35	17.22	18.47	16.90	18.33	19.55	18.49	17.16	16.66	18.11	20.39	21.18	17.46	18.37	19
20	18.14	19.34	18.03	19.38	17.67	19.32	20.64	19.39	17.95	17.42	19.09	21.55	22.26	18.27	19.32	20
21	18.92	20.32	18.82	20.28	18.42	20.31	21.74	20.28	18.74	18.18	20.06	22.71	23.34	19.08	20.28	21
22	19.68	21.31	19.61	21.19	19.15	21.31	22.84	21.17	19.52	18.92	21.04	23.88	24.42	19.88	21.23	22
23	20.44	22.31	20.39	22.09	19.89	22.31	23.95	22.06	20.29	19.66	22.03	25.06	25.51	20.68	22.19	23
24	21.20	23.31	21.16	23.00	20.61	23.32	25.09	22.97	21.05	20.40	23.02	26.26	26.61	21.46	23.15	24
25	21.94	24.31	21.93	23.93	21.33	24.33	26.25	23.89	21.81	21.14	24.01	27.50	27.75	22.24	24.11	25
26	22.68	25.32	22.68	24.85	22.05	25.34	27.43	24.80	22.56	21.87	25.01	28.76	28.89	23.03	25.07	26
27	23.41	26.32	23.43	25.76	22.75	26.35	28.63	25.71	23.30	22.59	26.01	30.03	30.03	23.82	26.04	27
28	24.13	27.33	24.17	26.67	23.44	27.37	29.83	26.62	24.03	23.30	27.01	31.32	31.17	24.60	27.01	28
29	24.83	28.34	24.90	27.56	24.12	28.39	31.05	27.52	24.75	24.00	28.01	32.62	32.31	25.37	27.98	29
30	25.53	29.36	25.62	28.45	24.80	29.41	32.28	28.41	25.46	24.70	29.02	33.93	33.44	26.14	28.96	30

[a]OMB discount rate as of April 2015.

C. Projected Average Fuel Price Indices and Escalation Rates (Real)

Tables Ca-1 through Ca-5 present projected fuel price indices for the four Census regions and for the United States. These indices, when multiplied by annual energy costs computed at base-date prices (i.e., as of April 1, 2015), provide estimates of future-year costs (also as of April 1) in constant base-date dollars. Constant-dollar cost estimates are needed when discounting is performed with a real discount rate (i.e., a rate that does not include general price inflation).

These indices were used in the calculation of the UPV* factors for energy prices in the Ba and Bb tables in this publication. While they are based on April 1 energy prices to maintain consistency in the computation of these UPV* factors, the level of precision implied here is not required for most LCC analyses. That is, the analyst need not calibrate base-year energy prices precisely to April 1, 2015 levels to use these indices (or the corresponding UPV* factors); instead, the analyst should use current price levels as of the base-date of the LCC analysis, regardless of the time of the year that the study is undertaken.

Example of How to Use the Indices:

To estimate the price of industrial coal in 2016 in Connecticut (in constant 2015 dollars), go to Table Ca-1, find the year 2016 index for industrial coal (1.00), and multiply by the price for industrial coal in Connecticut in 2015.

For further explanation of how to use these tables, see NIST Handbook 135.

Tables Cb-1 through Cb-5 present the projected average fuel price escalation rates (percentage change compounded annually) for selected periods from 2015 to 2045 for the four Census regions and for the overall United States. Note that these are real rates exclusive of general price inflation. Their use results in prices expressed in *constant* dollars.

The average fuel escalation rates consolidate the information provided by the indices in the Ca tables so that trends in projected price changes can be seen at a glance. They are provided primarily to accommodate computer programs (such as BLCC) which require price escalation rates as inputs.

Unless there is a compelling reason to use escalation rates, it is recommended that you use the indices in the Ca tables when you need estimates of future-year energy prices, since the indices include year-to-year information rather than averages over a number of years.

Example of How to Use the Escalation Rates:

To estimate the unit price of residential natural gas at the end of 2025 (p_{25}) in Wyoming using the DOE energy price escalation rates, go to Table Cb-4 and find the 2015 to 2020 and the 2020 to 2025 escalation rates for residential electricity (0.9 % for 5 years and 0.4 % for 5 years, respectively). Enter these values and the unit price of residential electricity in Wyoming in 2015 (p_{15}) into the following formula. Then solve for the 2025 energy price (stated in 2015 dollars):

$$p_y = p_0 \times \prod_{i=1}^{N} (1+e_i)^{k_i}$$

$$\begin{aligned} p_{25} &= p_{15} \times (1+e_1)^{k_1} \times (1+e_2)^{k_2} \\ &= p_{15} \times (1+0.009)^5 \times (1+0.004)^5 \\ &= p_{15} \times 1.046 \times 1.020 \\ &= p_{15} \times 1.066 \end{aligned}$$

where p_y = price at end of year y;
p_0 = unit price at base date;
e_i = annual compound escalation rate for period i from the Cb tables (in decimal form); and
k_i = number of years over which escalation rate e_i occurs.

Note that the compounded escalation rate factor (1.066) corresponds to the fuel price index in region 4, residential electricity, for the year 2025 in table Ca-4 (1.07).

The data in the Ca and Cb tables on the following pages are reported for the four Census regions and the U.S. average. Figure B-1 on page 13 presents a map showing the states corresponding to the four Census regions. The Census regions do not include American Samoa, Canal Zone, Guam, Puerto Rico, Trust Territory of the Pacific Islands, or the Virgin Islands. Analysts of federal projects in these areas should use data which are "reasonable under the circumstances," and may refer to the tables with U.S. average data for guidance.

Table Ca-1. Projected fuel price indices (excluding general inflation), by end-use sector and fuel type.

Census Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont)

Projected April 1 Fuel Price Indices (April 1, 2015 = 1.00)

Sector and Fuel	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Residential															
Electricity	0.99	0.99	1.01	1.05	1.09	1.13	1.16	1.18	1.19	1.21	1.22	1.23	1.24	1.24	1.24
Distillate Oil	0.98	1.03	1.03	1.04	1.06	1.07	1.09	1.11	1.14	1.16	1.18	1.21	1.23	1.26	1.29
LPG	1.01	1.03	1.04	1.05	1.06	1.06	1.06	1.07	1.08	1.08	1.09	1.10	1.10	1.11	1.12
Natural Gas	1.00	1.06	1.11	1.19	1.25	1.31	1.35	1.38	1.41	1.43	1.44	1.43	1.41	1.40	1.39
Commercial															
Electricity	0.99	0.98	0.99	1.03	1.07	1.12	1.14	1.16	1.18	1.20	1.20	1.21	1.22	1.22	1.22
Distillate Oil	0.98	1.01	1.01	1.02	1.03	1.05	1.08	1.10	1.12	1.15	1.17	1.19	1.22	1.25	1.28
Residual Oil	1.01	1.06	1.06	1.07	1.09	1.12	1.14	1.17	1.20	1.23	1.26	1.29	1.32	1.35	1.39
Natural Gas	1.02	1.08	1.13	1.21	1.30	1.36	1.41	1.45	1.48	1.51	1.52	1.49	1.46	1.43	1.41
Coal	1.01	1.02	1.03	1.03	1.05	1.06	1.06	1.06	1.06	1.06	1.07	1.07	1.07	1.08	1.08
Industrial															
Electricity	0.96	0.94	0.95	0.98	1.02	1.06	1.09	1.11	1.12	1.14	1.15	1.15	1.16	1.16	1.15
Distillate Oil	0.98	1.03	1.04	1.05	1.07	1.09	1.11	1.14	1.16	1.18	1.20	1.23	1.25	1.28	1.31
Residual Oil	1.01	1.07	1.08	1.10	1.12	1.14	1.17	1.20	1.23	1.25	1.28	1.32	1.35	1.38	1.42
Natural Gas	1.02	1.20	1.39	1.57	1.71	1.82	1.91	1.98	2.04	2.09	2.10	2.06	2.00	1.95	1.91
Coal	1.00	1.00	1.00	1.01	1.02	1.04	1.06	1.06	1.07	1.07	1.08	1.08	1.09	1.11	1.11
Transportation															
Motor Gasoline	1.00	1.07	1.08	1.08	1.09	1.11	1.12	1.14	1.16	1.18	1.20	1.22	1.23	1.25	1.27

Table Ca-1, continued. Projected fuel price indices (excluding general inflation), by end-use sector and fuel type.

Census Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont)

Projected April 1 Fuel Price Indices (April 1, 2015 = 1.00)

Sector and Fuel	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Residential															
Electricity	1.24	1.25	1.25	1.26	1.27	1.27	1.28	1.29	1.31	1.33	1.34	1.34	1.35	1.36	1.37
Distillate Oil	1.32	1.34	1.37	1.40	1.44	1.47	1.50	1.54	1.57	1.61	1.64	1.67	1.71	1.75	1.78
LPG	1.12	1.13	1.14	1.15	1.16	1.17	1.18	1.19	1.20	1.21	1.22	1.23	1.23	1.24	1.25
Natural Gas	1.39	1.40	1.42	1.43	1.46	1.48	1.51	1.56	1.61	1.66	1.68	1.70	1.72	1.73	1.75
Commercial															
Electricity	1.21	1.22	1.22	1.23	1.24	1.24	1.25	1.27	1.29	1.31	1.32	1.33	1.33	1.34	1.35
Distillate Oil	1.30	1.33	1.36	1.39	1.43	1.46	1.49	1.53	1.57	1.60	1.64	1.67	1.71	1.75	1.79
Residual Oil	1.42	1.46	1.50	1.54	1.57	1.62	1.66	1.70	1.76	1.85	1.91	1.96	2.02	2.08	2.14
Natural Gas	1.41	1.42	1.43	1.44	1.46	1.49	1.52	1.57	1.64	1.69	1.72	1.74	1.77	1.79	1.81
Coal	1.09	1.09	1.10	1.10	1.10	1.11	1.11	1.12	1.12	1.13	1.14	1.14	1.15	1.15	1.16
Industrial															
Electricity	1.15	1.16	1.16	1.17	1.18	1.18	1.19	1.21	1.24	1.26	1.27	1.28	1.29	1.30	1.30
Distillate Oil	1.33	1.36	1.39	1.42	1.45	1.49	1.52	1.56	1.59	1.63	1.66	1.70	1.73	1.77	1.81
Residual Oil	1.45	1.49	1.53	1.57	1.61	1.65	1.69	1.73	1.80	1.88	1.95	2.00	2.06	2.12	2.18
Natural Gas	1.90	1.91	1.94	1.96	2.01	2.04	2.11	2.20	2.32	2.42	2.47	2.52	2.56	2.60	2.65
Coal	1.12	1.13	1.14	1.14	1.15	1.16	1.17	1.18	1.19	1.20	1.21	1.22	1.23	1.24	1.25
Transportation															
Motor Gasoline	1.30	1.32	1.35	1.38	1.40	1.43	1.46	1.49	1.52	1.55	1.59	1.62	1.65	1.69	1.73

Table Ca-2. Projected fuel price indices (excluding general inflation), by end-use sector and fuel type.

Census Region 2 (Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin)

Projected April 1 Fuel Price Indices (April 1, 2015 = 1.00)

Sector and Fuel	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Residential															
Electricity	1.03	1.06	1.07	1.07	1.09	1.10	1.11	1.12	1.13	1.14	1.14	1.15	1.15	1.16	1.16
Distillate Oil	0.98	1.00	1.00	1.01	1.02	1.04	1.06	1.08	1.10	1.13	1.15	1.18	1.21	1.24	1.26
LPG	1.01	1.03	1.04	1.05	1.06	1.06	1.06	1.07	1.08	1.08	1.09	1.10	1.10	1.11	1.11
Natural Gas	0.98	0.98	0.99	1.02	1.07	1.11	1.12	1.14	1.15	1.16	1.18	1.19	1.18	1.18	1.19
Commercial															
Electricity	1.02	1.04	1.04	1.04	1.06	1.07	1.08	1.09	1.09	1.09	1.10	1.10	1.11	1.11	1.11
Distillate Oil	0.98	1.02	1.02	1.03	1.05	1.07	1.09	1.11	1.14	1.16	1.18	1.21	1.24	1.26	1.29
Residual Oil	1.01	1.07	1.08	1.10	1.13	1.16	1.19	1.22	1.26	1.29	1.33	1.37	1.41	1.45	1.50
Natural Gas	1.00	0.99	0.98	1.01	1.06	1.10	1.12	1.13	1.14	1.15	1.17	1.18	1.17	1.16	1.17
Coal	1.01	1.03	1.03	1.04	1.06	1.07	1.07	1.08	1.08	1.09	1.09	1.10	1.11	1.11	1.12
Industrial															
Electricity	1.01	1.02	1.02	1.02	1.04	1.05	1.06	1.07	1.07	1.09	1.09	1.10	1.11	1.11	1.11
Distillate Oil	0.98	1.00	1.00	1.01	1.03	1.05	1.07	1.09	1.11	1.14	1.16	1.19	1.21	1.23	1.26
Residual Oil	1.01	1.10	1.11	1.13	1.16	1.19	1.22	1.26	1.30	1.33	1.37	1.41	1.46	1.50	1.54
Natural Gas	0.98	1.01	1.06	1.12	1.20	1.25	1.27	1.29	1.31	1.32	1.35	1.35	1.34	1.33	1.33
Coal	1.02	1.05	1.05	1.07	1.09	1.10	1.12	1.13	1.14	1.14	1.15	1.16	1.17	1.18	1.19
Transportation															
Motor Gasoline	1.00	1.05	1.05	1.05	1.06	1.08	1.09	1.11	1.13	1.14	1.16	1.18	1.20	1.22	1.24

Table Ca-2, continued. Projected fuel price indices (excluding general inflation), by end-use sector and fuel type.

Census Region 2 (Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin)

Projected April 1 Fuel Price Indices (April 1, 2015 = 1.00)

Sector and Fuel	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Residential															
Electricity	1.16	1.16	1.17	1.17	1.18	1.18	1.18	1.19	1.20	1.21	1.22	1.22	1.23	1.23	1.24
Distillate Oil	1.29	1.32	1.36	1.39	1.42	1.45	1.49	1.52	1.56	1.60	1.63	1.67	1.70	1.74	1.78
LPG	1.12	1.13	1.14	1.15	1.16	1.17	1.18	1.18	1.19	1.21	1.22	1.22	1.23	1.24	1.25
Natural Gas	1.20	1.22	1.24	1.26	1.28	1.30	1.31	1.34	1.38	1.42	1.44	1.46	1.48	1.49	1.51
Commercial															
Electricity	1.11	1.12	1.12	1.13	1.13	1.13	1.14	1.15	1.16	1.17	1.17	1.18	1.18	1.19	1.19
Distillate Oil	1.32	1.35	1.38	1.41	1.44	1.47	1.51	1.54	1.58	1.62	1.65	1.69	1.72	1.76	1.80
Residual Oil	1.54	1.59	1.63	1.68	1.73	1.78	1.83	1.89	1.97	2.08	2.15	2.22	2.29	2.36	2.44
Natural Gas	1.18	1.20	1.22	1.24	1.26	1.28	1.29	1.31	1.35	1.40	1.42	1.44	1.46	1.48	1.50
Coal	1.12	1.13	1.14	1.14	1.15	1.16	1.17	1.18	1.19	1.20	1.21	1.22	1.23	1.24	1.25
Industrial															
Electricity	1.11	1.12	1.12	1.13	1.14	1.14	1.15	1.16	1.18	1.19	1.20	1.21	1.22	1.23	1.23
Distillate Oil	1.29	1.31	1.34	1.37	1.40	1.44	1.47	1.50	1.54	1.57	1.61	1.64	1.68	1.71	1.75
Residual Oil	1.59	1.64	1.68	1.73	1.79	1.84	1.89	1.95	2.03	2.14	2.22	2.29	2.37	2.44	2.52
Natural Gas	1.35	1.38	1.40	1.43	1.46	1.48	1.50	1.53	1.59	1.66	1.70	1.73	1.76	1.79	1.82
Coal	1.20	1.21	1.22	1.23	1.23	1.24	1.25	1.26	1.27	1.28	1.29	1.30	1.32	1.33	1.34
Transportation															
Motor Gasoline	1.27	1.29	1.32	1.35	1.37	1.40	1.43	1.46	1.50	1.53	1.56	1.59	1.63	1.67	1.70

Table Ca-3. Projected fuel price indices (excluding general inflation), by end-use sector and fuel type.

Census Region 3 (Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia)

Projected April 1 Fuel Price Indices (April 1, 2015 = 1.00)

Sector and Fuel	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Residential															
Electricity	1.03	1.04	1.03	1.04	1.05	1.07	1.08	1.09	1.09	1.10	1.11	1.12	1.12	1.12	1.12
Distillate Oil	0.98	1.01	1.02	1.03	1.04	1.06	1.08	1.10	1.12	1.14	1.17	1.19	1.22	1.25	1.27
LPG	1.01	1.04	1.05	1.05	1.06	1.06	1.07	1.08	1.08	1.09	1.10	1.10	1.11	1.12	1.12
Natural Gas	0.99	0.97	0.98	1.01	1.06	1.09	1.11	1.12	1.14	1.16	1.17	1.18	1.18	1.19	1.18
Commercial															
Electricity	1.01	1.02	1.01	1.01	1.03	1.04	1.05	1.06	1.07	1.07	1.08	1.08	1.09	1.08	1.08
Distillate Oil	0.98	1.02	1.02	1.04	1.05	1.07	1.09	1.11	1.14	1.16	1.18	1.21	1.24	1.26	1.29
Residual Oil	1.01	1.07	1.08	1.09	1.12	1.14	1.17	1.20	1.23	1.27	1.30	1.33	1.37	1.41	1.44
Natural Gas	0.98	0.95	0.94	0.97	1.02	1.06	1.07	1.09	1.11	1.12	1.14	1.15	1.14	1.14	1.13
Coal	1.01	1.02	1.02	1.03	1.04	1.05	1.07	1.07	1.07	1.08	1.08	1.08	1.09	1.10	1.11
Industrial															
Electricity	1.00	1.00	0.99	0.99	1.01	1.02	1.03	1.04	1.04	1.05	1.06	1.07	1.07	1.07	1.07
Distillate Oil	0.98	1.01	1.01	1.02	1.03	1.05	1.08	1.10	1.12	1.15	1.17	1.20	1.22	1.25	1.27
Residual Oil	1.01	1.07	1.08	1.10	1.12	1.15	1.18	1.21	1.24	1.27	1.30	1.34	1.37	1.41	1.45
Natural Gas	0.96	1.00	1.08	1.16	1.27	1.33	1.35	1.38	1.40	1.43	1.47	1.47	1.46	1.45	1.44
Coal	1.01	1.03	1.03	1.03	1.05	1.06	1.07	1.08	1.08	1.09	1.09	1.10	1.11	1.11	1.12
Transportation															
Motor Gasoline	1.00	1.05	1.05	1.06	1.06	1.08	1.10	1.11	1.13	1.15	1.17	1.19	1.21	1.23	1.25

Table Ca-3, continued. Projected fuel price indices (excluding general inflation), by end-use sector and fuel type.

Census Region 3 (Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia)

Projected April 1 Fuel Price Indices (April 1, 2015 = 1.00)

Sector and Fuel	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Residential															
Electricity	1.12	1.13	1.13	1.14	1.15	1.15	1.16	1.17	1.18	1.20	1.21	1.21	1.22	1.23	1.24
Distillate Oil	1.30	1.33	1.36	1.39	1.42	1.46	1.49	1.53	1.56	1.60	1.63	1.67	1.70	1.74	1.78
LPG	1.13	1.14	1.15	1.16	1.17	1.18	1.19	1.20	1.21	1.22	1.23	1.24	1.25	1.26	1.26
Natural Gas	1.20	1.22	1.24	1.26	1.27	1.30	1.33	1.37	1.40	1.45	1.48	1.49	1.50	1.51	1.53
Commercial															
Electricity	1.08	1.09	1.10	1.10	1.11	1.11	1.12	1.13	1.15	1.16	1.17	1.18	1.19	1.20	1.20
Distillate Oil	1.32	1.35	1.38	1.41	1.44	1.48	1.51	1.55	1.58	1.62	1.65	1.69	1.73	1.76	1.80
Residual Oil	1.49	1.53	1.57	1.61	1.65	1.70	1.74	1.79	1.87	1.96	2.03	2.09	2.15	2.22	2.28
Natural Gas	1.15	1.17	1.18	1.20	1.21	1.23	1.27	1.30	1.33	1.39	1.41	1.43	1.44	1.46	1.48
Coal	1.12	1.12	1.13	1.13	1.14	1.14	1.15	1.17	1.18	1.19	1.19	1.20	1.21	1.22	1.22
Industrial															
Electricity	1.08	1.09	1.10	1.10	1.11	1.12	1.13	1.15	1.16	1.18	1.20	1.21	1.22	1.23	1.24
Distillate Oil	1.30	1.33	1.36	1.39	1.42	1.46	1.49	1.53	1.56	1.60	1.63	1.67	1.70	1.74	1.78
Residual Oil	1.49	1.53	1.57	1.61	1.65	1.70	1.74	1.79	1.86	1.96	2.03	2.09	2.15	2.21	2.28
Natural Gas	1.48	1.52	1.55	1.59	1.62	1.65	1.69	1.73	1.80	1.90	1.95	1.99	2.02	2.06	2.09
Coal	1.13	1.14	1.15	1.15	1.16	1.16	1.17	1.18	1.19	1.21	1.21	1.22	1.23	1.24	1.25
Transportation															
Motor Gasoline	1.27	1.30	1.33	1.35	1.38	1.41	1.44	1.47	1.50	1.53	1.57	1.60	1.64	1.67	1.71

Table Ca-4. Projected fuel price indices (excluding general inflation), by end-use sector and fuel type.

Census Region 4 (Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming)

Projected April 1 Fuel Price Indices (April 1, 2015 = 1.00)

Sector and Fuel	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Residential															
Electricity	1.03	1.05	1.04	1.04	1.05	1.05	1.06	1.06	1.06	1.07	1.07	1.08	1.08	1.07	1.07
Distillate Oil	0.98	1.00	1.00	1.02	1.03	1.05	1.07	1.09	1.11	1.13	1.16	1.18	1.21	1.23	1.26
LPG	1.01	1.04	1.05	1.06	1.06	1.07	1.07	1.08	1.08	1.09	1.10	1.10	1.11	1.12	1.12
Natural Gas	0.97	0.97	0.98	1.02	1.06	1.10	1.12	1.13	1.15	1.16	1.19	1.19	1.19	1.19	1.19
Commercial															
Electricity	1.03	1.04	1.03	1.02	1.02	1.03	1.03	1.03	1.02	1.03	1.03	1.03	1.03	1.02	1.02
Distillate Oil	0.98	1.03	1.03	1.05	1.06	1.08	1.10	1.13	1.15	1.17	1.20	1.22	1.25	1.27	1.30
Residual Oil	1.01	1.11	1.13	1.15	1.17	1.21	1.24	1.28	1.31	1.35	1.39	1.44	1.48	1.52	1.57
Natural Gas	1.01	1.01	1.01	1.05	1.10	1.14	1.16	1.18	1.19	1.22	1.24	1.25	1.24	1.23	1.24
Coal	1.02	1.04	1.05	1.05	1.06	1.07	1.08	1.09	1.11	1.11	1.12	1.13	1.14	1.16	1.17
Industrial															
Electricity	1.02	1.02	1.01	1.01	1.01	1.02	1.02	1.03	1.03	1.03	1.04	1.04	1.04	1.04	1.04
Distillate Oil	0.98	1.00	1.00	1.01	1.02	1.04	1.07	1.09	1.11	1.14	1.16	1.19	1.21	1.24	1.26
Residual Oil	1.01	1.11	1.13	1.15	1.17	1.21	1.24	1.28	1.32	1.36	1.40	1.44	1.48	1.53	1.57
Natural Gas	0.99	1.04	1.10	1.17	1.24	1.30	1.33	1.35	1.37	1.40	1.44	1.44	1.41	1.38	1.37
Coal	1.03	1.03	1.03	1.03	1.05	1.06	1.07	1.08	1.10	1.10	1.10	1.11	1.12	1.13	1.14
Transportation															
Motor Gasoline	1.00	1.07	1.08	1.09	1.10	1.11	1.13	1.14	1.16	1.18	1.19	1.21	1.23	1.26	1.28

Table Ca-4, continued. Projected fuel price indices (excluding general inflation), by end-use sector and fuel type.

Census Region 4 (Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming)

Projected April 1 Fuel Price Indices (April 1, 2015 = 1.00)

Sector and Fuel	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Residential															
Electricity	1.07	1.08	1.08	1.09	1.09	1.09	1.10	1.11	1.11	1.12	1.12	1.13	1.13	1.14	1.14
Distillate Oil	1.29	1.32	1.35	1.38	1.41	1.44	1.47	1.51	1.54	1.58	1.61	1.65	1.68	1.72	1.75
LPG	1.13	1.14	1.15	1.16	1.17	1.18	1.19	1.20	1.21	1.22	1.23	1.24	1.24	1.25	1.26
Natural Gas	1.20	1.22	1.24	1.25	1.27	1.30	1.31	1.33	1.36	1.40	1.41	1.43	1.44	1.46	1.47
Commercial															
Electricity	1.02	1.02	1.02	1.02	1.02	1.02	1.03	1.03	1.04	1.05	1.05	1.05	1.05	1.05	1.05
Distillate Oil	1.33	1.36	1.39	1.42	1.45	1.48	1.52	1.55	1.59	1.62	1.66	1.69	1.73	1.77	1.80
Residual Oil	1.62	1.66	1.71	1.76	1.82	1.87	1.93	1.98	2.07	2.18	2.27	2.34	2.41	2.49	2.57
Natural Gas	1.25	1.27	1.28	1.30	1.32	1.34	1.36	1.38	1.42	1.45	1.47	1.49	1.51	1.53	1.55
Coal	1.17	1.19	1.20	1.21	1.22	1.23	1.25	1.26	1.28	1.29	1.30	1.31	1.32	1.33	1.34
Industrial															
Electricity	1.04	1.04	1.05	1.05	1.06	1.06	1.07	1.08	1.09	1.10	1.11	1.11	1.12	1.12	1.13
Distillate Oil	1.29	1.32	1.35	1.38	1.41	1.44	1.48	1.51	1.55	1.58	1.62	1.65	1.69	1.72	1.76
Residual Oil	1.62	1.67	1.72	1.77	1.82	1.88	1.93	1.99	2.08	2.19	2.28	2.35	2.42	2.50	2.58
Natural Gas	1.38	1.41	1.43	1.45	1.49	1.52	1.53	1.57	1.62	1.67	1.71	1.74	1.77	1.80	1.83
Coal	1.15	1.15	1.16	1.17	1.18	1.18	1.20	1.20	1.21	1.22	1.23	1.24	1.25	1.27	1.28
Transportation															
Motor Gasoline	1.30	1.32	1.35	1.38	1.41	1.43	1.46	1.49	1.52	1.56	1.59	1.62	1.65	1.69	1.72

Table Ca-5. Projected fuel price indices (excluding general inflation), by end-use sector and fuel type.

United States Average

	Projected April 1 Fuel Price Indices (April 1, 2015 = 1.00)														
Sector and Fuel	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Residential															
Electricity	1.02	1.04	1.04	1.04	1.06	1.08	1.09	1.10	1.11	1.12	1.12	1.13	1.13	1.13	1.13
Distillate Oil	0.98	1.02	1.03	1.04	1.05	1.07	1.09	1.11	1.13	1.16	1.18	1.20	1.23	1.26	1.28
LPG	1.01	1.04	1.05	1.06	1.06	1.07	1.07	1.08	1.08	1.09	1.10	1.11	1.11	1.12	1.13
Natural Gas	0.99	1.00	1.01	1.05	1.11	1.14	1.17	1.19	1.20	1.22	1.24	1.24	1.24	1.23	1.23
Commercial															
Electricity	1.01	1.02	1.02	1.02	1.04	1.06	1.07	1.08	1.08	1.09	1.09	1.10	1.10	1.10	1.09
Distillate Oil	0.98	1.02	1.02	1.03	1.05	1.06	1.09	1.11	1.13	1.16	1.18	1.21	1.23	1.26	1.29
Residual Oil	1.01	1.06	1.06	1.08	1.10	1.12	1.15	1.18	1.20	1.23	1.26	1.30	1.33	1.36	1.40
Natural Gas	1.00	1.00	1.01	1.05	1.11	1.15	1.18	1.20	1.22	1.23	1.25	1.25	1.24	1.23	1.22
Coal	1.01	1.03	1.04	1.04	1.05	1.06	1.07	1.08	1.09	1.09	1.10	1.10	1.11	1.12	1.12
Industrial															
Electricity	1.00	1.00	1.00	1.00	1.02	1.03	1.04	1.05	1.06	1.07	1.08	1.08	1.08	1.08	1.08
Distillate Oil	0.98	1.00	1.01	1.02	1.03	1.05	1.08	1.10	1.12	1.14	1.17	1.19	1.22	1.24	1.27
Residual Oil	1.01	1.09	1.10	1.12	1.14	1.16	1.19	1.23	1.26	1.29	1.32	1.36	1.39	1.43	1.47
Natural Gas	0.97	1.03	1.10	1.18	1.27	1.33	1.36	1.39	1.41	1.43	1.47	1.47	1.45	1.44	1.43
Coal	1.02	1.04	1.04	1.04	1.06	1.08	1.09	1.10	1.11	1.11	1.12	1.13	1.13	1.14	1.15
Transportation															
Motor Gasoline	1.00	1.06	1.06	1.07	1.08	1.09	1.11	1.12	1.14	1.16	1.18	1.20	1.22	1.24	1.26

Table Ca-5, continued. Projected fuel price indices (excluding general inflation), by end-use sector and fuel type.

United States Average

	Projected April 1 Fuel Price Indices (April 1, 2015 = 1.00)														
Sector and Fuel	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Residential															
Electricity	1.13	1.14	1.14	1.15	1.15	1.16	1.16	1.17	1.18	1.20	1.20	1.21	1.22	1.22	1.23
Distillate Oil	1.31	1.34	1.37	1.40	1.43	1.47	1.50	1.54	1.57	1.61	1.64	1.67	1.71	1.75	1.78
LPG	1.13	1.14	1.15	1.16	1.17	1.18	1.19	1.20	1.21	1.23	1.23	1.24	1.25	1.26	1.27
Natural Gas	1.25	1.26	1.28	1.30	1.32	1.34	1.37	1.40	1.44	1.48	1.50	1.52	1.53	1.55	1.56
Commercial															
Electricity	1.09	1.10	1.10	1.11	1.11	1.11	1.12	1.13	1.14	1.15	1.16	1.17	1.17	1.18	1.18
Distillate Oil	1.32	1.34	1.38	1.41	1.44	1.47	1.51	1.54	1.58	1.62	1.65	1.69	1.72	1.76	1.80
Residual Oil	1.43	1.47	1.51	1.55	1.59	1.63	1.67	1.71	1.78	1.87	1.93	1.98	2.04	2.10	2.16
Natural Gas	1.23	1.25	1.27	1.28	1.30	1.32	1.35	1.38	1.42	1.47	1.50	1.51	1.53	1.55	1.57
Coal	1.13	1.14	1.14	1.15	1.16	1.17	1.18	1.19	1.20	1.21	1.22	1.23	1.24	1.24	1.26
Industrial															
Electricity	1.09	1.09	1.10	1.11	1.11	1.12	1.13	1.14	1.16	1.18	1.19	1.20	1.21	1.21	1.22
Distillate Oil	1.30	1.32	1.36	1.39	1.42	1.45	1.48	1.52	1.56	1.59	1.62	1.66	1.69	1.73	1.77
Residual Oil	1.51	1.55	1.59	1.63	1.68	1.72	1.77	1.82	1.89	1.99	2.06	2.12	2.18	2.24	2.31
Natural Gas	1.45	1.48	1.51	1.54	1.57	1.61	1.64	1.67	1.74	1.82	1.86	1.90	1.93	1.96	2.00
Coal	1.16	1.17	1.18	1.19	1.19	1.20	1.21	1.22	1.23	1.24	1.29	1.31	1.32	1.33	1.35
Transportation															
Motor Gasoline	1.28	1.31	1.33	1.36	1.39	1.42	1.44	1.47	1.51	1.54	1.57	1.61	1.64	1.68	1.71

Table Cb-1. Projected average fuel price escalation rates, excluding general inflation, by end-use sector and fuel type.

Census Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont)

	Percentage change compounded annually					
Sector and Fuel	2015 to 2020	2020 to 2025	2025 to 2030	2030 to 2035	2035 to 2040	2040 to 2045
Residential						
Electricity	1.7	2.2	0.5	0.4	0.9	0.6
Distillate Oil	1.1	1.9	2.1	2.2	2.3	2.1
LPG	1.1	0.5	0.6	0.8	0.8	0.7
Natural Gas	4.6	2.7	-0.6	1.0	2.6	1.1
Commercial						
Electricity	1.4	2.2	0.4	0.3	1.1	0.6
Distillate Oil	0.7	2.0	2.2	2.3	2.4	2.2
Residual Oil	1.8	2.3	2.5	2.6	3.3	2.9
Natural Gas	5.3	3.1	-1.3	0.7	2.9	1.4
Coal	0.9	0.4	0.3	0.4	0.5	0.5
Industrial						
Electricity	0.4	2.3	0.2	0.4	1.3	0.7
Distillate Oil	1.3	2.0	2.0	2.2	2.3	2.1
Residual Oil	2.2	2.3	2.5	2.6	3.2	2.9
Natural Gas	11.3	4.1	-1.8	1.0	3.8	1.8
Coal	0.5	0.9	0.7	0.7	0.9	0.8
Transportation						
Motor Gasoline	1.8	1.5	1.6	1.9	2.1	2.1

Table Cb-2. Projected average fuel price escalation rates, excluding general inflation, by end-use sector and fuel type.

Census Region 2 (Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin)

	Percentage change compounded annually					
Sector and Fuel	2015 to 2020	2020 to 2025	2025 to 2030	2030 to 2035	2035 to 2040	2040 to 2045
Residential						
Electricity	1.7	0.9	0.4	0.4	0.5	0.4
Distillate Oil	0.4	2.0	2.3	2.3	2.4	2.2
LPG	1.1	0.5	0.6	0.8	0.8	0.7
Natural Gas	1.4	1.7	0.4	1.6	2.1	1.2
Commercial						
Electricity	1.1	0.7	0.3	0.4	0.6	0.5
Distillate Oil	0.9	2.0	2.2	2.3	2.3	2.2
Residual Oil	2.4	2.8	2.9	3.0	3.7	3.3
Natural Gas	1.2	1.7	0.2	1.6	2.1	1.4
Coal	1.1	0.6	0.6	0.6	0.8	0.9
Industrial						
Electricity	0.7	1.0	0.4	0.5	1.0	0.7
Distillate Oil	0.5	2.0	2.1	2.2	2.3	2.1
Residual Oil	3.0	2.9	2.9	3.0	3.7	3.3
Natural Gas	3.6	2.0	0.1	1.9	2.6	1.8
Coal	1.7	1.1	0.8	0.7	0.7	1.0
Transportation						
Motor Gasoline	1.2	1.5	1.7	2.0	2.1	2.2

Table Cb-3. Projected average fuel price escalation rates, excluding general inflation, by end-use sector and fuel type.

Census Region 3 (Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia)

	Percentage change compounded annually					
Sector and Fuel	2015 to 2020	2020 to 2025	2025 to 2030	2030 to 2035	2035 to 2040	2040 to 2045
Residential						
Electricity	1.0	0.9	0.2	0.5	0.9	0.7
Distillate Oil	0.8	1.9	2.2	2.3	2.3	2.2
LPG	1.2	0.5	0.6	0.8	0.8	0.7
Natural Gas	1.1	1.8	0.5	1.5	2.7	1.0
Commercial						
Electricity	0.5	0.9	0.2	0.5	1.0	0.7
Distillate Oil	1.0	2.0	2.1	2.3	2.3	2.2
Residual Oil	2.2	2.6	2.7	2.7	3.5	3.1
Natural Gas	0.4	1.9	0.1	1.4	2.8	1.3
Coal	0.8	0.7	0.6	0.5	0.8	0.6
Industrial						
Electricity	0.1	0.9	0.3	0.8	1.3	0.9
Distillate Oil	0.7	2.1	2.1	2.3	2.3	2.2
Residual Oil	2.3	2.5	2.6	2.7	3.4	3.1
Natural Gas	4.9	2.4	0.2	2.3	3.2	2.0
Coal	0.9	0.8	0.6	0.6	0.8	0.7
Transportation						
Motor Gasoline	1.3	1.6	1.7	2.0	2.1	2.2

Table Cb-4. Projected average fuel price escalation rates, excluding general inflation, by end-use sector and fuel type.

Census Region 4 (Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming)

	Percentage change compounded annually					
Sector and Fuel	2015 to 2020	2020 to 2025	2025 to 2030	2030 to 2035	2035 to 2040	2040 to 2045
Residential						
Electricity	0.9	0.4	0.1	0.3	0.5	0.4
Distillate Oil	0.6	1.9	2.2	2.2	2.3	2.1
LPG	1.2	0.5	0.6	0.8	0.8	0.7
Natural Gas	1.2	1.9	0.4	1.3	1.8	1.1
Commercial						
Electricity	0.5	0.1	-0.2	0.1	0.4	0.2
Distillate Oil	1.2	2.0	2.1	2.2	2.3	2.1
Residual Oil	3.2	2.9	3.0	3.0	3.7	3.3
Natural Gas	1.9	2.0	0.3	1.3	1.9	1.2
Coal	1.2	1.0	0.9	1.0	1.1	0.6
Industrial						
Electricity	0.2	0.5	0.1	0.4	0.8	0.5
Distillate Oil	0.5	2.1	2.1	2.3	2.3	2.2
Residual Oil	3.3	2.9	3.0	3.0	3.7	3.3
Natural Gas	4.4	2.5	-0.4	1.6	2.4	1.8
Coal	0.9	1.0	0.7	0.7	0.7	1.0
Transportation						
Motor Gasoline	1.9	1.4	1.7	2.0	2.0	2.1

Table Cb-5. Projected average fuel price escalation rates, excluding general inflation, by end-use sector and fuel type.

United States Average

Percentage change compounded annually

Sector and Fuel	2015 to 2020	2020 to 2025	2025 to 2030	2030 to 2035	2035 to 2040	2040 to 2045
Residential						
Electricity	1.2	1.0	0.2	0.4	0.7	0.6
Distillate Oil	1.0	1.9	2.1	2.2	2.3	2.1
LPG	1.2	0.5	0.6	0.8	0.9	0.7
Natural Gas	2.0	2.0	0.2	1.4	2.3	1.1
Commercial						
Electricity	0.8	0.9	0.1	0.3	0.8	0.5
Distillate Oil	0.9	2.0	2.2	2.3	2.3	2.2
Residual Oil	1.9	2.4	2.5	2.6	3.3	2.9
Natural Gas	2.1	2.2	-0.2	1.3	2.5	1.3
Coal	1.1	0.7	0.6	0.6	0.9	0.7
Industrial						
Electricity	0.3	1.0	0.3	0.6	1.1	0.8
Distillate Oil	0.6	2.1	2.1	2.2	2.3	2.1
Residual Oil	2.6	2.5	2.7	2.7	3.4	3.1
Natural Gas	4.9	2.4	-0.1	1.9	3.0	1.9
Coal	1.2	0.9	0.7	0.7	0.8	1.6
Transportation						
Motor Gasoline	1.5	1.5	1.7	2.0	2.1	2.2

D. Projected Average Carbon Prices and Emissions Indices

Most financed federal projects, such as Energy Savings Performance Contracts (ESPC), base contract payments on projected annual energy cost savings. When setting up the contract, average rates of energy price escalation over the contract term are a matter of negotiation. One consideration in setting escalation rates is the potential for future carbon pricing. Should carbon pricing legislation be enacted by the U.S. Congress, use of the EIA-based escalation rates—which do not consider carbon pricing—likely would underestimate escalation for contract payments. To assist federal agencies in considering a range of escalation rate scenarios, in 2010 FEMP introduced to the Annual Supplement a new "D" series of tables projecting potential future carbon prices and electricity-related carbon emissions rates under a range of carbon policy scenarios. Average rates of escalation may be calculated for each of these carbon policy scenarios in the Energy Escalation Rate Calculator (EERC 2.0), a BLCC companion program for financed projects. These may be considered by federal agencies for use as energy price escalation rates for contract payments.

Carbon Price Projections. In January 2010, the U.S. Environmental Protection Agency (EPA) issued a supplemental analysis of the American Clean Energy and Security Act of 2009 (H.R. 2454).[3] The analysis was based on multiple peer-reviewed climate economic models, with a particular focus on an economy-wide model known as ADAGE (Applied Dynamic Analysis of Global Economy).

Three carbon policy scenarios are chosen from the EPA study to create three levels of carbon pricing: Default, Low, and High. Default Pricing stems from a scenario assuming H.R. 2454 is enacted as is with no changes in the policy design, which does not restrict the type of capacity that electric utilities may install to meet carbon emissions targets. The Default scenario assumes that all countries, including developing countries, will begin to restrict carbon emissions over the next 40 years. Low Pricing assumes that developing countries do not take any action over the next 40 years to restrict carbon emissions, which decreases the demand for carbon reductions and allows emitters in the United States to purchase carbon offsets from other countries at a lower cost. High Pricing assumes that carbon offsets are not allowed and nuclear and biomass capacity construction is restricted. Both assumptions limit some of the least expensive options available to decrease carbon emissions, causing carbon prices to increase.

Table D-1 presents projected U.S. carbon prices under the Low, Default, and High Pricing policy scenarios.

Carbon Emissions Projections. Electric utilities will adjust to carbon markets by changing their generation mixes. These adjustments—and resulting carbon emissions levels—will vary over time depending on the policy scenario, with higher carbon prices encouraging more rapid transformations to less carbon-intensive electricity generation. The supplemental EPA analysis reports ADAGE-projected emissions with no carbon policy (business as usual) and under the

[3]U.S. Environmental Protection Agency, *Supplemental EPA Analysis of the American Clean Energy and Security Act of 2009: H.R. 2454 in the 111th Congress*, Office of Atmospheric Programs, January 29, 2010, http://www.epa.gov/climatechange/economics/economicanalyses.html .

Low, Default, and High carbon pricing scenarios.[4] These emissions projections are used to develop carbon emissions rate indices for this report.

Table D-2 presents projected U.S. carbon emissions rate indices for electricity with no carbon policy and under each carbon policy scenario. These indices, when multiplied by annual electricity emissions as of the base date, provide estimates of future-year emissions.

Examples of How to Use the Carbon Prices and Electricity Emissions Indices*:*

For all fuel types except electricity: To compute the cost of carbon in 2040 assuming the default carbon pricing scenario, go to Table D-1, find the 2040 default carbon price ($0.07/kg), and multiply the price by total annual carbon dioxide emissions (in kg) as of the base date for all fuel types except electricity (project-specific emissions, by fuel type, are reported by the BLCC program). The result is expressed in constant 2015 dollars.

For electricity: To compute the cost of carbon in 2020 assuming high carbon pricing, make two calculations:

(1) Go to Table D-1, find the 2020 High Pricing value ($0.08/kg), and multiply the price by annual carbon dioxide emissions for electricity (in kilograms) as of the base date.

(2) Go to Table D-2, find the 2020 carbon dioxide emissions rate index for high carbon pricing (0.77), and multiply the index by the result in (1).

The result is the projected carbon cost for 2020 electricity consumption expressed in constant 2015 dollars.

[4] Emissions rates in the business-as-usual case change based on expected electricity capacity deployment and generator retirement given the current market and policy environment.

Table D-1. Projected Carbon Dioxide-Equivalent Emissions Prices, by Carbon Policy Scenario

(2015 dollars per kilogram carbon dioxide)

	Carbon Policy Scenario		
Year	Default Pricing	Low Pricing	High Pricing
2015	$0.02	$0.01	$0.07
2016	$0.02	$0.01	$0.07
2017	$0.02	$0.01	$0.07
2018	$0.02	$0.02	$0.08
2019	$0.02	$0.02	$0.08
2020	$0.03	$0.02	$0.08
2021	$0.03	$0.02	$0.09
2022	$0.03	$0.02	$0.09
2023	$0.03	$0.02	$0.10
2024	$0.03	$0.02	$0.10
2025	$0.03	$0.02	$0.11
2026	$0.03	$0.02	$0.11
2027	$0.04	$0.02	$0.12
2028	$0.04	$0.03	$0.12
2029	$0.04	$0.03	$0.13
2030	$0.04	$0.03	$0.14
2031	$0.04	$0.03	$0.14
2032	$0.05	$0.03	$0.15
2033	$0.05	$0.03	$0.16
2034	$0.05	$0.03	$0.16
2035	$0.05	$0.04	$0.17
2036	$0.06	$0.04	$0.18
2037	$0.06	$0.04	$0.19
2038	$0.06	$0.04	$0.20
2039	$0.06	$0.04	$0.21
2040	$0.07	$0.05	$0.22
2041	$0.07	$0.05	$0.23
2042	$0.07	$0.05	$0.24
2043	$0.08	$0.05	$0.25
2044	$0.08	$0.06	$0.27
2045	$0.09	$0.06	$0.28

Table D-2. Projected Carbon Dioxide Emissions Rate Indices for Electricity, by Carbon Policy Scenario

Year	Carbon Policy Scenario			
	No Policy	Default Pricing	Low Pricing	High Pricing
2015	1.00	0.91	0.91	0.88
2016	0.99	0.89	0.89	0.85
2017	0.99	0.86	0.86	0.82
2018	0.98	0.83	0.83	0.79
2019	0.98	0.80	0.80	0.76
2020	0.97	0.78	0.77	0.73
2021	0.97	0.76	0.75	0.70
2022	0.96	0.74	0.73	0.68
2023	0.96	0.72	0.71	0.66
2024	0.95	0.70	0.69	0.64
2025	0.95	0.68	0.67	0.61
2026	0.95	0.65	0.65	0.59
2027	0.95	0.63	0.62	0.58
2028	0.96	0.60	0.60	0.56
2029	0.96	0.58	0.57	0.54
2030	0.96	0.56	0.55	0.52
2031	0.96	0.54	0.53	0.50
2032	0.96	0.52	0.51	0.48
2033	0.96	0.50	0.49	0.46
2034	0.96	0.49	0.48	0.44
2035	0.96	0.47	0.46	0.42
2036	0.96	0.45	0.44	0.39
2037	0.96	0.43	0.42	0.37
2038	0.96	0.41	0.40	0.34
2039	0.96	0.39	0.38	0.32
2040	0.96	0.37	0.36	0.29
2041	0.96	0.34	0.33	0.26
2042	0.97	0.32	0.31	0.23
2043	0.97	0.30	0.29	0.19
2044	0.97	0.27	0.26	0.16
2045	0.97	0.25	0.24	0.12

PART II:
ENERGY PRICE INDICES FOR PRIVATE SECTOR LCC ANALYSIS

This section presents tables of projected nominal (i.e., including inflation) fuel price indices for four fuels in the residential sector and five fuels in the commercial sector for each of the years from 2015 through 2016. These price indices are based on the DOE energy price projections, reported in Part I, Section B of this document, used to calculate the FEMP and OMB UPV* factors for energy costs.

As a convenience for the user, the indices include the effect of four alternative, hypothetical rates of general price inflation: 2 %, 3 %, 4 %, and 5 %. Selection of these rates is in no way intended to suggest what actual rates might be. Use of the indices produce price estimates in current dollars, inclusive of general price inflation. Current-dollar prices are needed when discounting is performed with discount rates that include general price inflation (i.e., *nominal* or *market* discount rates).

The calculated indices with inflation rates of 2 %, 3 %, 4 %, and 5 % allow the analyst to perform evaluations based on the assumption of a positive rate of general price inflation that changes the purchasing power of the dollar. Performing evaluations in current dollars is sometimes preferred for private investment decisions, primarily because it facilitates the treatment of taxes.

The indices in Tables S-1 through S-5 are derived from the indices reported in Tables Ca-1 through Ca-5 by means of the following equation:

$$I_S = I_C \times (1+g)^N,$$

where I_S = index found in Tables S-1 through S-5;
I_C = index found in Tables Ca-1 through Ca-5;
g = annual rate of general price inflation in decimal form; and
N = number of years, in this case equal to the year of the index minus 2015.

Example of How to Use the Indices:

Suppose you wish to estimate the annual cost of natural gas for a house in Maryland in year 2017, given the annual cost in 2015 (April 1) prices, and you expect an annual inflation rate of 3 % per year. From table S-3, find the column with residential natural gas indices at an inflation rate of 3 %; then locate the index for the year 2017. This index is 1.03. Multiply the annual cost in 2015 prices by the index to find the estimated annual cost in year 2017 prices.

If this annual cost in year-2017 prices is to be discounted to present value, you must use a nominal discount rate that includes the same assumption with regard to general price inflation (3 % in this example). To obtain a present-value cost over the entire study period, the present-value calculation must be repeated for each year that there are natural gas costs, and the results summed. (UPV* factors are not given for private sector use because of the large number of tables required to cover potential discount rates that might be used by the analyst.) The BLCC

computer program can perform LCC analyses using any discount rate, in constant or in current (market) dollars. The private sector analyst may use the UPV* factors reported in Part I, provided the analysis is performed in constant dollars and the desired discount rate corresponds to the DOE or OMB discount rates used in Part I.

The data in the tables that follow are reported for the four Census regions and the U.S. average. Figure B-1 on page 13 presents a map showing the states corresponding to the four Census regions. The Census regions do not include American Samoa, Canal Zone, Guam, Puerto Rico, Trust Territory of the Pacific Islands, or the Virgin Islands. Analysts of federal projects in these areas should use data which are "reasonable under the circumstances," and may refer to the tables with U.S. average data for guidance.

Table S-1. Projected fuel price indices with assumed general price inflation rates of 2 %, 3 %, 4 %, and 5 %, by end-use sector and fuel type.

Census Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont)

Projected April 1 Fuel Price Indices (April 1, 2015 = 1.00)

RESIDENTIAL

	Electricity				Distillate Oil				LPG				Natural Gas			
	Inflation Rate				Inflation Rate				Inflation Rate				Inflation Rate			
Year	2%	3%	4%	5%	2%	3%	4%	5%	2%	3%	4%	5%	2%	3%	4%	5%
2016	1.01	1.02	1.03	1.04	1.00	1.01	1.02	1.03	1.03	1.04	1.05	1.06	1.02	1.03	1.04	1.05
2017	1.03	1.06	1.08	1.10	1.07	1.09	1.11	1.13	1.08	1.10	1.12	1.14	1.10	1.12	1.15	1.17
2018	1.07	1.10	1.14	1.17	1.10	1.13	1.16	1.20	1.11	1.14	1.17	1.21	1.18	1.22	1.25	1.29
2019	1.13	1.18	1.22	1.27	1.13	1.17	1.22	1.27	1.14	1.18	1.23	1.28	1.29	1.34	1.39	1.44
2020	1.20	1.26	1.32	1.39	1.17	1.22	1.29	1.35	1.17	1.22	1.29	1.35	1.38	1.45	1.52	1.60
2021	1.27	1.35	1.43	1.51	1.21	1.28	1.36	1.44	1.19	1.27	1.34	1.42	1.47	1.56	1.65	1.75
2022	1.33	1.42	1.52	1.63	1.26	1.34	1.44	1.54	1.22	1.31	1.40	1.50	1.55	1.65	1.77	1.89
2023	1.38	1.49	1.61	1.74	1.31	1.41	1.53	1.65	1.26	1.36	1.47	1.58	1.61	1.75	1.89	2.04
2024	1.42	1.55	1.70	1.85	1.36	1.48	1.62	1.76	1.29	1.41	1.53	1.67	1.68	1.83	2.00	2.18
2025	1.48	1.63	1.79	1.97	1.41	1.56	1.71	1.89	1.32	1.46	1.60	1.76	1.74	1.92	2.12	2.33
2026	1.52	1.69	1.88	2.09	1.47	1.64	1.82	2.02	1.36	1.51	1.68	1.87	1.79	1.99	2.22	2.46
2027	1.56	1.75	1.97	2.21	1.53	1.72	1.93	2.16	1.39	1.56	1.76	1.97	1.81	2.04	2.29	2.57
2028	1.60	1.82	2.06	2.33	1.59	1.81	2.05	2.32	1.43	1.62	1.84	2.08	1.82	2.07	2.35	2.66
2029	1.63	1.87	2.15	2.45	1.66	1.90	2.18	2.49	1.46	1.68	1.92	2.20	1.84	2.11	2.42	2.77
2030	1.67	1.93	2.24	2.58	1.73	2.01	2.32	2.68	1.50	1.74	2.01	2.32	1.87	2.16	2.50	2.88
2031	1.70	1.99	2.32	2.71	1.81	2.11	2.46	2.87	1.54	1.80	2.10	2.45	1.91	2.23	2.60	3.03
2032	1.74	2.06	2.43	2.86	1.88	2.22	2.62	3.08	1.59	1.87	2.21	2.60	1.96	2.32	2.73	3.21
2033	1.79	2.13	2.54	3.01	1.96	2.34	2.78	3.30	1.63	1.95	2.32	2.75	2.03	2.41	2.87	3.41
2034	1.84	2.21	2.65	3.18	2.04	2.46	2.96	3.55	1.68	2.02	2.43	2.91	2.09	2.51	3.02	3.62
2035	1.88	2.29	2.77	3.36	2.13	2.59	3.15	3.81	1.72	2.10	2.54	3.08	2.17	2.63	3.19	3.87
2036	1.92	2.36	2.89	3.54	2.22	2.73	3.34	4.09	1.77	2.17	2.66	3.26	2.24	2.75	3.37	4.12
2037	1.97	2.44	3.02	3.73	2.32	2.87	3.55	4.39	1.82	2.26	2.79	3.44	2.34	2.90	3.58	4.42
2038	2.04	2.55	3.18	3.97	2.42	3.03	3.79	4.72	1.87	2.34	2.92	3.64	2.46	3.07	3.84	4.79
2039	2.11	2.67	3.36	4.23	2.53	3.20	4.03	5.07	1.92	2.43	3.07	3.86	2.59	3.28	4.13	5.20
2040	2.18	2.78	3.54	4.49	2.64	3.36	4.28	5.44	1.98	2.53	3.22	4.09	2.72	3.48	4.43	5.62
2041	2.23	2.88	3.70	4.75	2.74	3.54	4.55	5.83	2.04	2.63	3.38	4.33	2.82	3.63	4.67	5.98
2042	2.29	2.98	3.87	5.01	2.86	3.72	4.83	6.25	2.09	2.72	3.53	4.58	2.90	3.77	4.90	6.34
2043	2.35	3.09	4.05	5.30	2.98	3.91	5.13	6.70	2.15	2.82	3.70	4.84	2.99	3.93	5.15	6.73
2044	2.41	3.20	4.24	5.59	3.10	4.12	5.45	7.19	2.21	2.93	3.88	5.11	3.08	4.08	5.40	7.13
2045	2.48	3.32	4.43	5.91	3.23	4.33	5.79	7.71	2.27	3.04	4.06	5.41	3.17	4.25	5.67	7.56

Table S-1, continued. Projected fuel price indices with assumed general price inflation rates of 2 %, 3 %, 4 %, and 5 %, by end-use sector and fuel type.

Census Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont)

Projected April 1 Fuel Price Indices (April 1, 2015 = 1.00)

COMMERCIAL

	Electricity				Distillate Oil				Residual Oil				Natural Gas				Coal			
	Inflation Rate				Inflation Rate				Inflation Rate				Inflation Rate				Inflation Rate			
Year	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %
2016	1.00	1.01	1.02	1.03	1.00	1.01	1.02	1.03	1.03	1.04	1.05	1.06	1.04	1.05	1.06	1.07	1.03	1.04	1.05	1.06
2017	1.02	1.04	1.06	1.08	1.05	1.07	1.09	1.11	1.10	1.12	1.14	1.16	1.13	1.15	1.17	1.19	1.06	1.08	1.10	1.13
2018	1.06	1.09	1.12	1.15	1.07	1.10	1.14	1.17	1.12	1.16	1.19	1.23	1.20	1.23	1.27	1.31	1.09	1.12	1.16	1.19
2019	1.12	1.16	1.21	1.25	1.10	1.15	1.19	1.24	1.16	1.21	1.26	1.31	1.32	1.37	1.42	1.48	1.12	1.16	1.21	1.25
2020	1.18	1.24	1.30	1.37	1.14	1.20	1.26	1.32	1.21	1.27	1.33	1.40	1.43	1.50	1.58	1.65	1.15	1.21	1.27	1.33
2021	1.26	1.33	1.41	1.50	1.19	1.26	1.33	1.41	1.26	1.34	1.42	1.50	1.53	1.63	1.72	1.82	1.19	1.26	1.34	1.42
2022	1.31	1.41	1.50	1.61	1.24	1.32	1.42	1.51	1.31	1.41	1.51	1.61	1.62	1.73	1.85	1.98	1.22	1.30	1.39	1.49
2023	1.36	1.48	1.59	1.72	1.29	1.39	1.50	1.62	1.37	1.48	1.60	1.73	1.70	1.83	1.98	2.14	1.25	1.35	1.46	1.57
2024	1.41	1.54	1.67	1.83	1.34	1.46	1.60	1.74	1.43	1.57	1.71	1.86	1.77	1.93	2.11	2.30	1.27	1.39	1.51	1.65
2025	1.46	1.61	1.77	1.95	1.40	1.54	1.70	1.87	1.50	1.65	1.82	2.00	1.84	2.03	2.23	2.46	1.30	1.43	1.58	1.73
2026	1.50	1.67	1.85	2.06	1.45	1.62	1.80	2.00	1.57	1.74	1.94	2.15	1.89	2.10	2.33	2.59	1.33	1.48	1.64	1.83
2027	1.53	1.72	1.94	2.17	1.51	1.70	1.91	2.15	1.64	1.84	2.07	2.32	1.89	2.13	2.39	2.68	1.36	1.53	1.71	1.92
2028	1.58	1.79	2.03	2.30	1.58	1.79	2.03	2.30	1.71	1.94	2.20	2.49	1.89	2.14	2.43	2.75	1.39	1.58	1.79	2.02
2029	1.61	1.85	2.12	2.42	1.65	1.89	2.16	2.47	1.79	2.05	2.34	2.68	1.89	2.17	2.48	2.84	1.42	1.63	1.86	2.13
2030	1.64	1.90	2.20	2.54	1.72	1.99	2.30	2.65	1.87	2.16	2.50	2.89	1.90	2.20	2.54	2.94	1.45	1.68	1.95	2.25
2031	1.67	1.95	2.28	2.65	1.79	2.09	2.44	2.84	1.96	2.29	2.67	3.11	1.93	2.26	2.64	3.07	1.49	1.74	2.03	2.37
2032	1.71	2.01	2.37	2.79	1.87	2.20	2.59	3.05	2.05	2.41	2.85	3.35	1.98	2.34	2.76	3.25	1.53	1.81	2.13	2.50
2033	1.75	2.09	2.48	2.95	1.95	2.32	2.76	3.28	2.14	2.55	3.03	3.60	2.04	2.43	2.90	3.44	1.57	1.87	2.22	2.64
2034	1.79	2.16	2.59	3.11	2.03	2.45	2.94	3.53	2.24	2.69	3.23	3.88	2.10	2.53	3.04	3.65	1.60	1.93	2.32	2.78
2035	1.84	2.23	2.71	3.28	2.12	2.58	3.13	3.79	2.34	2.84	3.45	4.18	2.18	2.65	3.21	3.89	1.64	1.99	2.42	2.93
2036	1.88	2.31	2.83	3.46	2.21	2.72	3.33	4.07	2.45	3.00	3.68	4.50	2.25	2.76	3.38	4.14	1.68	2.06	2.52	3.08
2037	1.93	2.39	2.95	3.65	2.31	2.86	3.54	4.37	2.56	3.17	3.92	4.84	2.35	2.92	3.61	4.45	1.72	2.13	2.64	3.26
2038	2.00	2.50	3.12	3.89	2.42	3.02	3.78	4.71	2.68	3.35	4.19	5.22	2.48	3.11	3.88	4.84	1.77	2.21	2.76	3.44
2039	2.08	2.62	3.31	4.16	2.52	3.19	4.02	5.06	2.84	3.59	4.52	5.69	2.63	3.33	4.20	5.28	1.81	2.29	2.88	3.63
2040	2.15	2.74	3.49	4.43	2.63	3.36	4.28	5.43	3.03	3.87	4.93	6.26	2.78	3.54	4.51	5.73	1.86	2.37	3.02	3.83
2041	2.21	2.84	3.65	4.69	2.74	3.54	4.54	5.83	3.20	4.12	5.30	6.79	2.88	3.71	4.77	6.12	1.90	2.45	3.15	4.04
2042	2.26	2.94	3.82	4.95	2.86	3.72	4.83	6.25	3.35	4.36	5.66	7.33	2.98	3.87	5.03	6.51	1.95	2.53	3.29	4.26
2043	2.32	3.05	4.00	5.23	2.98	3.92	5.13	6.71	3.52	4.62	6.06	7.92	3.08	4.04	5.30	6.93	2.00	2.63	3.44	4.50
2044	2.38	3.16	4.18	5.52	3.11	4.12	5.45	7.20	3.69	4.89	6.48	8.55	3.18	4.22	5.59	7.37	2.05	2.72	3.59	4.74
2045	2.44	3.27	4.37	5.83	3.24	4.34	5.80	7.73	3.87	5.18	6.93	9.23	3.29	4.40	5.88	7.84	2.10	2.81	3.76	5.01

Table S-1, continued. Projected fuel price indices with assumed general price inflation rates of 2 %, 3 %, 4 %, and 5 %, by end-use sector and fuel type.

Census Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont)

Projected April 1 Fuel Price Indices (April 1, 2015 = 1.00)

INDUSTRIAL

	Electricity				Distillate Oil				Residual Oil				Natural Gas				Coal			
	Inflation Rate				Inflation Rate				Inflation Rate				Inflation Rate				Inflation Rate			
Year	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %
2016	0.98	0.99	1.00	1.01	1.00	1.01	1.02	1.03	1.03	1.04	1.05	1.06	1.04	1.05	1.06	1.07	1.02	1.03	1.04	1.05
2017	0.98	1.00	1.02	1.04	1.07	1.09	1.12	1.14	1.12	1.14	1.16	1.18	1.25	1.28	1.30	1.33	1.04	1.06	1.08	1.11
2018	1.01	1.04	1.07	1.10	1.11	1.14	1.17	1.21	1.15	1.18	1.22	1.25	1.48	1.52	1.57	1.61	1.06	1.10	1.13	1.16
2019	1.06	1.10	1.15	1.19	1.14	1.19	1.23	1.28	1.19	1.23	1.28	1.33	1.70	1.77	1.84	1.91	1.09	1.14	1.18	1.23
2020	1.13	1.18	1.24	1.30	1.18	1.24	1.30	1.36	1.23	1.30	1.36	1.43	1.89	1.98	2.08	2.18	1.13	1.19	1.25	1.31
2021	1.20	1.27	1.35	1.43	1.23	1.30	1.38	1.46	1.29	1.36	1.44	1.53	2.05	2.18	2.31	2.44	1.17	1.24	1.32	1.40
2022	1.25	1.34	1.44	1.54	1.28	1.37	1.47	1.57	1.34	1.44	1.54	1.64	2.19	2.34	2.51	2.68	1.21	1.30	1.39	1.49
2023	1.30	1.41	1.52	1.64	1.33	1.44	1.55	1.68	1.40	1.52	1.64	1.77	2.31	2.50	2.70	2.92	1.25	1.35	1.46	1.57
2024	1.34	1.47	1.60	1.74	1.38	1.51	1.65	1.80	1.46	1.60	1.74	1.90	2.43	2.66	2.90	3.16	1.27	1.39	1.52	1.65
2025	1.39	1.53	1.69	1.86	1.44	1.59	1.75	1.92	1.53	1.69	1.86	2.04	2.55	2.81	3.10	3.41	1.31	1.44	1.59	1.75
2026	1.43	1.59	1.77	1.97	1.50	1.67	1.85	2.06	1.60	1.78	1.98	2.20	2.61	2.91	3.24	3.60	1.34	1.49	1.66	1.84
2027	1.46	1.64	1.85	2.07	1.56	1.75	1.97	2.21	1.67	1.88	2.11	2.36	2.61	2.94	3.30	3.70	1.38	1.55	1.74	1.95
2028	1.50	1.70	1.93	2.19	1.62	1.84	2.09	2.37	1.74	1.98	2.25	2.54	2.59	2.94	3.33	3.78	1.41	1.61	1.82	2.06
2029	1.53	1.75	2.00	2.29	1.69	1.94	2.22	2.53	1.82	2.09	2.39	2.73	2.57	2.95	3.38	3.86	1.46	1.67	1.91	2.19
2030	1.55	1.80	2.08	2.40	1.76	2.03	2.35	2.72	1.91	2.21	2.55	2.94	2.57	2.97	3.44	3.97	1.50	1.73	2.00	2.31
2031	1.58	1.85	2.16	2.51	1.83	2.14	2.50	2.91	2.00	2.33	2.72	3.17	2.61	3.05	3.56	4.15	1.54	1.80	2.10	2.45
2032	1.62	1.91	2.25	2.65	1.91	2.25	2.65	3.12	2.09	2.46	2.90	3.42	2.68	3.16	3.73	4.39	1.58	1.87	2.20	2.59
2033	1.66	1.98	2.36	2.80	1.99	2.37	2.82	3.35	2.18	2.60	3.09	3.67	2.77	3.30	3.93	4.67	1.63	1.94	2.31	2.74
2034	1.70	2.05	2.47	2.96	2.07	2.50	3.00	3.60	2.28	2.75	3.30	3.96	2.86	3.44	4.14	4.96	1.67	2.01	2.41	2.89
2035	1.75	2.12	2.58	3.12	2.16	2.63	3.19	3.86	2.39	2.90	3.52	4.26	2.98	3.62	4.39	5.32	1.71	2.08	2.52	3.05
2036	1.79	2.20	2.69	3.29	2.25	2.77	3.39	4.14	2.50	3.06	3.75	4.59	3.09	3.79	4.65	5.68	1.75	2.15	2.64	3.22
2037	1.84	2.28	2.82	3.48	2.35	2.91	3.60	4.45	2.61	3.24	4.00	4.94	3.26	4.04	5.00	6.17	1.81	2.24	2.77	3.42
2038	1.91	2.39	2.98	3.72	2.46	3.07	3.84	4.78	2.73	3.42	4.27	5.32	3.47	4.35	5.43	6.76	1.86	2.33	2.91	3.63
2039	1.99	2.51	3.17	3.99	2.56	3.24	4.08	5.14	2.89	3.66	4.61	5.80	3.72	4.71	5.94	7.47	1.92	2.42	3.06	3.85
2040	2.06	2.63	3.35	4.26	2.67	3.41	4.34	5.51	3.09	3.95	5.02	6.38	3.97	5.06	6.45	8.19	1.98	2.52	3.21	4.08
2041	2.12	2.74	3.52	4.51	2.78	3.58	4.61	5.91	3.26	4.20	5.40	6.93	4.14	5.33	6.86	8.80	2.03	2.62	3.37	4.32
2042	2.18	2.84	3.68	4.77	2.90	3.77	4.89	6.34	3.42	4.45	5.77	7.48	4.29	5.59	7.25	9.39	2.09	2.72	3.53	4.57
2043	2.24	2.94	3.86	5.04	3.02	3.96	5.20	6.79	3.58	4.71	6.17	8.07	4.46	5.86	7.68	10.03	2.15	2.83	3.70	4.84
2044	2.30	3.05	4.04	5.33	3.14	4.17	5.52	7.28	3.76	4.99	6.60	8.71	4.62	6.14	8.12	10.72	2.21	2.93	3.88	5.12
2045	2.36	3.17	4.23	5.64	3.27	4.39	5.86	7.81	3.94	5.28	7.06	9.41	4.80	6.43	8.59	11.45	2.27	3.04	4.06	5.42

Table S-2. Projected fuel price indices with assumed general price inflation rates of 2 %, 3 %, 4 %, and 5 %, by end-use sector and fuel type.

Census Region 2 (Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin)

Projected April 1 Fuel Price Indices (April 1, 2015 = 1.00)

RESIDENTIAL

	Electricity				Distillate Oil				LPG				Natural Gas			
	Inflation Rate				Inflation Rate				Inflation Rate				Inflation Rate			
Year	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %
2016	1.05	1.06	1.08	1.09	1.00	1.01	1.02	1.03	1.03	1.04	1.05	1.06	1.00	1.01	1.02	1.03
2017	1.10	1.13	1.15	1.17	1.04	1.06	1.08	1.10	1.08	1.10	1.12	1.14	1.02	1.04	1.06	1.08
2018	1.13	1.16	1.20	1.23	1.06	1.09	1.12	1.15	1.11	1.14	1.17	1.21	1.05	1.08	1.11	1.15
2019	1.16	1.20	1.25	1.30	1.09	1.14	1.18	1.23	1.14	1.18	1.23	1.28	1.11	1.15	1.20	1.24
2020	1.20	1.26	1.32	1.39	1.13	1.18	1.24	1.30	1.17	1.22	1.28	1.35	1.18	1.24	1.30	1.37
2021	1.24	1.32	1.40	1.48	1.17	1.24	1.32	1.39	1.19	1.27	1.34	1.42	1.24	1.32	1.40	1.48
2022	1.28	1.37	1.47	1.57	1.22	1.30	1.40	1.49	1.22	1.31	1.40	1.50	1.29	1.38	1.48	1.58
2023	1.31	1.42	1.54	1.66	1.27	1.37	1.48	1.60	1.25	1.36	1.47	1.58	1.33	1.44	1.56	1.68
2024	1.34	1.47	1.60	1.75	1.32	1.44	1.57	1.71	1.29	1.40	1.53	1.67	1.37	1.50	1.64	1.78
2025	1.38	1.53	1.68	1.85	1.37	1.52	1.67	1.84	1.32	1.45	1.60	1.76	1.42	1.56	1.72	1.89
2026	1.42	1.58	1.76	1.95	1.43	1.60	1.77	1.97	1.35	1.51	1.68	1.86	1.47	1.64	1.82	2.02
2027	1.46	1.64	1.84	2.06	1.50	1.68	1.89	2.12	1.39	1.56	1.75	1.97	1.51	1.70	1.91	2.14
2028	1.49	1.69	1.92	2.18	1.56	1.77	2.01	2.28	1.42	1.62	1.83	2.08	1.53	1.74	1.97	2.23
2029	1.52	1.75	2.00	2.29	1.63	1.87	2.14	2.45	1.46	1.68	1.92	2.19	1.56	1.79	2.05	2.34
2030	1.56	1.80	2.08	2.40	1.70	1.97	2.28	2.63	1.50	1.74	2.01	2.32	1.60	1.85	2.14	2.47
2031	1.59	1.86	2.17	2.53	1.78	2.08	2.42	2.83	1.54	1.80	2.10	2.45	1.65	1.93	2.25	2.62
2032	1.63	1.92	2.27	2.67	1.85	2.19	2.58	3.03	1.59	1.87	2.21	2.60	1.71	2.02	2.38	2.80
2033	1.67	1.99	2.37	2.81	1.94	2.31	2.75	3.26	1.63	1.94	2.31	2.75	1.77	2.12	2.52	2.99
2034	1.71	2.06	2.47	2.97	2.02	2.43	2.92	3.50	1.68	2.02	2.42	2.91	1.84	2.21	2.66	3.19
2035	1.75	2.13	2.58	3.13	2.11	2.56	3.11	3.77	1.72	2.09	2.54	3.07	1.91	2.32	2.81	3.40
2036	1.79	2.20	2.69	3.29	2.20	2.70	3.31	4.05	1.77	2.17	2.66	3.25	1.97	2.42	2.96	3.62
2037	1.83	2.27	2.81	3.46	2.30	2.85	3.52	4.35	1.82	2.25	2.79	3.44	2.03	2.52	3.11	3.84
2038	1.88	2.35	2.94	3.66	2.40	3.01	3.76	4.68	1.87	2.34	2.92	3.64	2.11	2.64	3.29	4.10
2039	1.93	2.44	3.08	3.87	2.51	3.17	4.00	5.03	1.92	2.43	3.06	3.85	2.21	2.80	3.53	4.44
2040	1.99	2.54	3.23	4.10	2.62	3.34	4.25	5.40	1.98	2.53	3.22	4.08	2.33	2.98	3.79	4.81
2041	2.04	2.63	3.38	4.33	2.73	3.52	4.52	5.80	2.03	2.62	3.37	4.32	2.42	3.11	4.00	5.13
2042	2.09	2.72	3.53	4.57	2.84	3.70	4.81	6.22	2.09	2.72	3.53	4.57	2.49	3.24	4.21	5.45
2043	2.14	2.81	3.68	4.81	2.97	3.90	5.11	6.68	2.14	2.82	3.69	4.83	2.57	3.38	4.42	5.78
2044	2.19	2.91	3.84	5.07	3.09	4.10	5.43	7.17	2.20	2.92	3.87	5.10	2.65	3.52	4.65	6.14
2045	2.24	3.01	4.02	5.35	3.22	4.32	5.77	7.69	2.26	3.03	4.05	5.40	2.73	3.66	4.90	6.52

Table S-2, continued. Projected fuel price indices with assumed general price inflation rates of 2 %, 3 %, 4 %, and 5 %, by end-use sector and fuel type.

Census Region 2 (Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin)

Projected April 1 Fuel Price Indices (April 1, 2015 = 1.00)

COMMERCIAL

	Electricity				Distillate Oil				Residual Oil				Natural Gas				Coal			
	Inflation Rate				Inflation Rate				Inflation Rate				Inflation Rate				Inflation Rate			
Year	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %
2016	1.04	1.05	1.06	1.07	1.00	1.01	1.02	1.03	1.03	1.04	1.05	1.06	1.02	1.03	1.04	1.05	1.03	1.04	1.05	1.06
2017	1.09	1.11	1.13	1.15	1.06	1.08	1.10	1.12	1.12	1.14	1.16	1.18	1.03	1.05	1.07	1.09	1.07	1.09	1.11	1.13
2018	1.11	1.14	1.17	1.21	1.09	1.12	1.15	1.18	1.15	1.18	1.22	1.25	1.04	1.07	1.10	1.13	1.10	1.13	1.16	1.20
2019	1.13	1.17	1.22	1.27	1.12	1.16	1.21	1.26	1.19	1.24	1.29	1.34	1.09	1.14	1.18	1.23	1.13	1.17	1.22	1.26
2020	1.17	1.23	1.29	1.35	1.16	1.22	1.28	1.34	1.24	1.31	1.37	1.44	1.17	1.23	1.29	1.35	1.17	1.22	1.28	1.35
2021	1.21	1.28	1.36	1.44	1.20	1.27	1.35	1.43	1.30	1.38	1.46	1.55	1.24	1.31	1.39	1.47	1.20	1.27	1.35	1.43
2022	1.24	1.33	1.42	1.52	1.25	1.34	1.43	1.53	1.36	1.46	1.56	1.67	1.28	1.37	1.47	1.57	1.23	1.32	1.41	1.51
2023	1.27	1.37	1.48	1.60	1.30	1.41	1.52	1.64	1.43	1.55	1.67	1.81	1.33	1.43	1.55	1.67	1.26	1.37	1.47	1.59
2024	1.30	1.42	1.54	1.68	1.36	1.48	1.62	1.76	1.50	1.64	1.79	1.95	1.36	1.49	1.62	1.77	1.29	1.41	1.54	1.68
2025	1.33	1.47	1.62	1.78	1.41	1.56	1.71	1.89	1.58	1.74	1.92	2.11	1.41	1.55	1.71	1.88	1.32	1.46	1.61	1.77
2026	1.37	1.52	1.69	1.88	1.47	1.64	1.82	2.02	1.66	1.85	2.05	2.28	1.46	1.62	1.81	2.01	1.36	1.51	1.68	1.87
2027	1.40	1.57	1.77	1.98	1.53	1.72	1.94	2.17	1.74	1.96	2.20	2.47	1.49	1.68	1.89	2.12	1.39	1.57	1.76	1.97
2028	1.44	1.63	1.85	2.09	1.60	1.81	2.06	2.33	1.83	2.07	2.35	2.66	1.51	1.72	1.95	2.20	1.43	1.62	1.84	2.08
2029	1.47	1.68	1.92	2.20	1.66	1.91	2.18	2.50	1.92	2.20	2.52	2.88	1.54	1.76	2.02	2.30	1.47	1.68	1.93	2.20
2030	1.49	1.73	2.00	2.31	1.73	2.01	2.32	2.68	2.01	2.33	2.70	3.11	1.57	1.82	2.10	2.42	1.50	1.74	2.01	2.32
2031	1.53	1.78	2.08	2.43	1.81	2.11	2.47	2.87	2.12	2.47	2.89	3.37	1.62	1.89	2.21	2.58	1.54	1.80	2.11	2.45
2032	1.56	1.84	2.17	2.56	1.88	2.22	2.62	3.08	2.22	2.62	3.09	3.64	1.68	1.98	2.34	2.75	1.58	1.87	2.20	2.59
2033	1.60	1.91	2.27	2.70	1.97	2.34	2.79	3.31	2.33	2.78	3.31	3.93	1.74	2.08	2.47	2.94	1.62	1.94	2.30	2.74
2034	1.64	1.98	2.37	2.85	2.05	2.47	2.97	3.56	2.45	2.95	3.54	4.25	1.81	2.17	2.61	3.13	1.66	2.00	2.41	2.89
2035	1.68	2.04	2.48	3.00	2.14	2.60	3.16	3.82	2.57	3.13	3.80	4.60	1.87	2.27	2.76	3.34	1.71	2.08	2.52	3.06
2036	1.72	2.11	2.58	3.15	2.23	2.74	3.36	4.11	2.70	3.32	4.06	4.97	1.93	2.37	2.91	3.55	1.76	2.15	2.64	3.23
2037	1.76	2.18	2.70	3.33	2.33	2.89	3.57	4.41	2.83	3.51	4.34	5.36	1.99	2.47	3.05	3.77	1.81	2.24	2.77	3.42
2038	1.81	2.26	2.82	3.52	2.44	3.05	3.81	4.74	2.98	3.72	4.65	5.79	2.07	2.59	3.23	4.02	1.86	2.32	2.90	3.62
2039	1.86	2.35	2.96	3.73	2.54	3.21	4.05	5.10	3.17	4.01	5.05	6.35	2.18	2.75	3.47	4.36	1.91	2.42	3.05	3.84
2040	1.91	2.44	3.11	3.95	2.65	3.38	4.31	5.47	3.41	4.35	5.53	7.03	2.29	2.93	3.73	4.74	1.97	2.51	3.20	4.06
2041	1.96	2.53	3.25	4.17	2.76	3.56	4.58	5.87	3.61	4.65	5.97	7.66	2.38	3.07	3.95	5.06	2.02	2.61	3.35	4.30
2042	2.01	2.62	3.40	4.40	2.88	3.75	4.86	6.30	3.79	4.94	6.41	8.30	2.46	3.20	4.16	5.38	2.08	2.71	3.52	4.56
2043	2.06	2.71	3.55	4.64	3.00	3.94	5.17	6.75	3.99	5.24	6.87	8.99	2.54	3.34	4.38	5.72	2.14	2.81	3.69	4.82
2044	2.11	2.80	3.71	4.89	3.13	4.15	5.49	7.24	4.20	5.57	7.37	9.73	2.63	3.48	4.61	6.09	2.20	2.92	3.86	5.10
2045	2.16	2.90	3.87	5.16	3.26	4.37	5.83	7.77	4.42	5.92	7.91	10.54	2.71	3.64	4.86	6.47	2.27	3.04	4.06	5.41

Table S-2, continued. Projected fuel price indices with assumed general price inflation rates of 2 %, 3 %, 4 %, and 5 %, by end-use sector and fuel type.

Census Region 2 (Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin)

Projected April 1 Fuel Price Indices (April 1, 2015 = 1.00)

INDUSTRIAL

	Electricity				Distillate Oil				Residual Oil				Natural Gas				Coal			
	Inflation Rate				Inflation Rate				Inflation Rate				Inflation Rate				Inflation Rate			
Year	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %
2016	1.03	1.04	1.05	1.06	1.00	1.01	1.02	1.03	1.03	1.04	1.05	1.06	1.00	1.01	1.02	1.03	1.04	1.05	1.06	1.07
2017	1.06	1.08	1.10	1.13	1.04	1.06	1.08	1.10	1.14	1.16	1.19	1.21	1.05	1.07	1.09	1.11	1.09	1.11	1.13	1.15
2018	1.08	1.11	1.14	1.18	1.06	1.09	1.13	1.16	1.18	1.22	1.25	1.29	1.13	1.16	1.20	1.23	1.12	1.15	1.19	1.22
2019	1.10	1.15	1.19	1.24	1.10	1.14	1.18	1.23	1.23	1.27	1.32	1.38	1.22	1.26	1.31	1.37	1.15	1.20	1.25	1.30
2020	1.14	1.20	1.26	1.32	1.13	1.19	1.25	1.31	1.28	1.34	1.41	1.48	1.32	1.39	1.46	1.53	1.20	1.26	1.32	1.39
2021	1.18	1.26	1.33	1.41	1.18	1.25	1.32	1.40	1.34	1.42	1.50	1.59	1.41	1.49	1.58	1.67	1.24	1.32	1.39	1.48
2022	1.22	1.31	1.40	1.49	1.23	1.32	1.41	1.51	1.41	1.51	1.61	1.72	1.46	1.57	1.68	1.79	1.28	1.37	1.47	1.57
2023	1.26	1.36	1.47	1.58	1.28	1.38	1.50	1.61	1.48	1.60	1.72	1.86	1.52	1.64	1.77	1.91	1.32	1.43	1.54	1.67
2024	1.28	1.40	1.53	1.67	1.33	1.45	1.59	1.73	1.55	1.69	1.85	2.01	1.56	1.71	1.86	2.03	1.36	1.48	1.62	1.76
2025	1.32	1.46	1.61	1.77	1.39	1.53	1.68	1.85	1.63	1.79	1.97	2.17	1.61	1.78	1.96	2.15	1.40	1.54	1.69	1.86
2026	1.36	1.52	1.69	1.87	1.44	1.61	1.79	1.98	1.71	1.90	2.11	2.35	1.68	1.87	2.08	2.31	1.43	1.60	1.77	1.97
2027	1.40	1.57	1.76	1.98	1.50	1.69	1.90	2.13	1.79	2.02	2.26	2.54	1.72	1.93	2.17	2.43	1.48	1.66	1.86	2.09
2028	1.43	1.63	1.84	2.09	1.56	1.78	2.01	2.28	1.88	2.14	2.42	2.74	1.73	1.97	2.23	2.52	1.52	1.72	1.95	2.21
2029	1.46	1.68	1.92	2.19	1.63	1.87	2.14	2.44	1.98	2.26	2.59	2.96	1.75	2.01	2.30	2.63	1.56	1.79	2.05	2.34
2030	1.49	1.73	2.00	2.30	1.69	1.96	2.27	2.62	2.08	2.40	2.78	3.21	1.79	2.07	2.39	2.76	1.60	1.86	2.15	2.48
2031	1.52	1.78	2.08	2.42	1.77	2.06	2.41	2.81	2.18	2.55	2.98	3.47	1.85	2.16	2.52	2.94	1.65	1.92	2.25	2.62
2032	1.56	1.84	2.17	2.56	1.84	2.17	2.56	3.01	2.29	2.71	3.19	3.75	1.93	2.28	2.69	3.16	1.69	2.00	2.35	2.77
2033	1.60	1.91	2.28	2.70	1.92	2.29	2.72	3.23	2.40	2.87	3.41	4.05	2.01	2.39	2.85	3.38	1.74	2.07	2.47	2.93
2034	1.65	1.98	2.38	2.86	2.00	2.41	2.89	3.47	2.53	3.04	3.65	4.38	2.08	2.51	3.01	3.62	1.79	2.15	2.58	3.10
2035	1.69	2.05	2.49	3.02	2.09	2.54	3.08	3.73	2.65	3.23	3.91	4.74	2.17	2.63	3.20	3.87	1.83	2.23	2.70	3.28
2036	1.73	2.12	2.60	3.18	2.18	2.67	3.27	4.00	2.79	3.42	4.19	5.12	2.25	2.76	3.38	4.14	1.88	2.31	2.83	3.46
2037	1.78	2.20	2.73	3.36	2.27	2.81	3.48	4.30	2.92	3.62	4.48	5.53	2.32	2.88	3.56	4.39	1.93	2.40	2.96	3.66
2038	1.83	2.29	2.87	3.57	2.37	2.97	3.71	4.62	3.07	3.84	4.80	5.98	2.41	3.02	3.77	4.70	1.98	2.48	3.10	3.86
2039	1.89	2.39	3.02	3.80	2.48	3.13	3.95	4.97	3.27	4.13	5.21	6.56	2.56	3.24	4.08	5.14	2.04	2.58	3.25	4.09
2040	1.96	2.50	3.18	4.04	2.58	3.30	4.20	5.33	3.51	4.49	5.71	7.26	2.72	3.48	4.42	5.62	2.10	2.68	3.42	4.34
2041	2.01	2.59	3.33	4.28	2.69	3.47	4.46	5.72	3.72	4.79	6.16	7.90	2.84	3.66	4.70	6.03	2.16	2.79	3.58	4.60
2042	2.07	2.69	3.49	4.52	2.80	3.65	4.73	6.13	3.92	5.10	6.61	8.56	2.95	3.83	4.98	6.45	2.23	2.90	3.76	4.87
2043	2.12	2.79	3.65	4.78	2.92	3.84	5.03	6.57	4.12	5.41	7.10	9.28	3.06	4.02	5.27	6.88	2.30	3.02	3.96	5.18
2044	2.18	2.89	3.82	5.05	3.04	4.03	5.34	7.05	4.33	5.75	7.61	10.04	3.17	4.21	5.57	7.35	2.37	3.14	4.15	5.48
2045	2.24	3.00	4.00	5.33	3.17	4.25	5.67	7.56	4.56	6.11	8.16	10.88	3.29	4.41	5.89	7.85	2.43	3.26	4.36	5.81

Table S-3. Projected fuel price indices with assumed general price inflation rates of 2 %, 3 %, 4 %, and 5 %, by end-use sector and fuel type.

Census Region 3 (Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia)

Projected April 1 Fuel Price Indices (April 1, 2015 = 1.00)

RESIDENTIAL

	Electricity				Distillate Oil				LPG				Natural Gas			
	Inflation Rate				Inflation Rate				Inflation Rate				Inflation Rate			
Year	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %
2016	1.05	1.06	1.07	1.08	1.00	1.01	1.02	1.03	1.03	1.04	1.05	1.06	1.01	1.02	1.03	1.04
2017	1.08	1.10	1.12	1.15	1.06	1.08	1.10	1.12	1.08	1.10	1.12	1.14	1.01	1.03	1.05	1.07
2018	1.10	1.13	1.16	1.20	1.08	1.11	1.15	1.18	1.11	1.14	1.18	1.21	1.04	1.07	1.10	1.13
2019	1.12	1.17	1.21	1.26	1.11	1.16	1.20	1.25	1.14	1.19	1.23	1.28	1.09	1.14	1.18	1.23
2020	1.16	1.22	1.28	1.34	1.15	1.21	1.27	1.33	1.17	1.23	1.29	1.35	1.17	1.23	1.29	1.35
2021	1.21	1.28	1.36	1.44	1.19	1.26	1.34	1.42	1.20	1.27	1.35	1.43	1.23	1.30	1.38	1.46
2022	1.24	1.33	1.42	1.52	1.24	1.33	1.42	1.52	1.23	1.31	1.41	1.50	1.27	1.36	1.46	1.56
2023	1.28	1.38	1.49	1.61	1.29	1.39	1.50	1.62	1.26	1.36	1.47	1.59	1.32	1.42	1.54	1.66
2024	1.31	1.43	1.56	1.70	1.34	1.46	1.60	1.74	1.29	1.41	1.54	1.68	1.36	1.49	1.62	1.77
2025	1.34	1.48	1.63	1.80	1.39	1.54	1.69	1.86	1.33	1.46	1.61	1.77	1.41	1.55	1.71	1.88
2026	1.38	1.54	1.71	1.90	1.45	1.62	1.80	2.00	1.36	1.52	1.69	1.87	1.46	1.62	1.81	2.01
2027	1.41	1.59	1.79	2.00	1.51	1.70	1.91	2.14	1.40	1.57	1.76	1.98	1.50	1.68	1.89	2.12
2028	1.45	1.64	1.86	2.11	1.58	1.79	2.03	2.30	1.43	1.63	1.84	2.09	1.53	1.74	1.97	2.23
2029	1.47	1.69	1.93	2.21	1.64	1.89	2.16	2.47	1.47	1.69	1.93	2.21	1.57	1.80	2.06	2.35
2030	1.50	1.74	2.01	2.32	1.72	1.99	2.30	2.65	1.51	1.75	2.02	2.33	1.59	1.84	2.13	2.46
2031	1.54	1.80	2.10	2.44	1.79	2.09	2.44	2.84	1.55	1.81	2.12	2.47	1.65	1.93	2.25	2.62
2032	1.58	1.86	2.19	2.58	1.86	2.20	2.59	3.05	1.60	1.89	2.22	2.62	1.71	2.02	2.38	2.80
2033	1.62	1.93	2.30	2.73	1.94	2.32	2.76	3.28	1.64	1.96	2.33	2.77	1.77	2.11	2.51	2.99
2034	1.66	2.00	2.40	2.88	2.03	2.44	2.93	3.52	1.69	2.03	2.44	2.93	1.83	2.21	2.65	3.18
2035	1.70	2.07	2.51	3.04	2.12	2.57	3.12	3.78	1.74	2.11	2.56	3.10	1.89	2.30	2.79	3.38
2036	1.74	2.14	2.62	3.21	2.21	2.71	3.32	4.06	1.79	2.19	2.68	3.28	1.97	2.42	2.96	3.62
2037	1.79	2.22	2.74	3.38	2.30	2.86	3.53	4.36	1.83	2.27	2.81	3.47	2.06	2.55	3.16	3.89
2038	1.84	2.30	2.88	3.59	2.41	3.01	3.76	4.69	1.89	2.36	2.95	3.67	2.15	2.69	3.37	4.19
2039	1.90	2.40	3.03	3.81	2.51	3.18	4.01	5.04	1.94	2.45	3.09	3.89	2.25	2.85	3.59	4.52
2040	1.96	2.51	3.19	4.05	2.62	3.35	4.26	5.41	2.00	2.55	3.25	4.13	2.38	3.04	3.87	4.92
2041	2.02	2.60	3.35	4.29	2.73	3.52	4.53	5.80	2.06	2.65	3.41	4.37	2.47	3.18	4.09	5.25
2042	2.07	2.70	3.50	4.53	2.85	3.70	4.81	6.22	2.11	2.75	3.57	4.62	2.54	3.31	4.29	5.56
2043	2.13	2.80	3.66	4.79	2.97	3.90	5.11	6.68	2.17	2.85	3.74	4.89	2.61	3.43	4.50	5.88
2044	2.18	2.90	3.83	5.06	3.09	4.10	5.43	7.16	2.23	2.96	3.91	5.17	2.69	3.57	4.72	6.23
2045	2.24	3.00	4.01	5.35	3.22	4.32	5.77	7.68	2.29	3.07	4.10	5.46	2.77	3.71	4.95	6.60

Table S-3, continued. Projected fuel price indices with assumed general price inflation rates of 2 %, 3 %, 4 %, and 5 %, by end-use sector and fuel type.

Census Region 3 (Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia)

Projected April 1 Fuel Price Indices (April 1, 2015 = 1.00)

COMMERCIAL

	Electricity				Distillate Oil				Residual Oil				Natural Gas				Coal			
	Inflation Rate				Inflation Rate				Inflation Rate				Inflation Rate				Inflation Rate			
Year	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %
2016	1.03	1.04	1.05	1.06	1.00	1.01	1.02	1.03	1.03	1.04	1.05	1.06	1.00	1.01	1.02	1.03	1.03	1.04	1.05	1.06
2017	1.06	1.08	1.10	1.12	1.06	1.08	1.10	1.12	1.11	1.13	1.16	1.18	0.99	1.01	1.03	1.05	1.06	1.08	1.10	1.12
2018	1.07	1.10	1.14	1.17	1.09	1.12	1.15	1.18	1.14	1.17	1.21	1.24	0.99	1.02	1.05	1.08	1.08	1.11	1.14	1.18
2019	1.10	1.14	1.18	1.23	1.12	1.17	1.21	1.26	1.18	1.23	1.28	1.33	1.05	1.09	1.13	1.18	1.11	1.15	1.20	1.25
2020	1.13	1.19	1.25	1.31	1.16	1.22	1.28	1.34	1.23	1.29	1.36	1.42	1.13	1.18	1.24	1.30	1.15	1.20	1.26	1.33
2021	1.18	1.25	1.32	1.40	1.20	1.28	1.35	1.43	1.29	1.36	1.44	1.53	1.19	1.26	1.34	1.42	1.19	1.26	1.33	1.41
2022	1.21	1.30	1.39	1.48	1.25	1.34	1.44	1.54	1.35	1.44	1.54	1.65	1.23	1.32	1.41	1.51	1.22	1.31	1.40	1.50
2023	1.25	1.35	1.46	1.57	1.31	1.41	1.53	1.65	1.41	1.52	1.64	1.78	1.28	1.38	1.49	1.61	1.25	1.36	1.46	1.58
2024	1.27	1.39	1.52	1.65	1.36	1.48	1.62	1.76	1.47	1.61	1.76	1.91	1.32	1.45	1.58	1.72	1.28	1.40	1.53	1.66
2025	1.31	1.44	1.59	1.75	1.41	1.56	1.72	1.89	1.54	1.70	1.87	2.06	1.37	1.51	1.66	1.83	1.31	1.45	1.59	1.75
2026	1.34	1.49	1.66	1.84	1.47	1.64	1.82	2.03	1.62	1.80	2.00	2.22	1.42	1.58	1.76	1.95	1.34	1.50	1.66	1.85
2027	1.37	1.55	1.74	1.95	1.53	1.72	1.94	2.17	1.69	1.90	2.14	2.40	1.45	1.63	1.83	2.06	1.38	1.55	1.74	1.95
2028	1.41	1.60	1.81	2.05	1.60	1.82	2.06	2.33	1.77	2.01	2.28	2.58	1.48	1.68	1.90	2.15	1.41	1.60	1.82	2.06
2029	1.43	1.64	1.88	2.14	1.67	1.91	2.19	2.50	1.86	2.13	2.43	2.78	1.51	1.73	1.98	2.26	1.45	1.66	1.91	2.18
2030	1.46	1.69	1.95	2.25	1.74	2.01	2.32	2.68	1.94	2.25	2.60	3.00	1.52	1.76	2.04	2.35	1.49	1.72	1.99	2.30
2031	1.49	1.74	2.03	2.37	1.81	2.12	2.47	2.88	2.04	2.38	2.78	3.24	1.58	1.84	2.15	2.51	1.53	1.79	2.09	2.43
2032	1.52	1.80	2.12	2.50	1.89	2.23	2.63	3.09	2.14	2.52	2.97	3.50	1.63	1.93	2.27	2.67	1.57	1.85	2.18	2.57
2033	1.57	1.87	2.22	2.64	1.97	2.35	2.79	3.32	2.24	2.67	3.17	3.77	1.69	2.02	2.40	2.85	1.61	1.92	2.29	2.72
2034	1.61	1.93	2.32	2.79	2.06	2.47	2.97	3.57	2.34	2.82	3.39	4.07	1.75	2.10	2.53	3.03	1.65	1.99	2.39	2.86
2035	1.65	2.00	2.43	2.94	2.14	2.61	3.16	3.83	2.46	2.99	3.62	4.39	1.80	2.19	2.65	3.21	1.69	2.05	2.49	3.02
2036	1.69	2.07	2.54	3.10	2.24	2.75	3.36	4.11	2.58	3.16	3.87	4.73	1.87	2.30	2.81	3.44	1.73	2.13	2.61	3.19
2037	1.73	2.15	2.66	3.28	2.33	2.89	3.58	4.42	2.70	3.34	4.13	5.10	1.96	2.43	3.00	3.71	1.79	2.21	2.74	3.38
2038	1.78	2.23	2.79	3.48	2.44	3.05	3.81	4.75	2.82	3.54	4.42	5.50	2.05	2.56	3.20	3.99	1.84	2.30	2.87	3.58
2039	1.84	2.33	2.94	3.70	2.55	3.22	4.06	5.11	3.00	3.79	4.78	6.02	2.14	2.71	3.42	4.30	1.89	2.39	3.02	3.79
2040	1.91	2.44	3.10	3.94	2.66	3.39	4.32	5.48	3.22	4.10	5.22	6.64	2.28	2.90	3.70	4.70	1.94	2.48	3.16	4.01
2041	1.96	2.53	3.25	4.17	2.77	3.57	4.59	5.88	3.40	4.38	5.63	7.22	2.37	3.05	3.92	5.03	2.00	2.57	3.31	4.25
2042	2.02	2.62	3.40	4.41	2.88	3.75	4.87	6.31	3.57	4.64	6.03	7.80	2.44	3.17	4.12	5.33	2.05	2.67	3.46	4.48
2043	2.07	2.72	3.56	4.66	3.01	3.95	5.18	6.77	3.75	4.92	6.45	8.44	2.52	3.31	4.33	5.66	2.10	2.76	3.62	4.73
2044	2.12	2.82	3.73	4.92	3.13	4.16	5.50	7.26	3.93	5.22	6.91	9.12	2.59	3.44	4.56	6.01	2.16	2.86	3.79	5.00
2045	2.18	2.92	3.90	5.20	3.26	4.37	5.85	7.79	4.13	5.54	7.40	9.86	2.68	3.59	4.79	6.39	2.21	2.97	3.96	5.28

Table S-3, continued. Projected fuel price indices with assumed general price inflation rates of 2 %, 3 %, 4 %, and 5 %, by end-use sector and fuel type.

Census Region 3 (Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia)

Projected April 1 Fuel Price Indices (April 1, 2015 = 1.00)

INDUSTRIAL

	Electricity				Distillate Oil				Residual Oil				Natural Gas				Coal			
	Inflation Rate				Inflation Rate				Inflation Rate				Inflation Rate				Inflation Rate			
Year	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %
2016	1.02	1.03	1.04	1.05	1.00	1.01	1.02	1.03	1.03	1.04	1.05	1.06	0.98	0.99	1.00	1.01	1.03	1.04	1.05	1.06
2017	1.04	1.06	1.08	1.10	1.05	1.07	1.09	1.11	1.12	1.14	1.16	1.18	1.05	1.07	1.09	1.11	1.07	1.09	1.11	1.13
2018	1.05	1.08	1.11	1.15	1.07	1.10	1.13	1.17	1.15	1.18	1.22	1.25	1.15	1.18	1.22	1.25	1.09	1.12	1.16	1.19
2019	1.07	1.12	1.16	1.20	1.10	1.15	1.19	1.24	1.19	1.24	1.28	1.33	1.26	1.31	1.36	1.42	1.12	1.16	1.21	1.26
2020	1.11	1.17	1.22	1.28	1.14	1.20	1.26	1.32	1.24	1.30	1.36	1.43	1.40	1.47	1.54	1.62	1.16	1.21	1.27	1.34
2021	1.15	1.22	1.29	1.37	1.19	1.26	1.33	1.41	1.29	1.37	1.45	1.54	1.49	1.58	1.68	1.78	1.20	1.27	1.34	1.42
2022	1.18	1.27	1.36	1.45	1.24	1.33	1.42	1.52	1.35	1.45	1.55	1.65	1.55	1.66	1.78	1.90	1.23	1.32	1.41	1.51
2023	1.22	1.32	1.42	1.53	1.29	1.40	1.51	1.63	1.41	1.53	1.65	1.78	1.61	1.74	1.88	2.03	1.26	1.37	1.48	1.59
2024	1.25	1.36	1.49	1.62	1.34	1.47	1.60	1.74	1.48	1.61	1.76	1.92	1.67	1.83	1.99	2.17	1.29	1.41	1.54	1.68
2025	1.29	1.42	1.56	1.72	1.40	1.54	1.70	1.87	1.55	1.70	1.88	2.07	1.74	1.92	2.12	2.33	1.33	1.46	1.61	1.77
2026	1.32	1.47	1.64	1.82	1.46	1.62	1.80	2.00	1.62	1.80	2.01	2.23	1.82	2.03	2.26	2.51	1.36	1.51	1.68	1.87
2027	1.36	1.53	1.71	1.92	1.52	1.71	1.92	2.15	1.70	1.91	2.14	2.40	1.87	2.10	2.36	2.64	1.39	1.56	1.76	1.97
2028	1.39	1.58	1.79	2.02	1.58	1.79	2.03	2.30	1.77	2.01	2.28	2.59	1.88	2.14	2.43	2.75	1.43	1.62	1.84	2.08
2029	1.41	1.62	1.86	2.12	1.65	1.89	2.16	2.47	1.86	2.13	2.44	2.79	1.91	2.19	2.51	2.87	1.47	1.68	1.93	2.20
2030	1.44	1.67	1.93	2.23	1.71	1.98	2.29	2.65	1.95	2.25	2.60	3.01	1.94	2.25	2.60	3.00	1.51	1.75	2.02	2.33
2031	1.48	1.73	2.02	2.35	1.79	2.09	2.44	2.84	2.04	2.39	2.78	3.24	2.03	2.37	2.77	3.23	1.55	1.81	2.12	2.47
2032	1.52	1.79	2.11	2.49	1.86	2.20	2.59	3.05	2.14	2.52	2.97	3.50	2.12	2.51	2.95	3.48	1.59	1.88	2.22	2.61
2033	1.56	1.87	2.22	2.64	1.94	2.32	2.76	3.27	2.24	2.67	3.17	3.77	2.22	2.65	3.15	3.74	1.64	1.95	2.32	2.76
2034	1.61	1.94	2.33	2.79	2.03	2.44	2.93	3.52	2.34	2.82	3.39	4.07	2.32	2.79	3.36	4.02	1.68	2.02	2.43	2.91
2035	1.65	2.01	2.44	2.95	2.12	2.57	3.12	3.78	2.46	2.99	3.62	4.39	2.41	2.92	3.55	4.30	1.72	2.09	2.53	3.07
2036	1.70	2.09	2.55	3.12	2.21	2.71	3.32	4.06	2.57	3.16	3.87	4.73	2.51	3.08	3.77	4.61	1.76	2.17	2.65	3.24
2037	1.75	2.17	2.68	3.31	2.30	2.85	3.53	4.36	2.69	3.34	4.13	5.10	2.62	3.24	4.01	4.95	1.82	2.25	2.78	3.44
2038	1.81	2.26	2.82	3.52	2.41	3.01	3.76	4.69	2.82	3.53	4.41	5.50	2.73	3.42	4.27	5.32	1.87	2.34	2.92	3.64
2039	1.87	2.37	2.98	3.75	2.51	3.18	4.01	5.04	3.00	3.79	4.78	6.01	2.89	3.65	4.60	5.79	1.92	2.43	3.06	3.85
2040	1.94	2.48	3.16	4.01	2.62	3.35	4.26	5.41	3.21	4.10	5.22	6.63	3.12	3.98	5.06	6.43	1.98	2.52	3.21	4.08
2041	2.01	2.58	3.32	4.26	2.73	3.52	4.53	5.80	3.39	4.37	5.62	7.20	3.27	4.21	5.42	6.95	2.03	2.62	3.36	4.31
2042	2.06	2.69	3.49	4.51	2.85	3.70	4.81	6.22	3.56	4.63	6.01	7.79	3.39	4.41	5.73	7.42	2.09	2.72	3.53	4.57
2043	2.12	2.79	3.66	4.78	2.97	3.90	5.11	6.68	3.74	4.91	6.44	8.42	3.52	4.63	6.06	7.93	2.14	2.82	3.69	4.82
2044	2.19	2.90	3.84	5.07	3.09	4.10	5.43	7.16	3.92	5.21	6.89	9.10	3.65	4.85	6.42	8.47	2.20	2.92	3.86	5.10
2045	2.25	3.01	4.02	5.36	3.22	4.32	5.77	7.68	4.12	5.52	7.38	9.83	3.79	5.08	6.79	9.05	2.26	3.03	4.05	5.40

Table S-4. Projected fuel price indices with assumed general price inflation rates of 2 %, 3 %, 4 %, and 5 %, by end-use sector and fuel type.

Census Region 4 (Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming)

Projected April 1 Fuel Price Indices (April 1, 2015 = 1.00)

RESIDENTIAL

	Electricity				Distillate Oil				LPG				Natural Gas			
	Inflation Rate				Inflation Rate				Inflation Rate				Inflation Rate			
Year	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %
2016	1.05	1.06	1.07	1.09	1.00	1.01	1.02	1.03	1.03	1.04	1.05	1.06	0.99	1.00	1.01	1.02
2017	1.09	1.12	1.14	1.16	1.04	1.06	1.09	1.11	1.08	1.10	1.12	1.14	1.01	1.03	1.05	1.07
2018	1.11	1.14	1.17	1.21	1.07	1.10	1.13	1.16	1.11	1.15	1.18	1.21	1.04	1.07	1.10	1.14
2019	1.13	1.17	1.22	1.26	1.10	1.14	1.19	1.23	1.14	1.19	1.24	1.28	1.10	1.15	1.19	1.24
2020	1.15	1.21	1.27	1.33	1.14	1.19	1.25	1.32	1.17	1.23	1.29	1.36	1.17	1.23	1.29	1.36
2021	1.19	1.26	1.33	1.41	1.18	1.25	1.33	1.40	1.20	1.27	1.35	1.43	1.23	1.31	1.39	1.47
2022	1.22	1.30	1.39	1.49	1.23	1.31	1.40	1.50	1.23	1.32	1.41	1.51	1.28	1.37	1.47	1.57
2023	1.24	1.34	1.45	1.57	1.28	1.38	1.49	1.61	1.26	1.37	1.48	1.59	1.33	1.44	1.55	1.68
2024	1.27	1.39	1.51	1.65	1.33	1.45	1.58	1.72	1.30	1.41	1.54	1.68	1.37	1.49	1.63	1.78
2025	1.30	1.44	1.58	1.74	1.38	1.52	1.68	1.84	1.33	1.46	1.61	1.78	1.42	1.57	1.72	1.90
2026	1.34	1.49	1.65	1.84	1.44	1.60	1.78	1.98	1.36	1.52	1.69	1.88	1.48	1.64	1.83	2.03
2027	1.37	1.54	1.72	1.93	1.50	1.68	1.89	2.12	1.40	1.57	1.77	1.98	1.52	1.70	1.91	2.15
2028	1.39	1.58	1.79	2.03	1.56	1.77	2.01	2.28	1.44	1.63	1.85	2.09	1.54	1.75	1.98	2.24
2029	1.41	1.62	1.86	2.12	1.63	1.87	2.14	2.44	1.47	1.69	1.93	2.21	1.57	1.80	2.06	2.35
2030	1.44	1.67	1.93	2.23	1.70	1.97	2.27	2.62	1.51	1.75	2.02	2.34	1.60	1.86	2.15	2.48
2031	1.47	1.72	2.01	2.34	1.77	2.07	2.42	2.82	1.55	1.82	2.12	2.47	1.65	1.93	2.25	2.62
2032	1.51	1.78	2.10	2.47	1.85	2.18	2.57	3.02	1.60	1.89	2.23	2.62	1.71	2.02	2.38	2.80
2033	1.54	1.84	2.19	2.60	1.93	2.30	2.73	3.24	1.64	1.96	2.33	2.77	1.77	2.11	2.51	2.98
2034	1.58	1.90	2.29	2.74	2.01	2.42	2.91	3.49	1.69	2.03	2.44	2.93	1.83	2.20	2.64	3.17
2035	1.62	1.97	2.39	2.89	2.09	2.55	3.09	3.74	1.74	2.11	2.56	3.10	1.89	2.30	2.79	3.38
2036	1.66	2.03	2.49	3.05	2.18	2.68	3.28	4.01	1.79	2.19	2.69	3.28	1.96	2.41	2.95	3.61
2037	1.70	2.11	2.61	3.22	2.28	2.82	3.49	4.31	1.83	2.27	2.81	3.47	2.03	2.51	3.11	3.83
2038	1.75	2.19	2.73	3.40	2.38	2.98	3.72	4.64	1.88	2.36	2.95	3.67	2.10	2.63	3.28	4.09
2039	1.79	2.26	2.86	3.59	2.48	3.14	3.96	4.98	1.94	2.45	3.09	3.89	2.19	2.77	3.50	4.40
2040	1.84	2.34	2.98	3.79	2.59	3.30	4.21	5.34	2.00	2.55	3.25	4.13	2.29	2.92	3.72	4.73
2041	1.88	2.42	3.11	3.99	2.70	3.48	4.47	5.73	2.05	2.65	3.40	4.37	2.37	3.05	3.92	5.03
2042	1.92	2.50	3.25	4.21	2.81	3.66	4.75	6.14	2.11	2.75	3.57	4.62	2.44	3.17	4.12	5.33
2043	1.97	2.59	3.39	4.44	2.93	3.85	5.04	6.59	2.17	2.85	3.73	4.88	2.51	3.30	4.33	5.65
2044	2.02	2.68	3.54	4.67	3.05	4.05	5.35	7.07	2.23	2.95	3.91	5.16	2.59	3.44	4.55	6.00
2045	2.06	2.77	3.70	4.92	3.18	4.26	5.69	7.58	2.29	3.06	4.09	5.45	2.67	3.58	4.78	6.37

Table S-4, continued. Projected fuel price indices with assumed general price inflation rates of 2 %, 3 %, 4 %, and 5 %, by end-use sector and fuel type.

Census Region 4 (Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming)

Projected April 1 Fuel Price Indices (April 1, 2015 = 1.00)

COMMERCIAL

	Electricity				Distillate Oil				Residual Oil				Natural Gas				Coal			
	Inflation Rate				Inflation Rate				Inflation Rate				Inflation Rate				Inflation Rate			
Year	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %
2016	1.05	1.06	1.07	1.08	1.00	1.01	1.02	1.03	1.03	1.04	1.05	1.06	1.03	1.04	1.05	1.06	1.04	1.05	1.06	1.07
2017	1.08	1.11	1.13	1.15	1.07	1.09	1.11	1.13	1.15	1.17	1.20	1.22	1.05	1.08	1.10	1.12	1.08	1.10	1.12	1.15
2018	1.09	1.13	1.16	1.19	1.10	1.13	1.16	1.20	1.19	1.23	1.27	1.30	1.07	1.11	1.14	1.17	1.11	1.14	1.18	1.21
2019	1.11	1.15	1.20	1.24	1.13	1.18	1.22	1.27	1.24	1.29	1.34	1.39	1.14	1.18	1.23	1.28	1.14	1.19	1.23	1.28
2020	1.13	1.19	1.25	1.31	1.17	1.23	1.29	1.36	1.29	1.36	1.43	1.50	1.21	1.27	1.34	1.40	1.17	1.23	1.29	1.36
2021	1.16	1.23	1.30	1.38	1.22	1.29	1.37	1.45	1.36	1.44	1.53	1.62	1.28	1.36	1.44	1.53	1.21	1.28	1.36	1.44
2022	1.18	1.27	1.35	1.45	1.27	1.36	1.45	1.55	1.42	1.53	1.63	1.74	1.33	1.43	1.53	1.64	1.24	1.33	1.42	1.52
2023	1.20	1.30	1.41	1.52	1.32	1.43	1.54	1.66	1.50	1.62	1.75	1.89	1.39	1.50	1.62	1.75	1.28	1.38	1.49	1.61
2024	1.22	1.34	1.46	1.59	1.37	1.50	1.63	1.78	1.57	1.72	1.87	2.04	1.43	1.56	1.70	1.85	1.32	1.44	1.58	1.72
2025	1.25	1.38	1.52	1.67	1.43	1.57	1.73	1.91	1.65	1.82	2.00	2.20	1.48	1.63	1.80	1.98	1.36	1.50	1.65	1.82
2026	1.28	1.43	1.59	1.76	1.49	1.66	1.84	2.05	1.73	1.93	2.15	2.38	1.54	1.72	1.91	2.12	1.39	1.55	1.72	1.92
2027	1.31	1.47	1.65	1.85	1.55	1.74	1.96	2.19	1.82	2.05	2.30	2.58	1.58	1.78	2.00	2.24	1.44	1.62	1.82	2.04
2028	1.33	1.51	1.71	1.94	1.61	1.83	2.08	2.35	1.91	2.17	2.46	2.79	1.60	1.82	2.06	2.34	1.48	1.68	1.90	2.15
2029	1.35	1.54	1.77	2.02	1.68	1.93	2.21	2.52	2.01	2.30	2.63	3.01	1.63	1.87	2.14	2.44	1.53	1.75	2.00	2.29
2030	1.37	1.59	1.83	2.12	1.75	2.03	2.34	2.70	2.11	2.44	2.82	3.26	1.66	1.93	2.23	2.57	1.57	1.82	2.10	2.43
2031	1.40	1.63	1.90	2.22	1.82	2.13	2.49	2.90	2.22	2.59	3.03	3.53	1.71	2.00	2.33	2.72	1.61	1.88	2.20	2.56
2032	1.42	1.68	1.98	2.33	1.90	2.24	2.64	3.11	2.33	2.75	3.24	3.82	1.77	2.09	2.47	2.90	1.66	1.96	2.31	2.72
2033	1.45	1.73	2.06	2.45	1.98	2.36	2.81	3.34	2.45	2.91	3.47	4.12	1.83	2.19	2.60	3.09	1.71	2.04	2.42	2.88
2034	1.49	1.79	2.15	2.58	2.07	2.49	2.99	3.59	2.57	3.09	3.72	4.46	1.89	2.28	2.74	3.28	1.77	2.13	2.55	3.06
2035	1.52	1.85	2.24	2.71	2.16	2.62	3.18	3.85	2.70	3.28	3.98	4.82	1.96	2.39	2.90	3.51	1.82	2.21	2.68	3.25
2036	1.55	1.91	2.34	2.86	2.25	2.76	3.38	4.13	2.84	3.48	4.26	5.21	2.04	2.50	3.06	3.75	1.87	2.29	2.81	3.43
2037	1.59	1.97	2.44	3.01	2.34	2.91	3.59	4.44	2.98	3.69	4.56	5.63	2.10	2.60	3.22	3.97	1.93	2.39	2.96	3.65
2038	1.63	2.04	2.55	3.18	2.45	3.06	3.83	4.77	3.13	3.91	4.89	6.09	2.18	2.73	3.41	4.25	1.99	2.49	3.11	3.88
2039	1.67	2.11	2.67	3.35	2.55	3.23	4.07	5.12	3.33	4.21	5.31	6.68	2.28	2.88	3.64	4.58	2.06	2.61	3.29	4.13
2040	1.71	2.19	2.79	3.54	2.66	3.40	4.33	5.50	3.58	4.57	5.82	7.40	2.39	3.04	3.88	4.92	2.12	2.71	3.45	4.38
2041	1.75	2.26	2.90	3.73	2.77	3.58	4.60	5.89	3.79	4.89	6.28	8.06	2.47	3.18	4.09	5.24	2.18	2.81	3.61	4.63
2042	1.79	2.33	3.03	3.92	2.89	3.76	4.88	6.32	3.99	5.19	6.74	8.73	2.55	3.31	4.30	5.57	2.23	2.91	3.77	4.89
2043	1.83	2.40	3.15	4.12	3.01	3.95	5.18	6.78	4.20	5.52	7.23	9.46	2.63	3.46	4.53	5.92	2.30	3.02	3.96	5.17
2044	1.87	2.48	3.28	4.33	3.13	4.16	5.51	7.27	4.42	5.87	7.76	10.25	2.71	3.60	4.77	6.29	2.36	3.13	4.14	5.46
2045	1.91	2.56	3.42	4.56	3.27	4.38	5.85	7.79	4.65	6.23	8.33	11.10	2.80	3.75	5.01	6.68	2.42	3.24	4.34	5.78

Table S-4, continued. Projected fuel price indices with assumed general price inflation rates of 2 %, 3 %, 4 %, and 5 %, by end-use sector and fuel type.

Census Region 4 (Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming)

Projected April 1 Fuel Price Indices (April 1, 2015 = 1.00)

INDUSTRIAL

	Electricity				Distillate Oil				Residual Oil				Natural Gas				Coal			
	Inflation Rate				Inflation Rate				Inflation Rate				Inflation Rate				Inflation Rate			
Year	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %
2016	1.04	1.05	1.06	1.07	1.00	1.01	1.02	1.03	1.03	1.04	1.05	1.06	1.01	1.02	1.03	1.04	1.05	1.06	1.07	1.08
2017	1.06	1.09	1.11	1.13	1.04	1.06	1.08	1.10	1.15	1.17	1.20	1.22	1.08	1.10	1.13	1.15	1.08	1.10	1.12	1.14
2018	1.07	1.10	1.14	1.17	1.06	1.09	1.12	1.15	1.20	1.23	1.27	1.31	1.17	1.20	1.24	1.28	1.09	1.13	1.16	1.19
2019	1.09	1.13	1.18	1.22	1.09	1.13	1.18	1.22	1.24	1.29	1.34	1.40	1.27	1.32	1.37	1.42	1.12	1.16	1.21	1.26
2020	1.12	1.17	1.23	1.29	1.13	1.19	1.25	1.31	1.30	1.36	1.43	1.50	1.37	1.44	1.51	1.58	1.15	1.21	1.27	1.33
2021	1.15	1.22	1.29	1.36	1.17	1.24	1.32	1.40	1.36	1.44	1.53	1.62	1.46	1.55	1.64	1.74	1.19	1.26	1.34	1.42
2022	1.17	1.26	1.35	1.44	1.23	1.31	1.41	1.50	1.43	1.53	1.64	1.75	1.53	1.63	1.75	1.87	1.23	1.32	1.41	1.51
2023	1.20	1.30	1.40	1.52	1.28	1.38	1.49	1.61	1.50	1.62	1.75	1.89	1.59	1.72	1.85	2.00	1.27	1.37	1.48	1.60
2024	1.23	1.34	1.46	1.59	1.33	1.45	1.58	1.73	1.58	1.72	1.88	2.04	1.64	1.79	1.95	2.13	1.31	1.43	1.56	1.70
2025	1.26	1.39	1.53	1.68	1.39	1.53	1.68	1.85	1.65	1.82	2.01	2.21	1.71	1.89	2.08	2.29	1.34	1.48	1.63	1.79
2026	1.29	1.44	1.60	1.78	1.44	1.61	1.79	1.99	1.74	1.93	2.15	2.39	1.79	1.99	2.22	2.46	1.37	1.53	1.70	1.89
2027	1.32	1.49	1.67	1.88	1.50	1.69	1.90	2.13	1.83	2.05	2.30	2.58	1.83	2.05	2.30	2.58	1.41	1.58	1.78	2.00
2028	1.35	1.53	1.73	1.96	1.57	1.78	2.02	2.29	1.92	2.18	2.47	2.79	1.82	2.07	2.34	2.66	1.45	1.65	1.87	2.12
2029	1.37	1.57	1.80	2.05	1.63	1.87	2.14	2.45	2.01	2.31	2.64	3.02	1.83	2.09	2.40	2.74	1.49	1.71	1.95	2.24
2030	1.40	1.62	1.87	2.16	1.70	1.97	2.27	2.62	2.12	2.45	2.83	3.27	1.85	2.14	2.47	2.86	1.53	1.78	2.05	2.37
2031	1.43	1.67	1.95	2.27	1.77	2.07	2.42	2.81	2.22	2.60	3.03	3.54	1.90	2.22	2.59	3.02	1.57	1.84	2.15	2.50
2032	1.46	1.72	2.03	2.39	1.85	2.18	2.57	3.02	2.34	2.76	3.25	3.83	1.98	2.33	2.75	3.24	1.61	1.91	2.25	2.64
2033	1.50	1.79	2.12	2.52	1.93	2.30	2.73	3.25	2.45	2.92	3.48	4.13	2.05	2.44	2.90	3.45	1.66	1.98	2.36	2.80
2034	1.53	1.85	2.22	2.66	2.01	2.42	2.91	3.49	2.58	3.10	3.73	4.47	2.12	2.55	3.06	3.68	1.71	2.05	2.47	2.96
2035	1.57	1.91	2.32	2.81	2.10	2.55	3.09	3.74	2.71	3.29	4.00	4.84	2.21	2.68	3.25	3.94	1.75	2.13	2.58	3.12
2036	1.61	1.98	2.43	2.97	2.19	2.68	3.29	4.02	2.85	3.49	4.28	5.23	2.30	2.82	3.46	4.22	1.80	2.20	2.70	3.30
2037	1.66	2.06	2.54	3.14	2.28	2.83	3.50	4.32	2.99	3.70	4.58	5.65	2.37	2.94	3.64	4.49	1.85	2.29	2.83	3.50
2038	1.71	2.14	2.67	3.33	2.39	2.99	3.73	4.65	3.14	3.93	4.90	6.11	2.47	3.10	3.87	4.82	1.90	2.37	2.96	3.69
2039	1.76	2.22	2.80	3.52	2.49	3.15	3.97	4.99	3.34	4.22	5.33	6.70	2.61	3.29	4.15	5.23	1.95	2.46	3.11	3.91
2040	1.81	2.30	2.93	3.73	2.60	3.32	4.22	5.36	3.60	4.59	5.84	7.42	2.74	3.50	4.46	5.66	2.00	2.55	3.25	4.13
2041	1.85	2.39	3.07	3.94	2.71	3.49	4.48	5.75	3.81	4.91	6.31	8.09	2.85	3.68	4.73	6.07	2.06	2.65	3.41	4.37
2042	1.90	2.47	3.21	4.15	2.82	3.67	4.76	6.17	4.01	5.22	6.77	8.77	2.96	3.85	5.00	6.48	2.12	2.76	3.59	4.64
2043	1.95	2.56	3.35	4.38	2.94	3.86	5.06	6.62	4.22	5.54	7.27	9.50	3.07	4.04	5.30	6.92	2.18	2.87	3.76	4.92
2044	1.99	2.65	3.50	4.62	3.06	4.06	5.38	7.10	4.44	5.89	7.79	10.29	3.19	4.23	5.60	7.40	2.25	2.99	3.96	5.22
2045	2.04	2.74	3.66	4.88	3.19	4.28	5.72	7.62	4.67	6.26	8.36	11.14	3.31	4.44	5.93	7.90	2.32	3.10	4.15	5.53

Table S-5. Projected fuel price indices with assumed general price inflation rates of 2 %, 3 %, 4 %, and 5 %, by end-use sector and fuel type.

United States Average

Projected April 1 Fuel Price Indices (April 1, 2015 = 1.00)

RESIDENTIAL

	Electricity				Distillate Oil				LPG				Natural Gas			
	Inflation Rate				Inflation Rate				Inflation Rate				Inflation Rate			
Year	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %
2016	1.05	1.06	1.07	1.08	1.00	1.01	1.02	1.03	1.03	1.04	1.05	1.06	1.01	1.02	1.02	1.03
2017	1.08	1.10	1.12	1.15	1.07	1.09	1.11	1.13	1.08	1.10	1.12	1.14	1.04	1.06	1.08	1.10
2018	1.10	1.13	1.17	1.20	1.09	1.13	1.16	1.19	1.11	1.14	1.18	1.21	1.07	1.11	1.14	1.17
2019	1.13	1.18	1.22	1.27	1.13	1.17	1.22	1.26	1.14	1.19	1.23	1.28	1.14	1.19	1.23	1.28
2020	1.17	1.23	1.29	1.36	1.16	1.22	1.28	1.34	1.17	1.23	1.29	1.35	1.22	1.28	1.35	1.41
2021	1.22	1.29	1.37	1.45	1.21	1.28	1.35	1.43	1.20	1.27	1.35	1.43	1.29	1.37	1.45	1.53
2022	1.26	1.34	1.44	1.54	1.25	1.34	1.43	1.53	1.23	1.32	1.41	1.51	1.34	1.44	1.54	1.64
2023	1.29	1.40	1.51	1.63	1.30	1.41	1.52	1.64	1.26	1.36	1.47	1.59	1.39	1.50	1.62	1.75
2024	1.32	1.44	1.58	1.72	1.35	1.48	1.61	1.76	1.30	1.41	1.54	1.68	1.44	1.57	1.71	1.87
2025	1.36	1.50	1.65	1.82	1.41	1.55	1.71	1.88	1.33	1.46	1.61	1.78	1.49	1.64	1.81	1.99
2026	1.40	1.55	1.73	1.92	1.47	1.63	1.82	2.02	1.37	1.52	1.69	1.88	1.54	1.72	1.91	2.12
2027	1.43	1.61	1.81	2.02	1.53	1.72	1.93	2.16	1.40	1.58	1.77	1.98	1.58	1.77	1.99	2.23
2028	1.46	1.66	1.88	2.13	1.59	1.81	2.05	2.32	1.44	1.63	1.85	2.10	1.60	1.82	2.06	2.33
2029	1.49	1.71	1.95	2.23	1.66	1.90	2.18	2.49	1.48	1.69	1.94	2.21	1.63	1.87	2.14	2.44
2030	1.52	1.76	2.03	2.35	1.73	2.00	2.31	2.67	1.51	1.75	2.03	2.34	1.66	1.92	2.22	2.56
2031	1.55	1.81	2.12	2.47	1.80	2.11	2.46	2.87	1.56	1.82	2.13	2.48	1.71	2.00	2.33	2.72
2032	1.59	1.88	2.21	2.60	1.88	2.22	2.61	3.07	1.60	1.89	2.23	2.62	1.77	2.09	2.46	2.90
2033	1.63	1.94	2.31	2.75	1.96	2.33	2.78	3.30	1.65	1.97	2.34	2.78	1.83	2.19	2.60	3.09
2034	1.67	2.01	2.42	2.90	2.04	2.46	2.95	3.54	1.70	2.04	2.45	2.94	1.90	2.28	2.74	3.29
2035	1.71	2.08	2.52	3.06	2.13	2.59	3.14	3.80	1.74	2.12	2.57	3.11	1.96	2.39	2.89	3.51
2036	1.75	2.15	2.63	3.22	2.22	2.73	3.34	4.08	1.79	2.20	2.70	3.30	2.03	2.50	3.06	3.74
2037	1.80	2.23	2.75	3.40	2.32	2.87	3.55	4.38	1.84	2.28	2.82	3.49	2.11	2.62	3.24	3.99
2038	1.85	2.31	2.89	3.60	2.42	3.03	3.78	4.71	1.89	2.37	2.96	3.69	2.20	2.75	3.44	4.29
2039	1.90	2.40	3.03	3.81	2.53	3.19	4.03	5.07	1.95	2.46	3.11	3.91	2.31	2.92	3.68	4.63
2040	1.96	2.50	3.19	4.05	2.63	3.36	4.28	5.44	2.01	2.57	3.27	4.15	2.43	3.10	3.95	5.01
2041	2.01	2.60	3.34	4.28	2.74	3.53	4.54	5.83	2.07	2.66	3.42	4.39	2.51	3.24	4.17	5.34
2042	2.07	2.69	3.49	4.52	2.86	3.72	4.82	6.25	2.12	2.76	3.58	4.64	2.59	3.37	4.37	5.66
2043	2.12	2.78	3.65	4.77	2.98	3.91	5.13	6.70	2.18	2.86	3.75	4.90	2.67	3.51	4.59	6.01
2044	2.17	2.88	3.81	5.03	3.10	4.11	5.45	7.19	2.24	2.97	3.93	5.19	2.75	3.65	4.83	6.37
2045	2.23	2.98	3.99	5.31	3.23	4.33	5.79	7.71	2.30	3.08	4.11	5.48	2.83	3.79	5.07	6.76

Table S-5, continued. Projected fuel price indices with assumed general price inflation rates of 2 %, 3 %, 4 %, and 5 %, by end-use sector and fuel type.

United States Average

Projected April 1 Fuel Price Indices (April 1, 2015 = 1.00)

COMMERCIAL

	Electricity				Distillate Oil				Residual Oil				Natural Gas				Coal			
	Inflation Rate				Inflation Rate				Inflation Rate				Inflation Rate				Inflation Rate			
Year	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %
2016	1.03	1.04	1.05	1.06	1.00	1.01	1.02	1.03	1.03	1.04	1.05	1.06	1.02	1.03	1.04	1.05	1.03	1.04	1.05	1.06
2017	1.06	1.08	1.11	1.13	1.06	1.08	1.10	1.12	1.10	1.12	1.14	1.17	1.04	1.06	1.08	1.11	1.07	1.09	1.11	1.13
2018	1.08	1.11	1.15	1.18	1.08	1.11	1.15	1.18	1.13	1.16	1.19	1.23	1.07	1.10	1.13	1.16	1.10	1.13	1.17	1.20
2019	1.11	1.15	1.20	1.24	1.12	1.16	1.21	1.25	1.16	1.21	1.26	1.31	1.14	1.18	1.23	1.28	1.13	1.17	1.22	1.27
2020	1.15	1.21	1.26	1.33	1.15	1.21	1.27	1.34	1.21	1.27	1.33	1.40	1.22	1.28	1.35	1.41	1.16	1.22	1.28	1.35
2021	1.19	1.26	1.34	1.42	1.20	1.27	1.35	1.43	1.26	1.34	1.42	1.50	1.30	1.38	1.46	1.54	1.20	1.27	1.35	1.43
2022	1.23	1.31	1.41	1.50	1.25	1.34	1.43	1.53	1.32	1.41	1.51	1.61	1.35	1.45	1.55	1.66	1.23	1.32	1.41	1.51
2023	1.26	1.36	1.47	1.59	1.30	1.41	1.52	1.64	1.38	1.49	1.61	1.74	1.40	1.52	1.64	1.77	1.26	1.36	1.47	1.59
2024	1.29	1.41	1.54	1.67	1.35	1.48	1.61	1.76	1.44	1.57	1.71	1.87	1.45	1.59	1.73	1.88	1.30	1.42	1.54	1.68
2025	1.32	1.46	1.61	1.77	1.41	1.55	1.71	1.88	1.50	1.66	1.83	2.01	1.50	1.66	1.83	2.01	1.33	1.47	1.61	1.78
2026	1.36	1.51	1.68	1.87	1.47	1.64	1.82	2.02	1.57	1.75	1.95	2.16	1.56	1.73	1.93	2.14	1.36	1.52	1.69	1.87
2027	1.39	1.56	1.75	1.97	1.53	1.72	1.93	2.17	1.64	1.85	2.08	2.33	1.59	1.78	2.00	2.25	1.40	1.57	1.77	1.98
2028	1.42	1.61	1.83	2.07	1.60	1.81	2.05	2.33	1.72	1.95	2.21	2.50	1.60	1.82	2.06	2.34	1.43	1.63	1.85	2.09
2029	1.45	1.66	1.90	2.17	1.66	1.91	2.18	2.49	1.80	2.06	2.36	2.70	1.62	1.86	2.13	2.44	1.48	1.69	1.94	2.21
2030	1.47	1.70	1.97	2.27	1.73	2.00	2.32	2.68	1.88	2.18	2.52	2.90	1.65	1.91	2.20	2.54	1.51	1.75	2.02	2.34
2031	1.50	1.75	2.05	2.38	1.81	2.11	2.46	2.87	1.97	2.30	2.69	3.13	1.69	1.98	2.31	2.69	1.55	1.81	2.11	2.46
2032	1.53	1.81	2.13	2.51	1.88	2.22	2.62	3.08	2.06	2.43	2.87	3.37	1.75	2.07	2.44	2.87	1.60	1.88	2.22	2.61
2033	1.57	1.87	2.23	2.65	1.97	2.34	2.79	3.31	2.15	2.57	3.05	3.63	1.81	2.16	2.57	3.05	1.63	1.95	2.32	2.75
2034	1.61	1.94	2.33	2.79	2.05	2.47	2.97	3.56	2.25	2.71	3.26	3.91	1.87	2.25	2.71	3.25	1.68	2.02	2.43	2.92
2035	1.65	2.00	2.43	2.95	2.14	2.60	3.15	3.82	2.36	2.87	3.48	4.21	1.93	2.35	2.85	3.45	1.72	2.09	2.54	3.08
2036	1.69	2.07	2.54	3.10	2.23	2.74	3.36	4.10	2.47	3.03	3.71	4.54	2.01	2.46	3.02	3.69	1.77	2.17	2.66	3.25
2037	1.73	2.14	2.65	3.27	2.33	2.89	3.57	4.41	2.58	3.20	3.96	4.89	2.08	2.58	3.19	3.94	1.82	2.26	2.80	3.45
2038	1.78	2.23	2.78	3.47	2.43	3.05	3.81	4.74	2.70	3.38	4.22	5.26	2.17	2.72	3.40	4.23	1.87	2.34	2.93	3.65
2039	1.84	2.32	2.93	3.68	2.54	3.21	4.05	5.10	2.86	3.62	4.56	5.74	2.29	2.89	3.65	4.59	1.93	2.44	3.08	3.87
2040	1.89	2.42	3.08	3.91	2.65	3.38	4.31	5.47	3.06	3.91	4.98	6.32	2.41	3.08	3.92	4.98	1.99	2.54	3.23	4.10
2041	1.94	2.51	3.22	4.13	2.76	3.56	4.58	5.87	3.23	4.16	5.35	6.86	2.50	3.23	4.15	5.32	2.04	2.63	3.38	4.33
2042	1.99	2.59	3.37	4.36	2.88	3.75	4.86	6.29	3.39	4.41	5.72	7.41	2.59	3.36	4.37	5.66	2.10	2.73	3.54	4.59
2043	2.04	2.68	3.52	4.60	3.00	3.94	5.17	6.75	3.55	4.67	6.12	8.00	2.67	3.51	4.59	6.01	2.15	2.83	3.71	4.85
2044	2.09	2.78	3.68	4.85	3.13	4.15	5.49	7.24	3.73	4.95	6.54	8.64	2.75	3.66	4.84	6.38	2.21	2.93	3.88	5.12
2045	2.14	2.87	3.84	5.12	3.26	4.37	5.83	7.77	3.91	5.24	7.00	9.33	2.85	3.81	5.10	6.79	2.27	3.05	4.07	5.42

Table S-5, continued. Projected fuel price indices with assumed general price inflation rates of 2 %, 3 %, 4 %, and 5 %, by end-use sector and fuel type.

United States Average

Projected April 1 Fuel Price Indices (April 1, 2015 = 1.00)

INDUSTRIAL

	Electricity				Distillate Oil				Residual Oil				Natural Gas				Coal			
	Inflation Rate				Inflation Rate				Inflation Rate				Inflation Rate				Inflation Rate			
Year	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %	2 %	3 %	4 %	5 %
2016	1.02	1.03	1.04	1.05	1.00	1.01	1.02	1.03	1.03	1.04	1.05	1.06	0.99	1.00	1.01	1.02	1.04	1.05	1.06	1.07
2017	1.04	1.06	1.08	1.11	1.04	1.06	1.09	1.11	1.13	1.15	1.18	1.20	1.07	1.09	1.11	1.13	1.08	1.10	1.12	1.14
2018	1.06	1.09	1.12	1.15	1.07	1.10	1.13	1.16	1.17	1.20	1.24	1.27	1.17	1.20	1.24	1.28	1.10	1.13	1.17	1.20
2019	1.08	1.12	1.17	1.21	1.10	1.14	1.19	1.24	1.21	1.26	1.31	1.36	1.28	1.33	1.38	1.44	1.13	1.18	1.22	1.27
2020	1.12	1.18	1.24	1.30	1.14	1.20	1.26	1.32	1.26	1.32	1.38	1.45	1.40	1.48	1.55	1.62	1.17	1.23	1.29	1.35
2021	1.16	1.23	1.31	1.39	1.18	1.26	1.33	1.41	1.31	1.39	1.47	1.56	1.50	1.59	1.68	1.78	1.21	1.29	1.36	1.44
2022	1.20	1.28	1.37	1.47	1.24	1.32	1.42	1.52	1.37	1.47	1.57	1.68	1.56	1.67	1.79	1.91	1.25	1.34	1.43	1.53
2023	1.23	1.33	1.44	1.56	1.29	1.39	1.51	1.62	1.44	1.55	1.68	1.81	1.63	1.76	1.90	2.05	1.29	1.39	1.50	1.62
2024	1.26	1.38	1.51	1.64	1.34	1.46	1.60	1.74	1.50	1.64	1.79	1.95	1.68	1.84	2.01	2.19	1.32	1.44	1.57	1.72
2025	1.30	1.44	1.58	1.74	1.40	1.54	1.69	1.86	1.57	1.73	1.91	2.10	1.75	1.93	2.12	2.34	1.36	1.49	1.65	1.81
2026	1.34	1.49	1.66	1.84	1.45	1.62	1.80	2.00	1.65	1.83	2.04	2.26	1.83	2.03	2.26	2.51	1.39	1.55	1.72	1.91
2027	1.37	1.54	1.73	1.94	1.51	1.70	1.91	2.14	1.72	1.94	2.17	2.44	1.86	2.10	2.35	2.64	1.43	1.61	1.81	2.03
2028	1.40	1.59	1.81	2.05	1.58	1.79	2.03	2.30	1.80	2.05	2.32	2.63	1.87	2.13	2.41	2.73	1.47	1.67	1.89	2.14
2029	1.43	1.64	1.88	2.14	1.64	1.88	2.15	2.46	1.89	2.16	2.48	2.83	1.89	2.17	2.49	2.84	1.51	1.73	1.98	2.27
2030	1.46	1.69	1.95	2.25	1.71	1.98	2.29	2.64	1.98	2.29	2.65	3.05	1.92	2.22	2.57	2.97	1.55	1.80	2.08	2.40
2031	1.49	1.74	2.03	2.37	1.78	2.08	2.43	2.83	2.07	2.42	2.83	3.29	1.99	2.33	2.72	3.17	1.60	1.87	2.18	2.54
2032	1.53	1.81	2.13	2.50	1.85	2.19	2.58	3.04	2.17	2.56	3.02	3.55	2.08	2.45	2.89	3.40	1.64	1.93	2.28	2.68
2033	1.57	1.87	2.23	2.65	1.94	2.31	2.75	3.26	2.27	2.71	3.22	3.83	2.16	2.58	3.07	3.64	1.68	2.01	2.39	2.84
2034	1.61	1.94	2.33	2.80	2.02	2.43	2.92	3.50	2.38	2.87	3.44	4.13	2.25	2.71	3.25	3.90	1.73	2.08	2.50	3.00
2035	1.66	2.01	2.44	2.96	2.11	2.56	3.11	3.76	2.50	3.03	3.68	4.46	2.34	2.84	3.45	4.17	1.77	2.15	2.61	3.16
2036	1.70	2.09	2.56	3.12	2.20	2.70	3.30	4.04	2.61	3.21	3.93	4.80	2.43	2.99	3.66	4.47	1.82	2.24	2.74	3.35
2037	1.75	2.17	2.68	3.31	2.29	2.84	3.52	4.34	2.74	3.39	4.19	5.18	2.53	3.13	3.88	4.78	1.87	2.32	2.87	3.54
2038	1.80	2.26	2.82	3.51	2.40	3.00	3.75	4.67	2.87	3.59	4.48	5.58	2.64	3.30	4.12	5.14	1.93	2.41	3.01	3.75
2039	1.87	2.36	2.97	3.74	2.50	3.16	3.99	5.02	3.04	3.85	4.85	6.10	2.79	3.53	4.45	5.60	1.98	2.51	3.16	3.98
2040	1.93	2.47	3.14	3.99	2.61	3.33	4.24	5.39	3.26	4.16	5.30	6.73	2.99	3.81	4.85	6.16	2.04	2.60	3.32	4.21
2041	1.99	2.56	3.29	4.23	2.72	3.50	4.50	5.78	3.44	4.43	5.70	7.31	3.12	4.02	5.17	6.63	2.16	2.78	3.57	4.58
2042	2.04	2.66	3.45	4.47	2.83	3.68	4.78	6.19	3.61	4.70	6.10	7.90	3.24	4.21	5.47	7.08	2.24	2.92	3.79	4.91
2043	2.10	2.76	3.62	4.73	2.95	3.88	5.08	6.64	3.79	4.99	6.53	8.54	3.36	4.41	5.78	7.56	2.30	3.03	3.97	5.19
2044	2.16	2.86	3.79	5.00	3.07	4.08	5.40	7.13	3.98	5.29	6.99	9.23	3.48	4.62	6.12	8.08	2.37	3.14	4.16	5.49
2045	2.22	2.97	3.97	5.29	3.20	4.29	5.74	7.64	4.18	5.60	7.49	9.98	3.62	4.85	6.48	8.63	2.44	3.27	4.37	5.82

B.1 Garage Floor Plan Drawings

City State Garage
Entry

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Date:11/23/2015

Luminaire Schedule					
Scene: High Level					
Symbol	**Qty**	**Label**	**Description**	**Lum. Lumens**	**LLF**
●	16	LFS-LB-55-JP-NW-1-BK-X		7029	0.855

Calculation Summary							
Scene: High Level							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Main Parking_Floor	Illuminance	Fc	37.28	51.7	17.1	2.18	3.02

Scene Summary				
Scene: High Level				
Channel	Switched	Dimming	LumNo	Label
< Unassigned >	On	1.00	36	LFS-LB-55-JP-NW-1-BK-X
Full Level	On	1.00	29	LFS-LB-55-JP-NW-1-BK-X
			30	LFS-LB-55-JP-NW-1-BK-X
			31	LFS-LB-55-JP-NW-1-BK-X
			32	LFS-LB-55-JP-NW-1-BK-X
			33	LFS-LB-55-JP-NW-1-BK-X
			40	LFS-LB-55-JP-NW-1-BK-X
Tuned Level	On	0.60	35	LFS-LB-55-JP-NW-1-BK-X
			37	LFS-LB-55-JP-NW-1-BK-X
			38	LFS-LB-55-JP-NW-1-BK-X
			39	LFS-LB-55-JP-NW-1-BK-X
			41	LFS-LB-55-JP-NW-1-BK-X
			42	LFS-LB-55-JP-NW-1-BK-X
			43	LFS-LB-55-JP-NW-1-BK-X
			44	LFS-LB-55-JP-NW-1-BK-X
			45	LFS-LB-55-JP-NW-1-BK-X

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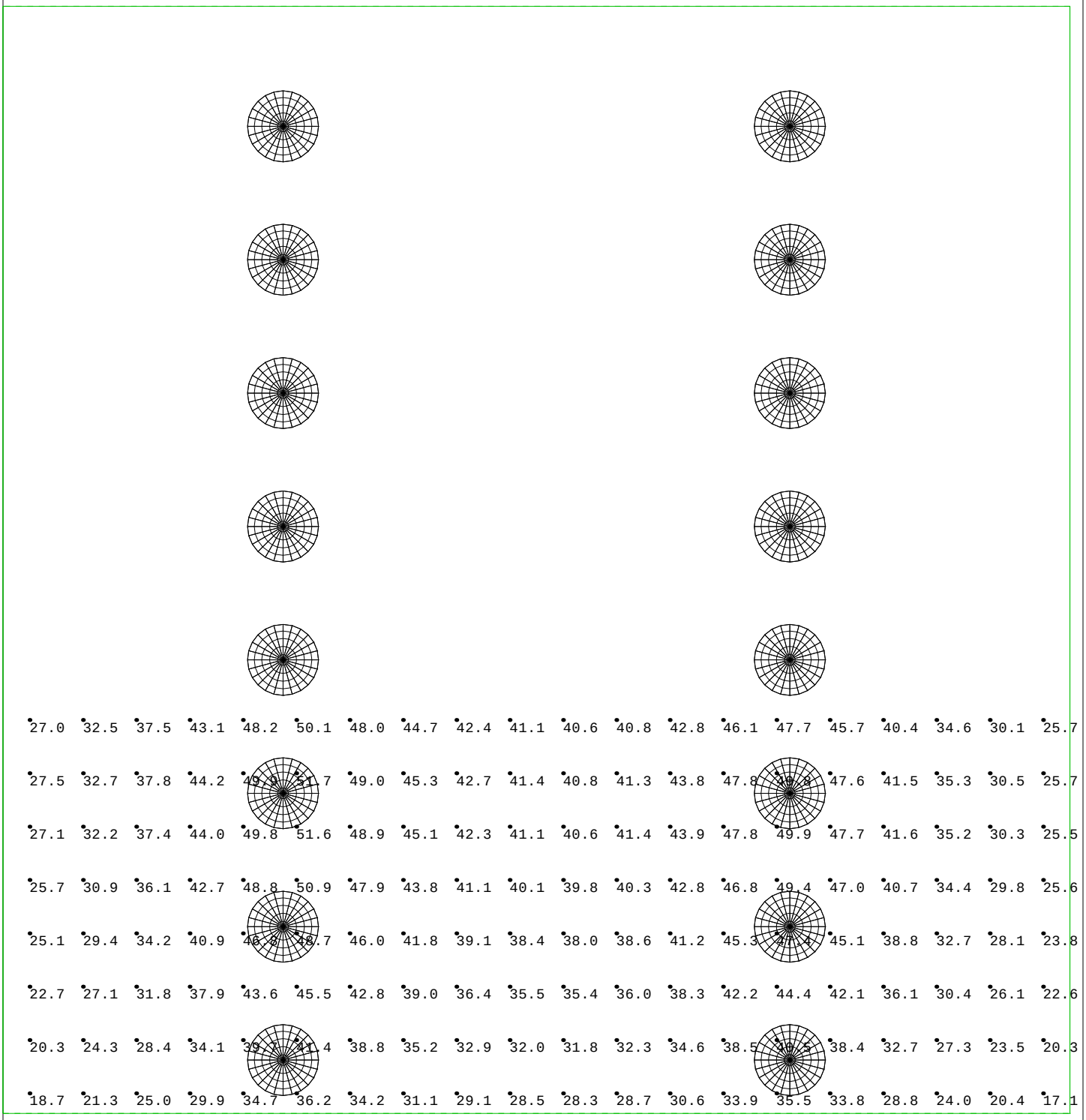

View of point by point

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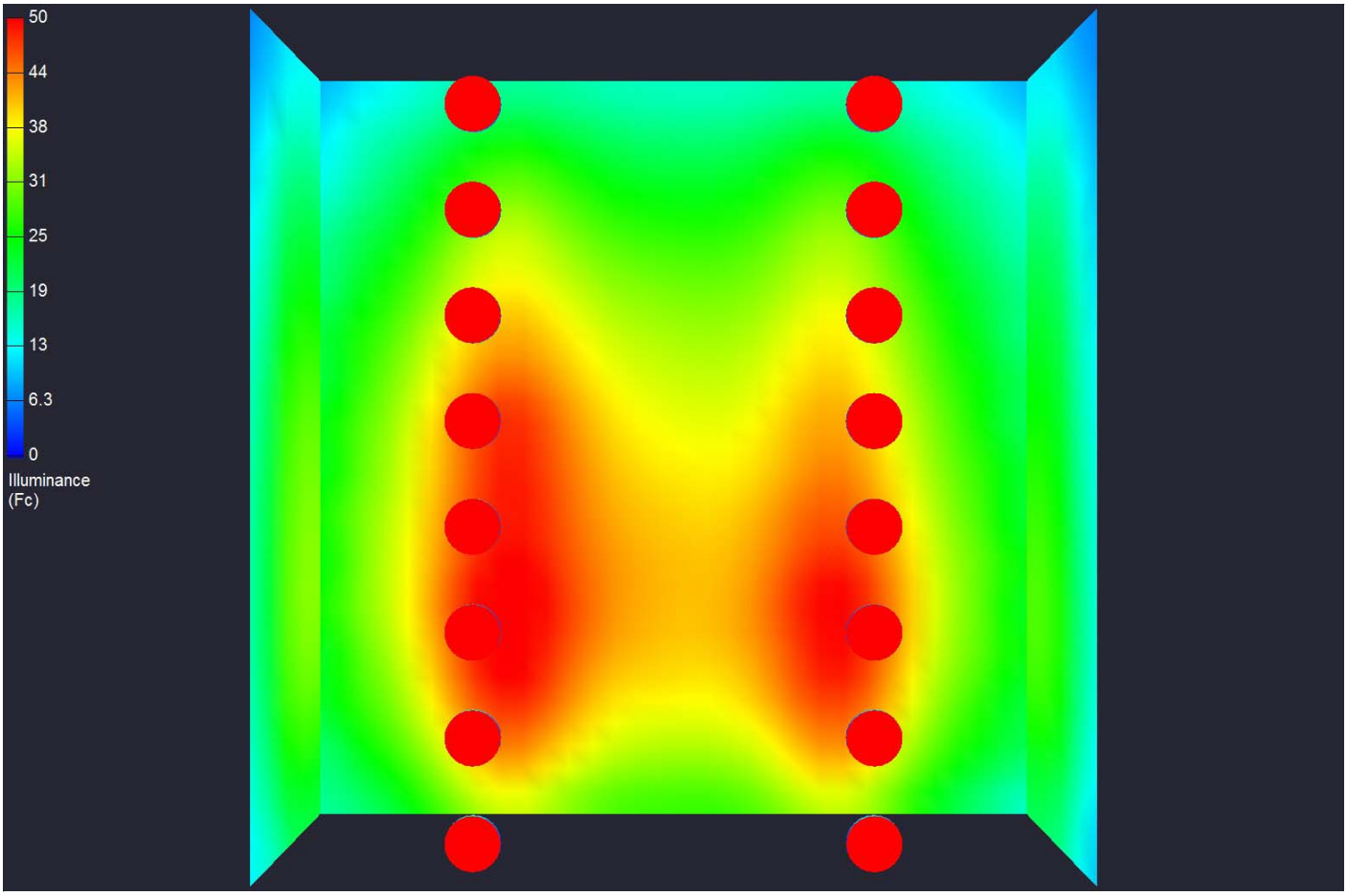

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City State Garage
Main Garage Deck

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Date:11/24/2015

Luminaire Schedule					
Scene: High Level					
Symbol	**Qty**	**Label**	**Description**	**Lum. Lumens**	**LLF**
●	6	LFS-LB-55-JP-NW-1-BK-X		7029	0.855

Calculation Summary							
Scene: High Level							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Main Parking_Floor	Illuminance	Fc	5.51	11.5	1.5	3.67	7.67

Scene Summary				
Scene: High Level				
Channel	Switched	Dimming	LumNo	Label
All	On	0.60	23	LFS-LB-55-JP-NW-1-BK-X
			24	LFS-LB-55-JP-NW-1-BK-X
			25	LFS-LB-55-JP-NW-1-BK-X
			26	LFS-LB-55-JP-NW-1-BK-X
			27	LFS-LB-55-JP-NW-1-BK-X
			28	LFS-LB-55-JP-NW-1-BK-X

City State Garage
Main Garage Deck

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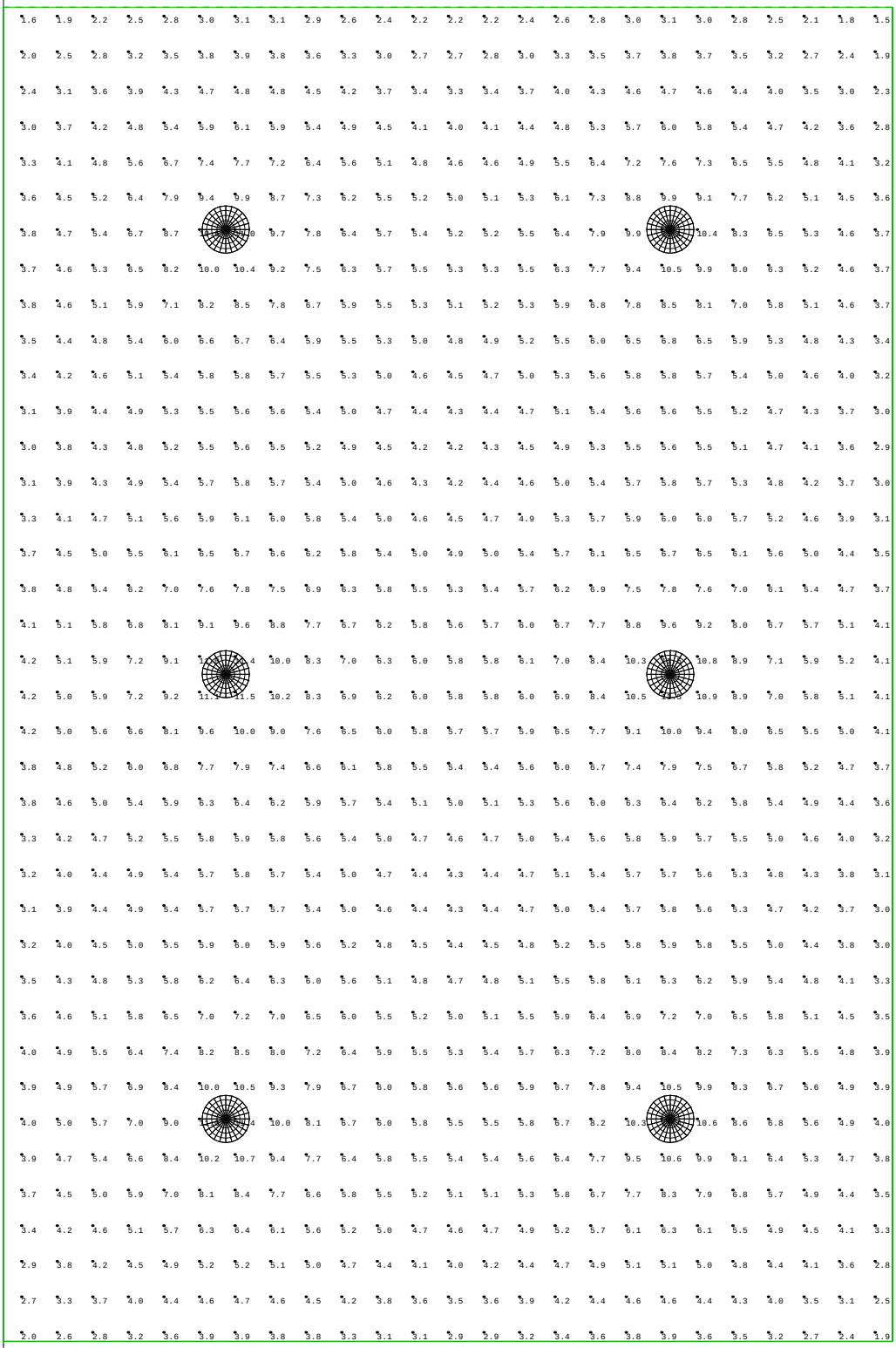

View of point by point

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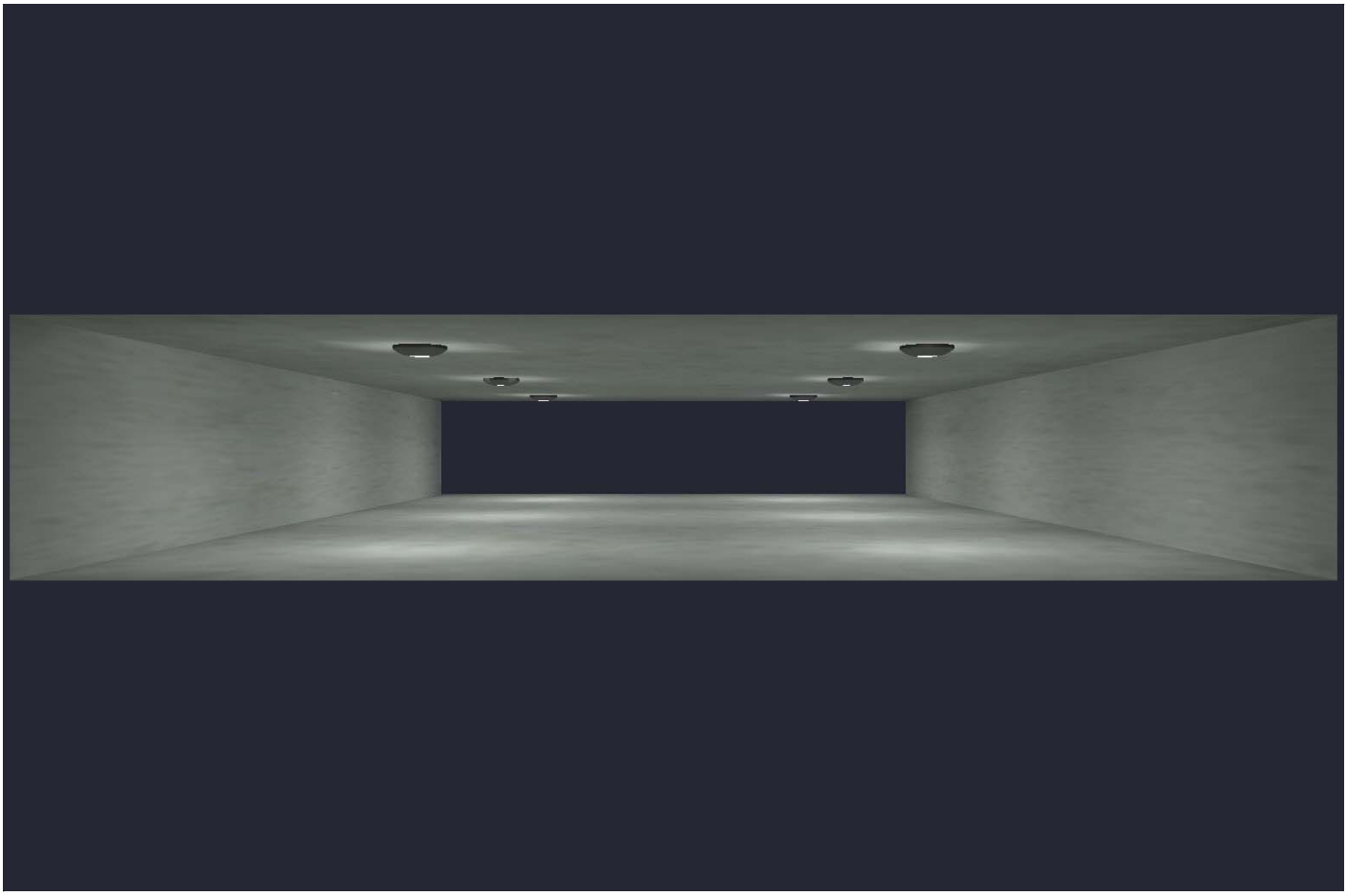

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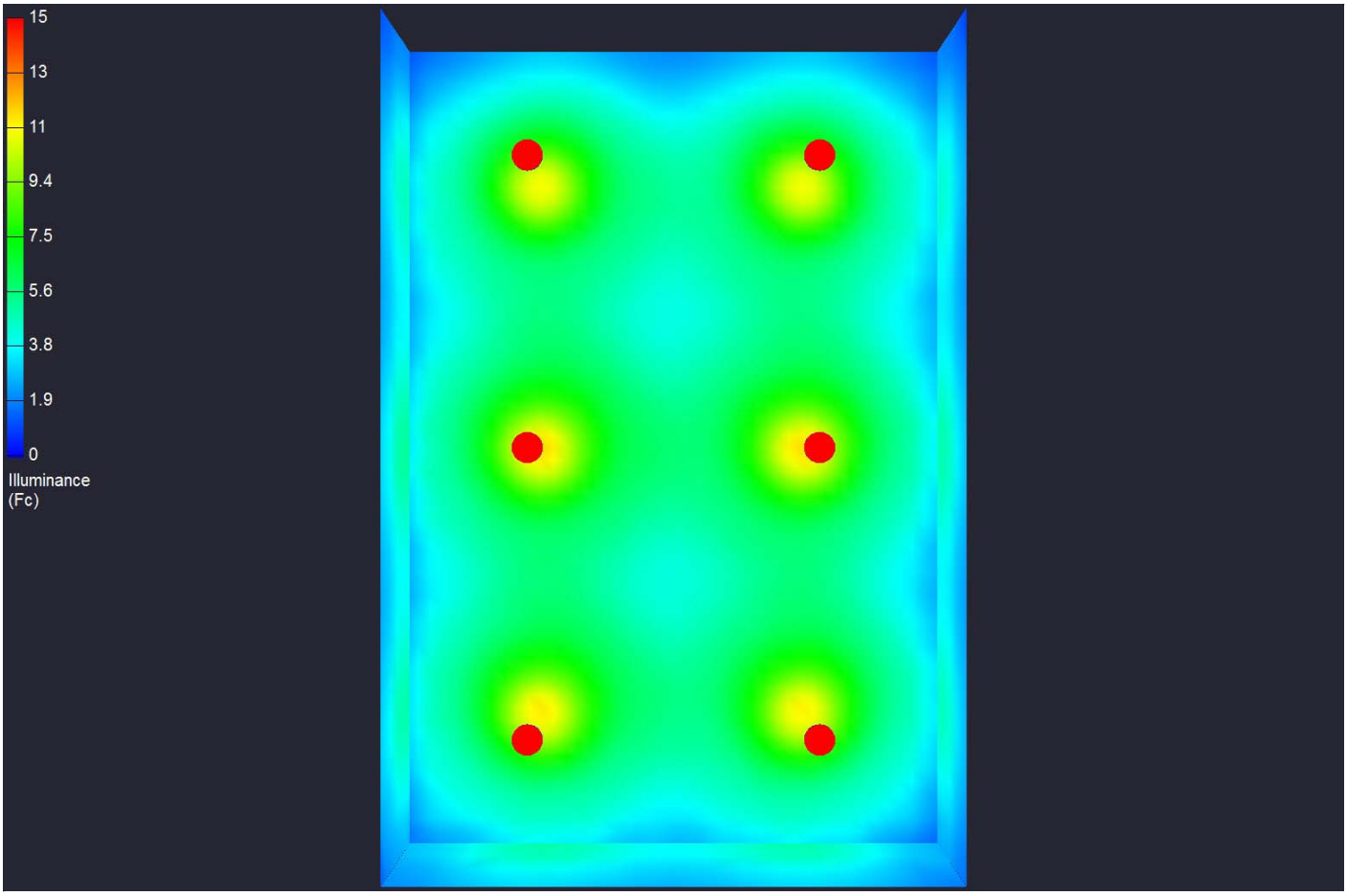

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Tucson Garages - Depot Plaza Garage
Main Parking Deck

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Date:12/2/2015

Luminaire Schedule					
Scene: High Level					
Symbol	**Qty**	**Label**	**Description**	**Lum. Lumens**	**LLF**
●	15	LFS-LB-30-JP-NW-1-BK-X	Lumecon 30W LFS-LB	3487	0.855

Calculation Summary							
Scene: High Level							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Main Parking_Floor	Illuminance	Fc	3.35	6.03	1.20	2.79	5.03

Scene Summary				
Scene: High Level				
Channel	Switched	Dimming	LumNo	Label
All	On	0.60	29	LFS-LB-30-JP-NW-1-BK-X
			30	LFS-LB-30-JP-NW-1-BK-X
			31	LFS-LB-30-JP-NW-1-BK-X
			32	LFS-LB-30-JP-NW-1-BK-X
			33	LFS-LB-30-JP-NW-1-BK-X
			40	LFS-LB-30-JP-NW-1-BK-X
			41	LFS-LB-30-JP-NW-1-BK-X
			42	LFS-LB-30-JP-NW-1-BK-X
			43	LFS-LB-30-JP-NW-1-BK-X
			44	LFS-LB-30-JP-NW-1-BK-X
			51	LFS-LB-30-JP-NW-1-BK-X
			52	LFS-LB-30-JP-NW-1-BK-X
			53	LFS-LB-30-JP-NW-1-BK-X
			54	LFS-LB-30-JP-NW-1-BK-X
			55	LFS-LB-30-JP-NW-1-BK-X

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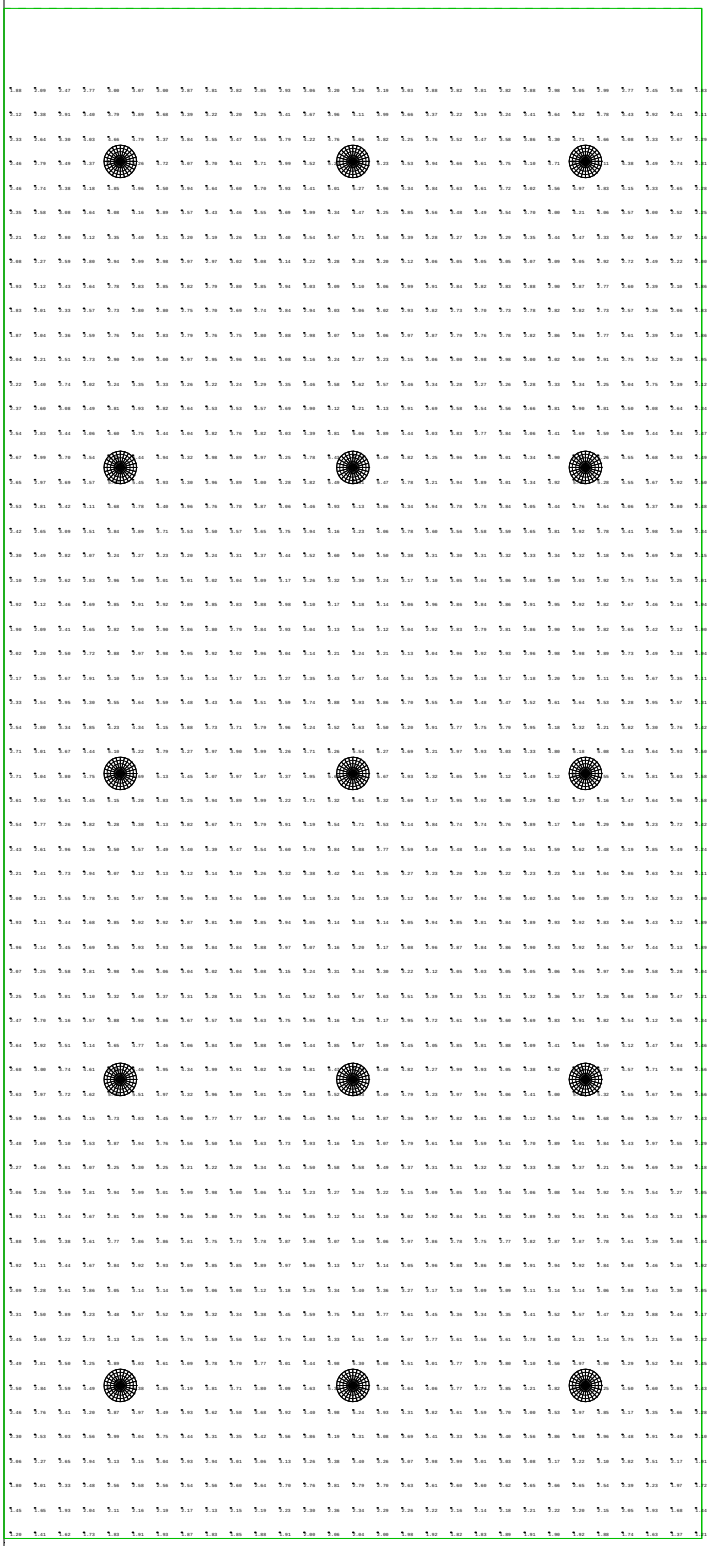

View of point by point

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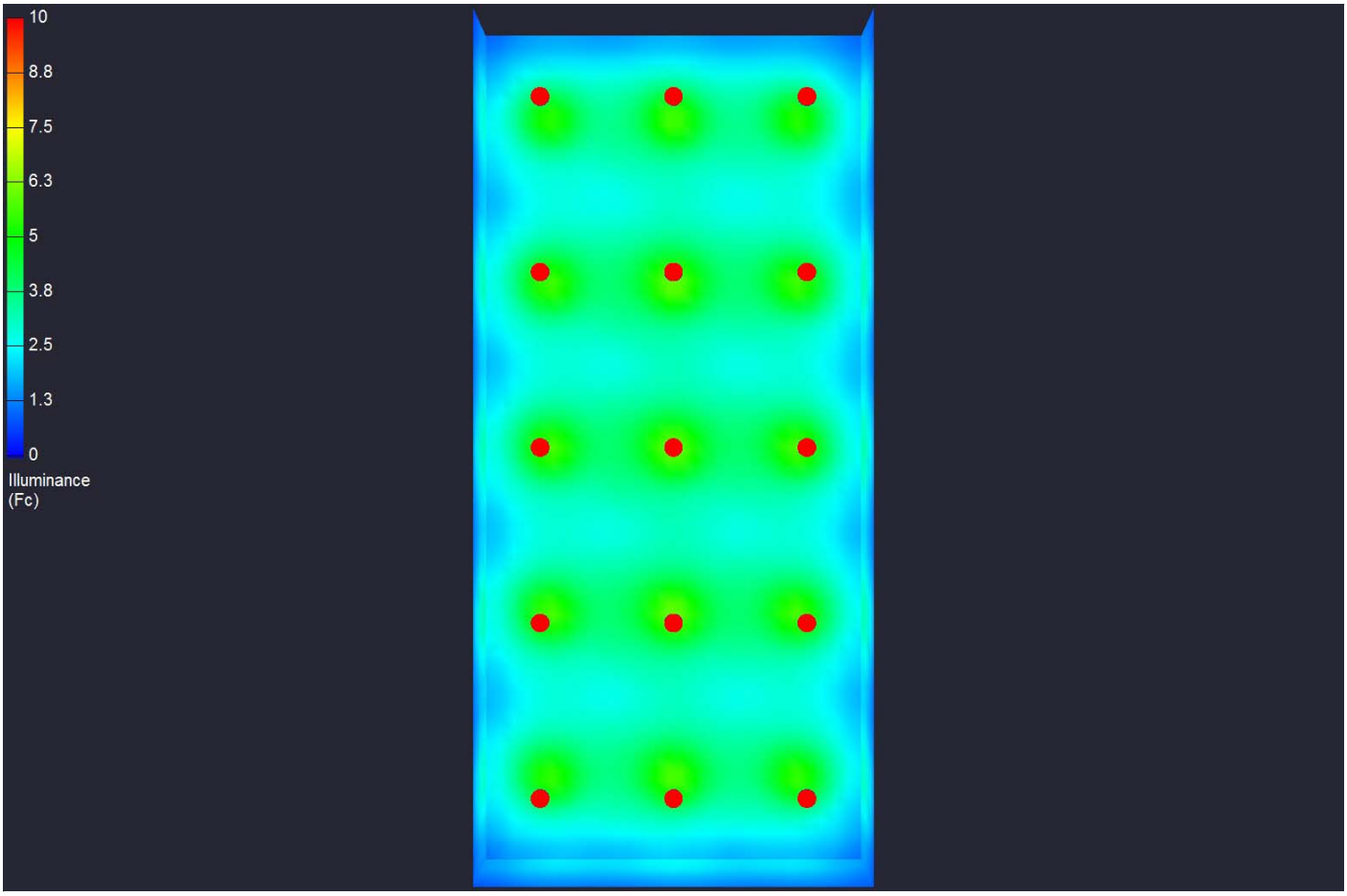

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El Centro Garage
Main Garage Deck

Retro-Tech Systems
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Date:11/23/2015

Luminaire Schedule					
Scene: High Level					
Symbol	**Qty**	**Label**	**Description**	**Lum. Lumens**	**LLF**
●	10	LFS-LB-30-JP-NW-1-BK-X		3487	0.855

Calculation Summary							
Scene: High Level							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Main Parking_Workplane	Illuminance	Fc	3.72	6.7	1.3	2.86	5.15

Scene Summary				
Scene: High Level				
Channel	Switched	Dimming	LumNo	Label
Tuned Level	On	0.60	11	LFS-LB-30-JP-NW-1-BK-X
			12	LFS-LB-30-JP-NW-1-BK-X
			13	LFS-LB-30-JP-NW-1-BK-X
			14	LFS-LB-30-JP-NW-1-BK-X
			15	LFS-LB-30-JP-NW-1-BK-X
			17	LFS-LB-30-JP-NW-1-BK-X
			18	LFS-LB-30-JP-NW-1-BK-X
			19	LFS-LB-30-JP-NW-1-BK-X
			20	LFS-LB-30-JP-NW-1-BK-X
			21	LFS-LB-30-JP-NW-1-BK-X

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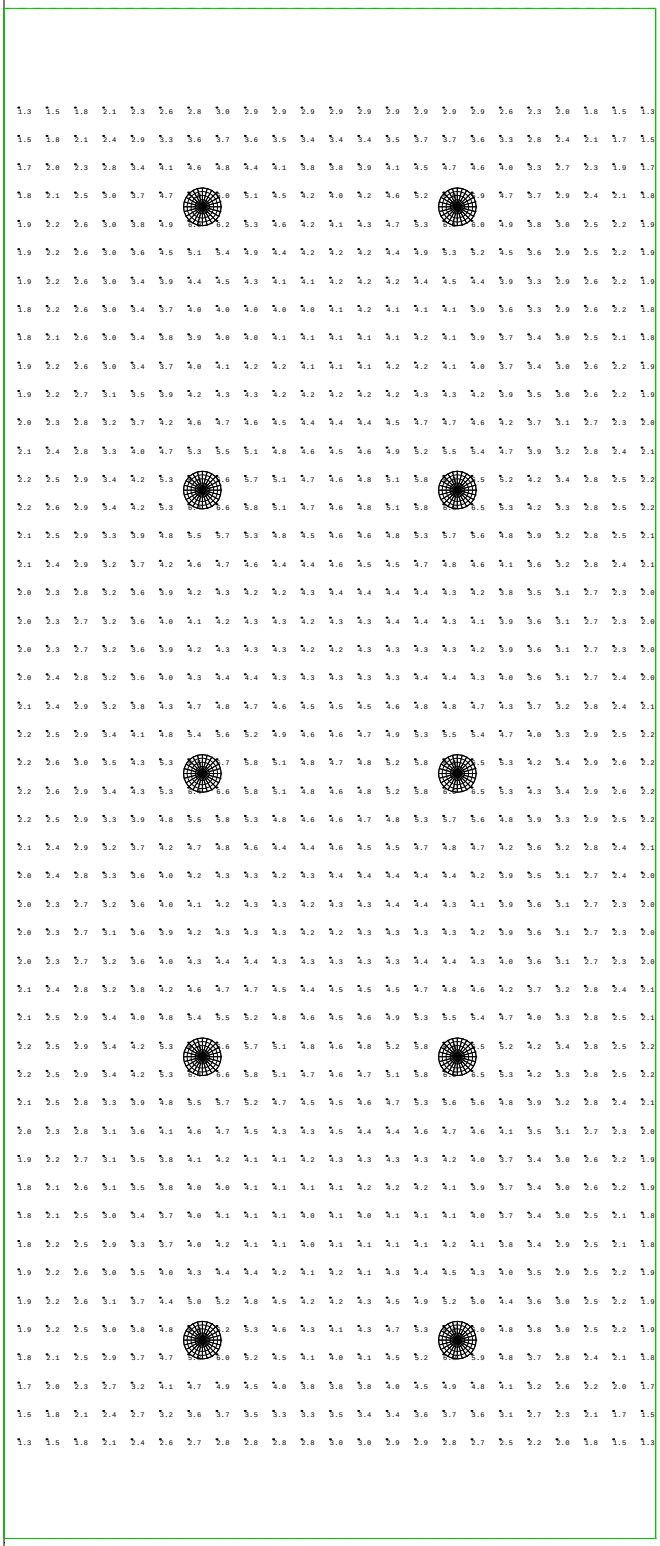

View of point by point

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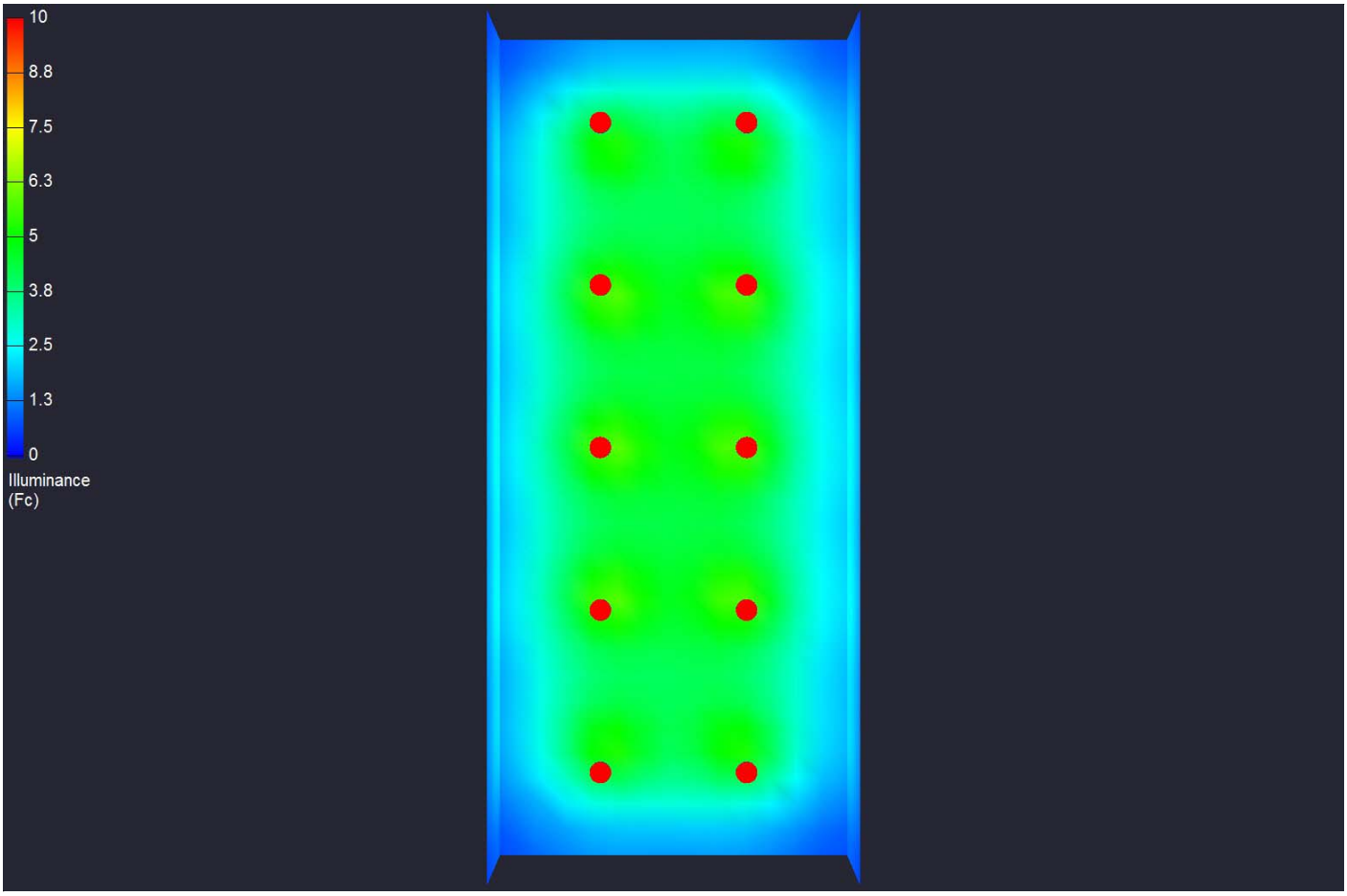

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Tucson Garages
La Entrada Garage Main Deck

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Luminaire Schedule					
Scene: Full Output					
Symbol	**Qty**	**Label**	**Description**	**Lum. Lumens**	**LLF**
●	34	LFS-LB-55-JP-NW-1-BK-X	Lumecon 55W LFS-LB	7029	0.855

Calculation Summary							
Scene: Full Output							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Main Parking_Floor	Illuminance	Fc	3.90	7.2	1.1	3.55	6.55

Scene Summary				
Scene: Full Output				
Channel	Switched	Dimming	LumNo	Label
All	On	0.70	42	LFS-LB-55-JP-NW-1-BK-X
			43	LFS-LB-55-JP-NW-1-BK-X
			44	LFS-LB-55-JP-NW-1-BK-X
			45	LFS-LB-55-JP-NW-1-BK-X
			46	LFS-LB-55-JP-NW-1-BK-X
			47	LFS-LB-55-JP-NW-1-BK-X
			48	LFS-LB-55-JP-NW-1-BK-X
			49	LFS-LB-55-JP-NW-1-BK-X
			50	LFS-LB-55-JP-NW-1-BK-X
			51	LFS-LB-55-JP-NW-1-BK-X
			52	LFS-LB-55-JP-NW-1-BK-X
			53	LFS-LB-55-JP-NW-1-BK-X
			54	LFS-LB-55-JP-NW-1-BK-X
			55	LFS-LB-55-JP-NW-1-BK-X
			56	LFS-LB-55-JP-NW-1-BK-X
			57	LFS-LB-55-JP-NW-1-BK-X
			58	LFS-LB-55-JP-NW-1-BK-X
			59	LFS-LB-55-JP-NW-1-BK-X
			68	LFS-LB-55-JP-NW-1-BK-X
			71	LFS-LB-55-JP-NW-1-BK-X
			73	LFS-LB-55-JP-NW-1-BK-X
			74	LFS-LB-55-JP-NW-1-BK-X
			75	LFS-LB-55-JP-NW-1-BK-X
			76	LFS-LB-55-JP-NW-1-BK-X
			77	LFS-LB-55-JP-NW-1-BK-X
			78	LFS-LB-55-JP-NW-1-BK-X
			79	LFS-LB-55-JP-NW-1-BK-X
			80	LFS-LB-55-JP-NW-1-BK-X
			82	LFS-LB-55-JP-NW-1-BK-X
			83	LFS-LB-55-JP-NW-1-BK-X
			84	LFS-LB-55-JP-NW-1-BK-X
			85	LFS-LB-55-JP-NW-1-BK-X
			86	LFS-LB-55-JP-NW-1-BK-X
			87	LFS-LB-55-JP-NW-1-BK-X

Tucson Garages
La Entrada Garage Main Deck

Retro-Tech Systems
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Project Information Manager
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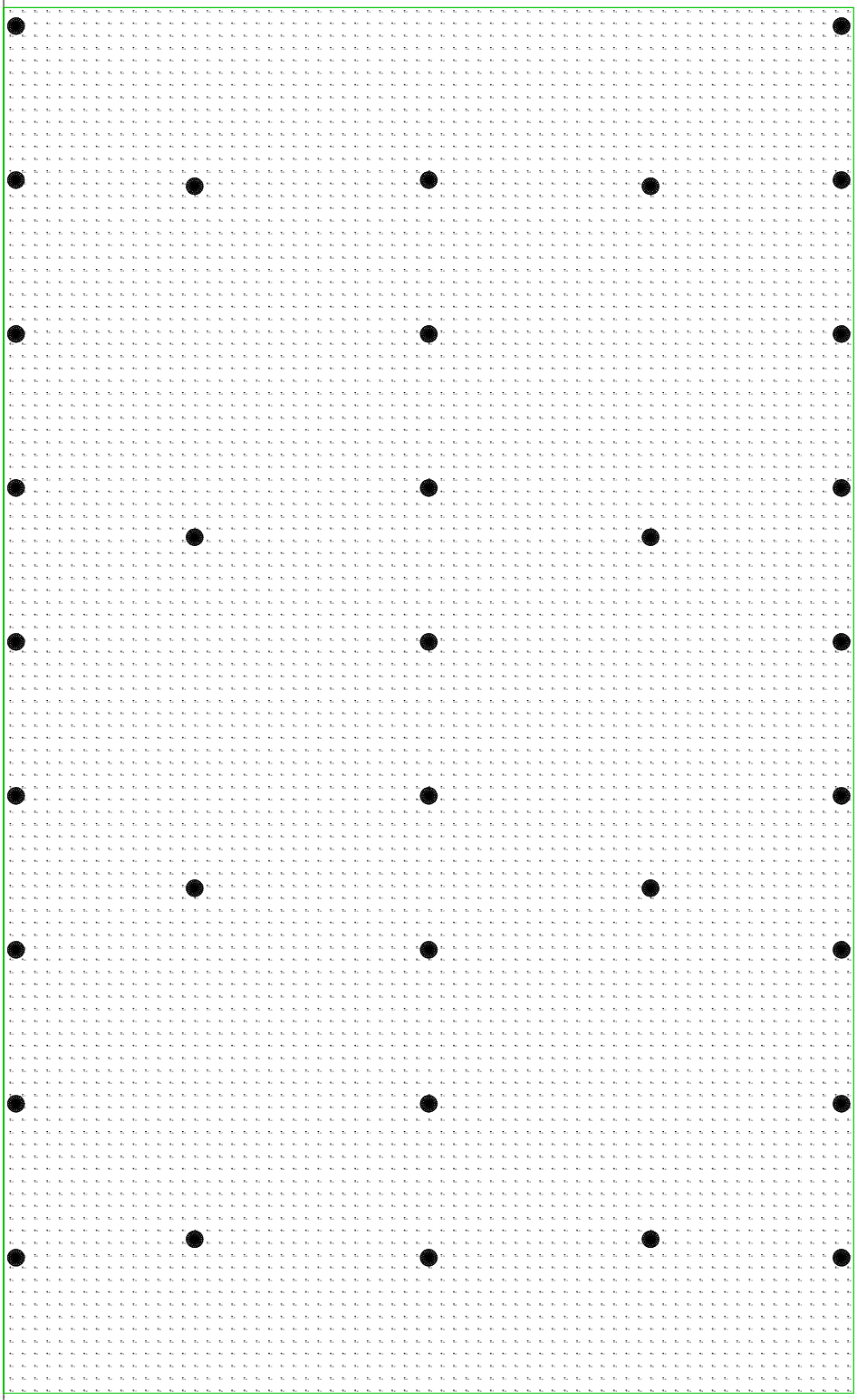
alan.ernstoff@retrotechsystems.com

Date:12/2/2015



View of point by point

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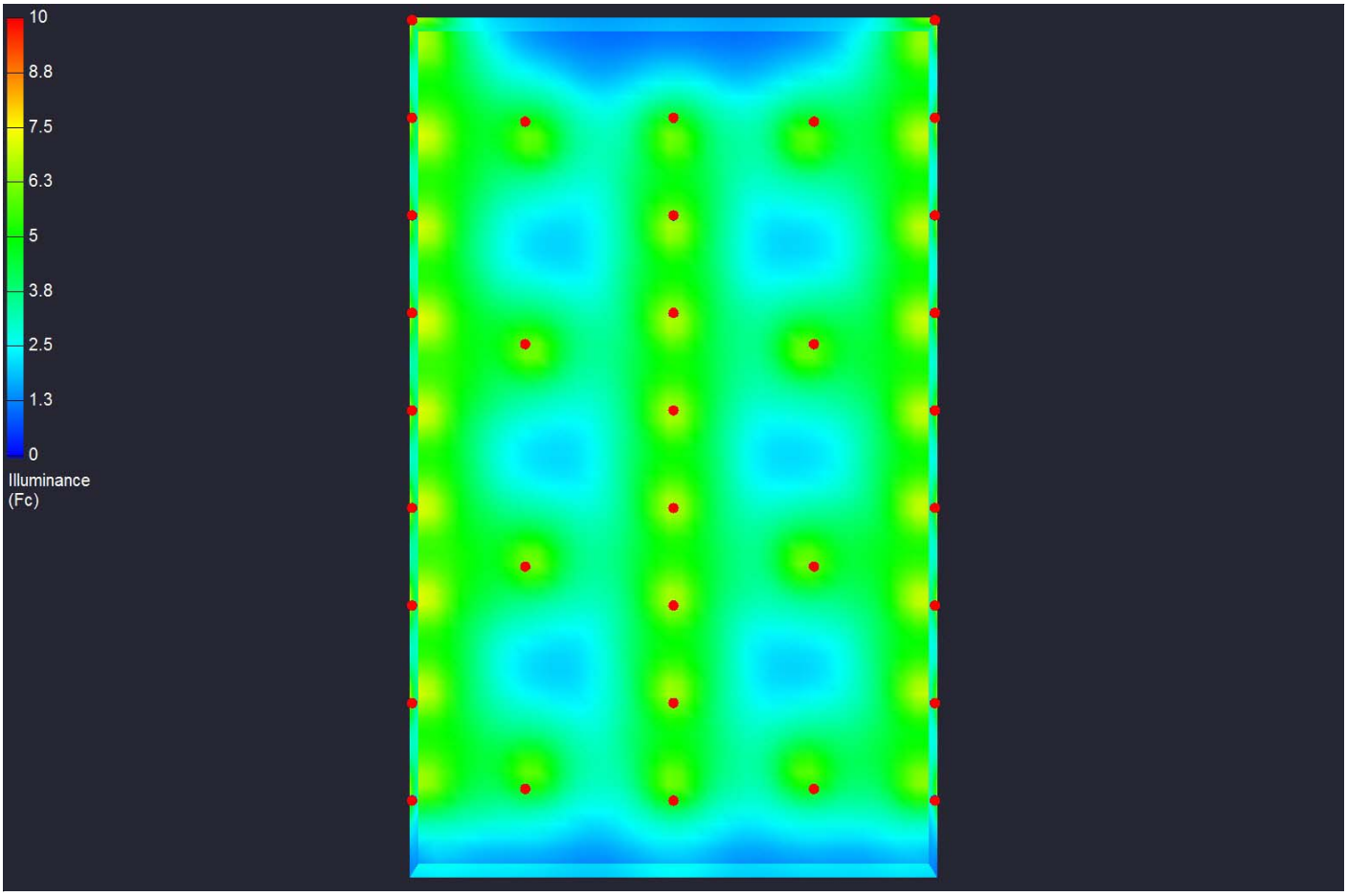

Render Image - View Name : Render

Tucson Garages
Main Library Garage
Main Deck - 1st Floor

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Date:12/2/2015

Luminaire Schedule					
Scene: Full Output					
Symbol	**Qty**	**Label**	**Description**	**Lum. Lumens**	**LLF**
●	11	LFS-LB-55-JP-NW-1-BK-X	Lumecon 55W LFS-LB	7029	0.855

Calculation Summary							
Scene: Full Output							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Main Parking_Floor	Illuminance	Fc	5.84	10.3	1.5	3.89	6.87

Scene Summary				
Scene: Full Output				
Channel	Switched	Dimming	LumNo	Label
All	On	0.60	23	LFS-LB-55-JP-NW-1-BK-X
			25	LFS-LB-55-JP-NW-1-BK-X
			26	LFS-LB-55-JP-NW-1-BK-X
			27	LFS-LB-55-JP-NW-1-BK-X
			28	LFS-LB-55-JP-NW-1-BK-X
			29	LFS-LB-55-JP-NW-1-BK-X
			30	LFS-LB-55-JP-NW-1-BK-X
			31	LFS-LB-55-JP-NW-1-BK-X
			32	LFS-LB-55-JP-NW-1-BK-X
			33	LFS-LB-55-JP-NW-1-BK-X
			34	LFS-LB-55-JP-NW-1-BK-X

Tucson Garages
Main Library Garage
Main Deck - 1st Floor

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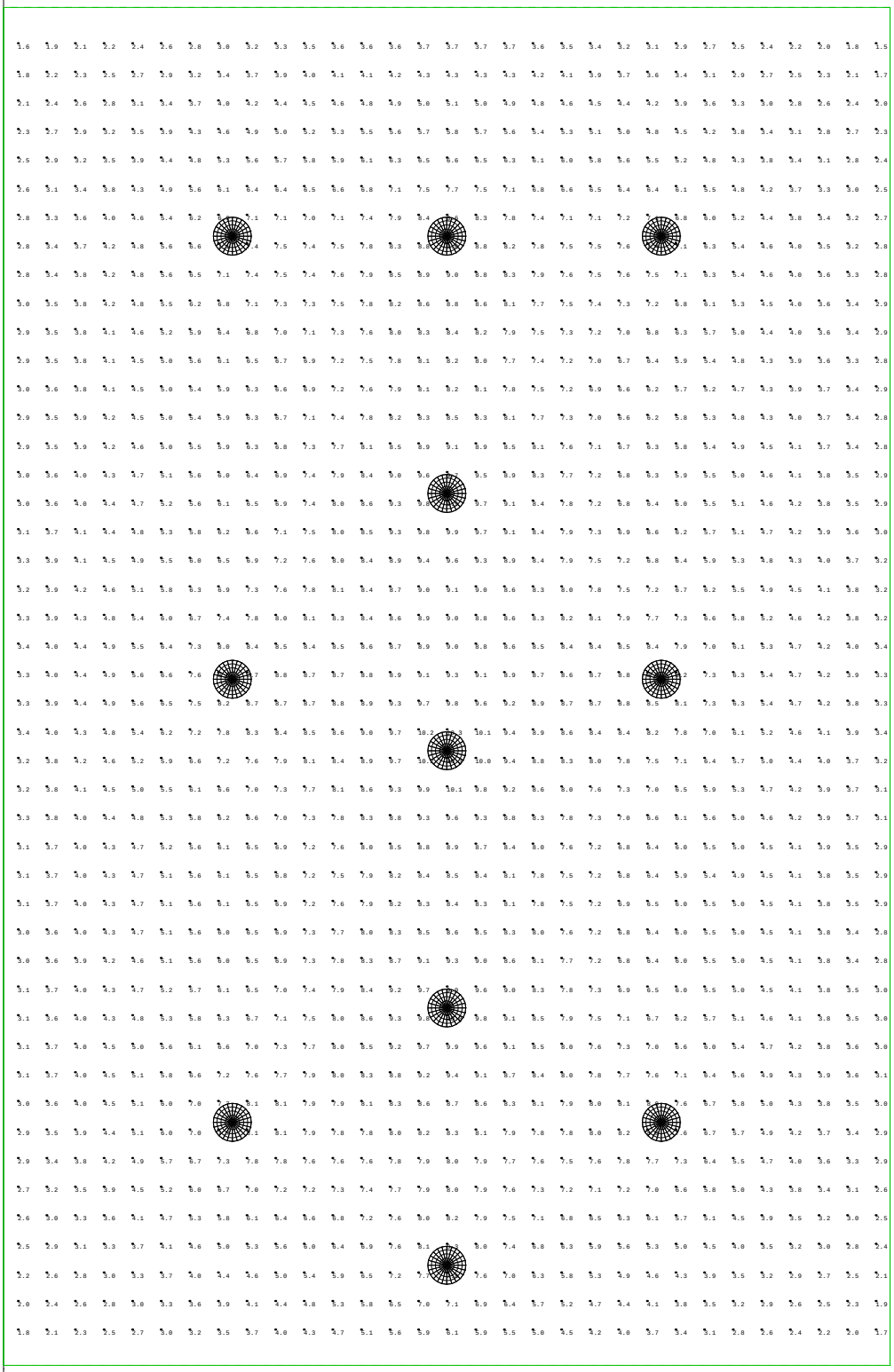

View of point by point

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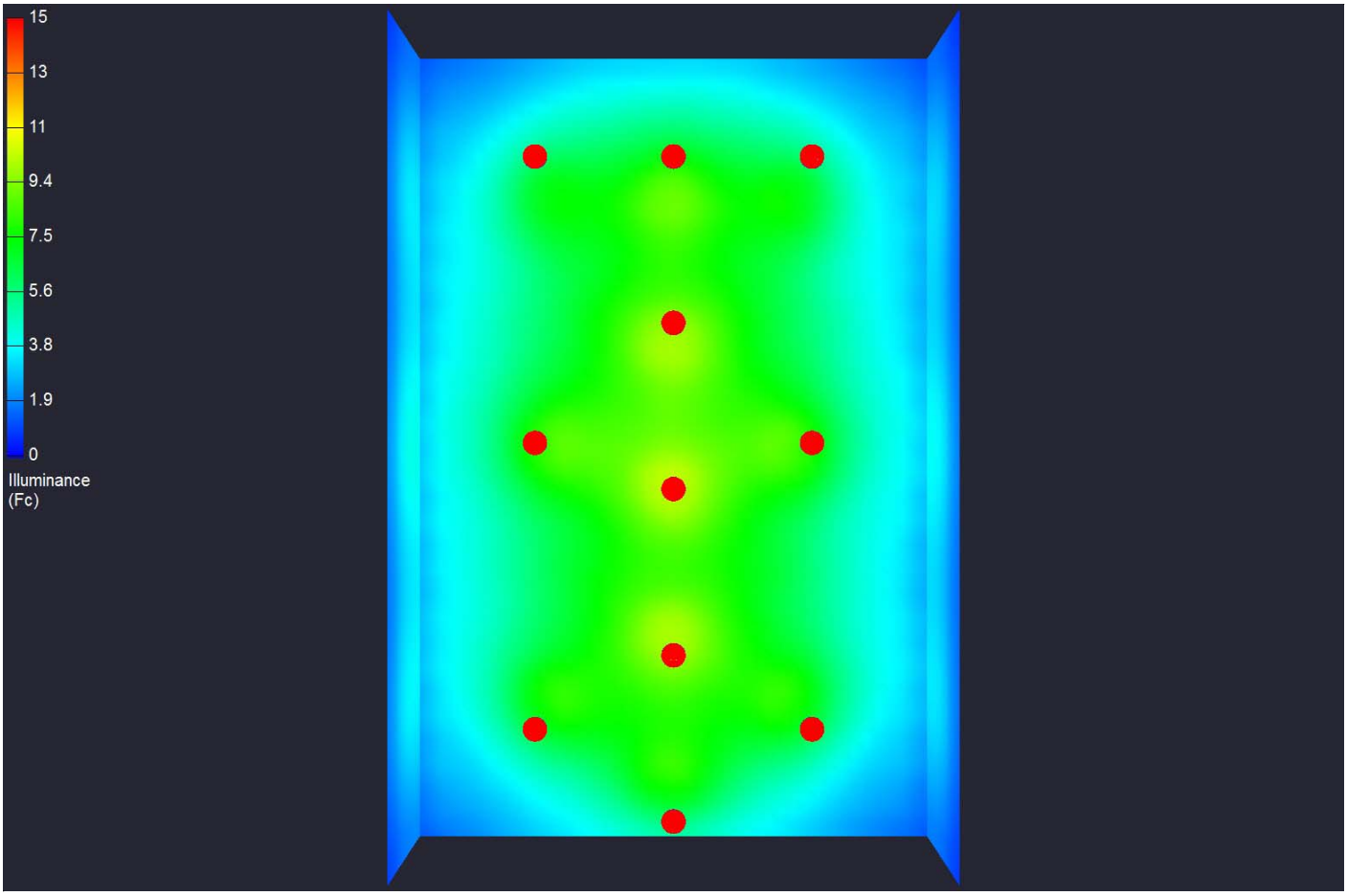

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Tucson Garages - Main Library Garage
Main Parking Deck
2nd & 3rd floors

Retro-Tech Systems
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Date:12/2/2015

Luminaire Schedule					
Scene: High Level					
Symbol	**Qty**	**Label**	**Description**	**Lum. Lumens**	**LLF**
●	6	LFS-LB-55-JP-NW-1-BK-X		7029	0.855

Calculation Summary							
Scene: High Level							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Main Parking_Floor	Illuminance	Fc	5.52	13.8	1.4	3.94	9.86

Scene Summary				
Scene: High Level				
Channel	Switched	Dimming	LumNo	Label
All	On	0.70	23	LFS-LB-55-JP-NW-1-BK-X
			29	LFS-LB-55-JP-NW-1-BK-X
			30	LFS-LB-55-JP-NW-1-BK-X
			31	LFS-LB-55-JP-NW-1-BK-X
			32	LFS-LB-55-JP-NW-1-BK-X
			33	LFS-LB-55-JP-NW-1-BK-X

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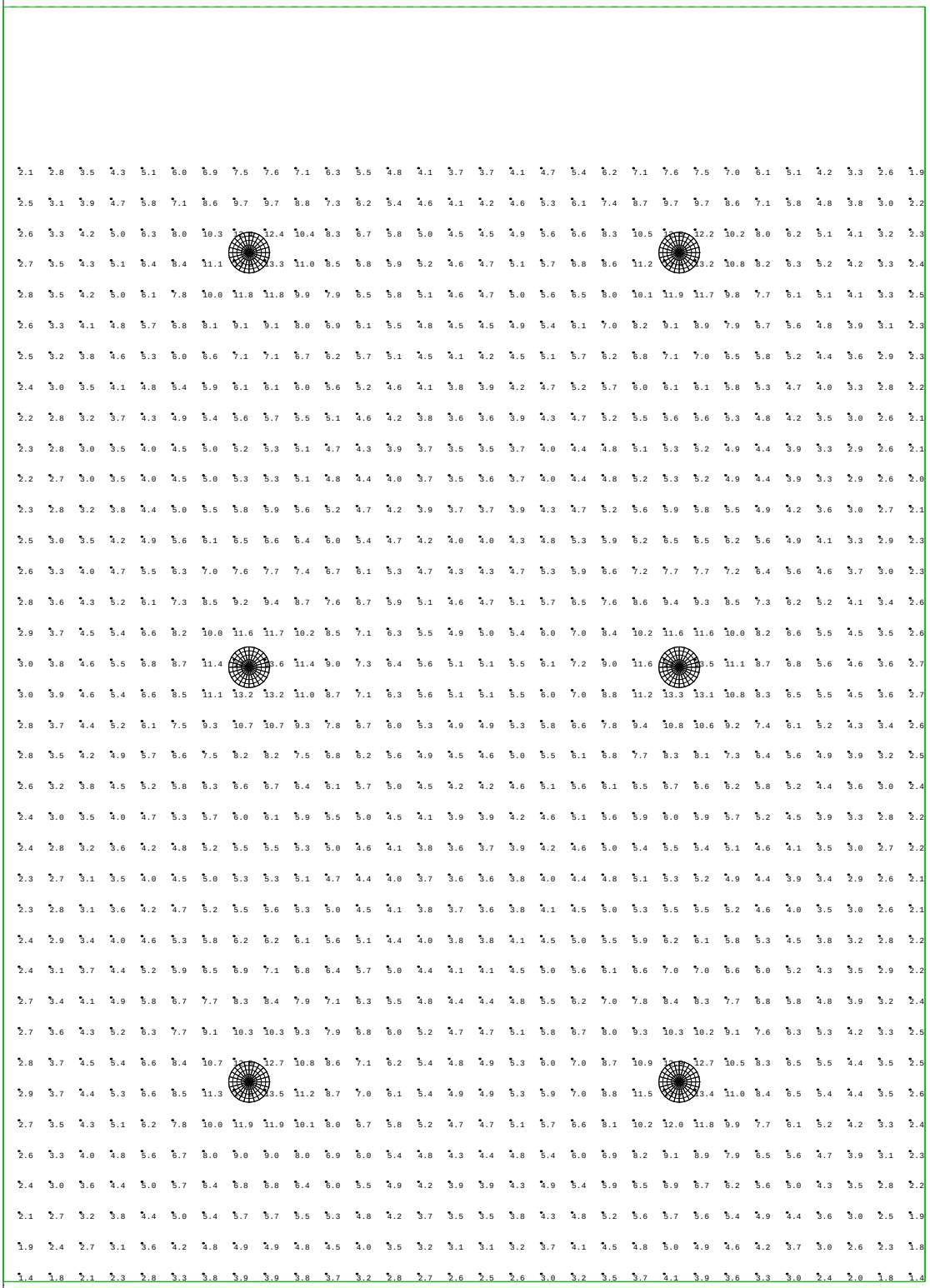
Date:12/2/2015



View of point by point

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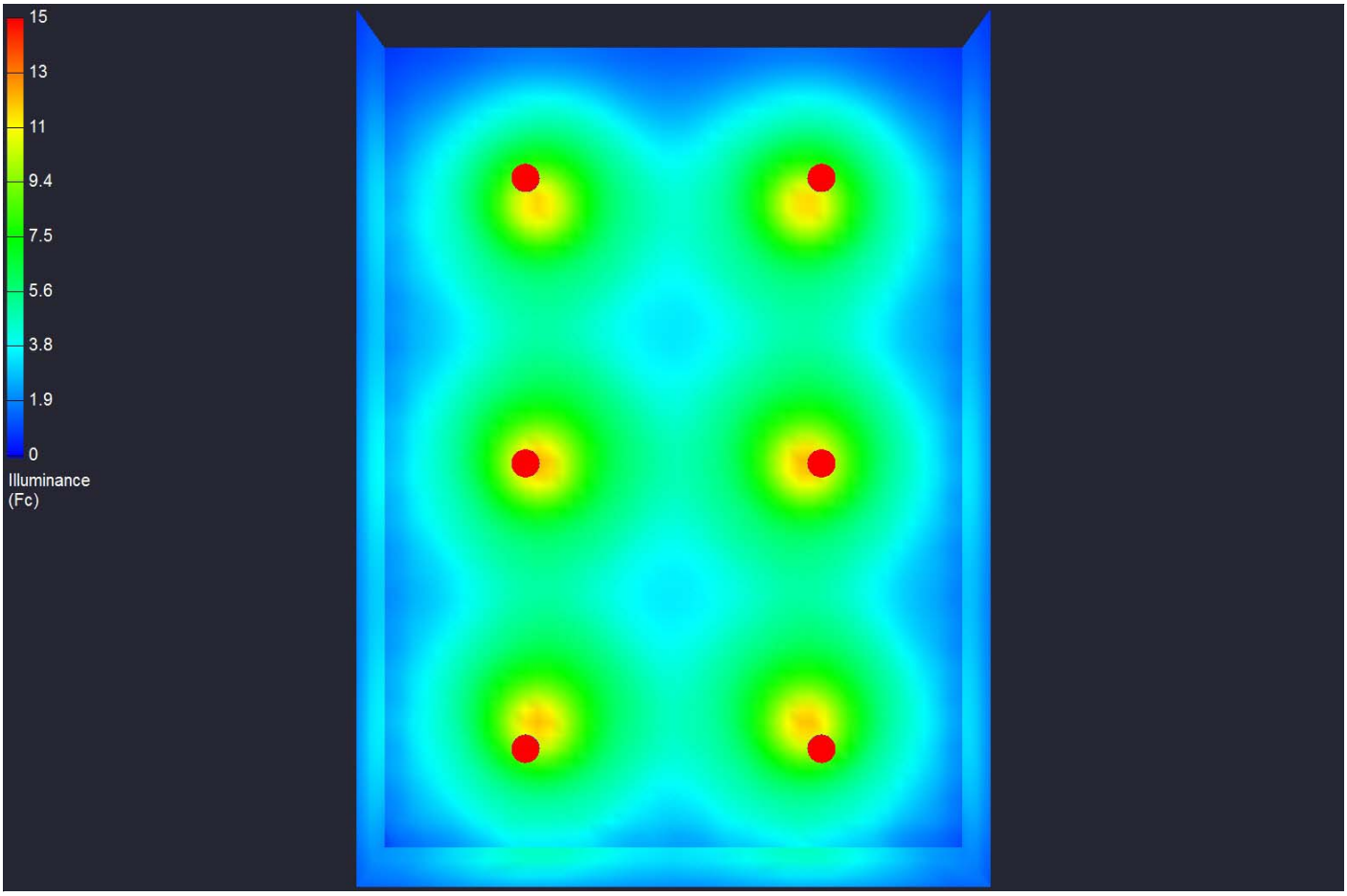

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B.2 Existing Equipment

Observed Model	Observed Type	Observed Wattage	Count of POINT ID
Cobrahead	**HPS**	100	1014
		150	796
		250	1555
		400	10050
	HPS Total		**13415**
	LED	53	921
		81	38
		83	2
		117	32
		185	33
		215	49
	LED Total		**1075**
	LPS	50	28
		90	2809
		135	27
		180	49
	LPS Total		**2913**
Cobrahead Total			**17403**
Cobrahead - McGrawEdison	**HPS**	400	154
	HPS Total		**154**
Cobrahead - McGrawEdison Total			**154**
Decorative - Bollard	**LPS**	55	10
	LPS Total		**10**
Decorative - Bollard Total			**10**
Decorative - Globe	**FL**	20	1066
	FL Total		**1066**
Decorative - Globe Total			**1066**
Decorative - Pendant Acorn	**FL**	20	60
	FL Total		**60**
	LED	18	14
	LED Total		**14**
Decorative - Pendant Acorn Total			**74**
Decorative - Posttop	**HPS**	100	268
	HPS Total		**268**
Decorative - Posttop Total			**268**
Decorative - Posttop Acorn 20	**FL**	20	294
	FL Total		**294**
Decorative - Posttop Acorn 20 Total			**294**
Decorative - Radius Tube	**HPS**	150	8
	HPS Total		**8**
Decorative - Radius Tube Total			**8**
Decorative - WallMount	**FL**	55	25
	FL Total		**25**
Decorative - WallMount Total			**25**

Pendant - Bell 400	**HPS**	400	39
	HPS Total		**39**
Pendant - Bell 400 Total			**39**
Pendant - Bell Scott 85	**IND**	85	106
	IND Total		**106**
Pendant - Bell Scott 85 Total			**106**
Pendant - SC 400	**HPS**	400	51
	HPS Total		**51**
Pendant - SC 400 Total			**51**
Pendant - SC 400 Cushing	**HPS**	400	36
	HPS Total		**36**
Pendant - SC 400 Cushing Total			**36**
Pendant - SC 70	**MH**	70	45
	MH Total		**45**
Pendant - SC 70 Total			**45**
Pendant - SC 70 Cushing	**MH**	70	41
	MH Total		**41**
Pendant - SC 70 Cushing Total			**41**
Shoebox	**HPS**	150	22
		250	332
		400	101
	HPS Total		**455**
Shoebox Total			**455**
Wall Pak	**HPS**	150	106
	HPS Total		**106**
	MH	70	63
		100	37
	MH Total		**100**
Wall Pak Total			**206**
Grand Total			**20281**

C.1 Utility Account Summary

Sum of Cost	Column Labels												
Row Labels	**201406**	**201407**	**201408**	**201409**	**201410**	**201411**	**201412**	**201501**	**201502**	**201503**	**201504**	**201505**	**Grand Total**
10	$ 95,416	$ 104,051	$ 111,791	$ 104,916	$ 88,546	$ 88,340	$ 90,827	$ 87,406	$ 67,652	$ 77,178	$ 76,591	$ 92,112	$ 1,084,826
41	$ 166,350	$ 169,146	$ 181,446	$ 193,958	$ 202,713	$ 226,946	$ 253,303	$ 223,738	$ 203,977	$ 195,579	$ 185,190	$ 182,730	$ 2,385,077
47	$ 16,000	$ 15,905	$ 17,820	$ 18,297	$ 19,123	$ 22,175	$ 23,636	$ 20,280	$ 19,128	$ 19,152	$ 18,460	$ 19,064	$ 229,040
Grand Total	**$ 277,767**	**$ 289,101**	**$ 311,058**	**$ 317,171**	**$ 310,382**	**$ 337,462**	**$ 367,766**	**$ 331,424**	**$ 290,756**	**$ 291,909**	**$ 280,241**	**$ 293,905**	**$ 3,698,943**

RATE 10 ($$$)

Rate-Place-Account Number	201406	201407	201408	201409	201410	201411	201412	201501	201502	201503	201504	201505	Grand Total
10	$ 48,913	$ 54,811	$ 56,186	$ 55,559	$ 46,550	$ 44,770	$ 48,869	$ 48,759	$ 31,408	$ 37,418	$ 36,037	$ 40,536	$ 549,816
2nd Str & Cherry Ave	**36.44**	**37.71**	**40.05**	**44.83**	**40.15**	**39.71**	**44.73**	**46.72**	**41.8**	**39.82**	**40.03**	**42.63**	**494.62**
2910000902	36.44	37.71	40.05	44.83	40.15	39.71	44.73	46.72	41.8	39.82	40.03	42.63	494.62
2nd Str & Highland Ave	**37.97**	**38.25**	**40.17**	**45.95**	**40.54**	**41.01**	**46.16**	**47.18**	**41.2**	**39.69**	**40.63**	**43.04**	**501.79**
7010001125	37.97	38.25	40.17	45.95	40.54	41.01	46.16	47.18	41.2	39.69	40.63	43.04	501.79
2nd Str & Olive Rd	**35.6**	**37.01**	**40.05**	**44.83**	**38.44**	**38.76**	**43.23**	**41.69**	**38.63**	**33.97**	**33.23**	**36.46**	**461.9**
7010001255	35.6	37.01	40.05	44.83	38.44	38.76	43.23	41.69	38.63	33.97	33.23	36.46	461.9
4th Ave & 4th Str	**40.2**	**45.08**	**50.85**	**48.69**	**45.85**	**52.22**	**54.78**	**48.09**	**46.11**	**47.11**	**46.83**	**52.94**	**578.75**
2910000685	40.2	45.08	50.85	48.69	45.85	52.22	54.78	48.09	46.11	47.11	46.83	52.94	578.75
4th Ave & 6th Str	**40.59**	**42.86**	**49.88**	**49.88**	**50.89**	**55.51**	**64**	**57.67**	**53.26**	**58.87**	**60.61**	**65.31**	**649.33**
2910000524	40.59	42.86	49.88	49.88	50.89	55.51	64	57.67	53.26	58.87	60.61	65.31	649.33
4th Ave & 9th Str	**41.6**	**41.33**	**46.79**	**48.64**	**44.11**	**48.6**	**52.68**	**46.35**	**44.47**	**45.43**	**45.14**	**49.53**	**554.67**
2910000864	41.6	41.33	46.79	48.64	44.11	48.6	52.68	46.35	44.47	45.43	45.14	49.53	554.67
ADC & Congress Str	**33.23**	**34.73**	**37.96**	**35.85**	**34.19**	**38.2**	**38.11**	**37.02**	**34.45**	**36.33**	**35.36**	**38.79**	**434.22**
2410000676	33.23	34.73	37.96	35.85	34.19	38.2	38.11	37.02	34.45	36.33	35.36	38.79	434.22
Broadway & Church Ave	**29.34**	**31.06**	**33.6**	**31.45**	**28.96**	**31.79**	**32.47**	**30.95**	**29.21**	**30.72**	**30.28**	**32.75**	**372.58**
2910000296	29.34	31.06	33.6	31.45	28.96	31.79	32.47	30.95	29.21	30.72	30.28	32.75	372.58
Broadway & Granada Ave	**65.92**	**68.62**	**78.12**	**75.13**	**71.09**	**79.55**	**73.12**	**85.82**	**70.68**	**73.55**	**74.17**	**79.94**	**895.71**
2410000306	33.23	34.31	39.21	38.32	36.07	40.3	33.65	47.98	35.3	36.95	38.06	41.88	455.26
2410000394	32.69	34.31	38.91	36.81	35.02	39.25	39.47	37.84	35.38	36.6	36.11	38.06	440.45
Broadway & 6th Ave	**31.83**	**34.31**	**18.01**	**54.09**	**33.97**	**37.4**	**37.4**	**33.62**	**32.56**	**33.71**	**32.28**	**34.2**	**413.38**
2910000079	31.83	34.31	18.01	54.09	33.97	37.4	37.4	33.62	32.56	33.71	32.28	34.2	413.38
Congress Str & 6th Ave	**30.82**	**32.01**	**18.01**	**49.1**	**31.5**	**35**	**36.08**	**32.57**	**31.1**	**32.19**	**31.81**	**37.56**	**397.75**
2910000185	30.82	32.01	18.01	49.1	31.5	35	36.08	32.57	31.1	32.19	31.81	37.56	397.75
Congress Str & Church Ave	**29.6**	**30.94**	**33.89**	**31.74**	**30.48**	**33.79**	**34.82**	**31.42**	**30.6**	**32.04**	**31.78**	**34.37**	**385.47**
2910000882	29.6	30.94	33.89	31.74	30.48	33.79	34.82	31.42	30.6	32.04	31.78	34.37	385.47
Congress Str & Stone Ave	**26.26**	**28.84**	**30.23**	**23.27**	**22.06**	**22.99**	**23.11**	**21.95**	**19.25**	**20.49**	**20.54**	**22.57**	**281.56**
2910000497	26.26	28.84	30.23	23.27	22.06	22.99	23.11	21.95	19.25	20.49	20.54	22.57	281.56
Cushing Str & ADC	**22.48**	**35.71**	**40.33**	**36.1**	**34.19**	**37.75**	**37.65**	**36.65**	**34.32**	**35.75**	**35.23**	**41.88**	**428.04**
2410000424	22.48	35.71	40.33	36.1	34.19	37.75	37.65	36.65	34.32	35.75	35.23	41.88	428.04
Cushing Str & I-10	**47.86**	**48.49**	**58.13**	**56.56**	**53.34**	**61.56**	**61.46**	**59.07**	**53.72**	**54.28**	**53.57**	**60.91**	**668.95**
2910000929	47.86	48.49	58.13	56.56	53.34	61.56	61.46	59.07	53.72	54.28	53.57	60.91	668.95
Granada Ave & Cushing Str	**57.32**	**60.26**	**66.87**	**62.89**	**58.93**	**70.8**	**71.27**	**67.48**	**60.7**	**60.67**	**59.75**	**68.25**	**765.19**
2910000168	57.32	60.26	66.87	62.89	58.93	70.8	71.27	67.48	60.7	60.67	59.75	68.25	765.19
Helen Str & Warren Ave	**58.49**	**58.39**	**61.03**	**65.36**	**55.41**	**55.59**	**60.41**	**61.06**	**55.79**	**54.51**	**58.29**	**60.77**	**705.1**
7010001350	23.45	23.05	22.51	22.63	18.69	18.21	18.46	18.55	18.07	18.07	20.49	21.09	243.27
7010001763	35.04	35.34	38.52	42.73	36.72	37.38	41.95	42.51	37.72	36.44	37.8	39.68	461.83
Median Island (Broadway/Alvernon Quadrants)	**236.08**	**234.2**	**237.57**	**222.3**	**205.59**	**206.45**	**205.22**	**204.53**	**204.15**	**227.45**	**227.62**	**237.4**	**2648.56**
410001502	57.96	57.96	58.41	58.41	49.36	49.41	49.42	49.39	49.38	52.42	52.42	60.43	644.97
410005054	20.84	20.84	21	21	18.24	18.26	18.26	18.24	18.24	20.55	20.55	21.13	237.15
810005011	24.86	22.29	23.99	25.64	20.93	21.44	20.04	19.71	19.44	21.68	21.68	22.63	264.33
1610003912	17.89	18.01	19.2	15.77	15.77	15.87	16.05	15.94	15.94	18.09	18.21	18.13	204.87

1610004265	18.22	18.5	18.37	16.11	16.16	16.16	16.15	16.14	16.04	18.43	18.32	18.38	206.98
2010000330	17.89	17.89	17.89	15.65	15.65	15.65	15.65	15.63	15.63	17.88	17.88	17.88	201.17
2010000556	24.5	24.67	24.67	22.39	22.29	22.37	22.37	22.26	22.26	24.43	24.57	24.8	281.58
2010005461	17.89	17.89	17.89	15.65	15.65	15.65	15.65	15.63	15.63	17.88	17.88	17.88	201.17
2010008678	17.89	18.01	18.01	15.77	15.77	15.77	15.76	15.73	15.73	18	18	18	202.44
2010009902	18.14	18.14	18.14	15.91	15.77	15.87	15.87	15.86	15.86	18.09	18.11	18.14	203.9
Signals	**219.15**	**213.7**	**215.32**	**230.81**	**202.16**	**199.11**	**226.95**	**228.75**	**200.02**	**201.58**	**201.73**	**218.25**	**2557.53**
2910000248	26.83	26.14	25.57	21.21	20.17	20.88	21.01	20.16	20.16	22.55	22.98	25.2	272.86
2910000470	25.84	25.44	25.44	21.43	21	20.54	20.88	20.07	20.07	22.79	23.09	25.08	271.67
2910000688	143.16	139.07	141.8	165.66	142.14	139.23	166.5	169.85	141.6	138.05	135.05	146.88	1768.99
2910000709	23.32	23.05	22.51	22.51	18.85	18.46	18.56	18.67	18.19	18.19	20.61	21.09	244.01
Street Lights	**3519.19**	**3206.04**	**3783.38**	**3808.33**	**3830.87**	**4447.45**	**4875.3**	**3943.93**	**3804.77**	**3856.12**	**3715.24**	**3827.49**	**46618.11**
410003511	17.89	17.89	18.01	18.01	15.77	15.77	15.77	15.76	15.73	15.73	18	18	202.33
810000738			126.64	149.05	136.79	169.06	180.03	151.28	142.9	138.09	127.94	151.72	1473.5
1210000317	517.38	487.28	535.18	600.82	540.24	619.31	693.04	563.9	562.64	497.22	473.1	513.72	6603.83
1610000250	167.31	143.63	171.26	173.89	167.83	175.2	194.61	161.29	143.6	138.25	126.96	140.92	1904.75
1610001437	124.19	116.8	127.97	128.42	135.63	140.66	160.05	129.67	130.87	129.63	114.47	127.21	1565.57
2010007701	18.22	18.62	18.5	16.24	16.16	16.16	16.27	16.14	16.14	18.3	18.42	18.63	207.8
2410001958	18.26	18.26	18.26	18.57	18.03	18.03	18.03	18.02	18.02	18.7	18.9	19.44	220.52
2410009662	46.32	66.99	72.16	76.91	66.38	64.26	70.6	62.11	59.99	59.14	59.06	66.86	770.78
2910000050	538.98	546.6	638.89	617.66	554.28	640.82	709.36	569.35	526.49	544.37	446.98	414.62	6748.4
2910000282	195.95	199.59	210.27	178.37	282.64	523.87	558.56	461	429.67	680.39	623.17	714.02	5057.5
2910000395	63.82	64.91	73.96	70.32	66.58	80.86	81.56	67.36	62.72	60.79	58.41	63.84	815.13
2910000592	70.7	72.08	83.56	79.67	73.6	87.02	91.25	52.29	92.42		136.41	18	857
2910000828	334.56	340.82	398.25	378.24	462.53	447.86	477.59	397.39	378.64	357.03	343.4	391.48	4707.79
2910004239	437.39	443.64	533.04	508.72	484.08	584	620.24	513.32	493.95	464.53	446.07	508.69	6037.67
2910008460	17.89	18.01	18.01	15.77	15.77	15.77	15.76	15.73	15.73	18	18	18	202.44
3710004370	911.36	611.26	697.86	735.78	757.63	811.73	930.2	709.38	677.88	679.56	647.53	598.95	8769.12
6610001720	38.97	39.66	41.56	41.89	36.93	37.07	42.38	39.94	37.38	36.39	38.42	43.39	473.98
Street Lights and Traffic Signals	**35640.47**	**41540.24**	**42001.77**	**40752.47**	**32474.78**	**29273.41**	**32289.03**	**34164.97**	**18021.13**	**24247.41**	**23121.05**	**26716.52**	**380243.25**
410005608	17.89	18.02	18.01	18.01	15.77	15.77	15.77	15.73	15.73	18	18	18	204.7
810000346	668.13	723.83	696.85	762.38	698.09	850.82	918.2	784.29	753.05	708.13	646.95	760.68	8971.4
1610007470	353.54	356.3	287.82	264.2	228.47	228.8	288.13	228.6	228.6	215.31	221.84	251.86	3153.47
2010000495	171.2	178.68	210.95	202.66	192.3	229.94	238.04	204.98	192.26	182.51	174.7	196.81	2375.03
2010001569	403.76	410.11	503.11	502.07	549.25	671.32	709.1	580.39	542.53	510.71	470.86	490.45	6343.66
2010001633	471.41	484.09	568.65	573.52	582.91	688.15	723.85	597.21	557.26	515.04	470.86	490.45	6723.4
2010003278	18.11	18.24		16.35	15.95	16.05	15.95	16.04	15.94	18.3	18.22	18.24	187.39
2010005795	18.6	18.62	18.72	16.44	16.27	16.35	16.45	16.26	16.26	18.62	18.54	18.73	209.86
2010006969	598.31	606.79	710.43	714.13	670.11	785.24	820.79	689.4	629.38	785.61	591.41	702.01	8303.61
2410000431	17.89	18.01	18.01	15.77	15.77	15.77	15.76	15.73	15.73	18	78.75	18.88	264.07
2410000630	33.53	33.18	35.68	30.41	34.57	37	40.05	35.65	35.65	35.47	34.62	36.56	422.37
2410000687	17.89	18.01	18.01	15.77	15.77	15.77	15.76	15.73	15.73	18	48.41	18	232.85
2410001494	183.82	172.68	189.44	205.04	174.35	190.36	197.63	166	164.76	150.62	147.21	163.63	2105.54
4910001155	30597.45	36400.71	36707.36	35243.89	27597.28	23962.1	26488.9	28986.81	13290.79	19563.76	18727.59	21926.86	319493.5

5810001483	44.05	45.47	47.63	48.09	43.73	44.17	48.85	42.85	43.22	41.15	44.55	47.4	541.16
6610005376	17.89	20.26	18.01	20.29	17.03	16.53	16.27	16.26	16.26	16.52	19.03	19.45	213.8
7010001058	193.2	184.89	192.74	228.78	203.18	203.82	243.65	250.4	203.4	188.24	178.06	186.43	2456.79
7010007412	60.64	57.21	58.01	66.21	56.29	56.39	63.37	64.04	55.57	55.96	54.78	59.87	708.34
7410002150	17.89	18.03	17.89	18.03	15.65	15.65	15.77	15.76	15.63	15.63	17.98	17.88	201.79
7410002801	18.14	18.14	18.14	18.14	15.87	15.95	15.87	15.94	15.86	15.86	18.09	18.13	204.13
7410004602	18.11	18.22	18.24	16.32		16.05	16.05	15.94		16.26	18.2	18.24	171.63
7910001882	68.8	75.05	73.13	78.09	68.08	73.05	84.22	71.1	65.52	61.94	64.67	69.17	852.82
8710000768	21.31	21.07	21.11	21.47	18.6	18.36	18.75	18.73	18.53	19.03	21.27	21.46	239.69
8710002669	1044.64	1088.95	985.79	985.79	636.96	475.74	543.8	572.56	514.29	514.29	507.43	619.7	8489.94
8710004788	517.83	490.09	521.85	622.43	550.39	571.65	673.64	687.81	561.75	503.64	467.01	484.8	6652.89
8710005867	17.89	17.89	18.01	18.01	15.77	15.77	15.77	15.76	15.73	15.73	18	18	202.33
8710007917	28.55	27.7	28.18	30.18	26.37	26.84	28.64	25	21.7	25.08	24.02	24.83	317.09
Traffic Signals	**7958.46**	**8268.11**	**8508.49**	**8818.58**	**8261.78**	**8789.55**	**9490.84**	**8527.82**	**7570.52**	**7374.99**	**7311.7**	**8019.38**	**98900.22**
410000790	166.21	176.73	180.52	216.95	180.38	213.2	211.79	203.04	176.27	167.92	160.52	199.14	2252.67
810000128	56.5	61.94	67.27	69.12	74.63	92.01	97.83	82.97	70.85	56.34	53.82	63.09	846.37
810000266	825.57	922.7	965.16	962.66	874.4	1043.4	1114.82	940.41	829.79	759.16	842.8	1013.12	11093.99
810000720	182.1	198.01	177.57	129.48	113.11	126.66	136.04	111.01	107.12	105.82	101.76	122.36	1611.04
810006888	95.12	102.84	115.39	112.12	102.97	124.9	132.18	111.5	95.8	93.76	83.88	106.85	1277.31
1210000131	188.45	177.49	191.53	204.47	173.8	193.29	217.06	182.59	186.16	171.41	168.24	188.46	2242.95
1210000488	69.06	66.29	67.67	68.75	59.97	65.79	72.18	62.92	63.04	60.3	59.08	65	780.05
1610000998	85.92	82.57	88.35	89.2	84.77	88.3	98.98	83.4	79.71	84.31	77.34	86.83	1029.68
1610003927	18.11	18.37	18.24	16	16.05	15.95	16.05	16.04	15.94	18.2	18.32	18.24	205.51
1610004474	84.02	90.54	150.6	158.58	152.45	158.59	91.73	36.56	104	148.15	133.73	113.69	1422.64
1610006624	18.22	18.37	18.37	16.11	15.95	16.05	16.05	16.04	16.04	18.2	18.32	18.38	206.1
2010002566	202	201.14	230.01	245	258.23	312.55	315.96	267.73	240.24	236	224.37	236.91	2970.14
2010006687	19.02	20.07	23.23	21.67	22.97	27.19	28.24	24	22.96	22.71	19.48	23.6	275.14
2410000058	69.98	70.86	80.48	75.18	70.45	83.03	81.32	77.86	69.02	68.55	67.17	76.89	890.79
2410000638	226.22	228.71	265.7	252.99	236.91	282.15	282.24	263.88	228.06	218.58	220.28	240.8	2946.52
2410000711	114.44	114.44	104.43	107.86	94.03	82.68	77.81	64.71	74.5	81.69	97.52	99.11	1113.22
2410001427	585.54	543.28	613.01	709.95	698.69	785.01	885.98	715.01	729.74	649.21	574.47	605.22	8095.11
2410004974	345.53	298.09	296.99	300.22	239.93	245	261.29	223.21	238.01	243.81	268.42	321.58	3282.08
2910000649	194.93	195.61	225.62	218.08	205.58	230.69	226.92	213.31	186.7	188.2	210.91	246.76	2543.31
3710000134	154.58	148.53	163.3	161.5	162.79	173.4	192.62	160.87	152.92	156.31	148.25	159.41	1934.48
3710000202	212.23	202.44	221.01	213.98	219.43	230.81	255.71	203.77	181.72	188.08	176.94	192.04	2498.16
3710000239	47.98	53.68	54.67	51.62	48.02	45.37	47.83	39.76	38.63	41.71	40.58	43.06	552.91
3710000405	138.63	149.76	152.98	127.24	117.15	147.84	185	153.87	146.13	141.48	150.02	152.29	1762.39
3710000406	58.61	56.93	60.26	55.62	55.36	57.5	62.09	54.07	52.19	55.3	53.34	55.84	677.11
3710000464	180.75	167.37	177.41	177.46	157.98	173.74	189.58	153.01	153.53	141.12	142.69	154.02	1968.66
4110001099	58.86	60.55	59.41	65.31	66.81	61.3	67.52	73.36	63.26	62.83	59.21	59.25	757.67
4110001186	69.88	67.43	71.97	68.89	67.93	70.78	77.56	64.7	58.84	62.02	57.83	65.35	803.18
4110001813	286.37	274.33	298.4	316.05	278	323.82	346.38	283.61	290.14	282.48	291.45	308.61	3579.64
4110001861	115.2	110.66	116.51	123.47	110.28	117.77	135.78	109.8	112.21	103.66	105.15	113.54	1374.03
4910001076	1391.95	1631.64	1450.35	1643.95	1522.1	1206.24	1165.79	1247.23	1037.97	1059.61	1084.93	1102.56	15544.32

4910001140	122.14	131.12	124.76	135.37	133.89	123.89	135.69	253.56		129.05	103.78	106.61	1499.86
4910001240	454.74	442.27	403.41	366.38	354.53	516.19	596.77	487.78	403.3	311.66	328.94	369.75	5035.72
4910001991	167.89	172.18	157.72	161.77	191.33	210.83	245.11	262.76	224.2	226.22	205.13	215.74	2440.88
7010007151	18.22	18.22	18.37	18.37	16.08	16.05	15.95	16.04	16.04	15.94	18.3	18.36	205.94
7410001312	880.81	935.38	1041.01	1097.77	1029.88	1068.5	1336.92	1206.1	1047.96	950.61	887.82	997.11	12479.87
7910001621	52.68	57.57	56.81	59.44	54.95	59.08	70.07	61.34	57.53	54.59	56.91	59.81	700.78
Unassigned-General Service Rate on Lite Sheet	**578.16**	**543.28**	**659.52**	**764.23**	**754.46**	**958.67**	**843.89**	**784.44**	**782.31**	**676.16**	**626.27**	**599.27**	**8570.66**
2410007188	578.16	543.28	659.52	764.23	754.46	958.67	843.89	784.44	782.31	676.16	626.27	599.27	8570.66
University Blvd & 3rd Ave	**49.26**	**51.84**	**18.01**	**98.64**	**53.68**	**62.16**	**65.43**	**56.96**	**53.95**	**54.43**	**53.86**	**61.33**	**679.55**
2910000776	49.26	51.84	18.01	98.64	53.68	62.16	65.43	56.96	53.95	54.43	53.86	61.33	679.55
University Blvd & Tyndall Ave	**46.56**	**47.62**	**18.01**	**59.67**	**52.3**	**52.59**	**61.1**	**62.46**	**53.31**	**50.89**	**50.47**	**54.52**	**609.5**
2410000044	46.56	47.62	18.01	59.67	52.3	52.59	61.1	62.46	53.31	50.89	50.47	54.52	609.5
Grand Total	**$ 48,913**	**$ 54,811**	**$ 56,186**	**$ 55,559**	**$ 46,550**	**$ 44,770**	**$ 48,869**	**$ 48,759**	**$ 31,408**	**$ 37,418**	**$ 36,037**	**$ 40,536**	**$ 549,816**

RATE 41 ($$$)

Row Labels	201406	201407	201408	201409	201410	201411	201412	201501	201502	201503	201504	201505	Grand Total
41	$ 164,635	$ 167,331	$ 179,423	$ 191,871	$ 200,520	$ 224,432	$ 250,519	$ 221,344	$ 201,776	$ 193,420	$ 183,249	$ 180,664	$ 2,359,184
Hawks	**89.42**	**88.28**	**88.99**	**98.94**	**94.5**	**103.43**	**115.41**	**98.93**	**102.7**	**96.35**	**94.84**	**93.86**	**1165.65**
2010000519	56.65	53.39	58.35	66.17	62.88	68.86	75.59	63.34	63.96	58.64	54.82	54.64	737.29
7910003897	32.77	34.89	30.64	32.77	31.62	34.57	39.82	35.59	38.74	37.71	40.02	39.22	428.36
Median Island (Broadway/Alvernon Quadrants)	**914.99**	**1039.18**	**998.92**	**1156.93**	**1173.33**	**1265.08**	**1457.38**	**1356.71**	**1178.39**	**1098.58**	**1077.87**	**1021.32**	**13738.68**
2910006957	33.09	33.09	33.09	33.71	32.79	32.79	32.77	32.76	32.76	33.86	34.25	35.21	400.17
7010006953	177.57	149.13	136.55	185.83	193.01	199.17	232.2	240.85	196.28	184.11	176.91	170.58	2242.19
7410001987	20.47	23.03	21.78	24.19	24.5	27.61	32.23	27.59	25.57	24.12	24.88	23.42	299.39
7410002317	331.89	477.74	456.59	507.34	529.65	580.82	669.2	544.74	492.05	458.39	460.96	425.91	5935.28
7910006540	79.26	98.29	90.9	100.42	100.49	112.43	132.43	111.32	104.99	99.73	103.88	98.62	1232.76
8710005006	159.62	156.43	165.95	194.47	186.83	191.41	210.33	213.4	174.41	155.5	146.08	141.6	2096.03
8710005813	113.09	101.47	94.06	110.97	106.06	120.85	148.22	186.05	152.33	142.87	130.91	125.98	1532.86
Non-Metered (Flat Rate) Lights	**1385.94**	**1476.22**	**1532.95**	**1595.97**	**1656.26**	**1860.55**	**2018.33**	**1802.7**	**1714.56**	**1527.34**	**1683**	**1573.69**	**19827.51**
410002738	83.4	82.56	82.14	98.5	93.09	97.6	121.39	103.02	101.52	89.45	86.32	87.42	1126.41
1210002025	179.28	215.71	215.21	231.43	235.39	280.01	297.82	250.04	232.88	227.75	226.4	206.32	2798.24
1210002357	129.79	150.72	146.69	154.65	158.64	191.72	210.56	173.05	165.47	159.91	158.65	148.79	1948.64
1210003390	108.85	123.65	125.75	134	130.33	147.17	184.02	154.44	146	138.49	144.79	131.59	1669.08
1610001707	102.62	97.23	108.45	119.76	133.26	142.15	161.07	128.24	118.78	117.82	103.3	97.42	1430.1
2010000044	98.69	105.68	118.68	118.77	118.96	140.77	149.5	130.45	135.9	24.33	233.07	147.7	1522.5
2410006988	62.56	66.47	73.96	72.32	73.58	87.29	86.95	81.75	72.69	72.04	68.45	74.11	892.17
2410007274	105.68	104.95	121.62	119.69	122.65	159.7	162.83	135.07	154.86	132.1	125.3	135.3	1579.75
2410009791	133.17	132.94	154.54	150.38	156.01	184.85	182.1	172.31	153.14	148.66	140.62	149.93	1858.65
4110002076	46.29	46.29	46.29	46.98	45.92	45.92	45.9	45.89	45.89	47.4	48.26	49.27	560.3
4110003663	18.26	18.26	18.26	18.45	18.03	18.03	18.03	18.02	18.02	18.7	19.04	19.44	220.54
4110005535	11.62	11.62	11.62	11.66	11.41	11.41	11.41	11.4	11.4	11.91	12.12	12.37	139.95
4110007385	5.16	5.16	5.16	5.09	4.99	4.99	4.99	4.99	4.99	5.28	5.39	5.5	61.69
4110008514	18.26	18.26	18.26	18.45	18.03	18.03	18.03	18.02	18.02	18.7	19.04	19.44	220.54
4910004722	180.84	188.91	184.32	186.56	212.03	200.97	222	221.71	204.51	183.07	170.64	169.25	2324.81
4910005898	83.61	89.95	84.14	91.42	106.31	112.34	124.13	136.7	112.9	114.14	103.34	100.87	1259.85
8710008417	17.86	17.86	17.86	17.86	17.63	17.6	17.6	17.6	17.59	17.59	18.27	18.97	214.29
Street Lights	**35633.16**	**35643.78**	**38595.92**	**40903.76**	**43186.77**	**48206.56**	**53244.39**	**46800.35**	**43086.64**	**41585.37**	**38660.53**	**38226.72**	**503773.95**
410003811	220.92	224.08	219.86	248.39	220.1	254.54	331.35	283.81	276.45	249.11	269.41	276.38	3074.4
410006050	110.86	117.71	119.43	139.71	132.95	160.44	162.56	50.07	236.37	127.1	114.02	130.65	1601.87
410008211	169.11	179.68	186.05	217.73	216.94	222.96	281.9	245.94	233.32	197.57	186.13	202.01	2539.34
410008344	70.58	84.23	77.99	80.98	77.38	94.65	125.39	106.26	103.45	89.63	84.73	90.21	1085.48
410009031	1075.99	1158.43	1185.91	1426.6	1433.85	1711.97	1687.93	1605.05	1403.93	1367.41	1296.27	1310.5	16663.84
810000952	44.6	48.09	54.54	54.67	56.14	67.15	70.54	59.46	56.52	54.62	50.68	52.98	669.99
810002401	77.14	78.21	86.66	85.04	85.09	98.75	104.02	87.11	81.85	81.16	74.97	85.96	1025.96
810002530	119.43	102.51	133.17	133.08	136.64	165.06	173.49	144.96	138.65	130.91	123.35	132.73	1633.98
810003526	52.84	57.06	65.51	66.47	71.38	84.02	86.97	74.16	69.44	67.39	61.63	66.47	823.34
810003900	10.46	10.46	10.46	10.65	10.24	10.24	10.24	10.23	10.23	10.7	10.73	11.13	125.77
810005229	5.16	5.16	5.16	5.16	4.99	4.99	4.99	4.99	4.99	5.28	5.29	5.5	61.66
810006357	25.89	25.89	25.89	26.58	25.6	25.6	25.6	25.57	25.57	26.5	26.57	27.56	312.82

810009647	178.52	198.72	217.09	219.3	228.55	276.55	304.83	257.19	244.25	233.07	207.84	233.75	2799.66
1210000572			22.5	59.39	60.88	73.49	78.76	65.97	82.07	102.91	102.02	95.15	743.14
1610000033	38.47	38.47	38.47	39.5	38.15	38.15	38.14	38.12	38.12	39.38	39.71	40.96	465.64
1610000653	61.3	59.16	63.42	68.54	81.92	86.14	95.59	79.76	74.5	74.64	62.16	59.61	866.74
1610000959	107.57	72.8	24.09	52	129.4	104.02	154.55	129.3	122.57	126.57	111.01	111.35	1245.23
1610001001	171.53	164.66	179.98	191.94	209.92	221.15	250.1	193.15	176.01	181.48	159.46	160.53	2259.91
1610002604	176.2	167.42	183.4	195.29	214.85	226.35	254.44	212.92	202.08	208.41	183.02	183.26	2407.64
1610004395	60.99	56.96	61.5	64.65	70.11	73.19	81.9	66.39	68.07	69.34	61.39	62.76	797.25
1610004407	208.45	195.34	210.33	223.61	246.74	255.59	281.66	236.25	225.66	233.62	204.09	205.64	2726.98
1610005383	456.59	433.34	481.97	510.36	610.29	635.53	715.48	578.29	584.6	571.32	488.66	481.47	6547.9
1610006082	159.61	144.78	164.88	177.43	198.76	209.27	235.58	198.62	178.62	191.54	157.07	148.49	2164.65
1610007074	25.34	23.23	26.41	25.96	27.19	26.13	31.42	25.06	25.06	27.06	23.98	22.49	309.33
1610007130	50.72	45.45	50.72	51.03	56.65	57.71	66.13	56.62	51.35	55.18	47.98	49.48	639.02
1610007504	205.28	191.85	209.41	238.18	232.75	263.18	273.14	222.57	211.24	139.13	166.75	207.43	2560.91
1610008481	641.05	601.81	651.71	702.16	783.31	831.62	951.88	791.04	735.74	760.78	652.14	631.52	8734.76
1610008716	345.4	331.98	364.34	397.28	441.68	465.87	528.38	451.12	419.18	426.1	368.24	362.34	4901.91
1610009340	89.84	86.66	94.06	102.23	113.48	118.76	134.53	112.35	100.79	111.43	92.7	90	1246.83
2010000568	78.53	77.14	89.42	88.46	91.82	86.14	80.63	97.33	92.68	88.95	84.09	91	1046.19
2010000635	750.43	718.7	839.21	835.47	862.88	881.84	1111.13	912.75	851.72	811.54	755.56	800.93	10132.16
2010006263	657.42	718.7	794.83	766.67	795.53	976.56	1046.02	870.67	820.17	774.72	681.68	771.68	9674.65
2010007471	478.81	490.42	596.14	549.73	556.61	669.2	711.23	642.44	781.28	731.46	680	716.56	7603.88
2410000667	353.79	350.6	414.84	413.97	429.79	514.62	518.38	480.59	418.65	400.76	367.99	388.32	5052.3
2410001113	127.35	118.78	128.5	144.57	139.38	154.86	172.84	147.6	147.83	131.66	121.43	120.34	1655.14
2410002775	112.02	114.13	131.04	129.88	132.43	153.52	150.32	143.93	123.93	127.67	126.82	130.48	1576.17
2410004558	35.85	35.85	35.85	36.59	35.53	35.53	35.53	35.5	35.5	36.69	37.07	38.13	433.62
2410006582	473.52	471.41	564.4	496.23	517.67	627.12	633.37	590.9	517.29	486.9	448.38	472.45	6299.64
2410007394	319.2	304.4	340.34	390.72	387.15	443.99	500.78	416.33	416.33	365.72	336.4	330.72	4552.08
2410007532	66.58	73.96	87.71	89.8	79.82	95.6	101.9	103.95	92.38	89.82	85.32	88.85	1055.69
2410008925	112.02	99.34	105.68	119.23	128.22	138.75	159.79	121.81	132.34	112.5	100.48	96.73	1426.89
2410008959	302.3	247.31	357.26	371.17	370.29	425.03	477.63	386.85	378.45	328.91	301.47	288	4234.67
2410009433	341.41	335.69	364.65	417.66	414.29	467.05	538.79	442.09	434.72	382.91	342.83	335.23	4817.32
2410009436	31.7	30.64	34.89	38.93	39.82	44.02	50.33	40.87	40.87	34.63	30.58	29.24	446.52
2910000375	61.84	56.12	68.38	74.52	72.74	82.68	93.47	78.28	77.86	69.45	64.52	63.87	863.73
2910000618	277.34	274.6	325.02	327.15	336.53	402	426.33	345.54	314.63	315.54	270.3	294.85	3909.83
2910000650	0	0	0	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	0	0	0	-0.96
2910000758	555.66	566.12	664.18	659.99	681.44	840.68	1025.99	538.95	469.97	413.99	410.66	558.2	7385.83
2910000809	617.91	544.33	715.35	727.87	758.04	962.05	1107.66	849.96	736.04	725.28	623.68	691.02	9059.19
2910001761	128.28	64.97	191.64	180.91	192.16	228.64	240.94	198.1	186.53	172.69	155.26	163.57	2103.69
2910001882	98.29	49.65	168.06	120.12	127.14	161.94	159.78	152.33	133.39	121.15	121.34	122.6	1535.79
2910002024	275.87	276.94	310.75	199.26	205.09	357.68	361.86	336.38	297.5	291.07	274.51	292.5	3479.41
2910002083	40.15	42.27	46.5	51.93	52.45	58.75	67.16	56.62	56.62	45.43	41.5	36.01	595.39
2910003680	278.62	270.78	331.35	325.86	342.84	484.63	491.07	404.54	373.52	350.91	322.8	344.44	4321.36
2910004120	19.02	19.02	23.23	22.56	22.97	28.24	30.34	24	24	21.62	21.91	21.35	278.26
2910004809	476.69	481.22	572.56	579.93	606.29	734.06	731.26	687.98	580.92	592.72	529.73	555.37	7128.73
2910005210	348.8	378.39	386.84	412.76	429.25	547.15	574.41	475.21	456.27	426.31	417.35	371.23	5223.97

2910006776	18.9	0	17.13	11.5	-0.05	13.82	16.34	24.96	23.37	22.61	20.8	21.71	191.09
2910007072	120.47	120.47	147.99	147.04	157.7	187.2	195.58	157.59	147.07	142.81	131.37	146.22	1801.51
2910009127	80.34	79.25	95.11	95.06	98.75	116.63	117.66	96.59	127.05	146.08	134.68	143.99	1331.19
2910009633	158.02	156.55	175.55	165.77	163.61	187.49	219.56	155.9	143.3	151.04	140.59	155	1972.38
3310000008	120.76	128.74	132.74	139.69	142.94	172.78	180.7	149.79	142.85	135.9	138.96	129.59	1715.44
3310000229	106.85	116.46	58.96	138.18	144.96	175.15	184.42	151.8	141.1	132.76	130.58	119.11	1600.33
3310000343	492.56	532.29	558.19	604.09	632.27	746.88	786.66	632.97	584.36	553.44	545.86	484.48	7154.05
3310000517	733.5	846.61	768.41	892.74	930.22	1120.76	1179.5	966.37	907.48	831.01	893.63	832.42	10902.65
3310000576	453.65	494.76	518.86	552.12	574.28	675.23	760.25	599.75	549.8	519.27	508.27	453.79	6660.03
3310000817	266.67	299.25	316.04	309.53	345.58	422.42	445.9	367.1	345.54	327.74	322.67	295.72	4064.16
3310000924	643.99	674.76	673.92	651.68	666.47	801.22	825.79	745.3	765.19	724.74	717.94	663.13	8554.13
3310004153	442.88	417.49	466.15	510.47	573.47	609.22	679.61	555.16	521.49	523.7	456.78	447.71	6204.13
3310009035	105.68	99.34	112.02	120.72	134.54	145.08	163.99	134.44	126.01	125.5	110.07	110.22	1487.61
3710000062	905.29	862.99	1002.61	951.79	1139.27	1418.25	1126.85	1161.79	1023.08	961.82	885.94	868.22	12307.9
3710000176	455.33	431.45	481.97	506.03	578.84	616.82	659	559.89	525.59	529.23	461.74	460.32	6266.21
3710000326	581.96	574.69	659.23	692.13	800.81	856.9	949.42	797.67	758.96	780.91	672.32	237.81	8362.81
3710000951	633.52	604.81	665.96	614.01	691.53	736.35	840.82	712.38	701.34	707.21	616.09	613.53	8137.55
3710001001	174.39	166.59	180.74	194.17	221.79	241.6	277.76	223.2	205.16	210.79	182.51	177.04	2455.74
3710002501	612.18	578.91	646.31	661.49	717.84	763.1	855.27	702.81	658.41	666.1	578.65	578.19	8019.26
3710003755	615.03	581.64	640.19	678.56	741	786.6	885.33	728.15	682.3	694.75	607.82	616.9	8258.27
3710004125	78.21	84.57	87.71	91.7	95.6	85.09	149.26	99.73	93.4	88.71	88.95	83.22	1126.15
3710004570	484.09	460.84	511.57	552.56	618.71	654.48	730.11	595.13	557.26	558.34	484.32	479.22	6686.63
3710005318	526.35	473.52	543.28	548.29	627.12	650.28	641.75	565.66	527.8	584.29	537.15	535.46	6760.95
3710005755	941.63	896.43	1002.09	1083.4	1218.34	1298.73	1440.61	1196.91	1124.13	1127.25	979.31	970.91	13279.74
3710007695	507.34	467.19	530.61	578.49	658.7	692.37	780.62	632.97	590.9	605.93	523.96	528.71	7097.79
3710007961	116.25	107.79	107.79	157.45	132.43	161.94	180.8	147.07	138.65	138.49	123.25	119.22	1631.13
3710009471	78.21	69.73	78.21	84.02	98.75	102.96	109.23	96.59	90.26	95.21	79.23	76.49	1058.89
3710009573	205.07	197.66	211.42	222.22	238.75	228.19	307.11	235.42	217.33	229.16	201.11	207.31	2700.75
3710009930	148	156.43	152.19	171.22	172.57	189.29	195.62	237.65	203.87	214.4	207.73	187.12	2236.09
4110000010	17.86	17.86	17.86	18.01	17.6	17.6	17.6	17.59	17.59	18.27	18.6	18.98	215.42
4110000708	936.75	948.31	1132.53	1112.99	1161.27	1398.81	1459.51	1204.88	1168.02	1113.52	1038.19	1082.49	13757.27
4110003392	109.92	109.92	133.17	131.87	140.87	170.32	178.72	147.07	140.76	132	122.62	128.22	1645.46
4110003527	69.73	63.42	65.51	49.36	39.82	50.33	126.07	106.05	109.18	90.88	106.89	97.86	975.1
4110005071	51.04	51.04	51.04	51.83	50.66	50.66	50.64	50.62	50.62	52.23	53.22	54.32	617.92
4110005271	22.83	22.83	22.83	23.08	22.55	22.55	22.55	22.54	22.54	23.36	23.8	24.29	275.75
4110005402	7.18	7.18	7.18	7.14	6.97	6.97	6.97	6.97	6.97	7.34	7.48	7.64	85.99
4110005514	7.18	7.18	7.18	7.14	6.97	6.97	6.97	6.97	6.97	7.34	7.48	7.64	85.99
4110006454	82.66	105.81	101.98	106.73	110.03	127.79	128.72	110.66	96.69	97.48	103.18	92.57	1264.3
4110008051	36.48	36.48	36.48	36.97	36.16	36.16	36.15	36.14	36.14	37.36	38.03	38.83	441.38
4110009248	471.41	481.97	517.9	599.48	643.96	772.35	869.05	691.87	647.72	605.93	525.61	560.21	7387.46
4110009837	355.35	373.31	355.33	311.41	382.09	431.19	488.84	538.41	436.84	430.87	373.99	349.69	4827.32
4510008692	7.18	7.18	7.18	7.11	6.97	6.97	6.97	6.97	6.97	7.34	7.49	7.64	85.97
4910001885	94.92	101.98	95.86	104.32	114.64	110.44	121.92	133.43	110.47	112.47	101.49	99.18	1301.12
4910003719	167.03	183.92	172.29	180.74	190.86	187.2	209.27	229.19	189.16	190.21	167.71	163.49	2231.07
4910005682	107.68	110.21	110.44	116.02	127.02	114.95	126.51	155.55	130.35	133.26	116.85	109.2	1458.04

4910008257	300.96	325.55	309.8	336.88	351.76	339.38	378.3	411.23	381.6	489.73	426.1	392.79	4444.08
4910008738	30.64	31.7	30.64	34.89	37.19	38.76	42.99	46.11	38.74	37.71	33.55	32.24	435.16
4910009263	387.72	431.65	414.94	461.26	516.45	494.82	588.29	643.61	513.83	504.36	432.17	392.33	5781.43
4910009671	173.33	170.17	171.22	202.92	168.74	204.02	182.33	207.86	157.59	151.16	146.49	140.1	2075.93
4910009715	67.63	71.87	65.51	68.69	73.44	65.06	71.38	78.73	68.17	68.17	61.67	63.38	823.7
5810008286	477.77	553.85	689.1	729.32	761.65	814.47	1039.69	944.51	799.14	742.36	703.32	726.14	8981.32
6210002259	404.2	434.93	404.92	451.95	507.37	502.27	560.2	618.89	519.81	498.77	434.54	410.25	5748.1
6210004016	173.75	173.74	173.74	173.74	175.23	172.85	172.85	172.79	172.72	172.72	177.87	182.81	2094.81
6210004557	380.41	380.38	380.38	380.38	383.9	378.64	378.64	378.49	378.33	378.33	389.41	400.24	4587.53
6210005958	951.09	951.04	951.04	951.04	960.07	946.86	946.86	946.51	946.17	946.17	973.6	1001.06	11471.51
6210006064	130.53	130.52	130.52	130.52	131.61	129.81	129.81	129.77	129.7	129.7	133.61	137.35	1573.45
6610003956	1.37	1.37	1.37	1.37	1.09	1.08	1.41	1.3	1.08	1.08	1.41	1.35	15.28
6610004448	28.01	28.01	28.01	28.01	28.03	27.72	27.72	27.7	27.7	27.7	28.69	29.51	336.81
6610006731	91.55	84.57	92.48	93.21	96.78	101.61	125.82	113.31	97.75	92.15	88.6	94.16	1171.99
6610009366	5.16	5.16	5.16	5.16	5.03	4.99	4.99	4.98	4.99	4.99	5.28	5.45	61.34
6610009739	10.46	10.46	10.46	10.46	10.36	10.24	10.24	10.23	10.23	10.23	10.7	11.03	125.1
7010001060	39.86	38.06	38.47	43.75	40.84	42.25	50.04	51.17	42.02	39.8	51.27	50.4	527.93
7010001101	82.57	84.34	84.67	98.29	94.79	98.34	116.63	119.52	98.06	94.89	91.54	88.74	1152.38
7010001473	86.68	84.57	84.57	98.29	92.24	98.75	115.57	117.63	95.53	89.22	87.64	85.85	1136.54
7010001737	112.03	128.92	105.68	167.02	171.92	180.85	216.66	220.74	178.62	163.9	132	169.46	1947.8
7010001960	15.95	15.21	15.53	17.96	16.84	16.44	19.3	17.93	13.3	12.44	11.58	10.91	183.39
7010001984	58.88	56.96	58.02	68.57	66.24	68.23	80.78	82.2	68.7	64.18	61.35	59.97	794.08
7010002637	50.07	49.25	48.09	56.12	53.81	52.66	61.61	62.63	50.92	50.62	50.08	49.39	635.25
7010003486	443.31	429.76	433.64	505.43	488.59	517.37	622.82	676.7	566.52	541.05	508.33	489.01	6222.53
7010004030	151.35	138.34	137.5	182.45	184.27	195.29	231.38	238.55	189.47	183.79	178.84	167.13	2178.36
7010004212	23.23	21.97	21.43	23.78	22.56	22.88	26.89	27.4	22.96	22.02	21.95	21.28	278.35
7010004720	29.6	27.49	27.49	32.77	31.7	32.45	34.57	33.5	29.29	27.17	25.96	26.76	358.75
7010005754	25.34	23.23	24.31	29.6	28.53	29.31	35.61	46.11	38.74	35.58	33.55	31.21	381.12
7010005762	54.95	52.84	52.84	65.51	65.69	67.15	84.02	81.87	69.22	65.02	54.09	53.51	766.71
7010006590	296.52	272.51	298.84	361.07	357.47	379.26	457.04	466.83	377.81	351.12	329.47	312.53	4260.47
7010006654	621.25	600.06	608.28	713.85	700.24	724.71	877.4	869.96	710.71	666.75	625.52	598.64	8317.37
7010008821	283.27	266.34	268.47	317.09	348.33	391.34	462.94	458.52	370.02	325.87	302.98	289.88	4085.05
7410001873	408.52	434.82	483.24	514.96	537.59	574.72	736.06	662.05	569.99	528.23	479.89	538.87	6468.94
7410004817	11.72	13.23	11.83	13.72	14.02	15.72	18.54	15.59	14.23	13.5	13.85	13.01	168.96
7410004824	170.18	205.07	196.61	219.86	229.77	256.64	300.87	252.29	233.32	212.27	229.39	212.95	2719.22
7410005995	816.33	931.18	900.34	1013.53	1066.58	1218.53	1436.07	1232.03	1128.25	1045.24	1049.67	947.62	12785.37
7410007447	121.54	137.39	125.75	131.04	135.46	152.43	178.75	153.42	141.8	133.39	137.42	130.01	1678.4
7910001196	84.35	95.22	90.68	99.74	102.27	114.33	133.26	111	104.89	98.47	104.09	96.47	1234.77
7910001926	45.45	52.84	45.45	50.72	50.69	56.65	66.13	51.37	46.09	40.87	42.21	45.96	594.43
7910002265	430.74	484.09	462.11	514.75	532.96	587.96	668.57	566	526.24	513.1	515.59	474.79	6276.9
7910009066	80.35	91.95	84.57	94.06	94.11	104.02	121.92	102.9	91.32	88.16	95.21	89.65	1138.22
7910009641	221.97	251.56	243.12	274.81	315.61	309.24	364.01	311.21	288.02	264.87	266.18	239.84	3350.44
7910009806	141.65	163.83	154.32	169.1	163.01	186.13	212.42	177.6	166.02	160.74	177.44	168.12	2040.38
7910009985	109.83	126.16	118.36	129.17	130.58	139.15	163.8	142.59	148.12	117.6	134.93	128.08	1588.37
8310001319	51.57	54.44	57.71	57.39	57.33	58.53	72.01	65.03	57.25	54.63	53.55	57.76	697.2

8310002947	38.59	14.58	24.4	45.73	47.26	50.1	62.13	53.16	48.09	43.12	42.09	44.61	513.86
8710002877	279.87	266.57	264.66	325.66	328.87	346.1	417.37	420.12	332.92	307.06	296.5	291.68	3877.38
8710002900	23.13	23.13	23.13	23.13	22.91	22.88	22.88	22.87	22.87	22.87	23.68	24.57	278.05
8710004984	34.89	33.83	33.83	40.15	38.08	40.89	47.19	47.17	39.8	37.71	35.72	34.57	463.83
8710006074	72.92	67.61	70.79	82.44	76.32	67.15	79.82	81.87	66.08	62.93	61.67	57.97	847.57
8710007820	7.18	7.18	7.18	7.18	6.98	6.97	6.97	6.96	6.97	6.97	7.34	7.63	85.51
8710007918	38.06	37.01	37.01	43.34	42.34	44.02	52.45	53.48	43.99	40.87	38.96	37.91	509.44
8710009465	640.56	571.83	632.04	741.96	731.87	777.6	935.51	961.4	777.04	718.15	677.35	641.09	8806.4
8710009849	82.76	80.01	80.43	93.96	90.23	93.61	110.63	113.64	91.95	86.48	84.07	81.71	1089.48
Street Lights and Traffic Signals	**47513.41**	**48994.42**	**51850.46**	**56043.26**	**58271.98**	**65173.52**	**73162.02**	**65552.31**	**59126.91**	**56469.1**	**53906.54**	**53172.76**	**689236.69**
410000309	49.65	43.64	44.67	64.25	62.88	68.44	98.13	85.98	44.85	129.41	107.11	85.61	884.62
410002349	190.6	193.98	193.74	227.65	216.53	222.45	275.58	231.76	224.91	199.02	185.8	202.45	2564.47
410002931	341.84	344.88	350.29	421.21	412.53	437.56	547.98	460.76	443.44	384.02	347	366.3	4857.81
410003642	465.1	490.42	577.11	900.53	889.34	944.99	1208.09	1022.24	992.65	860.15	781.2	841.69	9973.51
410003670	376.29	403.76	410.11	494.67	482.51	517.67	625.01	494.21	504.68	460.5	417.68	428.69	5615.78
410004302	139.1	140.67	142.17	169.32	160.23	165.17	206.76	173.92	170.96	150.01	139.89	153.05	1911.25
410004521	181.93	182.75	186.05	219.97	209.7	204.26	255.48	217.04	213.05	186.64	178.76	179.76	2415.39
410006160	319.2	346.68	357.26	429.13	420.84	509.23	515.57	426.87	477.32	395.27	374.38	400.03	4971.78
410009333	111.39	111.5	112.54	132.85	127.33	133.78	166.24	141.63	140.03	123.61	115.12	125.89	1541.91
810000268	56.86	59.94	60.25	69.73	66.01	78.12	77.6	74.9	67.54	66.77	63.07	68.72	809.51
810000282	531.01	575.09	619.7	605.02	622.28	753	799.21	655.49	600.39	560.71	511.06	534.33	7367.29
810000675	327.87	340.13	379.87	388.61	402	475.67	530.41	420.54	399.71	377.17	335.74	371.54	4749.26
810000723	118.68	129.36	144.78	145.67	145.91	154.25	165.06	138.76	131.91	128.74	117.25	160.53	1680.9
810000745	4.98	5.16	5.5	4.97	4.79	5.5	5.61	4.77	4.77	5.17	5	5.85	62.07
810000765	65.4	67.21	75.33	74.75	75.83	90.74	96.22	80.51	77.13	75.17	72.39	93.83	944.51
810001574	5.16	5.16	5.16	5.16	4.99	4.99	4.99	4.99	4.99	5.28	5.29	5.5	61.66
810004306	10.46	10.46	10.46	10.65	10.24	10.24	10.24	10.23	10.23	10.7	10.73	11.13	125.77
810004633	163.09	175.12	197.46	199.86	203.17	240.76	254.66	210.72	198.82	207.54	195.64	208.44	2455.28
810005486	10.46	10.46	10.46	10.65	10.24	10.24	10.24	10.23	10.23	10.7	10.73	11.13	125.77
810006292	753.92	802.34	890.9	915.15	942.13	1128.24	1151.36	962.39	869.72	813.91	771.77	1005.34	11007.17
810007431	34.58	36.88	41.13	41.67	42.25	51.81	54.66	46.09	43.79	42.09	38.52	38.48	511.95
810007871	36.05	35.96	37.22	34.47	33	37.73	38.56	32.33	33.19	33.33	34.72	38.37	424.93
810008408	116.64	125.65	131.69	121.5	123.7	147.5	153.71	130.64	131.39	140.65	135.78	146.12	1604.97
810008681	336.12	359.38	384.72	375.61	389.25	458.72	473.44	386.85	349.01	322.46	292.97	306	4434.53
810008872	15.53	15.53	15.53	15.89	15.31	15.31	15.31	15.3	15.3	15.91	15.95	16.52	187.39
810008955	8.45	30.64	23.23	21.67	21.93	26.65	28.13	24	22.72	22.4	21.37	22.49	273.68
810009992	359.38	377.31	428.07	435.69	450.3	550.29	572.41	480.47	452.07	430.66	383.01	424.08	5343.74
1210000385	39	45.33	45.13	48.25	49.41	59.16	62.54	51.76	48.73	47.17	46.7	42.87	586.05
1210000408	37.84	44.6	43.44	46.32	47.49	57.61	61.29	51.35	48.43	46.96	46.5	43.53	575.36
1210000783	608.03	709.43	714.19	771.57	803.11	974.88	1039.46	863.32	804.84	760.35	753.55	692.26	9494.99
1210000896	34.89	37.22	41.63	42.76	44.14	52.73	57.94	48.31	43.48	42.62	40.02	44.54	530.28
1210000920	179.56	208.52	211.94	228.83	235.81	285.69	305.05	253.08	236.78	224.74	221.17	203.96	2795.13
1210000986	23.66	25.14	24.6	26	26.36	30.76	32.58	27.39	25.9	25.31	25.68	24.29	317.67
1210001482	264.66	311.8	308.53	333.75	343.78	416.54	445.16	375.28	347.73	333.58	326.99	302.27	4110.07
1210002226	26.11	26.11	26.11	26.8	25.83	25.83	25.83	25.79	25.79	26.72	26.92	27.79	315.63

1210002274	30.43	30.43	30.43	31.24	30.14	30.14	30.14	30.12	30.12	31.14	31.37	32.4	368.1
1210004239	688.19	804.88	801.4	854.19	890.88	1084.31	1153.44	962.19	904.64	831.98	871.15	773.03	10620.28
1210006273	119.53	139.51	139.79	152.56	154.77	191.52	204.56	170.85	160.09	152.34	150.27	138.36	1874.15
1210007543	646.85	754.65	613.01	536.58	589.24	896.55	1006.02	885.38	832.81	789.87	773.15	715.44	9039.55
1210007550	11.62	11.62	11.62	11.83	11.41	11.41	11.41	11.4	11.4	11.91	11.98	12.37	139.98
1210007865	762.27	889.52	883.5	959.77	996.56	1212.29	1297.67	1086.28	1016.65	972.08	955.67	883.16	11915.42
1210007911	615.14	661.67	718.7	789.66	822.9	1012.36	1085.98	910.64	851.72	779.05	823.13	717.7	9788.65
1210008721	56.75	61.3	59.07	60.93	59.51	68.23	71.57	60.42	58.41	56.37	61.19	55.46	729.21
1210009393	87.84	100.94	102.09	109.23	107.49	130.33	138.22	116.56	114.02	104.97	98.45	99.76	1309.9
1610000123	36.37	34.49	37.74	39.83	40.36	42.35	47.48	40.1	35.93	36.15	31.33	31.62	453.75
1610000205	57.91	114.24	125.01	133.05	146.66	160.63	171.07	146.85	138.02	142.18	124.44	124.61	1584.67
1610001070	384.3	354.49	396.76	439.57	501.14	547.15	612.99	500.88	462.59	467.45	402.25	394.17	5463.74
1610001248	35.96	40.15	60.25	65.18	62.97	38.76	42.99	36.65	34.54	34.63	29.45	29.24	510.77
1610001459	311.8	297.03	330.83	357.21	413.46	439.76	492.4	412.11	387.91	396.03	341.42	334.09	4514.05
1610001462	670.92	624.26	697.47	757.05	846.79	885.5	1056.29	833.63	725.23	775.48	626.57	628.37	9127.56
1610001669	130.42	123.24	135.18	144.65	159.17	166.87	187.7	156.87	148.34	153.2	134.94	135.65	1776.23
1610003251	71.11	66.36	71.44	74.34	80.35	83.49	81.9	34.54	75.23	77.58	69.25	70.4	855.99
1610004004	207.18	195.56	214.57	232.97	257.7	265.07	324	261.69	244.88	248.88	217.06	212.61	2882.17
1610004934	122.6	116.25	125.75	130.7	152.43	159.79	169.27	147.07	139.7	143.93	125.41	124.84	1657.74
1610005395	740.5	709.97	779.6	812.53	964.67	998.9	1130.17	909.28	909.48	996.56	654.12	746.26	10352.04
1610006085	37.31	35.53	39.52	42.98	47.82	49.59	57.49	49.04	44.1	44.8	38.5	37.91	524.59
1610006134	249.35	230.41	251.26	267.33	297.49	309.48	375.76	351.52	323.24	340.4	302.03	296.65	3594.92
1610006394	743.14	693.14	751.8	818.74	914.24	978.79	1075.88	924.72	891.62	871.78	743.88	727.69	10135.42
1610006397	188.91	176.5	193.14	204.9	225.49	236.77	267.5	223.74	205.06	224.74	189.69	184.93	2521.37
2010000494	329.46	312.64	346.36	399.28	388.31	444.29	494.37	415.67	417.9	367.57	339.68	335.88	4591.41
2010000550	39.1	39.21	45.98	45.15	46.35	54.55	55.92	47.39	45.58	44.57	42.05	45.21	551.06
2010000805	35.2	32.99	39	37.95	43.93	50.76	51.39	42.54	40.21	37.98	34.62	36.9	483.47
2010000923	23.23	23.23	26.41	26.9	26.13	32.45	33.51	21.92	25.36	25.63	24.07	25.98	314.82
2010001075	167.02	164.88	196.61	196.82	210.33	254.54	260.8	224.91	214.4	209.92	192.75	200.25	2493.23
2010002239	1088.64	1198.58	1350.21	1371.36	1382.84	1660	1777.44	1503	1412.58	1354.53	1203.2	1358.89	16661.27
2010002340	142.7	136.32	165.95	161.09	169.27	196.64	208.2	173.37	164.94	156.9	151.1	164.23	1990.71
2010002950	33.83	34.89	40.15	40.22	40.89	50.33	52.45	42.96	40.87	40.02	35.72	40.51	492.84
2010003623	488.31	498.89	593.99	599.48	625.01	757.63	789.09	635.06	588.79	551.83	525.61	539.95	7193.64
2010004309	402.19	435.76	510.22	526.46	539.68	676.16	705.13	587.84	555.05	518.2	443.09	518.7	6418.48
2010004645	131.25	133.69	160.12	162.19	170.63	207.18	219.47	177.34	169.26	160.36	148.5	154.56	1994.55
2010004985	142.7	139.51	162.76	161.09	164.02	184.02	205.05	191.26	183.9	122.25	77.74	182.25	1916.55
2010005271	17.77	17.77	20.82	20.49	20.97	22.74	23.08	19.29	18.87	19.35	18.49	20.35	239.99
2010005731	122.18	122.06	143.87	139.02	136.87	164.65	184.54	134.56	138.34	131.78	127.43	142.64	1687.94
2010005804	450.16	446.67	512.53	511.94	523.77	639.11	668.38	530.66	493.93	461.82	577.19	667.51	6483.67
2010006198	1382.21	1380.26	1628.96	1704.56	1905.83	2287.45	2416.32	1982.48	1837.1	2010.9	2198.55	2178.83	22913.45
2010006486	637.65	642.52	760.17	739.76	756.98	996.78	1068.18	870.99	827.78	780.25	719.66	754.37	9555.09
2010006498	49.65	53.91	60.25	60.99	60.88	74.54	79.82	67.11	61.86	60.61	56.42	58.49	744.53
2010006880	18.26	18.26	18.26	18.61	18.03	18.03	18.03	18.02	18.02	18.7	18.88	19.44	220.54
2010006900	380.28	385.67	469.2	472.1	500.81	608.8	650.81	532.33	500.55	471.11	436.9	456.38	5864.94
2010006945	49.65	53.91	60.25	62.09	64.02	75.59	81.92	68.17	62.93	63.81	57.49	62.99	762.82

2010007068	0	0	0	-0.16	-0.16	9.29	73.49	61.86	58.71	24.88	11.91	15.73	255.55
2010007080	142.72	135.74	147.71	168	162.85	184.71	205.55	172.66	173.65	165.52	152.91	152.99	1965.01
2010007906	154.32	155.25	180.64	178.43	181.5	214.12	223.57	184.31	174.51	169.32	159.76	172.56	2148.29
2010009261	112.11	112.44	131.35	129.4	136.24	162.97	171.87	142.36	135.07	23.04	234.23	134.65	1625.73
2010009521	836.7	830.45	999.12	994.37	1044.46	1263.89	1354.9	1122.56	1044.42	992.76	921.36	978.56	12383.55
2010009562	114.35	115.5	134.54	133.28	137.7	165.69	172.94	142.66	133.26	124.63	118.26	125.5	1618.31
2010009801	25.34	26.41	31.7	33.39	34.57	41.95	45.17	38.12	35.5	34.85	32.75	34.86	414.61
2010009949	136.65	136.24	158.76	157.11	157.7	188.56	197.47	176.64	167.81	163.27	157.92	172.68	1970.81
2410000206	274.81	274.81	325.55	327.16	345.05	416.64	408.16	401.58	338.47	339.75	304.03	326.22	4082.23
2410000367	70.7	71.54	69.86	80.23	77.37	82.24	97.19	100.52	83.34	80.18	77.9	73.47	964.54
2410000656	38.68	38.59	45.55	45.02	46.55	55.4	55.4	52.7	46.42	44.9	42.21	45.1	556.52
2410000672	31.06	31.06	31.06	31.68	30.76	30.76	30.76	30.74	30.74	31.81	32.15	33.08	375.66
2410000781	38.16	36.59	40.57	46.34	46.88	54.75	62.97	51.99	51.57	45.1	41.73	40.72	557.37
2410000916	33.62	33.31	40.28	40.03	41.83	48.87	40.03	45.37	42.02	41.68	39.25	41.51	487.8
2410000969	134	207.91	232.75	185.8	229.27	252.74	237.26	218.28	218.58	196.83	191.15	184.48	2489.05
2410001443	203.48	204	242.37	243.91	256.54	308.53	305.27	293.26	251.1	241.42	223.51	235.92	3009.31
2410002044	93.01	94.06	107.79	107.12	110.34	131.37	130.31	124.96	110.23	106.03	100.61	107.98	1323.81
2410002495	143.74	135.27	152.19	175.71	172.44	197.7	225.06	182.84	166.02	186.13	150.7	148.49	2036.29
2410003226	11.62	11.62	11.62	11.76	11.41	11.41	11.41	11.4	11.4	11.91	12.03	12.37	139.96
2410003826	211.42	202.92	226.17	260.46	254.54	288.21	326.08	262.76	254.35	227.21	209.71	206.99	2930.82
2410003838	34.67	32.68	34.67	38.48	36.57	42.66	46.35	38.63	39.58	35.85	33.33	33.43	446.9
2410003859	8.45	9.5	10.56	10.66	9.29	11.41	10.34	10.33		18.4	9.82	11.23	119.99
2410004165	34.67	31.93	34.05	43.58	53.2	60.56	68.11	57.97	57.97	53.35	51.88	52.74	600.01
2410004206	17.86	17.86	17.86	18.13	17.6	17.6	17.6	17.59	17.59	18.27	18.46	18.98	215.4
2410004575	69.42	69.42	69.42	71.02	68.97	68.97	68.97	68.92	68.92	71.08	71.86	73.9	840.87
2410005343	231.46	231.46	271.64	270.78	293.47	353.49	341.85	334.27	288.02	280.24	262.48	276.73	3435.89
2410005449	298.07	276.94	302.3	335.33	330.31	362.94	408.17	325.87	329.04	299.73	281.79	286.86	3837.35
2410005656	76.09	70.49	75.97	85.51	82.55	92.99	104.33	87.65	89.53	82.23	80.17	80.19	1007.7
2410005694	54.33	50.72	53.26	58.88	56.57	62.88	70.45	58.93	59.46	49.22	45.63	46.68	667.01
2410005832	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2410005926	227.25	209.27	225.13	255.01	245.06	274.56	330.28	236.48	253.32	222.92	210.82	211.5	2901.6
2410006638	256.54	239.19	258.73	288.78	275.17	308.53	345.56	287.69	294.53	277.77	263.45	265.24	3361.18
2410006865	127.02	126.8	148.94	147.46	151.91	180.98	125.27	158.63	134.88	145.21	137.36	145.78	1730.24
2410007140	167.53	168.28	197.14	197.76	206.46	248.55	247.59	237.74	209.68	200.43	186.25	195.98	2463.39
2410007674	10.46	10.46	10.46	10.54	10.24	10.24	10.23	10.23	10.23	10.7	10.83	11.13	125.75
2410007972	649.5	662.3	789.24	804.48	854.7	1041.6	1037.1	980.28	860.15	805.13	741.22	665.49	9891.19
2410008719	544.33	509.88	562.41	653.28	669.73	767.51	843.46	700.3	684.09	607.45	563.89	557.29	7663.62
2410009421	21.97	23.23	26.31	25.5	26.65	33	36.67	81.03	79.23	76.03	70.52	74	574.14
2410009573	9.71	9.71	9.71	9.8	9.51	9.51	9.51	9.51	9.51	9.96	10.07	10.36	116.87
2410009668	150.5	150.5	150.5	154.07	149.69	149.69	149.68	149.58	149.58	154.08	155.72	160.18	1823.77
2410009777	17.86	17.86	17.86	18.13	17.6	17.6	17.6	17.59	17.59	18.27	18.46	18.98	215.4
2410009853	407.87	415.59	494.76	501.34	529.14	645.21	642.55	607.85	532.65	503.48	466.11	467.29	6213.84
4510000425	7.18	7.18	7.18	7.11	6.97	6.97	6.97	6.97	6.97	7.34	7.49	7.64	85.97
4510002701	11.62	11.62	11.62	11.63	11.41	11.41	11.41	11.4	11.4	11.91	12.13	12.37	139.93
4910000188	42.94	45.98	44.19	49.98	57.02	56.87	64.45	70.6	57.9	57.25	50.29	47.59	645.06

4910000541	92.79	99.56	92.69	100.63	110.06	106.13	117.39	128.6	106.46	107.7	97.91	83.72	1243.64
4910001082	238.88	251.56	245.22	272.72	315.73	311.37	353.49	387.01	315.35	311.16	272.67	258	3533.16
4910001278	221.55	242.26	228.96	253.47	284.89	278.34	323.26	361.66	277.47	283.39	247.59	235	3237.84
4910001511	74.63	81.68	77.9	84.57	93.62	90.86	100.12	110.4	92.07	93.11	84.73	82.18	1065.87
4910001762	173.33	184.99	177.55	197.66	219.69	212.42	236.64	259.7	211.24	210.19	186.13	176.81	2446.35
4910002734	109.93	119.43	110.97	123.65	139.61	134.54	148.22	161.87	133.39	146	133.07	139.02	1599.7
4910002738	11.72	12.58	12.17	13.51	4.2	4.87	20.64	22.87	18.75	17.5	15.54	14.81	169.16
4910003280	401.35	424.36	395.71	446.67	503.11	498.93	548.94	604.59	543.37	545.9	464.41	441.75	5819.09
4910003912	24.84	24.84	24.84	24.84	25.02	24.56	24.56	24.55	24.54	24.54	25.42	25.96	298.51
4910004176	5.28	10.56	15.86	24.31	28.64	27.19	28.24	31.41	25.06	16.66	15.13	15.55	243.89
4910004731	11.21	11.21	11.21	11.21	11.2	10.99	10.99	10.99	10.98	10.98	11.46	11.7	134.13
4910005012	171.23	179.68	175.46	196.61	223.93	159.79	250.33	277.58	229.12	224.91	196.94	175.71	2461.29
4910006641	809.69	870.91	839.21	944.93	1073.41	1067.07	1260.73	1384.24	1129.39	1112.59	993.3	934.15	12419.62
4910007480	94.07	87.71	91.95	106.73	105.98	110.34	120.85	129.23	108.13	101.84	99.54	95.03	1251.4
4910008076	190.87	203.08	189.84	209.22	231.7	226.48	252.87	277.2	226.3	228.35	203.76	196.52	2636.19
4910008228	125.76	133.17	127.87	138.46	153.51	159.79	166.13	174.46	141.8	139.92	118.9	116.87	1696.64
4910008559	693.4	710.27	653.2	729.32	795.94	776.55	858.68	738.4	864.36	912.75	798.54	756.24	9287.65
4910008719	81.41	70.69	77.03	83.7	91.61	88.55	96.33	105.98	88.68	91.11	84.07	82.73	1041.89
4910008827	130.01	142.7	135.27	164.88	193.01	185.1	205.09	220.77	182.84	184.97	166.63	162.37	2073.64
4910009311	32.77	43.34	42.27	47.57	52.1	51.4	57.71	62.95	52.4	52.4	43.28	41.15	579.34
4910009763	429.15	400.58	395.3	472.45	467.42	491.35	593.43	602.73	484.68	453.11	414.41	406.64	5611.25
5810000924	18.38	18.38	18.38	18.38	18.44	18.13	18.13	18.12	18.11	18.11	18.82	19.31	220.69
5810003361	104.54	108.96	117.71	122.18	116.62	124.33	153.17	139.2	122.66	110.66	107.97	110.92	1438.92
5810006551	733.55	752.54	769.46	904.78	835.95	860.78	1054.43	864.54	719.22	666.6	601.62	627.86	9391.33
6210000151	101.48	109.92	103.58	113.08	122.54	119.79	132.43	134.5	130.21	120.76	110.36	107.88	1406.53
6210001499	133.06	143.45	133.17	147.68	163.76	160.21	171.15	129.56	191.26	194.3	174.63	167.82	1910.05
6210001585	83.9	90.78	85.2	95.86	108.98	108.64	122.42	134.61	110.14	109.41	95.86	90.42	1236.22
6210001644	175.76	175.75	175.75	175.75	177.29	174.87	174.87	174.8	174.72	174.72	179.94	184.97	2119.19
6210002145	313.3	313.29	313.29	313.29	316.17	311.8	311.8	311.69	311.58	311.58	320.71	329.63	3778.13
6210004887	88.68	95.86	90.37	98.07	107.17	103.52	114.43	125	103.34	104.71	94.9	92.18	1218.23
6610001149	5.16	5.16	5.16	5.16	5.03	4.99	4.99	4.98	4.99	4.99	5.28	5.45	61.34
6610003114	212.16	221.72	250.21	260.12	257.33	272.65	343.57	315.74	275.51	250.79	235.89	246.02	3141.71
6610003250	65.51	65.51	65.51	65.51	65.79	65.06	65.06	65.03	65.02	65.02	67.07	69.01	789.1
6610003571	123.97	129.24	147.56	125.13	149.37	162.46	169.39	175.07	149.69	142.98	156.33	139.08	1770.27
6610004028	177.57	191.33	207.18	215.62	222.66	234.56	298.75	271.23	233.32	218.58	205.6	218.97	2695.37
6610004582	133.18	138.46	161.7	176.5	185.52	194.54	246.09	222.84	193.37	178.62	169.88	176.5	2177.2
6610004824	22.83	22.83	22.83	22.83	22.8	22.55	22.55	22.55	22.54	22.54	23.36	24.04	274.25
6610005042	211.44	226.17	251.56	251.56	258.72	311.37	422.94	384.86	245.91	197.57	183.94	192.17	3138.21
6610005537	269.54	291.09	308.32	323.84	317.73	341.17	427.26	382.22	334.18	306.94	301.68	319.09	3923.06
6610005907	70.38	73.33	78.62	82.23	81.1	71.28	91.28	83.56	73.84	71.02	68.37	74.3	919.31
6610006945	141.96	152.3	145.86	177.87	171.09	177.91	230.54	202.64	176.71	165.16	158.94	170.93	2071.91
6610006950	19.02	20.07	22.19	20.07	16.81	14.54	17.71	15.6	13.5	12.44	12.98	14.5	199.43
6610008175	451.98	478.37	529.43	556.6	571.23	592.17	753.97	688.75	590.9	554.74	850.06	218.73	6836.93
6610008886	42.27	42.27	42.27	42.27	42.39	41.95	41.95	41.91	41.9	41.9	43.28	44.54	508.9
6610009096	60.55	63.62	67.61	67.85	68.25	69.69	86.44	78.52	67.74	65.76	64.15	70.14	830.32

6610009404	87.32	92.17	99.66	102.51	103.58	107.06	133.59	121.34	105.95	99.85	96.61	102.99	1252.63
7010000003	67.22	63.62	62.65	59.94	56.89	60.12	71.69	73.56	60.08	56.83	55.18	62.11	749.89
7010001055	87.09	83.08	82.66	95.86	90.87	93.61	110.21	112.5	93.11	88.06	85.79	84.17	1107.01
7010001514	30.64	28.55	29.6	33.83	35.97	35.61	45.07	45.05	35.58	32.43	23.8	25.63	401.76
7010001902	37.84	36.48	36.48	43.34	42.22	44.35	31.71	29.71	25.26	22.54	23.36	21.86	395.15
7010002024	50.72	48.62	48.62	59.16	65.69	71.38	88.22	88.18	71.33	69.22	64.9	60.19	786.23
7010002119	544.78	524.67	479.02	651.92	645.5	661	759.85	812.85	679.45	624.67	592.09	567.94	7543.74
7010002344	272.2	260.12	266.23	316.36	313.03	328.63	390.52	399.06	322.7	301.27	285.14	270.92	3726.18
7010002516	395.32	359.38	323.44	410.11	439.68	589.24	513.46	508.99	414.2	384.77	579.98	347.87	5266.44
7010003015	33.83	29.6	29.6	30.64	28.53	27.19	32.45	33.5	28.22	31.39	33.55	33.45	371.95
7010003205	48.62	37.01	41.21	23.23	31.7	32.45	36.67	38.75	31.39	31.39	30.3	29.01	411.73
7010004482	8.45	8.45	12.69	12.69	12.55	13.51	15.6	14.54	13.5	11.4	12.98	13.4	149.76
7010004495	167.12	159.18	151.77	177.14	171	178.21	210.66	215.5	175.75	166.21	160.44	155.65	2088.63
7010004799	5.16	5.16	5.16	5.16	5.03	4.99	4.99	4.99	4.99	4.99	5.28	5.45	61.35
7010004938	78.97	75.44	74.5	85.51	83.85	87.71	103.78	105.87	87.33	83.22	80.84	79.39	1026.41
7010005712	811.8	784.24	807.52	944.93	919.92	957.62	1132.32	1144.43	914.84	851.72	798.54	918.71	10986.59
7010005831	43.64	40.57	39.32	42.82	38.41	37.83	42.57	43.8	37.48	37.81	38.73	40.37	483.35
7010006609	768.46	734.36	765.98	910.99	900.32	958.89	1155.06	1182.73	947.87	874.04	818.46	772.18	10789.34
7010007007	27.58	47.57	47.57	55.39	54.01	55.72	65.72	66.62	55.57	51.57	50.41	48.93	626.66
7010007585	87.63	85.51	85.09	97.88	97.25	98.75	116.22	119.85	96.36	80.07	77.58	75.82	1118.01
7010007638	54.54	51.76	53.13	61.84	56.25	56.04	64.86	66.51	55.27	52.81	52.14	51.18	676.33
7010008260	37.84	39.52	38.06	43.86	41.18	41.63	48.36	40.35	33.38	32.13	32.34	32.11	460.76
7010008634	82.57	87.31	82.44	83.08	81.16	86.24	107.57	98.08	85.36	80.59	79.75	86.47	1040.62
7010008729	125.76	131.04	138.46	125.75	129.26	134.54	167.18	151.29	133.39	124.96	122.25	130.68	1614.56
7010008842	90.91	87.71	87.71	98.29	90.11	91.39	105.07	108.16	88.16	83.97	81.16	80.97	1093.61
7010009356	11.62	10.99	11.21	12.81	12.47	12.34	14.45	14.86	18.64	17.7	16.78	15.94	169.81
7010009857	377.33	366.77	375.21	463.98	472.64	498.72	630.27	646.82	515.18	476.26	452.28	438.17	5713.63
7410000011	44.67	47.04	45.33	54.33	52.49	51.7	63.16	55.7	52.63	49.04	48.03	52.28	616.4
7410000189	137.93	153.37	147.77	166.16	171.18	192.57	220.55	184.24	174.3	163.8	168.48	155.33	2035.68
7410000422	86.68	97.23	91.95	100.42	99.44	108.2	101.91	85.04	77.63	72.38	75.72	70.6	1067.2
7410001051	652.83	745.78	722.19	799.37	826.65	934.99	1094.67	919.11	822.7	749.83	740.32	683.9	9692.34
7410001125	3.39	3.59	3.71	4.23	4.05	7.49	10.46	8.97	8.34	7.6	7.99	6.95	76.77
7410001268	570.8	646.85	636.27	716.6	756.4	854.49	1016.55	851.88	782.31	721.31	720.62	661.27	8935.35
7410003953	66.59	73.96	68.69	76.09	76.11	84.02	95.6	80.84	75.54	72.38	76.79	72.82	919.43
7410005533	230.22	263.18	254.22	291.42	310.64	361.8	423.97	366.73	335.25	312.83	313.36	290.05	3753.67
7410006837	61.94	69.95	66.99	71.75	72.81	80.15	94.24	81.57	77.13	75.77	80.18	76.08	908.56
7410008178	142.71	161.7	153.25	165.95	168.31	189.29	218.74	200.77	167.06	162.83	165.52	149.05	2045.18
7410009023	319.21	340.34	378.39	391.07	403.03	422.94	536.6	483.75	416.33	382.67	361.4	375.37	4811.1
7410009106	75.03	83.48	79.25	87.71	86.71	95.6	111.38	93.43	103.95	69.64	88.95	90.54	1065.67
7910000495	83.3	94.06	88.56	96.81	98.93	109.16	133.05	115.39	109.09	103.86	107.53	102.07	1241.81
7910001699	39.1	42.27	40.15	44.4	45.39	50.33	59.82	49.26	47.16	43.99	45.43	43.69	550.99
7910001861	60.12	67.85	63.09	68.16	68.46	74.44	85.5	72.29	66.61	64.18	67.93	65.68	824.31
7910001866	357.28	372.03	323.44	359.38	374.93	425.03	502.92	424.79	380.55	342.69	346.24	331.75	4541.03
7910003054	182.66	191.23	171.31	185.2	201.6	266.54	317.48	269.35	247.65	229.84	229.52	213.72	2706.1
7910003252	371.02	418.24	413.36	437.98	432.7	486.48	583.32	375.67	421.27	383.18	382.06	371.75	5077.03

7910003652	718.75	809.65	782.14	860.37	889.9	1010.26	1172.33	992.82	904.35	834.91	841.84	771.08	10588.4
7910004909	266.07	303.15	294.69	339.18	356.73	409.67	484.74	413.34	381.5	354.07	360.1	330.63	4293.87
7910005780	44.67	50.62	48.62	53.91	54.5	60.46	69.38	59.14	54.72	51.57	53.11	49.43	650.13
7910007547	62.65	71	66.36	71.63	80.26	102.03	118.64	100.16	85.86	87.65	91.32	87.99	1025.55
7910008357	5.28	6.35	6.35	5.28	6.18	5.08	7.17	5.08	5.08	5.08	5.41	5.6	67.94
7910008835	46.5	53.39	50.51	55.61	55.99	61.7	71.49	60.32	56.52	52.92	54.62	51.44	671.01
8310001932	431.25	452.38	492.56	513.71	536.73	578.72	719.76	641.52	546.74	506.76	473.94	496.01	6390.08
8310002263	15.53	16.58	17.86	17.86	13.94	14.04	17.93	16.04	13.81	13.2	13.1	14.27	184.16
8310003011	11.62	11.62	11.62	11.62	11.46	11.41	11.41	11.41	11.4	11.4	11.91	12.33	139.21
8310006777	70.92	76.32	81.68	82.66	85.03	88.98	112	102.16	90.05	77.76	73.56	80.76	1021.88
8310006879	126.81	123.65	131.04	136.32	138.82	142.97	177.68	189.19	164.94	126.64	128.74	132.48	1719.28
8310008354	83.09	87.71	94.59	96.69	98.41	102.54	127.9	117.94	102.89	96.59	93.05	99.54	1200.94
8710000929	85.63	82.44	81.4	94.06	91.21	92.44	108.2	98.69	77.63	75.54	73.56	71.34	1032.14
8710001159	219.57	209.17	179.77	249.24	244.52	258.53	312.01	310.73	256.56	241.21	232.21	220.75	2934.27
8710001496	144.79	135.27	136.32	160.64	153.9	158.75	186.13	189.2	155.5	147.07	141.74	139.37	1848.68
8710001841	113.38	111.82	114.02	135.27	131.78	136.42	164.45	168.79	136.87	128.24	127.22	122.96	1591.22
8710002070	289.61	272.72	505.22	150.09	356.81	361.89	437.66	469.05	384.77	325.87	313.79	296.6	4164.08
8710002208	13.72	12.69	12.69	15.86	12.53	13.51	16.67	15.6	13.5	14.53	11.91	13.38	166.59
8710002419	40.94	40.94	40.94	40.94	40.61	40.56	40.56	40.54	40.53	40.53	41.88	43.48	492.45
8710002457	33.53	30.64	30.96	36.59	31.7	14.25	15.84	9.06	5.82	6.03	6.59	6.9	227.91
8710002466	77.15	73.96	73.96	89.84	93.31	98.75	117.68	120.79	98.67	90.26	85.48	79.15	1099
8710002504	160.65	153.25	153.25	179.68	171.92	182.97	210.33	213.4	169.16	152.33	151.47	142.71	2041.12
8710002617	382.54	365.7	377.99	449.32	445.41	479.78	561.35	560.45	460.61	431.46	419.7	408.51	5342.82
8710003826	801.24	771.56	809.65	1004.11	1053.78	1172.33	1369.35	1403.35	1139.89	1213.53	1179.4	1121.65	13039.84
8710004061	46.29	45.13	49.98	61.18	59.75	61.61	76.96	78.07	60.94	59.13	53.11	51.18	703.33
8710004639	76.1	72.91	72.91	96.17	108.16	115.57	127.14	147.1	101.84	118.67	103.88	101.46	1241.91
8710004947	7.18	7.18	7.18	7.18	6.98	6.97	6.97	6.96	6.97	6.97	7.34	7.63	85.51
8710004968	44.4	42.27	38.06	42.27	40.18	42.99	50.33	46.11	41.9	38.74	37.88	36.79	501.92
8710004981	122.61	118.36	118.36	109.92	74.17	75.59	125.04	171.3	140.76	131.26	126.57	122.63	1436.57
8710005248	7.18	7.18	7.18	7.18	6.98	6.97	6.97	6.96	6.97	6.97	7.34	7.63	85.51
8710005351	416.46	416.44	422.78	505.22	490.69	515.57	620.8	628.94	508.85	468.91	437.14	419.23	5851.03
8710006469	2.42	2.34	2.09	2.52	2.05	2.03	2.36	2.46	2.03	2.03	2.27	2.35	26.95
8710006945	45.33	45.33	45.33	45.33	45.03	44.98	44.98	44.95	44.95	44.95	46.42	48.2	545.78
8710006972	359.4	374.15	422.78	494.67	492.82	526.09	625.01	622.62	462.59	481.54	428.48	396.9	5687.05
8710008330	62.36	60.25	60.25	70.79	69.94	72.43	87.19	89.25	72.38	68.17	60.61	51.3	824.92
8710008802	111.93	100.1	92.48	121.21	117.74	123.38	147.6	152.15	124.54	113.94	111	107.12	1423.19
8710008820	391.1	369.92	388.96	467.19	463.08	492.42	591.35	597.39	487.83	454.17	426.31	405.82	5535.54
Traffic Signals	**46258.33**	**47621.61**	**50277.53**	**54256.26**	**55900.83**	**63048.83**	**70363.83**	**62832.04**	**57115.6**	**54341.08**	**51913.79**	**51151.16**	**665080.89**
410000470	169.85	160.95	177.45	182.61	190.02	180.11	200.61	165.16	156.02	160.04	141.24	141.17	2025.23
410000491	95.53	98.6	106.85	116.55	119.07	154.45	142.33	134.44	78.71	87.96	96.61	101.1	1332.2
410001651	672.26	681.75	705.95	851.67	844.45	906.47	1109.49	964.71	931.37	799.99	751.36	738.59	9958.06
410004504	331.89	333.98	342.44	422.78	394	420.84	526.09	443.71	426.84	359.53	328.91	338.91	4669.92
410007758	443.95	445	433.34	502.9	497.92	528.3	664.17	558.57	480.47	509.71	481.2	482.1	6027.63
410008977	767.41	763.52	798.96	953.47	930.23	993.5	1252.74	1076.29	1018.75	912.46	845.6	837.69	11150.62
410009499	112.23	121.11	121.53	140.89	131.15	157.4	158.12	150.96	132.74	129.62	116.53	130.54	1602.82

810000138	34.89	37.01	37.01	39.15	39.82	54.34	56.45	48.52	42.43	37.65	36.13	37.58	500.98
810000293	34.78	37.65	42.68	42.76	44.14	53.41	57.17	47.68	45.15	43.38	40.45	42.63	531.88
810000355	125.35	134.76	150.18	148.61	147.08	173.06	177.6	145.38	144.67	142.72	135.63	146.12	1771.16
810000529	2.95	17.01	0.75	0.14	5.5	29.93	301.9	88.68	675.15	602.99	744.32	273.67	2742.99
810001058	10.46	10.46	10.46	10.65	10.24	10.24	10.24	10.23	10.23	10.7	10.73	11.13	125.77
810001152	35.85	35.85	35.85	36.88	35.53	35.53	35.53	35.5	35.5	36.69	36.78	38.13	433.62
810001214	651.37	698.34	807.83	836.75	887.7	1087.81	1139.37	928.93	871.41	826.9	760.3	798.69	10295.4
810001267	197.66	205.07	237.82	246.71	253.5	307.17	330.31	277.47	259.6	249.96	233.27	247.5	3046.04
810001341	17.96	21.12	22.19	21.67	19.82	24.02	20.86	18.75	18.75	19.48	20.54	19.11	244.27
810002120	46.6	47.15	49.89	54	54.87	65.06	71.28	70.16	67.02	66.11	60.61	69.16	721.91
810002945	89.84	86.66	106.73	111.23	114.53	137.7	150.33	128.11	120.76	115.76	108.49	115.84	1385.98
810004048	10.46	10.46	10.46	10.65	10.24	10.24	10.24	10.23	10.23	10.7	10.73	11.13	125.77
810005754	672.22	976.63	655.3	897.78	846.04	1187.04	1231.25	1064.18	948.5	861.31	837.62	895.44	11073.31
810007009	551.74	589.78	619.38	583.17	667.1	795.53	886.02	765.48	681.37	629.76	566.42	587.2	7922.95
810007492	617.27	672.22	758.88	768.86	799.71	978.66	1046.02	1087.31	609.85	776.89	713.98	753.68	9583.33
810007708	644.73	695.46	788.5	803.85	816.59	982.88	1024.96	837.01	790.74	763.91	681.68	1077.66	9907.97
810008413	110.97	118.36	131.04	129.81	130.33	154.56	162.97	136.54	130.21	127.67	120.41	130.48	1583.35
810009702	10.46	10.46	10.46	10.65	10.24	10.24	10.24	10.23	10.23	10.7	10.73	11.13	125.77
1210000614	116.99	136.03	136.44	148.42	154.02	186.77	198.98	165.25	155.25	148.13	146.14	134.42	1826.84
1210000716	18.9	22.09	21.33	22.51	21.17	24.65	25.27	20.54	19.91	20.1	20.67	19.11	256.25
1210000742	137.7	158.32	146.9	155.29	154.02	179.17	190.99	106.25	33.8	35.5	38.78	38.8	1375.52
1210001431	104.53	124.7	123.96	134.56	181.4	157.07	148.66	123.4	116.64	113.6	110.94	105.06	1544.52
1210001622	266.34	300.18	283.26	298.76	324.02	411.37	441.86	372.13	350.06	428.48	446.45	413.96	4336.87
1210001947	64.47	73.33	72.07	76.16	88.33	110.03	116.43	97.12	92.78	87.1	93.73	85.71	1057.26
1210002222	186.05	194.47	201.88	215.87	219.8	260.85	276.65	231.21	219.64	206.68	223.2	203.63	2639.93
1210002323	110.97	125.75	121.53	132.91	150.33	177.68	187.19	156.54	149.17	144.98	147.03	138.36	1742.44
1210002410	17.86	20.82	20.61	22.19	22.97	27.82	29.72	23.79	23.26	21.95	23.29	20.81	275.09
1210003306	104.43	121	110.21	92.54	92.34	109.38	116.85	98.06	92.15	86.88	92.43	85.82	1202.09
1210003466	133.17	152.19	149.04	158.02	162.97	205.09	191.41	167.06	156.54	147.16	158.97	137.23	1918.85
1210003701	46.92	48.77	52.09	55.02	55.84	67.15	71.68	60.2	57.02	55.52	56.07	53.21	679.49
1210004053	884.97	1028	1020.27	1105.86	1150.44	1390.15	1485.71	1251.61	1171.25	1111.13	1087.54	1006.79	13693.72
1210004568	151.14	173.32	174.39	184.2	190.35	226.12	238.74	199.66	191.26	178.54	192.74	173.22	2273.68
1210004745	96.69	111.18	107.38	112.08	112.84	135.59	142.23	118.87	111.93	109.05	109.87	103.81	1371.52
1210005686	116.25	136.32	135.27	142.74	147.17	174.53	170.31	141.8	134.44	132	130.66	124.84	1686.33
1210005718	162.76	186.05	195.56	186.4	200.86	241.9	254.54	212.27	201.65	195.2	194.06	182.8	2414.05
1210005873	217.73	237.82	213.5	228.95	231.38	276.65	291.38	245.91	231.21	225.08	227.57	215.99	2843.17
1210006418	92.69	105.05	83.18	88.41	89.6	2.03	220.55	96.69	196.28	91.42	83.41	88.97	1238.28
1210007076	52.62	60.65	59.39	63.09	63.91	76.13	81	67.89	64.39	62.53	62.85	59.61	774.06
1210007208	57.06	64.47	66.58	68.54	70.33	82.96	88.22	74.5	71.33	69.22	69.66	65.22	848.09
1210007515	31.31	16.27	15.43	14.99	14.79	49.59	59.7	50.01	47.68	45.01	47.8	1.46	394.04
1210008919	605.65	702.88	666.94	704.59	731.32	882.88	938.65	784.44	736.04	702.24	708.05	667.06	8830.74
1610001129	58.11	54.74	58.88	60.73	64.02	67.3	76.64	66.08	65.45	70.32	60.43	61.63	764.33
1610001330	158.54	160.64	219.86	253.9	248.25	286.12	315.53	256.46	256.46	225.08	200.46	209.25	2790.55
1610002295	136.03	129.79	144.07	156.17	174.43	189.92	204.98	168.43	148.75	158.74	148.01	141.07	1900.39
1610002534	124.7	117.83	127.12	132.63	147.17	152.43	157.59	131.59	127.82	139.99	123.03	123.96	1605.86

1610003487	76.09	67.61	76.09	79.37	85.09	88.22	98.74	82.9	76.59	87.64	75.24	75.35	968.93
1610003514	44.81	44.81	44.81	46.02	44.45	44.45	44.44	44.42	44.42	45.87	46.24	47.69	542.43
1610003685	567.39	523.2	596.23	648.1	756.05	828.68	919.6	756.24	715.01	693.14	567.43	596.87	8167.94
1610003941	114.13	108.73	120.26	129.91	144.43	158.33	168.12	139.48	135.61	142.18	118.65	113.15	1592.98
1610005942	52.84	48.51	51.57	52.67	55.93	57.61	64.02	56.11	56.11	59.51	54	56.37	665.25
1610006003	627.82	581.33	629.94	657.9	692.37	702.91	797.6	624.55	548.84	525.88	335.95	427.48	7152.57
1610006357	598.25	551.74	577.11	583.81	641.86	683.95	772.31	641.39	601.42	590.78	506.11	506.21	7254.94
1610007235	5.16	5.16	5.16	5.15	4.99	4.99	4.99	4.99	4.99	5.28	5.33	5.5	61.69
1610007610	42.27	40.15	44.4	44.5	54.55	52.45	61.91	51.35	47.16	50.86	41.41	42.74	573.75
1610008649	877.57	800.23	881.18	956.78	1120.02	1162.02	1318.41	1156.2	1069.44	1139.91	996.94	960.01	12438.71
1610009586	365.7	319.2	407.98	455.25	496.62	511.35	561.85	500.45	456.27	478.25	381.33	389.22	5323.47
2010000275	84.34	79.04	86.04	97.32	92.99	100.97	110.53	90.79	93.01	85.69	80.7	81.66	1083.08
2010000737	18.26	18.26	18.26	18.61	18.03	18.03	18.03	18.02	18.02	18.7	18.88	19.44	220.54
2010001021	486.21	498.89	460.84	521.58	610.29	761.82	810.14	666.6	611.94	579.98	536.56	591.7	7136.55
2010001054	101.47	106.73	124.7	122.13	126.09	148.22	157.67	133.39	124.96	121.15	123.72	137.23	1527.46
2010001217	467.19	467.19	568.65	573.52	618.71	738.66	765.92	647.72	607.72	579.98	538.74	557.96	7131.96
2010001752	51.76	53.91	60.25	59.9	59.82	69.29	72.43	61.86	58.71	59.51	54.09	65.22	726.75
2010001823	658.06	673.05	679.09	672.43	697.2	858.78	918.65	758.87	760.98	739.33	682.84	711.2	8810.48
2010002101	621.48	632.04	746.2	753.19	789.21	970.24	1039.55	849.65	799.14	766.08	700.8	744.68	9412.26
2010002511	15.53	15.53	15.53	15.81	15.31	15.31	15.31	15.3	15.3	15.91	16.06	16.52	187.42
2010002986	86.66	86.66	103.58	103.74	113.48	134.54	145.04	117.6	113.4	106.03	102.9	105.72	1319.35
2010004398	44.19	41.33	50.07	51.11	57.61	74.54	80.34	66.61	62.93	59.94	55.96	58.81	703.44
2010004800	6.77	6.77	6.77	6.78	6.56	6.56	6.56	6.56	6.56	6.92	6.98	7.19	80.98
2010005481	120.79	130.63	145.86	145.35	148.86	180.23	190.79	160.87	151.5	144.77	127.42	147.14	1794.21
2010006119	610.91	638.39	752.54	764.01	785.01	949.19	1005.88	828.59	775.99	733.6	676.73	677.2	9198.04
2010006174	116.9	107.91	130	123.12	131.15	168.12	198.1	172.72	163.61	151.04	174.44	138.82	1775.93
2010007336	23.13	23.13	23.13	23.59	22.88	22.88	22.88	22.87	22.87	23.68	23.9	24.6	279.54
2010007930	1042.57	1119.11	1364.22	1396.49	1504.4	1776.66	1870.62	1571.17	1487.23	1415.41	1313.34	1350.58	17211.8
2010008473	316.15	319	384.62	397.74	417.67	509.46	535.38	439.14	410.13	389.41	362.88	382.58	4864.16
2010009042	106.85	115.17	128.5	130.47	130.44	159.38	165.83	136.24	97.75	119.54	121.28	140.73	1552.18
2010009536	149.88	162.04	174.15	167.4	170.63	177.27	185.73	172.1	220.06	214.8	201.85	218.23	2214.14
2410000138	359.79	357.88	418.57	420.47	450.5	575.56	571.72	535.48	433.35	449.04	414.79	430.29	5417.44
2410000185	164.88	161.7	189.2	186.25	115.57	225.07	222.93	212.27	187.05	181.79	170.6	182.25	2199.56
2410000727	22.4	22.31	25.66	25.07	24.86	29	28.68	27.5	24.54	23.68	22.43	23.95	300.08
2410000801	118.57	118.25	138.04	136.7	140.33	165.93	164.52	156.65	138.95	135.89	128.7	138.49	1681.02
2410000855	490.42	500.99	593.99	604.62	643.96	785.01	784.96	744.46	645.58	603.8	540.24	569.22	7507.25
2410000997	84.45	77.03	82.34	91.36	87.29	97.19	109.16	91.44	92.68	84.95	80.7	82	1060.59
2410001035	420.67	401.62	446.03	512.35	507.13	578.72	648.16	536.24	525.7	467.45	432.51	429.7	5906.28
2410001178	342.25	344.48	398.15	395.84	413.66	498.83	498.9	480.06	418.12	396.22	367.44	383.69	4937.64
2410001656	42.27	40.15	44.4	51.93	50.33	56.65	65.06	52.4	50.29	45.43	41.5	42.74	583.15
2410001971	119.63	111.92	121.62	136.63	129.27	131.37	145.38	121.59	124.34	114.15	102.44	104.5	1462.84
2410002088	230.01	219.74	244.9	283.76	270.56	308.11	364.4	303.06	302.86	265.62	245.74	240.06	3278.82
2410002346	17.96	19.02	22.19	20.41	19.82	24.02	21.93	20.85	19.81	20.54	18.57	22.49	247.61
2410002801	496.76	471.41	522.15	597.03	591.35	679.76	753.39	614.05	607.72	530.21	493.66	494.95	6852.44
2410003658	285.27	278.09	320.9	326.06	343.37	390.72	391.85	381.6	331.74	317.8	293.73	302.27	3963.4

2410003767	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2410004176	76.09	70.79	77.14	87.78	98.75	114.53	129.26	107.85	109.53	98.23	92.6	92.9	1155.45
2410004261	310.75	287.5	317.09	364.67	355.6	397.68	437.63	355.33	363.74	337.59	316.74	310.51	4154.83
2410004276	10.46	10.46	10.46	10.54	10.24	10.24	10.23	10.23	10.23	10.7	10.83	11.13	125.75
2410004386	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2410004613	19.14	16.27	16.58	17.86	15.5	16.89	18.24	15.59	16.66	15.26	16.49	17.54	202.02
2410004637	758.88	735.64	881.49	1016.16	1041.82	1206.01	1351.95	1131.51	1118.87	991.14	917.44	902.19	12053.1
2410005595	469.3	486.21	416.44	518.86	500.81	553.44	599.72	475.21	464.7	411.19	375.7	364.48	5636.06
2410006866	71.87	69.73	76.09	91.03	86.14	96.65	109.26	92.38	92.38	80.06	74.24	71.97	1011.8
2410006873	77.14	73.96	80.34	89.95	89.28	99.81	112.42	93.4	95.53	84.39	80.84	79.87	1056.93
2410006905	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2410007586	18.26	18.26	18.26	18.57	18.03	18.03	18.03	18.02	18.02	18.7	18.9	19.44	220.52
2410008021	17.86	17.86	17.86	18.13	17.6	17.6	17.6	17.59	17.59	18.27	18.46	18.98	215.4
2410008247	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2410008992	384.72	397.42	467.19	465.87	486.1	578.72	568.13	559.35	496.25	469.61	310.6	317.23	5501.19
2410009178	204.84	217.73	209.83	276.95	277.8	317.99	359.15	295.36	294.03	256.32	235.48	230.04	3175.52
2910000150	95.86	97.23	112.44	111.31	114.1	134.66	142.85	119.2	112.74	106.67	100.42	107.17	1354.65
2910000160	9.71	9.91	11.83	11.73	12.34	14.96	16.34	13.2	12.58	12.02	11.07	11.58	147.27
2910000180	23.03	23.55	25.99	25.78	25.6	30.14	31.17	24.12	21.37	23.57	25.96	27.36	307.64
2910000190	24.71	25.05	29.31	28.83	28.68	34.57	36.45	30.22	28.35	27.39	25.71	27.68	346.95
2910000289	13.08	11.32	11.32	10.25	8.79	9.42	10.46	8.78	9.51	9.29	9.4	10.47	122.09
2910000461	68.38	67.42	78.96	77.17	77.48	91.82	86.65	74.8	73.96	72.49	70.19	77.14	916.46
2910000495	351.56	337.81	390.77	388.06	393.46	471.25	459.73	416.03	371.5	372.66	351.71	377.72	4682.26
2910000529	121.83	120.7	140.79	139.35	142.57	167.6	176.4	144.74	137.38	133.51	112.91	110.9	1648.68
2910000762	120.05	119.73	140.57	140.09	144.43	171.27	174.01	141.8	131.05	124.1	116.05	121.69	1644.84
2910000858	763.1	773.68	923.77	918.96	953.39	1142.86	1136.45	1085.22	956.94	908.92	837.68	859.43	11260.4
2910004808	486.21	281.16	659.52	551.43	408.19	742.92	681.81	580.39	588.79	517.22	460.91	449.95	6408.5
2910005776	53.91	51.47	53.67	57.7	56.45	64.12	55.61	46.72	47.68	43.04	43.25	40.26	613.88
2910007968	47.04	44.49	59.07	59.12	61.41	70.97	73.17	60.84	57.8	55.06	50.8	53.21	692.98
3310000003	138.67	149.13	184.46	131.47	166.98	198.98	204.74	164.21	155.9	150.81	152.33	142.86	1940.54
3310000158	109.92	117.41	120.37	126.17	129.4	153.91	160.82	133.39	127.48	124.73	126.94	119.34	1549.88
3310000341	149.67	140.89	155.16	161.89	179.5	190.99	209.14	173.13	163.9	168.38	148.5	148.72	1989.87
3310000573	91.64	98.5	100.71	105.22	107.16	127.05	132.41	110.14	104.78	101.69	104.11	99.11	1282.52
3710008858	144.78	150.09	149.04	158.53	175.58	121.92	110.32	87.11	85.03	90.88	81.46	82.12	1436.86
4110001286	31.7	29.5	32.99	36.84	35.53	39.41	43.08	35.31	33.7	30.61	27.89	28.24	404.8
4110001323	45.21												45.21
4110001756	100.83	63.7	87.31	97.02	94.24	105.39	115.33	96.05	97.95	88.71	84.31	82	1112.84
4510006750	463.16	463.16	463.16	470.4	461.05	461.05	460.92	460.71	460.71	474.16	483.6	492.94	5615.02
4910001078	0	0	0	0	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	0	0	-0.96
4910001194	42.06	46.92	45.45	50.42	50.9	56.65	71.28	53.47	50.01	51.15	41.44	42.88	602.63
4910001537	98.82	107.79	125.76	131.74	140.9	138.97	154.89	171.73	140.86	141.85	98.1	56.72	1508.13
4910001913	43.02	46.71	43.86	48.41	55.45	54.97	58.53	64.6	54.42	54.42	48.58	46.38	619.35
4910002026	446.58	481.66	464.53	521.71	574.18	568.82	640.16	701.81	553.88	539.9	462.57	445.64	6401.44
4910002756	146.17	157.7	144.78	160.02	176.87	172.44	188.88	207.52	162.74	164.11	148.37	143.24	1972.84
4910003036	230.33	260.65	252.39	281.58	319.03	309.37	336.87	362.07	296.55	302.73	325.9	293.82	3571.29

4910003699	167.03	181.8	173.32	198.72	228.17	220.84	239.8	254.46	216.51	210.19	186.13	175.71	2452.68
4910004618	93.02	98.29	94.06	101.47	110.79	108.2	118.76	131.32	108.13	109.18	98.46	96.73	1268.41
4910004852	132.11	141.64	133.17	149.04	164.18	149.28	162.97	176.57	144.96	154.44	138.49	136.77	1783.62
4910005156	72.92	80.34	76.09	82.44	90.52	86.14	98.75	108.17	89.22	88.16	80.06	78.96	1031.77
4910005229	545.42	570.76	536.93	621.48	734.04	721.85	801.85	892.06	702.39	691.87	601.62	573.86	7994.13
4910007174	40.37	43.55	41.21	44.27	48.26	46.24	51.19	56.34	46.62	47.46	43.59	42.26	551.36
6210001047	145.03	145.01	145.01	145.01	146.22	144.23	144.23	144.17	144.13	144.13	148.48	152.58	1748.23
6210001855	586.23	586.2	586.2	586.2	591.68	583.54	583.54	583.34	583.13	583.13	600.1	616.76	7070.05
6210008403	39.1	43.34	41.21	44.4	49.98	47.19	54.55	57.69	47.16	48.2	42.21	40.04	555.07
6210008769	95.54	95.53	95.53	95.53	96.27	94.96	94.96	94.93	94.89	94.89	97.81	100.53	1151.37
6210009465	612.33	612.29	612.29	612.29	618.04	609.54	609.54	609.32	609.09	609.09	626.8	644.24	7384.86
6210009737	573.87	622.96	600.77	663.46	744.28	739.94	835.32	911.08	727.73	717.51	635.79	589.51	8362.22
6610000467	169.11	153.25	159.61	163.83	171.7	189.29	230.32	206.04	184.97	167.06	152.57	187.69	2135.44
6610001412	57.06	51.76	52.84	60.25	57.26	58.75	70.33	67.13	62.93	56.62	56.26	53.45	704.64
6610001503	385.69	411.37	446.56	461.58	476.67	490.62	633.66	658.78	428.83	462.91	424.04	437.7	5718.41
6610002582	5.16	5.16	5.16	5.16	5.03	4.99	4.99	4.98	4.99	4.99	5.28	5.45	61.34
6610003468	221.97	224.08	236.76	219.86	243.87	244.01	324.02	302.81	258.56	243.82	242.39	265.88	3028.03
6610004686	75.8	80.63	86.24	88.03	109.75	133.18	131.06	92.28	80.59	77.33	75.5	81.45	1111.84
6610004895	228.1	219.63	222.28	258.96	248.15	259.59	278.34	252.44	237.42	210.31	201.48	196.55	2813.25
6610005868	130.53	137.7	148.94	144.69	139.75	144.66	179.3	162.47	140.23	131.26	127.1	136.16	1722.79
6610006299	60.65	63.93	68.46	69.42	69.86	71.81	89.06	81.14	71.87	68.48	359.67	75.05	1149.4
6610007077	50.85	50.85	50.85	50.85	51.01	50.45	50.45	50.43	50.41	50.41	52.04	53.55	612.15
6610007183	106.74	112.02	121.53	126.8	131.37	136.64	174.53	156.57	136.54	119.71	116.85	126.22	1565.52
6610007822	47.57	50.72	51.76	49.65	47.58	49.29	56.65	52.41	48.2	49.25	50.86	59.18	613.12
6610007959	109.93	116.25	126.8	126.8	135.81	193.51	239.8	163.94	140.76	128.11	121.15	127.33	1730.19
6610009618	462.98	488.31	528.49	543.28	577.04	625.01	829.2	830.9	708.71	645.58	603.8	632.31	7475.61
7010000568	535.8	518.44	493.91	619.17	611.07	641.65	754.26	755.39	587.96	544.13	511.57	476.66	7050.01
7010001329	112.55	107.91	112.87	133.17	124.14	125.68	144.43	147.65	119.48	112.65	110.68	108.93	1460.14
7010001643	47.57	44.4	44.19	49.03	46.79	46.88	53.61	54.73	43.48	41.39	38.41	34.46	544.94
7010001653	93.02	84.57	59.16	67.61	110.32	92.44	92.44	142.9	142.87	92.38	95.21	89.2	1162.12
7010001810	6.35	5.28	7.39	5.28	6.21	5.08	5.08	4.03	4.03	2.99	3.24	3.36	58.32
7010004535	191.97	181.8	188.46	215.95	208.51	224.63	264.54	274.01	219.55	210.5	200.94	192.92	2573.78
7010006528	69.74	67.61	68.69	79.25	77.37	76.64	91.39	93.44	76.59	72.38	70.32	68	911.42
7010008186	156.99	152.09	155.38	181.39	175.68	183.5	217.69	222.22	182.54	173.05	166.63	163.12	2130.28
7010008285	38.9	37.31	41.55	50.3	48.38	49.93	59.6	59.68	58.31	58.62	54.52	51.95	609.05
7010009315	43.86	43.86	43.86	43.86	43.94	43.51	43.51	43.49	43.48	43.48	44.9	46.26	528.01
7410000095	32.77	66.27	60.03	67.34	67.73	75.3	87.92	75.14	69.73	66.61	68.57	65.21	802.62
7410001157	154.12	161.42	174.28	179.77	184.78	193.8	243.5	220.11	191.67	179.36	175.42	184.91	2243.14
7410001223	147.78	163.42	153.58	172.83	177.09	198.24	231.5	208	204.83	193.77	199.43	187.29	2237.76
7410002147	249.48	217.52	340.99	324.07	340.39	389.04	459.68	385.34	354.38	329.64	330.46	305.09	4026.08
7410002305	163.74	186.78	184.32	208.22	215.78	242.23	299.51	251.13	225.43	210.42	213.94	196.71	2598.21
7410002993	125.76	139.51	135.27	147.99	152.42	171.4	200.86	170.22	157.59	147.07	167.71	189.42	1905.22
7410003034	62.99	72.07	67.21	72.27	73.55	80.99	94.85	80.95	75.77	71.87	75.61	71.59	899.72
7410003909	610.54	699.59	662.4	728.23	754.82	851.09	947.93	824.52	757.91	702.19	708.19	651.96	8899.37
7410004336	71.98	82.75	80.43	79.91	80.37	90.97	124.96	113.74	105.84	98.67	99.65	91.9	1121.17

7410005357	420.38	448.37	494.55	519.9	544.58	576.2	727.23	654.99	558.3	514.96	467.68	519.14	6446.28
7410007952	446.46	512.42	497.62	531.67	589.5	679.43	795.21	660.86	588.49	544.01	546.21	489.33	6881.21
7410009006	23.23	25.34	25.34	27.49	29.51	33.52	39.82	33.5	29.29	27.17	30.3	26.92	351.43
7410009212	913.38	1069.75	1025.03	1130.19	1156.83	1289.56	1469.26	1218.77	1139.49	1053.55	1479.92	1332.72	14278.45
7910000422	11.62	11.62	11.62	11.62	11.48	11.41	11.41	11.4	11.4	11.4	11.91	12.33	139.22
7910000538	86.68	98.29	91.95	99.34	100.49	109.26	127.14	108.15	101.84	96.59	101.69	97.49	1218.91
7910001354	597.01	681.22	653.07	718.84	751.51	835.51	984.04	862.1	757.91	698.18	687.08	629.21	8855.68
7910001409	83.09	94.48	89.61	98.42	99.44	110.21	128.44	108.98	101.63	96.36	99.97	94.48	1205.11
7910004019	207.4	230.31	215.1	238.47	225.94	241.06	316.75	283.43	247.01	229.84	233.39	216.75	2885.45
7910005618	669.08	762.16	733.75	810.18	856.45	980.35	1165.26	985.18	904.76	833.2	838.25	763.47	10302.09
7910006194	34.89	39.21	36.37	144.9	39.58	44.14	51.19	43.26	40.34	38.22	40.82	38.1	591.02
7910009363	51.67	60.03	57.91	63.51	63.7	70.33	83.27	71.54	66.85	62.19	63.71	59.83	774.54
7910009735	215.64	247.31	238.86	266.34	277.45	319.78	380.83	321.71	300.63	279.61	285.66	260.01	3393.83
7910009858	177.15	200.94	196.49	219.97	230	263.18	309.16	263.87	242.04	225.01	225.37	205.33	2758.51
8310000563	26.11	28.12	22.5	27.16	24.98	23.81	26.45	23.27	21.68	19.81	19.69	21.1	284.68
8310002757	245.24	257.89	285.39	300.18	313.9	330.31	412.41	378.56	327.98	302.73	279.18	312.54	3746.31
8310006000	19.77	21.01	16.15	17.34	18.07	19.38	24.86	21.69	18.95	17.92	17.21	18.08	230.43
8310009063	57.17	60.36	64.97	65.74	64.55	70.74	87.19	78.41	69.73	67.46	65.77	71.15	823.24
8710000000	65.51	63.42	65.51	76.09	76.32	81.92	92.44	90.3	79.76	73.42	71.4	66.89	902.98
8710000773	117.31	114.13	113.08	132.1	127.28	135.59	164.02	168.16	140.76	131.26	126.57	122.63	1592.89
8710000906	116.26	108.34	117.08	135.69	130.41	122.55	153.26	158.37	128.95	114.86	113.27	108.13	1507.17
8710001473	244.83	236.13	233.7	275.55	271.52	294.65	349.37	348.59	330.07	314.82	298.76	285.11	3483.1
8710001547	234.68	224.08	232.51	268.47	263.32	277.67	332.42	334.36	273.29	245.91	229.39	214.07	3130.17
8710001796	223.67	213.93	217.52	270.59	272.06	292.99	350.33	363.74	293.6	271.61	257.66	235.94	3263.64
8710002167	91.65	85.71	88.13	100.52	97.47	100.56	118.45	124.07	101.11	93.11	94.02	91.55	1186.35
8710002341	822.34	805.41	822.3	959.71	915.69	1033.39	1271.26	1293.82	1047.34	952.7	885.1	842.9	11651.96
8710002491	632.09	613.01	589.78	701.82	690.44	732.36	883.93	904.59	731.84	679.26	638.4	610.99	8408.51
8710004351	11.62	11.62	11.62	11.62	11.42	11.41	11.41	11.41	11.4	11.4	11.91	12.35	139.19
8710004477	5.16	5.16	5.16	5.16	4.99	4.99	4.99	4.99	4.99	4.99	5.28	5.49	61.35
8710005098	69.74	68.69	65.51	78.21	74.17	74.54	86.14	85.06	73.42	71.33	70.32	70.23	887.36
8710005176	28.55	26.41	26.41	27.49	25.3	25.08	28.48	29.3	24.85	24.85	25.96	26.76	319.44
8710005445	192.39	181.8	186.05	224.08	201.64	265.07	313.49	323.85	258.56	235.42	212.09	198.48	2792.92
8710005608	350.1	334.96	345.32	413.47	407.81	430.82	512.63	522.18	422.65	397.28	373.19	353.32	4863.73
8710006698	18.26	18.26	18.26	18.26	18.05	18.03	18.03	18.02	18.02	18.02	18.7	19.42	219.33
8710008074	564.43	545.39	551.74	653.2	637.3	662.9	791.33	809.91	662.41	614.05	562.66	539.64	7594.96
8710008203	513.74	460.84	488.31	583.42	575.71	612.39	735.53	755.18	612.99	568.84	530.21	492.8	6929.96
8710008466	127.88	156.43	197.66	246.27	230.37	199.82	255.59	270.2	236.48	236.48	233.73	225.21	2616.12
8710009239	100.43	97.23	97.23	114.13	109.26	112.43	130.33	134.49	110.23	103.95	101.69	96.98	1308.38
Unassigned-General Service Rate on Lite Sheet	**8836.03**	**9002.35**	**9509.82**	**10096.22**	**10757.23**	**11841.68**	**13378.92**	**12536.23**	**10676.72**	**10512.57**	**9821.39**	**9551.61**	**126520.77**
410002433	79.16	84.02	86.78	98.42	105.6	129.18	128.97	119.5	106.55	103.65	106.14	117.42	1265.39
810002469	5.16	5.16	5.16	5.16	4.99	4.99	4.99	4.99	4.99	5.28	5.29	5.5	61.66
810002729	459.98	431.99	492.03	509.22	551.76	728.46	761.93	635.71	594.38	547.41	537.53	542.91	6793.31
1610001463	165.95	152.19	152.19	160	173.49	181.93	197.7	170.19	172.31	213.17	181.08	178.85	2099.05
1610004073	720.51	660.49	682.03	573.37	736.79	933.08	1055.14	874.15	810.73	823.62	712.47	680.25	9262.63
1610004102	492.56	471.41	509.44	540.25	601.85	646.04	734.43	614.05	569.86	579.98	501.74	490.45	6752.06

1610005743	155.77	143.96	157.17	166.53	182.76	178.88	201.27	169.66	161.49	169.76	149.3	150.73	1987.28
1610007301	210.33	197.66	213.5	209.01	227.17	239.8	269.28	225.73	212.27	218.79	203.78	193.81	2621.13
1610009870	799.06	733.5	796.95	845.33	909.19	926.04	1071.25	879.08	845.43	831.01	719.88	697.44	10054.16
2010001379	100.63	107.67	123.02	122.72	126.84	151.6	161.08	134.88	123.19	128.08	116.09	123.85	1519.65
2010001990	46.19	46.29	54.54	54.25	56.14	67.58	68.85	54.63	47.99	46.09	43.37	46.36	632.28
2010004445	6.77	6.77	6.77	6.78	6.56	6.56	6.56	6.56	6.56	6.92	6.98	7.19	80.98
2010006517	34.23	36.59	39.75	37.96	36.57	41.53	43.29	36.43	35.5	36.15	35.03	40.14	453.17
2410002112	22.19	27.49	28.55	26.93	26.13	30.34	27.19	28.22	26.11	25.96	28.45	30.37	327.93
2410002159	86.15	84.14	95.53	110.89	109.6	125.47	140.2	115.27	112.23	98.35	90.33	87.62	1255.78
2410002742	147.32	148.4	175.12	173.47	179.69	213.61	212.53	189.7	181.05	169.32	163.45	167.71	2121.37
2410003153	73.87	69.08	74.07	82.38	78.46	87.41	98.14	82.38	83.86	76.24	72.92	73.82	952.63
2410003189	19.77	78.96	189.83	99.49	94.96	106.63	119.48	99.11	99.85	92.28	85.32	85.5	1171.18
2410003537	111.92	119.84	135.6	133.44	137.6	161.83	159.26	144.67	127.05	124.1	117.65	127.33	1600.29
2410003629	349.33	355.87	429.23	431.2	451.88	546.2	521.61	510.35	447.88	411.84	394.56	403.27	5253.22
2410003635	121.74	123.44	139.92	168.26	164.96	187.2	208.32	171.47	170.09	151.79	142.1	139.04	1888.33
2410003900	217.73	202.92	228.31	260.46	256.64	292.46	334.51	285.9	277.47	238.05	218.45	220.5	3033.4
2410003977	17.86	17.86	17.86	18.13	17.6	17.6	17.6	17.59	17.59	18.27	18.46	18.98	215.4
2410004238	16.92	16.92	16.92	17.18	16.67	16.67	16.66	16.66	16.66	17.33	17.5	18	204.09
2410006497	57.06	56.03	66.58	64.85	66.13	78.76	76.63	74.5	66.08	62.76	60.16	62.99	792.53
4910001822	752.59	809.65	780.02	879.39	988.03	951.28	1067.07	1178.2	956.94	948.5	878.6	816.28	11006.55
4910005544	570.03	604.47	577.4	635.96	715.56	710.49	797.63	832.47	713.21	765.68	718.57	677.9	8319.37
6210007399	143.66	143.65	143.65	143.65	144.86	142.87	142.87	142.8	142.76	142.76	147.06	151.13	1731.72
6610000093	437.58	471.41	498.89	522.15	555.84	582.91	747.09	675.21	521.49	462.59	437.14	460.29	6372.59
6610001920	122.61	130.52	141.95	150.3	157.82	166.98	209.07	183.64	157.16	145.71	140.09	146.35	1852.2
7010001376	852.16	806.88	836.7	1009.94	1007.27	1123.69	1346.26	1378.09	1091.44	1006.14	951.21	902.23	12312.01
7010008636	291.76	283.26	285.39	346.68	346.19	364.01	439.76	450.11	363.74	334.27	307.3	305.51	4117.98
7410001822	17.96	19.02	17.96	20.07	20.96	20.86	25.08	21.92	19.81	21.92	18.4	0	223.96
7910000253	96.19	107.79	103.58	114.13	117.44	129.27	152.43	129.2	131.26	124.96	128.74	119.89	1454.88
7910000561	285.95	327.35	315.82	351.02	362.33	412.72	487.55	411.34	374.24	347.21	351.42	324.45	4351.4
7910000982	119.44	135.27	127.87	141.64	143.94	161.94	187.2	158.66	147.07	138.65	142.81	134.49	1738.98
7910004078	176.62	202.19	179.38	192.37	212	248.45	302.54	267.14	249.73	230.79	230.16	212.16	2703.53
7910008849	0	155.25	144.69	157.49	153.37	169.05	199.17	174.43	164.11	155.5	158.19	149.37	1780.62
8710000002	143.75	136.32	136.32	152.19	149.63	172.44	175.58	185.02	155.5	135.5	150.4	147.17	1839.82
8710002679	289.61	274.81	285.39	342.44	341.95	364.01	435.56	658.39	149.17	336.38	313.79	276.51	4068.01
8710005861	17.96	15.86	17.96	21.12	20.01	20.86	27.19	28.23	21.92	19.81	19.48	17.85	248.25
Unassigned-Having Traffic & Lite Rate Code	**24003.97**	**23465.48**	**26568.78**	**27719.32**	**29479.21**	**32931.96**	**36778.9**	**30364.69**	**28774.01**	**27789.28**	**26091.28**	**25872.64**	**339839.52**
2910000000	10.46	10.46	10.46	10.53	10.24	10.24	10.23	10.23	10.23	10.7	10.84	11.13	125.75
2910000095	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2910000114	31.7	16.92	24.31	17.15	36.67	42.99	78.75	47.16	42.96	45.43	40.46	47.24	471.74
2910000133	5.39	5.39	5.82	5.13	5.19	5.83	5.82	5.08	5.71	4.88	5.23	6.19	65.66
2910000234	10.46	10.46	10.46	10.53	10.24	10.24	10.23	10.23	10.23	10.7	10.84	11.13	125.75
2910000597	207.69	214.77	256.83	261.13	272.34	324.21	337.23	276.01	256.04	242.49	228.18	237.35	3114.27
2910000620	722.95	722.95	864.59	870.1	898.68	1069.19	1132.16	780.2	729.74	692.49	639.47	663.7	9786.22
2910000710	26.41	24.31	26.41	25.71	27.19	28.24	30.34	27.17	25.06	27.06	25.3	27.01	320.21
2910000872	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69

2910000906	0	0	0	-0.16	-0.16	-0.16							-0.48
2910000953	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2910001008	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2910001049	151.56	151.88	180.21	186.55	219.92	270.83	284.37	235.84	221.1	210.91	195.79	207.21	2516.17
2910001168	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2910001590	17.86	17.86	17.86	18.11	17.6	17.6	17.6	17.59	17.59	18.27	18.49	18.98	215.41
2910001789	119.43	118.36	136.32	138.36	152.43	171.4	181.9	149.17	141.8	136.32	127	131.59	1704.08
2910001838	0.95	0.95	0.95	0.8	0.77	0.77	0.76	0.76	0.76	0.97	0.99	1.01	10.44
2910001953	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2910001963	46.5	46.5	46.5	47.46	46.12	46.12	46.12	46.09	46.09	47.6	48.17	49.48	562.75
2910002165	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2910002408	293.85	289.6	331.87	333.21	342.93	416.64	437.6	359.53	336.38	320.28	293.47	296.98	4052.34
2910002436	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2910002444	65.51	58.11	65.51	64.76	69.29	87.19	92.43	75.54	70.27	64.9	61.32	61.86	836.69
2910002733	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2910002812	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2910002904	276.94	439.68	488.31	515.86	576.6	608.17	677.5	550.96	523.61	525.88	460.1	445.47	6089.08
2910003161	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2910003306	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2910003497	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2910003634	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2910003683	2.42	2.42	2.42	2.31	2.26	2.26	2.26	2.22	2.22	2.48	2.5	2.58	28.35
2910003755	483.57	488.95	609.33	622.54	657.95	795.63	828.43	705.24	680.2	666.62	623.41	642.43	7804.3
2910004349	77.03	73.22	81.49	94.51	93.26	106.43	120.01	100.15	100.15	88.71	82.03	80.1	1097.09
2910004372	22.19	22.19	27.49	26.9	27.19	31.41	37.72	29.29	25.06	25.96	25.16	27.01	327.57
2910004383	782.14	661.67	879.39	877.75	841.85	597.66	1302.72	1167.26	1051.56	984.64	916.45	969.68	11032.77
2910004469	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2910004562	6.97	6.77	8.87	8.91	9.42	12.15	12.78	10.67	9.51	8.98	8.45	8.77	112.25
2910004665	298.07	300.18	357.26	353.15	370.29	443.99	446.05	418.42	359.53	333.26	316.74	346.49	4343.43
2910004793	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2910004845	329.77	304.4	380.51	337.56	378.74	429.25	631.22	378.45	353.21	337.59	315.35	351	4527.05
2910005094	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2910005127	325.55	331.87	393.18	383	395.57	481.87	536.53	405.8	376.33	357.07	341.66	409.46	4737.89
2910005166	10.46	10.46	10.46	10.53	10.24	10.24	10.23	10.23	10.23	10.7	10.84	11.13	125.75
2910005247	35.85	35.85	42.06	52.85	58.23	77.48	75.16	55.8	50.07	47.08	42.48	41.4	614.31
2910005368	727.16	763.1	782.14	836.53	864.98	1012.36	1050.04	864.36	803.34	755.24	746.82	677.2	9883.27
2910005467	23.13	23.13	23.13	23.52	22.88	22.88	22.88	22.87	22.87	23.68	23.96	24.6	279.53
2910005864	191.02	195.44	233.49	236.35	248.03	302.54	318.69	263.3	246.57	234.17	217.48	227.78	2914.86
2910005919	21.12	21.12	25.34	25.87	25.08	29.31	37.72	25.06	54.51	0	26.2	22.49	313.82
2910006010	11.62	11.62	11.62	11.73	11.41	11.41	11.41	11.4	11.4	11.91	12.05	12.37	139.95
2910006159	17.86	17.86	17.86	18.11	17.6	17.6	17.6	17.59	17.59	18.27	18.49	18.98	215.41
2910006198	7.81	7.81	7.81	7.82	7.6	7.6	7.6	7.6	7.6	7.99	8.09	8.31	93.64
2910006566	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2910006573	1.81	1.81	1.81	1.67	1.63	1.63	1.64	1.63	1.63	1.85	1.86	1.92	20.89
2910006649	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69

2910006858	17.86	17.86	17.86	18.11	17.6	17.6	17.6	17.59	17.59	18.27	18.49	18.98	215.41
2910007149	357.26	365.7	431.23	426.29	446.1	545.01	566.01	452.07	420.54	398.19	367.91	384.71	5161.02
2910007508	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2910007568	10.46	10.46	10.46	10.53	10.24	10.24	10.23	10.23	10.23	10.7	10.84	11.13	125.75
2910007614	22.19	21.12	23.23	24.7	24.02	28.24	30.34	25.06	24	23.8	22.99	23.6	293.29
2910007688	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2910007941	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2910007960	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2910008165	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2910008198	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2910008217	15.53	15.53	15.53	15.76	15.31	15.31	15.31	15.3	15.3	15.91	16.1	16.52	187.41
2910008521	0.42	0.54	0	0.66	0.23	0.38	0.23	0.23	0.23	0.44	0.34	0.56	4.26
2910008883	114.13	110.97	126.8	116.7	119.79	138.75	134.53	110.23	104.99	101.69	95.26	103.49	1377.33
2910008916	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2910009423	7.28	7.28	7.28	7.28	7.07	7.07	7.07	7.07	7.07	7.46	7.55	7.74	87.22
2910009528	17.01	17.01	17.01	17.26	16.78	16.78	16.78	16.77	16.77	17.43	17.63	18.1	205.33
2910009587	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2910009599	5.16	5.16	5.16	5.13	4.99	4.99	4.99	4.99	4.99	5.28	5.35	5.5	61.69
2910009805	14.04	14.04	14.04	14.21	13.82	13.82	13.82	13.81	13.81	14.38	14.57	14.95	169.31
2910009904	236.76	240.99	287.5	296.42	313.49	370.29	393.4	306.94	288.02	274.81	251.86	272.22	3532.7
3310001921	338.64	318.89	353.42	413.74	473.24	453.76	514.32	513.73	431.15	396.13	344.3	347.71	4899.03
3310003369	376.15	356.95	393.3	425.72	478.62	512.31	565.75	453.54	403.18	357.19	334.73	327.58	4985.02
3310003924	414.31	397.42	439.68	457.55	517.67	553.44	616.49	504.68	471	471.77	407.27	398.22	5649.5
3310004179	17.86	17.86	17.86	18.08	17.6	17.6	17.6	17.59	17.59	18.27	18.54	18.98	215.43
3310007874	17.86	17.86	17.86	18.08	17.6	17.6	17.6	17.59	17.59	18.27	18.54	18.98	215.43
3710000038	572.26	546.15	611.95	649.96	702.49	749.32	835.16	597.12	757.82	665.01	574.03	561	7822.27
3710000295	88.76	80.34	90.9	96.97	109.26	117.68	132.4	109.18	100.79	103.88	90.24	90	1210.4
3710000368	458.4	438.62	484.61	485.53	539.68	548.74	608.27	493.63	555.27	542.54	468.58	463.7	6087.57
3710001342	686.19	653.3	683.94	580.22	664.58	707.52	1037.7	902.35	811.79	810.76	766.18	685.86	8990.39
3710002053	77.14	83.48	86.66	89.54	93.48	110.34	116.62	98.67	91.32	90.88	90.05	85.5	1113.68
3710003001	100.42	95.11	104.63	112.08	133.48	140.87	145.04	129.18	122.87	123.35	107.86	107.98	1422.87
3710003125	15.64	15.64	15.64	15.8	15.39	15.39	15.39	15.38	15.38	16	16.28	16.64	188.57
3710003318	1112.15	1021.65	1047.97	1331.03	1312.92	1469.83	1583.93	1301.66	1293.16	1133.31	1331.15	1237.4	15176.16
3710003959	632.04	604.58	678.55	729.62	818.69	871.32	976.38	799.14	744.46	746.6	673.63	614.22	8889.23
3710004075	126.8	139.51	150.09	155.48	166.13	197.7	204	163.9	155.5	144.98	142.79	134.98	1881.86
3710004294	17.86	17.86	17.86	18.07	17.6	17.6	17.6	17.59	17.59	18.27	18.57	18.98	215.45
3710005536	420.67	401.62	449.2	486.72	506.1	623.97	649.09	551.99	544.64	553.99	482.12	476.95	6147.06
3710005640	95.96	91	102.39	108.19	121.05	131.48	146.85	120.35	110.89	112.3	97.51	96.49	1334.46
3710005889	31.7	30.64	33.83	35.46	39.82	42.99	44.01	37.71	35.58	44.38	38.53	39.37	454.02
3710005991	179.68	175.46	193.44	202.78	201.91	204.02	233.44	181.79	179.67	186.13	166.22	167.61	2272.15
3710006016	149.13	140.34	157.06	169.98	191.61	208.77	221.43	188.62	177.05	173.67	153.78	150.73	2082.17
3710006317	108.34	117.71	122.81	131.83	136.96	165.69	174.4	138.02	121.71	126.78	88.09	118.67	1551.01
3710006367	746.94	687.42	793.26	846.87	946.35	1016.03	1136.96	935.04	888.11	891.83	772.46	761.78	10423.05
3710006505	1050.61	976.63	1088.64	1195.98	1346.26	1421.35	1573.09	1306.1	1205.1	1209.7	1186.57	1068.65	14628.68
3710007048	17.01	17.01	17.01	17.22	16.78	16.78	16.78	16.77	16.77	17.43	17.73	18.1	205.39

3710007409	438.11	419.91	461.68	468.58	533.03	565.44	617.51	508.85	479.02	505.53	439.72	435.11	5872.49
3710008006	145.01	138.46	155.16	165.55	187.93	192.57	211.36	178.4	166.21	168.14	152.55	153.45	2014.79
3710008336	850.62	814.08	738.81	713.41	795.12	842.48	938.27	768.43	721.21	724.74	842.81	832.42	9582.4
3710009609	407.87	390.64	437.56	465.56	522.5	465.79	620.17	506.88	476.39	461.91	402.3	414.64	5572.21
3710009771	317.09	306.54	338.24	371.19	422.94	448.21	500.72	407.89	388.97	393.85	336.83	303.74	4536.21
4110000068	7.81	7.81	7.81	7.79	7.6	7.6	7.6	7.6	7.6	7.99	8.13	8.31	93.65
4110000124	16.81	16.81	16.81	16.94	16.54	16.54	16.55	16.53	16.53	17.21	17.51	17.88	202.66
4110000215	5.16	5.16	5.16	5.09	4.99	4.99	4.99	4.99	4.99	5.28	5.39	5.5	61.69
4110000507	56.54	56.75	50.3	1.67	46.88	71.16	76.74	65.22	67.89	64.25	60.79	57.13	675.32
4110000589	374.91	367.4	432.28	434.31	457.89	570.07	616.51	549.17	398.23	445.05	404.51	413.64	5463.97
4110000855	5.16	5.16	5.16	5.09	4.99	4.99	4.99	4.99	4.99	5.28	5.39	5.5	61.69
4110000856	17.86	17.86	17.86	18.01	17.6	17.6	17.6	17.59	17.59	18.27	18.6	18.98	215.42
4110000880	23.13	23.13	23.13	23.38	22.88	22.88	22.88	22.87	22.87	23.68	24.12	24.6	279.55
4110001125	5.16	5.16	5.16	5.09	4.99	4.99	4.99	4.99	4.99	5.28	5.39	5.5	61.69
4110001320	5.16	5.16	5.16	5.09	4.99	4.99	4.99	4.99	4.99	5.28	5.39	5.5	61.69
4110001358	17.86	17.86	17.86	18.01	17.6	17.6	17.6	17.59	17.59	18.27	18.6	18.98	215.42
4110001432	180.74	170.17	186.05	209.75	198.76	224	241.84	199.66	200.72	180.7	168.62	168.73	2329.74
4110001433	11.62	11.62	11.62	11.66	11.41	11.41	11.41	11.4	11.4	11.91	12.12	12.37	139.95
4110001595	17.86	17.86	17.86	18.01	17.6	17.6	17.6	17.59	17.59	18.27	18.6	18.98	215.42
4110001642	227.77	223.01	242.68	272.74	258.75	293.38	328.12	273.07	275.51	247.49	233.44	232.27	3108.23
4110001734	180.94	183.82	219.19	220.2	231.28	284.29	293.43	235.84	218.36	212.62	193.18	200.14	2673.29
4110001850	2.09	2	2.34	2.41	2.46	2.57	3.2	5.71	26.87	24.02	22.37	22.05	118.09
4110001865	11.62	11.62	11.62	11.66	11.41	11.41	11.41	11.4	11.4	11.91	12.12	12.37	139.95
4110001913	10.46	10.46	10.46	10.48	10.24	10.24	10.24	10.23	10.23	10.7	10.9	11.13	125.77
4110001980	5.16	5.16	5.16	5.09	4.99	4.99	4.99	4.99	4.99	5.28	5.39	5.5	61.69
4110002182	5.16	5.16	5.16	5.09	4.99	4.99	4.99	4.99	4.99	5.28	5.39	5.5	61.69
4110002302	7.18	7.18	7.18	7.14	6.97	6.97	6.97	6.97	6.97	7.34	7.48	7.64	85.99
4110002304	5.16	5.16	5.16	5.09	4.99	4.99	4.99	4.99	4.99	5.28	5.39	5.5	61.69
4110002360	11.62	11.62	11.62	11.66	11.41	11.41	11.41	11.4	11.4	11.91	12.12	12.37	139.95
4110002371	5.16	5.16	5.16	5.09	4.99	4.99	4.99	4.99	4.99	5.28	5.39	5.5	61.69
4110002400	5.16	5.16	5.16	5.09	4.99	4.99	4.99	4.99	4.99	5.28	5.39	5.5	61.69
4110002527	17.86	17.86	17.86	18.01	17.6	17.6	17.6	17.59	17.59	18.27	18.6	18.98	215.42
4110002653	5.16	5.16	5.16	5.09	4.99	4.99	4.99	4.99	4.99	5.28	5.39	5.5	61.69
4110002730	5.16	5.16	5.16	5.09	4.99	4.99	4.99	4.99	4.99	5.28	5.39	5.5	61.69
4110002817	15.33	15.33	15.33	15.46	15.1	15.37	15.37	15.36	15.36	15.98	16.28	16.59	186.86
4110003151	725.06	750.43	858.24	859.3	905	1098.63	1170.04	965.32	904.35	854.82	792.79	825.68	10709.66
4110003166	462.95	456.59	524.25	532.37	578.72	736.57	774.36	639.28	595.13	558.34	510.29	528.71	6897.56
4110003320	10.46	10.46	10.46	10.48	10.24	10.24	10.24	10.23	10.23	10.7	10.9	11.13	125.77
4110003339	17.86	17.86	17.86	18.01	17.6	17.6	17.6	17.59	17.59	18.27	18.6	18.98	215.42
4110003628	11.62	11.62	11.62	11.66	11.41	11.41	11.41	11.4	11.4	11.91	12.12	12.37	139.95
4110003772	5.16	5.16	5.16	5.09	4.99	4.99	4.99	4.99	4.99	5.28	5.39	5.5	61.69
4110004184	5.16	5.16	5.16	5.09	4.99	4.99	4.99	4.99	4.99	5.28	5.39	5.5	61.69
4110004406	137.28	128.19	138.97	153.1	147.94	165.27	180.41	143.93	144.13	127.55	121.64	119.22	1707.63
4110004417	810.18	805.72	921.46	953.89	1001.71	1209.96	1339.4	1048.53	995.81	977.94	907.35	944.35	11916.3
4110004723	0.54	0.42	0.54	0.39	0.23	0.38	0.47	0.23	0.38	0.44	0.54	0.45	5.01

4110005008	5.16	5.16	5.16	5.09	4.99	4.99	4.99	4.99	4.99	5.28	5.39	5.5	61.69
4110005023	16.86	16.86	16.86	17.01	16.63	16.63	16.63	16.62	16.62	17.26	17.57	17.92	203.47
4110005216	21.85	21.85	21.85	22.08	21.6	21.6	21.6	21.59	21.59	22.37	22.78	23.24	264
4110005367	147.99	150.09	179.68	186	204.02	250.33	258.71	208.06	193.37	186.13	168.62	179.99	2312.99
4110005467	5.16	5.16	5.16	5.09	4.99	4.99	4.99	4.99	4.99	5.28	5.39	5.5	61.69
4110005497	5.16	5.16	5.16	5.09	4.99	4.99	4.99	4.99	4.99	5.28	5.39	5.5	61.69
4110005536	594.66	664.81	882.24	1024.22	1010.9	1201.36	1337.83	1231.93	1196.48	1062.86	989.38	956.18	12152.85
4110005566	285.39	298.07	350.91	313.72	359.79	462.94	504.95	393.18	378.45	341.93	313.18	344.23	4346.74
4110005593	283.26	266.34	300.18	346.47	347.16	399.78	441.79	365.85	363.74	320.28	293.19	288	4016.04
4110005664	680.67	569.7	746.2	847.04	837.62	951.28	1028.99	866.45	782.31	872.11	783.61	748.05	9714.03
4110005677	5.16	5.16	5.16	5.09	4.99	4.99	4.99	4.99	4.99	5.28	5.39	5.5	61.69
4110005733	33.41	33.41	33.41	33.85	33.1	33.1	33.09	33.08	33.08	34.19	34.83	35.56	404.11
4110005834	17.86	17.86	17.86	18.01	17.6	17.6	17.6	17.59	17.59	18.27	18.6	18.98	215.42
4110005930	16.81	16.81	16.81	16.94	16.54	16.54	16.55	16.53	16.53	17.21	17.51	17.88	202.66
4110006049	10.34	10.34	10.34	10.37	10.11	10.11	10.11	10.11	10.11	10.59	10.79	11.02	124.34
4110006052	5.16	5.16	5.16	5.09	4.99	4.99	4.99	4.99	4.99	5.28	5.39	5.5	61.69
4110006283	11.62	11.62	11.62	11.66	11.41	11.41	11.41	11.4	11.4	11.91	12.12	12.37	139.95
4110006700	10.46	10.46	10.46	10.48	10.24	10.24	10.24	10.23	10.23	10.7	10.9	11.13	125.77
4110006839	17.86	17.86	17.86	18.01	17.6	17.6	17.6	17.59	17.59	18.27	18.6	18.98	215.42
4110006957	35.85	35.85	35.85	36.34	35.53	35.53	35.52	35.5	35.5	36.69	37.37	38.13	433.66
4110007460	10.34	10.34	10.34	10.37	10.11	10.11	10.11	10.11	10.11	10.59	10.79	11.02	124.34
4110007554	17.86	17.86	17.86	18.01	17.6	17.6	17.6	17.59	17.59	18.27	18.6	18.98	215.42
4110007769	412.21	416.44	492.56	495.58	514.51	613.44	635.43	517.29	484.68	463.12	421.58	422.98	5889.82
4110007855	7.18	7.18	7.18	7.14	6.97	6.97	6.97	6.97	6.97	7.34	7.48	7.64	85.99
4110007960	5.16	5.16	5.16	5.09	4.99	4.99	4.99	4.99	4.99	5.28	5.39	5.5	61.69
4110008147	5.16	5.16	5.16	5.09	4.99	4.99	4.99	4.99	4.99	5.28	5.39	5.5	61.69
4110008176	7.18	7.18	7.18	7.14	6.97	6.97	6.97	6.97	6.97	7.34	7.48	7.64	85.99
4110008379	15.53	15.53	15.53	15.66	15.31	15.31	15.31	15.3	15.3	15.91	16.2	16.52	187.41
4110008569	667.98	625.73	699.71	753.37	824.99	871.32	963.73	771.77	719.22	716.3	717.67	679.43	9011.22
4110009011	7.18	7.18	7.18	7.18	7.14	6.97	6.97	6.97	6.97	6.97	7.34	7.48	85.53
4110009171	5.16	5.16	5.16	5.09	4.99	4.99	4.99	4.99	4.99	5.28	5.39	5.5	61.69
4110009377	17.86	17.86	17.86	17.86	18.01	17.6	17.6	17.6	17.59	17.59	18.27	18.6	214.3
4110009462	824.43	826.54	982.97	989.15	1043.92	1267.08	1330.7	1093.64	1026.32	969.52	886.95	794.19	12035.41
4110009847	5.16	5.16	5.16	5.09	4.99	4.99	4.99	4.99	4.99	5.28	5.39	5.5	61.69
Grand Total	**$ 164,635**	**$ 167,331**	**$ 179,423**	**$ 191,871**	**$ 200,520**	**$ 224,432**	**$ 250,519**	**$ 221,344**	**$ 201,776**	**$ 193,420**	**$ 183,249**	**$ 180,664**	**$ 2,359,184**

RATE 47 ($$$)

Row Labels	201406	201407	201408	201409	201410	201411	201412	201501	201502	201503	201504	201505	Grand Total
47	**$ 15,865**	**$ 15,776**	**$ 17,678**	**$ 18,145**	**$ 18,957**	**$ 21,995**	**$ 23,428**	**$ 20,110**	**$ 18,963**	**$ 18,990**	**$ 18,315**	**$ 18,902**	**$ 227,123**
Broadway & Stone Ave	**11.83**	**13.94**	**17.34**	**17.81**	**19.07**	**23.38**	**24.77**	**20.2**	**18.53**	**17.75**	**16.52**	**17.65**	**218.79**
2910000387	11.83	13.94	17.34	17.81	19.07	23.38	24.77	20.2	18.53	17.75	16.52	17.65	218.79
Hawks	**91.95**	**91.95**	**107.79**	**106.96**	**110.34**	**128.22**	**122.94**	**96.59**	**88.16**	**86.58**	**82.13**	**88.85**	**1202.46**
2910002497	91.95	91.95	107.79	106.96	110.34	128.22	122.94	96.59	88.16	86.58	82.13	88.85	1202.46
Median Island (Broadway/Alvernon Quadrants)	**0.11**	**0.32**	**0.2**	**0.2**	**0.14**	**0.13**	**0.13**	**0.04**	**0.13**	**0.13**	**0.2**	**0**	**1.73**
7410003957	0.11	0.32	0.2	0.2	0.14	0.13	0.13	0.04	0.13	0.13	0.2	0	1.73
Signals	**238.43**	**236.72**	**275.53**	**270.79**	**275.51**	**327.11**	**335.97**	**292.6**	**275.96**	**270.27**	**256.66**	**275.04**	**3330.59**
2910000351	76.72	75.55	87.84	85.9	88.33	105.49	110.42	91.32	88.16	85.69	81.8	87.62	1064.84
2910000491	84.87	84.98	99.13	97.91	99.17	116.96	115.45	109.84	99.64	97.59	92.51	99.45	1197.5
2910000793	76.84	76.19	88.56	86.98	88.01	104.66	110.1	91.44	88.16	86.99	82.35	87.97	1068.25
Street Lights	**1282.73**	**1458.17**	**1657.32**	**1725.79**	**1944.86**	**2305**	**2453.71**	**2026.7**	**1976.93**	**1834.09**	**1688.47**	**1744.12**	**22097.89**
2410002087	4.62	4.62	4.62	4.57	4.45	4.45	4.45	4.45	4.45	4.74	4.8	4.95	55.17
2910004954	77.14	85.62	95.22	93.66	93.61	112.63	118.85	99.01	92.26	89.59	84.44	90.87	1132.9
2910007700	20.82	18.8	19.14	19.8	17.6	18.24	19.71	39.38	56.52	52.14	49.92	50.86	382.93
4110001173	239.93	227.47	253.79	292.01	294.02	322.74	356.56	284.3	287.51	226.47	207.31	207.1	3199.21
4110002509	112.79	103.81	115.78	129.96	124.07	138.97	153.86	125.97	128.94	115.47	109.29	110.48	1469.39
4110004864	750.59	946.22	1091.93	1095.61	1309.5	1602.16	1681.85	1375.74	1315.81	1250.68	1154.01	1211.03	14785.13
4110005368	76.84	71.63	76.84	90.18	101.61	105.81	118.43	97.85	91.44	95	78.7	68.83	1073.16
Street Lights and Traffic Signals	**3.26**	**3.35**	**3.35**	**3.35**	**2.65**	**1.66**	**2.61**	**2.6**	**2.61**	**2.7**	**3.33**	**3.53**	**35**
6610003106	0.54	0.63	0.63	0.63	0.39	0.47	0.38	0.37	0.38	0.47	0.54	0.66	6.09
7910001188	0.63	0.63	0.63	0.63	0.48	0.47	0.47	0.47	0.47	0.47	0.64	0.66	6.65
8310000984	2.09	2.09	2.09	2.09	1.94	0.88	1.92	1.92	1.92	1.92	2.15	2.21	23.22
8710001017	0	0	0	0	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	0	0	-0.96
Traffic Signals	**4356.26**	**4316.79**	**4755.96**	**4980.99**	**5161.67**	**6071.8**	**6570.99**	**5584.9**	**5284.5**	**5227.61**	**4867.49**	**4990.95**	**62169.91**
410000375	2.42	2.52	2.42	2.76	2.26	2.57	2.57	2.56	2.36	2.48	2.48	2.93	30.33
410000920	0.84	0.84	0.95	0.23	0.56	0.56	0.64	0.47	0.47	0.75	0.65	0.79	7.75
1210000244	80.75	27.69	110.01	114.92	117.68	147.4	156.98	131.81	125.29	117.59	136.64	110.12	1376.88
1610000624	55.39	53.81	41.21	43.53	47.93	50.66	57.42	47.79	44.95	46.21	40.13	40.05	569.08
2910000054	73.85	74.08	85.71	84.38	85.82	102.86	108.19	89.74	85.97	84.73	80.38	86.86	1042.57
2910000141	82.86	77.99	0	95.57	90.74	97.49	107.27	89.33	90.68	83.19	78.85	79.87	973.84
2910000162	122.81	122.7	142.28	139.45	141.2	167.6	176.2	145.71	137.38	134.26	127.97	138.69	1696.25
2910000241	39.1	38.68	46.5	46.11	47.49	62.65	54.75	47.06	48.83	38.19	38.05	42.42	549.83
2910000278	80.34	80.98	93.96	92.39	93.91	111.8	111.06	104.71	94.06	91.32	86.62	92.9	1134.05
2910000309	155.38	142.7	160.64	167.17	175.58	185.1	207.13	170.19	158.63	164.46	143.1	141.73	1971.81
2910000437	90.23	104	135.4	131.99	135.37	160.56	167.99	139.41	129.06	134.26	119.45	136	1583.72
2910000499	27.69	27.49	32.02	31.2	31.41	37	38.54	32.21	30.54	30.08	28.5	30.61	377.29
2910000587	93.64	93.64	109.82	109.35	112.72	134.43	141.17	116.75	111.82	109.6	103.36	111.01	1347.31
2910000590	119.33	118.68	132.41	132.43	132.86	194.98	219.03	183.9	174.84	169.99	161.3	173.8	1913.55
2910000692	49.76	50.42	59.6	59.9	62.65	71.57	75.37	62.61	58.93	56.37	52.66	55.35	715.19
2910000699	78.85	77.99	90.58	89.37	89.83	105.6	111.15	92.49	89.22	88.18	83.65	89.54	1086.45
2910000940	169.76	159.27	173.74	198.03	189.52	210.12	236.21	196.21	198.82	180.7	169.6	171	2252.98

2910001211	121.62	112.65	123.44	128.82	140.64	148.22	166.1	137.09	129.6	134.15	119.19	121.23	1582.75
2910001694	72.7	72.91	84.02	83.17	83.27	100.56	105.37	88.8	84.93	82.77	80.15	84.37	1023.02
2910002157	0.63	0.63	0.63	0.48	0.47	0.47	0.47	0.47	0.47	0.64	0.65	0.66	6.67
2910003779	51.76	51.76	59.16	56.1	58.75	67.15	70.32	58.71	57.67	57.33	55.86	61.86	706.43
2910006762	284.01	287.91	324.79	327.16	336.01	426.21	478.68	453.11	396.73	381.18	351.6	372.67	4420.06
2910007365	6.35	6.35	6.35	6.35	29.31	5.08	6.14	5.08	5.08	5.41	5.45	6.76	93.71
2910008098	141.64	142.7	168.06	165.65	171.4	200.86	198.75	187.05	160.74	166.63	152.01	162	2017.49
2910008126	115.17	114.13	135.27	107.12	109.26	127.14	125.04	119.71	122.87	125.5	113.72	129.36	1444.29
3310000560	71	91.54	150.09	158.94	164.65	195.72	206.53	169.66	159.9	154.63	155.63	145.22	1823.51
3310002066	151.14	131.04	142.7	147.76	161.94	174.53	202.92	168.1	158.63	165.52	146.38	149.61	1900.27
3310003757	37.22	40.28	42.27	45.1	47.09	57.17	60.35	49.78	46.84	44.57	44.59	39.82	555.08
3310008831	214.26	203.48	226.4	241.56	267.17	282.11	312.51	258.14	243.02	242.6	211.02	204.19	2906.46
3710000385	34.13	20.9	21.01	20.33	22.67	23.38	25.69	21.37	20.33	21.5	19.02	19.34	269.67
3710000395	7.49	6.86	6.86	6.51	6.45	6.35	6.77	5.92	6.03	6.92	6.7	7.07	79.93
3710000478	32.68	30.96	34.05	35.8	34.87	34.15	32.79	26.11	24.85	25.63	22.66	22.83	357.38
3710003671	113.08	105.68	114.13	119.64	129.27	134.54	150.31	126.01	116.56	121.15	106.75	110.22	1447.34
3710004272	66.36	67.85	68.69	70.93	71.69	84.67	88.85	72.9	71.33	69.34	72.49	68.83	873.93
3710004577	147.99	140.57	154.43	158.83	173.18	183.38	203.88	168.93	160.32	164.68	145.59	146.56	1948.34
3710004881	133.25	125.87	139.39	146.87	159.7	165.93	186.2	154.33	146	150.4	133.07	135.1	1776.11
3710005135	157.49	169.1	174.39	182.52	187.2	222.96	232.4	193.37	182.84	174.21	164.74	151.86	2193.08
3710006583	33.09	34.49	38.68	40.54	44.65	45.82	49.82	41.39	39.38	41.13	34.12	34.44	477.55
3710007234	48.62	45.45	50.72	33.31	34.57	35.61	36.66	33.48	31.39	34.63	31.94	31.51	447.89
3710007389	73.75	68.57	73.67	76.23	82.35	85.41	95.34	79.35	75.96	79.97	71.76	73.79	936.15
3710007446	25.34	25.34	26.41	28.98	31.41	31.41	35.6	29.29	28.22	29.2	26.42	27.01	344.63
3710007609	43.34	40.15	40.15	38.68	40.89	39.82	45.06	37.71	38.74	42.21	39.63	42.74	489.12
3710009023	41.21	40.15	42.27	41.95	46.12	48.23	53.49	42.96	42.96	44.38	40.72	42.74	527.18
3710009845	119.12	128.41	132.1	139.14	143.82	173.06	180.53	149.38	135.26	123.45	110.25	117.29	1651.81
3710009927	102.05	96.97	105.11	112.41	125.85	129.91	144.13	118.66	112.57	115.96	102.03	101	1366.65
4110001080	55.26	55.5	65.09	64	64.95	294.84	334.8	275.18	257.61	297.68	282.62	299.48	2347.01
4110001147	156.2	148.4	166.24	187.36	181.82	203.61	220.58	179.99	182.32	163.91	155.18	154.79	2100.4
4110003590	8.63	113.34	63.69	71.28	69.69	76.13	85.79	69.63	70.4	59.43	55.81	64.33	808.15
4110004691	153.7	143.71	157.72	173.67	162.85	182.72	197.58	175.63	167.68	150.2	141.56	143.39	1950.41
4110006539	169.85	159.61	173.24	194.8	186.77	209.07	224.08	196.28	193.15	174.08	166.1	168.51	2215.54
6210001432	43.13	40.05	27.49	30.22	33.57	32.79	35.95	38.54	32.43	44.42	48.69	46.7	453.98
8710004634	0	0	0	0	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	0	0	-0.96
Unassigned-General Service Rate on Lite Sheet	**1.27**	**1.27**	**1.27**	**1.13**	**1.08**	**1.08**	**1.08**	**1.08**	**1.08**	**1.3**	**1.32**	**1.35**	**14.31**
2410004410	1.27	1.27	1.27	1.13	1.08	1.08	1.08	1.08	1.08	1.3	1.32	1.35	14.31
Unassigned-Having Traffic & Lite Rate Code	**9879.65**	**9653.1**	**10858.89**	**11038.03**	**11441.73**	**13136.64**	**13915.58**	**12085.12**	**11315.39**	**11549.75**	**11398.54**	**11780.21**	**138052.63**
2910000010	51.57	54.01	69.09	67.26	68.53	81.09	84.87	71.22	68.07	66.65	54.52	77.25	814.13
2910000348	14.14	14.14	14.14	14.32	13.93	13.93	13.93	13.92	13.92	14.49	14.67	15.06	170.59
2910000421	45.21	44.6	51.47	49.84	50.33	58.75	61.17	51.15	49.04	48.69	46.66	51.07	607.98
2910000698	92.06	90.68	82.97	100.37	104.23	102.31	121.05	107.7	95.84	81.69	77.76	77.14	1133.8
2910000907	23.35	23.23	27.16	26.56	27.19	31.82	32.99	27.7	26.22	25.96	24.51	26.33	323.02
2910000955	452.38	414.31	458.71	527.52	515.57	585.02	660.75	542.53	542.53	482.58	447.78	436.46	6066.14

2910001101	0	0	0	-0.16	-0.16	-0.16	0.47	0.47	0.47	0.64	0.77	0.79	3.13
2910001306	131.04	131.04	154.32	153.74	156.65	188.23	188.21	177.55	156.54	150.4	139.97	149.61	1877.3
2910001445	77.44	77.78	90.58	89.01	92.74	110.34	115.14	96.05	91.85	89.92	85.1	90.09	1106.04
2910001608	144.78	144.78	170.17	166.53	170.32	201.91	212.39	176.51	162.83	173.12	158.78	173.22	2055.34
2910001997	135.27	135.27	264.24	49.61	166.13	196.64	208.51	174.84	166.13	158.83	149.34	157.5	1962.31
2910002554	136.74	138.24	153.79	150.28	146.12	165.38	215.78	139.41	123.93	125.94	116.05	131.46	1743.12
2910002829	171.22	170.17	192.37	188.44	195.62	234.56	231.35	220.69	194.4	188.3	168.41	173.22	2328.75
2910003393	64.47	64.47	75.02	73.41	75.59	86.14	90.33	75.54	68.17	73.56	67.9	73.09	887.69
2910003884	0	0	0	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	0	0	0	-0.96
2910004151	76.09	71.87	76.09	84.54	77.7	86.14	94.53	81.85	81.85	75.72	70.97	71.97	949.32
2910004238	72.07	76.32	77.34	78.42	77.39	92.65	100.54	83.02	77.86	73.89	72.15	67.37	949.02
2910004315	22.94	22.94	22.94	23.32	22.67	22.67	22.66	22.65	22.65	23.48	23.75	24.4	277.07
2910004777	188.15	168.06	207.18	208.19	228.19	239.8	268.17	220.69	209.13	213.17	187.12	183.37	2521.22
2910005372	95.11	95.11	109.92	106.96	111.38	134.54	140.86	117.6	111.29	109.28	104.02	111.35	1347.42
2910005849	34.89	34.89	39.1	36.69	35.61	40.89	40.89	37.71	35.58	34.63	33.48	38.37	442.73
2910005885	83.27	81.18	94.79	92.81	92.74	107.49	108.34	89.87	112.56	109.72	103.58	112.02	1188.37
2910005947	148.62	151.23	176.39	172.6	180.46	216.66	215.8	202.8	179.25	172.59	162.07	169.52	2147.99
2910007268	83.48	82.44	95.11	92.91	96.65	93.48	73.49	62.93	72.38	90.88	87.61	105.72	1037.08
2910007371	91.95	85.62	93.01	95.89	104.02	107.16	118.73	96.59	94.48	100.62	85.91	90	1163.98
2910007863	66.47	61.94	66.58	68.37	73.19	73.58	84.22	84.38	81.63	86.24	77.93	79.98	904.51
2910008056	125.65	123.96	144.78	151.89	167.18	203.81	205.6	186.75	154.86	147.93	139.52	147.7	1899.63
2910008076	102.3	100.29	118.68	113.93	113.48	136.64	123.9	201.87	195.77	185.69	171.69	181.58	1745.82
2910009573	83.48	83.8	98.6	99.09	102.54	122.32	118.44	115.81	102.78	98.46	92.84	98.43	1216.59
2910009823	163.83	223.01	167.02	272.38	126.09	380.83	309.22	258.56	257.51	218.56	223.9	209.25	2810.16
2910009987	558.08	530.61	589.78	679.54	669.2	761.82	858.62	712.92	710.82	647.04	596.32	575.95	7890.7
3310003951	134.21	126.06	135.69	123.44	134.97	142.24	152.95	127.05	121.3	125.94	112.13	114.27	1550.25
3310006022	31.7	32.77	35.96	37.68	39.82	47.19	50.32	40.87	38.74	37.88	36.23	33.74	462.9
3710000435	85.62	80.75	88.03	90.18	97.7	99.17	109.79	91.55	88.26	91.1	82.78	86.73	1091.66
3710000944	97.23	93.01	101.47	105.63	111.38	116.63	132.4	109.18	103.95	107.11	94.65	110.22	1282.86
3710001688	195.56	184.99	201.88	213.59	235.59	247.19	268.17	213.33	201.76	206.68	182.73	182.25	2533.72
3710004536	85.2	79.04	90.68	95.68	106.13	111.69	124.94	103.45	98.17	100.3	89.61	89.1	1173.99
3710006036	131.79	127.44	134	147.42	143.19	177.68	199.66	149.38	148.55	134.05	134.11	135.55	1762.82
3710006315	83.18	77.44	80.43	81.21	86.66	83.27	86.76	69.22	65.45	68.7	62.62	64.9	909.84
3710006400	52.84	45.45	45.45	46.24	51.4	51.4	58.73	47.16	46.09	48.69	51.72	37.13	582.3
3710006575	695.46	640.51	638.39	686.62	652.37	732.36	814.31	658.2	662.41	662.2	727.4	722.17	8292.4
3710007391	194.47	177.55	195.56	162.83	253.5	238.75	289.2	237.53	222.78	227.46	200.33	200.91	2600.87
3710007686	62.36	58.11	53.91	73.21	67.15	68.23	73.48	60.84	58.71	61.67	58.33	58.49	754.49
3710007801	135.27	124.7	137.39	142.33	157.7	167.18	180.8	150.22	141.8	146.08	127.64	131.59	1742.7
3710007881	30.64	29.5	32.77	35.03	39.41	41.53	46.35	38.12	35.71	36.15	31.38	31.27	427.86
3710009386	172.29	161.7	177.55	188.77	207.18	217.69	240.79	199.66	188.09	193.68	171.7	172.11	2291.21
3710009438	66.07	61.97	66.86	68.86	76.77	80.74	94.15	76.91	73.05	75.12	66.62	66.08	873.2
4110001017	627.19	627.82	728.67	701.26	712.06	859.21	1194.77	1022.32	936.1	913.03	1178.34	1168.32	10669.09
4110001706	448.14	458.71	644.73	649.27	658.7	816.59	496.53	395.27	370.02	772.55	838.78	881.92	7431.21
4110001826	114.19	120.47	116.07	126.35	140.63	148.82	149.42	175.54	144.53	145.74	138.49	131.03	1651.28

4110002246		85.3	83.89	96.27	90.31	83.49	121.15	130.62	109.18	104.15	102.78	98.44	107.87	1213.45
4110003697		75.44	75.44	87.71	86.31	88.01	104.33	109.59	91.22	86.7	84.95	80.48	86.62	1056.8
4110003701		1.27	48.51	156.74	152.77	156.56	188.76	197.16	163.68	156.11	151.23	143.11	171.76	1687.66
4110003944		599.51	573.09	670.74	656.09	673.84	814.05	871.93	702.81	634.34	703.32	750.19	816.27	8466.18
4110004039		151.02	150.3	175.34	172.39	177.8	212.85	217.98	180.29	169.66	166.44	155.79	169.42	2099.28
4110004182		127.87	120.17	131.25	139.62	157.18	166.75	177.45	140.23	136.44	139.35	123.69	125.72	1685.72
4110004382		140.25	46.19	49.38	59.24	61.91	76.13	87.9	76.59	72.16	58.09	53.22	54.44	835.5
4110004594		114.13	113.08	131.04	130.77	131.37	155.6	119.77	126.01	124.96	122.25	113.86	124.84	1507.68
4110005425		62.36	62.36	70.79	72.33	65.06	79.82	86.12	100.79	106.05	102.78	98.54	105.72	1012.72
4110005711		99.13	99.66	115.17	104.17	97.49	102.54	90.22	111.4	106.78	103.21	97.88	104.6	1232.25
4110006993		136.55	127.87	140.14	158.92	159.79	163.61	186.93	154.65	166.97	127.77	136.34	136.22	1795.76
4110007961		119.63	136.03	130.94	134.18	136.34	156.99	164.19	146.64	132.03	132.65	139.24	127.99	1656.85
4110008550		60.79	56.12	59.94	65.15	61.08	66.13	70.53	47.26	49.66	45.74	45.07	47.37	674.84
4110008871		194.47	193.44	229.37	228.2	233.49	280.84	300.81	243.96	231.33	222.92	210.26	225.3	2794.39
4110009747		117.29	117.29	137.39	134.03	138.75	165.06	173.47	144.96	136.54	133.07	123.72	130.48	1652.05
4110009819		708.51	734.89	682.88	732.88	870.71	846.04	928.45	1003.69	783.79	817.15	748	817.45	9674.44
4910006213		55.82	59.94	56.12	60.12	64.91	61.7	67.7	74.42	61.66	62.84	58	57.04	740.27
8710008351		50.85	50.85	50.85	50.85	50.52	50.45	50.45	50.42	50.41	50.41	52.04	54.05	612.15
Grand Total	**$**	**15,865**	**$ 15,776**	**$ 17,678**	**$ 18,145**	**$ 18,957**	**$ 21,995**	**$ 23,428**	**$ 20,110**	**$ 18,963**	**$ 18,990**	**$ 18,315**	**$ 18,902**	**$ 227,123**

C.2 Utility Consumption Data

Sum of Native Use	Column Labels												
Row Labels	**201406**	**201407**	**201408**	**201409**	**201410**	**201411**	**201412**	**201501**	**201502**	**201503**	**201504**	**201505**	**Grand Total**
10	360,275	405,095	413,081	409,716	376,006	376,355	411,344	412,015	258,684	308,186	287,778	289,270	4,307,805
41	1,558,221	1,583,320	1,698,475	1,788,180	1,900,981	2,136,855	2,386,068	2,107,965	1,921,362	1,808,360	1,683,830	1,611,613	22,185,230
47	150,815	150,042	168,146	169,075	181,222	210,781	224,571	192,663	181,655	176,803	167,969	169,043	2,142,785
Grand Total	**2,069,311**	**2,138,457**	**2,279,702**	**2,366,971**	**2,458,209**	**2,723,991**	**3,021,983**	**2,712,643**	**2,361,701**	**2,293,349**	**2,139,577**	**2,069,926**	**28,635,820**

Rate Name 10

Row Labels	201406	201407	201408	201409	201410	201411	201412	201501	201502	201503	201504	201505	Grand Total
2nd Str & Cherry Ave	**133**	**142**	**157**	**191**	**198**	**205**	**248**	**265**	**223**	**206**	**184**	**175**	**2,327**
TEP_2910000902	133	142	157	191	198	205	248	265	223	206	184	175	2,327
2nd Str & Highland Ave	**144**	**146**	**158**	**199**	**201**	**216**	**260**	**269**	**218**	**205**	**189**	**178**	**2,383**
TEP_7010001125	144	146	158	199	201	216	260	269	218	205	189	178	2,383
2nd Str & Olive Rd	**127**	**137**	**157**	**191**	**184**	**197**	**235**	**222**	**196**	**156**	**127**	**131**	**2,060**
TEP_7010001255	127	137	157	191	184	197	235	222	196	156	127	131	2,060
4th Ave & 4th Str	**160**	**193**	**234**	**241**	**258**	**312**	**334**	**277**	**260**	**243**	**226**	**237**	**2,975**
TEP_2910000685	160	193	234	241	258	312	334	277	260	243	226	237	2,975
4th Ave & 6th Str	**163**	**177**	**227**	**250**	**301**	**340**	**413**	**359**	**321**	**341**	**334**	**321**	**3,547**
TEP_2910000524	163	177	227	250	301	340	413	359	321	341	334	321	3,547
4th Ave & 9th Str	**170**	**166**	**205**	**240**	**243**	**281**	**316**	**262**	**246**	**229**	**213**	**214**	**2,785**
TEP_2910000864	170	166	205	240	243	281	316	262	246	229	213	214	2,785
ADC & Congress Str	**110**	**119**	**142**	**146**	**158**	**192**	**191**	**182**	**160**	**153**	**137**	**141**	**1,831**
TEP_2410000676	110	119	142	146	158	192	191	182	160	153	137	141	1,831
Broadway & Church Ave	**82**	**93**	**111**	**114**	**113**	**137**	**143**	**130**	**115**	**106**	**97**	**100**	**1,341**
TEP_2910000296	82	93	111	114	113	137	143	130	115	106	97	100	1,341
Broadway & Granada Ave	**216**	**232**	**300**	**317**	**339**	**411**	**356**	**465**	**335**	**313**	**302**	**298**	**3,884**
TEP_2410000306	110	116	151	164	174	210	153	276	167	158	159	162	2,000
TEP_2410000394	106	116	149	153	165	201	203	189	168	155	143	136	1,884
Broadway & 6th Ave	**100**	**116**	**-**	**281**	**156**	**185**	**185**	**153**	**144**	**131**	**112**	**110**	**1,673**
TEP_2910000079	100	116	-	281	156	185	185	153	144	131	112	110	1,673
Congress Str & 6th Ave	**109**	**117**	**-**	**287**	**158**	**193**	**204**	**169**	**154**	**139**	**127**	**156**	**1,813**
TEP_2910000185	109	117	-	287	158	193	204	169	154	139	127	156	1,813
Congress Str & Church Ave	**84**	**92**	**113**	**117**	**126**	**154**	**163**	**134**	**127**	**117**	**108**	**111**	**1,446**
TEP_2910000882	84	92	113	117	126	154	163	134	127	117	108	111	1,446
Congress Str & Stone Ave	**60**	**77**	**87**	**55**	**54**	**62**	**63**	**53**	**30**	**21**	**20**	**31**	**613**
TEP_2910000497	60	77	87	55	54	62	63	53	30	21	20	31	613
Cushing Str & ADC	**33**	**126**	**159**	**148**	**158**	**188**	**187**	**179**	**159**	**148**	**136**	**162**	**1,783**
TEP_2410000424	33	126	159	148	158	188	187	179	159	148	136	162	1,783
Cushing Str & I-10	**215**	**217**	**286**	**297**	**322**	**392**	**391**	**371**	**325**	**303**	**281**	**291**	**3,691**
TEP_2910000929	215	217	286	297	322	392	391	371	325	303	281	291	3,691
Granada Ave & Cushing Str	**283**	**301**	**348**	**343**	**370**	**471**	**475**	**443**	**385**	**356**	**330**	**341**	**4,446**
TEP_2910000168	283	301	348	343	370	471	475	443	385	356	330	341	4,446
Helen Str & Warren Ave	**163**	**162**	**178**	**209**	**194**	**206**	**247**	**253**	**208**	**197**	**186**	**176**	**2,379**
TEP_7010001350	40	37	32	33	24	21	23	24	20	20	21	22	317
TEP_7010001763	123	125	146	176	170	185	224	229	188	177	165	154	2,062
Median Island (Broadway/Alvernon Quadrants)	**463**	**442**	**464**	**468**	**456**	**464**	**452**	**447**	**443**	**441**	**442**	**443**	**5,425**
TEP_0410001502	367	367	367	367	367	367	367	367	367	367	367	367	4,404
TEP_0410005054	25	25	25	25	25	25	25	25	25	25	25	25	300
TEP_0810005011	59	37	50	64	52	57	43	40	37	36	36	37	548

TEP_1610003912	-	-	10	-	-	1	3	2	2	1	2	1	22
TEP_1610004265	3	4	3	3	4	4	4	4	3	4	3	3	42
TEP_2010000330	-	-	-	-	-	-	-	-	-	-	-	-	-
TEP_2010000556	7	7	7	7	7	8	8	7	7	6	7	8	86
TEP_2010005461	-	-	-	-	-	-	-	-	-	-	-	-	-
TEP_2010008678	-	-	-	-	-	-	-	-	-	-	-	-	-
TEP_2010009902	2	2	2	2	1	2	2	2	2	2	2	2	23
Signals	**1,000**	**963**	**965**	**1,084**	**1,044**	**1,065**	**1,261**	**1,272**	**1,070**	**1,048**	**994**	**973**	**12,739**
TEP_2910000248	64	58	54	40	38	44	45	38	38	38	39	49	545
TEP_2910000470	57	53	53	41	45	41	44	37	37	40	40	48	536
TEP_2910000688	840	815	826	971	936	957	1,148	1,172	974	949	893	854	11,335
TEP_2910000709	39	37	32	32	25	23	24	25	21	21	22	22	323
Street Lights	**23,503**	**21,124**	**25,041**	**25,855**	**29,548**	**34,174**	**37,581**	**30,189**	**29,102**	**28,490**	**25,998**	**23,715**	**334,320**
TEP_0410003511	-	-	-	-	-	-	-	-	-	-	-	-	-
TEP_0810000738			734	869	941	1,166	1,243	1,042	983	914	838	850	9,580
TEP_1210000317	3,130	2,926	3,217	3,660	3,777	4,327	4,845	3,941	3,932	3,384	3,099	2,960	43,198
TEP_1610000250	1,151	972	1,170	1,198	1,346	1,405	1,565	1,291	1,145	1,060	938	914	14,155
TEP_1610001437	840	780	860	870	1,080	1,120	1,280	1,030	1,040	990	840	820	11,550
TEP_2010007701	3	5	4	4	4	4	5	4	4	3	4	5	49
TEP_2410001958	173	173	173	173	173	173	173	173	173	173	173	173	2,076
TEP_2410009662	220	380	420	480	480	460	520	440	420	380	360	360	4,920
TEP_2910000050	3,833	3,857	4,518	4,494	4,540	5,249	5,816	4,663	4,309	4,346	3,387	2,794	51,806
TEP_2910000282	1,163	1,177	1,242	1,086	1,966	3,657	3,901	3,218	2,998	4,644	4,045	4,128	33,225
TEP_2910000395	388	393	469	470	509	626	632	515	472	419	372	366	5,631
TEP_2910000592	446	453	542	545	567	677	712	367	722		953	-	5,984
TEP_2910000828	2,358	2,384	2,795	2,726	3,782	3,656	3,902	3,242	3,087	2,830	2,589	2,635	35,986
TEP_2910004239	3,100	3,120	3,760	3,680	3,960	4,780	5,080	4,200	4,040	3,700	3,380	3,440	46,240
TEP_2910008460	-	-	-	-	-	-	-	-	-	-	-	-	-
TEP_3710004370	6,520	4,320	4,940	5,400	6,220	6,660	7,640	5,820	5,560	5,440	4,820	4,060	67,400
TEP_6610001720	178	184	197	200	203	214	267	243	217	207	200	210	2,520
Street Lights and Traffic Signals	**271,046**	**316,472**	**318,013**	**308,244**	**268,598**	**256,033**	**282,578**	**299,540**	**155,856**	**210,418**	**195,852**	**200,847**	**3,083,497**
TEP_0410005608	-	1	-	-	-	-	-	-	-	-	-	-	1
TEP_0810000346	4,765	5,126	4,933	5,328	5,731	6,983	7,539	6,439	6,181	5,671	5,138	5,171	69,005
TEP_1610007470	2,400	2,400	1,920	1,760	1,760	1,760	2,240	1,760	1,760	1,600	1,600	1,600	22,560
TEP_2010000495	1,179	1,223	1,454	1,442	1,548	1,857	1,924	1,652	1,547	1,418	1,289	1,298	17,831
TEP_2010001569	3,820	3,880	4,760	4,640	5,220	6,380	6,740	5,520	5,160	4,720	4,300	4,360	59,500
TEP_2010001633	4,460	4,580	5,380	5,300	5,540	6,540	6,880	5,680	5,300	4,760	4,300	4,360	63,080
TEP_2010003278	2	2		5	2	3	2	3	2	3	2	2	28
TEP_2010005795	6	5	6	6	5	6	7	5	5	6	5	6	68
TEP_2010006969	4,261	4,288	5,030	5,182	5,498	6,441	6,736	5,655	5,159	6,298	4,500	4,768	63,816
TEP_2410000431	-	-	-	-	-	-	-	-	-	-	553	7	560
TEP_2410000630	132	127	148	124	189	213	244	200	200	171	155	148	2,051
TEP_2410000687	-	-	-	-	-	-	-	-	-	-	282	-	282

TEP_2410001494	1,270	1,180	1,300	1,440	1,400	1,530	1,590	1,330	1,320	1,160	1,090	1,070	15,680
TEP_4910001155	235,200	280,000	280,000	268,800	229,600	212,800	235,200	257,600	117,600	173,600	162,400	168,000	2,620,800
TEP_5810001483	221	233	248	252	269	285	332	272	276	255	260	239	3,142
TEP_6610005376	-	20	-	19	12	8	5	5	5	8	10	12	104
TEP_7010001058	1,296	1,236	1,282	1,540	1,523	1,594	1,922	1,979	1,591	1,466	1,335	1,232	17,996
TEP_7010007412	361	332	335	404	386	408	478	485	400	404	360	348	4,701
TEP_7410002150	-	1	-	1	-	-	1	1	-	-	1	-	5
TEP_7410002801	2	2	2	2	2	3	2	3	2	2	2	2	26
TEP_7410004602	2	3	2	5		3	3	2		5	2	2	29
TEP_7910001882	430	483	462	503	505	562	654	546	500	464	457	416	5,982
TEP_8710000768	29	27	26	29	27	26	30	30	28	33	32	29	346
TEP_8710002669	7,440	7,760	6,960	6,960	4,960	3,840	4,400	4,640	4,160	4,160	4,000	4,320	63,600
TEP_8710004788	3,680	3,480	3,680	4,400	4,320	4,680	5,520	5,640	4,600	4,120	3,720	3,400	51,240
TEP_8710005867	-	-	-	-	-	-	-	-	-	-	-	-	-
TEP_8710007917	90	83	85	102	101	111	129	93	60	94	59	57	1,064
Traffic Signals	**55,974**	**57,849**	**59,496**	**62,459**	**64,984**	**70,600**	**76,161**	**68,099**	**60,463**	**57,519**	**55,050**	**54,193**	**742,847**
TEP_0410000790	1,143	1,219	1,236	1,497	1,450	1,719	1,707	1,636	1,415	1,346	1,240	1,320	16,928
TEP_0810000128	277	313	351	373	504	625	666	562	472	320	296	306	5,065
TEP_0810000266	5,901	6,550	6,854	6,738	7,189	8,573	9,162	7,729	6,815	6,084	6,711	6,905	85,211
TEP_0810000720	1,335	1,445	1,290	926	949	1,066	1,148	930	896	848	807	836	12,476
TEP_0810006888	630	680	770	750	810	990	1,050	880	750	700	620	680	9,310
TEP_1210000131	1,117	1,043	1,128	1,231	1,201	1,336	1,503	1,262	1,287	1,143	1,079	1,064	14,394
TEP_1210000488	367	344	354	382	379	428	483	404	405	353	327	319	4,545
TEP_1610000998	488	460	501	517	575	599	674	565	539	544	476	467	6,405
TEP_1610003927	2	3	2	2	3	2	3	3	2	2	3	2	29
TEP_1610004474	550	592	1,022	1,089	1,219	1,268	716	209	818	1,140	991	727	10,341
TEP_1610006624	3	3	3	3	2	3	3	3	3	2	3	3	34
TEP_2010002566	1,911	1,903	2,176	2,265	2,455	2,971	3,004	2,547	2,286	2,181	2,049	2,106	27,854
TEP_2010006687	180	190	220	200	220	260	270	230	220	210	180	210	2,590
TEP_2410000058	440	443	520	507	541	644	630	602	529	495	456	470	6,277
TEP_2410000638	1,576	1,581	1,846	1,800	1,917	2,288	2,289	2,139	1,843	1,710	1,650	1,600	22,239
TEP_2410000711	1,083	1,083	988	995	895	787	741	617	710	755	893	881	10,428
TEP_2410001427	5,540	5,140	5,800	6,540	6,640	7,460	8,420	6,800	6,940	6,000	5,260	5,380	75,920
TEP_2410004974	2,437	2,078	2,070	2,127	1,942	1,981	2,116	1,803	1,925	1,914	2,035	2,155	24,583
TEP_2910000649	1,350	1,344	1,559	1,546	1,658	1,863	1,832	1,721	1,501	1,464	1,577	1,641	19,056
TEP_3710000134	1,059	1,007	1,113	1,154	1,304	1,390	1,549	1,288	1,222	1,206	1,060	1,041	14,393
TEP_3710000202	1,475	1,393	1,526	1,542	1,772	1,864	2,070	1,642	1,460	1,463	1,276	1,265	18,748
TEP_3710000239	254	299	307	313	324	297	322	241	230	232	202	200	3,221
TEP_3710000405	944	1,016	1,039	896	927	1,179	1,486	1,230	1,166	1,086	1,084	992	13,045
TEP_3710000406	344	326	354	348	398	419	465	385	366	365	316	302	4,388
TEP_3710000464	1,248	1,142	1,214	1,288	1,264	1,393	1,524	1,223	1,227	1,083	1,012	1,004	14,622
TEP_4110001099	294	306	295	337	385	390	443	493	407	403	344	312	4,409
TEP_4110001186	439	414	452	464	520	543	599	492	433	431	356	378	5,521

TEP_4110001813	2,010	1,908	2,080	2,325	2,256	2,632	2,819	2,302	2,356	2,227	2,126	2,066	27,107
TEP_4110001861	775	736	778	884	870	931	1,080	866	886	780	731	726	10,043
TEP_4910001076	9,946	11,676	10,286	11,672	11,742	9,875	9,535	10,212	8,487	8,666	8,673	7,846	118,616
TEP_4910001140	825	890	837	913	1,000	982	1,079	2,053		1,025	781	713	11,098
TEP_4910001240	3,225	3,110	2,832	2,746	2,888	4,220	4,887	3,989	3,291	2,463	2,380	2,486	38,517
TEP_4910001991	1,155	1,186	1,073	1,102	1,446	1,700	1,982	2,129	1,811	1,828	1,601	1,499	18,512
TEP_7010007151	3	3	3	3	3	3	2	3	3	2	3	3	34
TEP_7410001312	5,354	5,688	6,292	6,637	6,957	7,484	9,365	8,451	7,342	6,658	6,071	5,948	82,247
TEP_7910001621	294	335	325	347	379	435	537	458	420	390	381	340	4,641
Unassigned-General Service Rate on Lite Sheet	**5,470**	**5,140**	**6,240**	**7,040**	**7,170**	**9,110**	**8,020**	**7,460**	**7,440**	**6,249**	**5,734**	**5,327**	**80,400**
TEP_2410007188	5,470	5,140	6,240	7,040	7,170	9,110	8,020	7,460	7,440	6,249	5,734	5,327	80,400
University Blvd & 3rd Ave	**225**	**241**	**-**	**591**	**325**	**397**	**425**	**353**	**327**	**304**	**281**	**294**	**3,763**
TEP_2910000776	225	241	-	591	325	397	425	353	327	304	281	294	3,763
University Blvd & Tyndall Ave	**242**	**251**	**-**	**349**	**348**	**370**	**455**	**469**	**377**	**353**	**318**	**305**	**3,837**
TEP_2410000044	242	251	-	349	348	370	455	469	377	353	318	305	3,837
Grand Total	**360,275**	**405,095**	**413,081**	**409,716**	**376,006**	**376,355**	**411,344**	**412,015**	**258,684**	**308,186**	**287,778**	**289,270**	**4,307,805**

Rate Name	41 (kWh)

Place Names/Account Numbers	201406	201407	201408	201409	201410	201411	201412	201501	201502	201503	201504	201505	Grand Total (kWh)
Hawks	**846**	**835**	**842**	**921**	**899**	**986**	**1,100**	**944**	**980**	**902**	**872**	**836**	**10,963**
TEP_2010000519	536	505	552	611	599	656	720	604	610	542	502	486	6,923
TEP_7910003897	310	330	290	310	300	330	380	340	370	360	370	350	4,040
Median Island (Broadway/Alvernon Quadrants)	**8,657**	**9,832**	**9,451**	**10,940**	**11,074**	**12,031**	**13,859**	**12,908**	**11,216**	**10,446**	**9,958**	**9,132**	**129,504**
TEP_2910006957	313	313	313	313	313	313	313	313	313	313	313	313	3,756
TEP_7010006953	1,680	1,411	1,292	1,758	1,818	1,894	2,208	2,291	1,868	1,752	1,635	1,530	21,137
TEP_7410001987	194	218	206	229	233	264	308	264	245	231	230	209	2,831
TEP_7410002317	3,140	4,520	4,320	4,800	5,000	5,520	6,360	5,180	4,680	4,360	4,260	3,800	55,940
TEP_7910006540	750	930	860	950	950	1,070	1,260	1,060	1,000	950	960	880	11,620
TEP_8710005006	1,510	1,480	1,570	1,840	1,760	1,820	2,000	2,030	1,660	1,480	1,350	1,270	19,770
TEP_8710005813	1,070	960	890	1,050	1,000	1,150	1,410	1,770	1,450	1,360	1,210	1,130	14,450
Non-Metered (Flat Rate) Lights	**13,114**	**13,968**	**14,505**	**14,800**	**15,723**	**17,705**	**19,205**	**17,167**	**16,331**	**14,231**	**15,467**	**14,020**	**186,236**
TEP_0410002738	789	781	777	932	885	929	1,155	981	967	852	798	778	10,624
TEP_1210002025	1,696	2,041	2,036	2,123	2,238	2,662	2,831	2,379	2,216	2,105	2,079	1,834	26,240
TEP_1210002357	1,228	1,426	1,388	1,419	1,509	1,823	2,002	1,647	1,575	1,478	1,457	1,323	18,275
TEP_1210003390	1,030	1,170	1,190	1,230	1,240	1,400	1,750	1,470	1,390	1,280	1,330	1,170	15,650
TEP_1610001707	971	920	1,026	1,101	1,268	1,352	1,532	1,221	1,131	1,089	947	866	13,424
TEP_2010000044	934	1,000	1,123	1,089	1,132	1,339	1,422	1,242	1,294	225	2,154	1,313	14,267
TEP_2410006988	592	629	700	669	701	831	828	779	693	666	626	659	8,373
TEP_2410007274	1,000	993	1,151	1,106	1,167	1,519	1,549	1,286	1,474	1,221	1,146	1,203	14,815
TEP_2410009791	1,260	1,258	1,462	1,389	1,484	1,758	1,732	1,640	1,458	1,374	1,286	1,333	17,434
TEP_4110002076	438	438	438	438	438	438	438	438	438	438	438	438	5,256
TEP_4110003663	173	173	173	173	173	173	173	173	173	173	173	173	2,076
TEP_4110005535	110	110	110	110	110	110	110	110	110	110	110	110	1,320
TEP_4110007385	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_4110008514	173	173	173	173	173	173	173	173	173	173	173	173	2,076
TEP_4910004722	1,711	1,787	1,744	1,765	1,989	1,911	2,111	2,109	1,946	1,742	1,577	1,522	21,914
TEP_4910005898	791	851	796	865	998	1,069	1,181	1,301	1,075	1,087	955	907	11,876
TEP_8710008417	169	169	169	169	169	169	169	169	169	169	169	169	2,028
Street Lights	**337,388**	**337,510**	**365,432**	**381,512**	**409,679**	**459,125**	**507,232**	**445,834**	**410,324**	**388,295**	**354,724**	**341,048**	**4,738,103**
TEP_0410003811	2,090	2,120	2,080	2,350	2,090	2,420	3,150	2,700	2,630	2,370	2,490	2,460	28,950
TEP_0410006050	1,049	1,114	1,130	1,322	1,265	1,526	1,546	478	2,249	1,175	1,054	1,163	15,071
TEP_0410008211	1,600	1,700	1,760	2,060	2,060	2,120	2,680	2,340	2,220	1,880	1,720	1,800	23,940
TEP_0410008344	668	797	738	766	736	901	1,193	1,012	985	854	783	804	10,237
TEP_0410009031	10,180	10,960	11,220	13,590	13,730	16,620	16,370	15,520	13,430	12,650	11,980	11,650	157,900
TEP_0810000952	422	455	516	502	535	640	672	567	539	505	467	471	6,291
TEP_0810002401	730	740	820	780	810	940	990	830	780	750	693	764	9,627
TEP_0810002530	1,130	970	1,260	1,220	1,300	1,570	1,650	1,380	1,320	1,210	1,140	1,180	15,330
TEP_0810003526	500	540	620	610	680	800	828	707	662	623	568	591	7,729
TEP_0810003900	99	99	99	99	99	99	99	99	99	99	99	99	1,188
TEP_0810005229	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_0810006357	245	245	245	245	245	245	245	245	245	245	245	245	2,940
TEP_0810009647	1,689	1,880	2,054	2,009	2,173	2,629	2,898	2,447	2,324	2,154	1,921	2,078	26,256
TEP_1210000572			213	546	580	700	750	629	782	951	937	846	6,934
TEP_1610000033	364	364	364	364	364	364	364	364	364	364	364	364	4,368
TEP_1610000653	580	560	600	630	780	820	910	760	710	690	570	530	8,140
TEP_1610000959	1,018	689	228	479	1,231	990	1,470	1,231	1,167	1,170	1,018	990	11,681

TEP_1610001001	1,623	1,558	1,703	1,763	1,996	2,103	2,378	1,838	1,675	1,677	1,462	1,427	21,203
TEP_1610002604	1,667	1,584	1,735	1,794	2,043	2,152	2,419	2,026	1,923	1,926	1,678	1,629	22,576
TEP_1610004395	577	539	582	595	668	697	780	633	649	641	563	558	7,482
TEP_1610004407	1,972	1,848	1,990	2,054	2,346	2,430	2,678	2,248	2,147	2,159	1,871	1,828	25,571
TEP_1610005383	4,320	4,100	4,560	4,680	5,800	6,040	6,800	5,500	5,560	5,280	4,480	4,280	61,400
TEP_1610006082	1,510	1,370	1,560	1,630	1,890	1,990	2,240	1,890	1,700	1,770	1,440	1,320	20,310
TEP_1610007074	240	220	250	240	260	250	300	240	240	250	220	200	2,910
TEP_1610007130	480	430	480	470	540	550	630	540	490	510	440	440	6,000
TEP_1610007504	1,942	1,815	1,981	2,214	2,213	2,502	2,597	2,118	2,010	1,286	1,514	1,844	24,036
TEP_1610008481	6,065	5,694	6,166	6,446	7,444	7,903	9,046	7,523	6,997	7,031	5,979	5,614	81,908
TEP_1610008716	3,268	3,141	3,447	3,648	4,198	4,428	5,022	4,291	3,987	3,938	3,376	3,221	45,965
TEP_1610009340	850	820	890	940	1,080	1,130	1,280	1,070	960	1,030	850	800	11,700
TEP_2010000568	743	730	846	819	874	820	768	927	883	822	768	809	9,809
TEP_2010000635	7,100	6,800	7,940	7,720	8,200	8,380	10,560	8,680	8,100	7,500	6,900	7,120	95,000
TEP_2010006263	6,220	6,800	7,520	7,020	7,560	9,280	9,940	8,280	7,800	7,160	6,300	6,860	90,740
TEP_2010007471	4,530	4,640	5,640	5,080	5,290	6,360	6,760	6,110	7,430	6,760	6,210	6,370	71,180
TEP_2410000667	3,347	3,317	3,925	3,821	4,085	4,891	4,927	4,571	3,982	3,704	3,365	3,452	47,387
TEP_2410001113	1,205	1,124	1,216	1,333	1,326	1,473	1,644	1,405	1,407	1,217	1,112	1,070	15,532
TEP_2410002775	1,060	1,080	1,240	1,200	1,260	1,460	1,430	1,370	1,180	1,180	1,160	1,160	14,780
TEP_2410004558	339	339	339	339	339	339	339	339	339	339	339	339	4,068
TEP_2410006582	4,480	4,460	5,340	4,580	4,920	5,960	6,020	5,620	4,920	4,500	4,100	4,200	59,100
TEP_2410007394	3,020	2,880	3,220	3,600	3,680	4,220	4,760	3,960	3,960	3,380	3,080	2,940	42,700
TEP_2410007532	630	700	830	830	760	910	970	990	880	830	780	790	9,900
TEP_2410008925	1,060	940	1,000	1,100	1,220	1,320	1,520	1,160	1,260	1,040	920	860	13,400
TEP_2410008959	2,860	2,340	3,380	3,420	3,520	4,040	4,540	3,680	3,600	3,040	2,760	2,560	39,740
TEP_2410009433	3,230	3,176	3,450	3,848	3,938	4,439	5,121	4,205	4,135	3,539	3,139	2,980	45,200
TEP_2410009436	300	290	330	360	380	420	480	390	390	320	280	260	4,200
TEP_2910000375	585	531	647	688	693	787	890	746	742	642	591	568	8,110
TEP_2910000618	2,624	2,598	3,075	3,024	3,199	3,821	4,053	3,287	2,993	2,916	2,471	2,621	36,682
TEP_2910000650	-	-	-	-	-	-	-	-	-	-	-	-	-
TEP_2910000758	5,257	5,356	6,284	6,099	6,476	7,989	9,751	5,126	4,470	3,826	3,754	4,962	69,350
TEP_2910000809	5,846	5,150	6,768	6,726	7,204	9,142	10,527	8,083	7,000	6,703	5,701	6,143	84,993
TEP_2910001761	1,214	615	1,813	1,673	1,827	2,174	2,291	1,885	1,775	1,596	1,418	1,454	19,735
TEP_2910001882	930	470	1,590	1,110	1,210	1,540	1,520	1,450	1,270	1,120	1,110	1,090	14,410
TEP_2910002024	2,610	2,620	2,940	1,840	1,950	3,400	3,440	3,200	2,830	2,690	2,510	2,600	32,630
TEP_2910002083	380	400	440	480	500	560	640	540	540	420	380	320	5,600
TEP_2910003680	2,636	2,562	3,135	3,012	3,259	4,606	4,668	3,848	3,553	3,243	2,948	3,062	40,532
TEP_2910004120	180	180	220	210	220	270	290	230	230	200	200	190	2,620
TEP_2910004809	4,510	4,553	5,417	5,352	5,762	6,976	6,950	6,543	5,525	5,478	4,844	4,937	66,847
TEP_2910005210	3,300	3,580	3,660	3,820	4,080	5,200	5,460	4,520	4,340	3,940	3,800	3,300	49,000
TEP_2910006776	179	-	162	108	1	133	157	239	224	209	190	193	1,795
TEP_2910007072	1,140	1,140	1,400	1,360	1,500	1,780	1,860	1,500	1,400	1,320	1,200	1,300	16,900
TEP_2910009127	760	750	900	880	940	1,110	1,120	920	1,210	1,350	1,230	1,280	12,450
TEP_2910009633	1,495	1,481	1,661	1,533	1,556	1,783	2,088	1,484	1,364	1,396	1,284	1,378	18,503
TEP_3310000008	1,210	1,290	1,330	1,370	1,440	1,740	1,820	1,510	1,440	1,330	1,340	1,220	17,040
TEP_3310000229	1,011	1,102	558	1,280	1,379	1,666	1,754	1,445	1,343	1,227	1,189	1,059	15,013
TEP_3310000343	4,660	5,036	5,281	5,590	6,009	7,098	7,477	6,020	5,558	5,115	4,970	4,307	67,121
TEP_3310000517	6,940	8,010	7,270	8,260	8,840	10,650	11,210	9,190	8,630	7,680	8,140	7,400	102,220
TEP_3310000576	4,292	4,681	4,909	5,109	5,458	6,417	7,226	5,704	5,229	4,799	4,628	4,034	62,486

TEP_3310000817	2,523	2,831	2,990	2,865	3,285	4,015	4,239	3,492	3,287	3,029	2,938	2,629	38,123
TEP_3310000924	6,093	6,384	6,376	6,030	6,334	7,614	7,849	7,088	7,277	6,698	6,537	5,895	80,175
TEP_3310004153	4,190	3,950	4,410	4,730	5,450	5,790	6,460	5,280	4,960	4,840	4,150	3,980	58,190
TEP_3310009035	1,000	940	1,060	1,120	1,280	1,380	1,560	1,280	1,200	1,160	1,000	980	13,960
TEP_3710000062	8,565	8,165	9,486	8,818	10,826	13,568	10,710	11,048	9,729	8,889	8,049	7,718	115,571
TEP_3710000176	4,308	4,082	4,560	4,689	5,501	5,862	6,264	5,325	4,999	4,891	4,195	4,092	58,768
TEP_3710000326	5,506	5,437	6,237	6,413	7,610	8,143	9,024	7,586	7,218	7,217	6,108	2,114	78,613
TEP_3710000951	5,994	5,722	6,301	5,689	6,572	6,998	7,992	6,775	6,670	6,536	5,597	5,454	76,300
TEP_3710001001	1,650	1,576	1,710	1,800	2,109	2,297	2,641	2,124	1,952	1,948	1,658	1,574	23,039
TEP_3710002501	5,792	5,477	6,115	6,129	6,822	7,252	8,129	6,684	6,262	6,156	5,257	5,140	75,215
TEP_3710003755	5,819	5,503	6,057	6,287	7,042	7,475	8,415	6,925	6,489	6,421	5,522	5,484	77,439
TEP_3710004125	740	800	830	850	910	810	1,420	950	890	820	810	740	10,570
TEP_3710004570	4,580	4,360	4,840	5,120	5,880	6,220	6,940	5,660	5,300	5,160	4,400	4,260	62,720
TEP_3710005318	4,980	4,480	5,140	5,080	5,960	6,180	6,100	5,380	5,020	5,400	4,880	4,760	63,360
TEP_3710005755	8,909	8,481	9,481	10,037	11,577	12,341	13,803	11,382	10,690	10,418	8,897	8,631	124,647
TEP_3710007695	4,800	4,420	5,020	5,360	6,260	6,580	7,420	6,020	5,620	5,600	4,760	4,700	66,560
TEP_3710007961	1,100	1,020	1,020	1,460	1,260	1,540	1,720	1,400	1,320	1,280	1,120	1,060	15,300
TEP_3710009471	740	660	740	780	940	980	1,040	920	860	880	720	680	9,940
TEP_3710009573	1,940	1,870	2,000	2,060	2,270	2,170	2,920	2,240	2,068	2,118	1,827	1,843	25,326
TEP_3710009930	1,400	1,480	1,440	1,620	1,600	1,800	1,860	2,260	1,940	2,040	1,920	1,700	21,060
TEP_4110000010	169	169	169	169	169	169	169	169	169	169	169	169	2,028
TEP_4110000708	8,863	8,972	10,715	10,284	11,035	13,366	13,999	11,458	11,107	10,291	9,481	9,623	129,194
TEP_4110003392	1,040	1,040	1,260	1,220	1,340	1,620	1,700	1,400	1,340	1,220	1,120	1,140	15,440
TEP_4110003527	660	600	620	460	380	480	1,200	1,010	1,040	840	970	870	9,130
TEP_4110005071	483	483	483	483	483	483	483	483	483	483	483	483	5,796
TEP_4110005271	216	216	216	216	216	216	216	216	216	216	216	216	2,592
TEP_4110005402	68	68	68	68	68	68	68	68	68	68	68	68	816
TEP_4110005514	68	68	68	68	68	68	68	68	68	68	68	68	816
TEP_4110006454	782	1,001	965	989	1,047	1,216	1,225	1,054	921	901	939	823	11,863
TEP_4110008051	338	338	338	338	338	338	338	338	338	338	338	338	4,056
TEP_4110009248	4,460	4,560	4,900	5,540	6,120	7,340	8,260	6,580	6,160	5,600	4,800	4,980	69,300
TEP_4110009837	3,560	3,740	3,560	3,120	3,760	4,340	4,920	5,420	4,400	4,340	3,660	3,360	48,180
TEP_4510008692	68	68	68	68	68	68	68	68	68	68	68	68	816
TEP_4910001885	898	965	907	987	1,076	1,051	1,160	1,270	1,052	1,071	938	892	12,267
TEP_4910003719	1,580	1,740	1,630	1,710	1,790	1,780	1,990	2,180	1,800	1,810	1,550	1,470	21,030
TEP_4910005682	1,019	1,043	1,045	1,098	1,192	1,094	1,204	1,480	1,241	1,269	1,080	982	13,747
TEP_4910008257	2,847	3,080	2,931	3,187	3,298	3,226	3,596	3,910	3,630	4,658	3,938	3,532	41,833
TEP_4910008738	290	300	290	330	350	370	410	440	370	360	310	290	4,110
TEP_4910009263	3,668	4,084	3,926	4,364	4,841	4,703	5,591	6,119	4,887	4,797	3,994	3,528	54,502
TEP_4910009671	1,640	1,610	1,620	1,920	1,575	1,940	1,734	1,977	1,500	1,439	1,354	1,268	19,577
TEP_4910009715	640	680	620	650	690	620	680	750	650	650	570	570	7,770
TEP_5810008286	4,520	5,240	6,520	6,900	7,180	7,740	9,880	8,980	7,600	7,060	6,500	6,500	84,620
TEP_6210002259	3,824	4,115	3,831	4,276	4,756	4,774	5,324	5,884	4,944	4,744	4,016	3,689	54,177
TEP_6210004016	1,644	1,644	1,644	1,644	1,644	1,644	1,644	1,644	1,644	1,644	1,644	1,644	19,728
TEP_6210004557	3,599	3,599	3,599	3,599	3,599	3,599	3,599	3,599	3,599	3,599	3,599	3,599	43,188
TEP_6210005958	8,998	8,998	8,998	8,998	8,998	8,998	8,998	8,998	8,998	8,998	8,998	8,998	107,976
TEP_6210006064	1,235	1,235	1,235	1,235	1,235	1,235	1,235	1,235	1,235	1,235	1,235	1,235	14,820
TEP_6610003956	13	13	13	13	12	12	15	14	12	12	13	12	154
TEP_6610004448	265	265	265	265	265	265	265	265	265	265	265	265	3,180

TEP_6610006731	866	800	875	882	914	967	1,197	1,079	931	878	819	843	11,051
TEP_6610009366	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_6610009739	99	99	99	99	99	99	99	99	99	99	99	99	1,188
TEP_7010001060	377	360	364	414	386	403	477	488	401	380	474	452	4,976
TEP_7010001101	781	798	801	930	894	936	1,110	1,138	934	904	846	796	10,868
TEP_7010001473	820	800	800	930	870	940	1,100	1,120	910	850	810	770	10,720
TEP_7010001737	1,060	1,220	1,000	1,580	1,620	1,720	2,060	2,100	1,700	1,560	1,220	1,520	18,360
TEP_7010001960	151	144	147	170	160	158	185	172	128	120	107	98	1,740
TEP_7010001984	557	539	549	649	625	650	769	783	655	612	567	538	7,493
TEP_7010002637	474	466	455	531	508	502	587	597	486	483	463	443	5,995
TEP_7010003486	4,194	4,066	4,103	4,782	4,600	4,917	5,919	6,434	5,388	5,146	4,698	4,386	58,633
TEP_7010004030	1,432	1,309	1,301	1,726	1,736	1,857	2,200	2,269	1,803	1,749	1,653	1,499	20,534
TEP_7010004212	220	208	203	225	214	219	257	262	220	211	203	191	2,633
TEP_7010004720	280	260	260	310	300	310	330	320	280	260	240	240	3,390
TEP_7010005754	240	220	230	280	270	280	340	440	370	340	310	280	3,600
TEP_7010005762	520	500	500	620	620	640	800	780	660	620	500	480	7,240
TEP_7010006590	2,805	2,578	2,827	3,416	3,366	3,605	4,344	4,439	3,594	3,340	3,045	2,803	40,162
TEP_7010006654	5,877	5,677	5,755	6,754	6,592	6,887	8,338	8,271	6,759	6,341	5,781	5,369	78,401
TEP_7010008821	2,680	2,520	2,540	3,000	3,280	3,720	4,400	4,360	3,520	3,100	2,800	2,600	38,520
TEP_7410001873	3,865	4,114	4,572	4,872	5,068	5,462	6,995	6,295	5,421	5,024	4,435	4,828	60,951
TEP_7410004817	111	125	112	130	134	151	178	150	137	130	128	116	1,602
TEP_7410004824	1,610	1,940	1,860	2,080	2,170	2,440	2,860	2,400	2,220	2,020	2,120	1,900	25,620
TEP_7410005995	7,723	8,810	8,518	9,589	10,067	11,579	13,753	11,714	10,729	9,940	9,701	8,455	120,578
TEP_7410007447	1,150	1,300	1,190	1,240	1,280	1,450	1,700	1,460	1,350	1,270	1,270	1,160	15,820
TEP_7910001196	798	901	858	944	967	1,088	1,268	1,057	999	938	962	861	11,641
TEP_7910001926	430	500	430	480	480	540	630	490	440	390	390	410	5,610
TEP_7910002265	4,075	4,580	4,372	4,870	5,031	5,588	6,354	5,382	5,005	4,880	4,765	4,236	59,138
TEP_7910009066	760	870	800	890	890	990	1,160	980	870	840	880	800	10,730
TEP_7910009641	2,100	2,380	2,300	2,600	2,980	2,940	3,460	2,960	2,740	2,520	2,460	2,140	31,580
TEP_7910009806	1,340	1,550	1,460	1,600	1,540	1,770	2,020	1,690	1,580	1,530	1,640	1,500	19,220
TEP_7910009985	1,039	1,194	1,120	1,222	1,234	1,324	1,558	1,357	1,410	1,120	1,247	1,143	14,968
TEP_8310001319	488	515	546	543	542	558	686	620	546	521	495	517	6,577
TEP_8310002947	365	138	231	433	447	478	592	507	459	436	412	423	4,921
TEP_8710002877	2,648	2,522	2,504	3,081	3,097	3,290	3,967	3,995	3,167	2,921	2,740	2,616	36,548
TEP_8710002900	219	219	219	219	219	219	219	219	219	219	219	219	2,628
TEP_8710004984	330	320	320	380	360	390	450	450	380	360	330	310	4,380
TEP_8710006074	690	640	670	780	720	640	760	780	630	600	570	520	8,000
TEP_8710007820	68	68	68	68	68	68	68	68	68	68	68	68	816
TEP_8710007918	360	350	350	410	400	420	500	510	420	390	360	340	4,810
TEP_8710009465	6,060	5,410	5,980	7,020	6,890	7,390	8,890	9,140	7,390	6,830	6,260	5,750	83,010
TEP_8710009849	783	757	761	889	851	891	1,053	1,082	876	824	777	733	10,277
Street Lights and Traffic Signals	**449,725**	**463,750**	**491,017**	**523,048**	**551,604**	**620,989**	**697,236**	**624,705**	**563,324**	**530,242**	**497,054**	**475,111**	**6,487,805**
TEP_0410000309	470	413	423	608	599	652	934	819	428	1,196	990	761	8,293
TEP_0410002349	1,803	1,835	1,833	2,154	2,056	2,115	2,620	2,205	2,140	1,894	1,717	1,804	24,176
TEP_0410002931	3,234	3,263	3,314	3,985	3,916	4,159	5,208	4,382	4,218	3,653	3,207	3,264	45,803
TEP_0410003642	4,400	4,640	5,460	8,520	8,440	8,980	11,480	9,720	9,440	8,180	7,220	7,500	93,980
TEP_0410003670	3,560	3,820	3,880	4,680	4,580	4,920	5,940	4,700	4,800	4,380	3,860	3,820	52,940
TEP_0410004302	1,316	1,331	1,345	1,602	1,522	1,571	1,966	1,655	1,627	1,428	1,293	1,364	18,020
TEP_0410004521	1,721	1,729	1,760	2,081	1,991	1,942	2,429	2,065	2,027	1,776	1,652	1,600	22,773

TEP_0410006160	3,020	3,280	3,380	4,060	4,000	4,840	4,900	4,060	4,540	3,760	3,460	3,560	46,860
TEP_0410009333	1,054	1,055	1,065	1,257	1,210	1,273	1,581	1,348	1,333	1,177	1,064	1,122	14,539
TEP_0810000268	538	567	570	660	629	744	739	714	644	617	583	611	7,616
TEP_0810000282	5,024	5,441	5,863	5,540	5,914	7,156	7,595	6,234	5,710	5,182	4,710	4,750	69,119
TEP_0810000675	3,102	3,218	3,594	3,559	3,821	4,521	5,041	4,000	3,802	3,486	3,103	3,303	44,550
TEP_0810000723	1,123	1,224	1,370	1,335	1,388	1,467	1,570	1,321	1,256	1,190	1,084	1,427	15,755
TEP_0810000745	47	49	52	47	47	54	55	47	47	48	46	52	591
TEP_0810000765	619	636	713	686	722	864	916	767	735	695	667	834	8,854
TEP_0810001574	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_0810004306	99	99	99	99	99	99	99	99	99	99	99	99	1,188
TEP_0810004633	1,543	1,657	1,868	1,831	1,932	2,289	2,421	2,005	1,892	1,918	1,803	1,853	23,012
TEP_0810005486	99	99	99	99	99	99	99	99	99	99	99	99	1,188
TEP_0810006292	7,133	7,591	8,429	8,379	8,953	10,721	10,941	9,152	8,271	7,522	7,113	8,937	103,142
TEP_0810007431	327	349	389	383	403	494	521	440	418	389	355	342	4,810
TEP_0810007871	341	340	352	317	315	360	368	309	317	308	320	341	3,988
TEP_0810008408	1,104	1,189	1,246	1,114	1,177	1,403	1,462	1,244	1,251	1,300	1,255	1,299	15,044
TEP_0810008681	3,180	3,400	3,640	3,440	3,700	4,360	4,500	3,680	3,320	2,980	2,700	2,720	41,620
TEP_0810008872	147	147	147	147	147	147	147	147	147	147	147	147	1,764
TEP_0810008955	80	290	220	200	210	255	269	230	218	207	197	200	2,576
TEP_0810009992	3,400	3,570	4,050	3,990	4,280	5,230	5,440	4,570	4,300	3,980	3,540	3,770	50,120
TEP_1210000385	369	429	427	444	471	564	596	494	465	436	429	381	5,505
TEP_1210000408	358	422	411	426	453	549	584	490	462	434	427	387	5,403
TEP_1210000783	5,753	6,712	6,757	7,074	7,632	9,264	9,878	8,210	7,654	7,027	6,920	6,154	89,035
TEP_1210000896	330	352	394	393	421	503	552	461	415	394	369	396	4,980
TEP_1210000920	1,699	1,973	2,005	2,099	2,242	2,716	2,900	2,408	2,253	2,077	2,031	1,813	26,216
TEP_1210000986	224	238	233	240	252	294	311	262	248	234	236	216	2,988
TEP_1210001482	2,504	2,950	2,919	3,061	3,268	3,959	4,231	3,570	3,308	3,083	3,003	2,687	38,543
TEP_1210002226	247	247	247	247	247	247	247	247	247	247	247	247	2,964
TEP_1210002274	288	288	288	288	288	288	288	288	288	288	288	288	3,456
TEP_1210004239	6,511	7,615	7,582	7,831	8,466	10,304	10,961	9,150	8,603	7,689	8,001	6,872	99,585
TEP_1210006273	1,131	1,320	1,323	1,400	1,472	1,821	1,945	1,626	1,524	1,408	1,380	1,230	17,580
TEP_1210007543	6,120	7,140	5,800	4,920	5,600	8,520	9,560	8,420	7,920	7,300	7,100	6,360	84,760
TEP_1210007550	110	110	110	110	110	110	110	110	110	110	110	110	1,320
TEP_1210007865	7,212	8,416	8,359	8,799	9,470	11,520	12,331	10,330	9,668	8,984	8,776	7,851	111,716
TEP_1210007911	5,820	6,260	6,800	7,240	7,820	9,620	10,320	8,660	8,100	7,200	7,560	6,380	91,780
TEP_1210008721	537	580	559	560	567	650	682	576	557	521	562	493	6,844
TEP_1210009393	831	955	966	1,003	1,023	1,240	1,315	1,110	1,086	970	904	887	12,290
TEP_1610000123	344	326	357	367	385	404	453	383	343	334	287	281	4,264
TEP_1610000205	548	1,081	1,183	1,223	1,395	1,528	1,627	1,398	1,314	1,314	1,141	1,108	14,860
TEP_1610001070	3,636	3,354	3,754	4,036	4,763	5,200	5,826	4,764	4,400	4,320	3,688	3,504	51,245
TEP_1610001248	340	380	570	600	600	370	410	350	330	320	270	260	4,800
TEP_1610001459	2,950	2,810	3,130	3,280	3,930	4,180	4,680	3,920	3,690	3,660	3,130	2,970	42,330
TEP_1610001462	6,348	5,906	6,599	6,950	8,047	8,415	10,038	7,928	6,897	7,167	5,751	5,586	85,632
TEP_1610001669	1,234	1,166	1,279	1,329	1,514	1,587	1,785	1,493	1,412	1,416	1,237	1,206	16,658
TEP_1610003251	673	628	676	684	765	795	780	330	717	717	635	626	8,026
TEP_1610004004	1,960	1,850	2,030	2,140	2,450	2,520	3,080	2,490	2,330	2,300	1,990	1,890	27,030
TEP_1610004934	1,160	1,100	1,190	1,200	1,450	1,520	1,610	1,400	1,330	1,330	1,150	1,110	15,550
TEP_1610005395	7,006	6,717	7,376	7,450	9,167	9,492	10,740	8,647	8,649	9,210	5,997	6,634	97,085
TEP_1610006085	353	336	374	396	456	473	548	468	421	414	353	337	4,929

TEP_1610006134	2,359	2,180	2,377	2,455	2,828	2,942	3,572	3,344	3,075	3,146	2,769	2,637	33,684
TEP_1610006394	7,031	6,558	7,113	7,516	8,688	9,301	10,224	8,794	8,479	8,057	6,820	6,469	95,050
TEP_1610006397	1,787	1,670	1,827	1,882	2,144	2,251	2,543	2,129	1,951	2,077	1,739	1,644	23,644
TEP_2010000494	3,117	2,958	3,277	3,679	3,691	4,223	4,699	3,954	3,975	3,397	3,110	2,986	43,066
TEP_2010000550	370	371	435	419	442	520	533	452	435	412	384	402	5,175
TEP_2010000805	333	312	369	352	419	484	490	406	384	351	316	328	4,544
TEP_2010000923	220	220	250	250	250	310	320	210	243	237	220	231	2,961
TEP_2010001075	1,580	1,560	1,860	1,820	2,000	2,420	2,480	2,140	2,040	1,940	1,760	1,780	23,380
TEP_2010002239	10,300	11,340	12,800	12,560	13,200	16,080	17,300	14,460	13,520	12,520	11,120	12,080	157,280
TEP_2010002340	1,350	1,290	1,570	1,490	1,610	1,870	1,980	1,650	1,570	1,450	1,380	1,460	18,670
TEP_2010002950	320	330	380	370	390	480	500	410	390	370	330	360	4,630
TEP_2010003623	4,620	4,720	5,620	5,540	5,940	7,200	7,500	6,040	5,600	5,100	4,800	4,800	67,480
TEP_2010004309	3,805	4,123	4,827	4,821	5,129	6,426	6,701	5,591	5,279	4,789	4,095	4,611	60,197
TEP_2010004645	1,242	1,265	1,515	1,500	1,623	1,970	2,087	1,688	1,611	1,482	1,356	1,374	18,713
TEP_2010004985	1,350	1,320	1,540	1,490	1,560	1,750	1,950	1,820	1,750	1,130	710	1,620	17,990
TEP_2010005271	168	168	197	191	201	218	221	185	181	179	169	181	2,259
TEP_2010005731	1,156	1,155	1,361	1,286	1,302	1,566	1,755	1,281	1,317	1,218	1,164	1,268	15,829
TEP_2010005804	4,259	4,226	4,849	4,731	4,978	6,074	6,353	5,047	4,698	4,268	5,271	5,934	60,688
TEP_2010006198	13,131	13,111	15,683	16,044	18,634	22,599	23,942	19,446	17,934	19,137	20,772	19,967	220,400
TEP_2010006486	6,033	6,079	7,192	6,836	7,194	9,472	10,152	8,283	7,872	7,211	6,572	6,706	89,602
TEP_2010006498	470	510	570	560	580	710	760	640	590	560	520	520	6,990
TEP_2010006880	173	173	173	173	173	173	173	173	173	173	173	173	2,076
TEP_2010006900	3,598	3,649	4,439	4,363	4,760	5,786	6,186	5,063	4,761	4,354	3,990	4,057	55,006
TEP_2010006945	470	510	570	570	610	720	780	650	600	590	530	560	7,160
TEP_2010007068	-	-	-	-	-	90	700	590	560	230	110	140	2,420
TEP_2010007080	1,430	1,360	1,480	1,640	1,640	1,860	2,070	1,740	1,750	1,530	1,400	1,360	19,260
TEP_2010007906	1,460	1,469	1,709	1,650	1,726	2,036	2,126	1,754	1,661	1,565	1,459	1,534	20,149
TEP_2010009261	1,061	1,064	1,243	1,197	1,296	1,550	1,635	1,355	1,286	213	2,139	1,197	15,236
TEP_2010009521	7,916	7,857	9,453	9,188	9,925	12,010	12,912	10,675	9,932	9,175	8,414	8,699	116,156
TEP_2010009562	1,082	1,093	1,273	1,233	1,310	1,576	1,645	1,358	1,269	1,152	1,080	1,116	15,187
TEP_2010009801	240	250	300	310	330	400	431	364	339	322	299	310	3,895
TEP_2010009949	1,293	1,289	1,502	1,453	1,500	1,793	1,878	1,681	1,597	1,509	1,442	1,535	18,472
TEP_2410000206	2,600	2,600	3,080	3,020	3,280	3,960	3,880	3,820	3,220	3,140	2,780	2,900	38,280
TEP_2410000367	669	677	661	759	730	783	925	957	794	764	720	659	9,098
TEP_2410000656	366	365	431	417	444	528	528	503	443	415	386	401	5,227
TEP_2410000672	294	294	294	294	294	294	294	294	294	294	294	294	3,528
TEP_2410000781	361	346	384		447	522	600	496	492	417	382	362	4,809
TEP_2410000916	318	315	381	371	399	466	382	433	401	385	359	369	4,579
TEP_2410000969	1,268	1,967	2,202	1,710	2,180	2,403	2,256	2,077	2,080	1,819	1,750	1,640	23,352
TEP_2410001443	1,925	1,930	2,293	2,252	2,439	2,933	2,902	2,790	2,389	2,231	2,044	2,097	28,225
TEP_2410002044	880	890	1,020	990	1,050	1,250	1,240	1,190	1,050	980	920	960	12,420
TEP_2410002495	1,360	1,280	1,440	1,620	1,640	1,880	2,140	1,740	1,580	1,720	1,380	1,320	19,100
TEP_2410003226	110	110	110	110	110	110	110	110	110	110	110	110	1,320
TEP_2410003826	2,000	1,920	2,140	2,400	2,420	2,740	3,100	2,500	2,420	2,100	1,920	1,840	27,500
TEP_2410003838	328	309	328	356	349	407	442	369	378	331	305	297	4,199
TEP_2410003859	80	90	100	100	90	110	100	100		170	90	100	1,130
TEP_2410004165	328	302	322	403	507	577	649	553	553	493	475	469	5,631
TEP_2410004206	169	169	169	169	169	169	169	169	169	169	169	169	2,028
TEP_2410004575	657	657	657	657	657	657	657	657	657	657	657	657	7,884

TEP_2410005343	2,190	2,190	2,570	2,500	2,790	3,360	3,250	3,180	2,740	2,590	2,400	2,460	32,220
TEP_2410005449	2,820	2,620	2,860	3,090	3,140	3,450	3,880	3,100	3,130	2,770	2,580	2,550	35,990
TEP_2410005656	720	667	719	789	786	885	993	835	853	760	734	713	9,454
TEP_2410005694	514	480	504	544	539	599	671	562	567	455	418	415	6,268
TEP_2410005832	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2410005926	2,150	1,980	2,130	2,350	2,330	2,610	3,140	2,250	2,410	2,060	1,930	1,880	27,220
TEP_2410006638	2,427	2,263	2,448	2,661	2,616	2,933	3,285	2,737	2,802	2,567	2,412	2,358	31,509
TEP_2410006865	1,202	1,200	1,409	1,362	1,445	1,721	1,192	1,510	1,284	1,342	1,256	1,296	16,219
TEP_2410007140	1,585	1,592	1,865	1,826	1,963	2,363	2,354	2,262	1,995	1,852	1,703	1,742	23,102
TEP_2410007674	99	99	99	99	99	99	99	99	99	99	99	99	1,188
TEP_2410007972	6,145	6,266	7,467	7,424	8,122	9,898	9,856	9,322	8,180	7,441	6,778	5,916	92,815
TEP_2410008719	5,150	4,824	5,321	6,018	6,365	7,294	8,016	6,660	6,506	5,614	5,163	4,954	71,885
TEP_2410009421	208	220	249	237	255	315	350	772	755	703	645	658	5,367
TEP_2410009573	92	92	92	92	92	92	92	92	92	92	92	92	1,104
TEP_2410009668	1,424	1,424	1,424	1,424	1,424	1,424	1,424	1,424	1,424	1,424	1,424	1,424	17,088
TEP_2410009777	169	169	169	169	169	169	169	169	169	169	169	169	2,028
TEP_2410009853	3,859	3,932	4,681	4,627	5,029	6,132	6,107	5,781	5,066	4,653	4,262	4,154	58,283
TEP_4510000425	68	68	68	68	68	68	68	68	68	68	68	68	816
TEP_4510002701	110	110	110	110	110	110	110	110	110	110	110	110	1,320
TEP_4910000188	406	435	418	473	536	542	614	673	552	546	465	428	6,088
TEP_4910000541	878	942	877	952	1,033	1,010	1,117	1,224	1,014	1,026	905	753	11,731
TEP_4910001082	2,260	2,380	2,320	2,580	2,960	2,960	3,360	3,680	3,000	2,960	2,520	2,320	33,300
TEP_4910001278	2,096	2,292	2,166	2,398	2,671	2,646	3,073	3,439	2,640	2,696	2,288	2,113	30,518
TEP_4910001511	706	773	737	800	879	865	953	1,051	877	887	783	739	10,050
TEP_4910001762	1,640	1,750	1,680	1,870	2,060	2,020	2,250	2,470	2,010	2,000	1,720	1,590	23,060
TEP_4910002734	1,040	1,130	1,050	1,170	1,310	1,280	1,410	1,540	1,270	1,390	1,230	1,250	15,070
TEP_4910002738	111	119	115	128	41	48	198	219	180	178	152	141	1,630
TEP_4910003280	3,797	4,015	3,744	4,226	4,716	4,742	5,217	5,748	5,168	5,192	4,292	3,972	54,829
TEP_4910003912	235	235	235	235	235	235	235	235	235	235	235	235	2,820
TEP_4910004176	50	100	150	230	270	260	270	300	240	160	140	140	2,310
TEP_4910004731	106	106	106	106	106	106	106	106	106	106	106	106	1,272
TEP_4910005012	1,620	1,700	1,660	1,860	2,100	1,520	2,380	2,640	2,180	2,140	1,820	1,580	23,200
TEP_4910006641	7,660	8,240	7,940	8,940	10,060	10,140	11,980	13,220	10,740	10,580	9,180	8,400	117,080
TEP_4910007480	890	830	870	1,010	990	1,050	1,150	1,230	1,030	970	920	860	11,800
TEP_4910008076	1,870	1,990	1,860	2,050	2,250	2,230	2,490	2,730	2,230	2,250	1,950	1,830	25,730
TEP_4910008228	1,190	1,260	1,210	1,310	1,440	1,520	1,580	1,660	1,350	1,332	1,099	1,051	16,002
TEP_4910008559	6,560	6,720	6,180	6,900	7,460	7,380	8,160	7,020	8,220	8,680	7,380	6,800	87,460
TEP_4910008719	770	669	729	792	860	843	917	1,009	845	868	777	744	9,823
TEP_4910008827	1,230	1,350	1,280	1,560	1,810	1,760	1,950	2,100	1,740	1,760	1,540	1,460	19,540
TEP_4910009311	310	410	400	450	490	490	550	600	500	500	400	370	5,470
TEP_4910009763	4,060	3,790	3,740	4,470	4,360	4,670	5,640	5,730	4,610	4,310	3,830	3,680	52,890
TEP_5810000924	174	174	174	174	174	174	174	174	174	174	174	174	2,088
TEP_5810003361	989	1,031	1,114	1,156	1,101	1,183	1,457	1,325	1,168	1,054	998	993	13,569
TEP_5810006551	6,940	7,120	7,280	8,560	7,880	8,180	10,020	8,220	6,840	6,340	5,560	5,620	88,560
TEP_6210000151	960	1,040	980	1,070	1,150	1,140	1,260	1,280	1,240	1,150	1,020	970	13,260
TEP_6210001499	1,259	1,357	1,260	1,397	1,536	1,524	1,628	1,233	1,820	1,849	1,614	1,509	17,986
TEP_6210001585	794	859	806	907	1,023	1,034	1,165	1,281	1,049	1,042	886	813	11,659
TEP_6210001644	1,663	1,663	1,663	1,663	1,663	1,663	1,663	1,663	1,663	1,663	1,663	1,663	19,956
TEP_6210002145	2,964	2,964	2,964	2,964	2,964	2,964	2,964	2,964	2,964	2,964	2,964	2,964	35,568

TEP_6210004887	839	907	855	928	1,006	985	1,089	1,190	984	997	877	829	11,486
TEP_6610001149	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_6610003114	2,007	2,098	2,367	2,461	2,427	2,592	3,266	3,003	2,621	2,386	2,180	2,202	29,610
TEP_6610003250	620	620	620	620	620	620	620	620	620	620	620	620	7,440
TEP_6610003571	1,173	1,223	1,396	1,184	1,407	1,545	1,611	1,666	1,425	1,361	1,445	1,241	16,677
TEP_6610004028	1,680	1,810	1,960	2,040	2,100	2,230	2,840	2,580	2,220	2,080	1,900	1,960	25,400
TEP_6610004582	1,260	1,310	1,530	1,670	1,750	1,850	2,340	2,120	1,840	1,700	1,570	1,580	20,520
TEP_6610004824	216	216	216	216	216	216	216	216	216	216	216	216	2,592
TEP_6610005042	2,000	2,140	2,380	2,380	2,440	2,960	4,020	3,660	2,340	1,880	1,700	1,720	29,620
TEP_6610005537	2,550	2,754	2,917	3,064	2,996	3,243	4,061	3,635	3,179	2,920	2,788	2,856	36,963
TEP_6610005907	666	694	744	778	766	679	869	796	704	677	632	665	8,670
TEP_6610006945	1,343	1,441	1,380	1,683	1,612	1,692	2,192	1,928	1,682	1,572	1,469	1,530	19,524
TEP_6610006950	180	190	210	190	160	140	170	150	130	120	120	130	1,890
TEP_6610008175	4,276	4,526	5,009	5,266	5,385	5,628	7,165	6,549	5,620	5,276	7,856	1,958	64,514
TEP_6610008886	400	400	400	400	400	400	400	400	400	400	400	400	4,800
TEP_6610009096	573	602	640	642	645	664	823	748	646	627	593	628	7,831
TEP_6610009404	826	872	943	970	978	1,019	1,271	1,155	1,009	951	893	922	11,809
TEP_7010000003	636	602	593	567	537	573	683	701	573	542	510	557	7,074
TEP_7010001055	824	786	782	907	857	891	1,049	1,071	887	839	793	755	10,441
TEP_7010001514	290	270	280	320	340	340	430	430	340	310	220	230	3,800
TEP_7010001902	358	345	345	410	399	423	303	284	242	216	216	196	3,737
TEP_7010002024	480	460	460	560	620	680	840	840	680	660	600	540	7,420
TEP_7010002119	5,154	4,964	4,532	6,168	6,077	6,282	7,221	7,728	6,462	5,941	5,472	5,094	71,095
TEP_7010002344	2,575	2,461	2,519	2,993	2,948	3,124	3,712	3,795	3,070	2,866	2,635	2,430	35,128
TEP_7010002516	3,740	3,400	3,060	3,880	4,140	5,600	4,880	4,840	3,940	3,660	5,360	3,120	49,620
TEP_7010003015	320	280	280	290	270	260	310	320	270	300	310	300	3,510
TEP_7010003205	460	350	390	220	300	310	350	370	300	300	280	260	3,890
TEP_7010004482	80	80	120	120	120	130	150	140	130	110	120	120	1,420
TEP_7010004495	1,581	1,506	1,436	1,676	1,611	1,695	2,003	2,050	1,673	1,582	1,483	1,396	19,692
TEP_7010004799	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_7010004938	747	714	705	809	791	835	988	1,008	832	793	747	712	9,681
TEP_7010005712	7,680	7,420	7,640	8,940	8,660	9,100	10,760	10,880	8,700	8,100	7,380	8,240	103,500
TEP_7010005831	413	384	372	405	363	361	406	418	358	361	358	362	4,561
TEP_7010006609	7,270	6,948	7,247	8,619	8,475	9,112	10,976	11,244	9,014	8,312	7,564	6,926	101,707
TEP_7010007007	261	450	450	524	510	531	626	635	530	492	466	439	5,914
TEP_7010007585	829	809	805	926	917	940	1,106	1,141	918	763	717	680	10,551
TEP_7010007638	516	490	503	585	531	534	618	634	527	504	482	459	6,383
TEP_7010008260	358	374	360	415	389	397	461	385	319	307	299	288	4,352
TEP_7010008634	781	826	780	786		821	1,024	934	813	768	737	774	9,044
TEP_7010008729	1,190	1,240	1,310	1,190	1,220	1,280	1,590	1,440	1,270	1,190	1,130	1,170	15,220
TEP_7010008842	860	830	830	930	850	870	1,000	1,030	840	800	750	726	10,316
TEP_7010009356	110	104	106	121	119	119	139	143	179	170	155	143	1,608
TEP_7010009857	3,570	3,470	3,550	4,390	4,450	4,740	5,990	6,150	4,900	4,530	4,180	3,930	53,850
TEP_7410000011	423	445	429	514	496	493	602	531	502	468	444	468	5,815
TEP_7410000189	1,305	1,451	1,398	1,572	1,617	1,831	2,097	1,753	1,659	1,559	1,557	1,386	19,185
TEP_7410000422	820	920	870	950	940	1,030	970	810	740	690	700	630	10,070
TEP_7410001051	6,176	7,056	6,833	7,563	7,803	8,885	10,402	8,739	7,824	7,131	6,842	6,102	91,356
TEP_7410001125	32	34	35	40	40	73	101	87	81	74	74	62	733
TEP_7410001268	5,400	6,120	6,020	6,780	7,140	8,120	9,660	8,100	7,440	6,860	6,660	5,900	84,200

TEP_7410003953	630	700	650	720	720	800	910	770	720	690	710	650	8,670
TEP_7410005533	2,178	2,490	2,405	2,757	2,933	3,439	4,030	3,488	3,189	2,976	2,896	2,588	35,369
TEP_7410006837	586	662	634	679	689	763	897	777	735	722	741	679	8,564
TEP_7410008178	1,350	1,530	1,450	1,570	1,590	1,800	2,080	1,910	1,590	1,550	1,530	1,330	19,280
TEP_7410009023	3,020	3,220	3,580	3,700	3,800	4,020	5,100	4,600	3,960	3,640	3,340	3,360	45,340
TEP_7410009106	710	790	750	830	820	910	1,060	890	990	664	822	808	10,044
TEP_7910000495	788	890	838	916	935	1,039	1,266	1,099	1,039	989	994	911	11,704
TEP_7910001699	370	400	380	420	430	480	570	470	450	420	420	390	5,200
TEP_7910001861	569	642	597	645	648	709	814	689	635	612	628	586	7,774
TEP_7910001866	3,380	3,520	3,060	3,400	3,540	4,040	4,780	4,040	3,620	3,260	3,200	2,960	42,800
TEP_7910003054	1,728	1,809	1,621	1,752	1,904	2,534	3,018	2,562	2,356	2,187	2,121	1,907	25,499
TEP_7910003252	3,510	3,957	3,911	4,144	4,085	4,624	5,544	3,573	4,007	3,645	3,531	3,317	47,848
TEP_7910003652	6,800	7,660	7,400	8,140	8,400	9,600	11,140	9,440	8,600	7,940	7,780	6,880	99,780
TEP_7910004909	2,517	2,868	2,788	3,209	3,368	3,894	4,607	3,931	3,629	3,368	3,328	2,950	40,457
TEP_7910005780	423	479	460	510	516	576	661	564	522	492	491	441	6,135
TEP_7910007547	593	672	628	678	759	971	1,129	954	818	835	844	785	9,666
TEP_7910008357	50	60	60	50	60	50	70	50	50	50	50	50	650
TEP_7910008835	440	505	478	526	530	588	681	575	539	505	505	459	6,331
TEP_8310001932	4,080	4,280	4,660	4,860	5,060	5,500	6,840	6,100	5,200	4,820	4,380	4,440	60,220
TEP_8310002263	147	157	169	169	133	135	172	154	133	127	121	128	1,745
TEP_8310003011	110	110	110	110	110	110	110	110	110	110	110	110	1,320
TEP_8310006777	671	722	773	782	803	847	1,066	973	858	741	680	723	9,639
TEP_8310006879	1,200	1,170	1,240	1,290	1,310	1,360	1,690	1,800	1,570	1,206	1,190	1,186	16,212
TEP_8310008354	786	830	895	915	929	976	1,217	1,123	980	920	860	891	11,322
TEP_8710000929	810	780	770	890	860	880	1,030	940	740	720	680	640	9,740
TEP_8710001159	2,077	1,979	1,701	2,358	2,303	2,458	2,966	2,955	2,441	2,295	2,146	1,980	27,659
TEP_8710001496	1,370	1,280	1,290	1,520	1,450	1,510	1,770	1,800	1,480	1,400	1,310	1,250	17,430
TEP_8710001841	1,073	1,058	1,079	1,280	1,242	1,298	1,564	1,606	1,303	1,221	1,176	1,103	15,003
TEP_8710002070	2,740	2,580	4,780	1,420	3,360	3,440	4,160	4,460	3,660	3,100	2,900	2,660	39,260
TEP_8710002208	130	120	120	150	120	130	160	150	130	140	110	120	1,580
TEP_8710002419	387	387	387	387	387	387	387	387	387	387	387	387	4,644
TEP_8710002457	317	290	293	346	300	137	152	88	57	59	61	62	2,162
TEP_8710002466	730	700	700	850	880	940	1,120	1,150	940	860	790	710	10,370
TEP_8710002504	1,520	1,450	1,450	1,700	1,620	1,740	2,000	2,030	1,610	1,450	1,400	1,280	19,250
TEP_8710002617	3,619	3,460	3,576	4,251	4,194	4,560	5,335	5,329	4,381	4,104	3,879	3,664	50,352
TEP_8710003826	7,580	7,300	7,660	9,500	9,920	11,140	13,060	13,420	10,840	11,540	10,900	10,060	122,920
TEP_8710004061	438	427	473	579	564	587	733	744	581	564	491	459	6,640
TEP_8710004639	720	690	690	910	1,020	1,100	1,210	1,400	970	1,130	960	910	11,710
TEP_8710004947	68	68	68	68	68	68	68	68	68	68	68	68	816
TEP_8710004968	420	400	360	400	380	410	480	440	400	370	350	330	4,740
TEP_8710004981	1,160	1,120	1,120	1,040	700	720	1,190	1,630	1,340	1,250	1,170	1,100	13,540
TEP_8710005248	68	68	68	68	68	68	68	68	68	68	68	68	816
TEP_8710005351	3,940	3,940	4,000	4,780	4,620	4,900	5,900	5,980	4,840	4,460	4,040	3,760	55,160
TEP_8710006469	23	22	20	24	21	21	24	25	21	21	21	21	264
TEP_8710006945	429	429	429	429	429	429	429	429	429	429	429	429	5,148
TEP_8710006972	3,400	3,540	4,000	4,680	4,640	5,000	5,940	5,920	4,400	4,580	3,960	3,560	53,620
TEP_8710008330	590	570	570	670	660	690	830	850	690	650	560	460	7,790
TEP_8710008802	1,059	947	875	1,147	1,110	1,174	1,404	1,448	1,186	1,085	1,026	961	13,422
TEP_8710008820	3,700	3,500	3,680	4,420	4,360	4,680	5,620	5,680	4,640	4,320	3,940	3,640	52,180

Traffic Signals	437,710	450,165	475,803	505,766	529,788	599,959	669,832	598,041	543,662	508,733	477,729	456,111	6,253,299
TEP_0410000470	1,607	1,523	1,679	1,693	1,807	1,713	1,908	1,572	1,485	1,479	1,283	1,255	19,004
TEP_0410000491	904	933	1,011	1,103	1,133	1,469	1,354	1,280	750	813	893	899	12,542
TEP_0410001651	6,360	6,450	6,679	8,058	8,014	8,614	10,543	9,173	8,857	7,608	6,944	6,574	93,874
TEP_0410004504	3,140	3,160	3,240	4,000	3,740	4,000	5,000	4,220	4,060	3,420	3,040	3,020	44,040
TEP_0410007758	4,200	4,210	4,100	4,758	4,726	5,021	6,312	5,312	4,570	4,848	4,447	4,291	56,795
TEP_0410008977	7,260	7,224	7,559	9,021	8,828	9,441	11,904	10,234	9,688	8,677	7,815	7,456	105,107
TEP_0410009499	1,062	1,146	1,150	1,333	1,248	1,497	1,504	1,437	1,264	1,198	1,077	1,162	15,078
TEP_0810000138	330	350	350	360	380	518	538	463	405	348	333	334	4,709
TEP_0810000293	329	356	404	393	421	509	545	455	431	401	373	379	4,996
TEP_0810000355	1,186	1,275	1,421	1,362	1,399	1,646	1,689	1,384	1,377	1,319	1,250	1,299	16,607
TEP_0810000529	28	161	7	3	54	286	2,870	845	6,421	5,573	6,860	2,433	25,541
TEP_0810001058	99	99	99	99	99	99	99	99	99	99	99	99	1,188
TEP_0810001152	339	339	339	339	339	339	339	339	339	339	339	339	4,068
TEP_0810001214	6,163	6,607	7,643	7,661	8,436	10,337	10,827	8,834	8,287	7,642	7,007	7,100	96,544
TEP_0810001267	1,870	1,940	2,250	2,260	2,410	2,920	3,140	2,640	2,470	2,310	2,150	2,200	28,560
TEP_0810001341	170	200	210	200	190	230	200	180	180	180	190	170	2,300
TEP_0810002120	441	446	472	496	523	620	679	669	639	611	560	615	6,771
TEP_0810002945	850	820	1,010	1,020	1,090	1,310	1,430	1,220	1,150	1,070	1,000	1,030	13,000
TEP_0810004048	99	99	99	99	99	99	99	99	99	99	99	99	1,188
TEP_0810005754	6,360	9,240	6,200	8,220	8,040	11,280	11,700	10,120	9,020	7,960	7,720	7,960	103,820
TEP_0810007009	5,220	5,580	5,860	5,340	6,340	7,560	8,420	7,280	6,480	5,820	5,220	5,220	74,340
TEP_0810007492	5,840	6,360	7,180	7,040	7,600	9,300	9,940	10,340	5,800	7,180	6,580	6,700	89,860
TEP_0810007708	6,100	6,580	7,460	7,360	7,760	9,340	9,740	7,960	7,520	7,060	6,300	9,580	92,760
TEP_0810008413	1,050	1,120	1,240	1,190	1,240	1,470	1,550	1,300	1,240	1,180	1,110	1,160	14,850
TEP_0810009702	99	99	99	99	99	99	99	99	99	99	99	99	1,188
TEP_1210000614	1,107	1,287	1,291	1,362	1,465	1,776	1,892	1,573	1,478	1,369	1,342	1,195	17,137
TEP_1210000716	179	209	202	208	203	236	242	197	191	186	190	170	2,413
TEP_1210000742	1,303	1,498	1,390	1,425	1,465	1,704	1,816	1,012	323	328	356	345	12,965
TEP_1210001431	989	1,180	1,173	1,235	1,725	1,494	1,414	1,175	1,111	1,050	1,019	934	14,499
TEP_1210001622	2,520	2,840	2,680	2,740	3,080	3,910	4,200	3,540	3,330	3,960	4,100	3,680	40,580
TEP_1210001947	610	694	682	700	841	1,047	1,108	925	884	805	861	762	9,919
TEP_1210002222	1,760	1,840	1,910	1,980	2,090	2,480	2,630	2,200	2,090	1,910	2,050	1,810	24,750
TEP_1210002323	1,050	1,190	1,150	1,220	1,430	1,690	1,780	1,490	1,420	1,340	1,350	1,230	16,340
TEP_1210002410	169	197	195	205	220	266	284	228	223	203	214	185	2,589
TEP_1210003306	988	1,145	1,043	850	879	1,041	1,112	934	878	803	849	763	11,285
TEP_1210003466	1,260	1,440	1,410	1,450	1,550	1,950	1,820	1,590	1,490	1,360	1,460	1,220	18,000
TEP_1210003701	444		493	506	532	640	683	574	544	513	515	473	5,917
TEP_1210004053	8,373	9,726	9,653	10,138	10,932	13,276	14,269	11,902	11,138	10,269	9,987	8,950	128,613
TEP_1210004568	1,430	1,640	1,650	1,690	1,810	2,150	2,270	1,900	1,820	1,650	1,770	1,540	21,320
TEP_1210004745	915	1,052	1,016	1,029	1,074	1,290	1,353	1,132	1,066	1,008	1,009	923	12,867
TEP_1210005686	1,100	1,290	1,280	1,310	1,400	1,660	1,620	1,350	1,280	1,220	1,200	1,110	15,820
TEP_1210005718	1,540	1,760	1,850	1,710	1,910	2,300	2,420	2,020	1,919	1,804	1,782	1,625	22,640
TEP_1210005873	2,060	2,250	2,020	2,100	2,200	2,630	2,770	2,340	2,200	2,080	2,090	1,920	26,660
TEP_1210006418	877	994	787	812	853	21	2,097	921	1,868	845	766	791	11,632
TEP_1210007076	498	574	562	580	609	725	771	647	614	578	577	530	7,265
TEP_1210007208	540	610	630	630	670	790	840	710	680	640	640	580	7,960
TEP_1210007515	296	154	146	139	142	473	569	477	455	416	439	13	3,719
TEP_1210008919	5,730	6,650	6,310	6,460	6,950	8,390	8,920	7,460	7,000	6,490	6,502	5,930	82,792

TEP_1610001129	550	518	557	559	610	641	730	630	624	650	554	548	7,171
TEP_1610001330	1,500	1,520	2,080	2,360	2,360	2,720	3,000	2,440	2,440	2,080	1,820	1,860	26,180
TEP_1610002295	1,287	1,228	1,363	1,435	1,659	1,806	1,949	1,603	1,416	1,467	1,357	1,254	17,824
TEP_1610002534	1,180	1,115	1,203	1,219	1,400	1,450	1,499	1,253	1,217	1,294	1,128	1,102	15,060
TEP_1610003487	720	640	720	730	810	840	940	790	730	810	690	670	9,090
TEP_1610003514	424	424	424	424	424	424	424	424	424	424	424	424	5,088
TEP_1610003685	5,368	4,950	5,641	5,950	7,185	7,875	8,739	7,192	6,800	6,406	5,202	5,306	76,614
TEP_1610003941	1,080	1,029	1,138	1,194	1,374	1,506	1,599	1,328	1,291	1,314	1,088	1,006	14,947
TEP_1610005942	500	459	488	485	533	549	610	535	535	550	495	501	6,240
TEP_1610006003	5,940	5,500	5,960	6,040	6,580	6,680	7,580	5,940	5,220	4,860	3,080	3,800	67,180
TEP_1610006357	5,660	5,220	5,460	5,360	6,100	6,500	7,340	6,100	5,720	5,460	4,640	4,500	68,060
TEP_1610007235	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_1610007610	400	380	420	410	520	500	590	490	450	470	380	380	5,390
TEP_1610008649	8,303	7,571	8,337	8,783	10,643	11,042	12,531	10,995	10,170	10,535	9,140	8,534	116,584
TEP_1610009586	3,460	3,020	3,860	4,180	4,720	4,860	5,340	4,760	4,340	4,420	3,500	3,460	49,920
TEP_2010000275	798	748	814	898	885	961	1,052	865	886	792	739	726	10,164
TEP_2010000737	173	173	173	173	173	173	173	173	173	173	173	173	2,076
TEP_2010001021	4,600	4,720	4,360	4,820	5,800	7,240	7,700	6,340	5,820	5,360	4,900	5,260	66,920
TEP_2010001054	960	1,010	1,180	1,130	1,200	1,410	1,500	1,270	1,190	1,120	1,130	1,220	14,320
TEP_2010001217	4,420	4,420	5,380	5,300	5,880	7,020	7,280	6,160	5,780	5,360	4,920	4,960	66,880
TEP_2010001752	490	510	570	550	570	660	690	590	560	550	500	580	6,820
TEP_2010001823	6,226	6,368	6,425	6,214	6,626	8,161	8,731	7,217	7,237	6,833	6,236	6,322	82,596
TEP_2010002101	5,880	5,980	7,060	6,960	7,500	9,220	9,880	8,080	7,600	7,080	6,400	6,620	88,260
TEP_2010002511	147	147	147	147	147	147	147	147	147	147	147	147	1,764
TEP_2010002986	820	820	980	960	1,080	1,280	1,380	1,120	1,080	980	940	940	12,380
TEP_2010004398	418	391	474	474	549	710	765	635	600	554	511	523	6,604
TEP_2010004800	64	64	64	64	64	64	64	64	64	64	64	64	768
TEP_2010005481	1,143	1,236	1,380	1,332	1,416	1,714	1,814	1,531	1,442	1,338	1,178	1,308	16,832
TEP_2010006119	5,780	6,040	7,120	7,060	7,460	9,020	9,560	7,880	7,380	6,780	6,180	6,020	86,280
TEP_2010006174	1,106	1,021	1,230	1,139	1,248	1,599	1,884	1,644	1,557	1,396	1,588	1,234	16,646
TEP_2010007336	219	219	219	219	219	219	219	219	219	219	219	219	2,628
TEP_2010007930	9,864	10,588	12,945	12,940	14,463	17,292	18,271	15,169	14,296	13,134	11,994	12,006	162,962
TEP_2010008473	2,991	3,018	3,639	3,676	3,970	4,842	5,089	4,177	3,901	3,599	3,314	3,401	45,617
TEP_2010009042	1,011	1,090	1,216	1,196	1,241	1,516	1,577	1,297	931	1,105	1,121	1,251	14,552
TEP_2010009536	1,418	1,533	1,648	1,534	1,623	1,686	1,766	1,638	2,094	1,985	1,860	1,940	20,725
TEP_2410000138	3,404	3,386	3,960	3,881	4,282	5,470	5,434	5,093	4,122	4,150	3,793	3,825	50,800
TEP_2410000185	1,560	1,530	1,790	1,720	1,100	2,140	2,120	2,020	1,780	1,680	1,560	1,620	20,620
TEP_2410000727	212	211	243	233	238	277	274	263	235	219	205	213	2,823
TEP_2410000801	1,122	1,119	1,306	1,263	1,335	1,578	1,565	1,491	1,323	1,256	1,177	1,231	15,766
TEP_2410000855	4,640	4,740	5,620	5,580	6,120	7,460	7,460	7,080	6,140	5,580	4,940	5,060	70,420
TEP_2410000997	799	729	779	843	831	925	1,039	871	883	785	739	729	9,952
TEP_2410001035	3,980	3,800	4,220	4,720	4,820	5,500	6,160	5,100	5,000	4,320	3,960	3,820	55,400
TEP_2410001178	3,238	3,259	3,767	3,654	3,932	4,741	4,742	4,566	3,977	3,662	3,360	3,411	46,309
TEP_2410001656	400	380	420	480	480	540	620	500	480	420	380	380	5,480
TEP_2410001971	1,132	1,059	1,151	1,260	1,230	1,250	1,383	1,158	1,184	1,055	938	929	13,729
TEP_2410002088	2,176	2,079	2,317	2,615	2,572	2,929	3,464	2,883	2,881	2,455	2,250	2,134	30,755
TEP_2410002346	170	180	210	190	190	230	210	200	190	190	170	200	2,330
TEP_2410002801	4,700	4,460	4,940	5,500	5,620	6,460	7,160	5,840	5,780	4,900	4,520	4,400	64,280
TEP_2410003658	2,699	2,631	3,036	3,010	3,264	3,714	3,725	3,630	3,156	2,937	2,686	2,687	37,175

TEP_2410003767	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2410004176	720	670	730	810	940	1,090	1,230	1,027	1,043	908	848	826	10,842
TEP_2410004261	2,940	2,720	3,000	3,360	3,380	3,780	4,160	3,380	3,460	3,120	2,900	2,760	38,960
TEP_2410004276	99	99	99	99	99	99	99	99	99	99	99	99	1,188
TEP_2410004386	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2410004613	181	154	157	166	149	162	175	150	160	141	151	156	1,902
TEP_2410004637	7,180	6,960	8,340	9,360	9,900	11,460	12,880	10,760	10,640	9,160	8,400	8,020	113,060
TEP_2410005595	4,440	4,600	3,940	4,780	4,760	5,260	5,700	4,520	4,420	3,800	3,440	3,240	52,900
TEP_2410006866	680	660	720	840	820	920	1,040	880	880	740	680	640	9,500
TEP_2410006873	730	700	760	830	850	950	1,070	890	910	780	740	710	9,920
TEP_2410006905	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2410007586	173	173	173	173	173	173	173	173	173	173	173	173	2,076
TEP_2410008021	169	169	169	169	169	169	169	169	169	169	169	169	2,028
TEP_2410008247	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2410008992	3,640	3,760	4,420	4,300	4,620	5,500	5,400	5,320	4,720	4,340	2,840	2,820	51,680
TEP_2410009178	1,938	2,060	1,985	2,552	2,641	3,023	3,414	2,810	2,797	2,369	2,156	2,045	29,790
TEP_2910000150	907	920	1,064	1,030	1,086	1,281	1,359	1,135	1,074	986	917	953	12,712
TEP_2910000160	92	94	112	110	119	144	157	127	121	111	101	103	1,391
TEP_2910000180	218	223	246	240	245	288	298	231	205	218	237	243	2,892
TEP_2910000190	234	237	277	268	274	330	348	289	271	253	235	246	3,262
TEP_2910000289	124	107	107	96	85	91	101	85	92	86	86	93	1,153
TEP_2910000461	647	638	747	714	738	874	825	713	705	670	642	686	8,599
TEP_2910000495	3,326	3,196	3,697	3,582	3,740	4,479	4,370	3,957	3,534	3,444	3,216	3,358	43,899
TEP_2910000529	1,153	1,142	1,332	1,289	1,356	1,594	1,678	1,378	1,308	1,234	1,031	986	15,481
TEP_2910000762	1,136	1,133	1,330	1,296	1,374	1,629	1,655	1,350	1,248	1,147	1,060	1,082	15,440
TEP_2910000858	7,220	7,320	8,740	8,480	9,060	10,860	10,800	10,320	9,100	8,400	7,660	7,640	105,600
TEP_2910004808	4,600	2,660	6,240	5,080	3,880	7,060	6,480	5,520	5,600	4,780	4,220	4,000	60,120
TEP_2910005776	510	487	508	533	538	611	530	446	455	398	396	358	5,770
TEP_2910007968	445	421	559	548	585	676	697	580	551	509	464	473	6,508
TEP_3310000003	1,312	1,411	1,745	1,218	1,588	1,892	1,947	1,563	1,484	1,394	1,387	1,270	18,211
TEP_3310000158	1,040	1,111	1,139	1,169	1,231	1,464	1,530	1,270	1,214	1,153	1,156	1,061	14,538
TEP_3310000341	1,416	1,333	1,468	1,501	1,707	1,816	1,989	1,648	1,560	1,556	1,349	1,322	18,665
TEP_3310000573	867	932	953	975	1,020	1,209	1,260	1,049	998	940	948	881	12,032
TEP_3710008858	1,370	1,420	1,410	1,470	1,670	1,160	1,050	830	810	840	740	730	13,500
TEP_4110001286	300	279	312	344	339	376	411	337	322	283	253	251	3,807
TEP_4110001323	428												428
TEP_4110001756	954	603	826	903	897	1,003	1,098	915	933	820	765	729	10,446
TEP_4510006750	4,382	4,382	4,382	4,382	4,382	4,382	4,382	4,382	4,382	4,382	4,382	4,382	52,584
TEP_4910001078	-	-	-	-	-	-	-	-	-	-	-	-	-
TEP_4910001194	398	444	430	477	482	540	679	510	477	488	383	382	5,690
TEP_4910001537	990	1,080	1,260	1,320	1,400	1,400	1,560	1,730	1,420	1,430	960	540	15,090
TEP_4910001913	407	442	415	458	521	524	558	616	519	519	449	417	5,845
TEP_4910002026	4,225	4,557	4,395	4,936	5,382	5,406	6,084	6,672	5,268	5,135	4,275	4,007	60,342
TEP_4910002756	1,383	1,492	1,370	1,514	1,659	1,640	1,796	1,974	1,549	1,562	1,371	1,288	18,598
TEP_4910003036	2,179	2,466	2,388	2,664	2,991	2,941	3,202	3,443	2,821	2,880	3,012	2,642	33,629
TEP_4910003699	1,580	1,720	1,640	1,880	2,140	2,100	2,280	2,420	2,060	2,000	1,720	1,580	23,120
TEP_4910004618	880	930	890	960	1,040	1,030	1,130	1,250	1,030	1,040	910	870	11,960
TEP_4910004852	1,250	1,340	1,260	1,410	1,540	1,420	1,550	1,680	1,380	1,470	1,280	1,230	16,810
TEP_4910005156	690	760	720	780	850	820	940	1,030	850	840	740	710	9,730

TEP_4910005229	5,160	5,400	5,080	5,880	6,880	6,860	7,620	8,480	6,680	6,580	5,560	5,160	75,340
TEP_4910007174	382	412	390	419	454	441	488	537	445	453	403	380	5,204
TEP_6210001047	1,372	1,372	1,372	1,372	1,372	1,372	1,372	1,372	1,372	1,372	1,372	1,372	16,464
TEP_6210001855	5,546	5,546	5,546	5,546	5,546	5,546	5,546	5,546	5,546	5,546	5,546	5,546	66,552
TEP_6210008403	370	410	390	420	470	450	520	550	450	460	390	360	5,240
TEP_6210008769	904	904	904	904	904	904	904	904	904	904	904	904	10,848
TEP_6210009465	5,793	5,793	5,793	5,793	5,793	5,793	5,793	5,793	5,793	5,793	5,793	5,793	69,516
TEP_6210009737	5,429	5,894	5,684	6,277	6,976	7,032	7,938	8,661	6,921	6,824	5,876	5,301	78,813
TEP_6610000467	1,600	1,450	1,510	1,550	1,620	1,800	2,190	1,960	1,760	1,590	1,410	1,680	20,120
TEP_6610001412	540	490	500	570	540	560	670	640	600	540	520	480	6,650
TEP_6610001503	3,649	3,892	4,225	4,367	4,494	4,663	6,022	6,264	4,079	4,403	3,919	3,918	53,895
TEP_6610002582	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_6610003468	2,100	2,120	2,240	2,080	2,300	2,320	3,080	2,880	2,460	2,320	2,240	2,380	28,520
TEP_6610004686	717	763	816	833	1,036	1,267	1,247	879	768	737	698	729	10,490
TEP_6610004895	2,158	2,078	2,103	2,450	2,334	2,468	2,646	2,401	2,259	2,001	1,862	1,765	26,525
TEP_6610005868	1,235	1,303	1,409	1,369	1,319	1,376	1,705	1,546	1,335	1,250	1,175	1,219	16,241
TEP_6610006299	574	605	648	657	660	684	848	773	685	653	3,324	672	10,783
TEP_6610007077	481	481	481	481	481	481	481	481	481	481	481	481	5,772
TEP_6610007183	1,010	1,060	1,150	1,200	1,240	1,300	1,660	1,490	1,300	1,140	1,080	1,130	14,760
TEP_6610007822	450	480	490	470	450	470	540	500	460	470	470	530	5,780
TEP_6610007959	1,040	1,100	1,200	1,200	1,280	1,840	2,280	1,560	1,340	1,220	1,120	1,140	16,320
TEP_6610009618	4,380	4,620	5,000	5,140	5,440	5,940	7,880	7,900	6,740	6,140	5,580	5,660	70,420
TEP_7010000568	5,069	4,905	4,673	5,858	5,753	6,098	7,168	7,182	5,592	5,175	4,728	4,275	66,476
TEP_7010001329	1,065	1,021	1,068	1,260	1,170	1,196	1,374	1,405	1,138	1,073	1,023	977	13,770
TEP_7010001643	450	420	418	464	442	447	511	522	415	395	355	309	5,148
TEP_7010001653	880	800	560	640	1,040	880	880	1,360	1,360	880	880	800	10,960
TEP_7010001810	60	50	70	50	60	50	50	40	40	30	30	30	560
TEP_7010004535	1,816	1,720	1,783	2,043	1,964	2,136	2,515	2,606	2,089	2,003	1,857	1,730	24,262
TEP_7010006528	660	640	650	750	730	730	870	890	730	690	650	610	8,600
TEP_7010008186	1,485	1,439	1,470	1,716	1,655	1,745	2,070	2,114	1,737	1,647	1,540	1,463	20,081
TEP_7010008285	368	353	393	476	457	476	568	569	556	559	504	466	5,745
TEP_7010009315	415	415	415	415	415	415	415	415	415	415	415	415	4,980
TEP_7410000095	310	627	568	637	641	717	837	716	665	635	634	582	7,569
TEP_7410001157	1,458	1,527	1,649	1,701	1,743	1,843	2,315	2,094	1,824	1,707	1,621	1,655	21,137
TEP_7410001223	1,398	1,546	1,453	1,635	1,673	1,885	2,201	1,979	1,949	1,844	1,843	1,671	21,077
TEP_7410002147	2,360	2,058	3,226	3,066	3,214	3,698	4,369	3,665	3,371	3,136	3,054	2,722	37,939
TEP_7410002305	1,549	1,767	1,744	1,970	2,038	2,303	2,847	2,389	2,145	2,002	1,977	1,755	24,486
TEP_7410002993	1,190	1,320	1,280	1,400	1,440	1,630	1,910	1,620	1,500	1,400	1,550	1,690	17,930
TEP_7410003034	596	682	636	684	696	771	903	771	722	685	699	639	8,484
TEP_7410003909	5,776	6,619	6,267	6,890	7,125	8,088	9,008	7,840	7,208	6,678	6,545	5,817	83,861
TEP_7410004336	681	783	761	756	760	866	1,189	1,083	1,008	940	921	820	10,568
TEP_7410005357	3,977	4,242	4,679	4,919	5,134	5,476	6,911	6,228	5,310	4,898	4,322	4,651	60,747
TEP_7410007952	4,224	4,848	4,708	5,030	5,565	6,457	7,557	6,284	5,597	5,174	5,048	4,366	64,858
TEP_7410009006	220	240	240	260	280	320	380	320	280	260	280	240	3,320
TEP_7410009212	8,641	10,121	9,698	10,693	10,919	12,254	14,098	11,588	10,836	10,019	13,784	11,891	134,542
TEP_7910000422	110	110	110	110	110	110	110	110	110	110	110	110	1,320
TEP_7910000538	820	930	870	940	950	1,040	1,210	1,030	970	920	940	870	11,490
TEP_7910001354	5,648	6,445	6,179	6,801	7,094	7,940	9,351	8,197	7,208	6,640	6,350	5,614	83,467
TEP_7910001409	786	894	848	931	940	1,049	1,222	1,038	968	918	924	843	11,361

TEP_7910004019	1,962	2,179	2,035	2,256	2,134	2,292	3,011	2,696	2,350	2,187	2,157	1,934	27,193
TEP_7910005618	6,330	7,211	6,942	7,665	8,084	9,316	11,073	9,367	8,604	7,924	7,747	6,812	97,075
TEP_7910006194	330	371	344	1,371	375	421	488	413	385	365	377	340	5,580
TEP_7910009363	489	568	548	601	603	670	793	682	637	593	589	534	7,307
TEP_7910009735	2,040	2,340	2,260	2,520	2,620	3,040	3,620	3,060	2,860	2,660	2,640	2,320	31,980
TEP_7910009858	1,676	1,901	1,859	2,081	2,172	2,502	2,939	2,510	2,303	2,141	2,083	1,832	25,999
TEP_8310000563	247	266	213	257	237	228	253	223	208	190	182	189	2,693
TEP_8310002757	2,320	2,440	2,700	2,840	2,960	3,140	3,920	3,600	3,120	2,880	2,580	2,800	35,300
TEP_8310006000	187	199	153	164	172	186	238	208	182	172	159	162	2,182
TEP_8310009063	541	571	615	622	610	674	830	747	665	643	608	637	7,763
TEP_8710000000	620	600	620	720	720	780	880	860	760	700	660	600	8,520
TEP_8710000773	1,110	1,080	1,070	1,250	1,200	1,290	1,560	1,600	1,340	1,250	1,170	1,100	15,020
TEP_8710000906	1,100	1,025	1,108	1,284	1,229	1,166	1,458	1,507	1,228	1,094	1,047	970	14,216
TEP_8710001473	2,316	2,234	2,211	2,607	2,557	2,801	3,321	3,315	3,140	2,995	2,761	2,557	32,815
TEP_8710001547	2,220	2,120	2,200	2,540	2,480	2,640	3,160	3,180	2,600	2,340	2,120	1,920	29,520
TEP_8710001796	2,116	2,024	2,058	2,560	2,562	2,785	3,330	3,459	2,793	2,584	2,381	2,116	30,768
TEP_8710002167	867	811	834	951	919	957	1,127	1,181	963	887	869	821	11,187
TEP_8710002341	7,780	7,620	7,780	9,080	8,620	9,820	12,080	12,300	9,960	9,060	8,180	7,560	109,840
TEP_8710002491	5,980	5,800	5,580	6,640	6,500	6,960	8,400	8,600	6,960	6,460	5,900	5,480	79,260
TEP_8710004351	110	110	110	110	110	110	110	110	110	110	110	110	1,320
TEP_8710004477	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_8710005098	660	650	620	740	700	710	820	810	700	680	650	630	8,370
TEP_8710005176	270	250	250	260	240	240	272	280	238	238	240	240	3,018
TEP_8710005445	1,820	1,720	1,760	2,120	1,900	2,520	2,980	3,080	2,460	2,240	1,960	1,780	26,340
TEP_8710005608	3,312	3,169	3,267	3,912	3,840	4,095	4,872	4,965	4,020	3,779	3,449	3,169	45,849
TEP_8710006698	173	173	173	173	173	173	173	173	173	173	173	173	2,076
TEP_8710008074	5,340	5,160	5,220	6,180	6,000	6,300	7,520	7,700	6,300	5,840	5,200	4,840	71,600
TEP_8710008203	4,860	4,360	4,620	5,520	5,420	5,820	6,990	7,180	5,830	5,410	4,900	4,420	65,330
TEP_8710008466	1,210	1,480	1,870	2,330	2,170	1,900	2,430	2,570	2,250	2,250	2,160	2,020	24,640
TEP_8710009239	950	920	920	1,080	1,030	1,070	1,240	1,280	1,050	990	940	870	12,340
Unassigned-General Service Rate on Lite Sheet	**83,639**	**85,212**	**90,016**	**94,293**	**101,791**	**112,625**	**127,268**	**119,346**	**101,630**	**98,640**	**90,473**	**85,318**	**1,190,251**
TEP_0410002433	749	795	821	931	1,005	1,229	1,227	1,138	1,015	958	981	1,044	11,893
TEP_0810002469	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_0810002729	4,352	4,087	4,655	4,663	5,244	6,923	7,241	6,046	5,653	5,059	4,954	4,826	63,703
TEP_1610001463	1,570	1,440	1,440	1,470	1,650	1,730	1,880	1,620	1,640	1,970	1,660	1,590	19,660
TEP_1610004073	6,817	6,249	6,453	5,264	7,002	8,867	10,027	8,313	7,710	7,612	6,532	6,047	86,893
TEP_1610004102	4,660	4,460	4,820	4,960	5,720	6,140	6,980	5,840	5,420	5,360	4,600	4,360	63,320
TEP_1610005743	1,474	1,362	1,487	1,530	1,738	1,701	1,914	1,615	1,537	1,569	1,369	1,340	18,636
TEP_1610007301	1,990	1,870	2,020	1,920	2,160	2,280	2,560	2,148	2,020	2,022	1,868	1,723	24,581
TEP_1610009870	7,560	6,940	7,540	7,760	8,640	8,800	10,180	8,360	8,040	7,680	6,600	6,200	94,300
TEP_2010001379	952	1,019	1,164	1,125	1,207	1,442	1,532	1,284	1,173	1,184	1,070	1,101	14,253
TEP_2010001990	437	438	516	503	535	644	656	521	458	426	396	412	5,942
TEP_2010004445	64	64	64	64	64	64	64	64	64	64	64	64	768
TEP_2010006517	324	346	376	349	349	396	413	348	339	334	323	357	4,254
TEP_2410002112	210	260	270	250	250	290	260	270	250	240	260	270	3,080
TEP_2410002159	815	796	904	1,023	1,043	1,194	1,334	1,098	1,069	909	827	779	11,791
TEP_2410002742	1,394	1,404	1,657	1,602	1,709	2,031	2,021	1,805	1,723	1,565	1,495	1,491	19,897
TEP_2410003153	740	692	742	805	791	881	989	831	846	746	707	695	9,465
TEP_2410003189	187	747	1,796	918	904	1,015	1,137	944	951	853	781	760	10,993

TEP_2410003537	1,059	1,134	1,283	1,233	1,309	1,539	1,515	1,377	1,210	1,147	1,076	1,132	15,014
TEP_2410003629	3,305	3,367	4,061	3,980	4,295	5,191	4,958	4,854	4,260	3,806	3,608	3,585	49,270
TEP_2410003635	1,152	1,168	1,324	1,551	1,569	1,780	1,981	1,632	1,619	1,403	1,301	1,236	17,716
TEP_2410003900	2,060	1,920	2,160	2,400	2,440	2,780	3,180	2,720	2,640	2,200	2,000	1,960	28,460
TEP_2410003977	169	169	169	169	169	169	169	169	169	169	169	169	2,028
TEP_2410004238	160	160	160	160	160	160	160	160	160	160	160	160	1,920
TEP_2410006497	540	530	630	600	630	750	730	710	630	580	550	560	7,440
TEP_4910001822	7,120	7,660	7,380	8,320	9,260	9,040	10,140	11,200	9,100	9,020	8,120	7,340	103,700
TEP_4910005544	5,393	5,719	5,463	6,017	6,707	6,752	7,580	7,914	6,783	7,282	6,641	6,096	78,347
TEP_6210007399	1,359	1,359	1,359	1,359	1,359	1,359	1,359	1,359	1,359	1,359	1,359	1,359	16,308
TEP_6610000093	4,140	4,460	4,720	4,940	5,240	5,540	7,100	6,420	4,960	4,400	4,040	4,120	60,080
TEP_6610001920	1,160	1,235	1,343	1,422	1,489	1,588	1,988	1,747	1,496	1,387	1,295	1,310	17,460
TEP_7010001376	8,062	7,634	7,916	9,555	9,482	10,678	12,820	13,157	10,379	9,568	8,791	8,092	116,134
TEP_7010008636	2,760	2,680	2,700	3,280	3,260	3,460	4,180	4,280	3,460	3,180	2,840	2,740	38,820
TEP_7410001822	170	180	170	190	200	200	240	210	190	210	170	-	2,130
TEP_7910000253	910	1,020	980	1,080	1,110	1,230	1,450	1,230	1,250	1,190	1,190	1,070	13,710
TEP_7910000561	2,705	3,097	2,988	3,321	3,421	3,923	4,634	3,912	3,560	3,303	3,248	2,895	41,007
TEP_7910000982	1,130	1,280	1,210	1,340	1,360	1,540	1,780	1,510	1,400	1,320	1,320	1,200	16,390
TEP_7910004078	1,671	1,913	1,697	1,820	2,002	2,362	2,876	2,541	2,376	2,196	2,127	1,893	25,474
TEP_7910008849	-	1,469	1,369	1,490	1,449	1,608	1,894	1,660	1,562	1,480	1,462	1,333	16,776
TEP_8710000002	1,360	1,290	1,290	1,440	1,410	1,640	1,670	1,760	1,480	1,290	1,390	1,320	17,340
TEP_8710002679	2,740	2,600	2,700	3,240	3,220	3,460	4,140	6,260	1,420	3,200	2,900	2,480	38,360
TEP_8710005861	170	150	170	200	190	200	260	270	210	190	180	160	2,350
Unassigned-Having Traffic & Lite Rate Code	**227,142**	**222,048**	**251,409**	**256,900**	**280,423**	**313,435**	**350,336**	**289,020**	**273,895**	**256,871**	**237,553**	**230,037**	**3,189,069**
TEP_2910000000	99	99	99	99	99	99	99	99	99	99	99	99	1,188
TEP_2910000095	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2910000114	300	160	230	160	350	410	750	450	410	420	370	420	4,430
TEP_2910000133	51	51	55	49	51	57	57	50	56	45	48	55	625
TEP_2910000234	99	99	99	99	99	99	99	99	99	99	99	99	1,188
TEP_2910000597	1,965	2,032	2,430	2,414	2,589	3,082	3,206	2,626	2,436	2,241	2,084	2,110	29,215
TEP_2910000620	6,840	6,840	8,180	8,040	8,540	10,160	10,760	7,420	6,940	6,400	5,840	5,900	91,860
TEP_2910000710	250	230	250	240	260	270	290	260	240	250	230	240	3,010
TEP_2910000872	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2910000906	-	-	-	-	-	-							-
TEP_2910000953	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2910001008	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2910001049	1,434	1,437	1,705	1,725	2,091	2,575	2,704	2,244	2,104	1,949	1,788	1,842	23,598
TEP_2910001168	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2910001590	169	169	169	169	169	169	169	169	169	169	169	169	2,028
TEP_2910001789	1,130	1,120	1,290	1,280	1,450	1,630	1,730	1,420	1,350	1,260	1,160	1,170	15,990
TEP_2910001838	9	9	9	9	9	9	9	9	9	9	9	9	108
TEP_2910001953	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2910001963	440	440	440	440	440	440	440	440	440	440	440	440	5,280
TEP_2910002165	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2910002408	2,780	2,740	3,140	3,080	3,260	3,960	4,160	3,420	3,200	2,960	2,680	2,640	38,020
TEP_2910002436	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2910002444	620	550	620	600	660	830	880	720	670	600	560	550	7,860
TEP_2910002733	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2910002812	49	49	49	49	49	49	49	49	49	49	49	49	588

TEP_2910002904	2,620	4,160	4,620	4,780	5,480	5,780	6,440	5,240	4,980	4,860	4,180	3,960	57,100
TEP_2910003161	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2910003306	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2910003497	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2910003634	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2910003683	23	23	23	23	23	23	23	23	23	23	23	23	276
TEP_2910003755	4,575	4,626	5,765	5,753	6,253	7,561	7,874	6,707	6,469	6,161	5,693	5,711	73,148
TEP_2910004349	729	693	771	872	888	1,013	1,142	954	954	820	751	712	10,299
TEP_2910004372	210	210	260	250	260	300	360	280	240	240	230	240	3,080
TEP_2910004383	7,400	6,260	8,320	8,100	8,000	5,680	12,380	11,100	10,000	9,100	8,380	8,620	103,340
TEP_2910004469	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2910004562	66	64	84	84	91	117	123	103	92	83	77	78	1,062
TEP_2910004665	2,820	2,840	3,380	3,260	3,520	4,220	4,240	3,980	3,420	3,080	2,900	3,080	40,740
TEP_2910004793	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2910004845	3,120	2,880	3,600	3,120	3,600	4,080	6,000	3,600	3,360	3,120	2,880	3,120	42,480
TEP_2910005094	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2910005127	3,080	3,140	3,720	3,540	3,760	4,580	5,100	3,860	3,580	3,300	3,120	3,640	44,420
TEP_2910005166	99	99	99	99	99	99	99	99	99	99	99	99	1,188
TEP_2910005247	339	339	398	490	555	738	716	532	478	435	388	368	5,776
TEP_2910005368	6,880	7,220	7,400	7,740	8,220	9,620	9,980	8,220	7,640	6,980	6,800	6,020	92,720
TEP_2910005467	219	219	219	219	219	219	219	219	219	219	219	219	2,628
TEP_2910005864	1,807	1,849	2,209	2,185	2,358	2,876	3,030	2,505	2,346	2,164	1,986	2,025	27,340
TEP_2910005919	200	200	240	240	240	280	360	240	520	-	240	200	2,960
TEP_2910006010	110	110	110	110	110	110	110	110	110	110	110	110	1,320
TEP_2910006159	169	169	169	169	169	169	169	169	169	169	169	169	2,028
TEP_2910006198	74	74	74	74	74	74	74	74	74	74	74	74	888
TEP_2910006566	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2910006573	17	17	17	17	17	17	17	17	17	17	17	17	204
TEP_2910006649	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2910006858	169	169	169	169	169	169	169	169	169	169	169	169	2,028
TEP_2910007149	3,380	3,460	4,080	3,940	4,240	5,180	5,380	4,300	4,000	3,680	3,360	3,420	48,420
TEP_2910007508	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2910007568	99	99	99	99	99	99	99	99	99	99	99	99	1,188
TEP_2910007614	210	200	220	230	230	270	290	240	230	220	210	210	2,760
TEP_2910007688	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2910007941	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2910007960	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2910008165	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2910008198	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2910008217	147	147	147	147	147	147	147	147	147	147	147	147	1,764
TEP_2910008521	4	5	-	8	4	5	4	4	4	4	3	5	50
TEP_2910008883	1,080	1,050	1,200	1,080	1,140	1,320	1,280	1,050	1,000	940	870	920	12,930
TEP_2910008916	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2910009423	69	69	69	69	69	69	69	69	69	69	69	69	828
TEP_2910009528	161	161	161	161	161	161	161	161	161	161	161	161	1,932
TEP_2910009587	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2910009599	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_2910009805	133	133	133	133	133	133	133	133	133	133	133	133	1,596
TEP_2910009904	2,240	2,280	2,720	2,740	2,980	3,520	3,740	2,920	2,740	2,540	2,300	2,420	33,140

TEP_3310001921	3,204	3,017	3,344	3,834	4,498	4,313	4,889	4,886	4,101	3,661	3,128	3,091	45,966
TEP_3310003369	3,559	3,377	3,721	3,945	4,549	4,869	5,378	4,314	3,835	3,301	3,041	2,912	46,801
TEP_3310003924	3,920	3,760	4,160	4,240	4,920	5,260	5,860	4,800	4,480	4,360	3,700	3,540	53,000
TEP_3310004179	169	169	169	169	169	169	169	169	169	169	169	169	2,028
TEP_3310007874	169	169	169	169	169	169	169	169	169	169	169	169	2,028
TEP_3710000038	5,414	5,167	5,790	6,022	6,676	7,121	7,938	5,679	7,207	6,146	5,215	4,987	73,362
TEP_3710000295	840	760	860	900	1,040	1,120	1,260	1,040	960	960	820	800	11,360
TEP_3710000368	4,337	4,150	4,585	4,499	5,129	5,215	5,782	4,695	5,281	5,014	4,257	4,122	57,066
TEP_3710001342	6,492	6,181	6,471	5,376	6,316	6,724	9,863	8,581	7,720	7,493	6,961	6,097	84,275
TEP_3710002053	730	790	820	830	890	1,050	1,110	940	870	840	820	760	10,450
TEP_3710003001	950	900	990	1,040	1,270	1,340	1,380	1,230	1,170	1,140	980	960	13,350
TEP_3710003125	148	148	148	148	148	148	148	148	148	148	148	148	1,776
TEP_3710003318	10,522	9,666	9,915	12,366	12,476	14,104	15,293	12,378	12,297	10,474	12,078	11,000	142,569
TEP_3710003959	5,980	5,720	6,420	6,760	7,780	8,280	9,280	7,600	7,080	6,900	6,120	5,460	83,380
TEP_3710004075	1,200	1,320	1,420	1,440	1,580	1,880	1,940	1,560	1,480	1,340	1,300	1,200	17,660
TEP_3710004294	169	169	169	169	169	169	169	169	169	169	169	169	2,028
TEP_3710005536	3,980	3,800	4,250	4,510	4,810	5,930	6,170	5,250	5,180	5,120	4,380	4,240	57,620
TEP_3710005640	908	861	969	1,004	1,152	1,251	1,397	1,146	1,056	1,038	886	858	12,526
TEP_3710005889	300	290	320	330	380	410	420	360	340	410	350	350	4,260
TEP_3710005991	1,700	1,660	1,830	1,880	1,920	1,940	2,220	1,730	1,710	1,720	1,510	1,490	21,310
TEP_3710006016	1,411	1,328	1,486	1,576	1,822	1,985	2,106	1,795	1,685	1,605	1,397	1,340	19,536
TEP_3710006317	1,025	1,114	1,162	1,221	1,303	1,576	1,659	1,314	1,159	1,172	802	1,055	14,562
TEP_3710006367	7,067	6,504	7,505	7,846	8,993	9,655	10,806	8,892	8,446	8,242	7,018	6,772	97,746
TEP_3710006505	9,940	9,240	10,300	11,080	12,820	13,600	15,180	12,420	11,460	11,180	10,780	9,500	137,500
TEP_3710007048	161	161	161	161	161	161	161	161	161	161	161	161	1,932
TEP_3710007409	4,145	3,973	4,368	4,342	5,066	5,374	5,870	4,840	4,556	4,672	3,995	3,868	55,069
TEP_3710008006	1,372	1,310	1,468	1,535	1,787	1,831	2,010	1,698	1,582	1,554	1,386	1,364	18,897
TEP_3710008336	8,048	7,702	6,990	6,610	7,556	8,006	8,918	7,308	6,859	6,698	7,657	7,400	89,752
TEP_3710009609	3,859	3,696	4,140	4,314	4,966	4,427	5,895	4,821	4,531	4,269	3,655	3,686	52,259
TEP_3710009771	3,000	2,900	3,200	3,440	4,020	4,260	4,760	3,880	3,700	3,640	3,060	2,700	42,560
TEP_4110000068	74	74	74	74	74	74	74	74	74	74	74	74	888
TEP_4110000124	159	159	159	159	159	159	159	159	159	159	159	159	1,908
TEP_4110000215	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_4110000507	535	537	476	17	447	678	731	622	647	594	553	508	6,345
TEP_4110000589	3,547	3,476	4,090	4,014	4,352	5,418	5,860	5,223	3,788	4,113	3,694	3,677	51,252
TEP_4110000855	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_4110000856	169	169	169	169	169	169	169	169	169	169	169	169	2,028
TEP_4110000880	219	219	219	219	219	219	219	219	219	219	219	219	2,628
TEP_4110001125	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_4110001320	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_4110001358	169	169	169	169	169	169	169	169	169	169	169	169	2,028
TEP_4110001432	1,710	1,610	1,760	1,950	1,890	2,130	2,300	1,900	1,910	1,670	1,530	1,500	21,860
TEP_4110001433	110	110	110	110	110	110	110	110	110	110	110	110	1,320
TEP_4110001595	169	169	169	169	169	169	169	169	169	169	169	169	2,028
TEP_4110001642	2,155	2,110	2,296	2,535	2,460	2,789	3,120	2,598	2,621	2,287	2,118	2,065	29,154
TEP_4110001734	1,712	1,739	2,074	2,036	2,199	2,703	2,790	2,244	2,078	1,965	1,764	1,779	25,083
TEP_4110001850	20	19	22	24	25	26	32	56	257	222	203	196	1,102
TEP_4110001865	110	110	110	110	110	110	110	110	110	110	110	110	1,320
TEP_4110001913	99	99	99	99	99	99	99	99	99	99	99	99	1,188

TEP_4110001980	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_4110002182	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_4110002302	68	68	68	68	68	68	68	68	68	68	68	68	816
TEP_4110002304	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_4110002360	110	110	110	110	110	110	110	110	110	110	110	110	1,320
TEP_4110002371	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_4110002400	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_4110002527	169	169	169	169	169	169	169	169	169	169	169	169	2,028
TEP_4110002653	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_4110002730	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_4110002817	147	147	147	147	147	147	147	147	147	147	147	147	1,764
TEP_4110003151	6,860	7,100	8,120	7,940	8,600	10,440	11,120	9,180	8,600	7,900	7,240	7,340	100,440
TEP_4110003166	4,380	4,320	4,960	4,920	5,500	7,000	7,360	6,080	5,660	5,160	4,660	4,700	64,700
TEP_4110003320	99	99	99	99	99	99	99	99	99	99	99	99	1,188
TEP_4110003339	169	169	169	169	169	169	169	169	169	169	169	169	2,028
TEP_4110003628	110	110	110	110	110	110	110	110	110	110	110	110	1,320
TEP_4110003772	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_4110004184	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_4110004406	1,299	1,213	1,315	1,424	1,407	1,572	1,716	1,370	1,372	1,179	1,104	1,060	16,031
TEP_4110004417	7,665	7,623	8,718	8,814	9,519	11,498	12,751	9,971	9,470	9,038	8,286	8,395	111,748
TEP_4110004723	5	4	5	5	4	5	6	4	5	4	5	4	56
TEP_4110005008	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_4110005023	169	169	169	169	169	169	169	169	169	169	169	169	2,028
TEP_4110005216	219	219	219	219	219	219	219	219	219	219	219	219	2,628
TEP_4110005367	1,400	1,420	1,700	1,720	1,940	2,380	2,460	1,980	1,840	1,720	1,540	1,600	21,700
TEP_4110005467	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_4110005497	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_4110005536	5,626	6,290	8,347	9,516	9,606	11,416	12,735	11,715	11,378	9,823	8,977	8,500	113,929
TEP_4110005566	2,700	2,820	3,320	2,900	3,420	4,400	4,800	3,740	3,600	3,160	2,860	3,060	40,780
TEP_4110005593	2,680	2,520	2,840	3,220	3,300	3,800	4,200	3,480	3,460	2,960	2,660	2,560	37,680
TEP_4110005664	6,440	5,390	7,060	7,870	7,960	9,040	9,780	8,240	7,440	8,060	7,110	6,650	91,040
TEP_4110005677	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_4110005733	316	316	316	316	316	316	316	316	316	316	316	316	3,792
TEP_4110005834	169	169	169	169	169	169	169	169	169	169	169	169	2,028
TEP_4110005930	159	159	159	159	159	159	159	159	159	159	159	159	1,908
TEP_4110006049	98	98	98	98	98	98	98	98	98	98	98	98	1,176
TEP_4110006052	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_4110006283	110	110	110	110	110	110	110	110	110	110	110	110	1,320
TEP_4110006700	99	99	99	99	99	99	99	99	99	99	99	99	1,188
TEP_4110006839	169	169	169	169	169	169	169	169	169	169	169	169	2,028
TEP_4110006957	339	339	339	339	339	339	339	339	339	339	339	339	4,068
TEP_4110007460	98	98	98	98	98	98	98	98	98	98	98	98	1,176
TEP_4110007554	169	169	169	169	169	169	169	169	169	169	169	169	2,028
TEP_4110007769	3,900	3,940	4,660	4,580	4,890	5,830	6,040	4,920	4,610	4,280	3,850	3,760	55,260
TEP_4110007855	68	68	68	68	68	68	68	68	68	68	68	68	816
TEP_4110007960	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_4110008147	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_4110008176	68	68	68	68	68	68	68	68	68	68	68	68	816
TEP_4110008379	147	147	147	147	147	147	147	147	147	147	147	147	1,764

TEP_4110008569	6,320	5,920	6,620	6,980	7,840	8,280	9,160	7,340	6,840	6,620	6,520	6,040	84,480
TEP_4110009011	68	68	68	68	68	68	68	68	68	68	68	68	816
TEP_4110009171	49	49	49	49	49	49	49	49	49	49	49	49	588
TEP_4110009377	169	169	169	169	169	169	169	169	169	169	169	169	2,028
TEP_4110009462	7,800	7,820	9,300	9,140	9,920	12,040	12,660	10,400	9,760	8,960	8,100	7,060	112,960
TEP_4110009847	49	49	49	49	49	49	49	49	49	49	49	49	588
Grand Total	**1,558,221**	**1,583,320**	**1,698,475**	**1,788,180**	**1,900,981**	**2,136,855**	**2,386,068**	**2,107,965**	**1,921,362**	**1,808,360**	**1,683,830**	**1,611,613**	**22,185,230**

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Row Labels	201406	201407	201408	201409	201410	201411	201412	201501	201502	201503	201504	201505	Grand Total
Broadway & Stone Ave	**112**	**132**	**164**	**166**	**183**	**224**	**237**	**194**	**178**	**164**	**151**	**157**	**2,062**
TEP_2910000387	112	132	164	166	183	224	237	194	178	164	151	157	2,062
Hawks	**870**	**870**	**1,020**	**990**	**1,050**	**1,220**	**1,170**	**920**	**840**	**800**	**750**	**790**	**11,290**
TEP_2910002497	870	870	1,020	990	1,050	1,220	1,170	920	840	800	750	790	11,290
Median Island (Broadway/Alvernon Quadrants)	**1**	**3**	**2**	**2**	**3**	**3**	**3**	**2**	**3**	**3**	**2**	**-**	**27**
TEP_7410003957	1	3	2	2	3	3	3	2	3	3	2	-	27
Signals	**2,256**	**2,240**	**2,607**	**2,505**	**2,623**	**3,113**	**3,198**	**2,787**	**2,629**	**2,498**	**2,345**	**2,445**	**31,246**
TEP_2910000351	726	715	831	795	841	1,004	1,051	870	840	792	747	779	9,991
TEP_2910000491	803	804	938	905	944	1,113	1,099	1,046	949	902	846	884	11,233
TEP_2910000793	727	721	838	805	838	996	1,048	871	840	804	752	782	10,022
Street Lights	**12,618**	**14,382**	**16,354**	**16,646**	**19,356**	**23,226**	**24,771**	**20,250**	**19,688**	**17,695**	**16,078**	**16,197**	**217,261**
TEP_2410002087	44	44	44	44	44	44	44	44	44	44	44	44	528
TEP_2910004954	730	810	901	867	891	1,072	1,131	943	879	828	771	808	10,631
TEP_2910007700	197	178	181	184	169	175	189	376	539	482	457	452	3,579
TEP_4110001173	2,270	2,152	2,401	2,714	2,795	3,068	3,390	2,705	2,735	2,093	1,881	1,841	30,045
TEP_4110002509	1,130	1,040	1,160	1,280	1,250	1,400	1,550	1,270	1,300	1,130	1,050	1,040	14,600
TEP_4110004864	7,520	9,480	10,940	10,720	13,240	16,460	17,340	13,980	13,320	12,240	11,160	11,400	147,800
TEP_4110005368	727	678	727	837	967	1,007	1,127	932	871	878	715	612	10,078
Street Lights and Traffic Signals	**31**	**32**	**32**	**32**	**31**	**22**	**31**	**31**	**31**	**32**	**31**	**32**	**368**
TEP_6610003106	5	6	6	6	5	6	5	5	5	6	5	6	66
TEP_7910001188	6	6	6	6	6	6	6	6	6	6	6	6	72
TEP_8310000984	20	20	20	20	20	10	20	20	20	20	20	20	230
TEP_8710001017	-	-	-	-	-	-	-	-	-	-	-	-	-
Traffic Signals	**41,337**	**40,935**	**45,111**	**46,270**	**49,243**	**57,906**	**62,669**	**53,312**	**50,450**	**48,440**	**44,470**	**44,469**	**584,612**
TEP_0410000375	23	24	23	26	23	26	26	26	24	23	23	26	293
TEP_0410000920	8	8	9	4	7	7	8	6	6	7	6	7	83
TEP_1210000244	764	262	1,041	1,055	1,120	1,402	1,493	1,255	1,193	1,087	1,255	979	12,906
TEP_1610000624	524	509	390	401	457	483	547	456	429	427	368	356	5,347
TEP_2910000054	699	701	811	781	817	979	1,030	855	819	783	734	772	9,781
TEP_2910000141	784	738	-	882	864	928	1,021	851	864	769	722	710	9,133
TEP_2910000162	1,162	1,161	1,346	1,290	1,343	1,594	1,676	1,387	1,308	1,241	1,169	1,233	15,910
TEP_2910000241	370	366	440	427	453	597	522	449	466	353	348	377	5,168
TEP_2910000278	760	766	889	854	894	1,064	1,057	997	896	844	792	826	10,639
TEP_2910000309	1,470	1,350	1,520	1,550	1,670	1,760	1,970	1,620	1,510	1,520	1,300	1,260	18,500
TEP_2910000437	854	984	1,281	1,221	1,288	1,527	1,598	1,327	1,229	1,241	1,092	1,209	14,851
TEP_2910000499	262	260	303	290	300	353	368	308	292	278	260	272	3,546
TEP_2910000587	886	886	1,039	1,012	1,073	1,279	1,343	1,112	1,065	1,013	944	987	12,639
TEP_2910000590	1,129	1,123	1,253	1,225	1,264	1,854	2,083	1,750	1,664	1,571	1,473	1,545	17,934
TEP_2910000692	471	477	564	555	597	682	718	597	562	521	481	492	6,717
TEP_2910000699	746	738	857	827	855	1,005	1,058	881	850	815	764	796	10,192
TEP_2910000940	1,606	1,507	1,644	1,825	1,802	1,998	2,246	1,867	1,892	1,670	1,553	1,520	21,130
TEP_2910001211	1,151	1,066	1,168	1,195	1,338	1,410	1,580	1,305	1,234	1,240	1,083	1,078	14,848
TEP_2910001694	688	690	795	770	793	957	1,003	846	809	765	732	750	9,598
TEP_2910002157	6	6	6	6	6	6	6	6	6	6	6	6	72
TEP_2910003779	490	490	560	520	560	640	670	560	550	530	510	550	6,630
TEP_2910006762	2,687	2,724	3,073	3,020	3,194	4,051	4,550	4,310	3,774	3,523	3,215	3,313	41,434
TEP_2910007365	60	60	60	60	280	50	60	50	50	50	50	60	890
TEP_2910008098	1,340	1,350	1,590	1,530	1,630	1,910	1,890	1,780	1,530	1,540	1,390	1,440	18,920
TEP_2910008126	1,090	1,080	1,280	990	1,040	1,210	1,190	1,140	1,170	1,160	1,040	1,150	13,540
TEP_3310000560	672	866	1,420	1,472	1,566	1,861	1,964	1,615	1,522	1,429	1,417	1,291	17,095

TEP_3310002066	1,430	1,240	1,350	1,370	1,540	1,660	1,930	1,600	1,510	1,530	1,330	1,330	17,820
TEP_3310003757	352	381	400	419	449	545	575	475	447	412	406	354	5,215
TEP_3310008831	2,027	1,925	2,142	2,239	2,540	2,682	2,971	2,456	2,312	2,242	1,917	1,815	27,268
TEP_3710000385	323	198	199	190	217	224	246	205	195	199	173	172	2,541
TEP_3710000395	71	65	65	62	63	62	66	58	59	64	61	63	759
TEP_3710000478	309	293	322	333	333	326	313	250	238	237	206	203	3,363
TEP_3710003671	1,070	1,000	1,080	1,110	1,230	1,280	1,430	1,200	1,110	1,120	970	980	13,580
TEP_3710004272	628	642	650	658	683	806	846	695	680	641	660	612	8,201
TEP_3710004577	1,400	1,330	1,461	1,473	1,647	1,744	1,939	1,608	1,526	1,522	1,323	1,303	18,276
TEP_3710004881	1,261	1,191	1,319	1,362	1,519	1,578	1,771	1,469	1,390	1,390	1,209	1,201	16,660
TEP_3710005135	1,490	1,600	1,650	1,690	1,780	2,120	2,210	1,840	1,740	1,610	1,500	1,350	20,580
TEP_3710006583	313	326	366	377	426	437	475	395	376	380	310	306	4,487
TEP_3710007234	460	430	480	310	330	340	350	320	300	320	290	280	4,210
TEP_3710007389	698	649	697	708	784	813	908	756	724	739	652	656	8,784
TEP_3710007446	240	240	250	270	300	300	340	280	270	270	240	240	3,240
TEP_3710007609	410	380	380	360	390	380	430	360	370	390	360	380	4,590
TEP_3710009023	390	380	400	390	440	460	510	410	410	410	370	380	4,950
TEP_3710009845	1,127	1,215	1,250	1,289	1,368	1,646	1,717	1,422	1,288	1,141	1,004	1,043	15,510
TEP_3710009927	1,000	950	1,030	1,080	1,240	1,280	1,420	1,170	1,110	1,110	960	930	13,280
TEP_4110001080	523	525	616	593	619	2,803	3,183	2,618	2,451	2,751	2,581	2,662	21,925
TEP_4110001147	1,478	1,404	1,573	1,742	1,729	1,936	2,098	1,713	1,735	1,515	1,408	1,376	19,707
TEP_4110003590	80	1,050	590	650	650	710	800	650	657	538	496	560	7,431
TEP_4110004691	1,540	1,440	1,580	1,710	1,640	1,840	1,990	1,770	1,690	1,470	1,360	1,350	19,380
TEP_4110006539	1,607	1,510	1,639	1,811	1,776	1,988	2,131	1,868	1,838	1,609	1,507	1,498	20,782
TEP_6210001432	408	379	260	286	316	313	343	368	310	424	450	420	4,277
TEP_8710004634	-	-	-	-	-	-	-	-	-	-	-	-	-
Unassigned-General Service Rate on Lite Sheet	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**144**
TEP_2410004410	12	12	12	12	12	12	12	12	12	12	12	12	144
Unassigned-Having Traffic & Lite Rate Code	**93,578**	**91,436**	**102,844**	**102,452**	**108,721**	**125,055**	**132,480**	**115,155**	**107,824**	**107,159**	**104,130**	**104,941**	**1,295,775**
TEP_2910000010	488	511	654	623	653	772	808	679	649	616	498	687	7,638
TEP_2910000348	134	134	134	134	134	134	134	134	134	134	134	134	1,608
TEP_2910000421	428	422	487	462	480	560	583	488	468	450	426	454	5,708
TEP_2910000698	871	858	785	926	992	974	1,152	1,026	913	755	712	686	10,650
TEP_2910000907	221	220	257	247	260	304	315	265	251	240	224	234	3,038
TEP_2910000955	4,280	3,920	4,340	4,860	4,900	5,560	6,280	5,160	5,160	4,460	4,100	3,880	56,900
TEP_2910001101	-	-	-	-	-	-	6	6	6	6	7	7	38
TEP_2910001306	1,240	1,240	1,460	1,420	1,490	1,790	1,790	1,690	1,490	1,390	1,280	1,330	17,610
TEP_2910001445	733	736	857	824	883	1,050	1,096	915	875	831	777	801	10,378
TEP_2910001608	1,370	1,370	1,610	1,540	1,620	1,920	2,020	1,680	1,550	1,600	1,450	1,540	19,270
TEP_2910001997	1,280	1,280	2,500	460	1,580	1,870	1,983	1,664	1,581	1,468	1,364	1,400	18,430
TEP_2910002554	1,294	1,308	1,455	1,390	1,390	1,573	2,052	1,327	1,180	1,164	1,060	1,169	16,362
TEP_2910002829	1,620	1,610	1,820	1,740	1,860	2,230	2,200	2,100	1,850	1,740	1,540	1,540	21,850
TEP_2910003393	610	610	710	680	720	820	860	720	650	680	620	650	8,330
TEP_2910003884	-	-	-	-	-	-	-	-	-	-	-	-	-
TEP_2910004151	720	680	720	780	740	820	900	780	780	700	650	640	8,910
TEP_2910004238	682	722	732	727	737	882	957	791	742	683	657	599	8,911
TEP_2910004315	217	217	217	217	217	217	217	217	217	217	217	217	2,604
TEP_2910004777	1,780	1,590	1,960	1,930	2,170	2,280	2,550	2,100	1,990	1,970	1,700	1,630	23,650
TEP_2910005372	900	900	1,040	990	1,060	1,280	1,340	1,120	1,060	1,010	950	990	12,640
TEP_2910005849	330	330	370	340	340	390	390	360	340	320	306	341	4,157
TEP_2910005885	788	768	897	859	883	1,023	1,031	856	1,072	1,014	946	996	11,133
TEP_2910005947	1,406	1,431	1,669	1,594	1,716	2,060	2,052	1,930	1,706	1,595	1,482	1,507	20,148
TEP_2910007268	790	780	900	860	920	890	700	600	690	840	800	940	9,710

TEP_2910007371	870	810	880	890	990	1,020	1,130	920	900	930	780	800	10,920
TEP_2910007863	629	586	630	635	697	701	802	804	778	797	708	711	8,478
TEP_2910008056	1,189	1,173	1,370	1,403	1,590	1,938	1,955	1,777	1,474	1,367	1,276	1,313	17,825
TEP_2910008076	968	949	1,123	1,053	1,080	1,300	1,179	1,921	1,863	1,716	1,570	1,614	16,336
TEP_2910009573	790	793	933	916	976	1,164	1,127	1,103	979	910	849	875	11,415
TEP_2910009823	1,550	2,110	1,580	2,510	1,200	3,620	2,940	2,460	2,450	2,020	2,050	1,860	26,350
TEP_2910009987	5,280	5,020	5,580	6,260	6,360	7,240	8,160	6,780	6,760	5,980	5,460	5,120	74,000
TEP_3310003951	1,270	1,193	1,284	1,145	1,284	1,353	1,455	1,210	1,155	1,164	1,019	1,016	14,548
TEP_3310006022	300	310	340	350	380	450	480	390	370	350	330	300	4,350
TEP_3710000435	810	764	833	837	930	944	1,045	872	841	842	752	771	10,241
TEP_3710000944	920	880	960	980	1,060	1,110	1,260	1,040	990	990	860	980	12,030
TEP_3710001688	1,850	1,750	1,910	1,980	2,240	2,350	2,550	2,030	1,920	1,910	1,660	1,620	23,770
TEP_3710004536	806	748	858	888	1,010	1,063	1,189	985	935	927	814	792	11,015
TEP_3710006036	1,247	1,206	1,268	1,371	1,362	1,690	1,899	1,422	1,414	1,239	1,217	1,205	16,540
TEP_3710006315	787	733	761	754	825	793	826	660	624	635	569	577	8,544
TEP_3710006400	500	430	430	430	490	490	560	450	440	450	470	330	5,470
TEP_3710006575	6,580	6,060	6,040	6,380	6,200	6,960	7,740	6,260	6,300	6,120	6,600	6,420	77,660
TEP_3710007391	1,840	1,680	1,850	1,510	2,410	2,270	2,750	2,260	2,120	2,102	1,820	1,786	24,398
TEP_3710007686	590	550	510	680	640	650	700	580	560	570	530	520	7,080
TEP_3710007801	1,280	1,180	1,300	1,320	1,500	1,590	1,720	1,430	1,350	1,350	1,160	1,170	16,350
TEP_3710007881	290	279	310	326	376	396	442	364	341	334	285	278	4,021
TEP_3710009386	1,630	1,530	1,680	1,750	1,970	2,070	2,290	1,900	1,790	1,790	1,560	1,530	21,490
TEP_3710009438	662	621	670	677	774	814	949	776	737	735	641	622	8,678
TEP_4110001017	5,934	5,940	6,894	6,480	6,767	8,165	11,355	9,722	8,902	8,438	10,761	10,386	99,744
TEP_4110001706	4,240	4,340	6,100	6,000	6,260	7,760	4,720	3,760	3,520	7,140	7,660	7,840	69,340
TEP_4110001826	1,144	1,207	1,163	1,266	1,385	1,499	1,505	1,768	1,457	1,469	1,280	1,189	16,332
TEP_4110002246	807	794	911	836	795	1,153	1,243	1,040	992	950	899	959	11,379
TEP_4110003697	714	714	830	799	838	993	1,043	869	826	785	735	770	9,916
TEP_4110003701	12	459	1,483	1,413	1,489	1,795	1,875	1,558	1,486	1,398	1,307	1,527	15,802
TEP_4110003944	5,672	5,422	6,346	6,063	6,404	7,736	8,287	6,684	6,033	6,500	6,851	7,256	79,254
TEP_4110004039	1,429	1,422	1,659	1,594	1,691	2,024	2,073	1,716	1,615	1,538	1,423	1,506	19,690
TEP_4110004182	1,210	1,137	1,242	1,295	1,495	1,586	1,688	1,335	1,299	1,288	1,124	1,118	15,817
TEP_4110004382	1,327	437	467	552	590	725	837	730	688	537	483	484	7,857
TEP_4110004594	1,080	1,070	1,240	1,210	1,250	1,480	1,140	1,200	1,190	1,130	1,040	1,110	14,140
TEP_4110005425	590	590	670	670	620	760	820	960	1,010	950	900	940	9,480
TEP_4110005711	938	943	1,090	964	928	976	859	1,061	1,017	954	894	930	11,554
TEP_4110006993	1,292	1,210	1,326	1,478	1,520	1,556	1,778	1,472	1,589	1,181	1,237	1,211	16,850
TEP_4110007961	1,132	1,287	1,239	1,243	1,297	1,493	1,562	1,396	1,257	1,226	1,267	1,138	15,537
TEP_4110008550	575	531	567	607	582	630	672	451	474	423	409	421	6,342
TEP_4110008871	1,840	1,830	2,170	2,110	2,220	2,670	2,860	2,321	2,201	2,060	1,920	2,003	26,205
TEP_4110009747	1,110	1,110	1,300	1,240	1,320	1,570	1,650	1,380	1,300	1,230	1,130	1,160	15,500
TEP_4110009819	6,703	6,953	6,461	6,934	8,090	8,040	8,823	9,540	7,454	7,771	6,913	7,417	91,099
TEP_4910006213	528	567	531	569	610	588	645	709	588	599	536	513	6,983
TEP_8710008351	481	481	481	481	481	481	481	481	481	481	481	481	5,772
Grand Total	**150,815**	**150,042**	**168,146**	**169,075**	**181,222**	**210,781**	**224,571**	**192,663**	**181,655**	**176,803**	**167,969**	**169,043**	**2,142,785**

C.3 Electricity Rate Sheets

Small General Service (GS-10)

AVAILABILITY
Available throughout the Company's entire electric service area where the facilities of the Company are of adequate capacity and are adjacent to the premises. To all general power and lighting service unless otherwise addressed by specific Rates.

APPLICABILITY
When all energy is supplied at one point of delivery and through one metered service. Not applicable to resale, breakdown, temporary, standby, or auxiliary service.

The supply of electric service under a residential Rate schedule to a dwelling involving some business or professional activity will be permitted only where such activity is of only occasional occurrence, or where the electricity used in connection with such activity is small in amount and used only by equipment which would normally be in use if the space were used as living quarters. Where the portion of a dwelling is used regularly for business, professional or other gainful purposes, and any considerable amount of electricity is used for other than domestic purposes, or electrical equipment not normally used in living quarters is installed in connection with such activities referred to above, the entire premises must be classified as non-residential and the appropriate general service rate will be applied.

For Customers who were previously on Municipal Service Rate (PS-40), a monthly transitional adjustment of 16.5% will be applied to the Delivery Charges (excluding the Customer Charge) and Power Supply Charges.

CHARACTER OF SERVICE
The service shall be single-phase or three-phase, 60 Hertz, and at one standard nominal voltage as mutually agreed and subject to availability at point of delivery. Primary metering may be used by mutual agreement.

RATE
A monthly bill at the following rate, plus any adjustments incorporated herein:

BUNDLED STANDARD OFFER SERVICE – SUMMARY OF CUSTOMER AND ENERGY CHARGES

Customer Charges:

Customer Charge, single-phase service and minimum bill	$15.50 per month
Customer Charge, three-phase service and minimum bill	$20.50 per month

Energy Charges: All energy charges below are charged per kWh basis.

Delivery Charges:

Description	Summer (May – September)	Winter (October – April)
First 500 kWh	$0.076800	$0.056800
All remaining kWh	$0.097600	$0.078800

Base Power Supply Charges:

Summer	$0.035111 per kWh
Winter	$0.031532 per kWh

Purchased Power and Fuel Adjustment Clause (PPFAC): The Base Power Supply Charge shall be subject to a per kWh adjustment in accordance with Rider-1 PPFAC to reflect any increase or decrease in the cost to the Company for energy either generated or purchased above or below the base cost per kWh sold.

PRIMARY SERVICE
The Rates contained in this Schedule are designed to reflect secondary service but where service is taken at primary voltage will be subject to a primary discount of 20.6 cents per kW per month (on the bundled rate, with the discount taken from the unbundled kW delivery charge) on the billing demand each month.

DIRECT ACCESS
A Customer's Direct Access bill will include all unbundled components except those services provided by a qualified third party. Those services may include Metering (Installation, Maintenance and/or Equipment), Meter Reading, Billing and Collection, Transmission and Generation. If any of these services are not available from a third party supplier and must be obtained from the Company, the rates for Unbundled Components set forth in this tariff will be applied to the customer's bill.

FOR DIRECT ACCESS: ARIZONA INDEPENDENT SCHEDULING ADMINISTRATOR (AZISA) CHARGE
A charge per kWh shall, subject to FERC authorization, be applied for costs associated with the implementation of the AZISA in Arizona.

TEP STATEMENT OF CHARGES
For all additional charges and assessments approved by the Arizona Corporation Commission see the TEP Statement of Charges which is available on TEP's website at www.tep.com.

TAX CLAUSE
To the charges computed under the above rate, including any adjustments, shall be added the applicable proportionate part of any taxes or governmental impositions which are or may in the future be assessed on the basis of gross revenues of the Company and/or the price or revenue from the electric energy or service sold and/or the volume of energy generated or purchased for sale and/or sold hereunder.

RULES AND REGULATIONS
The standard Rules and Regulations of the Company as on file with the Arizona Corporation Commission shall apply where not inconsistent with this rate.

ADDITIONAL NOTES
Additional charges may be directly assigned to a customer based on the type of facilities (e.g., metering) dedicated to the customer or pursuant to the customer's contract, if applicable. Additional or alternate Direct Access charges may be assessed pursuant to any Direct Access fee schedule authorized.

BUNDLED STANDARD OFFER SERVICE CONSISTS OF THE FOLLOWING UNBUNDLED COMPONENTS:

Customer Charge Components (Unbundled):

Description	Single-Phase	Three-Phase
Meter Services	$5.78 per month	$7.65 per month
Meter Reading	$0.74 per month	$0.98 per month
Billing & Collection	$3.19 per month	$4.21 per month
Customer Delivery	$5.79 per month	$7.66 per month
Total	$15.50 per month	$20.50 per month

Energy Charge Components (Unbundled):

Component	Summer (May – September)	Winter (October - April)
Delivery-Energy		
First 500 kWh	$0.021700	$0.021700
All remaining kWh	$0.022600	$0.022600
Generation Capacity		
First 500 kWh	$0.042700	$0.022700
All remaining kWh	$0.062600	$0.043800
Fixed Must-Run	$0.003500	$0.003500
Transmission	$0.006800	$0.006800
Transmission Ancillary Services consists of the following charges:		
System Control & Dispatch	$0.000100	$0.000100
Reactive Supply and Voltage Control	$0.000400	$0.000400
Regulation and Frequency Response	$0.000400	$0.000400
Spinning Reserve Service	$0.001000	$0.001000
Supplemental Reserve Service	$0.000200	$0.000200
Energy Imbalance Service: Currently charged pursuant to the Company's OATT		
Base Power Supply Charge	$0.035111	$0.031532
PPFAC	In accordance with Rider 1 - PPFAC	

Large General Service (LGS-13)

AVAILABILITY
Available throughout the Company's entire electric service area where the facilities of the Company are of adequate capacity and are adjacent to the premises.

APPLICABILITY
To all general power and lighting service on an optional basis when all energy is supplied at one point of delivery and through one metered service. The minimum monthly billing demand hereunder is 200 kW.

Not applicable to resale, breakdown, temporary, standby, or auxiliary service.

CHARACTER OF SERVICE
The service shall be single-phase or three-phase, 60 Hertz, and at one standard nominal voltage as mutually agreed and subject to availability at point of delivery. Primary metering shall be required for new installations with service requirements in excess of 2,500 kW.

RATE
A monthly bill at the following rate plus any adjustments incorporated herein:

BUNDLED STANDARD OFFER SERVICE – SUMMARY OF CUSTOMER AND ENERGY CHARGES

Customer Charge:	$775.00 per month
Demand Charge:	$15.25 per kW
Energy Charges:	
Summer (May – September)	$0.019200 per kWh
Winter (October – April)	$0.013400 per kWh
Base Power Charges:	
Summer (May – September)	$0.035111 per kWh
Winter (October – April)	$0.031532 per kWh

Purchased Power and Fuel Adjustment Clause (PPFAC): The Base Power Supply Charge shall be subject to a per kWh adjustment in accordance with Rider-1 PPFAC to reflect any increase or decrease in the cost to the Company for energy either generated or purchased above or below the base cost per kWh sold.

BILLING DEMAND
The monthly billing demand shall be the greatest of the following:

1. The maximum 15 minute measured demand in the billing month;
2. 75 % of the maximum demand used for billing purposes in the preceding 11 months; or
3. The contract demand amount, not to be less than 200 kW.

PRIMARY SERVICE
The Rates contained in this Schedule are designed to reflect secondary service but where service is taken at primary voltage will be subject to a primary discount of 20.6 cents per kW per month (on the bundled rate, with the discount taken from the unbundled kW delivery charge) on the billing demand each month.

The Company may require a written contract with a minimum contract demand and a minimum term of contract.

DIRECT ACCESS

A Customer's Direct Access bill will include all unbundled components except those services provided by a qualified third party. Those services may include Metering (Installation, Maintenance and/or Equipment), Meter Reading, Billing and Collection, Transmission and Generation. If any of these services are not available from a third party supplier and must be obtained from the Company, the rates for Unbundled Components set forth in this tariff will be applied to the customer's bill.

FOR DIRECT ACCESS: ARIZONA INDEPENDENT SCHEDULING ADMINISTRATOR (AZISA) CHARGE

A charge per kWh shall, subject to FERC authorization, be applied for costs associated with the implementation of the AZISA in Arizona.

TEP STATEMENT OF CHARGES

For all additional charges and assessments approved by the Arizona Corporation Commission see the TEP Statement of Charges which is available on TEP's website at www.tep.com.

TAX CLAUSE

To the charges computed under the above rate, including any adjustments, shall be added the applicable proportionate part of any taxes or governmental impositions which are or may in the future be assessed on the basis of gross revenues of the Company and/or the price or revenue from the electric energy or service sold and/or the volume of energy generated or purchased for sale and/or sold hereunder.

RULES AND REGULATIONS

The standard Rules and Regulations of the Company as on file with the Arizona Corporation Commission shall apply where not inconsistent with this rate.

ADDITIONAL NOTES

Additional charges may be directly assigned to a customer based on the type of facilities (e.g., metering) dedicated to the customer or pursuant to the customer's contract, if applicable. Additional or alternate Direct Access charges may be assessed pursuant to any Direct Access fee schedule authorized.

BUNDLED STANDARD OFFER SERVICE CONSISTS OF THE FOLLOWING UNBUNDLED COMPONENTS:

Customer Charges:	
Meter Services	$211.38 per month
Meter Reading	$ 32.43 per month
Billing & Collection	$140.81 per month
Customer Delivery	$390.38 per month
Total	$775.00 per month
Demand Charge (in $/kW):	
Delivery Charge	$1.71 per kW
Generation Capacity	$9.17 per kW
Fixed Must-Run	$0.95 per kW

Transmission	$2.67 per kW
Transmission Ancillary Services	
System Control & Dispatch	$0.04 per kW
Reactive Supply and Voltage Control	$0.14 per kW
Regulation and Frequency Response	$0.14 per kW
Spinning Reserve Service	$0.37 per kW
Supplemental Reserve Service	$0.06 per kW
Energy Imbalance Service: Currently charged pursuant to the Company's OATT	
Energy Charges (kWh): (in $/kWh)	
Delivery Charge	
Summer	$0.005800 per kWh
Winter	$0.004000 per kWh
Generation Capacity:	
Summer	$0.013400 per kWh
Winter	$0.009400 per kWh
Base Power Supply Charges:	
Summer	$0.035111 per kWh
Winter	$0.031532 per kWh

Traffic Signal and Street Lighting Service (PS-41)

AVAILABILITY
Available for service to the State, a county, city, town, political subdivision, improvement district, or a responsible person or persons for unincorporated communities for Traffic Signal and Street Lighting purposes where the facilities of the Company are of adequate capacity and are adjacent to the premises.

APPLICABILITY
Applicable to Customer owned and maintained traffic signals and public street and highway lighting.

Not applicable to resale, breakdown, temporary, standby, or auxiliary service.

CHARACTER OF SERVICE
Service shall be single-phase or three-phase, 60 Hertz, and at one standard nominal voltage as mutually agreed and subject to availability at point of delivery approved by the Company.

RATE
A monthly bill at the following rate plus any adjustments incorporated herein.

BUNDLED STANDARD OFFER SERVICE – SUMMARY OF CUSTOMER AND ENERGY CHARGES

Energy Charges: All energy charges below are charged on a per kWh basis.

Delivery Charge:	$0.047600 per kWh
Base Power Charges:	
Summer (May – September)	$0.035111 per kWh
Winter (October – April)	$0.031532 per kWh

Purchased Power and Fuel Adjustment Clause (PPFAC): The Base Power Supply Charge shall be subject to a per kWh adjustment in accordance with Rider-1 PPFAC to reflect any increase or decrease in the cost to the Company for energy either generated or purchased above or below the base cost per kWh sold.

DIRECT ACCESS
A Customer's Direct Access bill will include all unbundled components except those services provided by a qualified third party. Those services may include Metering (Installation, Maintenance and/or Equipment), Meter Reading, Billing and Collection, Transmission and Generation. If any of these services are not available from a third party supplier and must be obtained from the Company, the rates for Unbundled Components set forth in this rate will be applied to the customer's bill.

FOR DIRECT ACCESS: ARIZONA INDEPENDENT SCHEDULING ADMINISTRATOR (AZISA) CHARGE
A charge per kWh shall, subject to FERC authorization, be applied for costs associated with the implementation of the AZISA in Arizona.

TEP STATEMENT OF CHARGES
For all additional charges and assessments approved by the Arizona Corporation Commission see the TEP Statement of Charges which is available on TEP's website at www.tep.com.

TAX CLAUSE

To the charges computed under the above rate, including any adjustments, shall be added the applicable proportionate part of any taxes or governmental impositions which are or may in the future be assessed on the basis of gross revenues of the Company and/or the price or revenue from the electric energy or service sold and/or the volume of energy generated or purchased for sale and/or sold hereunder.

RULES AND REGULATIONS

The standard Rules and Regulations of the Company as on file with the Arizona Corporation Commission shall apply where not inconsistent with this rate.

ADDITIONAL NOTES

Additional charges may be directly assigned to a customer based on the type of facilities (e.g., metering) dedicated to the customer or pursuant to the customer's contract, if applicable. Additional or alternate Direct Access charges may be assessed pursuant to any Direct Access fee schedule authorized.

BUNDLED STANDARD OFFER SERVICE CONSISTS OF THE FOLLOWING UNBUNDLED COMPONENTS:

Energy Charges: All energy charges below are charged on a per kWh basis.

Delivery Charge (in $/kWh)	
Summer	$0.003400 per kWh
Winter	$0.003400 per kWh
Generation Capacity (in $/kWh)	
Summer	$0.010200 per kWh
Winter	$0.010200 per kWh
Fixed Must-Run (in $/kWh)	$0.014300 per kWh
Transmission (in $/kWh)	$0.015300 per kWh
Transmission Ancillary Services (in $/kWh)	
System Control & Dispatch	$0.000200 per kWh
Reactive Supply and Voltage Control	$0.000800 per kWh
Regulation and Frequency Response	$0.000800 per kWh
Spinning Reserve Service	$0.002200 per kWh
Supplemental Reserve Service	$0.000400 per kWh
Energy Imbalance Service: Currently charged pursuant to the Company's OATT.	
Base Power Supply Charge:	
Summer	$0.035111 per kWh
Winter	$0.031532 per kWh

Rider R-5
Electric Service Solar Rider
(Bright Tucson Community Solar™)

APPLICABILITY

Rider-5 is for individually metered Customers who wish to participate in the Bright Tucson Community Solar Program. Under Rider-5, Customers will be able to purchase blocks of electricity from solar generation sources. Participation in Rider-5 is limited in the Company's sole discretion to the amount of solar generation available and subscription will be made on a first come, first served basis. In order to maximize subscription under Rider-5, TEP may limit the amount of solar block energy purchased by individual Customers. Rider-5 available prior to July 1, 2013 is further restricted to Customers being served under one of the following Rates:

1) Residential Lifeline Discount, Rate R-06-01
2) Residential Electric Service, Rate R-01
3) Small General Service, Rate GS-10
4) Large General Service, Rate LGS-13
5) Municipal Service, Rate PS-40

Rider-5 effective July 1, 2013 is further restricted to Customers being served under one of the following Rates:

1) Residential Electric Service, Rate R-01
2) Small General Service, Rate GS-10
3) Large General Service, Rate LGS-13

Customers being served under self-generation riders or plans may not purchase power under Rider-5 (including, but not limited to Net Metering for Certain Partial Requirements Service Rider-4 and Non-Firm Power Purchase from Renewable Energy Resources and Qualifying Cogeneration Facilities of 100 kilowatts (kW) or Less Capacity Rider-101).

RATE

Customers can contract for a portion or up to their average annual usage in solar blocks of 150 kilowatt hours (kWh) each. Transmission and distribution charges will be applied to all energy delivered, including energy delivered under Rider-5. The Customer is responsible for paying (each month) all charges incurred under their applicable rate schedule, and the total solar energy contracted for multiplied by the applicable solar block energy rate. Any demand based charges under the Customer's current Rate will not be affected by elections under Rider-5. No discounts specified in any of the above-listed standard offer tariffs will apply to this Rate.

TEP STATEMENT OF CHARGES

For all additional charges and assessments approved by the Arizona Corporation Commission (ACC) see the TEP Statement of Charges which is available on TEP's website at www.tep.com.

RULES AND REGULATIONS

The standard Rules and Regulations of the Company as on file with the ACC shall apply where not inconsistent with this rate.

TAX CLAUSE

To the charges computed under the above rate, including any adjustments, shall be added the applicable proportionate part of any taxes or governmental impositions which are or may in the future be assessed on the basis of gross revenues of the Company and/or the price or revenue from the electric energy or service sold and/or the volume of energy generated or purchased for sale and/or sold hereunder.

TERMS AND CONDITIONS

1) Customers may contract for a portion or up to their average annual usage in solar blocks of 150 kWh. If Customer's annual average usage is not available, TEP will apply the appropriate class average. This limit can be reviewed annually at the request of the Customer.

2) Each solar block's energy rate will be maintained for twenty years from the date of purchase. For the purposes of the twenty year energy rate, solar blocks will be attributed to the Customer's original service address. Transfer of service under Rider-5 is prohibited. Should the Customer cancel service for any reason, his or her subscription under Rider-5 will expire.

3) Customers may add or delete solar blocks once within a twelve month period. Any addition of solar blocks will be at the then offered solar block energy rate.

4) Solar blocks will be applied to the actual energy usage each month. Electricity used in excess of the purchased solar blocks will be billed at the Customer's regular energy rate. If electricity usage is below the amount covered by the solar block(s), then the excess kWhs will be rolled forward and credited again the Customer's usage in the following month. The Customer will still be responsible for the full cost of the block(s) each month.

   Customers will be credited for the balance of any excess kWhs annually, or on their final bill should the Customer terminate service under Rider-5. Each year, for the bills produced in October (September usage), TEP will credit Customers their excess kWhs after netting and reset their balance to zero. Credit for excess kWhs will be at the energy rate of the oldest solar block.

5) All contracted solar block kWhs and associated charges in a billing month will be excluded from the calculation of PPFAC and REST charges and/or credits.

Rider R-6
Renewable Energy Standard and Tariff (REST) Surcharge
REST-TS1 Renewable Energy Program Expense Recovery

APPLICABILITY

Mandatory, non-bypassable surcharge applied to all energy consumed by all Customers throughout Company's entire electric service area.

RATES

For all energy billed which is supplied by the Company to the Customer. The REST surcharge shall be applied to all monthly bills. The REST rates are shown in the TEP Statement of Charges.

Notes:

1. A Large Commercial Customer is one with monthly demand greater or equal to 200 kW but less than 3,000 kW.
2. An Industrial Customer is one with monthly demand equal to or greater than 3,000 kW.
3. For non-metered services, the lesser of the load profile or otherwise estimated kWh required to provide the service in question, or the service's contract
4. kWh shall be used in the calculation of the surcharge.

This charge will be a line item on customer bills reading "Renewable Energy Standard Tariff."

Per Decision No. 73637 effective March 21, 2013, any Customer who has received incentives on and after January 1, 2012 under the REST Rules, shall pay the average of the REST surcharge paid by members of their Customer class. Any Customer who has a renewable installation without incentives that is interconnected with TEP's system on and after February 1, 2013 shall pay the average of the REST surcharge paid by members of their Customer class. The average price by class is shown in the TEP Statement of Charges

TEP STATEMENT OF CHARGES

For all additional charges and assessments approved by the Arizona Corporation Commission (ACC) see the TEP Statement of Charges which is available on TEP's website at www.tep.com.

RULES AND REGULATIONS

The standard Rules and Regulations of the Company as on file with the ACC shall apply where not inconsistent with this Rider.

TAX CLAUSE

To the charges computed under the above rate, including any adjustments, shall be added the applicable proportionate part of any taxes or governmental impositions which are or may in the future be assessed on the basis of gross revenues of the Company and/or the price or revenue from the electric energy or service sold and/or the volume of energy generated or purchased for sale and/or sold hereunder.

TEP STATEMENT OF CHARGES

Fee No.	Description	Rate	Effective Date	Decision No.
1.	Service Transfer Fee	$20.00	July 1, 2013	73912
2.	Customer-Requested Meter Re-read	$20.00	July 1, 2013	73912
3.	Special Meter Reading Fee	$20.00	July 1, 2013	73912
4.	Service Establishment and Reestablishment under usual operating procedures During Regulator Business Hours – Single-Phase Service	$32.00	July 1, 2013	73912
5.	Service Establishment and Reestablishment under usual operating procedures After Regular Business Hours (includes Saturdays, Sundays and Holidays) – Single-Phase Service	$57.00	July 1, 2013	73912
6.	Service Establishment and Reestablishment under usual operating procedures During Regular Business Hours – Three-Phase Service	$78.00	July 1, 2013	73912
7.	Service Establishment and Reestablishment under usual operating procedures After Regular Business Hours (includes Saturdays, Sundays and Holidays) – Three-Phase Service	$216.00	July 1, 2013	73912
8.	Service Reestablishment under other than usual operating procedures – Single-Phase Service	$150.00	July 1, 2013	73912
9.	Single-Phase Line Extension Charge per Foot	$17.00	July 1, 2013	73912
10.	Three-Phase Line Extension Charge per Foot	$27.00	July 1, 2013	73912
11.	Underground Differential Line Extension Charge per Foot	$21.00	July 1, 2013	73912
12.	PME Switchgear Cabinet	$20,500.00	July 1, 2013	73912
13.	Meter Test	$186.00	July 1, 2013	73912
14.	Returned Payment Fee	$10.00	July 1, 2013	73912
15.	Late Payment Finance Charge	1.5%	July 1, 2013	73912
16.	Residential Solar – Company Owned Program Processing Fee	$250.00	Dec. 31, 2014	74884

Tucson Electric Power

Tucson Electric Power Company

Fifth Revised Sheet No.: 801-1

Superseding Third Substitute Fourth Revised Sheet No.: 801-1

TEP STATEMENT OF CHARGES

Description	Rate	Effective Date	Decision No.
Rider R-1 – Purchased Power and Fuel Adjustment Clause (PPFAC)	$0.006820 per kWh	April 1, 2015	74974
Rider R-2 – Demand Side Management Surcharge (DSMS) RESIDENTIAL: NON-RESIDENTIAL: FREEPORT-MCMORAN COPPER AND GOLD (25 MW and above):	 $0.002311 per kWh 2.466% Exempt	January 6, 2015	74885
Rider R-3 – Market Cost of Comparable Conventional Generation (MCCCG) Calculation as Applicable to Rider-4 NM-PRS	$0.028653 per kWh	April 1, 2015	74973
Rider R-5 – Electric Service Solar Rider (Bright Tucson Community Solar™) Solar Block Energy Rate for Residential Lifeline Discount, Rate R-06-01 Solar Block Energy Rate for Residential Electric Service, Rate R-01 Solar Block Energy Rate for General Service, Rate GS-10 Solar Block Energy Rate for Large General Service, Rate LGS-13 Solar Block Energy Rate for Municipal Service, Rate PS-40	 $0.050198 per kWh $0.050324 per kWh $0.048475 per kWh $0.049371 per kWh $0.049086 per kWh	February 1, 2011	71835[1]
Rider R-5 – Electric Service Solar Rider (Bright Tucson Community Solar™) Solar Block Energy Rate for Residential Electric Service, Rate R-01 Solar Block Energy Rate for Small General Service, Rate GS-10 Solar Block Energy Rate for Large General Service, Rate LGS-13	 $0.053463 per kWh $0.053274 per kWh $0.053227 per kWh	July 1, 2013	73912
Rider R-6 – Renewable Energy Standard and Tariff Surcharge REST-TS1 Renewable Energy Program Expense Recovery <u>Monthly Cap</u> For Residential Customers: For Small General Service Customers: For Large General Service Customers: For Large Light & Power Customers: For Lighting Customers:	$0.008000 per kWh <u>Monthly Cap</u> $ 3.76 per month $ 100.00 per month $1,015.00 per month $8,000.00 per month $ 100.00 per month	January 1, 2015	74884

[1]The Rider R-5 approved by Decision No. 71835 is closed for new enrollment as of July 1, 2013

TEP STATEMENT OF CHARGES

Description	Rate	Effective Date	Decision No.
Rider R-6 – Renewable Energy Standard and Tariff Surcharge REST-TS1 Renewable Energy Program Expense Recovery Average price by class: Monthly Cap For Residential Customers: For Small General Service Customers: For Large General Service Customers: For Large Light & Power Customers: For Lighting Customers:	Monthly Cap $ 3.19 per month $ 20.77 per month $ 779.66 per month $8,000.00 per month $ 11.71 per month	January 1, 2015	74884
Rider R-8 Lost Fixed Cost Recovery (LFCR) Mechanism – Energy Efficiency Lost Fixed Cost Recovery (LFCR) Mechanism – Distributed Generation	0.4149% 0.3126%	August 1, 2014	74593
Rider R-9 – Environmental Compliance Adjustor (ECA)	$0.000191 per kWh	May 1, 2015	73912

D.1 Baseline Calculations

ANNUAL CALCULATED BASELINE
RATE 41 STREET LIGHTS

EXIST Fixture Type	EXIST Lamp Wattage	EXIST Fixture with Ballast	EXIST Fixture Quantities	Summer Dark Hour Energy Consumption	Winter Dark Hour Energy Consumption	Delivery Charge Summer (May-Sept)	Power Supply Chg Summer (May-Sept)	Delivery Charge Winter (Oct-Apr)	Power Supply Chg Winter (Oct-Apr)	PPFAC	Renewable Energy Tariff	DSM Surcharge	ECA Surcharge	TAXES Averaged	EXIST FIXTURE BASELINE Annual Dollars
	watts/lamp	watts/fixture	counts	kWh	kWh	$/kWh	$/kWh	$/kWh	$/kWh	$/kWh	$$$	$/kWh	$/kWh	Percentage	
				1598	2716	0.0476	0.035111	0.0476	0.031532	0.00682	0.0080	0.02466	0.000191	0.075	
FLOR	20	20	1420	45393	77129	2161	1594	3671	2432	836	613	264	23	869	$ 12,463
FLOR	55	75	25	2997	5092	143	105	242	161	55	65	17	2	59	$ 849
HPS	100	130	1286	267212	454030	12719	9382	21612	14316	4919	3606	1552	138	5118	$ 73,363
HPS	150	190	913	277266	471113	13198	9735	22425	14855	5104	3742	1611	143	5311	$ 76,123
HPS	250	308	1594	784713	1333336	37352	27552	63467	42043	14445	10590	4559	405	15031	$ 215,443
HPS	400	468	8670	6485401	11019589	308705	227709	524532	347470	119384	87525	37676	3343	124226	$ 1,780,570
IND	85	85	106	14401	24470	685	506	1164.75	772	265	194	84	7	276	$ 3,954
LED	18	18	14	403	684	19	14	33	22	7	9	2	0	8	$ 114
LED	53	53	924	78274	132999	3726	2748	6331	4194	1441	1056	455	40	1499	$ 21,490
LED	81	81	38	4920	8359	234	173	398	264	91	106	29	3	97	$ 1,394
LED	83	83	2	265	451	13	9	21	14	5	6	2	0	5	$ 75
LED	117	117	32	5984	10168	285	210	484	321	110	81	35	3	115	$ 1,643
LED	135	135	27	5826	9899	277	205	471	312	107	79	34	3	112	$ 1,600
LED	185	185	27	7984	13566	380	280	646	428	147	108	46	4	153	$ 2,192
LED	215	215	37	12715	21604	605	446	1028	681	234	172	74	7	244	$ 3,491
LPS	50	50	28	2238	3802	107	79	181	120	41	48	13	1	44	$ 634
LPS	55	80	10	1279	2173	61	45	103	69	24	28	7	1	25	$ 362
LPS	90	125	2806	560621	952573	26686	19684	45342	30037	10320	7566	3257	289	10739	$ 153,919
LPS	180	208	46	15293	25985	728	537	1237	819	282	206	89	8	293	$ 4,199
MH	70	75	149	17862	30349	850	627	1445	957	329	241	104	9	342	$ 4,904
MH	150	185	37	10941	18590	521	384	885	586	201	148	64	6	210	$ 3,004
			18191	8601987	14615960										

Exist Fixture Type	Exist Lamp Wattage	Exist Fixture wBallast	Exist Fixture Quantities	Summer Energy (kWh)	Winter Energy (kWh)	RATE 10 (COST) Delivery Service Charges PH1(15.50)PH3(20.50)	Summer (May-Sept)	Summer (May-Sept)	Winter (May-Sept)	Winter (Oct-Apr)	Base Power Supply Charges Summer (May-Sept)	Winter (Oct-Apr)	PPFAC	Renewable Energy Tariff	DSM Surcharge	ECA Surcharge	Taxes Total ($$$)	Total ($$$) Total ($$$)
				Summer (May-Sept)	Winter (Oct - Apr)	15.5	First 500 ($/kWh)	$/kWh	First 500 ($/kWh)	$/kWh	$/kWh	$/kWh	$/kWh	$$$	$/kWh	$/kWh		
	watts/lamp	watts/fixture	counts	Summer Dark Hours 1598	Winter Dark Hours 2716	20.5	0.0768	0.0976	0.0568	0.0788	0.035111	0.031532	0.00682	0.0080	0.02466	0.000191	0.091	
HPS	100	130	5	1,039	1,765		38.40	52.60	28.40	99.70	36.48	55.66	19.12	22.43	2.67	0.54	32	$ 388
HPS	150	190	19	5,770	9,804		38.40	514.36	28.40	733.16	202.59	309.14	106.22	77.87	20.30	2.97	217	$ 2,251
LPS	180	208	3	997	1,695		38.40	48.54	28.40	94.14	35.02	53.44	18.36	21.54	2.51	0.51	216	$ 557
LED	185	185	6	1,774	3,015		38.40	124.36	28.40	198.15	62.29	95.05	32.66	38.31	5.41	0.91	88	$ 712
LED	215	215	12	4,124	7,007		38.40	353.68	28.40	512.74	144.79	220.94	75.91	89.04	14.16	2.13	191	$ 1,671
HPS	250	308	293	144,241	245,086		38.40	14029.17	28.40	19273.39	5064.46	7728.06	2655.21	1946.64	536.33	74.36	4803	$ 56,177
HPS	400	468	1752	1,310,545	2,226,796		38.40	127860.36	28.40	175432.11	46014.54	70215.33	24124.66	17686.70	4882.67	675.63	47100	$ 514,059
			2090	1470089	2497883												Rate 10	$ 575,815
					3,967,972	Rate 10 (kWh)												
			20281															

	CALCUALTED	ACTUAL	DIFF%
RATE 41	23,217,948	24,328,015	5%
RATE 10	3,967,972	4,307,805	8%
TOTAL	27,185,920	28,635,820	5%

18994271.4
69.87%

	CALCUALTED	ACTUAL	CALCUALTED Blended Rate	ACTUAL Blended Rate
RATE 41	$ 2,361,785	$ 2,586,307	$ 0.102	$ 0.106
RATE 10	$ 575,815	$ 549,816	$ 0.145	$ 0.128
TOTAL	$ 2,937,600	$ 3,136,123	$ 0.108	$ 0.110

D.2 Savings Calculations

EXISTING FIXTURE
RATE 41 ANNUAL DOLLARS AND ENERGY CONSUMPTION

Existing Fixture Model	Existing Fixture Type	Existing Fixture Wattage	Existing Fixture Wattage w/ballast	Existing Fixture Quantities	Existing Fixture Demand	**Summer Dark Hour Energy Consumption**	**Winter Dark Hour Energy Consumption**	Delivery Charge Summer (May-Sept)	Power Supply Chg Summer (May-Sept)	Delivery Charge Winter (Oct-Apr)	Power Supply Chg Winter (Oct-Apr)	PPFAC	Renewable Energy Tariff	DSM Surcharge	ECA Surcharge	TAXES Averaged	EXIST FIXTURE BASELINE Annual Dollars		
		w/lamp	watt/fixture	counts	kW	**1598**	**2716**	0.0476	0.035111	0.0476	0.031532	0.00682	0.0080	0.02466	0.000191	0.075		**Sub-Totals**	**Sub-Totals**
Shoebox	HPS	**150**	190	22	4.18	6681	11352	$ 318	$ 235	$ 540	$ 358	$ 123	$ 90	$ 39	$ 3	$ 127.97	$ 1,834		
Shoebox	HPS	**250**	308	229	71	112735	191552	$ 5,366	$ 3,958	$ 9,118	$ 6,040	$ 2,075	$ 1,521	$ 655	$ 58	$ 2,159	$ 30,951		
Shoebox	HPS	**400**	468	90	42	67323	114390	$ 3,205	$ 2,364	$ 5,445	$ 3,607	$ 1,239	$ 909	$ 391	$ 35	$ 1,290	$ 18,483	$ 51,269	504,033
Cobrahead	HPS	**150**	190	6	1	1822	3096	$ 87	$ 64	$ 147	$ 98	$ 34	$ 39	$ 11	$ 1	$ 36	$ 516		
Cobrahead	HPS	**250**	308	117	36	57598	97867	$ 2,742	$ 2,022	$ 4,658	$ 3,086	$ 1,060	$ 777	$ 335	$ 30	$ 1,103	$ 15,814		
Cobrahead	HPS	**400**	468	294	138	219920	373675	$ 10,468	$ 7,722	$ 17,787	$ 11,783	$ 4,048	$ 2,968	$ 1,278	$ 113	$ 4,213	$ 60,379	$ 76,709	753,978
Cobrahead	HPS	**100**	130	547	71	113659	193122	$ 5,410	$ 3,991	$ 9,193	$ 6,090	$ 2,092	$ 1,534	$ 660	$ 59	$ 2,177	$ 31,205		
Cobrahead	HPS	**150**	190	335	64	101735	172862	$ 4,843	$ 3,572	$ 8,228	$ 5,451	$ 1,873	$ 1,373	$ 591	$ 52	$ 1,949	$ 27,931		
Cobrahead	HPS	**250**	308	315	97	155072	263489	$ 7,381	$ 5,445	$ 12,542	$ 8,308	$ 2,855	$ 2,093	$ 901	$ 80	$ 2,970	$ 42,575		
Cobrahead	HPS	**400**	468	5686	2661	4253286	7226919	$ 202,456	$ 149,337	$ 344,001	$ 227,879	$ 78,295	$ 57,401	$ 24,709	$ 2,193	$ 81,470	$ 1,167,742		
Cobrahead - McGrawEdison	HPS	**400**	468	154	72	115196	195734	$ 5,483	$ 4,045	$ 9,317	$ 6,172	$ 2,121	$ 1,555	$ 669	$ 59	$ 2,207	$ 31,627		
Cobrahead	LED	**53**	53	748	40	63365	107666	$ 3,016	$ 2,225	$ 5,125	$ 3,395	$ 1,166	$ 855	$ 368	$ 33	$ 1,214	$ 17,397		
Cobrahead	LED	**81**	81	10	1	1295	2200	$ 62	$ 45	$ 105	$ 69	$ 24	$ 28	$ 8	$ 1	$ 26	$ 367		
Cobrahead	LED	**83**	83	2	0	265	451	$ 13	$ 9	$ 21	$ 14	$ 5	$ 6	$ 2	$ 0	$ 5	$ 75		
Cobrahead	LED	**117**	117	4	0	748	1271	$ 36	$ 26	$ 60	$ 40	$ 14	$ 16	$ 4	$ 0	$ 15	$ 212		
Cobrahead	LED	**135**	135	1	0	216	367	$ 10	$ 8	$ 17	$ 12	$ 4	$ 5	$ 1	$ 0	$ 4	$ 61		
Cobrahead	LED	**215**	215	11	2	3780	6423	$ 180	$ 133	$ 306	$ 203	$ 70	$ 82	$ 22	$ 2	$ 75	$ 1,071		
Cobrahead	LPS	**90**	125	905	113	180813	307227	$ 8,607	$ 6,349	$ 14,624	$ 9,687	$ 3,328	$ 2,440	$ 1,050	$ 93	$ 3,463	$ 49,642	$ 1,369,905	13,467,159
Cobrahead	HPS	**150**	190	1	0	304	516	$ 14	$ 11	$ 25	$ 16	$ 6	$ 7	$ 2	$ 0	$ 6	$ 86		
Cobrahead	HPS	**250**	308	60	18	29538	50188	$ 1,406	$ 1,037	$ 2,389	$ 1,583	$ 544	$ 399	$ 172	$ 15	$ 566	$ 8,110		
Cobrahead	HPS	**400**	468	1253	586	937279	1592566	$ 44,614	$ 32,909	$ 75,806	$ 50,217	$ 17,254	$ 12,649	$ 5,445	$ 483	$ 17,953	$ 257,330	$ 265,526	2,610,390
Cobrahead	HPS	**100**	130	392	51	81452	138398	$ 3,877	$ 2,860	$ 6,588	$ 4,364	$ 1,499	$ 1,099	$ 473	$ 42	$ 1,560	$ 22,363		
Cobrahead	HPS	**150**	190	284	54	86247	146545	$ 4,105	$ 3,028	$ 6,976	$ 4,621	$ 1,588	$ 1,164	$ 501	$ 44	$ 1,652	$ 23,679		
Cobrahead	HPS	**250**	308	162	50	79751	135508	$ 3,796	$ 2,800	$ 6,450	$ 4,273	$ 1,468	$ 1,076	$ 463	$ 41	$ 1,528	$ 21,896		
Cobrahead	HPS	**400**	468	267	125	199723	339358	$ 9,507	$ 7,012	$ 16,153	$ 10,701	$ 3,677	$ 2,695	$ 1,160	$ 103	$ 3,826	$ 54,834		
Cobrahead	LED	**53**	53	134	7	11351	19288	$ 540	$ 399	$ 918	$ 608	$ 209	$ 153	$ 66	$ 6	$ 217	$ 3,117		
Cobrahead	LED	**81**	81	26	2	3366	5720	$ 160	$ 118	$ 272	$ 180	$ 62	$ 73	$ 20	$ 2	$ 67	$ 953		
Cobrahead	LED	**117**	117	13	2	2431	4131	$ 116	$ 85	$ 197	$ 130	$ 45	$ 52	$ 14	$ 1	$ 48	$ 689		
Cobrahead	LED	**135**	135	26	4	5610	9533	$ 267	$ 197	$ 454	$ 301	$ 103	$ 76	$ 33	$ 3	$ 107	$ 1,540		
Cobrahead	LED	**215**	215	1	0	344	584	$ 16	$ 12	$ 28	$ 18	$ 6	$ 7	$ 2	$ 0	$ 7	$ 97		
Cobrahead	LPS	**50**	50	28	1	2238	3802	$ 107	$ 79	$ 181	$ 120	$ 41	$ 48	$ 13	$ 1	$ 44	$ 634		
Cobrahead	LPS	**90**	125	1813	227	362226	615472	$ 17,242	$ 12,718	$ 29,296	$ 19,407	$ 6,668	$ 4,888	$ 2,104	$ 187	$ 6,938	$ 99,449		
Cobrahead	LPS	**180**	208	5	1	1662	2824	$ 79	$ 58	$ 134	$ 89	$ 31	$ 36	$ 10	$ 1	$ 33	$ 471	$ 229,722	2,257,565
Cobrahead	HPS	**100**	130	2	0	416	706	$ 20	$ 15	$ 34	$ 22	$ 8	$ 9	$ 2	$ 0	$ 8	$ 118		
Cobrahead	HPS	**150**	190	3	1	911	1548	$ 43	$ 32	$ 74	$ 49	$ 17	$ 20	$ 5	$ 0	$ 18	$ 258		
Cobrahead	HPS	**250**	308	62	19	30522	51861	$ 1,453	$ 1,072	$ 2,469	$ 1,635	$ 562	$ 412	$ 177	$ 16	$ 585	$ 8,380		
Cobrahead	HPS	**400**	468	231	108	172794	293602	$ 8,225	$ 6,067	$ 13,975	$ 9,258	$ 3,181	$ 2,332	$ 1,004	$ 89	$ 3,310	$ 47,441		
Cobrahead	LED	**117**	117	1	0	187	318	$ 9	$ 7	$ 15	$ 10	$ 3	$ 4	$ 1	$ 0	$ 4	$ 53		
Cobrahead	LED	**185**	185	27	5	7984	13566	$ 380	$ 280	$ 646	$ 428	$ 147	$ 108	$ 46	$ 4	$ 153	$ 2,192	$ 58,441	574,414
Cobrahead	HPS	**100**	130	56	7	11636	19771	$ 554	$ 409	$ 941	$ 623	$ 214	$ 157	$ 68	$ 6	$ 223	$ 3,195		
Cobrahead	HPS	**150**	190	148	28	44946	76369	$ 2,139	$ 1,578	$ 3,635	$ 2,408	$ 827	$ 607	$ 261	$ 23	$ 861	$ 12,340		
Cobrahead	HPS	**250**	308	364	112	179194	304476	$ 8,530	$ 6,292	$ 14,493	$ 9,601	$ 3,299	$ 2,418	$ 1,041	$ 92	$ 3,432	$ 49,198		
Cobrahead	HPS	**400**	468	384	180	287243	488065	$ 13,673	$ 10,085	$ 23,232	$ 15,390	$ 5,288	$ 3,877	$ 1,669	$ 148	$ 5,502	$ 78,863		
Cobrahead	LED	**53**	53	36	2	3050	5182	$ 145	$ 107	$ 247	$ 163	$ 56	$ 66	$ 18	$ 2	$ 60	$ 864		
Cobrahead	LED	**81**	81	2	0	259	440	$ 12	$ 9	$ 21	$ 14	$ 5	$ 6	$ 2	$ 0	$ 5	$ 73		
Cobrahead	LED	**117**	117	14	2	2618	4449	$ 125	$ 92	$ 212	$ 140	$ 48	$ 57	$ 15	$ 1	$ 52	$ 742		
Cobrahead	LED	**215**	215	25	5	8591	14598	$ 409	$ 302	$ 695	$ 460	$ 158	$ 116	$ 50	$ 4	$ 165	$ 2,359		
Cobrahead	LPS	**90**	125	79	10	15784	26819	$ 751	$ 554	$ 1,277	$ 846	$ 291	$ 213	$ 92	$ 8	$ 302	$ 4,333		
Cobrahead	LPS	**180**	208	41	9	13631	23160	$ 649	$ 479	$ 1,102	$ 730	$ 251	$ 184	$ 79	$ 7	$ 261	$ 3,742	$ 155,708	1,530,278
Decorative - Posttop	HPS	**100**	130	268	35	55687	94619	$ 2,651	$ 1,955	$ 4,504	$ 2,984	$ 1,025	$ 752	$ 323	$ 29	$ 1,067	$ 15,289		
Decorative - Bollard	LPS	**55**	80	10	1	1279	2173	$ 61	$ 45	$ 103	$ 69	$ 24	$ 28	$ 7	$ 1	$ 25	$ 362		
Decorative - Globe	FL	**20**	20	1066	21	34077	57901	$ 1,622	$ 1,196	$ 2,756	$ 1,826	$ 627	$ 460	$ 198	$ 18	$ 653	$ 9,356		
Decorative - Pendant Acorn	FL	**20**	20	60	1	1918	3259	$ 91	$ 67	$ 155	$ 103	$ 35	$ 41	$ 11	$ 1	$ 38	$ 543		
Decorative - Pendant Acorn	LED	**18**	18	14	0	403	684	$ 19	$ 14	$ 33	$ 22	$ 7	$ 9	$ 2	$ 0	$ 8	$ 114		
Decorative - Posttop Acorn 20	FL	**20**	20	294	6	9398	15969	$ 447	$ 330	$ 760	$ 504	$ 173	$ 127	$ 55	$ 5	$ 180	$ 2,580		
Decorative - Radius Tube	HPS	**150**	190	8	2	2429	4128	$ 116	$ 85	$ 196	$ 130	$ 45	$ 52	$ 14	$ 1	$ 48	$ 688		
Decorative - WallMount	FL	**55**	75	25	2	2997	5092	$ 143	$ 105	$ 242	$ 161	$ 55	$ 65	$ 17	$ 2	$ 59	$ 849	$ 29,782	292,013
Pendant - Bell Scott 85	IND	**85**	85	106	9	14401	24470	$ 685	$ 506	$ 1,165	$ 772	$ 265	$ 194	$ 84	$ 7	$ 276	$ 3,954		
Pendant - SC 400 (Downtown)	HPS	**400**	468	0	0	0	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		
Pendant - Bell 400 (Downtown)	HPS	**400**	468	0	0	0	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		
Pendant - SC 400 (Cushing)	HPS	**400**	468	36	17	26929	45756	$ 1,282	$ 946	$ 2,178	$ 1,443	$ 496	$ 363	$ 156	$ 14	$ 516	$ 7,393		
Pendant - SC 70 (Cushing)	MH	**70**	75	41	3	4915	8351	$ 234	$ 173	$ 398	$ 263	$ 90	$ 106	$ 29	$ 3	$ 97	$ 1,392	$ 12,739	124,822
Wall Pak	MH	**70**	75	63	5	7552	12832	$ 359	$ 265	$ 611	$ 405	$ 139	$ 102	$ 44	$ 4	$ 145	$ 2,073		
Wall Pak	MH	**100**	120	37	4	7097	12058	$ 338	$ 249	$ 574	$ 380	$ 131	$ 96	$ 41	$ 4	$ 136	$ 1,948		
Wall Pak	HPS	**150**	190	88	17	26724	45408	$ 1,272	$ 938	$ 2,161	$ 1,432	$ 492	$ 361	$ 155	$ 14	$ 512	$ 7,337		
Wall Pak	HPS	**150**	190	18	3	5466	9288	$ 260	$ 192	$ 442	$ 293	$ 101	$ 118	$ 32	$ 3	$ 108	$ 1,548	$ 12,907	126,427
				17550	**5155**	8240068	14001010	$ 392,227	$ 289,317								$ 2,262,709	$ 2,262,709	22,241,078
							22,241,078										$ 0.102	CHECK	0

(EXISTING) RATE 41- HIGH PEDESTRIAN LIGHTING SAVINGS CALCULATIONS

HIGH PEDESTRIAN (3am - dawn)	Existing Fixture Type	Existing Fixture Wattage	Existing Fixture Wattage w/ballast	Existing Fixture Quantities	Existing Fixture Demand	Summer Dark Hour Energy Consumption	Winter Dark Hour Energy Consumption	Delivery Charge Summer (May-Sept)	Power Supply Chg Summer (May-Sept)	Delivery Charge Winter (Oct-Apr)	Power Supply Chg Winter (Oct-Apr)	PPFAC	Renewable Energy Tariff	DSM Surcharge	ECA Surcharge	TAXES Averaged	EXIST FIXTURE BASELINE Annual Dollars
		w/lamp	watt/fixture	counts	kW	1598	2716	0.0476	0.035111	0.0476	0.031532	0.00682	0.0080	0.02466	0.000191	0.075	
DOWNTOWN/CUSHING																	
Pendant - BELL 400 (Downtown)	HPS	400	468	**39**	18	29173	49569	$ 1,389	$ 1,024	$ 2,359	$ 1,563	$ 537	$ 394	$ 169	$ 15	$ 559	$ 8,009
Pendant - SC 400 (Downtown)	HPS	400	468	**51**	24	38149	64821	$ 1,816	$ 1,339	$ 3,085	$ 2,044	$ 702	$ 515	$ 222	$ 20	$ 731	$ 10,474
Pendant - SC 70 (Downtown)	MH	70	75	**45**	3	5394	9166	$ 257	$ 189	$ 436	$ 289	$ 99	$ 116	$ 31	$ 3	$ 107	$ 1,528
Cobrahead	HPS	250	308	**44**	14	21661	36805	$ 1,031	$ 761	$ 1,752	$ 1,161	$ 399	$ 292	$ 126	$ 11	$ 415	$ 5,947
Cobrahead	HPS	400	468	**11**	5	8228	13981	$ 392	$ 289	$ 665	$ 441	$ 151	$ 111	$ 48	$ 4	$ 158	$ 2,259
Shoebox	HPS	250	308	**103**	32	50706	86157	$ 2,414	$ 1,780	$ 4,101	$ 2,717	$ 933	$ 684	$ 295	$ 26	$ 971	$ 13,921
Shoebox	HPS	400	468	**11**	5	8228	13981	$ 392	$ 289	$ 665	$ 441	$ 151	$ 111	$ 48	$ 4	$ 158	$ 2,259
UNIVERSITY																	
Cobrahead	HPS	400	468	172	80	128661	218612	$ 6,124	$ 4,517	$ 10,406	$ 6,893	$ 2,368	$ 1,736	$ 747	$ 66	$ 2,464	$ 35,324
Cobrahead	HPS	250	308	138	43	67936	115433	$ 3,234	$ 2,385	$ 5,495	$ 3,640	$ 1,251	$ 917	$ 395	$ 35	$ 1,301	$ 18,652
Cobrahead	HPS	100	130	12	2	2493	4237	$ 119	$ 88	$ 202	$ 134	$ 46	$ 54	$ 14	$ 1	$ 49	$ 706
Cobrahead	LPS	90	125	12	2	2398	4074	$ 114	$ 84	$ 194	$ 128	$ 44	$ 52	$ 14	$ 1	$ 47	$ 679
Cobrahead	LED	53	53	3	0	254	432	$ 12	$ 9	$ 21	$ 14	$ 5	$ 5	$ 1	$ 0	$ 5	$ 72
				641	**227**	363283	617267	$ 17,292	$ 12,755								$ 99,831

(EXISTING) RATE 10 - Intersection Lights Are Not Dimmed and Evaluated at 90%

Existing Fixture Model	Existing Fixture Type	Existing Fixture Wattage	Existing Fixture Wattage w/ballast	Existing Fixture Quantities	Existing Fixture Demand	Summer Dark Hour Energy Consumption	Winter Dark Hour Energy Consumption	Delivery Charge PH1(15.50)PH3 (20.50)	Delivery Charge Summer (May-Sept) First 500 ($/kWh)	Delivery Charge Summer (May-Sept) $/kWh	Delivery Charge Winter (Oct-Apr) First 500 ($/kWh)	Delivery Charge Winter (Oct-Apr) $/kWh	Base Power Supply Charge Summer (May-Sept) $/kWh	Base Power Supply Charge Winter (Oct-Apr) $/kWh	PPFAC $/kWh	Renewable Energy $$$	DSM Surcharge $/kWh	ECA Surcharge $/kWh	Taxes ($$$)
		w/lamp	watt/fixture	counts	kW	1598	2716	15.5/20.5	0.0768	0.0976	0.0568	0.0788	0.035111	0.031532	0.00682	0.0080	0.02466	0.000191	0.091
Intersection Cobrahead	HPS	100	130	5	1	1,039	1,765	0	38.40	52.60	28.40	99.70	36.48	55.66	19.12	22.43	2.67	0.54	32
Intersection Cobrahead	HPS	150	190	19	4	5,770	9,804	0	38.40	514.36	28.40	733.16	202.59	309.14	106.22	77.87	20.30	2.97	185
Intersection Cobrahead	LPS	180	208	3	1	997	1,695	0	38.40	48.54	28.40	94.14	35.02	53.44	18.36	21.54	2.51	0.51	31
Intersection Cobrahead	LED	185	185	6	1	1,774	3,015	0	38.40	124.36	28.40	198.15	62.29	95.05	32.66	38.31	5.41	0.91	57
Intersection Cobrahead	LED	215	215	12	3	4,124	7,007	0	38.40	353.68	28.40	512.74	144.79	220.94	75.91	89.04	14.16	2.13	135
Intersection Cobrahead	HPS	250	308	293	90	144,241	245,086	0	38.40	14029.17	28.40	19273.39	5064.46	7728.06	2655.21	1946.64	536.33	74.36	4675
Intersection Cobrahead	HPS	400	468	1270	594	949,995	1,614,173	0	38.40	92670.74	28.40	127157.42	33355.29	50898.10	17487.63	12820.84	3539.05	489.76	30802
Intersection Cobrahead	**HPS- MAJOR**	400	468	482	226	360,549	612,623	0	38.40	35140.82	28.40	48235.30	12659.25	19317.23	6637.04	4865.86	1342.42	185.88	11689
				2090	**919**	1468490	2495167												

3,963,658 total baseline kWh

	1752	total 400w cobrahead intersection lights
HPS- MAJOR-MAJOR LIGHTS	482	major/major 400w cobraheads
	1270	remaining 400w intersection lights (collector/major, collector/collector)

6301 **kW- Existing Demand**

20281	Savsum Count
20281	Baseline Count
0	CHECK

NEW FIXTURE
RATE 41 ANNUAL DOLLARS AND ENERGY CONSUMPTION

LED FIXTURE	watts /fixture	Factor	Fixture	Fixture	DEMAND	Off Hours Dimming Factor (12am - Dawn)	Off Dimming Hours (12am - dawn) Summer	Off Dimming Hours (12am - dawn) Winter	Initial Dimming Hours (dusk to midnight) Summer	Initial Dimming Hours (dusk to midnight) Winter	Total Summer Energy Consumpton	Total Winter Energy Consumption	Delivery Charge Summer (May-Sept)	Power Supply Chg Summer (May-Sept)	Delivery Charge Winter (Oct-Apr)	Power Supply Chg Winter (Oct-Apr)	PPFAC	Renewable Energy Tariff	DSM Surcharge	ECA Surcharge	TAXES Averaged	New Fixture Annual Dollars
MODEL NUMBER		0.1	counts	sub-totals	kW	30.0%	976	1353	622	1363	kWh	kWh	0.0476	0.035111	0.0476	0.031532	0.00682	0.0080	0.02466	0.000191	0.075	
ATB0 20BLED10	72	0.10	22	22	2	0.300	1082	1500	887	1943	1969	3443	94	69	164	109	37	23	12	1	38	$ 546
ATB2 40BLED10	138	0.10	229	276	32	0.300	21594	29921	17697	38773	39290	68694	1870	1380	3270	2166	736	282	232	21	747	$ 10,704
ATB2 60BLED10	208	0.10	90	92	19	0.300	12791	17724	10483	22968	23274	40692	1108	817	1937	1283	436	167	138	12	442	$ 6,341
ATB2_60BLEDE85_480	173	0.10	6		1	0.300	709	983	581	1274	1291	2256	61	45	107	71	24	15	8	1	25	$ 358
ATB2_60BLEDE85_480	173	0.10	117		20	0.300	13831	19164	11335	24834	25165	43998	1198	884	2094	1387	472	181	149	13	478	$ 6,856
ATB2_60BLEDE85_480	173	0.10	294	417	51	0.300	34754	48156	28482	62404	63236	110560	3010	2220	5263	3486	1185	454	374	33	1202	$ 17,228
ATBM D R3	95	0.10	547		52	0.300	35508	49200	29100	63757	64607	112958	3075	2268	5377	3562	1211	464	382	34	1228	$ 17,602
ATBM D R3	95	0.10	335		32	0.300	21746	30132	17822	39047	39568	69179	1883	1389	3293	2181	742	284	234	21	752	$ 10,780
ATBM D R3	95	0.10	315		30	0.300	20448	28333	16758	36716	37205	65049	1771	1306	3096	2051	697	267	220	20	707	$ 10,136
ATBM D R3	95	0.10	5686		540	0.300	369097	511429	302489	662751	671586	1174180	31968	23580	55891	37024	12588	4826	3972	353	12765	$ 182,966
ATBM D R3	95	0.10	154		15	0.300	9997	13852	8193	17950	18189	31802	866	639	1514	1003	341	131	108	10	346	$ 4,955
ATBM D R3	95	0.10	748		71	0.300	48555	67279	39793	87186	88348	154465	4205	3102	7353	4871	1656	635	522	46	1679	$ 24,069
ATBM D R3	95	0.10	10		1	0.300	649	899	532	1166	1181	2065	56	41	98	65	22	14	7	1	23	$ 327
ATBM D R3	95	0.10	2		0	0.300	130	180	106	233	236	413	11	8	20	13	4	3	1	0	5	$ 65
ATBM D R3	95	0.10	4		0	0.300	260	360	213	466	472	826	22	17	39	26	9	5	3	0	9	$ 131
ATBM D R3	95	0.10	1		0	0.300	65	90	53	117	118	207	6	4	10	7	2	1	1	0	2	$ 33
ATBM D R3	95	0.10	11		1	0.300	714	989	585	1282	1299	2272	62	46	108	72	24	15	8	1	25	$ 360
ATBM D R3	95	0.10	905	8718	86	0.300	58747	81400	48145	105485	106892	186886	5088	3753	8896	5893	2004	768	632	56	2032	$ 29,121
ATBM E R3	115	0.10	1		0	0.300	79	109	64	141	143	250	7	5	12	8	3	2	1	0	3	$ 40
ATBM E R3	115	0.10	60		7	0.300	4715	6533	3864	8466	8579	14999	408	301	714	473	161	62	51	5	163	$ 2,337
ATBM E R3	115	0.10	1253	1314	144	0.300	98460	136428	80692	176795	179151	313223	8528	6290	14909	9877	3358	1287	1059	94	3405	$ 48,808
ATBS E R2	39	0.10	392		15	0.300	10446	14475	8561	18757	19007	33232	905	667	1582	1048	356	137	112	10	361	$ 5,178
ATBS E R2	39	0.10	284		11	0.300	7568	10487	6202	13589	13771	24076	655	484	1146	759	258	99	81	7	262	$ 3,752
ATBS E R2	39	0.10	162		6	0.300	4317	5982	3538	7752	7855	13734	374	276	654	433	147	56	46	4	149	$ 2,140
ATBS E R2	39	0.10	267		10	0.300	7115	9859	5831	12776	12946	22635	616	455	1077	714	243	93	77	7	246	$ 3,527
ATBS E R2	39	0.10	134		5	0.300	3571	4948	2927	6412	6497	11360	309	228	541	358	122	47	38	3	123	$ 1,770
ATBS E R2	39	0.10	26		1	0.300	693	960	568	1244	1261	2204	60	44	105	70	24	14	7	1	24	$ 349
ATBS E R2	39	0.10	13		1	0.300	346	480	284	622	630	1102	30	22	52	35	12	7	4	0	12	$ 175
ATBS E R2	39	0.10	26		1	0.300	693	960	568	1244	1261	2204	60	44	105	70	24	14	7	1	24	$ 349
ATBS E R2	39	0.10	1		0	0.300	27	37	22	48	48	85	2	2	4	3	1	1	0	0	1	$ 13
ATBS E R2	39	0.10	28		1	0.300	746	1034	612	1340	1358	2374	65	48	113	75	25	16	8	1	26	$ 376
ATBS E R2	39	0.10	1813		71	0.300	48314	66945	39595	86753	87909	153697	4184	3087	7316	4846	1648	632	520	46	1671	$ 23,950
ATBS E R2	39	0.10	5	3151	0	0.300	133	185	109	239	242	424	12	9	20	13	5	3	1	0	5	$ 67
ATBS F R3	49	0.10	2		0	0.300	67	93	55	120	122	213	6	4	10	7	2	1	1	0	2	$ 34
ATBS F R3	49	0.10	3		0	0.300	100	139	82	180	183	320	9	6	15	10	3	2	1	0	4	$ 51
ATBS F R3	49	0.10	62		3	0.300	2076	2876	1701	3727	3777	6604	180	133	314	208	71	43	22	2	73	$ 1,047
ATBS F R3	49	0.10	231		11	0.300	7734	10717	6339	13888	14073	24604	670	494	1171	776	264	101	83	7	267	$ 3,834
ATBS F R3	49	0.10	1		0	0.300	33	46	27	60	61	107	3	2	5	3	1	1	0	0	1	$ 17
ATBS F R3	49	0.10	27	326	1	0.300	904	1253	741	1623	1645	2876	78	58	137	91	31	19	10	1	32	$ 456
ATBS H R2	72	0.10	56		4	0.300	2755	3817	2258	4947	5013	8764	239	176	417	276	94	58	30	3	97	$ 1,389
ATBS H R2	72	0.10	148		11	0.300	7281	10089	5967	13074	13248	23163	631	465	1103	730	248	95	78	7	252	$ 3,609
ATBS H R2	72	0.10	364		26	0.300	17908	24814	14676	32155	32584	56969	1551	1144	2712	1796	611	234	193	17	619	$ 8,877
ATBS H R2	72	0.10	384		28	0.300	18892	26177	15483	33922	34374	60099	1636	1207	2861	1895	644	247	203	18	653	$ 9,365
ATBS H R2	72	0.10	36		3	0.300	1771	2454	1451	3180	3223	5634	153	113	268	178	60	37	19	2	62	$ 893
ATBS H R2	72	0.10	2		0	0.300	98	136	81	177	179	313	9	6	15	10	3	2	1	0	3	$ 50
ATBS H R2	72	0.10	14		1	0.300	689	954	564	1237	1253	2191	60	44	104	69	23	14	7	1	24	$ 347
ATBS H R2	72	0.10	25		2	0.300	1230	1704	1008	2208	2238	3913	107	79	186	123	42	26	13	1	43	$ 620
ATBS H R2	72	0.10	79		6	0.300	3887	5385	3185	6979	7072	12364	337	248	589	390	133	51	42	4	134	$ 1,927
ATBS H R2	72	0.10	41	1149	3	0.300	2017	2795	1653	3622	3670	6417	175	129	305	202	69	42	22	2	71	$ 1,017
PTUE 100 3K	55		268		15		14388	19937	9171	20094	23560	40031	1121	827	1905	1262	434	146	137	12	438	$ 6,284
DC_BOLLARD LPS 55W	23		10		0		225	311	143	314	368	625	17	13	30	20	7	4	2	0	7	$ 100
DC_GLOBE FLUOR 20W	9.9		1066		11		10302	14274	6566	14387	16868	28661	803	592	1364	904	311	105	98	9	314	$ 4,499
DC_PEN-ACORN FLR 20W	9.9		60		1		580	803	370	810	949	1613	45	33	77	51	17	9	6	0	18	$ 257
DC_PEN-ACORN LED 18W	9.9		14		0		135	187	86	189	222	376	11	8	18	12	4	2	1	0	4	$ 60
DC_POSTTOP FLOR 20W	9.9		294		3		2841	3937	1811	3968	4652	7905	221	163	376	249	86	46	27	2	88	$ 1,259
DC_RADIUS TUBE HPS 150W	88		8		1		687	952	438	960	1125	1912	54	40	91	60	21	11	7	1	21	$ 305
DC_WALL MTD FLUOR 55W	27		25	1745	1		659	913	420	920	1079	1833	51	38	87	58	20	11	6	1	20	$ 292
GBLF 053 3K	75	0.10	106		8	0.300	5432	7527	4452	9754	9884	17281	470	347	823	545	185	71	58	5	188	$ 2,693
GELF2 105 3K	153	0.10	0		0	0.300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$ -
GELF2 105 3K	75	0.10	0		0	0.300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$ -
GELF2 105 3K	153	0.10	36	36	6	0.300	3764	5215	3084	6758	6848	11973	326	240	570	378	128	49	40	4	130	$ 1,866
GSLF2 053 3K	75	0.10	41	147	3	0.300	2101	2911	1722	3773	3823	6684	182	134	318	211	72	44	23	2	74	$ 1,059
W4GLED 10C	39		63		2		2398	3323	1529	3350	3927	6673	187	138	318	210	72	39	23	2	74	$ 1,063
W4GLED 20C	72		37		3		2600	3603	1658	3632	4258	7235	203	150	344	228	78	42	25	2	80	$ 1,153
W4GLED 20C	72		88	125	6		6185	8570	3942	8638	10127	17207	482	356	819	543	186	63	59	5	188	$ 2,701
W4GLED 30C	104		18		2		1827	2532	1165	2552	2992	5084	142	105	242	160	55	30	17	2	57	$ 810
			17550		**1385** kW						1737985	3035185									Rate 41 New LED Annual Cost	$ 473,342
																						$ 0.099

ROADWAY LIGHTING AND CONTROL
ENERGY AND DOLLAR SAVINGS SUMMARY

Energy Savings	Dollar Savings			
kwh	$$$			
12,621	$1,289			
196,302	$20,247			
117,746	$12,143	**326,669**	**$ 33,678**	**SHOEBOX**
1,371	$159			
86,302	$8,958			
419,799	$43,151			
129,215	$13,603			
165,850	$17,152			
316,306	$32,439			
9,634,438	$984,775			
260,940	$26,672			
(71,782)	$6,673			
248	$39			
67	$10			
721	$81			
258	$28			
6,632	$711			
194,263	$20,521			
427	$46			
56,148	$5,772			
2,037,471	$208,523			
167,611	$17,184			
194,946	$19,927			
193,671	$19,756			
503,500	$51,307			
12,782	$1,346			
5,621	$604			
4,829	$514			
11,678	$1,191			
794	$84			
2,308	$258			
736,091	$75,499			
3,820	$404			
787	$84			
1,957	$207			
72,002	$7,333			
427,719	$43,607			
337	$36			
17,029	$1,736			
17,630	$1,806			
84,903	$8,730			
394,117	$40,321			
680,834	$69,498			
(625)	$29			
207	$24			
3,622	$394			
17,038	$1,739			
23,166	$2,407			
26,704	$2,725	**16,843,752**	**$ 1,724,660**	**COBRAHEADS TYPICALS**
86,715	$9,005			
2,459	$263			
46,449	$4,857			
2,614	$286			
489	$54			
12,810	$1,321			
3,520	$384			
5,177	$557	**160,234**	**$ 16,726**	**DECORATIVE**
11,705	$1,261			
0	$0			
0	$0			
53,864	$5,528			
2,759	$333	**68,328**	**$ 7,122**	**PENDANTS**
9,785	$1,010			
7,662	$796			
44,798	$4,636			
6,678	$738	**68,923**	**$ 7,180**	**UNDERPASS**
17,467,907	$1,789,367	SAVINGS	$ 1,789,367	CHECK

(NEW) RATE 41- HIGH PEDESTRIAN LIGHTING SAVINGS CALCULATIONS

	New LED Fixture Wattage	Initial Dimming Factor	New LED Fixture Quantities	Fixture sub-totals	NEW DEMAND	After Hours Dimming Factor3am - Dawn	Summer (3am - dawn) Energy Consumption	Winter (3am - dawn) Energy Consumption	Summer (Dusk to 3am) Energy Consumption	Winter (Dusk to 3am) Energy Consumption	Total Summer Energy Consumption	Total Winter Energy Consumption	Delivery Charge Summer (May-Sept) $/kWh	Power Supply Chg Summer (May-Sept) $/kWh	Delivery Charge Winter (Oct-Apr) $/kWh	Power Supply Chg Winter (Oct-Apr) $/kWh	PPFAC $/kWh	Renewable Energy Tariff $$$	DSM Surcharge $/kWh	ECA Surcharge $/kWh	TAXES Averaged Percentage	High Pedestrian Projected Annual Cost	Energy Savings	Dollar Savings	
			Counts	sub-totals	kW	30%	517	717	622	1363	kWh	kWh	0.0476	0.035111	0.0476	0.031532	0.00682	0.0080	0.02466	0.000191	0.075		kwh	$$$	
DOWNTOWN/CUSHING																									
GELF2 105K 3K	234	0.10	39		9	0.30	3304	4578	5110	11197	8414	15775	401	295	751	497	165	82	52	5	169	$ 2,416	54,554	$5,594	
GELF2 105K 3K	234	0.10	51		12	0.30	4320	5986	6683	14642	11003	20628	524	386	982	650	216	107	68	6	220	$ 3,159	71,339	$7,315	
GBLF2 053 3K	75	0.10	45		3	0.30	1222	1693	1890	4141	3112	5834	148	109	278	184	61	48	19	2	64	$ 913	5,615	$615	
ATBM D R3	154	0.10	44		7	0.30	2453	3399	3794	8314	6247	11712	297	219	558	369	122	61	39	3	125	$ 1,794	40,506	$4,153	
ATBM D R3	154	0.10	11		2	0.30	613	850	949	2078	1562	2928	74	55	139	92	31	24	10	1	32	$ 458	17,719	$1,801	
ATB2 40BLED10 MVOLT	154	0.10	103		16	0.30	5742	7956	8883	19462	14625	27418	696	513	1305	865	287	142	90	8	293	$ 4,199	94,820	$9,722	
ATB2 60BLED10 MVOLT	234	0.10	11	304.00	3	0.30	932	1291	1441	3158	2373	4449	113	83	212	140	47	37	15	1	49	$ 696	15,387	$1,563	
UNIVERSITY																									
ATBM D R3	234	0.10	172		40	0.30	14570	20188	22538	49382	37108	69570	1766	1303	3312	2194	728	360	229	20	743	$ 10,655	240,595	$24,669	
ATBM D R3	154	0.10	138		21	0.30	7693	10660	11901	26075	19594	36735	933	688	1749	1158	384	190	121	11	393	$ 5,626	127,041	$13,026	
ATBS H R2	72	0.10	12		1	0.30	313	433	484	1060	797	1493	38	28	71	47	16	12	5	0	16	$ 234	4,440	$473	
ATBM D R3	72	0.10	12		1	0.30	313	433	484	1060	797	1493	38	28	71	47	16	12	5	0	16	$ 234	4,181	$445	
ATBS E R2	53	0.10	3	337.00	0	0.30	58	80	89	195	147	275	7	5	13	9	3	2	1	0	3	$ 43	265	$29	**676,462**	**$69,405**	**COBRAHEADS HIGH PEDESTRIAN**
			641		**115**	kW															Rate 41 New LED Annual Cost	$ 30,426	ck	$69,405	

(NEW) RATE 10 - Intersection Lights Are Not Dimmed and Evaluated at 90%

Total ($$$)	New Fixture Model	New Fixture Wattage	New Fixture kW	Initial Dimming Factor 0.1	New Fixture counts	Summer Dark Hour Energy Consumption (dusk to dawn) 1598	Winter Dark Hour Energy Consumption (dusk to dawn) 2716	Delivery Charge PH1(15.50)PH3(20.50) 15.5/20.5	Delivery Charge Summer (May-Sept) First 500 ($/kWh) 0.0768	Delivery Charge Summer (May-Sept) $/kWh 0.0976	Delivery Charge Winter (Oct-Apr) First 500 ($/kWh) 0.0568	Delivery Charge Winter (Oct-Apr) $/kWh 0.0788	Base Power Supply Charge Summer (May-Sept) $/kWh 0.035111	Base Power Supply Charge Winter (Oct-Apr) $/kWh 0.031532	PPFAC $/kWh 0.00682	Renewable Energy $$$ 0.0080	DSM Surcharge $/kWh 0.02466	ECA Surcharge $/kWh 0.000191	Taxes ($$$) 0.091	Total ($$$)	Energy Savings kwh	Dollar Savings $$$	
$ 388	**ATBM D R3**	95	0	0.10	5	683	1,161		38.40	17.89	28.40	52.09	23.99	36.61	12.58	14.75	1.34	0.35	21	$ 247	960	$ 141			
$ 2,218	**ATBM D R3**	95	2	0.10	19	2,597	4,412		38.40	204.62	28.40	308.25	91.17	139.11	47.80	56.07	8.47	1.34	84	$ 1,008	8,566	$ 1,211			
$ 372	**ATBM D R3**	95	0	0.10	3	410	697		31.49	0.00	28.40	15.49	14.39	21.97	7.55	8.85	0.54	0.21	12	$ 141	1,585	$ 231			
$ 681	**ATBM D R3**	95	1	0.10	6	820	1,393		38.40	31.23	28.40	70.39	28.79	43.93	15.09	17.71	1.85	0.42	25	$ 301	2,576	$ 379			
$ 1,615	**ATBM D R3**	95	1	0.10	12	1,640	2,786		38.40	111.25	28.40	180.17	57.58	87.86	30.19	35.41	4.91	0.85	52	$ 627	6,704	$ 988			
$ 56,049	**ATBM D R3**	95	28	0.10	293	40,041	68,035		38.40	3859.21	28.40	5321.78	1405.88	2145.29	737.08	540.38	148.01	20.64	1294	$ 15,540	281,251	$ 40,510			
$ 369,288	**ATBM D R3**	95	121	0.10	1270	173,557	294,897		38.40	16890.35	28.40	23198.48	6093.75	9298.69	3194.85	2342.27	645.57	89.47	5617	$ 67,438	2,095,714	$ 301,850			
$ 140,140	**ATB2_60BLEDE85**	173	83	0.10	482	119,952	203,815		38.40	11658.52	28.40	16021.22	4211.64	6426.69	2208.09	1618.83	445.81	61.84	3882	$ 46,601	649,405	$ 93,538	**3,046,762**	**$ 438,849**	**COBRAHEAD INTERSECTIONS**
$ 570,751.23			**236**	kW		2090	341298	579,912												Rate 10 New Calc. Annual Baseline	$ 131,902	3,046,762	$ 438,849			
$ 0.14				ck		1608		921,210.05	Rate 10 (kWh)												$ 0.14	check	$ 0.1440		

1736 kW- NEW DEMAND

4565 Kw- SAVED DEMAND

EXISTING BASELINE				
504,033	$ 51,269		$ 0.103	
292,013	$ 29,782		$ 0.104	
124,822	$ 12,739		$ 0.104	
126,427	$ 12,907		$ 0.104	
21,193,784	$ 2,156,012		$ 0.102	
980,550	$ 99,831		$ 0.103	
3,963,658	$ 570,751		$ 0.144	
27,185,286	**$ 2,933,291**		$ 0.108	

TOTAL PROJECT - SAVINGS SUMMARY		
326,669	$ 33,678	SHOEBOX
160,234	$ 16,726	DECORATIVE
68,328	$ 7,122	PENDANTS
68,923	$ 7,180	UNDERPASS
16,843,752	$ 1,724,660	COBRAHEADS TYPICALS
676,462	$ 69,405	COBRAHEADS HIGH PEDESTRIAN
3,046,762	$ 438,849	COBRAHEAD INTERSECTIONS
21,191,131	**$ 2,297,621**	**TOTAL PROJECT SAVINGS**

20,961,974	**$ 2,273,714**	**ECM 1 - Roadway**
160,234	**$ 16,726**	**ECM 2 - Decorative**
68,923	**$ 7,180**	**ECM 3 - Underpass**

TUCSON, ARIZONA
Mountain Standard Time
Location: W110 55', N32 13'
http://aa.usno.navy.mil/data/docs/Dur_OneYear.php

Astronomical Applications Dept.
U.S. Naval Observatory
Washington D.C. 20392-5452

Duration of Darkness for 2015

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	13:55	13:20	12:30	11:29	10:33	9:53	9:46	10:17	11:11	12:09	13:07	13:48
2	13:54	13:19	12:28	11:27	10:32	9:52	9:47	10:19	11:13	12:11	13:09	13:49
3	13:54	13:17	12:26	11:25	10:30	9:51	9:47	10:20	11:14	12:13	13:10	13:50
4	13:53	13:16	12:24	11:23	10:28	9:50	9:48	10:22	11:16	12:15	13:12	13:51
5	13:52	13:14	12:22	11:21	10:27	9:50	9:48	10:23	11:18	12:17	13:14	13:51
6	13:52	13:12	12:20	11:19	10:25	9:49	9:49	10:25	11:20	12:19	13:15	13:52
7	13:51	13:11	12:18	11:17	10:23	9:48	9:50	10:27	11:22	12:21	13:17	13:53
8	13:50	13:09	12:16	11:15	10:22	9:48	9:50	10:28	11:24	12:22	13:18	13:53
9	13:49	13:07	12:14	11:13	10:20	9:47	9:51	10:30	11:26	12:24	13:20	13:54
10	13:49	13:05	12:12	11:11	10:19	9:47	9:52	10:31	11:28	12:26	13:22	13:55
11	13:48	13:04	12:10	11:09	10:17	9:46	9:53	10:33	11:30	12:28	13:23	13:55
12	13:47	13:02	12:08	11:07	10:16	9:46	9:54	10:35	11:32	12:30	13:25	13:56
13	13:46	13:00	12:06	11:06	10:14	9:46	9:55	10:36	11:34	12:32	13:26	13:56
14	13:45	12:58	12:04	11:04	10:13	9:45	9:55	10:38	11:36	12:34	13:28	13:56
15	13:44	12:57	12:03	11:02	10:12	9:45	9:56	10:40	11:38	12:36	13:29	13:57
16	13:42	12:55	12:01	11:00	10:10	9:45	9:57	10:42	11:40	12:38	13:31	13:57
17	13:41	12:53	11:59	10:58	10:09	9:44	9:58	10:43	11:41	12:40	13:32	13:57
18	13:40	12:51	11:57	10:56	10:08	9:44	9:59	10:45	11:43	12:42	13:33	13:57
19	13:39	12:49	11:55	10:54	10:06	9:44	10:01	10:47	11:45	12:43	13:35	13:58
20	13:38	12:47	11:53	10:53	10:05	9:44	10:02	10:49	11:47	12:45	13:36	13:58
21	13:36	12:45	11:51	10:51	10:04	9:44	10:03	10:50	11:49	12:47	13:37	13:58
22	13:35	12:44	11:49	10:49	10:03	9:44	10:04	10:52	11:51	12:49	13:38	13:58
23	13:34	12:42	11:47	10:47	10:02	9:44	10:05	10:54	11:53	12:51	13:40	13:58
24	13:32	12:40	11:45	10:45	10:00	9:44	10:07	10:56	11:55	12:53	13:41	13:58
25	13:31	12:38	11:43	10:44	9:59	9:45	10:08	10:58	11:57	12:54	13:42	13:57
26	13:30	12:36	11:41	10:42	9:58	9:45	10:09	10:59	11:59	12:56	13:43	13:57
27	13:28	12:34	11:39	10:40	9:57	9:45	10:10	11:01	12:01	12:58	13:44	13:57
28	13:27	12:32	11:37	10:38	9:56	9:45	10:12	11:03	12:03	13:00	13:45	13:57
29	13:25		11:35	10:37	9:55	9:46	10:13	11:05	12:05	13:02	13:46	13:56
30	13:24		11:33	10:35	9:54	9:46	10:15	11:07	12:07	13:03	13:47	13:56
31	13:22		11:31		9:53		10:16	11:09		13:05		13:55
	13:41	**12:57**	**12:00**	**11:01**	**10:11**	**9:46**	**9:58**	**10:42**	**11:38**	**12:37**	**13:28**	**13:55** AVG HRS/DAY.

E.1 New Roadway Equipment Cut-Sheets

NOTES:
1. REMOVE ALL BURRS AND SHARP EDGES.
2. WELDING SHALL CONFORM TO ANSI / AWS D1.1. WELD BETWEEN PIPE AMD SIMPLEX FITTING SHOE SHALL BE DESIGNED NOT TO FAIL BEFORE THE PIPE.
3. AFTER SANDBLASTING, THE MAST ARMS SHALL BE GALVANIZED. THE GALVANIZING SHALL CONFORM WITH ASTM A123.

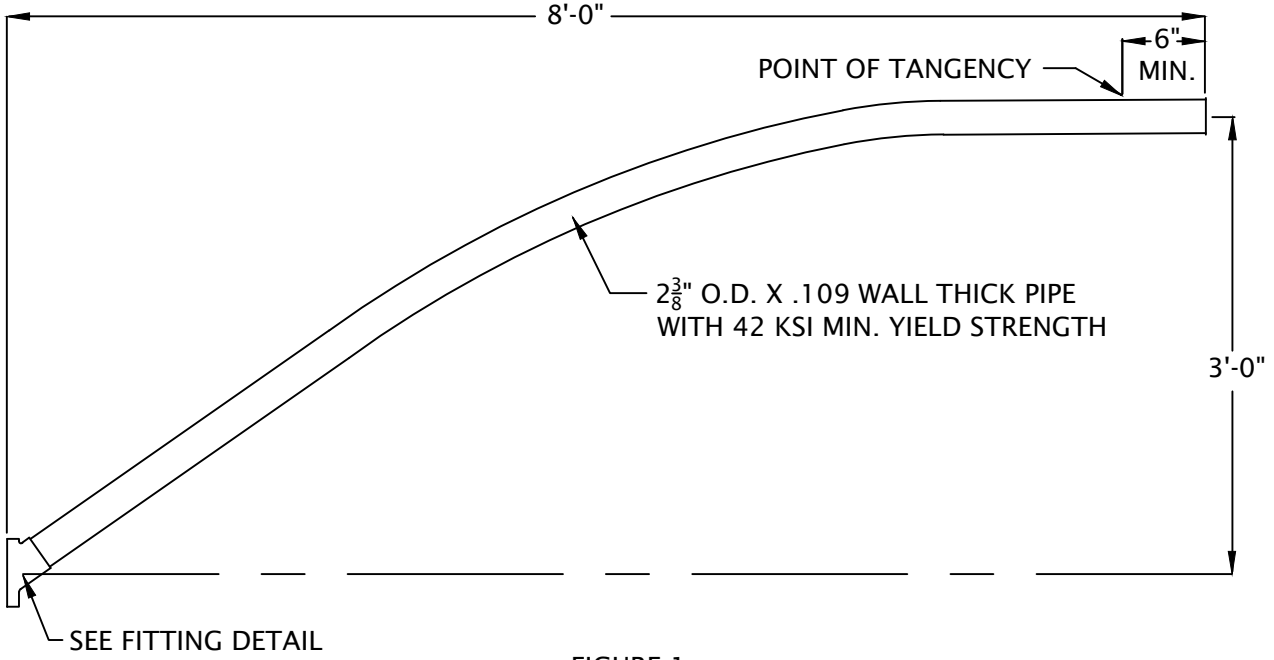
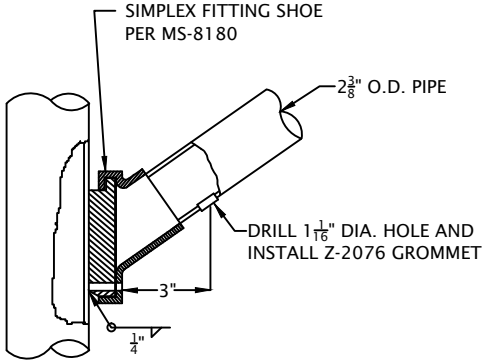


FIGURE 1
2" X 3' - 0" X 8' MAST ARM



FITTING DETAIL

CEM-TEC CORPORATION
Steel Manufacturing Light Standards

3745 South 7th Avenue
Phoenix, Arizona 85041
(602) 268-8895 (Tel)
(602) 276-7251 (Fax)
Web: http://www.cem-tec.com

JOB NAME:
SIMPLEX MAST ARMS

DRAWING NAME:
MS-8185.DWG

Autobahn Series ATBO

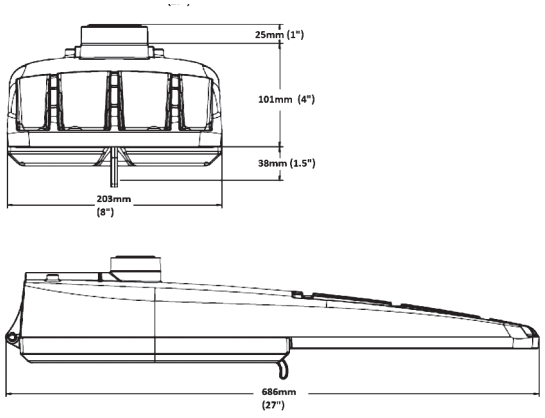
Roadway Lighting

PRODUCT OVERVIEW

Applications:

Roadways
Off ramps
Residential streets
Parking lots

DIMENSIONS



Effective Projected Area (EPA): The EPA for the ATB0 is 0.76 sq. ft.
Approx. Wt. = 14 lbs.

Features:

OPTICAL

Same Light: Performance is comparable to 70-200W HPS roadway luminaires.

White Light: Correlated color temperature standard 4000K, 70 CRI minimum or optional 5000K, 70 CRI minimum.

Unique IP66 rated LED light engines provided 0% uplight and restrict backlight to within sidewalk depth, providing optimal application coverage and optimal pole spacing. Available in Type II, III, IV, and V roadway distributions.

ELECTRICAL

Expected Life: LED light engines are rated >100,000 hours at 25°C, L70. Electronic driver has an expected life of 100,000 hours at a 25°C ambient.

Lower Energy: Saves an expected of 40-60% over comparable HID luminaires.

Robust Surge Protection: Three different surge protection options provide a minimum of IEEE/ANSI C62.41 Category C (10kV/5kA) protection.

MECHANICAL

Includes standard AEL lineman-friendly features such as tool-less entry, 3 station terminal block and quick disconnects. Bubble level located inside the electrical compartment for easily leveling at installation.

Rugged die-cast aluminum housing and door are polyester powder-coated for durability and corrosion resistance. Rigorous five-stage pre-treating and painting process yields a finish that achieves a scribe creepage rating of 8 (per ASTM D1654) after over 1000 hours exposure to salt fog chamber (operated per ASTM B117). Optional Enhanced Corrosion Resistant finish (CR) increases the salt spray exposure over 5000 hours.

Mast arm mount is adjustable for arms from 1-1/4" to 2" (1-5/8" to 2-3/8" O.D.) diameter. Provides a 3G vibration rating per ANSI C136.31

Wildlife shield is cast into the housing (not a separate piece).

CONTROLS

NEMA 3 pin photocontrol receptacle is standard, with the Acuity designed ANSI standard 5 pin and 7 pin receptacles optionally available.

Premium solid state locking style photocontrol - PCSS (10 year rated life) Extreme long life solid state locking style photocontrol - PCLL (20 year rated life).

Multi-level dimming available to provide scheduled dimming as specified by the customer.

Optional onboard Adjustable Output module allows the light output and input wattage to be modified to meet site specific requirements, and also can allow a single fixture to be flexibly applied in many different applications.

STANDARDS

Rated for -40°C to 40°C ambient

CSA Certified to U.S. and Canadian standards

Complies with ANSI: C136.2, C136.10, C136.14, C136.31, C136.15, C136.37

Note: Specifications subject to change without notice. Actual performance may differ as a result of end-user environment and application.

AEL American Electric Lighting

Autobahn Series ATBO

Roadway Lighting

Type: 150W SHOEBOX

ORDERING INFORMATION

Example: ATBO 30LEDE10 MVOLT R2

ATB0	20BLEDE10	480	R3
Series	Performance Packages	Voltage	Optics
ATB0 Autobahn LED Roadway	20BLEDE53 [1] 20B Chips, 525mA Driver 20BLEDE70 20B Chips, 700mA Driver 20BLEDE10 20B Chips, 1050mA Driver 20BLEDE13 20B Chips, 1300mA Driver 30BLEDE70 30B Chips, 700mA Driver 30BLEDE85 30B Chips, 850mA Driver 30BLEDE10 30B Chips, 1050mA Driver 30BLEDE13 30B Chips, 1300mA Driver	MVOLT Multi-volt, 120-277V 347 347V 480 480V	R2 Roadway Type II R3 Roadway Type III R4 Roadway Type IV R5 Roadway Type V

3K / BZ / NL / P7 / RFD200357

Options

Color Temperature (CCT)
- 3K 3000K CCT,

Paint
- (Blank) Gray (Standard)
- BK Black
- BZ Bronze
- DDB Dark Bronze
- GI Graphite
- WH White

Surge Protection
- Blank Acuity SPD with inductive filter circuit (Standard)
- MP[2] MOV Pack
- IL[2] SPD with Indicator Light

Terminal Block
- (Blank) Terminal Block (Standard)
- T2 Wired to L1 & L2 Positions

Misc.
- BL External Bubble Level
- CR Enhanced Corrosion Resistant Finish
- HS House-Side Shield
- NL Nema Label
- XL Not CSA Certified

Controls
- (Blank) 3 Pin NEMA Photocontrol Receptacle (Standard)
- P5[3] 5 Pin Photocontrol Receptacle (Dimmable Driver Included)
- P7[3] 7 Pin Photocontrol Receptacle (Dimmable Driver Included)
- NR No Photocontrol Receptacle
- AO[4] Field Adjustable Output
- DM 0V-10V Dimmable Driver (Controls by others)
- ML[5,6] Multi-Level Dimming
- PCSS[2] Solid State Lighting Photocontrol (120-277V)
- PCLL Solid State Long Life Photocontrol
- SH Shorting Cap

Packaging
- (Blank) Single Unit (Standard)
- JP Job Pack (42/Pallet)

Notes
1. 20BLEDE53 not compatible with the following options: P5, P7, AO, DM, ML.
2. Not available in 347 or 480V.
3. Not available with AO, DM, ML options.
4. Not available with DM or ML options.
5. Not available with AO, DM, P5 or P7 options.
6. Dimming Schedule and light level information required from the customer in order to configure product. Contact Infrastructure Technical Support to proceed.

RFD200357= 3K CCT

Note: Specifications subject to change without notice. Actual performance may differ as a result of end-user environment and application.

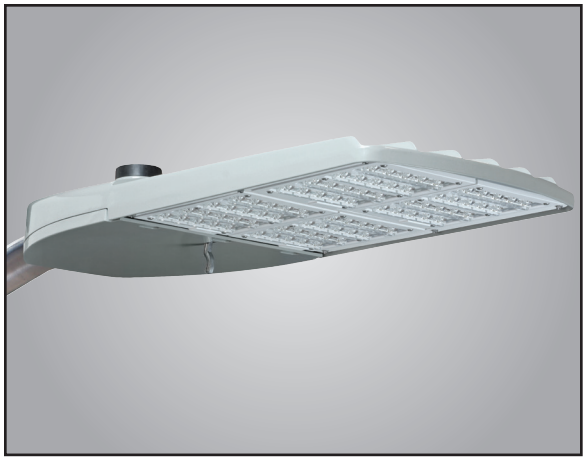
American Electric Lighting®
AEL Headquarters, 3825 Columbus Road, Granville, OH 43023
www.americanelectriclighting.com

Warranty Five-year limited warrantyComplete warranty terms located at:
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx
Actual performance may differ as a result of end-user environment and application.
All values are design or typical values, measured under laboratory conditions at 25 °C.
Specifications subject to change without notice.

Please contact your sales representative for the latest product information.

AutobahnSeries ATB2
Roadway Lighting

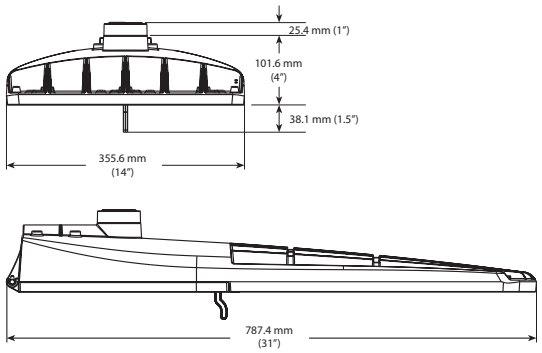
PRODUCT OVERVIEW



Applications:

Roadways
Off ramps
Residential streets
Parking lots

DIMENSIONS



Effective Projected Area (EPA)
The EPA for the ATB2 is 0.78 sq. ft.,
Approx. Wt. = 21 lbs. (9.53 kg)

Features:

OPTICAL

Same Light: Performance is comparable to 250-400W HPS roadway luminaires.

White Light: Correlated color temperature standard 4000K, 70 CRI minimum or optional 5000K, 70 CRI minimum.

Unique IP66 rated LED light engines provided 0% uplight and restrict backlight to within sidewalk depth, providing optimal application coverage and optimal pole spacing.

Available in Type II, III, IV, & V roadway distributions.

ELECTRICAL

Expected Life: LED light engines are rated >100,000 hours at 25°C, L70. Electronic driver has an expected life of 100,000 hours at a 25°C ambient.

Lower Energy: Saves an average of 40-60% over comparable HPS platforms.

Robust Surge Protection: Three different surge protection options provide a minimum of IEEE/ANSI C62.41 Category C (10kV/5kA) protection.

MECHANICAL

Easy to Maintain: Includes standard AEL lineman-friendly features such as tool-less entry, 3 station terminal block and quick disconnects. Bubble level located inside the electrical compartment for easy leveling at installation.

Rugged die-cast aluminum housing is polyester powder-coated for durability and corrosion resistance. Rigorous five-stage pre-treating and painting process yields a finish that achieves a scribe creepage rating of 8 (per ASTM D1654) after over 1000 hours exposure to salt fog chamber (operated per ASTM B117) Optional Enhanced Corrosion Resistant finish (CR) increases the salt spray exposure to 5000 hours.

Four-bolt mast arm mount is adjustable for arms from 1-1/4" to 2" (1-5/8" to 2-3/8" O.D.) diameter and provides a 3G vibration rating per ANSI C136.

Wildlife shield is cast into the housing (not a separate piece).

CONTROLS

NEMA 3 Pin photocontrol receptacle is standard, with the Acuity designed ANSI 5 Pin and 7 Pin receptacles optionally available.

Premium solid state locking sale photocontrol - PCSS (10 year rated life). Extreme long life sold state locking style photocontrol - PCLL (20 year rated life).

Mulit-level dimming available to provide scheduled dimming as specified by the customer.

Optional onboard Adjustable Output module allows the light output and input wattage to be modified to meet site specific requirements, and can also allow a single fixture to be flexibly applied in many different applications.

WARRANTY & STANDARDS

5 year limited warranty. Full warranty terms located at http://www.acuitybrands.com/Libraries/Terms_and_Conds/ABL_LED_Commerical_Outdoor.sflb.ashx

Rated for -40°C to 40°C ambient.

CSA Certified to U.S. and Canadian standards

Complies with ANSI: C136.2, C136.10, C136.14, C136.31, C136.15, C136.37

Note: Specifications subject to change without notice. Actual performance may differ as a result of end-user environment and application.

AEL American Electric Lighting

AutobahnSeries ATB2
Roadway Lighting

Type:250 W SHOEBOX

ORDERING INFORMATION

Example: ATB2 40LEDE70 MVOLT R2

ATB0	20BLEDE10	480	R3
Series	Performance Packages	Voltage	Optics

Series

ATB2 Autobahn LED Roadway & Security

Performance Packages

40BLEDE70	40B Chips, 700mA Driver
40BLEDE10	40B Chips, 1050mA Driver
40BLEDE13	40B Chips, 1300mA Driver
60BLEDE70	60B Chips, 700mA Driver
60BLEDE85	60B Chips, 850mA Driver
60BLEDE10	60B Chips, 1050mA Driver
60BLEDE13	60B Chips, 1300mA Driver
80BLEDE70	80B Chips, 700mA Driver
80BLEDE85	80B Chips, 850mA Driver
80BLEDE10	80B Chips, 1050mA Driver

Voltage

MVOLT	Multi-volt, 120-277V
347	347V
480	480V

Optics

R2	Roadway Type II
R3	Roadway Type III
R4	Roadway Type IV
R5	Roadway Type V

3K / BZ / NL / P7 / RFD200357

Options

Color Temperature (CCT)

3K	3000K

Paint

(Blank)	Gray (Standard)
BK	Black
BZ	Bronze
DDB	Dark Bronze
GI	Graphite
WH	White

Surge Protection

Blank	Acuity SPD with inductive filter (Standard)
MP[1]	MOV Pack
IL[1]	SPD with Indicator Light

Terminal Block

(Blank)	Terminal Block (Standard)
T2	Wired to L1 & L2 Positions

Misc.

BL	External Bubble Level
CR	Enhanced Corrosion Resistant Finish
HS	House-Side Shield
NL	Nema Label
XL	Not CSA Certified

Controls

(Blank)	3 Pin NEMA Photocontrol Receptacle (Standard)
P5	5 Pin Photocontrol Receptacle (Dimmable Driver Included)
P7	7 Pin Photocontrol Receptacle (Dimmable Driver Included)
NR	No Photocontrol Receptacle
AO[2]	Field Adjustable Output
DM	0V-10V Dimmable Driver (Controls by others)
ML[3,4]	Multi-Level Dimming
PCSS[1]	Solid State Lighting Photocontrol (120-277V)
PCLL	Solid State Long Life Photocontrol
SH	Shorting Cap

Packaging

(Blank)	Single Unit (Standard)
JP	Job Pack (24/Pallet)

Notes

1. Not available in 347 or 480V.
2. Not available with DM or ML options.
3. Not available with AO, DM, P5 or P7 options.
4. Dimming schedule and light level information required from the customer in order to configure product. Contact Infrastructure Technical Support to proceed.

RFD200358 = 3K CCT

Note: Specifications subject to change without notice. Actual performance may differ as a result of end-user environment and application.

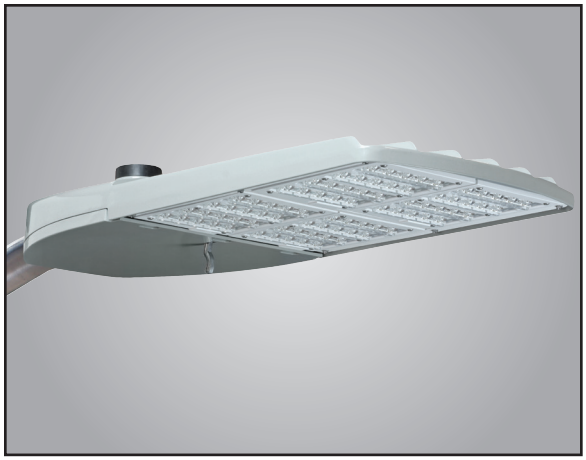
American Electric Lighting®
AEL Headquarters, 3825 Columbus Road, Granville, OH 43023
www.americanelectriclighting.com

Warranty Five-year limited warrantyComplete warranty terms located at:
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx
Actual performance may differ as a result of end-user environment and application.
All values are design or typical values, measured under laboratory conditions at 25 °C.
Specifications subject to change without notice.

Please contact your sales representative for the latest product information.

AutobahnSeries ATB2
Roadway Lighting

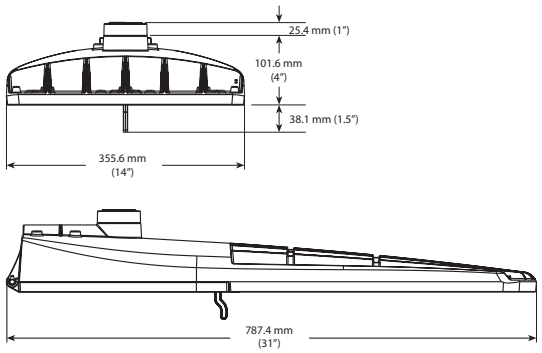
PRODUCT OVERVIEW



Applications:

Roadways
Off ramps
Residential streets
Parking lots

DIMENSIONS



Effective Projected Area (EPA)
The EPA for the ATB2 is 0.78 sq. ft.,
Approx. Wt. = 21 lbs. (9.53 kg)

Features:

OPTICAL

Same Light: Performance is comparable to 250-400W HPS roadway luminaires.

White Light: Correlated color temperature standard 4000K, 70 CRI minimum or optional 5000K, 70 CRI minimum.

Unique IP66 rated LED light engines provided 0% uplight and restrict backlight to within sidewalk depth, providing optimal application coverage and optimal pole spacing.

Available in Type II, III, IV, & V roadway distributions.

ELECTRICAL

Expected Life: LED light engines are rated >100,000 hours at 25°C, L70. Electronic driver has an expected life of 100,000 hours at a 25°C ambient.

Lower Energy: Saves an average of 40-60% over comparable HPS platforms.

Robust Surge Protection: Three different surge protection options provide a minimum of IEEE/ANSI C62.41 Category C (10kV/5kA) protection.

MECHANICAL

Easy to Maintain: Includes standard AEL lineman-friendly features such as tool-less entry, 3 station terminal block and quick disconnects. Bubble level located inside the electrical compartment for easy leveling at installation.

Rugged die-cast aluminum housing is polyester powder-coated for durability and corrosion resistance. Rigorous five-stage pre-treating and painting process yields a finish that achieves a scribe creepage rating of 8 (per ASTM D1654) after over 1000 hours exposure to salt fog chamber (operated per ASTM B117) Optional Enhanced Corrosion Resistant finish (CR) increases the salt spray exposure to 5000 hours.

Four-bolt mast arm mount is adjustable for arms from 1-1/4" to 2" (1-5/8" to 2-3/8" O.D.) diameter and provides a 3G vibration rating per ANSI C136.

Wildlife shield is cast into the housing (not a separate piece).

CONTROLS

NEMA 3 Pin photocontrol receptacle is standard, with the Acuity designed ANSI 5 Pin and 7 Pin receptacles optionally available.

Premium solid state locking sale photocontrol - PCSS (10 year rated life). Extreme long life sold state locking style photocontrol - PCLL (20 year rated life).

Mulit-level dimming available to provide scheduled dimming as specified by the customer.

Optional onboard Adjustable Output module allows the light output and input wattage to be modified to meet site specific requirements, and can also allow a single fixture to be flexibly applied in many different applications.

WARRANTY & STANDARDS

5 year limited warranty. Full warranty terms located at http://www.acuitybrands.com/Libraries/Terms_and_Conds/ABL_LED_Commerical_Outdoor.sflb.ashx

Rated for -40°C to 40°C ambient.

CSA Certified to U.S. and Canadian standards

Complies with ANSI: C136.2, C136.10, C136.14, C136.31, C136.15, C136.37

Note: Specifications subject to change without notice. Actual performance may differ as a result of end-user environment and application.

AEL American Electric Lighting

AutobahnSeries ATB2
Roadway Lighting

Type:400 W SHOEBOX

ORDERING INFORMATION

Example: ATB2 40LEDE70 MVOLT R2

ATB0	20BLEDE10	480	R3
Series	Performance Packages	Voltage	Optics

Series

ATB2 Autobahn LED Roadway & Security

Performance Packages

40BLEDE70	40B Chips, 700mA Driver
40BLEDE10	40B Chips, 1050mA Driver
40BLEDE13	40B Chips, 1300mA Driver
60BLEDE70	60B Chips, 700mA Driver
60BLEDE85	60B Chips, 850mA Driver
60BLEDE10	60B Chips, 1050mA Driver
60BLEDE13	60B Chips, 1300mA Driver
80BLEDE70	80B Chips, 700mA Driver
80BLEDE85	80B Chips, 850mA Driver
80BLEDE10	80B Chips, 1050mA Driver

Voltage

MVOLT	Multi-volt, 120-277V
347	347V
480	480V

Optics

R2	Roadway Type II
R3	Roadway Type III
R4	Roadway Type IV
R5	Roadway Type V

3K / BZ / NL / P7 / RFD200357

Options

Color Temperature (CCT)

3K	3000K

Paint

(Blank)	Gray (Standard)
BK	Black
BZ	Bronze
DDB	Dark Bronze
GI	Graphite
WH	White

Surge Protection

Blank	Acuity SPD with inductive filter (Standard)
MP[1]	MOV Pack
IL[1]	SPD with Indicator Light

Terminal Block

(Blank)	Terminal Block (Standard)
T2	Wired to L1 & L2 Positions

Misc.

BL	External Bubble Level
CR	Enhanced Corrosion Resistant Finish
HS	House-Side Shield
NL	Nema Label
XL	Not CSA Certified

Controls

(Blank)	3 Pin NEMA Photocontrol Receptacle (Standard)
P5	5 Pin Photocontrol Receptacle (Dimmable Driver Included)
P7	7 Pin Photocontrol Receptacle (Dimmable Driver Included)
NR	No Photocontrol Receptacle
AO[2]	Field Adjustable Output
DM	0V-10V Dimmable Driver (Controls by others)
ML[3,4]	Multi-Level Dimming
PCSS[1]	Solid State Lighting Photocontrol (120-277V)
PCLL	Solid State Long Life Photocontrol
SH	Shorting Cap

Packaging

(Blank)	Single Unit (Standard)
JP	Job Pack (24/Pallet)

Notes

1. Not available in 347 or 480V.
2. Not available with DM or ML options.
3. Not available with AO, DM, P5 or P7 options.
4. Dimming schedule and light level information required from the customer in order to configure product. Contact Infrastructure Technical Support to proceed.

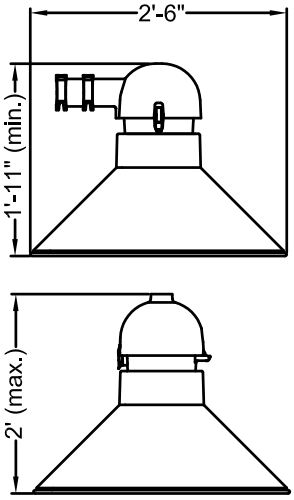
RFD200359 = 3K CCT

Note: Specifications subject to change without notice. Actual performance may differ as a result of end-user environment and application.

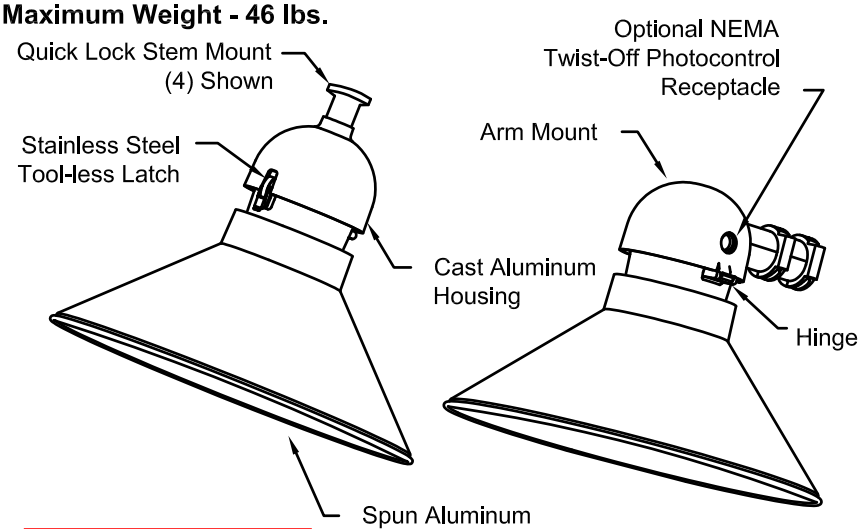
American Electric Lighting®
AEL Headquarters, 3825 Columbus Road, Granville, OH 43023
www.americanelectriclighting.com

Warranty Five-year limited warrantyComplete warranty terms located at:
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx
Actual performance may differ as a result of end-user environment and application.
All values are design or typical values, measured under laboratory conditions at 25 °C.
Specifications subject to change without notice.

Please contact your sales representative for the latest product information.



Maximum Effective Projected Area - 1.2 ft²
Maximum Weight - 46 lbs.



BELL FIXTURE

GlasWerks® LED 2 Hallbrook® Ext

DESIGNER OUTDOOR

EXAMPLE: GELF2 053 4K AS 4 B L3

GELF2	105	3K	AH	4	TDC	R3

ORDERING INFORMATION:

COVER TYPE
GELF2 = HALLBROOK EXTENDED

SOURCE & WATTAGE
053 = 530mA DRIVER (70W)
070 = 700mA DRIVER (100W)
105 = 1050mA DRIVER (140W)

COLOR TEMP.
AM = TRUE AMBER**
3K = 3000K
4K = 4000K
5K = 5000K

VOLTAGE
AS = AUTO-SENSING 120-277V
AH = AUTO-SENSING 347-480V

MOUNTING STYLE
1 = ARM
4 = QUICK LOCK STEM MOUNT

COLOR
A = AS SPECIFIED
B = BLACK
D = DARK BLUE
G = GRAY
H = GRAPHITE
N = GREEN
P = PRIME PAINT
S = SILVER
W - WHITE
Z = BRONZE
TDC = TIGER DRYLAC COLOR (RAL***)
CMC = CUSTOM MATCH COLOR

OPTICS
L3 = ASYMMETRIC FULL CUTOFF LED
L5 = SYMMETRIC FULL CUTOFF LED

NOTE: AM (TRUE AMBER) ONLY AVAILABLE WITH 530mA DRIVER

HOLOPHANE® LEADER IN LIGHTING SOLUTIONS
An AcuityBrandsCompany

3K / BZ / NL / P7 / RFD200357

OPTIONS:
AO = FIELD ADJUSTABLE OUTPUT
D = ROAM 0-10V DIMMING CONTROL
B = BI-LEVEL 0-10V DIMMING CONTROL
H = NEMA TWISTLOCK PHOTOCONTROL RECEPTACLE ONLY
PCS = DTL TWISTLOCK PHOTOCONTROL 120-277 VOLT
P34 = DTL TWISTLOCK PHOTOCONTROL 347V
P48 = DTL TWISTLOCK PHOTOCONTROL 480 VOLT
PSC = SHORTING CAP
P5 = DIMMING PHOTOCONTROL RECEPTACLE - 5 PIN
P7 = DIMMING PHOTOCONTROL RECEPTACLE - 7 PIN
L03 = 3 FEET OF PREWIRED LEADS
L10 = 10 FEET OF PREWIRED LEADS
L20 = 20 FEET OF PREWIRED LEADS
L25 = 25 FEET OF PREWIRED LEADS
L30 = 30 FEET OF PREWIRED LEADS

ACCESSORIES:
SPDPLUGIN = REPLACEMENT SURGE PROTECTOR 120-277V
SPDPLUGIN-48 = REPLACEMENT SURGE PROTECTOR 347-480V

ORDER #:	
TYPE:	
DRAWN:	RAF
DATE:	5-11-15
DWG #:	LUM_GELF2

Specifications

GENERAL DESCRIPTION
The Euro styled luminaire consists of a LED flat glass optical assembly shielded by a decorative formed reflector and a top mounted cast aluminum electrical assembly with a circumferential 1.50 inch reveal.

OPTICAL ASSEMBLY
The optical assembly consists of a thermal resistant flat glass panel mechanically held in a formed aluminum door frame. The door frame is attached to the spun cover with studs and lock nuts. Light from the LED module is distributed by precisely molded optical lens to maximize utilization, uniformity and luminaire spacing. Two LED boards are available for symmetrical or asymmetric distribution.

MOUNTING STYLE (LEVELING FITTER OPTIONS)
The Quick Lock Stem Mounting style is compatible with the following leveling fitters:
- Boston Harbor Decorative Arm Fitter (BHDF13)
- GlasWerks Decorative Arm Fitter (GWDF13)
- West Liberty Decorative Arm Fitter (WLDF13)

ELECTRICAL ASSEMBLY
The cast aluminum electrical housing has a smooth domed contour. A (3) station terminal block is provided that accepts #14 through #2 size wire and has a quick disconnect receptacle. The electrical housing is hinged with a tool-less latch to provide easy access to the gear assembly. The unitized electrical assembly, containing the electronic driver and other electrical components, plugs into the quick disconnect receptacle. The pendant mount version has a welded stem (Quick Lock Stem Mounting), which aides in installation speed. The arm mount version is provided with two U-bolts with washers and nuts and two leveling set screws that lock the housing to a 2 inch nominal (2-3/8" O.D.) horizontal arm and allow a +/- 5 degree adjustment from horizontal to the cover.

ELECTRICAL DRIVER
(Refer to the driver specification sheet for operating characteristics)

FINISH
The luminaire is finished with polyester powder paint to insure maximum durability.

LISTING
The luminaire is CSA listed as suitable for wet locations up to 40° C ambient temperature. IP55 rated electrical chamber, IP66 rated LED optic chamber.

WARRANTY
Limited warranty located at
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

NOTE
Actual performance may differ as a result of end-user environment and application.

Actual wattage may differ by +11% / -6% when operating between 120-480V +/- 10%.

Specification subject to change without notice.

GlasWerks® LED 2 Hallbrook® Ext

DESIGNER OUTDOOR

HOLOPHANE® LEADER IN LIGHTING SOLUTIONS
An AcuityBrandsCompany

ORDER #:
TYPE:
DRAWN: RAF
DATE: 5-11-15
DWG #: LUM_GELF2

Operating Characteristics

TOTAL LUMENS, WHITE LIGHT			
LED mA, CCT	**Input Watts**	**L3**	**L5**
053 3K	75	5597	5918
053 4K	75	6776	7165
053 5K	75	6843	7237
070 3K	99	7015	7418
070 4K	99	8492	8981
070 5K	99	8577	9071
105 3K	153	9034	9554
105 4K	153	10938	11567
105 5K	153	11047	11682

Operating Characteristics

TOTAL LUMENS, AMBER LIGHT			
LED mA, CCT	**Input Watts**	**L3**	**L5**
053 AM	56	1955	2067

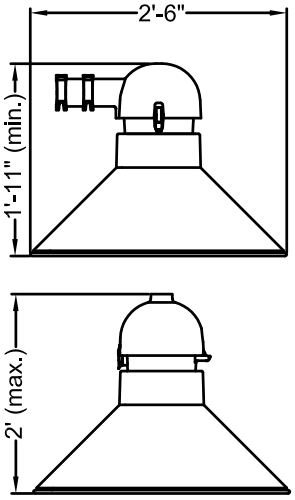
GlasWerks® LED 2 Hallbrook® Ext

DESIGNER OUTDOOR

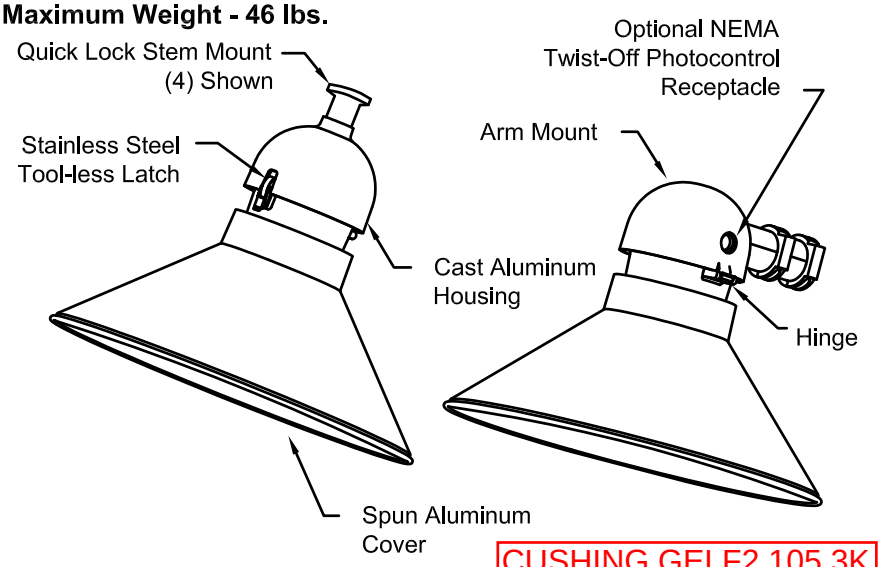
HOLOPHANE® LEADER IN LIGHTING SOLUTIONS
An AcuityBrandsCompany

THIS DRAWING, WHEN APPROVED, SHALL BECOME THE COMPLETE SPECIFICATION FOR THE MATERIAL TO BE FURNISHED BY HOLOPHANE ON THE ORDER NOTED ABOVE. A UNIT OF SIMILAR DESIGN MAY BE SUPPLIED, BUT ONLY AFTER APPROVAL BY THE CUSTOMER IN WRITING. ON POLE ORDERS AN ANCHOR BOLT TEMPLATE PRINT WILL BE SUPPLIED WITH EACH ANCHOR BOLT ORDER TO MATCH THE POLE PROVIDED. THIS PRINT IS THE PROPERTY OF HOLOPHANE AND IS LOANED SUBJECT TO RETURN UPON DEMAND AND UPON EXPRESS CONDITION THAT IT WILL NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO OUR INTERESTS, AND ONLY IN CONNECTION WITH MATERIAL FURNISHED BY HOLOPHANE.

ORDER #:
TYPE:
DRAWN: RAF
DATE: 5-11-15
DWG #: LUM_GELF2



Maximum Effective Projected Area - 1.2 ft²
Maximum Weight - 46 lbs.



CUSHING GELF2 105 3K

GlasWerks® LED 2 Hallbrook® Ext

DESIGNER OUTDOOR

EXAMPLE: GELF2 053 4K AS 4 B L3

GELF2	105	3K	AH	4	TDC	R3

ORDERING INFORMATION:

COVER TYPE
GELF2 = HALLBROOK EXTENDED

SOURCE & WATTAGE
053 = 530mA DRIVER (70W)
070 = 700mA DRIVER (100W)
105 = 1050mA DRIVER (140W)

COLOR TEMP.
AM = TRUE AMBER**
3K = 3000K
4K = 4000K
5K = 5000K

VOLTAGE
AS = AUTO-SENSING 120-277V
AH = AUTO-SENSING 347-480V

MOUNTING STYLE
1 = ARM
4 = QUICK LOCK STEM MOUNT

COLOR
A = AS SPECIFIED
B = BLACK
D = DARK BLUE
G = GRAY
H = GRAPHITE
N = GREEN
P = PRIME PAINT
S = SILVER
W - WHITE
Z = BRONZE
TDC = TIGER DRYLAC COLOR (RAL***)
CMC = CUSTOM MATCH COLOR

OPTICS
L3 = ASYMMETRIC FULL CUTOFF LED
L5 = SYMMETRIC FULL CUTOFF LED

NOTE: AM (TRUE AMBER) ONLY AVAILABLE WITH 530mA DRIVER

HOLOPHANE® LEADER IN LIGHTING SOLUTIONS
An AcuityBrandsCompany

3K / BZ / NL / P7 / RFD200357

OPTIONS:
AO = FIELD ADJUSTABLE OUTPUT
D = ROAM 0-10V DIMMING CONTROL
B = BI-LEVEL 0-10V DIMMING CONTROL
H = NEMA TWISTLOCK PHOTOCONTROL RECEPTACLE ONLY
PCS = DTL TWISTLOCK PHOTOCONTROL 120-277 VOLT
P34 = DTL TWISTLOCK PHOTOCONTROL 347V
P48 = DTL TWISTLOCK PHOTOCONTROL 480 VOLT
PSC = SHORTING CAP
P5 = DIMMING PHOTOCONTROL RECEPTACLE - 5 PIN
P7 = DIMMING PHOTOCONTROL RECEPTACLE - 7 PIN
L03 = 3 FEET OF PREWIRED LEADS
L10 = 10 FEET OF PREWIRED LEADS
L20 = 20 FEET OF PREWIRED LEADS
L25 = 25 FEET OF PREWIRED LEADS
L30 = 30 FEET OF PREWIRED LEADS

ACCESSORIES:
SPDPLUGIN = REPLACEMENT SURGE PROTECTOR 120-277V
SPDPLUGIN-48 = REPLACEMENT SURGE PROTECTOR 347-480V

ORDER #:	
TYPE:	
DRAWN:	RAF
DATE:	5-11-15
DWG #:	LUM_GELF2

Specifications

GENERAL DESCRIPTION
The Euro styled luminaire consists of a LED flat glass optical assembly shielded by a decorative formed reflector and a top mounted cast aluminum electrical assembly with a circumferential 1.50 inch reveal.

OPTICAL ASSEMBLY
The optical assembly consists of a thermal resistant flat glass panel mechanically held in a formed aluminum door frame. The door frame is attached to the spun cover with studs and lock nuts. Light from the LED module is distributed by precisely molded optical lens to maximize utilization, uniformity and luminaire spacing. Two LED boards are available for symmetrical or asymmetric distribution.

MOUNTING STYLE (LEVELING FITTER OPTIONS)
The Quick Lock Stem Mounting style is compatible with the following leveling fitters:
- Boston Harbor Decorative Arm Fitter (BHDF13)
- GlasWerks Decorative Arm Fitter (GWDF13)
- West Liberty Decorative Arm Fitter (WLDF13)

ELECTRICAL ASSEMBLY
The cast aluminum electrical housing has a smooth domed contour. A (3) station terminal block is provided that accepts #14 through #2 size wire and has a quick disconnect receptacle. The electrical housing is hinged with a tool-less latch to provide easy access to the gear assembly. The unitized electrical assembly, containing the electronic driver and other electrical components, plugs into the quick disconnect receptacle. The pendant mount version has a welded stem (Quick Lock Stem Mounting), which aides in installation speed. The arm mount version is provided with two U-bolts with washers and nuts and two leveling set screws that lock the housing to a 2 inch nominal (2-3/8" O.D.) horizontal arm and allow a +/- 5 degree adjustment from horizontal to the cover.

ELECTRICAL DRIVER
(Refer to the driver specification sheet for operating characteristics)

FINISH
The luminaire is finished with polyester powder paint to insure maximum durability.

LISTING
The luminaire is CSA listed as suitable for wet locations up to 40° C ambient temperature. IP55 rated electrical chamber, IP66 rated LED optic chamber.

WARRANTY
Limited warranty located at
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

NOTE
Actual performance may differ as a result of end-user environment and application.

Actual wattage may differ by +11% / -6% when operating between 120-480V +/- 10%.

Specification subject to change without notice.

GlasWerks® LED 2
Hallbrook® Ext

DESIGNER OUTDOOR

HOLOPHANE®
LEADER IN LIGHTING SOLUTIONS
An AcuityBrandsCompany

ORDER #:
TYPE:
DRAWN: RAF
DATE: 5-11-15
DWG #: LUM_GELF2

Operating Characteristics

TOTAL LUMENS, WHITE LIGHT			
LED mA, CCT	**Input Watts**	**L3**	**L5**
053 3K	75	5597	5918
053 4K	75	6776	7165
053 5K	75	6843	7237
070 3K	99	7015	7418
070 4K	99	8492	8981
070 5K	99	8577	9071
105 3K	153	9034	9554
105 4K	153	10938	11567
105 5K	153	11047	11682

Operating Characteristics

TOTAL LUMENS, AMBER LIGHT			
LED mA, CCT	**Input Watts**	**L3**	**L5**
053 AM	56	1955	2067

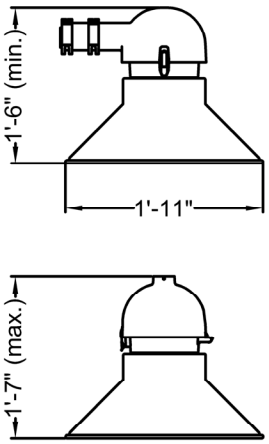
GlasWerks® LED 2 Hallbrook® Ext

DESIGNER OUTDOOR

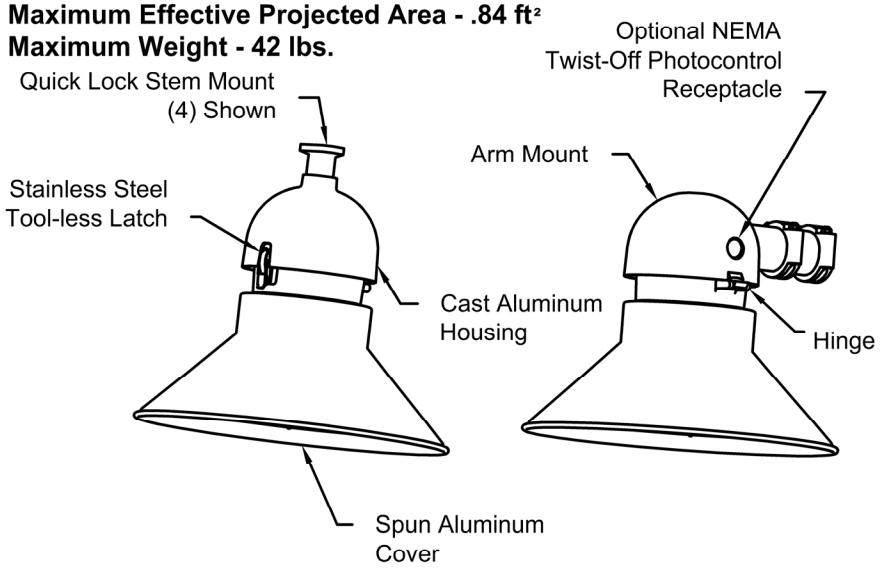
HOLOPHANE® LEADER IN LIGHTING SOLUTIONS
An AcuityBrandsCompany

THIS DRAWING, WHEN APPROVED, SHALL BECOME THE COMPLETE SPECIFICATION FOR THE MATERIAL TO BE FURNISHED BY HOLOPHANE ON THE ORDER NOTED ABOVE. A UNIT OF SIMILAR DESIGN MAY BE SUPPLIED, BUT ONLY AFTER APPROVAL BY THE CUSTOMER IN WRITING. ON POLE ORDERS AN ANCHOR BOLT TEMPLATE PRINT WILL BE SUPPLIED WITH EACH ANCHOR BOLT ORDER TO MATCH THE POLE PROVIDED. THIS PRINT IS THE PROPERTY OF HOLOPHANE AND IS LOANED SUBJECT TO RETURN UPON DEMAND AND UPON EXPRESS CONDITION THAT IT WILL NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO OUR INTERESTS, AND ONLY IN CONNECTION WITH MATERIAL FURNISHED BY HOLOPHANE.

ORDER #:
TYPE:
DRAWN: RAF
DATE: 5-11-15
DWG #: LUM_GELF2



Maximum Effective Projected Area - .84 ft²
Maximum Weight - 42 lbs.



CUSHING GSLF2

GlasWerks® LED 2 Hallbrook®

DESIGNER OUTDOOR

EXAMPLE: GSLF2 053 4K AS 4 B L3

GSLF2 | 105 | 3K | AH | 4 | TDC | R3

ORDERING INFORMATION:

COVER TYPE
GSLF2 = HALLBROOK

SOURCE & WATTAGE
053 = 530mA DRIVER (70W)
070 = 700mA DRIVER (100W)
105 = 1050mA DRIVER (140W)

COLOR TEMP.
AM = TRUE AMBER**
3K = 3000K
4K = 4000K
5K = 5000K

VOLTAGE
AS = AUTO-SENSING 120-277V
AH = AUTO-SENSING 347-480V

MOUNTING STYLE
1 = ARM
4 = QUICK LOCK STEM MOUNT

COLOR
A = AS SPECIFIED
B = BLACK
D = DARK BLUE
G = GRAY
H = GRAPHITE
N = GREEN
P = PRIME PAINT
S = SILVER
W - WHITE
Z = BRONZE
TDC = TIGER DRYLAC COLOR (RAL***)
CMC = CUSTOM MATCH COLOR

OPTICS
L3 = ASYMMETRIC FULL CUTOFF LED
L5 = SYMMETRIC FULL CUTOFF LED

****NOTE:** AM (TRUE AMBER) ONLY AVAILABLE WITH 530mA DRIVER

HOLOPHANE® LEADER IN LIGHTING SOLUTIONS
An AcuityBrandsCompany

3K / BZ / NL / P7 / RFD200357

OPTIONS:
AO = FIELD ADJUSTABLE OUTPUT
D = ROAM 0-10V DIMMING CONTROL
B = BI-LEVEL 0-10V DIMMING CONTROL
H = NEMA TWISTLOCK PHOTOCONTROL RECEPTACLE ONLY
PCS = DTL TWISTLOCK PHOTOCONTROL 120-277 VOLT
P34 = DTL TWISTLOCK PHOTOCONTROL 347V
P48 = DTL TWISTLOCK PHOTOCONTROL 480 VOLT
PSC = SHORTING CAP
P5 = DIMMING PHOTOCONTROL RECEPTACLE - 5 PIN
P7 = DIMMING PHOTOCONTROL RECEPTACLE - 7 PIN
L03 = 3 FEET OF PREWIRED LEADS
L10 = 10 FEET OF PREWIRED LEADS
L20 = 20 FEET OF PREWIRED LEADS
L25 = 25 FEET OF PREWIRED LEADS
L30 = 30 FEET OF PREWIRED LEADS

ACCESSORIES:
SPDPLUGIN = REPLACEMENT SURGE PROTECTOR 120-277V
SPDPLUGIN-48 = REPLACEMENT SURGE PROTECTOR 347-480V

ORDER #:
TYPE:
DRAWN: RAF
DATE: 5-11-15
DWG #: LUM_GSLF2

Specifications

GENERAL DESCRIPTION
The Euro styled luminaire consists of a LED flat glass optical assembly shielded by a decorative formed reflector and a top mounted cast aluminum electrical assembly with a circumferential 1.50 inch reveal.

OPTICAL ASSEMBLY
The optical assembly consists of a thermal resistant flat glass panel mechanically held in a formed aluminum door frame. The door frame is attached to the spun cover with studs and lock nuts. Light from the LED module is distributed by precisely molded optical lens to maximize utilization, uniformity and luminaire spacing. Two LED boards are available for symmetrical or asymmetric distribution.

MOUNTING STYLE (LEVELING FITTER OPTIONS)
The Quick Lock Stem Mounting style is compatible with the following leveling fitters:
- Boston Harbor Decorative Arm Fitter (BHDF13)
- GlasWerks Decorative Arm Fitter (GWDF13)
- West Liberty Decorative Arm Fitter (WLDF13)

ELECTRICAL ASSEMBLY
The cast aluminum electrical housing has a smooth domed contour. A (3) station terminal block is provided that accepts #14 through #2 size wire and has a quick disconnect receptacle. The electrical housing is hinged with a tool-less latch to provide easy access to the gear assembly. The unitized electrical assembly, containing the electronic driver and other electrical components, plugs into the quick disconnect receptacle. The pendant mount version has a welded stem (Quick Lock Stem Mounting), which aides in installation speed. The arm mount version is provided with two U-bolts with washers and nuts and two leveling set screws that lock the housing to a 2 inch nominal (2-3/8" O.D.) horizontal arm and allow a +/- 5 degree adjustment from horizontal to the cover.

ELECTRICAL DRIVER
(Refer to the driver specification sheet for operating characteristics)

FINISH
The luminaire is finished with polyester powder paint to insure maximum durability.

LISTING
The luminaire is CSA listed as suitable for wet locations up to 40° C ambient temperature. IP55 rated electrical chamber, IP66 rated LED optic chamber.

WARRANTY
Limited warranty located at
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

NOTE
Actual performance may differ as a result of end-user environment and application.

Actual wattage may differ by +11% / -6% when operating between 120-480V +/- 10%.

Specification subject to change without notice.

GlasWerks® LED 2
Hallbrook®

DESIGNER OUTDOOR

HOLOPHANE®
LEADER IN LIGHTING SOLUTIONS
An AcuityBrandsCompany

ORDER #:
TYPE:
DRAWN: RAF
DATE: 5-11-15
DWG #: LUM_GSLF2

Operating Characteristics

TOTAL LUMENS, WHITE LIGHT			
LED mA, CCT	**Input Watts**	**L3**	**L5**
053 3K	**75**	**5593**	**5914**
053 4K	**75**	**6771**	**7160**
053 5K	**75**	**6838**	**7232**
070 3K	**99**	**7010**	**7413**
070 4K	**99**	**8486**	**8974**
070 5K	**99**	**8571**	**9064**
105 3K	**153**	**9028**	**9547**
105 4K	**153**	**10930**	**11558**
105 5K	**153**	**11039**	**11674**

Operating Characteristics

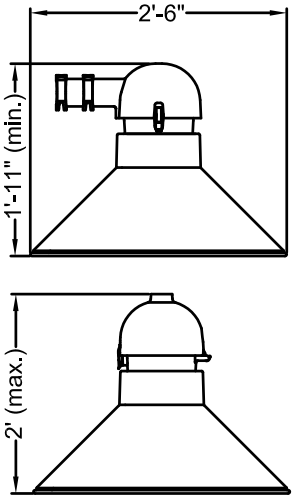
TOTAL LUMENS, AMBER LIGHT			
LED mA, CCT	**Input Watts**	**L3**	**L5**
053 AM	**56**	**1865**	**1972**

GlasWerks® LED 2®
Hallbrook

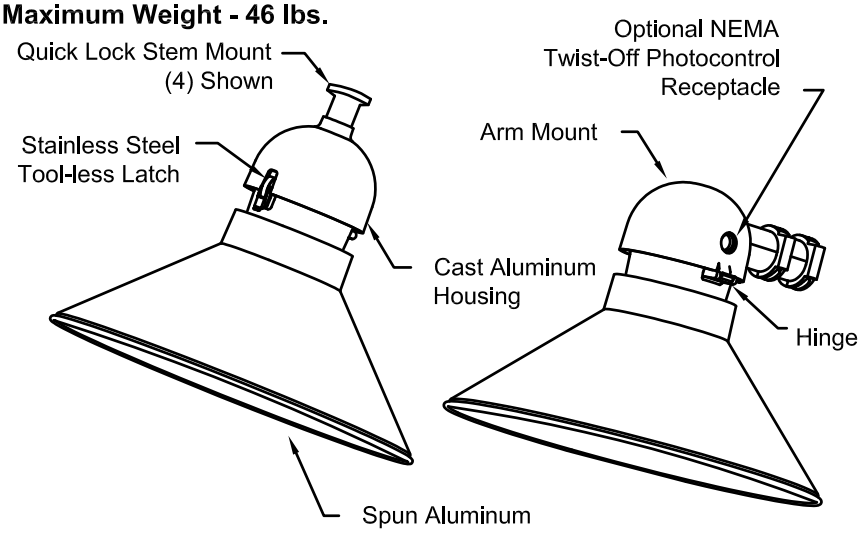
DESIGNER
OUTDOOR

HOLOPHANE®
LEADER IN LIGHTING SOLUTIONS
An AcuityBrandsCompany

ORDER #:
TYPE:
DRAWN: RAF
DATE: 5-11-15
DWG #: LUM_GSLF2



Maximum Effective Projected Area - 1.2 ft²
Maximum Weight - 46 lbs.



DOWNTOWN GELF2

GlasWerks® LED 2 Hallbrook® Ext

DESIGNER OUTDOOR

EXAMPLE: GELF2 053 4K AS 4 B L3

GELF2 | 105 | 3K | AH | 4 | TDC | R3

ORDERING INFORMATION:

COVER TYPE
GELF2 = HALLBROOK EXTENDED

SOURCE & WATTAGE
053 = 530mA DRIVER (70W)
070 = 700mA DRIVER (100W)
105 = 1050mA DRIVER (140W)

COLOR TEMP.
AM = TRUE AMBER**
3K = 3000K
4K = 4000K
5K = 5000K

VOLTAGE
AS = AUTO-SENSING 120-277V
AH = AUTO-SENSING 347-480V

MOUNTING STYLE
1 = ARM
4 = QUICK LOCK STEM MOUNT

COLOR
A = AS SPECIFIED
B = BLACK
D = DARK BLUE
G = GRAY
H = GRAPHITE
N = GREEN
P = PRIME PAINT
S = SILVER
W - WHITE
Z = BRONZE
TDC = TIGER DRYLAC COLOR (RAL***)
CMC = CUSTOM MATCH COLOR

OPTICS
L3 = ASYMMETRIC FULL CUTOFF LED
L5 = SYMMETRIC FULL CUTOFF LED

NOTE: AM (TRUE AMBER) ONLY AVAILABLE WITH 530mA DRIVER

HOLOPHANE® LEADER IN LIGHTING SOLUTIONS
An AcuityBrandsCompany

3K / BZ / NL / P7 / RFD200357

OPTIONS:
AO = FIELD ADJUSTABLE OUTPUT
D = ROAM 0-10V DIMMING CONTROL
B = BI-LEVEL 0-10V DIMMING CONTROL
H = NEMA TWISTLOCK PHOTOCONTROL RECEPTACLE ONLY
PCS = DTL TWISTLOCK PHOTOCONTROL 120-277 VOLT
P34 = DTL TWISTLOCK PHOTOCONTROL 347V
P48 = DTL TWISTLOCK PHOTOCONTROL 480 VOLT
PSC = SHORTING CAP
P5 = DIMMING PHOTOCONTROL RECEPTACLE - 5 PIN
P7 = DIMMING PHOTOCONTROL RECEPTACLE - 7 PIN
L03 = 3 FEET OF PREWIRED LEADS
L10 = 10 FEET OF PREWIRED LEADS
L20 = 20 FEET OF PREWIRED LEADS
L25 = 25 FEET OF PREWIRED LEADS
L30 = 30 FEET OF PREWIRED LEADS

ACCESSORIES:
SPDPLUGIN = REPLACEMENT SURGE PROTECTOR 120-277V
SPDPLUGIN-48 = REPLACEMENT SURGE PROTECTOR 347-480V

ORDER #:
TYPE:
DRAWN: RAF
DATE: 5-11-15
DWG #: LUM_GELF2

Specifications

GENERAL DESCRIPTION
The Euro styled luminaire consists of a LED flat glass optical assembly shielded by a decorative formed reflector and a top mounted cast aluminum electrical assembly with a circumferential 1.50 inch reveal.

OPTICAL ASSEMBLY
The optical assembly consists of a thermal resistant flat glass panel mechanically held in a formed aluminum door frame. The door frame is attached to the spun cover with studs and lock nuts. Light from the LED module is distributed by precisely molded optical lens to maximize utilization, uniformity and luminaire spacing. Two LED boards are available for symmetrical or asymmetric distribution.

MOUNTING STYLE (LEVELING FITTER OPTIONS)
The Quick Lock Stem Mounting style is compatible with the following leveling fitters:
- Boston Harbor Decorative Arm Fitter (BHDF13)
- GlasWerks Decorative Arm Fitter (GWDF13)
- West Liberty Decorative Arm Fitter (WLDF13)

ELECTRICAL ASSEMBLY
The cast aluminum electrical housing has a smooth domed contour. A (3) station terminal block is provided that accepts #14 through #2 size wire and has a quick disconnect receptacle. The electrical housing is hinged with a tool-less latch to provide easy access to the gear assembly. The unitized electrical assembly, containing the electronic driver and other electrical components, plugs into the quick disconnect receptacle. The pendant mount version has a welded stem (Quick Lock Stem Mounting), which aides in installation speed. The arm mount version is provided with two U-bolts with washers and nuts and two leveling set screws that lock the housing to a 2 inch nominal (2-3/8" O.D.) horizontal arm and allow a +/- 5 degree adjustment from horizontal to the cover.

ELECTRICAL DRIVER
(Refer to the driver specification sheet for operating characteristics)

FINISH
The luminaire is finished with polyester powder paint to insure maximum durability.

LISTING
The luminaire is CSA listed as suitable for wet locations up to 40° C ambient temperature. IP55 rated electrical chamber, IP66 rated LED optic chamber.

WARRANTY
Limited warranty located at
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

NOTE
Actual performance may differ as a result of end-user environment and application.

Actual wattage may differ by +11% / -6% when operating between 120-480V +/- 10%.

Specification subject to change without notice.

GlasWerks® LED 2
Hallbrook® Ext

DESIGNER OUTDOOR

HOLOPHANE®
LEADER IN LIGHTING SOLUTIONS
An AcuityBrandsCompany

ORDER #:
TYPE:
DRAWN: RAF
DATE: 5-11-15
DWG #: LUM_GELF2

Operating Characteristics

TOTAL LUMENS, WHITE LIGHT			
LED mA, CCT	**Input Watts**	**L3**	**L5**
053 3K	75	5597	5918
053 4K	75	6776	7165
053 5K	75	6843	7237
070 3K	99	7015	7418
070 4K	99	8492	8981
070 5K	99	8577	9071
105 3K	153	9034	9554
105 4K	153	10938	11567
105 5K	153	11047	11682

Operating Characteristics

TOTAL LUMENS, AMBER LIGHT			
LED mA, CCT	**Input Watts**	**L3**	**L5**
053 AM	56	1955	2067

GlasWerks® LED 2 Hallbrook® Ext

DESIGNER OUTDOOR

HOLOPHANE® LEADER IN LIGHTING SOLUTIONS
An AcuityBrandsCompany

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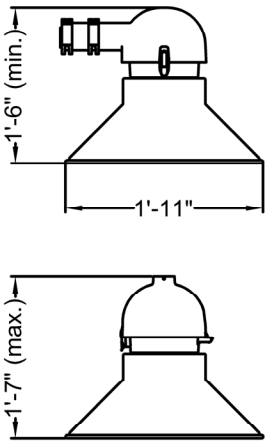
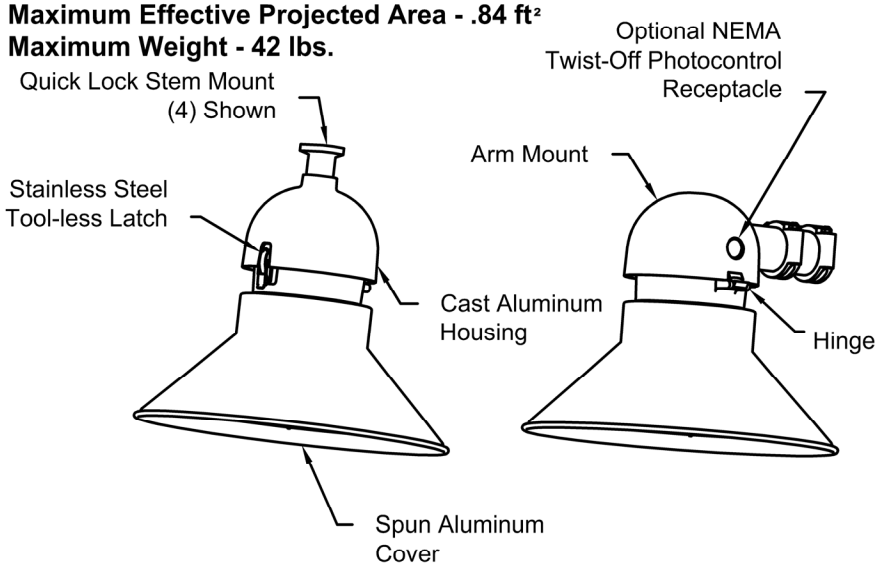
DATE: 5-11-15
DWG #: LUM_GELF2



Maximum Effective Projected Area - .84 ft²
Maximum Weight - 42 lbs.



DOWNTOWN GSLF2

GlasWerks® LED 2 Hallbrook®

DESIGNER OUTDOOR

EXAMPLE: GSLF2 053 4K AS 4 B L3

GSLF2 | 105 | 3K | AH | 4 | TDC | R3

COVER TYPE
GSLF2 = HALLBROOK

SOURCE & WATTAGE
053 = 530mA DRIVER (70W)
070 = 700mA DRIVER (100W)
105 = 1050mA DRIVER (140W)

COLOR TEMP.
AM = TRUE AMBER**
3K = 3000K
4K = 4000K
5K = 5000K

VOLTAGE
AS = AUTO-SENSING 120-277V
AH = AUTO-SENSING 347-480V

MOUNTING STYLE
1 = ARM
4 = QUICK LOCK STEM MOUNT

COLOR
A = AS SPECIFIED
B = BLACK
D = DARK BLUE
G = GRAY
H = GRAPHITE
N = GREEN
P = PRIME PAINT
S = SILVER
W - WHITE
Z = BRONZE
TDC = TIGER DRYLAC COLOR (RAL***)
CMC = CUSTOM MATCH COLOR

OPTICS
L3 = ASYMMETRIC FULL CUTOFF LED
L5 = SYMMETRIC FULL CUTOFF LED

ORDERING INFORMATION:

****NOTE:** AM (TRUE AMBER) ONLY AVAILABLE WITH 530mA DRIVER

3K / BZ / NL / P7 / RFD200357

OPTIONS:
AO = FIELD ADJUSTABLE OUTPUT
D = ROAM 0-10V DIMMING CONTROL
B = BI-LEVEL 0-10V DIMMING CONTROL
H = NEMA TWISTLOCK PHOTOCONTROL RECEPTACLE ONLY
PCS = DTL TWISTLOCK PHOTOCONTROL 120-277 VOLT
P34 = DTL TWISTLOCK PHOTOCONTROL 347V
P48 = DTL TWISTLOCK PHOTOCONTROL 480 VOLT
PSC = SHORTING CAP
P5 = DIMMING PHOTOCONTROL RECEPTACLE - 5 PIN
P7 = DIMMING PHOTOCONTROL RECEPTACLE - 7 PIN
L03 = 3 FEET OF PREWIRED LEADS
L10 = 10 FEET OF PREWIRED LEADS
L20 = 20 FEET OF PREWIRED LEADS
L25 = 25 FEET OF PREWIRED LEADS
L30 = 30 FEET OF PREWIRED LEADS

ACCESSORIES:
SPDPLUGIN = REPLACEMENT SURGE PROTECTOR 120-277V
SPDPLUGIN-48 = REPLACEMENT SURGE PROTECTOR 347-480V

HOLOPHANE® LEADER IN LIGHTING SOLUTIONS
An AcuityBrandsCompany

ORDER #:
TYPE:
DRAWN: RAF
DATE: 5-11-15
DWG #: LUM_GSLF2

Specifications

GENERAL DESCRIPTION
The Euro styled luminaire consists of a LED flat glass optical assembly shielded by a decorative formed reflector and a top mounted cast aluminum electrical assembly with a circumferential 1.50 inch reveal.

OPTICAL ASSEMBLY
The optical assembly consists of a thermal resistant flat glass panel mechanically held in a formed aluminum door frame. The door frame is attached to the spun cover with studs and lock nuts. Light from the LED module is distributed by precisely molded optical lens to maximize utilization, uniformity and luminaire spacing. Two LED boards are available for symmetrical or asymmetric distribution.

MOUNTING STYLE (LEVELING FITTER OPTIONS)
The Quick Lock Stem Mounting style is compatible with the following leveling fitters:
- Boston Harbor Decorative Arm Fitter (BHDF13)
- GlasWerks Decorative Arm Fitter (GWDF13)
- West Liberty Decorative Arm Fitter (WLDF13)

ELECTRICAL ASSEMBLY
The cast aluminum electrical housing has a smooth domed contour. A (3) station terminal block is provided that accepts #14 through #2 size wire and has a quick disconnect receptacle. The electrical housing is hinged with a tool-less latch to provide easy access to the gear assembly. The unitized electrical assembly, containing the electronic driver and other electrical components, plugs into the quick disconnect receptacle. The pendant mount version has a welded stem (Quick Lock Stem Mounting), which aides in installation speed. The arm mount version is provided with two U-bolts with washers and nuts and two leveling set screws that lock the housing to a 2 inch nominal (2-3/8" O.D.) horizontal arm and allow a +/- 5 degree adjustment from horizontal to the cover.

ELECTRICAL DRIVER
(Refer to the driver specification sheet for operating characteristics)

FINISH
The luminaire is finished with polyester powder paint to insure maximum durability.

LISTING
The luminaire is CSA listed as suitable for wet locations up to 40° C ambient temperature. IP55 rated electrical chamber, IP66 rated LED optic chamber.

WARRANTY
Limited warranty located at
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

NOTE
Actual performance may differ as a result of end-user environment and application.

Actual wattage may differ by +11% / -6% when operating between 120-480V +/- 10%.

Specification subject to change without notice.

GlasWerks® LED 2
Hallbrook®

DESIGNER OUTDOOR

HOLOPHANE®
LEADER IN LIGHTING SOLUTIONS
An AcuityBrandsCompany

ORDER #:
TYPE:
DRAWN: RAF
DATE: 5-11-15
DWG #: LUM_GSLF2

Operating Characteristics

TOTAL LUMENS, WHITE LIGHT			
LED mA, CCT	**Input Watts**	**L3**	**L5**
053 3K	**75**	**5593**	**5914**
053 4K	**75**	**6771**	**7160**
053 5K	**75**	**6838**	**7232**
070 3K	**99**	**7010**	**7413**
070 4K	**99**	**8486**	**8974**
070 5K	**99**	**8571**	**9064**
105 3K	**153**	**9028**	**9547**
105 4K	**153**	**10930**	**11558**
105 5K	**153**	**11039**	**11674**

Operating Characteristics

TOTAL LUMENS, AMBER LIGHT			
LED mA, CCT	**Input Watts**	**L3**	**L5**
053 AM	**56**	**1865**	**1972**

GlasWerks® LED 2®
Hallbrook

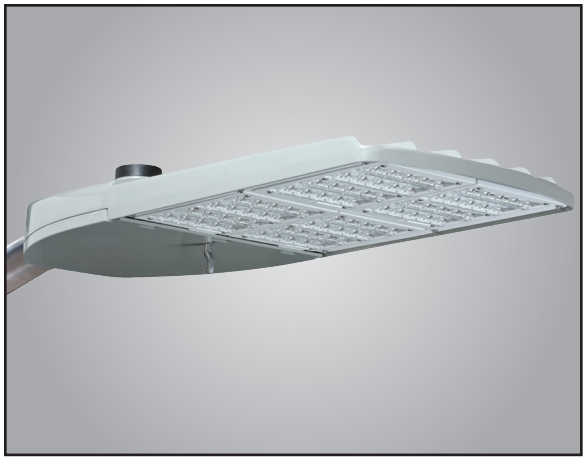
DESIGNER
OUTDOOR

HOLOPHANE®
LEADER IN LIGHTING SOLUTIONS
An AcuityBrandsCompany

ORDER #:
TYPE:
DRAWN: RAF
DATE: 5-11-15
DWG #: LUM_GSLF2

AutobahnSeries ATB2
Roadway Lighting

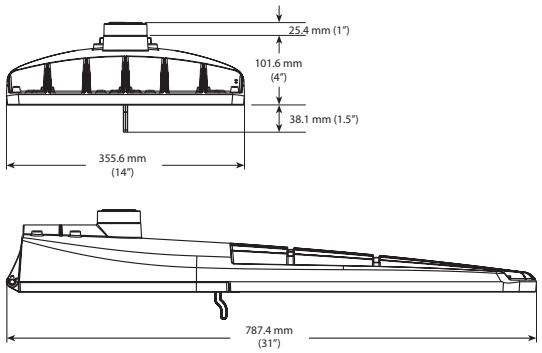
PRODUCT OVERVIEW



Applications:

Roadways
Off ramps
Residential streets
Parking lots

DIMENSIONS



Effective Projected Area (EPA)
The EPA for the ATB2 is 0.78 sq. ft.,
Approx. Wt. = 21 lbs. (9.53 kg)

Features:

OPTICAL

Same Light: Performance is comparable to 250-400W HPS roadway luminaires.

White Light: Correlated color temperature standard 4000K, 70 CRI minimum or optional 5000K, 70 CRI minimum.

Unique IP66 rated LED light engines provided 0% uplight and restrict backlight to within sidewalk depth, providing optimal application coverage and optimal pole spacing.

Available in Type II, III, IV, & V roadway distributions.

ELECTRICAL

Expected Life: LED light engines are rated >100,000 hours at 25°C, L70. Electronic driver has an expected life of 100,000 hours at a 25°C ambient.

Lower Energy: Saves an average of 40-60% over comparable HPS platforms.

Robust Surge Protection: Three different surge protection options provide a minimum of IEEE/ANSI C62.41 Category C (10kV/5kA) protection.

MECHANICAL

Easy to Maintain: Includes standard AEL lineman-friendly features such as tool-less entry, 3 station terminal block and quick disconnects. Bubble level located inside the electrical compartment for easy leveling at installation.

Rugged die-cast aluminum housing is polyester powder-coated for durability and corrosion resistance. Rigorous five-stage pre-treating and painting process yields a finish that achieves a scribe creepage rating of 8 (per ASTM D1654) after over 1000 hours exposure to salt fog chamber (operated per ASTM B117) Optional Enhanced Corrosion Resistant finish (CR) increases the salt spray exposure to 5000 hours.

Four-bolt mast arm mount is adjustable for arms from 1-1/4" to 2" (1-5/8" to 2-3/8" O.D.) diameter and provides a 3G vibration rating per ANSI C136.

Wildlife shield is cast into the housing (not a separate piece).

CONTROLS

NEMA 3 Pin photocontrol receptacle is standard, with the Acuity designed ANSI 5 Pin and 7 Pin receptacles optionally available.

Premium solid state locking sale photocontrol - PCSS (10 year rated life). Extreme long life sold state locking style photocontrol - PCLL (20 year rated life).

Mulit-level dimming available to provide scheduled dimming as specified by the customer.

Optional onboard Adjustable Output module allows the light output and input wattage to be modified to meet site specific requirements, and can also allow a single fixture to be flexibly applied in many different applications.

WARRANTY & STANDARDS

5 year limited warranty. Full warranty terms located at http://www.acuitybrands.com/Libraries/Terms_and_Conds/ABL_LED_Commerical_Outdoor.sflb.ashx

Rated for -40°C to 40°C ambient.

CSA Certified to U.S. and Canadian standards

Complies with ANSI: C136.2, C136.10, C136.14, C136.31, C136.15, C136.37

Note: Specifications subject to change without notice. Actual performance may differ as a result of end-user environment and application.

AEL American Electric Lighting

AutobahnSeries ATB2
Roadway Lighting

Type:INTERSECTION

ORDERING INFORMATION

Example: ATB2 40LEDE70 MVOLT R2

ATB0	20BLEDE10	480	R3
Series	Performance Packages	Voltage	Optics

Series

ATB2 Autobahn LED Roadway & Security

Performance Packages

40BLEDE70	40B Chips, 700mA Driver
40BLEDE10	40B Chips, 1050mA Driver
40BLEDE13	40B Chips, 1300mA Driver
60BLEDE70	60B Chips, 700mA Driver
60BLEDE85	60B Chips, 850mA Driver
60BLEDE10	60B Chips, 1050mA Driver
60BLEDE13	60B Chips, 1300mA Driver
80BLEDE70	80B Chips, 700mA Driver
80BLEDE85	80B Chips, 850mA Driver
80BLEDE10	80B Chips, 1050mA Driver

Voltage

MVOLT	Multi-volt, 120-277V
347	347V
480	480V

Optics

R2	Roadway Type II
R3	Roadway Type III
R4	Roadway Type IV
R5	Roadway Type V

3K / BZ / NL / P7 / RFD200357

Options

Color Temperature (CCT)

3K	3000K

Paint

(Blank)	Gray (Standard)
BK	Black
BZ	Bronze
DDB	Dark Bronze
GI	Graphite
WH	White

Surge Protection

Blank	Acuity SPD with inductive filter (Standard)
MP[1]	MOV Pack
IL[1]	SPD with Indicator Light

Terminal Block

(Blank)	Terminal Block (Standard)
T2	Wired to L1 & L2 Positions

Misc.

BL	External Bubble Level
CR	Enhanced Corrosion Resistant Finish
HS	House-Side Shield
NL	Nema Label
XL	Not CSA Certified

Controls

(Blank)	3 Pin NEMA Photocontrol Receptacle (Standard)
P5	5 Pin Photocontrol Receptacle (Dimmable Driver Included)
P7	7 Pin Photocontrol Receptacle (Dimmable Driver Included)
NR	No Photocontrol Receptacle
AO[2]	Field Adjustable Output
DM	0V-10V Dimmable Driver (Controls by others)
ML[3,4]	Multi-Level Dimming
PCSS[1]	Solid State Lighting Photocontrol (120-277V)
PCLL	Solid State Long Life Photocontrol
SH	Shorting Cap

Packaging

(Blank)	Single Unit (Standard)
JP	Job Pack (24/Pallet)

Notes

1. Not available in 347 or 480V.
2. Not available with DM or ML options.
3. Not available with AO, DM, P5 or P7 options.
4. Dimming schedule and light level information required from the customer in order to configure product. Contact Infrastructure Technical Support to proceed.

RFD200734 = 3K CCT

Note: Specifications subject to change without notice. Actual performance may differ as a result of end-user environment and application.

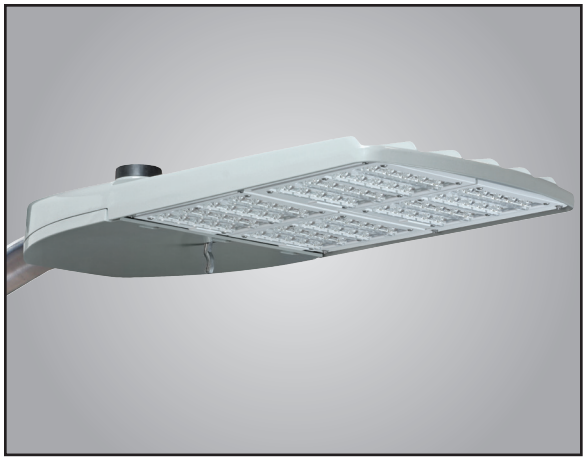
American Electric Lighting®
AEL Headquarters, 3825 Columbus Road, Granville, OH 43023
www.americanelectriclighting.com

Warranty Five-year limited warrantyComplete warranty terms located at:
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx
Actual performance may differ as a result of end-user environment and application.
All values are design or typical values, measured under laboratory conditions at 25 °C.
Specifications subject to change without notice.

Please contact your sales representative for the latest product information.

AutobahnSeries ATB2
Roadway Lighting

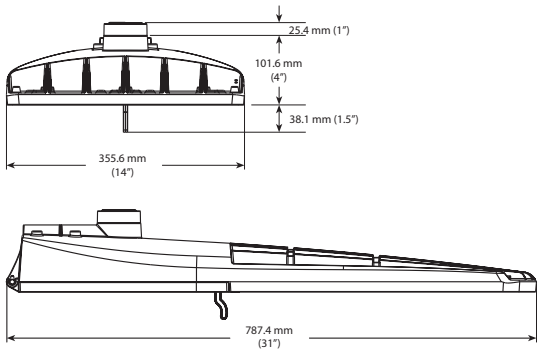
PRODUCT OVERVIEW



Applications:

Roadways
Off ramps
Residential streets
Parking lots

DIMENSIONS



Effective Projected Area (EPA)
The EPA for the ATB2 is 0.78 sq. ft.,
Approx. Wt. = 21 lbs. (9.53 kg)

Features:

OPTICAL

Same Light: Performance is comparable to 250-400W HPS roadway luminaires.

White Light: Correlated color temperature standard 4000K, 70 CRI minimum or optional 5000K, 70 CRI minimum.

Unique IP66 rated LED light engines provided 0% uplight and restrict backlight to within sidewalk depth, providing optimal application coverage and optimal pole spacing.

Available in Type II, III, IV, & V roadway distributions.

ELECTRICAL

Expected Life: LED light engines are rated >100,000 hours at 25°C, L70. Electronic driver has an expected life of 100,000 hours at a 25°C ambient.

Lower Energy: Saves an average of 40-60% over comparable HPS platforms.

Robust Surge Protection: Three different surge protection options provide a minimum of IEEE/ANSI C62.41 Category C (10kV/5kA) protection.

MECHANICAL

Easy to Maintain: Includes standard AEL lineman-friendly features such as tool-less entry, 3 station terminal block and quick disconnects. Bubble level located inside the electrical compartment for easy leveling at installation.

Rugged die-cast aluminum housing is polyester powder-coated for durability and corrosion resistance. Rigorous five-stage pre-treating and painting process yields a finish that achieves a scribe creepage rating of 8 (per ASTM D1654) after over 1000 hours exposure to salt fog chamber (operated per ASTM B117) Optional Enhanced Corrosion Resistant finish (CR) increases the salt spray exposure to 5000 hours.

Four-bolt mast arm mount is adjustable for arms from 1-1/4" to 2" (1-5/8" to 2-3/8" O.D.) diameter and provides a 3G vibration rating per ANSI C136.

Wildlife shield is cast into the housing (not a separate piece).

CONTROLS

NEMA 3 Pin photocontrol receptacle is standard, with the Acuity designed ANSI 5 Pin and 7 Pin receptacles optionally available.

Premium solid state locking sale photocontrol - PCSS (10 year rated life). Extreme long life sold state locking style photocontrol - PCLL (20 year rated life).

Mulit-level dimming available to provide scheduled dimming as specified by the customer.

Optional onboard Adjustable Output module allows the light output and input wattage to be modified to meet site specific requirements, and can also allow a single fixture to be flexibly applied in many different applications.

WARRANTY & STANDARDS

5 year limited warranty. Full warranty terms located at http://www.acuitybrands.com/Libraries/Terms_and_Conds/ABL_LED_Commerical_Outdoor.sflb.ashx

Rated for -40°C to 40°C ambient.

CSA Certified to U.S. and Canadian standards

Complies with ANSI: C136.2, C136.10, C136.14, C136.31, C136.15, C136.37

Note: Specifications subject to change without notice. Actual performance may differ as a result of end-user environment and application.

AEL American Electric Lighting

AutobahnSeries ATB2
Roadway Lighting

Type:INTERSECTION

ORDERING INFORMATION

Example: ATB2 40LEDE70 MVOLT R2

ATB0	20BLEDE10	480	R3
Series	Performance Packages	Voltage	Optics

Series

ATB2 Autobahn LED Roadway & Security

Performance Packages

40BLEDE70	40B Chips, 700mA Driver
40BLEDE10	40B Chips, 1050mA Driver
40BLEDE13	40B Chips, 1300mA Driver
60BLEDE70	60B Chips, 700mA Driver
60BLEDE85	60B Chips, 850mA Driver
60BLEDE10	60B Chips, 1050mA Driver
60BLEDE13	60B Chips, 1300mA Driver
80BLEDE70	80B Chips, 700mA Driver
80BLEDE85	80B Chips, 850mA Driver
80BLEDE10	80B Chips, 1050mA Driver

Voltage

MVOLT	Multi-volt, 120-277V
347	347V
480	480V

Optics

R2	Roadway Type II
R3	Roadway Type III
R4	Roadway Type IV
R5	Roadway Type V

3K / BZ / NL / P7 / RFD200357

Options

Color Temperature (CCT)

3K	3000K

Paint

(Blank)	Gray (Standard)
BK	Black
BZ	Bronze
DDB	Dark Bronze
GI	Graphite
WH	White

Surge Protection

Blank	Acuity SPD with inductive filter (Standard)
MP[1]	MOV Pack
IL[1]	SPD with Indicator Light

Terminal Block

(Blank)	Terminal Block (Standard)
T2	Wired to L1 & L2 Positions

Misc.

BL	External Bubble Level
CR	Enhanced Corrosion Resistant Finish
HS	House-Side Shield
NL	Nema Label
XL	Not CSA Certified

Controls

(Blank)	3 Pin NEMA Photocontrol Receptacle (Standard)
P5	5 Pin Photocontrol Receptacle (Dimmable Driver Included)
P7	7 Pin Photocontrol Receptacle (Dimmable Driver Included)
NR	No Photocontrol Receptacle
AO[2]	Field Adjustable Output
DM	0V-10V Dimmable Driver (Controls by others)
ML[3,4]	Multi-Level Dimming
PCSS[1]	Solid State Lighting Photocontrol (120-277V)
PCLL	Solid State Long Life Photocontrol
SH	Shorting Cap

Packaging

(Blank)	Single Unit (Standard)
JP	Job Pack (24/Pallet)

Notes

1. Not available in 347 or 480V.
2. Not available with DM or ML options.
3. Not available with AO, DM, P5 or P7 options.
4. Dimming schedule and light level information required from the customer in order to configure product. Contact Infrastructure Technical Support to proceed.

RFD200732 = 3K CCT

Note: Specifications subject to change without notice. Actual performance may differ as a result of end-user environment and application.

American Electric Lighting®
AEL Headquarters, 3825 Columbus Road, Granville, OH 43023
www.americanelectriclighting.com

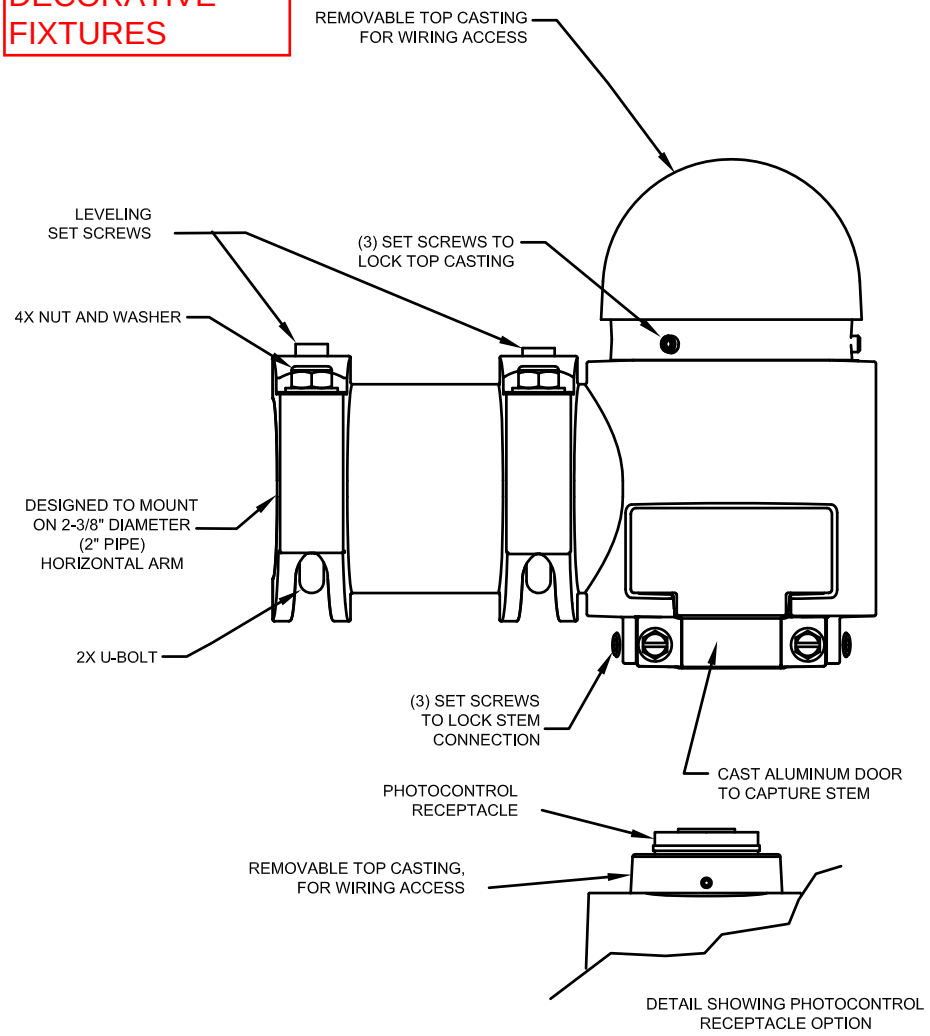
Warranty Five-year limited warrantyComplete warranty terms located at:
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx
Actual performance may differ as a result of end-user environment and application.
All values are design or typical values, measured under laboratory conditions at 25 °C.
Specifications subject to change without notice.

Please contact your sales representative for the latest product information.

GlasWerks Style Decorative Arm Fitter

For Use with Quick Lock Stem mounting luminaires

FOR ALL ARM MOUNTED DECORATIVE FIXTURES



ORDERING INFORMATION

GWDF13 **200** AS R (P7)

GLAS WERKS LEVELING FITTER

SIZE
200 = TO SLIPFIT 2" NOMINAL PIPE

FINISH
BK = BLACK
BD = DARK BLUE
BZ = BRONZE
GH = GRAPHITE
GN = DARK GREEN
GR = GRAY
PP = PRIME PAINT
SL = SILVER
WH = WHITE
AS = CUSTOM COLOR

OPTIONS
-R = PHOTOCONTROL RECEPTACLE (REPLACES THE STANDARD TOP COVER) FOR NEMA TWISTLOCK PHOTOCONTROLS

Specifications

GENERAL DESCRIPTION

The Glas Werks style decorative arm fitter is designed to replicate the look of period cast arm mounts.

MATERIAL

The fitter body, top cover, and door assembly shall be heavy wall cast aluminum. All mounting and locking hardware shall be stainless steel.

INSTALLATION

The fitter is designed to be used with luminaires having a welded top mount stem. The contoured door (with integral lanyard) is removed to allow the stem to engage inside the fitter. The door is replaced to the capture the luminaire stem.
The fitter is provided with (2) U-bolts, washers and nuts and (2) leveling set screws that lock the fitter to a nominal 2" horizontal arm and allow a +/- 5 degree adjustment from horizontal to the fitter. The swivel action on the stem allows for +/- 4 degree adjustment from vertical.
(3) set screws lock the threaded male connector in place. The cast top cover can be removed to allow access to the inside of the fitter to facilitate wire connections. (3) set screws lock the cover to the fitter.

FINISH

The fitter is finished with a polyester powder paint applied after a seven stage pretreatment process to insure maxiumum durability.

WARRANTY

Limited warranty located at www.acuitybrands.com/CustomerResources/Terms and Conditions.aspx

NOTE

Specifications subject to change without notice.

ARCHITECTURAL OUTDOOR ORDER #: TYPE: DRAWING NO: LUM_GWDF13

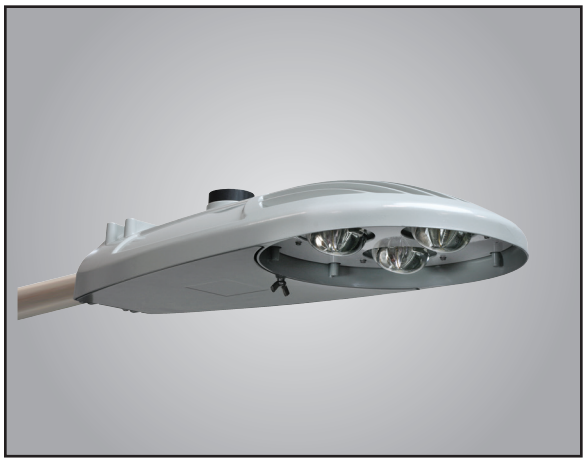
HOLOPHANE®
LEADER IN LIGHTING SOLUTIONS
An AcuityBrandsCompany

SCALE: N/A
DRAWN: JCH
APP'D:
DATE: 4-1-13

ROADWAY ATBM D

Autobahn Series ATBM
Roadway

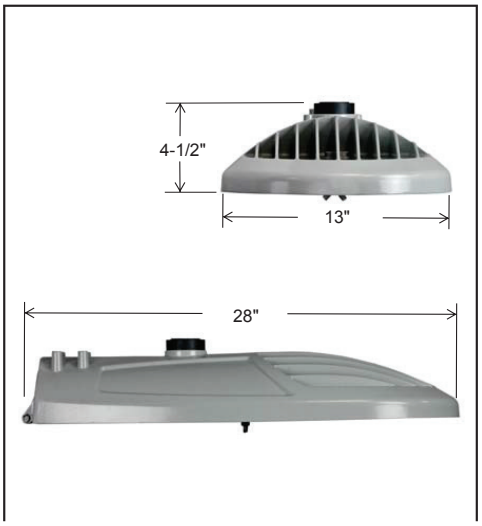
PRODUCT OVERVIEW



Applications:

Residential streets
Parking lots
High speed roadways

DIMENSIONS



Effective Projected Area (EPA)
The EPA for the ATBM is 0.3 sq. ft.,
Approx. Wt. = 21 lbs. (9.5 kg)

Features:

OPTICAL

Same Light: Performance is comparable to 150W – 250W HPS

White Light: Correlated color temperature - standard 4000K, 70 CRI minimum or optional 5000K, 70 CRI minimum.

IP66 rated borosilicate glass optics ensure longevity and minimize dirt depre ciation. Unique IP66 rated LED light engines provide 0% uplight and restrict backlight to within sidewalk depth, providing optimal application coverage and optimal pole spacing.

Available distributions are Type II, III, IV, & V roadway distributions.

ELECTRICAL

Expected Life: LED light engines are rated >100,000 hours at 25°C, L70. Electronic driver has an expected life of 100,000 hours at a 25°C ambient.

Lower Energy: Saves an expected 40-60% over comparable HID luminaires.

Robust Surge Protection: Three different surge protection options provide a minimum of IEEE/ANSI C62.41 Category C (10kV/5kA) protection.

MECHANICAL

Includes standard AEL lineman-friendly features such as tool-less entry, 3 station terminal block and quick disconnects. Bubble level located inside the electrical compartment for easy leveling at installation.

Rugged die-cast aluminum housing and door are polyester powder-coated for durability and corrosion resistance. Rigorous five-stage pre-treating and painting process yields a finish that achieves a scribe creepage rating of 8 (per ASTM D1654) after over 5000 hours exposure to salt fog chamber (oper ated per ASTM B117).

Mast arm mount is adjustable for arms from 1-1/4" to 2" (1-5/8" to 2-3/8" O.D.) diameter. The 2 – bolt and optional 4 bolt clamping mechanism provide 3G vibration rating per ANSI C136.

The Wildlife shield is cast into the housing (not a separate piece).

CONTROLS

NEMA 3 pin photocontrol receptacle is standard, with the Acuity designed ANSI standard 5 pin and 7 pin receptacles optionally available.

Premium solid state locking-style photocontrol – PCSS (10 year rated life) Extreme long life solid state locking-style photocontrol – PCL1 (20 year rated life).

Extreme long life solid state locking-style photocontrol with on demand remote on/off control - PCCC (15 year rated life).

Optional onboard Adjustable Output module allows the light output and input wattage to be modified to meet site specific requirements, and also can allow a single fixture to be flexibly applied in many different applications.

STANDARDS

Rated for -40°C to 40°C ambient
CSA Certified to U.S. and Canadian standards
Complies with ANSI: C136.2, C136.10, C136.14, C136.31, C136.15, C136.37

Note: Specifications subject to change without notice. Actual performance may differ as a result of end-user environment and application.

AEL American Electric Lighting®

Autobahn Series ATBM

Roadway

Type: Roadway

ORDERING INFORMATION

Example: ATBM A MVOLT R2

ATB0	D	480	R3	
Series	Performance Packages	Voltage	Optics	Mounting
ATBM Autobahn LED Roadway	A 7,000 lumens B 8,000 lumens C 9,000 lumens D 11,600 lumens E 13,400 lumens F 15,700 lumens G 16,600 lumens H 17,400 lumens	MVOLT Multi-volt, 120-277V 347 347V 480 480V	R2 Roadway Type II R3 Roadway Type III R4 Roadway Type IV R5 Roadway Type V	(Blank) 2 Bolt Mounting 4B 4 Bolt Mounting

3K / BZ / NL / P7 / RFD200357

Options

Color Temperature (CCT)
- 3K 3000K

Paint
- (Blank) Gray
- BK Black
- BZ Bronze
- DDB Dark Bronze
- GI Graphite
- WH White

Surge Protection
- (Blank) Acuity SPD
- MP MOV Pack[1]
- IL SPD with Indicator Light

Miscellaneous Options
- HSS House Side Shield
- NL NEMA Label Indicating Wattage
- XL Not CSA Certified – No Terminal Block Cover

Control Options
- (Blank) 3 Pin NEMA Photocontrol Receptacle
- P5 5 Pin Photocontrol Receptacle (dimmable driver included)
- P7 7 Pin Photocontrol Receptacle (dimmable driver included)
- NR No Photocontrol Receptacle
- AO Field Adjustable Output
- DM 0-10V Dimmable Driver
- PCSS Solid-State Lighting Photocontrol
- PCLL Solid-State Long Life Photocontrol
- PCCC Solid-State Long Life Photocontrol with remote control on/off
- SH Shorting Cap

Packages
- (Blank) Standard Pack
- JP Job Pack (36/pallet)

Accessories
- ATBMHSS House Side Shield
- ATBMLTS Light Trespass Shield
- RKATBMMVOLTSPD ATBM Acuity SPD Replacement Kit MVOLT
- RKATBMHVSPD ATBM Acuity SPD Replacement Kit 347/480V
- RKATBMMVOLTMP ATBM MOV Pack Replacement Kit
- RKATBMMVOLTIL ATBM IL SPD Replaement Kit

RFD200353 = 3K CCT

Notes:
1. Not available with G and H performance packages.

Note: Specifications subject to change without notice. Actual performance may differ as a result of end-user environment and application.

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www.americanelectriclighting.com

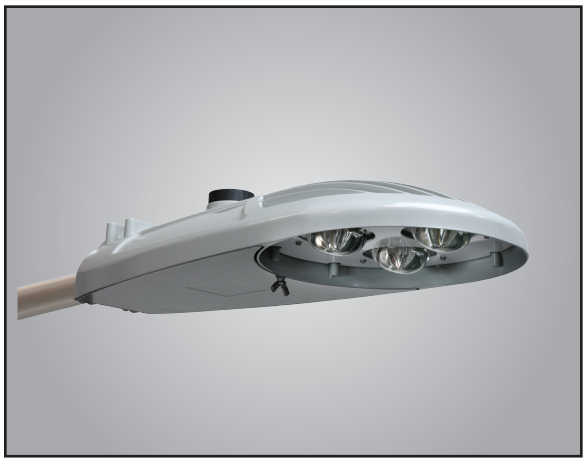
Warranty Five-year limited warrantyComplete warranty terms located at:
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx
Actual performance may differ as a result of end-user environment and application.
All values are design or typical values, measured under laboratory conditions at 25 °C.
Specifications subject to change without notice.

Please contact your sales representative for the latest product information.

ROADWAY ATBM E

Autobahn Series ATBM
Roadway

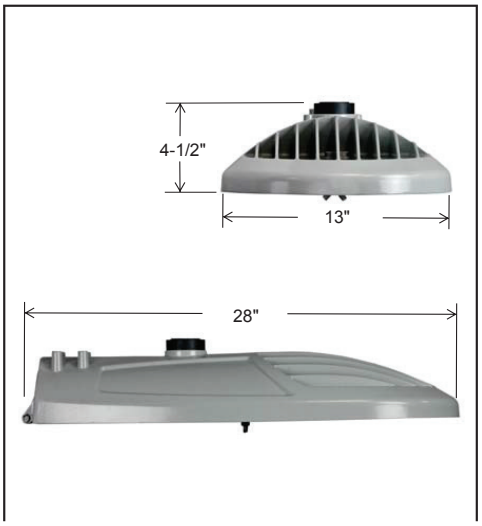
PRODUCT OVERVIEW



Applications:

Residential streets
Parking lots
High speed roadways

DIMENSIONS



Effective Projected Area (EPA)
The EPA for the ATBM is 0.3 sq. ft.,
Approx. Wt. = 21 lbs. (9.5 kg)

Features:

OPTICAL

Same Light: Performance is comparable to 150W – 250W HPS

White Light: Correlated color temperature - standard 4000K, 70 CRI minimum or optional 5000K, 70 CRI minimum.

IP66 rated borosilicate glass optics ensure longevity and minimize dirt depre ciation. Unique IP66 rated LED light engines provide 0% uplight and restrict backlight to within sidewalk depth, providing optimal application coverage and optimal pole spacing.

Available distributions are Type II, III, IV, & V roadway distributions.

ELECTRICAL

Expected Life: LED light engines are rated >100,000 hours at 25°C, L70. Electronic driver has an expected life of 100,000 hours at a 25°C ambient.

Lower Energy: Saves an expected 40-60% over comparable HID luminaires.

Robust Surge Protection: Three different surge protection options provide a minimum of IEEE/ANSI C62.41 Category C (10kV/5kA) protection.

MECHANICAL

Includes standard AEL lineman-friendly features such as tool-less entry, 3 station terminal block and quick disconnects. Bubble level located inside the electrical compartment for easy leveling at installation.

Rugged die-cast aluminum housing and door are polyester powder-coated for durability and corrosion resistance. Rigorous five-stage pre-treating and painting process yields a finish that achieves a scribe creepage rating of 8 (per ASTM D1654) after over 5000 hours exposure to salt fog chamber (oper ated per ASTM B117).

Mast arm mount is adjustable for arms from 1-1/4" to 2" (1-5/8" to 2-3/8" O.D.) diameter. The 2 – bolt and optional 4 bolt clamping mechanism provide 3G vibration rating per ANSI C136.

The Wildlife shield is cast into the housing (not a separate piece).

CONTROLS

NEMA 3 pin photocontrol receptacle is standard, with the Acuity designed ANSI standard 5 pin and 7 pin receptacles optionally available.

Premium solid state locking-style photocontrol – PCSS (10 year rated life) Extreme long life solid state locking-style photocontrol – PCL1 (20 year rated life).

Extreme long life solid state locking-style photocontrol with on demand remote on/off control - PCCC (15 year rated life).

Optional onboard Adjustable Output module allows the light output and input wattage to be modified to meet site specific requirements, and also can allow a single fixture to be flexibly applied in many different applications.

STANDARDS

Rated for -40°C to 40°C ambient
CSA Certified to U.S. and Canadian standards
Complies with ANSI: C136.2, C136.10, C136.14, C136.31, C136.15, C136.37

Note: Specifications subject to change without notice. Actual performance may differ as a result of end-user environment and application.

AEL American Electric Lighting®

Autobahn Series ATBM

Roadway

Type: Roadway

ORDERING INFORMATION

Example: ATBM A MVOLT R2

ATB0	D	480	R3	
Series	Performance Packages	Voltage	Optics	Mounting
ATBM Autobahn LED Roadway	A 7,000 lumens B 8,000 lumens C 9,000 lumens D 11,600 lumens E 13,400 lumens F 15,700 lumens G 16,600 lumens H 17,400 lumens	MVOLT Multi-volt, 120-277V 347 347V 480 480V	R2 Roadway Type II R3 Roadway Type III R4 Roadway Type IV R5 Roadway Type V	(Blank) 2 Bolt Mounting 4B 4 Bolt Mounting

3K / BZ / NL / P7 / RFD200357

Options

Color Temperature (CCT)
- 3K 3000K

Paint
- (Blank) Gray
- BK Black
- BZ Bronze
- DDB Dark Bronze
- GI Graphite
- WH White

Surge Protection
- (Blank) Acuity SPD
- MP MOV Pack[1]
- IL SPD with Indicator Light

Miscellaneous Options
- HSS House Side Shield
- NL NEMA Label Indicating Wattage
- XL Not CSA Certified – No Terminal Block Cover

Control Options
- (Blank) 3 Pin NEMA Photocontrol Receptacle
- P5 5 Pin Photocontrol Receptacle (dimmable driver included)
- P7 7 Pin Photocontrol Receptacle (dimmable driver included)
- NR No Photocontrol Receptacle
- AO Field Adjustable Output
- DM 0-10V Dimmable Driver
- PCSS Solid-State Lighting Photocontrol
- PCLL Solid-State Long Life Photocontrol
- PCCC Solid-State Long Life Photocontrol with remote control on/off
- SH Shorting Cap

Packages
- (Blank) Standard Pack
- JP Job Pack (36/pallet)

Accessories
- ATBMHSS House Side Shield
- ATBMLTS Light Trespass Shield
- RKATBMMVOLTSPD ATBM Acuity SPD Replacement Kit MVOLT
- RKATBMHVSPD ATBM Acuity SPD Replacement Kit 347/480V
- RKATBMMVOLTMP ATBM MOV Pack Replacement Kit
- RKATBMMVOLTIL ATBM IL SPD Replaement Kit

RFD200354 = 3K CCT

Notes:
1. Not available with G and H performance packages.

Note: Specifications subject to change without notice. Actual performance may differ as a result of end-user environment and application.

American Electric Lighting®
AEL Headquarters, 3825 Columbus Road, Granville, OH 43023
www.americanelectriclighting.com

Warranty Five-year limited warrantyComplete warranty terms located at:
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx
Actual performance may differ as a result of end-user environment and application.
All values are design or typical values, measured under laboratory conditions at 25 °C.
Specifications subject to change without notice.

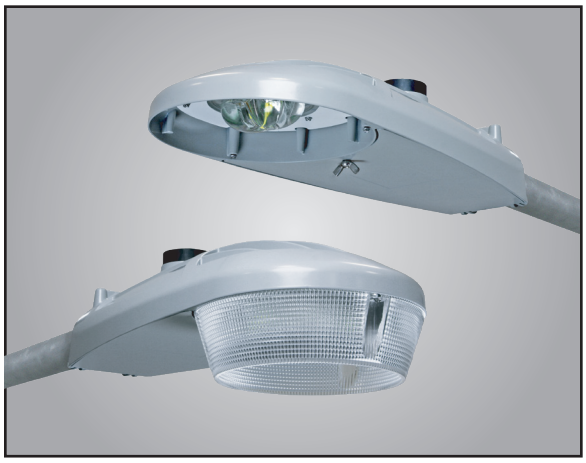
Please contact your sales representative for the latest product information.

ROADWAY ATBS E

AutobahnSeries ATBS

Roadway & Security Lighting

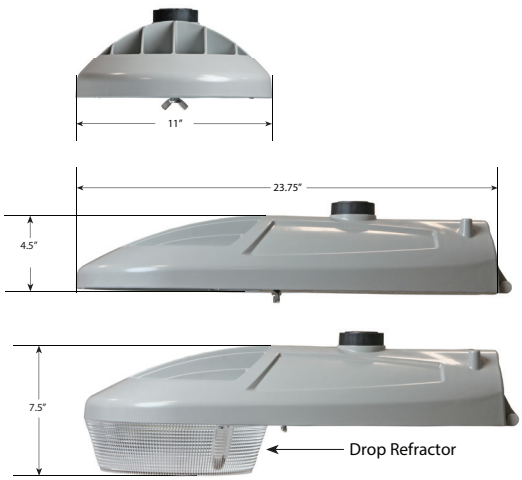
PRODUCT OVERVIEW



Applications:

Residential streets
Parking lots
General security lighting

DIMENSIONS



Effective Projected Area (EPA) The EPA for the ATBS is 0.3 sq. ft.,
Approx. Wt. = 12 lbs. (5 kg)

Features:

OPTICAL

Same Light: Performance is comparable to 50W – 150W HPS and up to 175W Mercury Vapor roadway and security lighting luminaires.

White Light: Correlated color temperature - standard 4000K, 70 CRI minimum or optional 5000K, 70 CRI minimum.

IP66 rated borosilicate glass optics ensure longevity and minimize dirt depreciation. Unique IP66 rated LED light engines provide 0% uplight and restrict backlight to within sidewalk depth, providing optimal application coverage and optimal pole spacing.

Available distributions are Type II, III, and V roadway distributions. When used with the optional acrylic refractor the unit provides approximately 10% uplight and increased vertical foot-candles

ELECTRICAL

Expected Life: LED light engines are rated >100,000 hours at 25°C, L70. Electronic driver has an expected life of 100,000 hours at a 25°C ambient.

Lower Energy: Saves an expected 40-60% over comparable HID luminaires.

Robust Surge Protection: Three different surge protection options provide a minimum of IEEE/ANSI C62.41 Category C (10kV/5kA) protection.

MECHANICAL

Includes standard AEL lineman-friendly features such as tool-less entry, 3 station terminal block and quick disconnects. Bubble level located inside the electrical compartment for easy leveling at installation.

Rugged die-cast aluminum housing and door are polyester powder-coated for durability and corrosion resistance. Rigorous five-stage pre-treating and painting process yields a finish that achieves a scribe creepage rating of 8 (per ASTM D1654) after over 5000 hours exposure to salt fog chamber (operated per ASTM B117).

Mast arm mount is adjustable for arms from 1-1/4" to 2" (1-5/8" to 2-3/8" O.D.) diameter. The 2 – bolt clamping mechanism provides 3G vibration rating per ANSI C136.

The Wildlife shield is cast into the housing (not a separate piece).

CONTROLS

NEMA 3 pin photocontrol receptacle is standard, with the Acuity designed ANSI standard 5 pin and 7 pin receptacles optionally available.

Premium solid state locking-style photocontrol – PCSS (10 year rated life)
Extreme long life solid state locking-style photocontrol – PCL1 (20 year rated life)

Optional onboard Adjustable Output module allows the light output and input wattage to be modified to meet site specific requirements, and also can allow a single fixture to be flexibly applied in many different applications.

STANDARDS

Rated for -40°C to 40°C ambient
CSA Certified to U.S. and Canadian standards
Complies with ANSI: C136.2, C136.10, C136.14, C136.31, C136.15, C136.37

Note: Specifications subject to change without notice. Actual performance may differ as a result of end-user environment and application.

AEL American Electric Lighting®

AutobahnSeries ATBS

Roadway & Security Lighting

Type: Roadway

ORDERING INFORMATION

Example: ATBS A MVOLT R2

ATBS	E	MVOLT	R2
Series	Performance Packages	Voltage	Optics

ATBS Autobahn LED Roadway & Security

Performance Packages
- A 1,800 lumens
- B 2,400 lumens
- E 4,000 lumens
- F 4,600 lumens
- G 5,600 lumens
- H 6,300 lumens

MVOLT Multi-volt, 120-277V

Optics
- R2 Roadway Type II
- R3 Roadway Type III
- R5 Roadway Type V
- D2 Type II, Drop Refractor included
- D3 Type III, Drop Refractor included
- D5 Type V, Drop Refractor included

3K / MP / NL / P7 / RFD200349

Options

Color Temperature (CCT)
- 3K 3000K CCT,

Paint
- Blank Gray (Standard)
- BK Black
- WH White
- BZ Bronze

Surge Protection
- Blank Acuity SPD-10kV/5kA with inductive filter (Standard)
- MP MOV Pack
- IL SPD with Indicator Light

Misc.
- HSS House Side Shield
- NL NEMA Label
- XL Not CSA Certified

Controls
- (Blank) 3 Pin NEMA Photocontrol Receptacle
- NR[1] No Photocontrol Receptacle
- DM 0V-10V Dimmable Driver
- P5 5 Pin Photocontrol Receptacle (dimmable driver included)
- P7 7 Pin Photocontrol Receptacle (dimmable driver included)
- PCSS[1] DTL DSS Photocontrol
- PCL1[1] DTL DLL Photocontrol 120-277V
- AO Field Adjustable Output
- SH Shorting Cap

Install Packages
- PKGS DTL DSS Photocontrol
- PKGL DTL DLL Photocontrol

Packages ship with selected photocontrol, 24", 1 1/4" diameter arm, 5' of prewire and mounting hardware

Accessories
- ATBSREF Drop Refractor for field installation
- ATBSHSS House Side Shield for field installation
- ATBSLTS Light Trespass Shield for field installation

200349 = 3K CCT

Notes
1. Not available with Install Packages.

American Electric Lighting®
AEL Headquarters, 3825 Columbus Road, Granville, OH 43023
www.americanelectriclighting.com

Warranty Five-year limited warranty.Complete warranty terms located at:
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx
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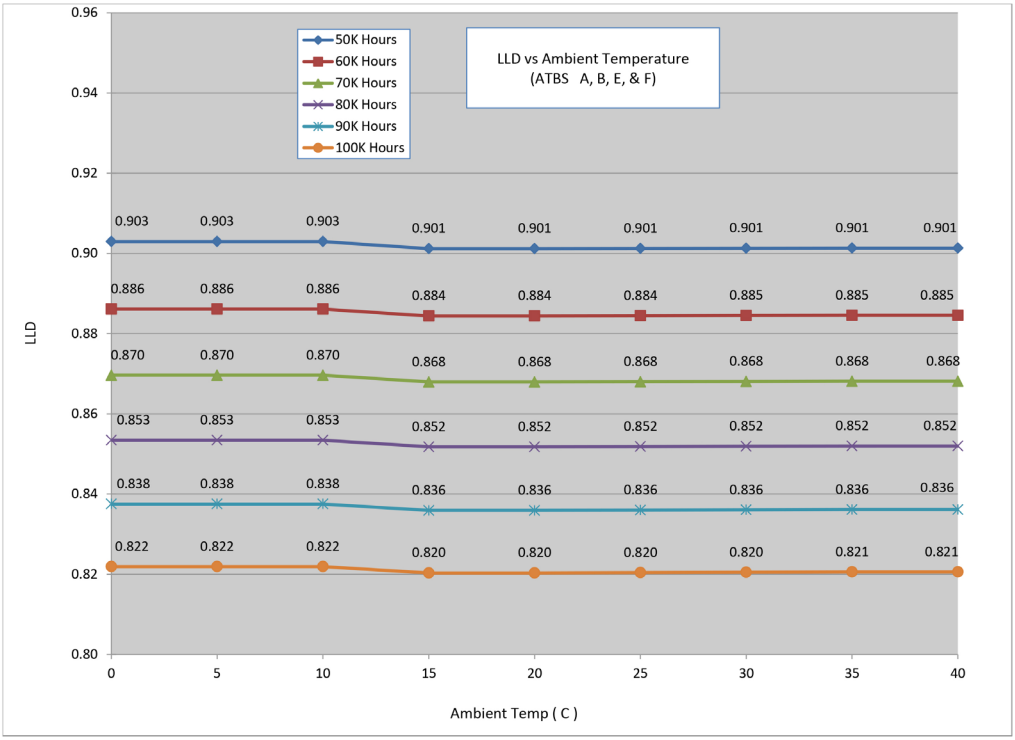
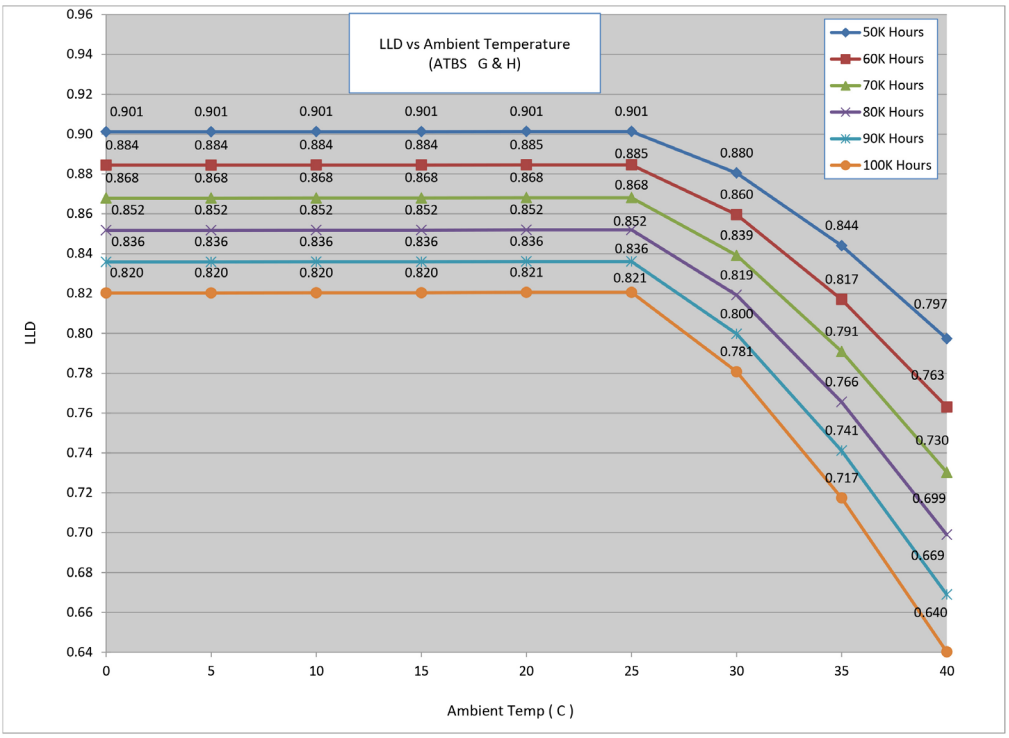
All values are design or typical values, measured under laboratory conditions at 25 °C.
Specifications subject to change without notice.

Please contact your sales representative for the latest product information.

PERFORMANCE PACKAGE



* LLD vs. temperature charts are based on LM-80 chip data and in-situ thermal test testing per IES TM-21



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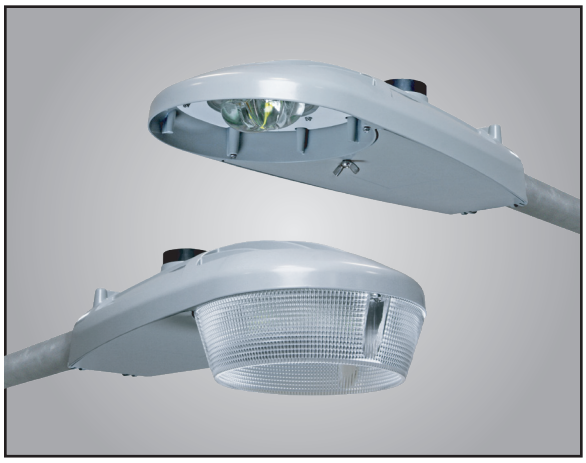
ROADWAY ATBS F

AutobahnSeries ATBS

Roadway & Security Lighting

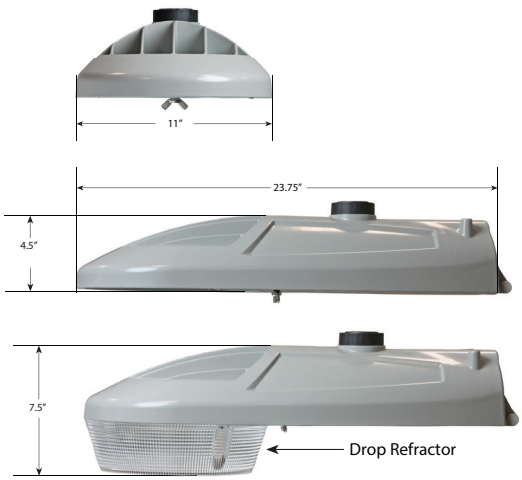
PRODUCT OVERVIEW



Applications:

Residential streets
Parking lots
General security lighting

DIMENSIONS



Effective Projected Area (EPA) The EPA for the ATBS is 0.3 sq. ft.,
Approx. Wt. = 12 lbs. (5 kg)

Features:

OPTICAL

Same Light: Performance is comparable to 50W – 150W HPS and up to 175W Mercury Vapor roadway and security lighting luminaires.

White Light: Correlated color temperature - standard 4000K, 70 CRI minimum or optional 5000K, 70 CRI minimum.

IP66 rated borosilicate glass optics ensure longevity and minimize dirt depreciation. Unique IP66 rated LED light engines provide 0% uplight and restrict backlight to within sidewalk depth, providing optimal application coverage and optimal pole spacing.

Available distributions are Type II, III, and V roadway distributions. When used with the optional acrylic refractor the unit provides approximately 10% uplight and increased vertical foot-candles

ELECTRICAL

Expected Life: LED light engines are rated >100,000 hours at 25°C, L70. Electronic driver has an expected life of 100,000 hours at a 25°C ambient.

Lower Energy: Saves an expected 40-60% over comparable HID luminaires.

Robust Surge Protection: Three different surge protection options provide a minimum of IEEE/ANSI C62.41 Category C (10kV/5kA) protection.

MECHANICAL

Includes standard AEL lineman-friendly features such as tool-less entry, 3 station terminal block and quick disconnects. Bubble level located inside the electrical compartment for easy leveling at installation.

Rugged die-cast aluminum housing and door are polyester powder-coated for durability and corrosion resistance. Rigorous five-stage pre-treating and painting process yields a finish that achieves a scribe creepage rating of 8 (per ASTM D1654) after over 5000 hours exposure to salt fog chamber (operated per ASTM B117).

Mast arm mount is adjustable for arms from 1-1/4" to 2" (1-5/8" to 2-3/8" O.D.) diameter. The 2 – bolt clamping mechanism provides 3G vibration rating per ANSI C136.

The Wildlife shield is cast into the housing (not a separate piece).

CONTROLS

NEMA 3 pin photocontrol receptacle is standard, with the Acuity designed ANSI standard 5 pin and 7 pin receptacles optionally available.

Premium solid state locking-style photocontrol – PCSS (10 year rated life)
Extreme long life solid state locking-style photocontrol – PCL1 (20 year rated life)

Optional onboard Adjustable Output module allows the light output and input wattage to be modified to meet site specific requirements, and also can allow a single fixture to be flexibly applied in many different applications.

STANDARDS

Rated for -40°C to 40°C ambient
CSA Certified to U.S. and Canadian standards
Complies with ANSI: C136.2, C136.10, C136.14, C136.31, C136.15, C136.37

Note: Specifications subject to change without notice. Actual performance may differ as a result of end-user environment and application.

AEL American Electric Lighting®

AutobahnSeries ATBS

Roadway & Security Lighting

Type: Roadway

ORDERING INFORMATION

Example: ATBS A MVOLT R2

ATBS	F	MVOLT	R2
Series	Performance Packages	Voltage	Optics

ATBS Autobahn LED Roadway & Security

Performance Packages
- A 1,800 lumens
- B 2,400 lumens
- E 4,000 lumens
- F 4,600 lumens
- G 5,600 lumens
- H 6,300 lumens

MVOLT Multi-volt, 120-277V

Optics
- R2 Roadway Type II
- R3 Roadway Type III
- R5 Roadway Type V
- D2 Type II, Drop Refractor included
- D3 Type III, Drop Refractor included
- D5 Type V, Drop Refractor included

3K / MP / NL / P7 / RFD200350

Options

Color Temperature (CCT)
- 3K 3000K CCT,

Paint
- Blank Gray (Standard)
- BK Black
- WH White
- BZ Bronze

Surge Protection
- Blank Acuity SPD-10kV/5kA with inductive filter (Standard)
- MP MOV Pack
- IL SPD with Indicator Light

Misc.
- HSS House Side Shield
- NL NEMA Label
- XL Not CSA Certified

Controls
- (Blank) 3 Pin NEMA Photocontrol Receptacle
- NR[1] No Photocontrol Receptacle
- DM 0V-10V Dimmable Driver
- P5 5 Pin Photocontrol Receptacle (dimmable driver included)
- P7 7 Pin Photocontrol Receptacle (dimmable driver included)
- PCSS[1] DTL DSS Photocontrol
- PCL1[1] DTL DLL Photocontrol 120-277V
- AO Field Adjustable Output
- SH Shorting Cap

Install Packages
- PKGS DTL DSS Photocontrol
- PKGL DTL DLL Photocontrol

Packages ship with selected photocontrol, 24", 1 1/4" diameter arm, 5' of prewire and mounting hardware

Accessories
- ATBSREF Drop Refractor for field installation
- ATBSHSS House Side Shield for field installation
- ATBSLTS Light Trespass Shield for field installation

RFD200350 = 3K CCT

Notes
1. Not available with Install Packages.

AEL American Electric Lighting®
AEL Headquarters, 3825 Columbus Road, Granville, OH 43023
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Warranty Five-year limited warranty.Complete warranty terms located at:
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All values are design or typical values, measured under laboratory conditions at 25 °C.
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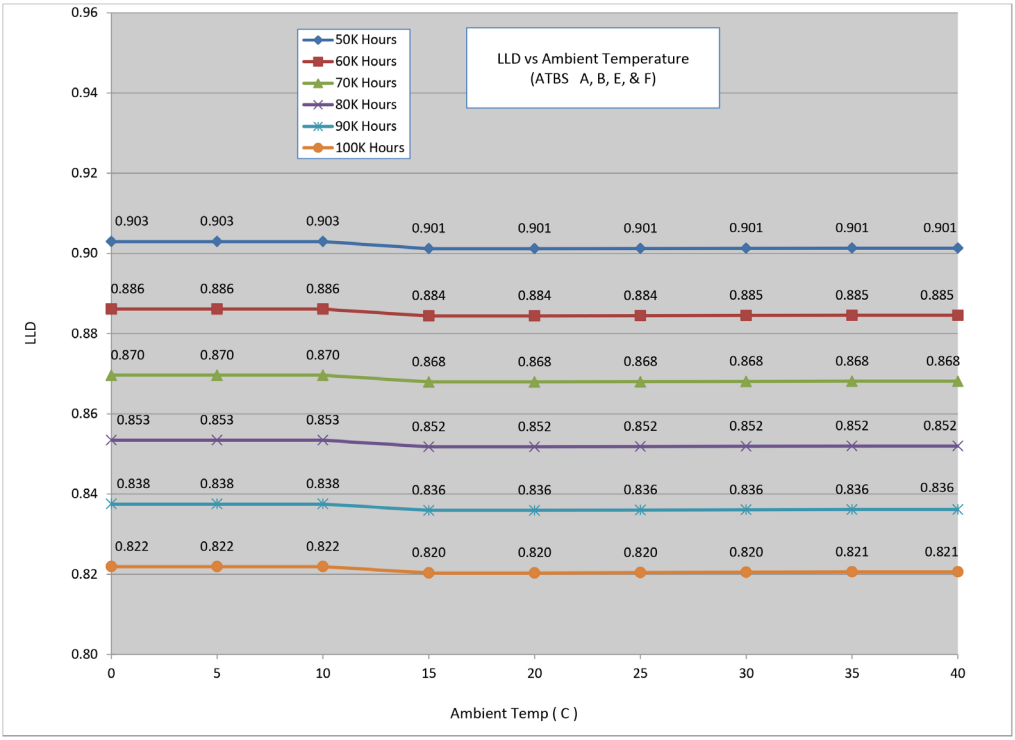
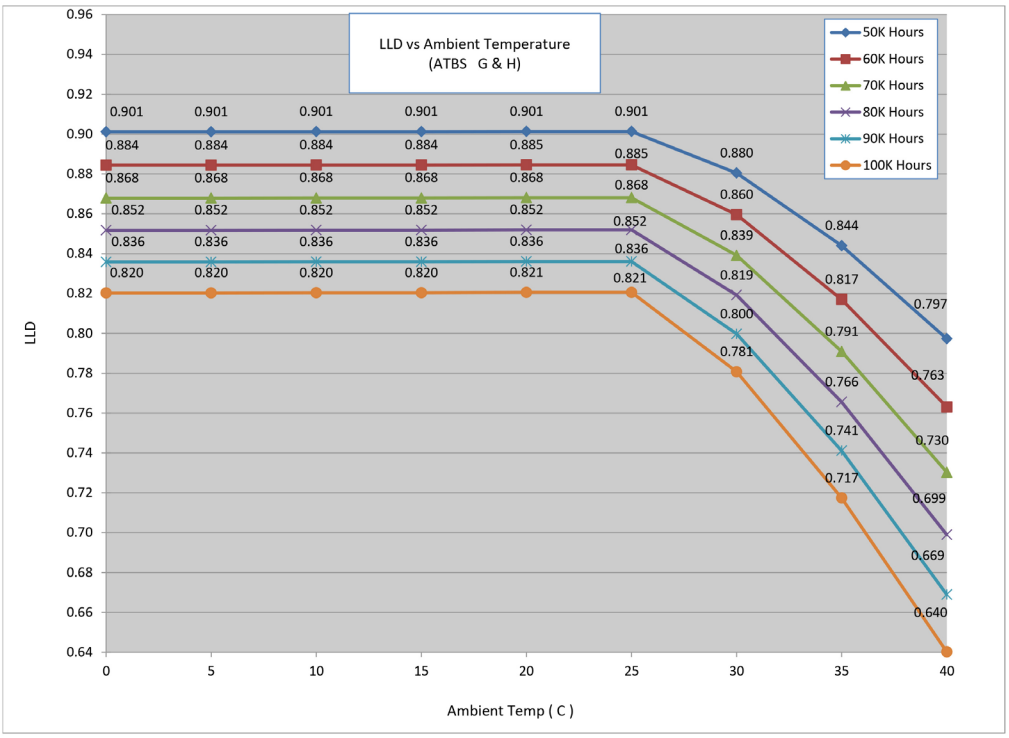
PERFORMANCE PACKAGE



* LLD vs. temperature charts are based on LM-80 chip data and in-situ thermal test testing per IES TM-21



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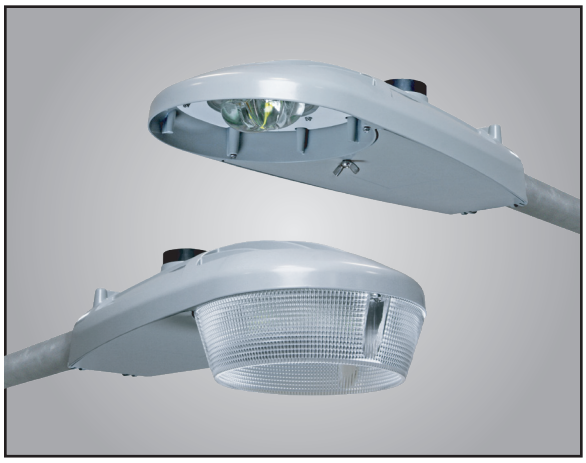
ROADWAY ATBS H

AutobahnSeries ATBS

Roadway & Security Lighting

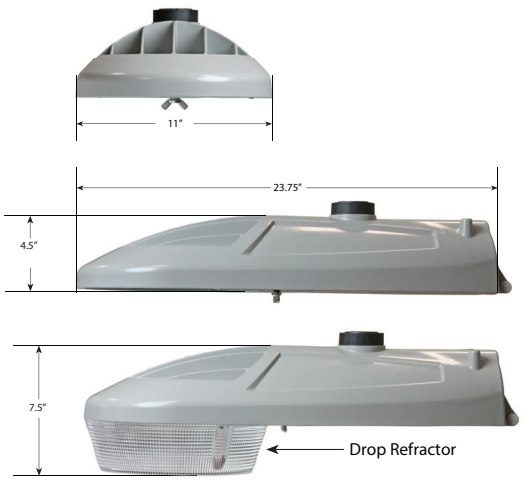
PRODUCT OVERVIEW



Applications:

Residential streets
Parking lots
General security lighting

DIMENSIONS



Effective Projected Area (EPA) The EPA for the ATBS is 0.3 sq. ft.,
Approx. Wt. = 12 lbs. (5 kg)

Features:

OPTICAL

Same Light: Performance is comparable to 50W – 150W HPS and up to 175W Mercury Vapor roadway and security lighting luminaires.

White Light: Correlated color temperature - standard 4000K, 70 CRI minimum or optional 5000K, 70 CRI minimum.

IP66 rated borosilicate glass optics ensure longevity and minimize dirt depreciation. Unique IP66 rated LED light engines provide 0% uplight and restrict backlight to within sidewalk depth, providing optimal application coverage and optimal pole spacing.

Available distributions are Type II, III, and V roadway distributions. When used with the optional acrylic refractor the unit provides approximately 10% uplight and increased vertical foot-candles

ELECTRICAL

Expected Life: LED light engines are rated >100,000 hours at 25°C, L70. Electronic driver has an expected life of 100,000 hours at a 25°C ambient.

Lower Energy: Saves an expected 40-60% over comparable HID luminaires.

Robust Surge Protection: Three different surge protection options provide a minimum of IEEE/ANSI C62.41 Category C (10kV/5kA) protection.

MECHANICAL

Includes standard AEL lineman-friendly features such as tool-less entry, 3 station terminal block and quick disconnects. Bubble level located inside the electrical compartment for easy leveling at installation.

Rugged die-cast aluminum housing and door are polyester powder-coated for durability and corrosion resistance. Rigorous five-stage pre-treating and painting process yields a finish that achieves a scribe creepage rating of 8 (per ASTM D1654) after over 5000 hours exposure to salt fog chamber (operated per ASTM B117).

Mast arm mount is adjustable for arms from 1-1/4" to 2" (1-5/8" to 2-3/8" O.D.) diameter. The 2 – bolt clamping mechanism provides 3G vibration rating per ANSI C136.

The Wildlife shield is cast into the housing (not a separate piece).

CONTROLS

NEMA 3 pin photocontrol receptacle is standard, with the Acuity designed ANSI standard 5 pin and 7 pin receptacles optionally available.

Premium solid state locking-style photocontrol – PCSS (10 year rated life)
Extreme long life solid state locking-style photocontrol – PCL1 (20 year rated life)

Optional onboard Adjustable Output module allows the light output and input wattage to be modified to meet site specific requirements, and also can allow a single fixture to be flexibly applied in many different applications.

STANDARDS

Rated for -40°C to 40°C ambient
CSA Certified to U.S. and Canadian standards
Complies with ANSI: C136.2, C136.10, C136.14, C136.31, C136.15, C136.37

Note: Specifications subject to change without notice. Actual performance may differ as a result of end-user environment and application.

AEL American Electric Lighting®

AutobahnSeries ATBS

Roadway & Security Lighting

Type: Roadway

ORDERING INFORMATION

Example: ATBS A MVOLT R2

ATBS	H	MVOLT	R2
Series	Performance Packages	Voltage	Optics

ATBS Autobahn LED Roadway & Security

Performance Packages
- A 1,800 lumens
- B 2,400 lumens
- E 4,000 lumens
- F 4,600 lumens
- G 5,600 lumens
- H 6,300 lumens

MVOLT Multi-volt, 120-277V

Optics
- R2 Roadway Type II
- R3 Roadway Type III
- R5 Roadway Type V
- D2 Type II, Drop Refractor included
- D3 Type III, Drop Refractor included
- D5 Type V, Drop Refractor included

3K / MP / NL / P7 / SH / RFD200351

Options

Color Temperature (CCT)
- 3K 3000K CCT,

Paint
- Blank Gray (Standard)
- BK Black
- WH White
- BZ Bronze

Surge Protection
- Blank Acuity SPD-10kV/5kA with inductive filter (Standard)
- MP MOV Pack
- IL SPD with Indicator Light

Misc.
- HSS House Side Shield
- NL NEMA Label
- XL Not CSA Certified

Controls
- (Blank) 3 Pin NEMA Photocontrol Receptacle
- NR[1] No Photocontrol Receptacle
- DM 0V-10V Dimmable Driver
- P5 5 Pin Photocontrol Receptacle (dimmable driver included)
- P7 7 Pin Photocontrol Receptacle (dimmable driver included)
- PCSS[1] DTL DSS Photocontrol
- PCL1[1] DTL DLL Photocontrol 120-277V
- AO Field Adjustable Output
- SH Shorting Cap

Install Packages
- PKGS DTL DSS Photocontrol
- PKGL DTL DLL Photocontrol

Packages ship with selected photocontrol, 24", 1 1/4" diameter arm, 5' of prewire and mounting hardware

Accessories
- ATBSREF Drop Refractor for field installation
- ATBSHSS House Side Shield for field installation
- ATBSLTS Light Trespass Shield for field installation

RFD200351 = 3K CCT

Notes
1. Not available with Install Packages.

AEL American Electric Lighting®
AEL Headquarters, 3825 Columbus Road, Granville, OH 43023
www.americanelectriclighting.com

Warranty Five-year limited warranty.Complete warranty terms located at:
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All values are design or typical values, measured under laboratory conditions at 25 °C.
Specifications subject to change without notice.

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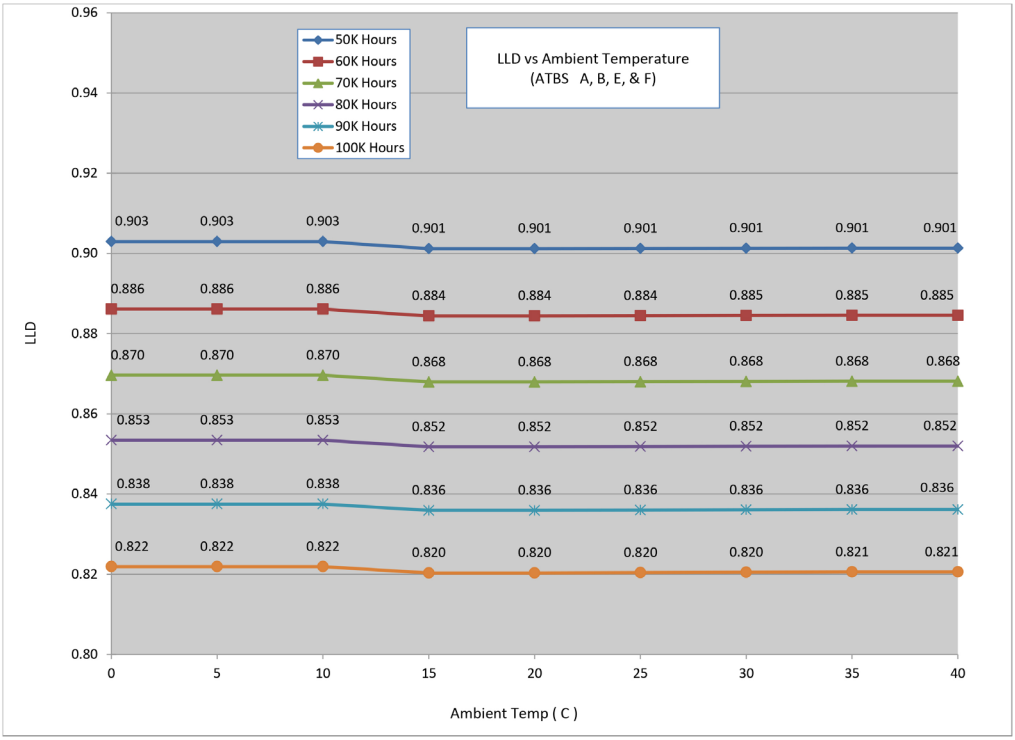
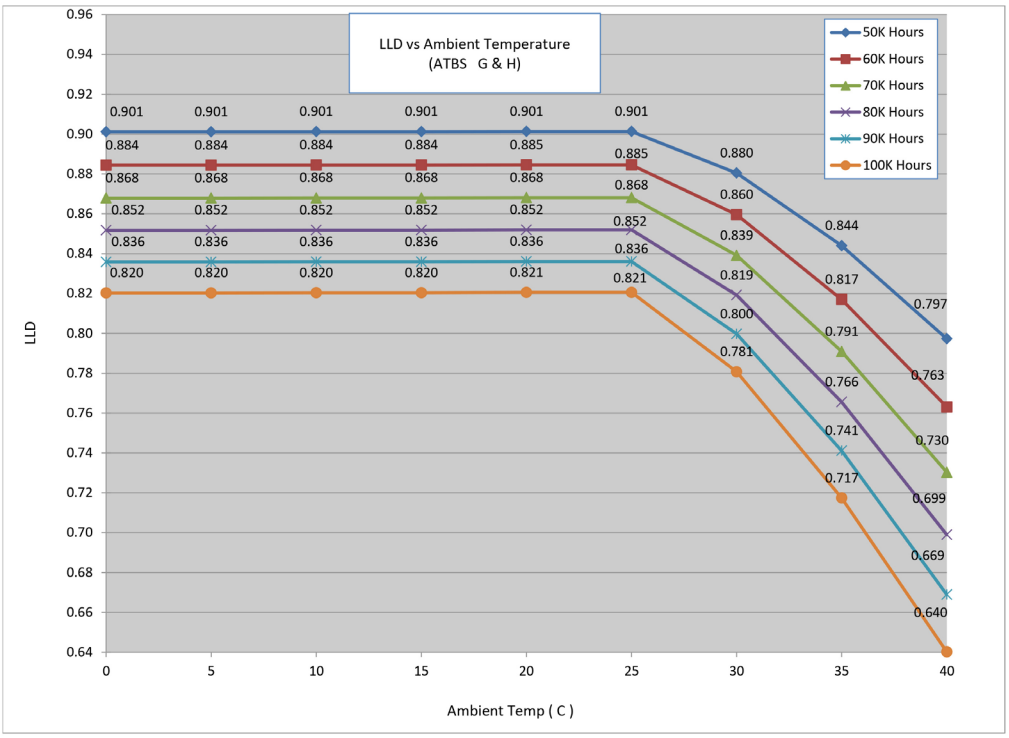
PERFORMANCE PACKAGE



* LLD vs. temperature charts are based on LM-80 chip data and in-situ thermal test testing per IES TM-21



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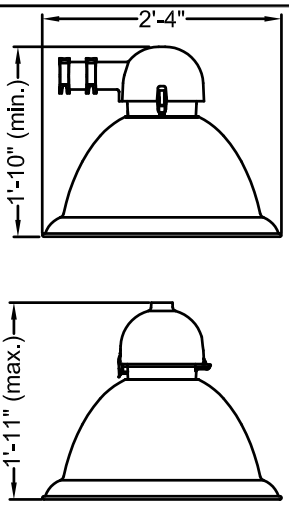
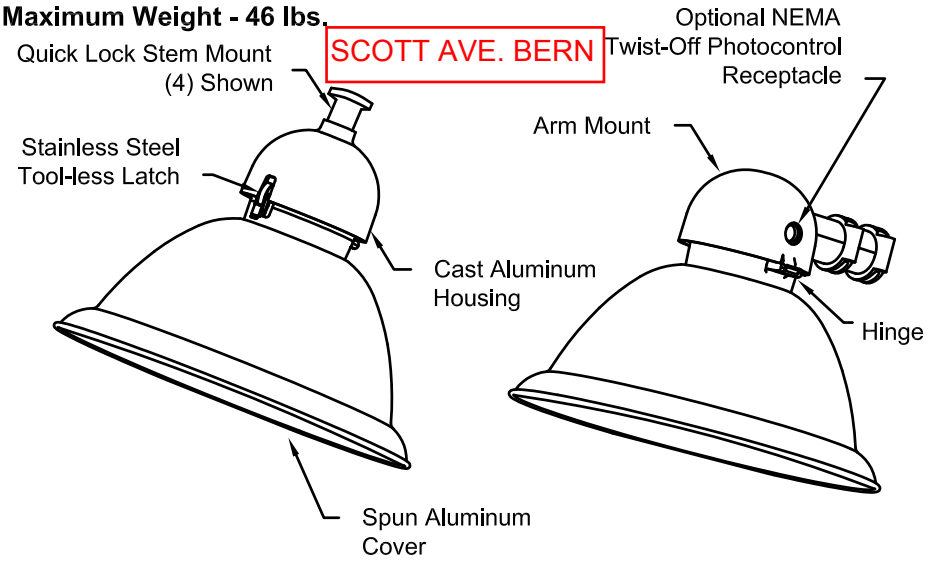


Maximum Effective Projected Area - 1.2 ft²
Maximum Weight - 46 lbs.

SCOTT AVE. BERN



GlasWerks® LED 2 Bern®

DESIGNER OUTDOOR

EXAMPLE: GBLF2 053 4K AS 4 B L3

GBLF2 | 105 | 3K | AH | 4 | TDC | R3

ORDERING INFORMATION:

COVER TYPE
GBLF2 = BERN

SOURCE & WATTAGE
053 = 530mA DRIVER (70W)
070 = 700mA DRIVER (100W)
105 = 1050mA DRIVER (140W)

COLOR TEMP.
AM = TRUE AMBER**
3K = 3000K
4K = 4000K
5K = 5000K

VOLTAGE
AS = AUTO-SENSING 120-277V
AH = AUTO-SENSING 347-480V

MOUNTING STYLE
1 = ARM
4 = QUICK LOCK STEM MOUNT

COLOR
A = AS SPECIFIED
B = BLACK
D = DARK BLUE
G = GRAY
H = GRAPHITE
N = GREEN
P = PRIME PAINT
S = SILVER
W - WHITE
Z = BRONZE
TDC = TIGER DRYLAC COLOR (RAL***)
CMC = CUSTOM MATCH COLOR

OPTICS
L3 = ASYMMETRIC FULL CUTOFF LED
L5 = SYMMETRIC FULL CUTOFF LED

NOTE: AM (TRUE AMBER) ONLY AVAILABLE WITH 530mA DRIVER

3K / BZ / NL / P7 / RFD200357

OPTIONS:
AO = FIELD ADJUSTABLE OUTPUT
D = ROAM 0-10V DIMMING CONTROL
B = BI-LEVEL 0-10V DIMMING CONTROL
H = NEMA TWISTLOCK PHOTOCONTROL RECEPTACLE ONLY
PCS = DTL TWISTLOCK PHOTOCONTROL 120-277 VOLT
P34 = DTL TWISTLOCK PHOTOCONTROL 347V
P48 = DTL TWISTLOCK PHOTOCONTROL 480 VOLT
PSC = SHORTING CAP
P5 = DIMMING PHOTOCONTROL RECEPTACLE - 5 PIN
P7 = DIMMING PHOTOCONTROL RECEPTACLE - 7 PIN
L03 = 3 FEET OF PREWIRED LEADS
L10 = 10 FEET OF PREWIRED LEADS
L20 = 20 FEET OF PREWIRED LEADS
L25 = 25 FEET OF PREWIRED LEADS
L30 = 30 FEET OF PREWIRED LEADS

GWDF13= GlasWerks Decorative Arm Fitter RAL7013

ACCESSORIES:
SPDPLUGIN = REPLACEMENT SURGE PROTECTOR 120-277V
SPDPLUGIN-48 = REPLACEMENT SURGE PROTECTOR 347-480V

HOLOPHANE® LEADER IN LIGHTING SOLUTIONS
An AcuityBrandsCompany

ORDER #:
TYPE:
DRAWN: RAF
DATE: 5-11-15
DWG #: LUM_GBLF2

Specifications

GENERAL DESCRIPTION
The Euro styled luminaire consists of a LED flat glass optical assembly shielded by a decorative formed reflector and a top mounted cast aluminum electrical assembly with a circumferential 1.50 inch reveal.

OPTICAL ASSEMBLY
The optical assembly consists of a thermal resistant flat glass panel mechanically held in a formed aluminum door frame. The door frame is attached to the spun cover with studs and lock nuts. Light from the LED module is distributed by precisely molded optical lens to maximize utilization, uniformity and luminaire spacing. Two LED boards are available for symmetrical or asymmetric distribution.

MOUNTING STYLE (LEVELING FITTER OPTIONS)
The Quick Lock Stem Mounting style is compatible with the following leveling fitters:
- Boston Harbor Decorative Arm Fitter (BHDF13)
- GlasWerks Decorative Arm Fitter (GWDF13)
- West Liberty Decorative Arm Fitter (WLDF13)

ELECTRICAL ASSEMBLY
The cast aluminum electrical housing has a smooth domed contour. A (3) station terminal block is provided that accepts #14 through #2 size wire and has a quick disconnect receptacle. The electrical housing is hinged with a tool-less latch to provide easy access to the gear assembly. The unitized electrical assembly, containing the electronic driver and other electrical components, plugs into the quick disconnect receptacle. The pendant mount version has a welded stem (Quick Lock Stem Mounting), which aides in installation speed. The arm mount version is provided with two U-bolts with washers and nuts and two leveling set screws that lock the housing to a 2 inch nominal (2-3/8" O.D.) horizontal arm and allow a +/- 5 degree adjustment from horizontal to the cover.

ELECTRICAL DRIVER
(Refer to the driver specification sheet for operating characteristics)

FINISH
The luminaire is finished with polyester powder paint to insure maximum durability.

LISTING
The luminaire is CSA listed as suitable for wet locations up to 40° C ambient temperature. IP55 rated electrical chamber, IP66 rated LED optic chamber.

WARRANTY
Limited warranty located at
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

NOTE
Actual performance may differ as a result of end-user environment and application.

Actual wattage may differ by +11% / -6% when operating between 120-480V +/- 10%.

Specification subject to change without notice.

GlasWerks® LED 2
Bern®
DESIGNER OUTDOOR

HOLOPHANE®
LEADER IN LIGHTING SOLUTIONS
An AcuityBrandsCompany

ORDER #:
TYPE:
DRAWN: RAF
DATE: 5-11-15
DWG #: LUM_GBLF2

Operating Characteristics

TOTAL LUMENS, WHITE LIGHT			
LED mA, CCT	**Input Watts**	**L3**	**L5**
053 3K	**75**	**5537**	**5855**
053 4K	**75**	**6703**	**7089**
053 5K	**75**	**6770**	**7160**
070 3K	**99**	**6940**	**7339**
070 4K	**99**	**8402**	**8885**
070 5K	**99**	**8486**	**8974**
105 3K	**153**	**8938**	**9452**
105 4K	**153**	**10821**	**11443**
105 5K	**153**	**10929**	**11558**

Operating Characteristics

TOTAL LUMENS, AMBER LIGHT			
LED mA, CCT	**Input Watts**	**L3**	**L5**
053 AM	**56**	**1934**	**2045**

GlasWerks® LED 2
Bern®
DESIGNER OUTDOOR

HOLOPHANE®
LEADER IN LIGHTING SOLUTIONS
An AcuityBrandsCompany

ORDER #:
TYPE:
DRAWN: RAF
DATE: 5-11-15
DWG #: LUM_GBLF2

LED IMPORTANT SAFETY INSTRUCTIONS

SHIELD FOR ATBM SERIES

READ AND FOLLOW ALL SAFETY INSTRUCTIONS!
SAVE THESE INSTRUCTIONS AND DELIVER TO OWNER AFTER INSTALLATION

- To reduce the risk of death, personal injury or property damage from fire, electric shock, falling parts, cuts/abrasions, and other hazards please read all warnings and instructions included with and on the fixture box and all fixture labels.
- Before installing, servicing, or performing routine maintenance upon this equipment, follow these general precautions.
- Installation and service of luminaires should be performed by a **qualified licensed electrician**.
- Maintenance of the luminaires should be performed by person(s) familiar with the luminaires' construction and operation and any hazards involved. Regular fixture maintenance programs are recommended.
- It will occasionally be necessary to clean the outside of the refractor/lens. Frequency of cleaning will depend on ambient dirt level and minimum light output which is acceptable to user. Refractor/lens should be washed in a solution of warm water and any mild, non-abrasive household detergent, rinsed with clean water and wiped dry. Should optical assembly become dirty on the inside, wipe refractor/lens and clean in above manner, replacing damaged gaskets as necessary.
- **DO NOT INSTALL DAMAGED PRODUCT!** This luminaire has been properly packed so that no parts should have been damaged during transit. Inspect to confirm. Any part damaged or broken during or after assembly should be replaced.
- Recycle: For information on how to recycle LED electronic products, please visit www.epa.gov.
- These instructions do not purport to cover all details or variations in equipment nor to provide every possible contingency to meet in connection with installation, operation, or maintenance. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's or owner's purposes, this matter should be referred to Acuity Brands Lighting, Inc.

WARNING
RISK OF ELECTRIC SHOCK

- ✓ Disconnect or turn off power before installation or servicing.
- ✓ Verify that supply voltage is correct by comparing it with the luminaire label information.
- ✓ Make all electrical and grounded connections in accordance with the National Electrical Code (NEC) and any applicable local code requirements.
- ✓ All wiring connections should be capped with UL approved recognized wire connectors.

WARNING
RISK OF BURN

- ✓ Allow lamp/fixture to cool before handling. Do not touch enclosure or light source.
- ✓ Do not exceed maximum wattage marked on luminaire label.
- ✓ Follow all manufacturer's warnings, recommendations and restrictions for: driver type, burning position, mounting locations/methods, replacement and recycling.

CAUTION
RISK OF INJURY

- ✓ Wear gloves and safety glasses at all times when removing luminaire from carton, installing, servicing or performing maintenance.
- ✓ Avoid direct eye exposure to the light source while it is on.

CAUTION
RISK OF FIRE

- ✓ Keep combustible and other materials that can burn, away from lamp/lens.
- ✓ Do not operate in close proximity to persons, combustible materials or substances affected by heat or drying.

LED IMPORTANT SAFETY INSTRUCTIONS

CAUTION: RISK OF PRODUCT DAMAGE

- ✓ Never connect components under load.
- ✓ Do not mount or support these fixtures in a manner that can cut the outer jacket or damage wire insulation.
- ✓ Unless individual product specifications deem otherwise: Never connect an LED product directly to a dimmer packs, occupancy sensors, timing devices, or other related control devices. LED fixtures must be powered directly off a switched circuit.
- ✓ Unless individual product specifications deem otherwise: Do not restrict fixture ventilation. Allow for some volume of airspace around fixture. Avoid covering LED fixtures with insulation, foam, or other material that will prevent convection or conduction cooling.
- ✓ Unless individual product specifications deem otherwise: Do not exceed fixtures maximum ambient temperature.
- ✓ Only use fixture in its intended location.
- ✓ LED products are Polarity Sensitive. Ensure proper Polarity before installation.
- ✓ Electrostatic Discharge (ESD): ESD can damage LED fixtures. Personal grounding equipment must be worn during all installation or servicing of the unit.
- ✓ Do not touch individual electrical components as this can cause ESD, shorten lamp life, or alter performance.
- ✓ Some components inside the fixture may not be serviceable. In the unlikely event your unit may require service, stop using the unit immediately and contact an ABL representative for assistance.
- ✓ Always read the fixtures complete installation instructions prior to installation for any additional fixture specific warnings.

Please see product specific installation instructions for additional warnings or any applicable FCC or other regulatory statements.

Failure to follow any of these instructions could void product warranties. For a complete listing of product Terms and Conditions, please visit www.acuitybrands.com.

Our Brands	Indoor/Outdoor	Indoor Lighting	Outdoor Lighting	Controls
	Lithonia Lighting	Gotham	American Electric Lighting	DARK TO LIGHT
	Carandini	Mark Architectural Lighting	Antique Street Lamps	Lighting Control & Design
	Holophane	Peerless	Hydrel	ROAM
	RELOC	Renaissance Lighting	Tersen	Sensor Switch
		Winona Lighting		Synergy

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ABL LED General Warnings, Form No. 503.203

ATBM Light Trespass And House Side Shields

Installation and Maintenance Manual

INTRODUCTION

Product Description
The Light Trespass Shield is intended to limit the light directed to the sides and above/below the luminaire, and the House Side Shield is intended to limit the light directed directly behind the luminaire. Each kit, **ATBMLTS** and **ATBMHSS**, consists of a shield and #8 hex washer head thread rolling screws.

INSTALLATION

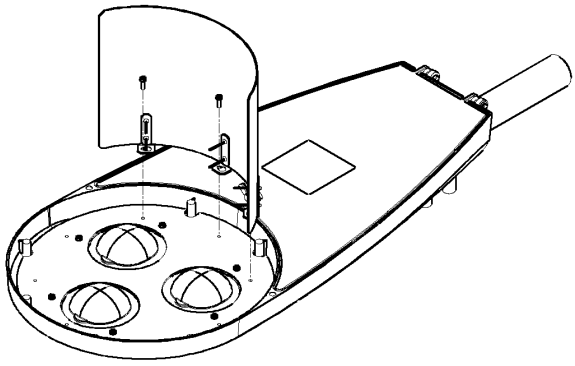
Tools and Materials Required

Description	Use
1/4” Socket or Nut Driver	Screws

Light Trespass Shield:

Pre-install provided (3) #8 hex washer head screws in holes in luminaire optical plate. Do not fully tighten. Align keyhole slots in shield base to screws. Rotate shield slightly to engage keyhole slots onto screw heads. Tighten screws until snug.
Light Trespass Shield can be installed in 4 different positions; 0°, 90°, 180°, 270°.

Figure 1 – Light Trespass Shield

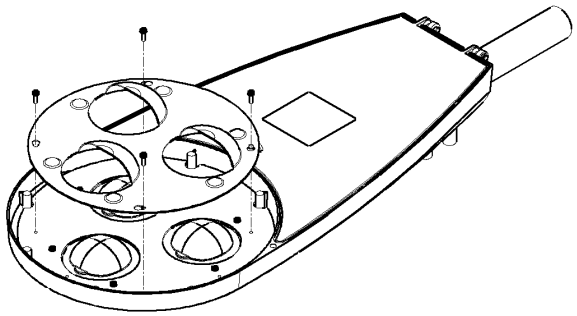


GR2393

House Side Shield:

Pre-install provided (4) #8 hex washer head screws in holes in luminaire optical plate. Do not fully tighten. Align keyhole slots in shield base to screws. Shift shield slightly forward to engage keyhole slots onto screw heads. Tighten screws until snug.

Figure 2 – House Side Shield



GR2392

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RISK OF FIRE

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INSTALLATION

Tools and Materials Required

Description	Use
1/4” Socket or Nut Driver	Screws

Light Trespass Shield:

Pre-install provided (2) #8 hex washer head screws in holes in luminaire optical plate. Do not fully tighten. Align keyhole slots in shield base to screws. Rotate shield slightly to engage keyhole slots onto screw heads. Tighten screws until snug.
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Figure 1 – Light Trespass Shield

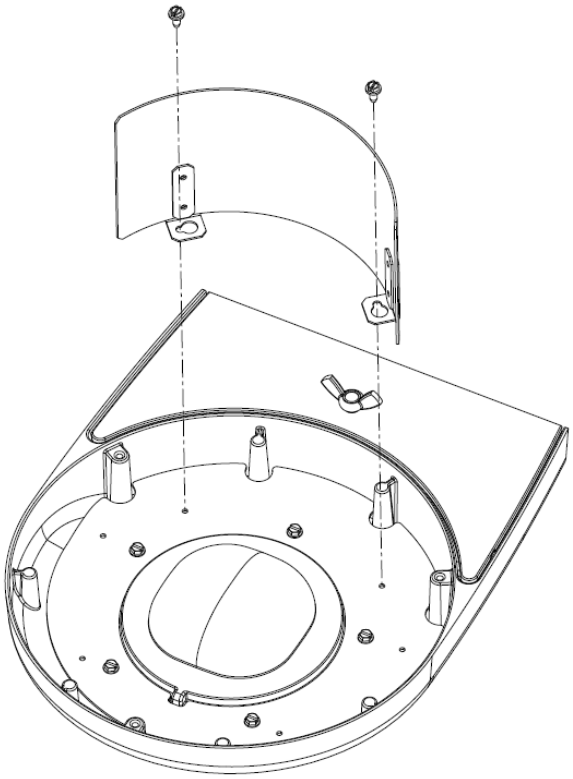

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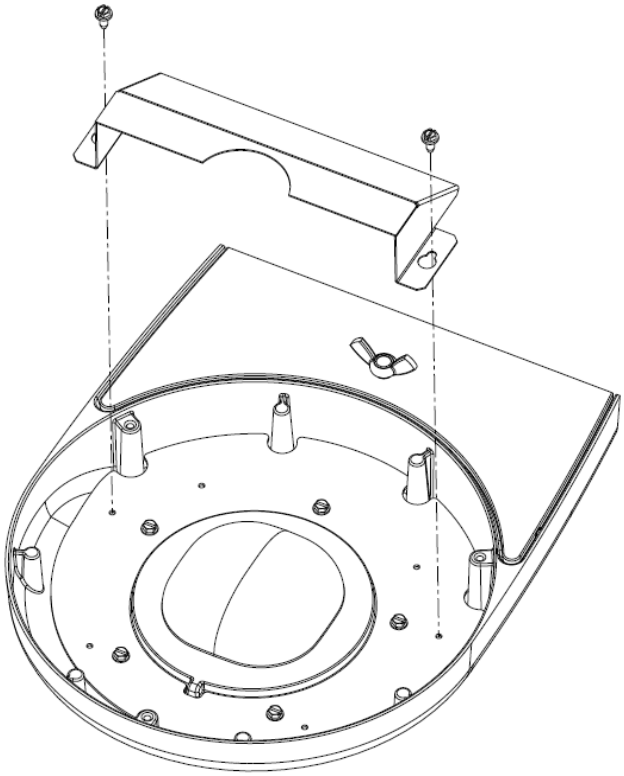
Figure 2 – House Side Shield



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Description	Use
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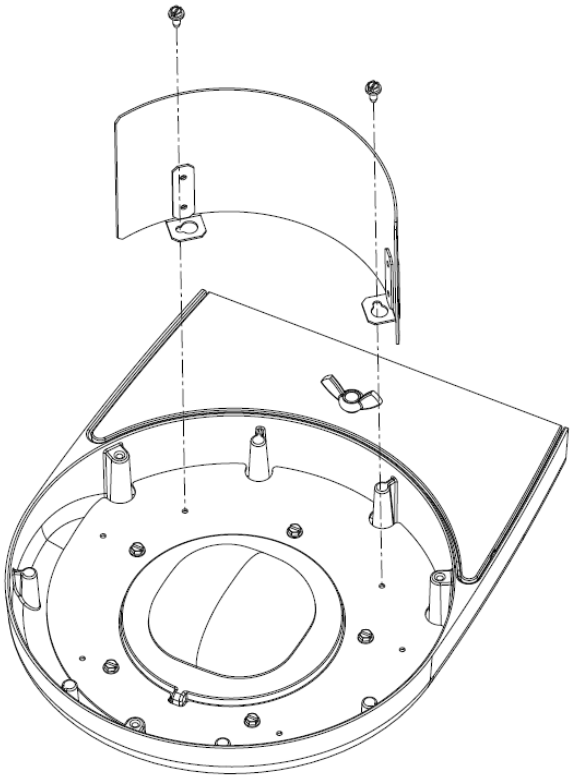

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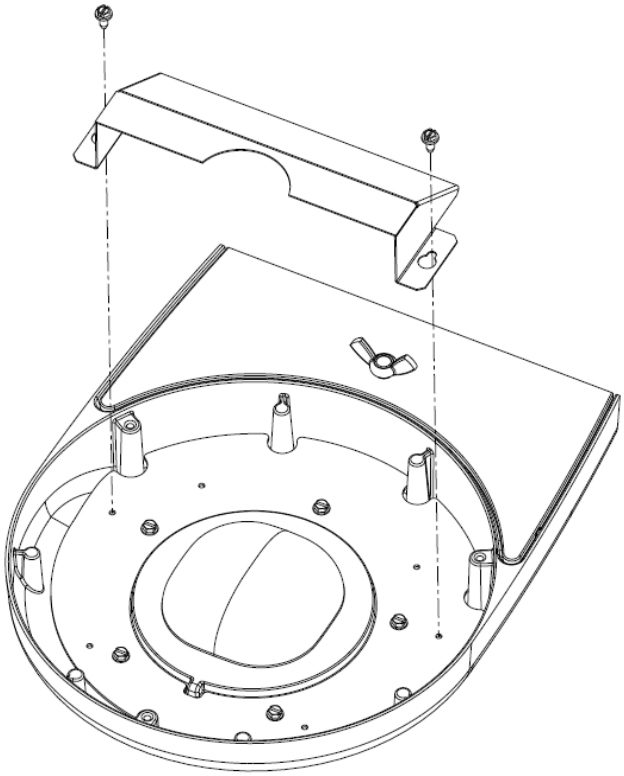
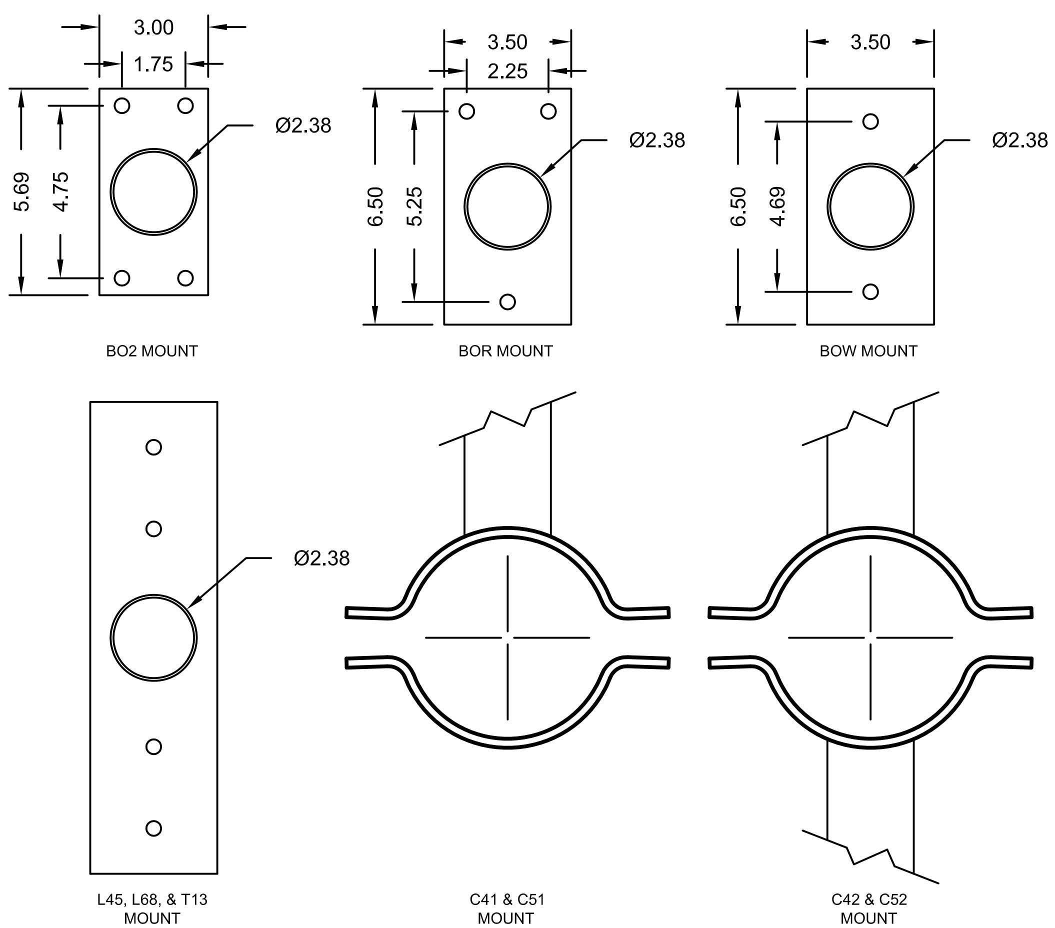
Figure 2 – House Side Shield



HORIZONTAL BARACKET TO RETROFIT SHOEBOXES



ORDERING INFORMATION:

HZ	08	BOR	BZ
Arm	Length	Mounting	Color

Arm

HZ = Horizontal

Length

06 = 6"	20 = 20"
08 = 8"	22 = 22"
10 = 10"	24 = 24"
12 = 12"	30 = 30"
14 = 14"	36 = 36"
16 = 16"	42 = 42"
18 = 18"	48 = 48"

Mounting

BO2 = 4 HOLE DRILL PATTERN TO MATCH "MP2" FOR DECORATIVE POLES
BOR = 3 HOLE DRILL PATTERN "R" FOR SSA & SSS POLES
BOW = 2 DRILL PATTERN "W" FOR SSA & SSS POLES
C41 = CLAMP ON ARM, FOR 4" SHAFT, SINGLE ARM
C42 = CLAMP ON ARM, FOR 4" SHAFT, (2) & 180°
C51 = CLAMP ON ARM, FOR 5" SHAFT, SINGLE ARM
C52 = CLAMP ON ARM, FOR 5" SHAFT, (2) & 180°
L45 = SiteLink, Small Tracknut For SL4/5 Shafts
L68 = SiteLink, Large Tracknut For SL6/8 Shafts
T13 = SiteLink, Large Tracknut For T Series Shafts

Color

BK = Black
BD = Dark Blue
BZ = Bronze
GH = Graphite
GN = Green
GR = Gray
PP = Prime Painted
SL = Silver
WH = White
CMC = Customer Matching Color
TDC = Tiger Drylac Color

SPECIFICATIONS

DESCRIPTION
The modern design of the Horizontal style arm shall mount to the pole using a mounting kit.
MATERIALS
The luminaire arm shall be 2" sch. 40 aluminum pipe (6061-T6 alloy). All hardware shall be stainless steel. The arm shall be heat treated to a T6 condition after fabrication.
DIMENSIONS
The arm shall measure XX" from arm mounting plate to end of pipe.
INSTALLATION
The arm shall mount on the side of the pole using 2, 3, or 4 fasteners depending on mounting plate.
FINISH
The arm assembly is finished with polyester powder paint applied to insure maximum durability.

HORIZONTAL™ Arm

Outdoor

HOLOPHANE®
LEADER IN LIGHTING SOLUTIONS
An Acuity Brands Company

THIS DRAWING, WHEN APPROVED, SHALL BECOME THE COMPLETE SPECIFICATION FOR THE MATERIAL TO BE FURNISHED BY HOLOPHANE ON THE ORDER NOTED ABOVE. A UNIT OF SIMILAR DESIGN MAY BE SUPPLIED, BUT ONLY AFTER APPROVAL BY THE CUSTOMER IN WRITING. ON POLE ORDERS AN ANCHOR BOLT TEMPLATE PRINT WILL BE SUPPLIED WITH EACH ANCHOR BOLT ORDER TO MATCH THE POLE PROVIDED. THIS PRINT IS THE PROPERTY OF HOLOPHANE AND IS LOANED SUBJECT TO RETURN UPON DEMAND AND UPON EXPRESS CONDITION THAT IT WILL NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO OUR INTERESTS, AND ONLY IN CONNECTION WITH MATERIAL FURNISHED BY HOLOPHANE.

ORDER #:
TYPE:
DRAWN: KRW
DATE: 7/1/13
DWG #: ARM_HZ

SPECIFICATIONS

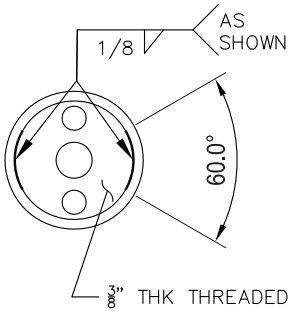
PIPE: API 5XL GRADE 42

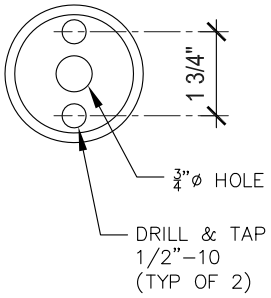
PLATE: ASTM A36 (36 KSI)

CUSTOM ARM FOR LIGHTRAIL FIXTURES

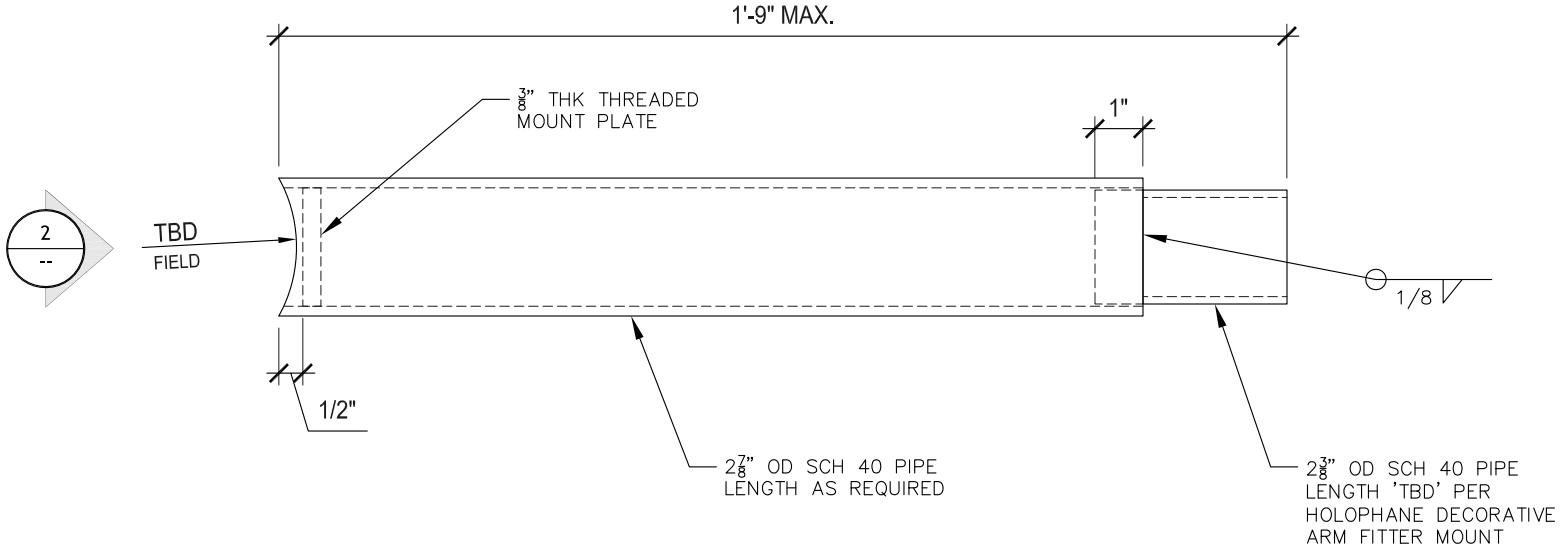
WELDING: ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN WELDING SOCIETY (AWS) D1.1

FINISH: AFTER FABRICATION, THE POLE IS SAND BLASTED TO A NEAR WHITE FINISH AND TREATED WITH IRON PHOSPHATE SOLUTION. A HIGH QUALITY POLYESTER POWDER IS THEN ELECTROSTATICALLY APPLIED AND CURED TO A MINIMUM 2.5 MIL THICKNESS.

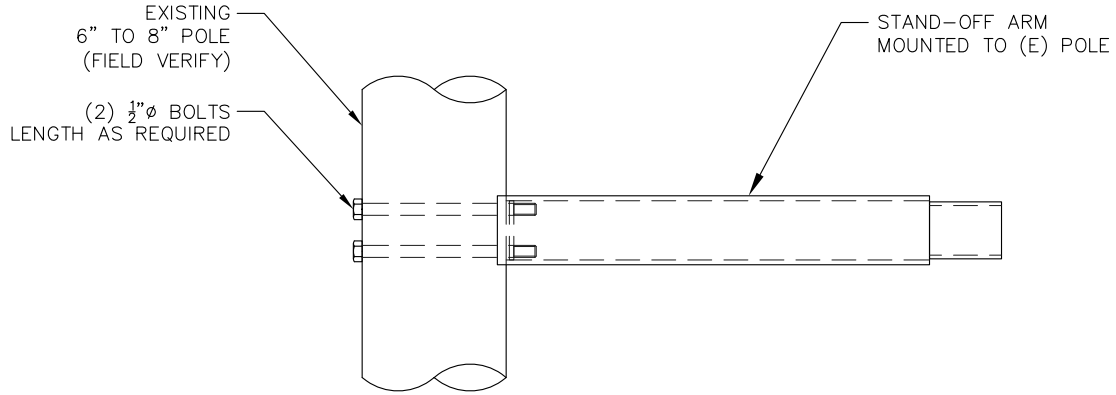




2 MOUNT END VIEW SCALE: 3"=1'



1 STAND–OFF ARM (TOP VIEW) SCALE: 3"=1'



3 STAND–OFF ARM (TOP VIEW) SCALE: 1 1/2"=1'

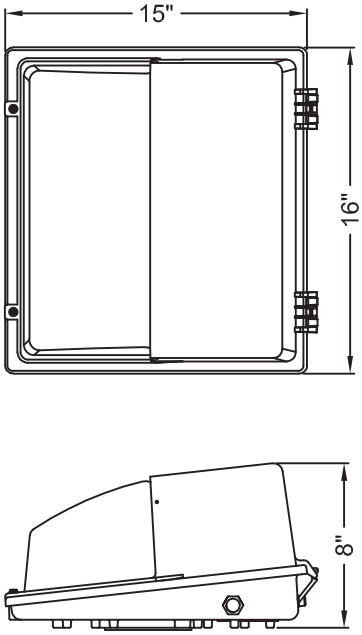
CEM-TEC CORPORATION
Steel Manufacturing Light Standards

3745 South 7th Avenue
Phoenix, Arizona 85041
(602) 268-8895 (Tel)
(602) 276-7251 (Fax)
Web: http://www.cem-tec.com

TUCSON MAST ARM

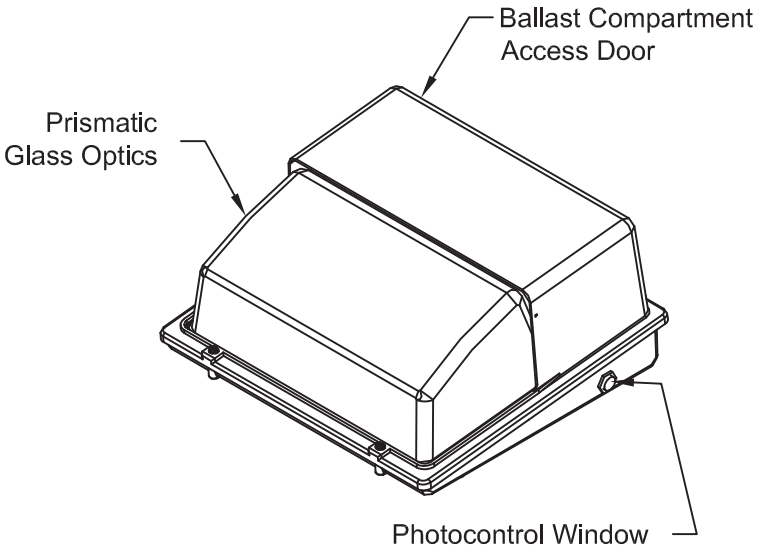
STAND-OFF ARM

UNDERDECK



Maximum Weight - 28 Lbs.

Type: UNDERDECKS



Wallpack® IV GLASS LED

INFRASTUCTURE OUTDOOR

HOLOPHANE® LEADER IN LIGHTING SOLUTIONS An AcuityBrandsCompany

ORDERING INFORMATION:

W4GLED | 10C | 1000 | 30K | T3M | MVOLT | DMG P7 | BZSDP

Series
W4GLED

LED's
10C = 10 LED (ONE ENGINE)
20C = 20 LED (TWO ENGINES)
30C = 30 LED (ONE ENGINE)

DRIVE CURRENT
1000 = 1000 mA (1A)

COLOR TEMPERATURE
30K= 3000K

DISTRIBUTION
T3M = TYPE III MEDIUM

FINISH
BKSDP = BLACK
GYSDP = GRAY
WHSDP = WHITE
BZSDP = BRONZE

VOLTAGE
MVOLT = MULTIVOLT [1] 120,208,240,277 [1]
120 = 120 VOLT [1]
208 = 208 VOLT [1]
240 = 240 VOLT [1]
277 = 277 VOLT [1]
347 = 347 VOLT [2]
480 = 480 VOLT [2]

OPTIONS SHIPPED INSTALLED

DMG = 0-10 VOLT DIMING DRIVER

P7 = 7 PIN PHOTOCONTROL RECEPTACLE

RFD200748 SPECIAL WITH

0-10 VOLT DIMMING, 3000K CCT

AND 7 PIN RECEPTACLE

NOTES:

1. MVOLT driver operates on any line voltage from 120- 277V (50/60 Hz). Specify 120, 208, 240 or 277 options only when ordering with fusing (SF, DF options) or photocontrol (PE).
2. Not available with 10C option.
3. Must specify voltage; not available with MVOLT.
4. Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.
5. See the electrical section on page 2 for more details.
6. Not available with 30C, 347, 480, PER, or SPD.
7. Requires luminaire to be specified with PER option. Ordered and shipped as a separate line item.
8. Requires field modification (only when ordered as a separate accessory).
9. Casting is pre-drilled for guard. Wire Guard ships separately.

ORDER #:
TYPE:
DRAWN: BGW
DATE: 9-30-15
DWG #: W4GLED

Lumen Output

Lumen values are from photometric test in accordance with IESNA LM-79-08. Data is considered to be representative of the configuratons shown, within the tolerance allowed by Lighting Facts. Actual performance may differ as a results of end-user environment and application. Contact factroy for performance data on any configurations not shown here.

LED's	DRIVE CURRENT (mA)	SYSTEM WATTS	DIST. TYPE	50K (5000K, 65 CRI)				
				LUMENS	B	U	G	LPW
10C (10 LED)	1000	39W	T3M	3398	0	3	3	87
20C (20 LED)	1000	72W	T3M	7027	1	3	4	97
30C (30 LED)	1000	104W	T3M	8427	1	3	5	81

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

AMBIENT		LUMEN MULTIPLIER
0° C	32° F	1.02
10° C	50° F	1.01
20° C	68° F	1.00
25° C	77° F	1.00
30° C	86° F	1.00
40° C	104° F	.98

Project LED Lumen Maintenance

Data references the extrapolated performance projections for the W4GLED 30C 1000 platform in a 25° C ambient based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	.969	.935	.870

ELECTRICAL LOAD

LED's	DRIVE CURRENT (mA)	SYSTEM WATTS	CURRENT (A)					
			120	208	240	277	347	480
10C	1000	39W	0.36	0.21	0.18	0.16	-	-
20C	1000	72W	0.67	0.38	0.33	0.29	0.23	0.17
30C	1000	104W	0.96	0.56	0.48	0.42	0.33	0.24

FEATURES & SPECIFICATIONS

INTENDED USE

The energy savings, long life and easy-to-install design of the W4GLED make it the smart choice for building-mounted doorway and pathway illumination for nearly any facility.

CONSTRUCTION

Die-cast aluminum housing has an impact-resistant, tempered glass lens that is fully gasketed. Modular design allows for ease of maintenance. The LED driver is mounted to the front casting to thermally isolate it from the light engine for low operating temperature and long life. Housing is completely sealed against moisture and environmental contaminants.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling.

OPTICS

Protective glass lens covers the light engine's precision-molded proprietary acrylic lenses. Light engines are available in 4000K and 5000K configurations.

ELECTRICAL

Light engine(s) consist of 10 or 30 high-efficacy LEDs mounted to a metal-core circuit board and integral aluminum heat sink to maximize heat dissipation and promote long life (L87/100,000 hrs at 25°C). The electronic driver has a power factor of >90%, THD <20%, and a minimum 2.5 KV surge rating. When ordering the SPD option, a separate surge protection device is installed within the luminaire which meets a minimum Category C low operation (per ANSI/IEEE C62.41.2).

INSTALLATION

Back housing is separated from front housing, eliminating ballast weight and promoting easy handling. Top 3/4" threaded wiring access. Back access through removable 3/4" knockout. Feed-thru wiring can be achieved by using a condulet tee. Mount on any vertical surface. Not recommended in applications where a sprayed stream of water can come in direct contact with glass lens.

LISTINGS

UL listed for wet locations. Rated for -40°C minimum ambient. Luminaire is IP55 rated. DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org to confirm which versions are qualified.

WARRANTY

Five year limited warranty. Complete warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx.

NOTE:

Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25°C. Specifications subject to change without notice.

Wallpack® IV

GLASS LED

INFRASTUCTURE

OUTDOOR

HOLOPHANE®

LEADER IN LIGHTING SOLUTIONS

An AcuityBrandsCompany

ORDER #:

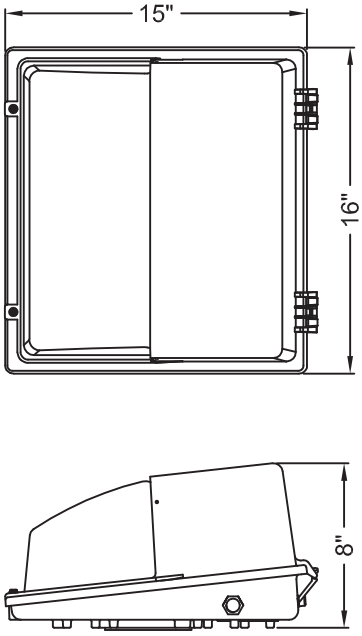
TYPE:

DRAWN: BGW

DATE: 9-30-15

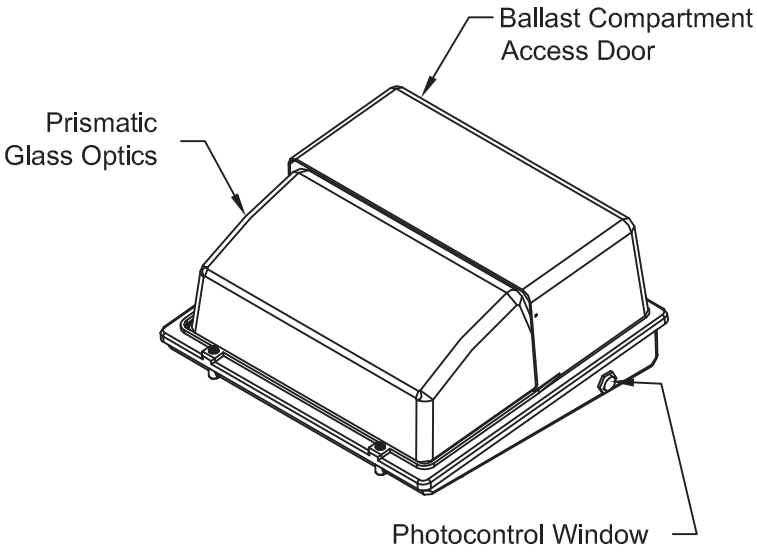
DWG #: W4GLED

UNDERDECK



Maximum Weight - 28 Lbs.

Type: UNDERDECKS



Wallpack® IV GLASS LED

INFRASTUCTURE OUTDOOR

HOLOPHANE® LEADER IN LIGHTING SOLUTIONS An AcuityBrandsCompany

ORDERING INFORMATION:

W4GLED | 20C | 1000 | 30K | T3M | 480 | DMG P7 | BZSDP

Series
W4GLED

LED's
10C = 10 LED (ONE ENGINE)
20C = 20 LED (TWO ENGINES)
30C = 30 LED (ONE ENGINE)

DRIVE CURRENT
1000 = 1000 mA (1A)

COLOR TEMPERATURE
30K= 3000K

DISTRIBUTION
T3M = TYPE III MEDIUM

FINISH
BKSDP = BLACK
GYSDP = GRAY
WHSDP = WHITE
BZSDP = BRONZE

VOLTAGE
MVOLT = MULTIVOLT [1]
120,208,240,277 [1]
120 = 120 VOLT [1]
208 = 208 VOLT [1]
240 = 240 VOLT [1]
277 = 277 VOLT [1]
347 = 347 VOLT [2]
480 = 480 VOLT [2]

OPTIONS
SHIPPED INSTALLED

DMG = 0-10 VOLT DIMING DRIVER

P7 = 7 PIN PHOTOCONTROL RECEPTACLE

RFD200749 SPECIAL WITH

0-10 VOLT DIMMING, 3000K CCT

AND 7 PIN RECEPTACLE

NOTES:

1. MVOLT driver operates on any line voltage from 120- 277V (50/60 Hz). Specify 120, 208, 240 or 277 options only when ordering with fusing (SF, DF options) or photocontrol (PE).
2. Not available with 10C option.
3. Must specify voltage; not available with MVOLT.
4. Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.
5. See the electrical section on page 2 for more details.
6. Not available with 30C, 347, 480, PER, or SPD.
7. Requires luminaire to be specified with PER option. Ordered and shipped as a separate line item.
8. Requires field modification (only when ordered as a separate accessory).
9. Casting is pre-drilled for guard. Wire Guard ships separately.

ORDER #:
TYPE:
DRAWN: BGW
DATE: 9-30-15
DWG #: W4GLED

Lumen Output

Lumen values are from photometric test in accordance with IESNA LM-79-08. Data is considered to be representative of the configuratons shown, within the tolerance allowed by Lighting Facts. Actual performance may differ as a results of end-user environment and application. Contact factroy for performance data on any configurations not shown here.

LED's	DRIVE CURRENT (mA)	SYSTEM WATTS	DIST. TYPE	50K (5000K, 65 CRI)				
				LUMENS	B	U	G	LPW
10C (10 LED)	1000	39W	T3M	3398	0	3	3	87
20C (20 LED)	1000	72W	T3M	7027	1	3	4	97
30C (30 LED)	1000	104W	T3M	8427	1	3	5	81

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

AMBIENT		LUMEN MULTIPLIER
0° C	32° F	1.02
10° C	50° F	1.01
20° C	68° F	1.00
25° C	77° F	1.00
30° C	86° F	1.00
40° C	104° F	.98

Project LED Lumen Maintenance

Data references the extrapolated performance projections for the W4GLED 30C 1000 platform in a 25° C ambient based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	.969	.935	.870

ELECTRICAL LOAD

LED's	DRIVE CURRENT (mA)	SYSTEM WATTS	CURRENT (A)					
			120	208	240	277	347	480
10C	1000	39W	0.36	0.21	0.18	0.16	-	-
20C	1000	72W	0.67	0.38	0.33	0.29	0.23	0.17
30C	1000	104W	0.96	0.56	0.48	0.42	0.33	0.24

FEATURES & SPECIFICATIONS

INTENDED USE

The energy savings, long life and easy-to-install design of the W4GLED make it the smart choice for building-mounted doorway and pathway illumination for nearly any facility.

CONSTRUCTION

Die-cast aluminum housing has an impact-resistant, tempered glass lens that is fully gasketed. Modular design allows for ease of maintenance. The LED driver is mounted to the front casting to thermally isolate it from the light engine for low operating temperature and long life. Housing is completely sealed against moisture and environmental contaminants.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling.

OPTICS

Protective glass lens covers the light engine's precision-molded proprietary acrylic lenses. Light engines are available in 4000K and 5000K configurations.

ELECTRICAL

Light engine(s) consist of 10 or 30 high-efficacy LEDs mounted to a metal-core circuit board and integral aluminum heat sink to maximize heat dissipation and promote long life (L87/100,000 hrs at 25°C). The electronic driver has a power factor of >90%, THD <20%, and a minimum 2.5 KV surge rating. When ordering the SPD option, a separate surge protection device is installed within the luminaire which meets a minimum Category C low operation (per ANSI/IEEE C62.41.2).

INSTALLATION

Back housing is separated from front housing, eliminating ballast weight and promoting easy handling. Top 3/4" threaded wiring access. Back access through removable 3/4" knockout. Feed-thru wiring can be achieved by using a condulet tee. Mount on any vertical surface. Not recommended in applications where a sprayed stream of water can come in direct contact with glass lens.

LISTINGS

UL listed for wet locations. Rated for -40°C minimum ambient. Luminaire is IP55 rated. DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org to confirm which versions are qualified.

WARRANTY

Five year limited warranty. Complete warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx.

NOTE:

Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25°C. Specifications subject to change without notice.

Wallpack® IV

GLASS LED

INFRASTUCTURE

OUTDOOR

HOLOPHANE®

LEADER IN LIGHTING SOLUTIONS

An AcuityBrandsCompany

ORDER #:

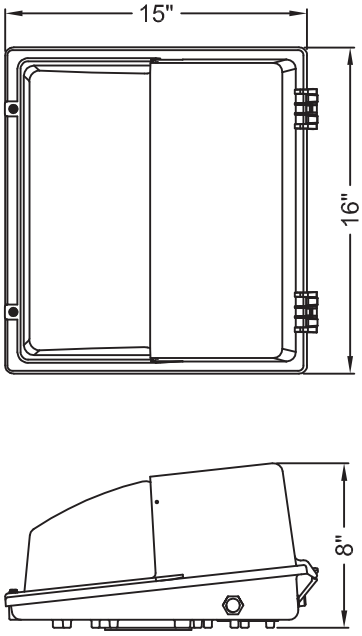
TYPE:

DRAWN: BGW

DATE: 9-30-15

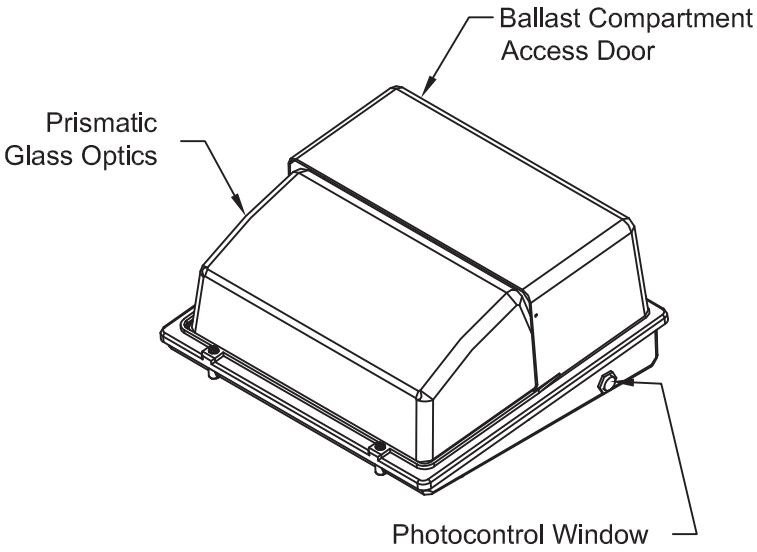
DWG #: W4GLED

UNDERDECK



Maximum Weight - 28 Lbs.

Type: TUNNEL



Wallpack® IV GLASS LED

INFRASTUCTURE OUTDOOR

HOLOPHANE® LEADER IN LIGHTING SOLUTIONS An AcuityBrandsCompany

ORDERING INFORMATION:

W4GLED | 30C | 1000 | 30K | T3M | 480 | DMG P7 | BZSDP

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W4GLED

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SHIPPED INSTALLED

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P7 = 7 PIN PHOTOCONTROL RECEPTACLE

RFD200924 SPECIAL WITH

0-10 VOLT DIMMING, 3000K CCT

AND 7 PIN RECEPTACLE

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ORDER #:
TYPE:
DRAWN: BGW
DATE: 9-30-15
DWG #: W4GLED

Lumen Output

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FEATURES & SPECIFICATIONS

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NOTE:

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Wallpack® IV

GLASS LED

INFRASTUCTURE

OUTDOOR

HOLOPHANE®

LEADER IN LIGHTING SOLUTIONS

An AcuityBrandsCompany

ORDER #:

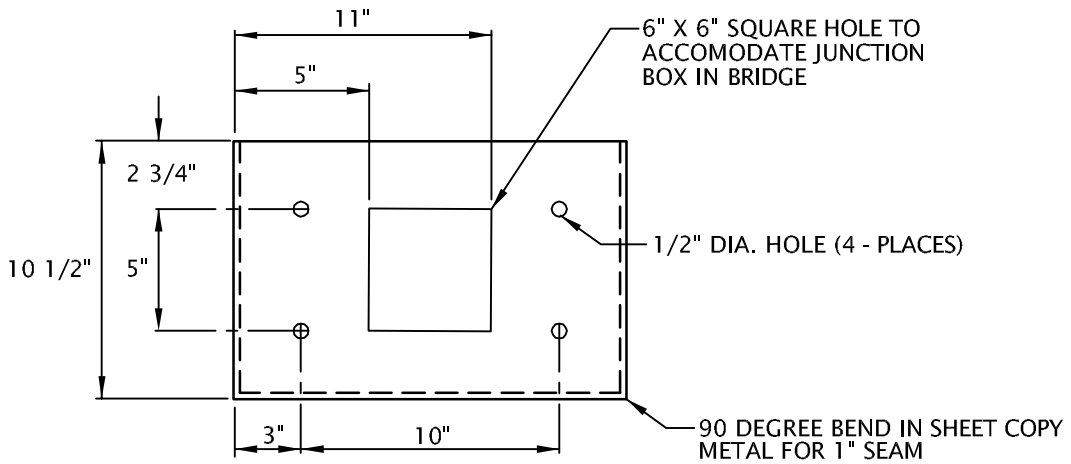
TYPE:

DRAWN: BGW

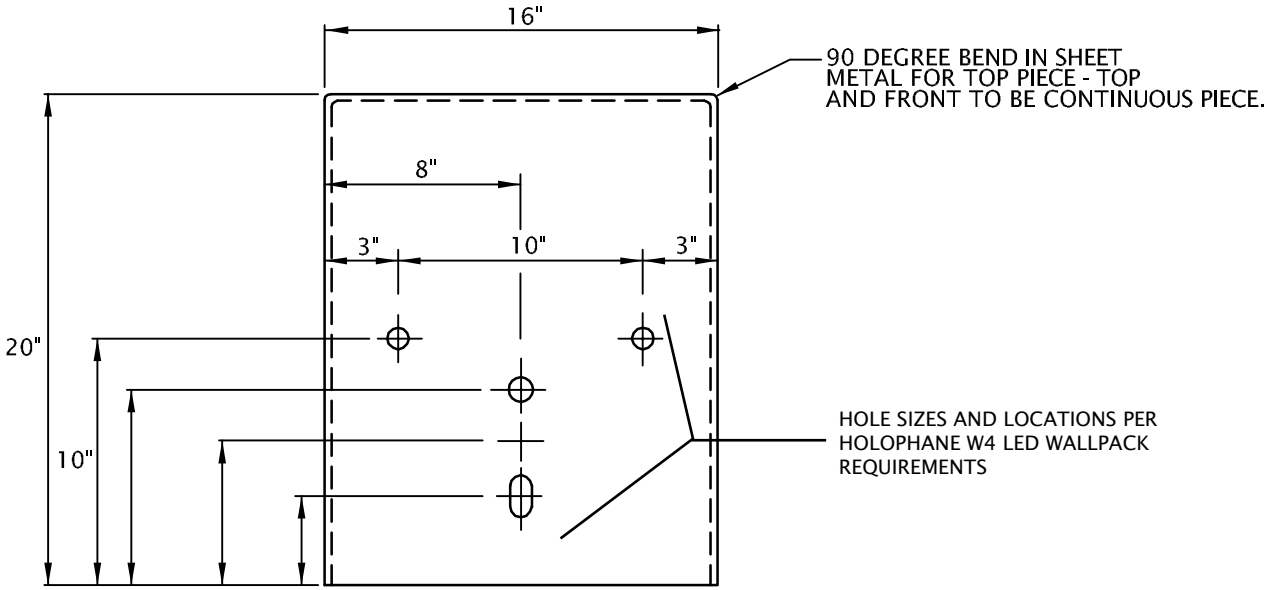
DATE: 9-30-15

DWG #: W4GLED

UNDER DECK BRACKET



TOP VIEW



FRONT VIEW

SPECIFICATIONS:

DESIGN CRITERIA: CONSTRUCTION - ARIZONA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2008 EDITION, AND THE ADOT 2010 TRAFFIC SIGNALS & LIGHTING STANDARD DRAWINGS. ANALYSIS AND DESIGN - AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 2004.

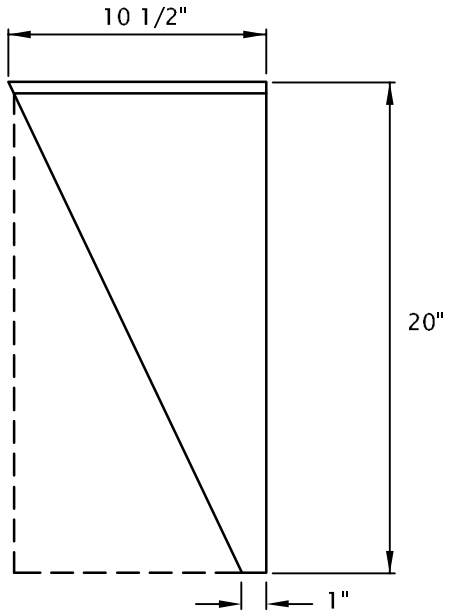
HOLE SIZES: HOLE SIZES AND DIMENSIONS SHALL BE PER PROJECT PLANS AND SPECIFICATIONS.

SHEET METAL: SHALL BE 10 GA. PER ASTM A366.

WELDING: WELDING SHALL CONFORM TO AWS D1.1 (LATEST EDITION). DIAGONAL SIDE PIECE TO BE WELDED ON 1" SEAM MINIMUM, EVERY 1".

FINISH: THE POLE IS SAND BLASTED TO A NEAR WHITE FINISH AND TREATED WITH AN IRON PHOSPHATE SOLUTION. A HIGH QUALITY POLYESTER POWDER IS THEN ELECTROSTATICALLY APPLIED AND CURED TO A MINIMUM 2.5 MIL. THICKNESS.

ELIMINATE DIAGONAL SIDE PIECE FOR SOLID 10 1/2" X 20" SIDE PIECE FOR DOUBLES ONLY.



SIDE VIEW

CEM-TEC CORPORATION
Steel Manufacturing Light Standards

3745 South 7th Avenue
Phoenix, Arizona 85041
(602) 268-8895 (Tel)
(602) 276-7251 (Fax)
Web: http://www.cem-tec.com

JOB NAME:

UNIVERSAL SQUARE BRACKET DETAIL

12/2/15

LED UNIVERSAL LIGHT

DESCRIPTION: LED Universal Light 12W

ITEM NUMBER: 31077X

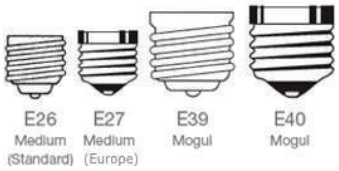
FEATURES

High-efficiency LED, featuring best in class thermal management, with a high CRI and 360 degree beam spread. 70%+ savings in energy consumption, 50,000+ hour life expectancy, wide voltage and constant current design, shock & vibration resistant, mercury-free, 100% recyclable, no ballast, no noise, no flickering. More efficient alternative to metal halide, high pressure sodium, and fluorescent lights. Perfect for hard to reach areas that require clean lighting. UL listed. IP64 rated for outdoor use.

APPLICATIONS

Outdoor Area Lighting
Bollard
Post Top
Wall Pack
Security Lighting

REPLACES



50w CFL, 40w MHL, HPS

TECHNICAL PARAMETERS

Life Span: 50,000

Fixture Material: Aluminum Base

IP Rating: IP64

Dimensions: 165x70x70mm (6.50x2.76x2.76in) [E27]
175x70x70mm (6.89x2.76x3.15in) [E40]

Thermal Layer Material: Aluminum Profile

Working Temperature: -30°C~65°C

OPTICAL PARAMETERS

LED Chip Type: SMD

LED Chip Quantity: 136 pcs

Lumens: 1300

Color Temperature: 5000K~5300K (1)
4000K~4300K (2)
3000K~3300K (3)

CRI: > 80

Beam Angle: 360°

Socket: E40 / E39 / E27 / E26

Cover: Clear

ELECTRICAL PARAMETERS

Input Voltage: AC 100V-277V

Total Power Consumption: 12W

Power Factor: > .95

Installation Note:

- ***When installing Universal Light, existing ballast must be bypassed according to installation guide.***

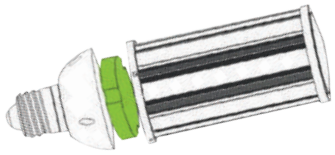
RoHS Compliant · LISTED · TÜVRheinland CERTIFIED · LM 79 · LM 80 · 3 Year Warranty

WARNING: READ INSTRUCTIONS BEFORE INSTALLING
Disconnect all power sources to the fixtures before installing.

www.trulygreensolutions.com | info@trulygreensolutions.com P: 818.206.4404 | F: 866.577.5302

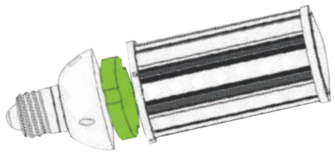
Ordering Information – LED UNIVERSAL LIGHT 12W

310771 LED Universal Light 12W Day White
310772 LED Universal Light 12W Natural White
310773 LED Universal Light 12W Warm White



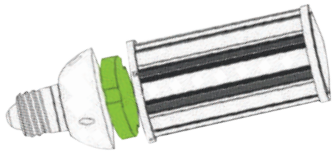
Ordering Information – LED UNIVERSAL LIGHT 16W

310781 LED Universal Light 16W Day White
310782 LED Universal Light 16W Natural White
310783 LED Universal Light 16W Warm White



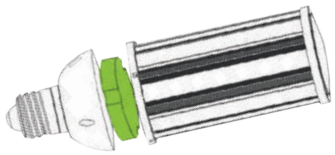
Ordering Information – LED UNIVERSAL LIGHT 20W

310791 LED Universal Light 20W Day White
310792 LED Universal Light 20W Natural White
310793 LED Universal Light 20W Warm White



Ordering Information – LED UNIVERSAL LIGHT 24W

310801 LED Universal Light 24W Day White
310802 LED Universal Light 24W Natural White
310803 LED Universal Light 24W Warm White



WARNING: READ INSTRUCTIONS BEFORE INSTALLING
Disconnect all power sources to the fixtures before installing.
www.trulygreensolutions.com | info@trulygreensolutions.com P: 818.206.4404 | F: 866.577.5302

LED UNIVERSAL LIGHT

DESCRIPTION: LED Universal Light 54W

ITEM NUMBER: 31084X

FEATURES

High-efficiency Samsung LED, best in class thermal management, with a high CRI and 360 degree beam spread. 70%+ savings in energy consumption, 50,000+ hour life expectancy, wide voltage and constant current design, shock & vibration resistant, mercury-free, 100% recyclable, no ballast, no noise, no flickering. More efficient alternative to metal halide, high pressure sodium, and fluorescent lights. Perfect for hard to reach areas that require clean lighting. UL listed. IP64 rated for outdoor use.

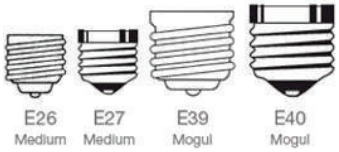
[Not Suitable For Wall Packs]

APPLICATIONS

Outdoor Area Lighting
Bollard
Post Top
Wall Pack
Security Lighting

REPLACES

(Custom Base E26 / E27: MOQ Applies)



200w CFL, 170w MHL, HPS

TECHNICAL PARAMETERS

Life Span: 50,000

Fixture Material: Aluminum Base

IP Rating: IP64

Dimensions: 258x93mm (10.15x3.66 in) [E27]
274x93mm (10.79x3.66 in) [E40]

Weight: 0.88kg (1.94 lbs)

Thermal Layer Material: Aluminum Profile

Working Temperature: -29°C~60°C
-20ºF~140ºF

OPTICAL PARAMETERS

LED Chip Type: SMD

LED Chip Quantity: 180 pcs

Lumens: 6480

Color Temperature: 5000K (1)
4000K (2)
3000K (3)

Lumen Output May Vary ± 200 lm

CRI: ≥ 85

Beam Angle: 360°

Socket: E40 / E39

Cover: Clear

ELECTRICAL PARAMETERS

Input Voltage: AC 100V-277V
*347V Available (External Driver)

Total Power Consumption: 54W

Power Factor: ≥ 0.9

Installation Note:

- ***When installing Universal Light, existing ballast must be bypassed according to installation guide.***

CE RoHS Compliant FC cULus LISTED TÜVRheinland CERTIFIED lighting design lab LM 79 LM 80 5 Year Warranty REBATE

WARNING: READ INSTRUCTIONS BEFORE INSTALLING
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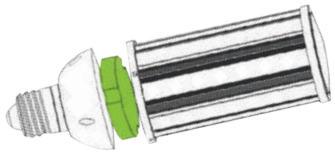
For medium base please add "A" at the end of product number.

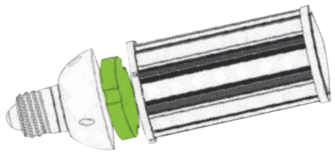
Ordering Information – LED UNIVERSAL LIGHT 27W

310811 LED Universal Light 27W Day White
310812 LED Universal Light 27W Natural White
310813 LED Universal Light 27W Warm White



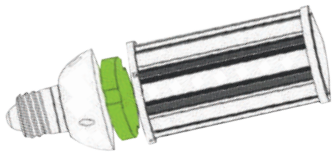
Ordering Information – LED UNIVERSAL LIGHT 36W

310821 LED Universal Light 36W Day White
310822 LED Universal Light 36W Natural White
310823 LED Universal Light 36W Warm White



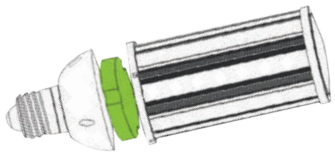
Ordering Information – LED UNIVERSAL LIGHT 45W

310831 LED Universal Light 45W Day White
310832 LED Universal Light 45W Natural White
310833 LED Universal Light 45W Warm White



Ordering Information – LED UNIVERSAL LIGHT 54W

310841 LED Universal Light 54W Day White
310842 LED Universal Light 54W Natural White
310843 LED Universal Light 54W Warm White



WARNING: READ INSTRUCTIONS BEFORE INSTALLING
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LED UNIVERSAL STREET LIGHT G4

DESCRIPTION: LED Universal Street Light G4 40W

ITEM NUMBER: 32084X-G4

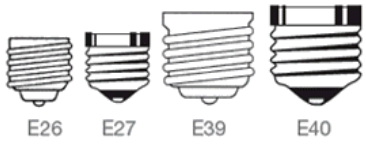
FEATURES

High-efficiency Samsung LED, best in class thermal management, with a high CRI and 180 degree beam spread. 70%+ savings in energy consumption, 60,000+ hour life expectancy, wide voltage and constant current design, shock & vibration resistant, mercury-free, 100% recyclable, no ballast, no noise, no flickering. More efficient alternative to metal halide, high pressure sodium, and fluorescent lights. Perfect for hard to reach areas that require clean lighting. UL listed.

APPLICATIONS

Outdoor Area Lighting
Post Top
Wall Pack
Security Lighting

REPLACES



250W
HPS, MHL , HID

TECHNICAL PARAMETERS

Life Span: 60,000

Fixture Material: Aluminum Base

IP Rating: IP64

Dimensions: 268x90mm (10.55x3.54 in) [E27]
278x90mm (10.94x3.54 in) [E40]

Weight: 0.79 kg (1.74 lbs)

Thermal Layer Material: Aluminum Profile

Working Temperature: -29°C~60°C
-20ºF~140ºF

OPTICAL PARAMETERS

LED Chip Type: SMD

LED Chip Quantity: 220 pcs

Lumens: 5800 (145 lm/W)

Color Temperature: 5000K [145 lm/W] (1)
4000K [140 lm/W] (2)
3000K [130 lm/W] (3)

Lumen Output May Vary* : ± *200 lm

CRI: ≥ 80

Beam Angle: 180°

Socket: E26, E27, E39, E40

Cover: Clear

ELECTRICAL PARAMETERS

Input Voltage: AC 100V-277V
* 347V Available

Total Power Consumption: 40W

Power Factor: ≥ 0.9

Installation Note:

- ***When installing Universal Light, existing ballast must be bypassed according to installation guide.***

RoHS Compliant · c UL us LISTED · TÜVRheinland CERTIFIED · LM 80 · 6 Year Warranty

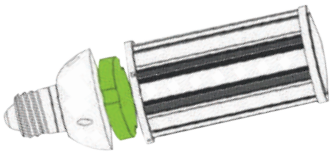
WARNING: READ INSTRUCTIONS BEFORE INSTALLING
Disconnect all power sources to the fixtures before installing.

www.trulygreensolutions.com | info@trulygreensolutions.com P: 818.206.4404 | F: 866.577.5302

For medium base please add "A" at the end of product number.

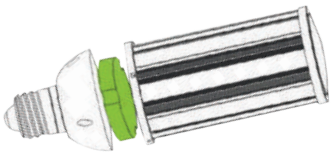
Ordering Information – LED UNIVERSAL Street Light G4 40W

320811-G4 LED Universal Street Light G4 20W Day White
320812-G4 LED Universal Street Light G4 20W Natural White
320813-G4 LED Universal Street Light G4 20W Warm White



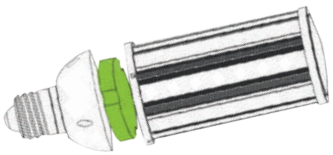
Ordering Information – LED UNIVERSAL Street Light G4 40W

320821-G4 LED Universal Street Light G4 30W Day White
320822-G4 LED Universal Street Light G4 30W Natural White
320823-G4 LED Universal Street Light G4 30W Warm White



Ordering Information – LED UNIVERSAL Street Light G4 40W

320841-G4 LED Universal Street Light G4 40W Day White
320842-G4 LED Universal Street Light G4 40W Natural White
320843-G4 LED Universal Street Light G4 40W Warm White



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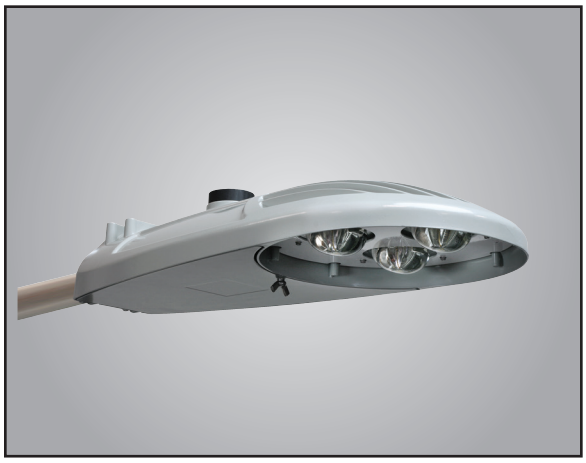
Disconnect all power sources to the fixtures before installing.
www.trulygreensolutions.com | info@trulygreensolutions.com P: 818.206.4404 | F: 866.577.5302

E.2 New Garage Equipment Cut-Sheets

Consistent with LEED® goals & Green Globes™ criteria for light pollution reduction

Autobahn Series ATBM
Roadway

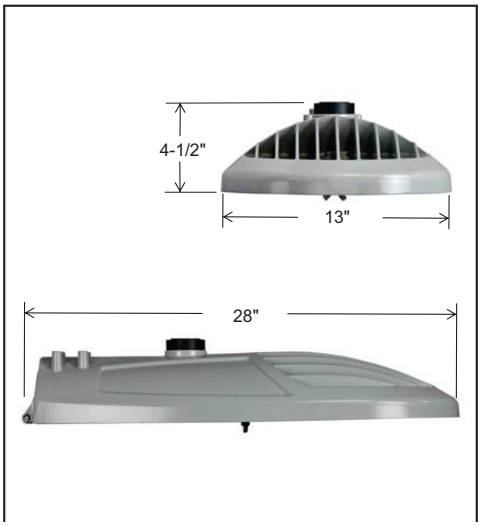
PRODUCT OVERVIEW



Applications:

Residential streets
Parking lots
High speed roadways

DIMENSIONS



Effective Projected Area (EPA)
The EPA for the ATBM is 0.3 sq. ft.,
Approx. Wt. = 21 lbs. (9.5 kg)

Features:

OPTICAL

Same Light: Performance is comparable to 150W – 250W HPS

White Light: Correlated color temperature - standard 4000K, 70 CRI minimum or optional 5000K, 70 CRI minimum.

IP66 rated borosilicate glass optics ensure longevity and minimize dirt depreciation. Unique IP66 rated LED light engines provide 0% uplight and restrict backlight to within sidewalk depth, providing optimal application coverage and optimal pole spacing.

Available distributions are Type II, III, IV, & V roadway distributions.

ELECTRICAL

Expected Life: LED light engines are rated >100,000 hours at 25°C, L70. Electronic driver has an expected life of 100,000 hours at a 25°C ambient.

Lower Energy: Saves an expected 40-60% over comparable HID luminaires.

Robust Surge Protection: Three different surge protection options provide a minimum of IEEE/ANSI C62.41 Category C (10kV/5kA) protection.

MECHANICAL

Includes standard AEL lineman-friendly features such as tool-less entry, 3 station terminal block and quick disconnects. Bubble level located inside the electrical compartment for easy leveling at installation.

Rugged die-cast aluminum housing and door are polyester powder-coated for durability and corrosion resistance. Rigorous five-stage pre-treating and painting process yields a finish that achieves a scribe creepage rating of 8 (per ASTM D1654) after over 5000 hours exposure to salt fog chamber (operated per ASTM B117).

Mast arm mount is adjustable for arms from 1-1/4" to 2" (1-5/8" to 2-3/8" O.D.) diameter. The 2 – bolt and optional 4 bolt clamping mechanism provide 3G vibration rating per ANSI C136.

The Wildlife shield is cast into the housing (not a separate piece).

CONTROLS

NEMA 3 pin photocontrol receptacle is standard, with the Acuity designed ANSI standard 5 pin and 7 pin receptacles optionally available.

Premium solid state locking-style photocontrol – PCSS (10 year rated life)
Extreme long life solid state locking-style photocontrol – PCL1 (20 year rated life).

Extreme long life solid state locking-style photocontrol with on demand remote on/off control - PCCC (15 year rated life).

Optional onboard Adjustable Output module allows the light output and input wattage to be modified to meet site specific requirements, and also can allow a single fixture to be flexibly applied in many different applications.

STANDARDS

DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.
Rated for -40°C to 40°C ambient
CSA Certified to U.S. and Canadian standards
Complies with ANSI: C136.2, C136.10, C136.14, C136.31, C136.15, C136.37

Note: Specifications subject to change without notice. Actual performance may differ as a result of end-user environment and application.

American Electric Lighting®

Autobahn Series ATBM
Roadway

ORDERING INFORMATION

Example: ATBM A MVOLT R2

ATB0	D	480	R3	
Series	Performance Packages	Voltage	Optics	Mounting
ATBM Autobahn LED Roadway	**A** 7,000 lumens **B** 8,000 lumens **C** 9,000 lumens **D** 11,600 lumens **E** 13,400 lumens **F** 15,700 lumens **G** 16,600 lumens **H** 17,400 lumens	**MVOLT** Multi-volt, 120-277V **347** 347V **480** 480V	**R2** Roadway Type II **R3** Roadway Type III **R4** Roadway Type IV **R5** Roadway Type V	**(Blank)** 2 Bolt Mounting **4B** 4 Bolt Mounting

3K / BZ / NL / P7 / RFD200357

Options

Color Temperature (CCT)
- **(Blank)** 4000K CCT, 70 CRI Min.
- **5K** 5000K CCT, 70 CRI Min.

Paint
- **(Blank)** Gray
- **BK** Black
- **BZ** Bronze
- **DDB** Dark Bronze
- **GI** Graphite
- **WH** White

Surge Protection
- **(Blank)** Acuity SPD
- **MP** MOV Pack[1]
- **IL** SPD with Indicator Light

Miscellaneous Options
- **HSS** House Side Shield
- **NL** NEMA Label Indicating Wattage
- **XL** Not CSA Certified – No Terminal Block Cover

Control Options
- **(Blank)** 3 Pin NEMA Photocontrol Receptacle
- **P5** 5 Pin Photocontrol Receptacle (dimmable driver included)
- **P7** 7 Pin Photocontrol Receptacle (dimmable driver included)
- **NR** No Photocontrol Receptacle
- **AO** Field Adjustable Output
- **DM** 0-10V Dimmable Driver
- **PCSS** Solid-State Lighting Photocontrol
- **PCLL** Solid-State Long Life Photocontrol
- **PCCC** Solid-State Long Life Photocontrol with remote control on/off
- **SH** Shorting Cap

Packages
- **(Blank)** Standard Pack
- **JP** Job Pack (36/pallet)

Accessories
- **ATBMHSS** House Side Shield
- **ATBMLTS** Light Trespass Shield
- **RKATBMMVOLTSPD** ATBM Acuity SPD Replacement Kit MVOLT
- **RKATBMHVSPD** ATBM Acuity SPD Replacement Kit 347/480V
- **RKATBMMVOLTMP** ATBM MOV Pack Replacement Kit
- **RKATBMMVOLTIL** ATBM IL SPD Replaement Kit

Notes:
1. Not available with G and H performance packages.

Note: Specifications subject to change without notice. Actual performance may differ as a result of end-user environment and application.

American Electric Lighting®
AEL Headquarters, 3825 Columbus Road, Granville, OH 43023
www.americanelectriclighting.com

Warranty Five-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx
Actual performance may differ as a result of end-user environment and application.
All values are design or typical values, measured under laboratory conditions at 25 °C.
Specifications subject to change without notice.

Please contact your sales representative for the latest product information.

PERFORMANCE PACKAGE

Performance Package	Distribution	4000 K CCT			LLD @ 25°C		
		Lumens	Input Watts	LPW	50K Hours	75K Hours	100K Hours
A	R2	7,114	60	118	89	84	80
	R3	7,024		117			
	R4	6,958		116			
	R5	7,469		124			
B	R2	8,090	70	115	89	84	80
	R3	8,016		114			
	R4	7,924		113			
	R5	8528		121			
C	R2	9031	81	112	89	84	80
	R3	8,942		111			
	R4	8,827		110			
	R5	9,517		118			
D	R2	11,769	95	124	90	87	84
	R3	11,690		123			
	R4	11,534		121			
	R5	12,388		130			
E	R2	13,601	115	118	90	87	84
	R3	13,416		117			
	R4	13,323		116			
	R5	14,263		124			
F	R2	15,932	133	120	90	86	83
	R3	15,741		118			
	R4	15,476		116			
	R5	16,691		125			
G	R2	17,102	150	114	90	86	83
	R3	16,974		113			
	R4	16,635		111			
	R5	17,938		119			
H	R2	18,085	164	111	90	86	83
	R3	17,929		110			
	R4	17,439		107			
	R5	18,966		116			

Note: Specifications subject to change without notice. Actual performance may differ as a result of end-user environment and application.

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www.americanelectriclighting.com

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Actual performance may differ as a result of end-user environment and application.
All values are design or typical values, measured under laboratory conditions at 25 °C.
Specifications subject to change without notice.

Please contact your sales representative for the latest product information.

Autobahn Series ATB0
Roadway Lighting

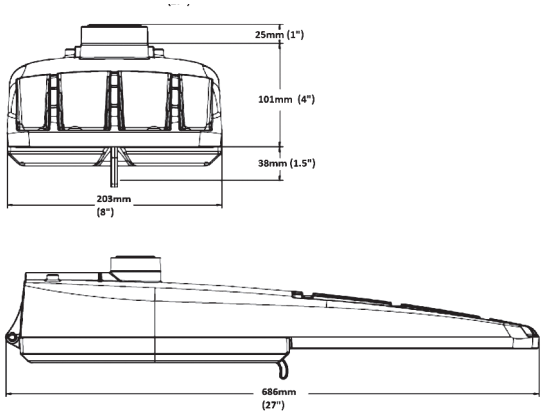
Consistent with LEED® goals & Green Globes™ criteria for light pollution reduction

PRODUCT OVERVIEW

Applications:

- Roadways
- Off ramps
- Residential streets
- Parking lots

DIMENSIONS



Effective Projected Area (EPA): The EPA for the ATB0 is 0.76 sq. ft.
Approx. Wt. = 14 lbs.

Features:

OPTICAL

Same Light: Performance is comparable to 70-200W HPS roadway luminaires.

White Light: Correlated color temperature – standard 4000K, 70 CRI minimum or optional 5000K, 70 CRI minimum.

Unique IP66 rated LED light engines provided 0% uplight and restrict backlight to within sidewalk depth, providing optimal application coverage and optimal pole spacing. Available in Type II, III, IV, and V roadway distributions.

ELECTRICAL

Expected Life: LED light engines are rated >100,000 hours at 25°C, L70. Electronic driver has an expected life of 100,000 hours at a 25°C ambient.

Lower Energy: Saves an expected of 40-60% over comparable HID luminaires.

Robust Surge Protection: Three different surge protection options provide a minimum of IEEE/ANSI C62.41 Category C (10kV/5kA) protection.

MECHANICAL

Includes standard AEL lineman-friendly features such as tool-less entry, 3 station terminal block and quick disconnects. Bubble level located inside the electrical compartment for easily leveling at installation.

Rugged die-cast aluminum housing and door are polyester powder-coated for durability and corrosion resistance. Rigorous five-stage pre-treating and painting process yields a finish that achieves a scribe creepage rating of 8 (per ASTM D1654) after over 1000 hours exposure to salt fog chamber (operated per ASTM B117). Optional Enhanced Corrosion Resistant finish (CR) increases the salt spray exposure over 5000 hours.

Mast arm mount is adjustable for arms from 1-1/4" to 2" (1-5/8" to 2-3/8" O.D.) diameter. Provides a 3G vibration rating per ANSI C136.31

Wildlife shield is cast into the housing (not a separate piece).

CONTROLS

NEMA 3 pin photocontrol receptacle is standard, with the Acuity designed ANSI standard 5 pin and 7 pin receptacles optionally available.

Premium solid state locking style photocontrol - PCSS (10 year rated life) Extreme long life solid state locking style photocontrol - PCLL (20 year rated life).

Multi-level dimming available to provide scheduled dimming as specified by the customer.

Optional onboard Adjustable Output module allows the light output and input wattage to be modified to meet site specific requirements, and also can allow a single fixture to be flexibly applied in many different applications.

STANDARDS

DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

Rated for -40°C to 40°C ambient

CSA Certified to U.S. and Canadian standards

Complies with ANSI: C136.2, C136.10, C136.14, C136.31, C136.15, C136.37

Note: Specifications subject to change without notice. Actual performance may differ as a result of end-user environment and application.

AEL American Electric Lighting®

Autobahn Series ATBO
Roadway Lighting

ORDERING INFORMATION

Example: ATBO 30LEDE10 MVOLT R2

Series

ATBO Autobahn LED Roadway

Performance Packages

20BLEDE53[1]	20B Chips, 525mA Driver
20BLEDE70	20B Chips, 700mA Driver
20BLEDE10	20B Chips, 1050mA Driver
20BLEDE13	20B Chips, 1300mA Driver
30BLEDE70	30B Chips, 700mA Driver
30BLEDE85	30B Chips, 850mA Driver
30BLEDE10	30B Chips, 1050mA Driver
30BLEDE13	30B Chips, 1300mA Driver

Voltage

MVOLT	Multi-volt, 120-277V
347	347V
480	480V

Optics

R2	Roadway Type II
R3	Roadway Type III
R4	Roadway Type IV
R5	Roadway Type V

Options

Color Temperature (CCT)

(Blank)	4000K CCT, 70 CRI Min. (Standard)
5K	5000K CCT, 70 CRI Min.

Paint

(Blank)	Gray (Standard)
BK	Black
BZ	Bronze
DDB	Dark Bronze
GI	Graphite
WH	White

Surge Protection

Blank	Acuity SPD with inductive filter circuit (Standard)
MP[2]	MOV Pack
IL[2]	SPD with Indicator Light

Terminal Block

(Blank)	Terminal Block (Standard)
T2	Wired to L1 & L2 Positions

Misc.

BL	External Bubble Level
CR	Enhanced Corrosion Resistant Finish
HS	House-Side Shield
NL	Nema Label
XL	Not CSA Certified

Controls

(Blank)	3 Pin NEMA Photocontrol Receptacle (Standard)
P5[3]	5 Pin Photocontrol Receptacle (Dimmable Driver Included)
P7[3]	7 Pin Photocontrol Receptacle (Dimmable Driver Included)
NR	No Photocontrol Receptacle
AO[4]	Field Adjustable Output
DM	0V-10V Dimmable Driver (Controls by others)
ML[5,6]	Multi-Level Dimming
PCSS[2]	Solid State Lighting Photocontrol (120-277V)
PCLL	Solid State Long Life Photocontrol
SH	Shorting Cap

Packaging

(Blank)	Single Unit (Standard)
JP	Job Pack (42/Pallet)

Notes

1 20BLEDE53 not compatible with the following options: P5, P7, AO, DM, ML.

2 Not available in 347 or 480V.

3 Not available with AO, DM, ML options.

4 Not available with DM or ML options.

5 Not available with AO, DM, P5 or P7 options.

6 Dimming Schedule and light level information required from the customer in order to configure product. Contact Infrastructure Technical Support to proceed.

Note: Specifications subject to change without notice. Actual performance may differ as a result of end-user environment and application.

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www.americanelectriclighting.com

Warranty Five-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx
Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

Please contact your sales representative for the latest product information.

PERFORMANCE PACKAGE

Performance Package	Drive Current (mA)	Input Watts	Optic	4000K CCT		LLD @ 25°C	
				Delivered Lumens	Efficacy (LPW)	50k Hours	100k Hours
20B	525	37	R2	3806	103	0.98	0.96
	700	49		4865	99	0.98	0.96
	1000	73		6414	88	0.93	0.89
	1300	92		7504	82	0.89	0.82
	525	37	R3	3775	102	0.98	0.96
	700	49		4807	98	0.98	0.96
	1000	73		6256	86	0.93	0.89
	1300	92		7372	80	0.89	0.82
	525	37	R4	3721	101	0.98	0.96
	700	49		4747	97	0.98	0.96
	1000	73		6256	86	0.93	0.89
	1300	92		7338	80	0.89	0.82
	525	37	R5	3775	102	0.98	0.96
	700	49		4807	98	0.98	0.96
	1000	73		6256	86	0.93	0.89
	1300	92		7372	80	0.89	0.82
30B	700	70	R2	7053	101	0.98	0.96
	850	88		8182	93	0.96	0.90
	1000	107		9472	89	0.92	0.86
	1300	135		10790	80	0.88	0.79
	700	70	R3	7085	101	0.98	0.96
	850	88		8155	93	0.96	0.90
	1000	107		9497	89	0.92	0.86
	1300	135		10930	81	0.88	0.79
	700	70	R4	7021	100	0.98	0.96
	850	88		8000	91	0.96	0.90
	1000	107		9231	86	0.92	0.86
	1300	135		10400	77	0.88	0.79
	700	70	R5	7444	106	0.98	0.96
	850	88		8400	95	0.96	0.90
	1000	107		9823	92	0.92	0.86
	1300	135		11110	82	0.88	0.79

Note: Information shown above is based on nominal system data. Individual fixture performance may vary. Specifications subject to change without notice.

ATB0 LLD Multiplier	15°C	20°C	25°C	30°C	35°C	40°C
	1.02	1.01	1	0.98	0.97	0.95

To calculate the LLD for a temperature other than 25°C, multiply the LLD @ 25°C (shown in the performance package table) by the LLD multiplier for the selected temperature.

American Electric Lighting®
AEL Headquarters, 3825 Columbus Road, Granville, OH 43023
www.americanelectriclighting.com

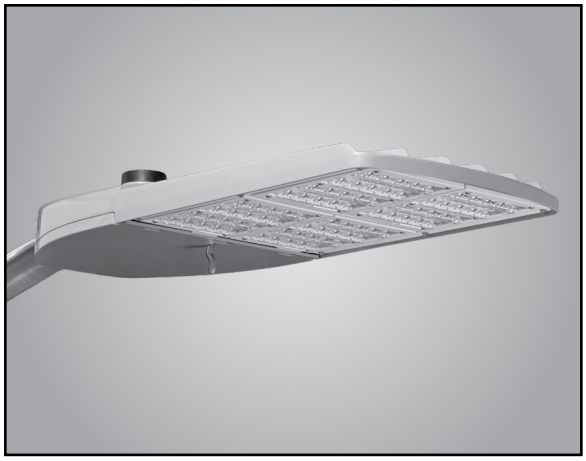
Warranty Five-year limited warranty. Complete warranty terms located at:
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx
Actual performance may differ as a result of end-user environment and application.
All values are design or typical values, measured under laboratory conditions at 25 °C.
Specifications subject to change without notice.

Please contact your sales representative for the latest product information.

Autobahn Series ATB2
Roadway Lighting

Consistent with LEED® goals & Green Globes™ criteria for light pollution reduction

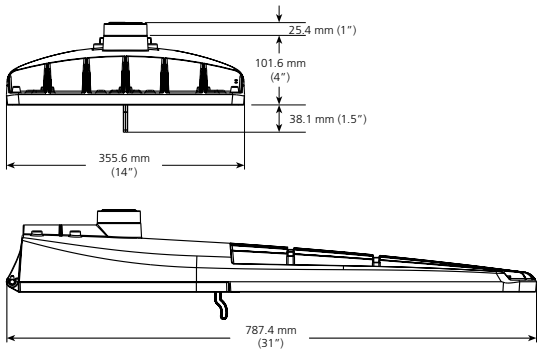
PRODUCT OVERVIEW



Applications:

Roadways
Off ramps
Residential streets
Parking lots

DIMENSIONS



Effective Projected Area (EPA)
The EPA for the ATB2 is 0.78 sq. ft.,
Approx. Wt. = 21 lbs. (9.53 kg)

Features:

OPTICAL

Same Light: Performance is comparable to 250-400W HPS roadway luminaires.

White Light: Correlated color temperature - standard 4000K, 70 CRI minimum or optional 5000K, 70 CRI minimum.

Unique IP66 rated LED light engines provided 0% uplight and restrict backlight to within sidewalk depth, providing optimal application coverage and optimal pole spacing.

Available in Type II, III, IV, & V roadway distributions.

ELECTRICAL

Expected Life: LED light engines are rated >100,000 hours at 25°C, L70. Electronic driver has an expected life of 100,000 hours at a 25°C ambient.

Lower Energy: Saves an average of 40-60% over comparable HPS platforms.

Robust Surge Protection: Three different surge protection options provide a minimum of IEEE/ANSI C62.41 Category C (10kV/5kA) protection.

MECHANICAL

Easy to Maintain: Includes standard AEL lineman-friendly features such as tool-less entry, 3 station terminal block and quick disconnects. Bubble level located inside the electrical compartment for easy leveling at installation.

Rugged die-cast aluminum housing is polyester powder-coated for durability and corrosion resistance. Rigorous five-stage pre-treating and painting process yields a finish that achieves a scribe creepage rating of 8 (per ASTM D1654) after over 1000 hours exposure to salt fog chamber (operated per ASTM B117) Optional Enhanced Corrosion Resistant finish (CR) increases the salt spray exposure to 5000 hours.

Four-bolt mast arm mount is adjustable for arms from 1-1/4" to 2" (1-5/8" to 2-3/8" O.D.) diameter and provides a 3G vibration rating per ANSI C136.

Wildlife shield is cast into the housing (not a separate piece).

CONTROLS

NEMA 3 Pin photocontrol receptacle is standard, with the Acuity designed ANSI 5 Pin and 7 Pin receptacles optionally available.

Premium solid state locking sale photocontrol - PCSS (10 year rated life). Extreme long life sold state locking style photocontrol - PCLL (20 year rated life).

Mulit-level dimming available to provide scheduled dimming as specified by the customer.

Optional onboard Adjustable Output module allows the light output and input wattage to be modified to meet site specific requirements, and can also allow a single fixture to be flexibly applied in many different applications.

WARRANTY & STANDARDS

5 year limited warranty. Full warranty terms located at http://www.acuitybrands.com/Libraries/Terms_and_Conds/ABL_LED_Commerical_Outdoor.sflb.ashx

Rated for -40°C to 40°C ambient.

CSA Certified to U.S. and Canadian standards

Complies with ANSI: C136.2, C136.10, C136.14, C136.31, C136.15, C136.37

Note: Specifications subject to change without notice. Actual performance may differ as a result of end-user environment and application.

AEL American Electric Lighting®

Autobahn Series ATB2
Roadway Lighting

ORDERING INFORMATION

Example: ATB2 40LEDE70 MVOLT R2

Series

ATB2 Autobahn LED Roadway & Security

Performance Packages

40BLEDE70	40B Chips, 700mA Driver
40BLEDE10	40B Chips, 1050mA Driver
40BLEDE13	40B Chips, 1300mA Driver
60BLEDE70	60B Chips, 700mA Driver
60BLEDE85	60B Chips, 850mA Driver
60BLEDE10	60B Chips, 1050mA Driver
60BLEDE13	60B Chips, 1300mA Driver
80BLEDE70	80B Chips, 700mA Driver
80BLEDE85	80B Chips, 850mA Driver
80BLEDE10	80B Chips, 1050mA Driver

Voltage

MVOLT	Multi-volt, 120-277V
347	347V
480	480V

Optics

R2	Roadway Type II
R3	Roadway Type III
R4	Roadway Type IV
R5	Roadway Type V

Options

Color Temperature (CCT)

(Blank)	4000K CCT, 70 CRI Min. (Standard)
5K	5000K CCT, 70 CRI Min.

Paint

(Blank)	Gray (Standard)
BK	Black
BZ	Bronze
DDB	Dark Bronze
GI	Graphite
WH	White

Surge Protection

Blank	Acuity SPD with inductive filter (Standard)
MP[1]	MOV Pack
IL[1]	SPD with Indicator Light

Terminal Block

(Blank)	Terminal Block (Standard)
T2	Wired to L1 & L2 Positions

Misc.

BL	External Bubble Level
CR	Enhanced Corrosion Resistant Finish
HS	House-Side Shield
NL	Nema Label
XL	Not CSA Certified
HK	Hinge Keeper

Controls

(Blank)	3 Pin NEMA Photocontrol Receptacle (Standard)
P5[5]	5 Pin Photocontrol Receptacle (Dimmable Driver Included)
P7[5]	7 Pin Photocontrol Receptacle (Dimmable Driver Included)
NR	No Photocontrol Receptacle
AO[2]	Field Adjustable Output
DM	0V-10V Dimmable Driver (Controls by others)
ML[3,4]	Multi-Level Dimming
PCSS[1]	Solid State Lighting Photocontrol (120-277V)
PCLL	Solid State Long Life Photocontrol
SH	Shorting Cap

Packaging

(Blank)	Single Unit (Standard)
JP	Job Pack (24/Pallet)

Notes

1. Not available in 347 or 480V.
2. Not available with DM or ML options.
3. Not available with AO, DM, P5 or P7 options.
4. Dimming schedule and light level information required from the customer in order to configure product. Contact Infrastructure Technical Support to proceed.
5. Not available with AO, DM, ML options.

Note: Specifications subject to change without notice. Actual performance may differ as a result of end-user environment and application.

American Electric Lighting®

AEL Headquarters, 3825 Columbus Road, Granville, OH 43023

Warranty Five-year limited warranty. Full warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Visit our web site at www.americanelectriclighting.com

Product specifications may change without notice.
Please contact your sales representative for the latest product information.

PERFORMANCE PACKAGE

Performance Package	Drive Current (mA)	Input Watts	Optic	4000K CCT		LLD @ 25°C	
				Delivered Lumens	Efficacy (LPW)	50k Hours	100k Hours
40B	700	94	R2	9496	101	0.98	0.96
	1000	143		12852	90	0.98	0.96
	1300	187		14821	79	0.95	0.88
	700	94	R3	9259	99	0.98	0.96
	1000	143		12920	90	0.98	0.96
	1300	187		14886	80	0.95	0.88
	700	94	R4	9461	101	0.98	0.96
	1000	143		12816	90	0.98	0.96
	1300	187		14791	79	0.95	0.88
	700	94	R5	10095	107	0.98	0.96
	1000	143		13651	95	0.98	0.96
	1300	187		15750	84	0.95	0.88
60B	700	138	R2	13891	101	0.96	0.90
	850	178		16125	91	0.94	0.88
	1000	215		18570	86	0.92	0.86
	1300	273		21059	77	0.89	0.79
	700	138	R3	14054	102	0.96	0.90
	850	178		16264	91	0.94	0.88
	1000	215		18562	86	0.92	0.86
	1300	273		21134	77	0.89	0.79
	700	138	R4	13894	101	0.96	0.90
	850	178		16119	91	0.94	0.88
	1000	215		18505	86	0.92	0.86
	1300	273		21158	78	0.89	0.80
	700	138	R5	14576	106	0.96	0.90
	850	178		16935	95	0.94	0.88
	1000	215		19373	90	0.92	0.86
	1300	273		22093	81	0.89	0.79
80B	700	185	R2	18710	101	0.98	0.96
	850	232		21668	93	0.93	0.88
	1000	284		24921	88	0.91	0.84
	700	185	R3	18805	102	0.98	0.96
	850	232		21772	94	0.93	0.88
	1000	284		25050	88	0.91	0.84
	700	185	R4	18628	101	0.98	0.96
	850	232		21571	93	0.93	0.88
	1000	284		24793	87	0.91	0.84
	700	185	R5	19982	108	0.98	0.96
	850	232		23155	100	0.93	0.88
	1000	284		26456	93	0.91	0.84

Note: Information shown above is based on nominal system data. Individual fixture performance may vary. Specifications subject to change without notice.

ATB2 LLD Multiplier	15°C	20°C	25°C	30°C	35°C	40°C
	1.02	1.01	1	0.99	0.97	0.96

To calculate the LLD for a temperature other than 25°C, multiply the LLD @ 25°C (shown in the performance package table) by the LLD multiplier for the selected temperature.

American Electric Lighting®

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Warranty Five-year limited warranty. Full warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

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Please contact your sales representative for the latest product information.

HOLOPHANE
LEADER IN LIGHTING SOLUTIONS

Catalog Number	
Notes	
Type	

FEATURES & SPECIFICATIONS

INTENDED USE — Ideal for use in applications where smart, energy-efficient fixtures are desired. Typical applications include parking garage, canopy, transportation, school, hospital, cold storage and exterior retail environments where moisture or dust is a concern. Polycarbonate enclosure protects fixture while remaining easy to service and clean.

CONSTRUCTION — UV-stabilized, injection-molded, impact-resistant, frosted polycarbonate housing with continuous poured-in-place, closed-cell gasket. 20-gauge steel channel and channel cover. Aluminum sheet metal board plate for thermal conduction and support. Captive, tamper-resistant, polycarbonate latches standard (8 Torx T-20 tamper-resistant screws included). Stainless steel latches also available. Fixture design allows for approximately 4% up-light.

OPTICS — UV-stabilized, injection-molded, impact-resistant, clear transparent and frosted, polycarbonate lens with aesthetic rib detail (.080" thick). Miro 5 aluminum reflector used to achieve wide distribution.

ELECTRICAL — Utilizes high-output LEDs integrated on a two-layer circuit board, ensuring cool-running operation. Electronic LED driver rated for 44 input watts and is standard 0-10V dimming standard. Integral 6kV/3kA surge protection, tested in accordance to IEEE/ANSI standards. L85 at 60,000 hours.

INSTALLATION — Stainless steel surface spring-mounting brackets standard (2 included) allows for ceiling or suspended mount. A variety of stainless steel mounting options also available: J-box mounting and mounting brackets for suspension with aircraft cable (cable not included). Optional stainless steel V hooks available for chain hanging (chain not included). Surface conduit entry on each end and on top. For horizontal and vertical mounting on a wall, application must be under a covered ceiling and QMB option recommended. 1/2" - 3/4" KO. When wall mounted the product will be rated fro damp location only.

LISTINGS — NSF Splash Zone 2 rated, CSA Certified to UL and C-UL standards. Minimum ambient temperature or -20°F (-29°C) to 104°F(40°C).EVT4 is wet location listed for covered ceiling applications. IP65 and IP66 rated. When wall mounted, the product will be rated for damp location only . DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org to confirm which versions are qualified.

WARRANTY — 5-year limited warranty. Complete warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

For installed Rough Service Product(s), Acuity warrants that, for the lifetime of the product(s), the polycarbonate lens and/or polycarbonate housing will withstand breakage resulting from occasional physical abuse and rough handling (the "Rough Service Warranty"), notwithstanding the vandalism exclusion set forth at www.acuitybrands.com/CustomerResources/Terms_and_Conditions.aspx

ARCHWAY™ PASSAGE™

Rough Service Fixture

EVT4 LED

CEILING/
SUSPEND MOUNT

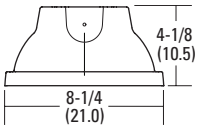
Specifications

Length: 54-3/4 (139.1)

Width: 8-1/4 (21.0)

Depth: 4-1/8 (10.5)

Weight: 13.5 lbs. (5.9 kg)



All dimensions are inches (centimeters) unless otherwise indicated.

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25°C.

Specifications subject to change without notice.

ORDERING INFORMATION

Lead times will vary depending on options selected. Consult with your sales representative.

Example: EVT4 4000LM FST MD MVOLT GZ10 40K 80 CRI

EVT4				480			
Series	**Nominal lumens**	**Diffuser**	**Distribution**	**Voltage**	**Driver**	**Color temperature**	**CRI**
EVT4	4000LM 4,000 lumens 6000LM 6,000 lumens 12000LM 12,000 lumens[1]	FST Frosted polycarbonate lens PCL Clear polycarbonate lens	MD Medium WD Wide	MVOLT 120-277V 120 120V 277 277V 347 347V[2] 480 480V[2]	GZ10 0 -10V dimming	30K 3000 K 40K 4000 K 50K 5000 K	80 CRI 90 CRI

3K / BZ / NL / P7 / RFD200357

Options[3]

SF	Single fuse[4]	CS89	6' white cord, 16/3, no plug, wet location	MSI10XAWL10M DSCXAWL	Xpoint wireless integral motion sensor, On/Off operation for motion sensing, override Off due to daylight[4]
BSL722	Bodine® emergency LED battery pack for 0°C and up[4,5]	CS89L12	12' white cord, 16/3, no plug, wet location	MSI10NWL	Low mount 360 integral motion sensor, wet location, On/Off operation[4]
BSL722C	Bodine® emergency LED battery pack for -20°C and up[4,5]	CS88	6' Brad Harrison 16/3 cord and straight blade plug set[4]	MSI102L3VWL	Low mount 360 integral motion sensor, wet location, High/Low operation (Bi-level)[4]
WLF	Wet location fitting (two outboard, top)[6]	CS88L12	12' Brad Harrison 16/3 cord and straight blade plug set[4]	MSI10NWL DSCNWL	Low mount 360 integral motion sensor, wet location , On/Off operation for motion sensing, override Off due to daylight[4]
WLFIN	Wet location fitting (two inboard, top)[6]	STSL	Stainless steel tamper resistant latches	XAD	XPoint wireless controller, 0-10V dimming[9]
WLFEND	Wet location fitting (one end)[6]	QMB	Quick-mount ceiling bracket		
WLFEND2	Wet location fitting (both ends)[6,7]	CMB	Chain-mount suspension bracket		
LSC	Lens safety clip	JSB	Junction box snap-bracket		
L/SP	Less surge protection device				
DL	Damp location[8]				

Accessories: *Order as separate catalog number. (Ships separately)*

VAPSMB	Surface spring-mount bracket	RK1 T20BIT	Hex base driver bit, Torx T20. Tamper resistant screws with center reject pin
VAPQMB	Quick-mount ceiling bracket	RK1 T20DRV	Torx T20 screwdriver for use with tamper resistant screws with center reject pin
VAPCMB	Chain-mount bracket		
VAPJSB	Junction box snap bracket		
HC36	Wire hook and 36" chain set[10,11]		

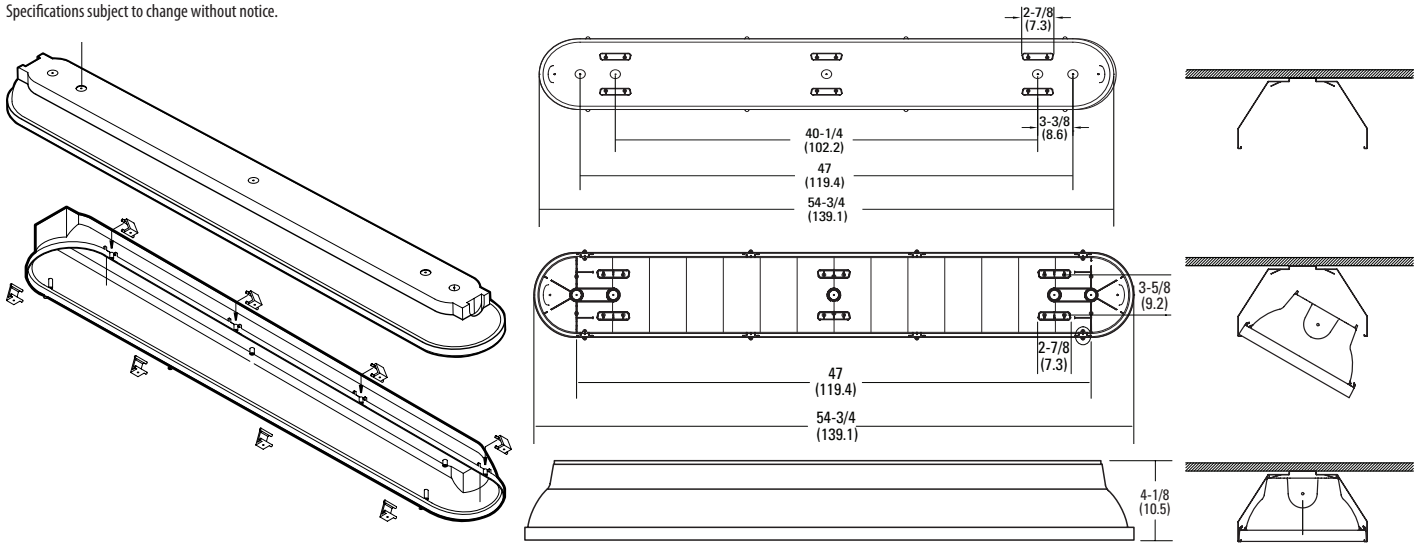
Notes

1 Not available with BSL722 or BSL722C options.
2 347V and 480V utilize a step-down transformer. 60HZ only.
3 For additional options, consult factory.
4 Must specify voltage.
5 Not available with 12000LM lumen package. Maximum ambient temperature 30 C.
6 5/8" long NPT threaded hub.
7 Not available with cord, sensor, or photocell options.
8 Required when using battery packs or cord sets that are not rated for wet locations.
9 Not available with BSL722 and BSL722C option.
10 Requires CMB (chain mount bracket) option.
11 For stainless steel, specify STS (example: HC36 STS).

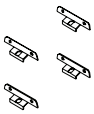
DIMENSIONS

All dimensions are shown in inches (centimeters) unless otherwise noted.

Specifications subject to change without notice.

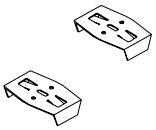


MOUNTING ACCESSORIES

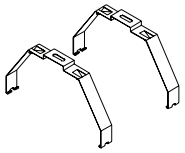


CMB - Ceiling Mounting Brackets

JSB - Junction Box Mounting Bracket



QMB - Quick-Mount Mounting Brackets



SMB - Surface Mounting Brackets (ship with fixture as standard)

ARCHWAY™ PASSAGE™ LED Specification Matrix						
Nominal lumens	Initial delivered lumens @ 80CRI with clear polycarbonate lens		Initial delivered lumens @80CRI with frosted polycarbonate lens		Wattage @120V	Comparable source
	4000K	5000K	4000K	5000K		
4000LM	5,208	5,672	4,428	4,822	44	2-lamp 32W T8, 1-lamp 54W T5HO, 70W HID
6000LM	6,643	7,234	5,648	6,150	64	3-lamp 32W T8, 2-lamp 54W T5HO, 100W HID
12000LM	11,056	12,040	9,400	10,236	109	4-lamp 32W T8, 2-lamp 54W T5HO, 150W HID

Operating hours	0	10,000	20,000	25,000	35,000	50,000	60,000	75,000	100,000
Lumen Maintenance Factor	1	.95	.92	.91	.89	.86	.84	.81	.77

HOLOPHANE®
An AcuityBrands Company
3825 Columbus Road, Granville, OH 43023 Phone: 1-740-345-9631 www.holophane.com

SBOR - WET LOCATION Motion Sensor (see www.sensorswitch.com for additional information)

- 360° coverage
- On/Off dim
- Photocell optional
- IP66 rated
- Photocell and 0-10VDC dimming options.

Fixture sensor nomenclature	SBOR sensor nomenclature
For shortest lead times use one of the following SBOR confi gurations	
MSI10NWL	SBOR 10 OEX EB3 WH
MSI102L3VWL	SBOR 10 OEX D EB3 WH 3V
MSI10NWL DSCNWL	SBOR 10 OEX P EB3 WH

MOTION SENSOR

ORDERING INFORMATION Lead times will vary depending on options selected. Consult with your sales representative. **Example**: MSI6NWL

Series	Lens option	Dimming	Minimum dim level	Environmental factors
MSI Passive infrared occupancy sensor	6 High mount, 360° 10 Low mount, 360°	N On\off 2LXX Bi level range[1] CXX Continous dim range[1] XA Xpoint wireless signal to external system	0V Off 1V 1VDC 2V 2VDC 3V 3VDC 4V 4VDC 5V 5VDC	WL Wet location

PHOTOCELL

ORDERING INFORMATION Lead times will vary depending on options selected. Consult with your sales representative. **Example**: DSCNWL

Series	Dimming	Environmental factors
DSC Passive infrared occupancy sensor with photocell	N On\off 2LXX Bi level range[1] CXX Continous dim range[1] XA Xpoint wireless signal to external system	WL Wet location

Notes

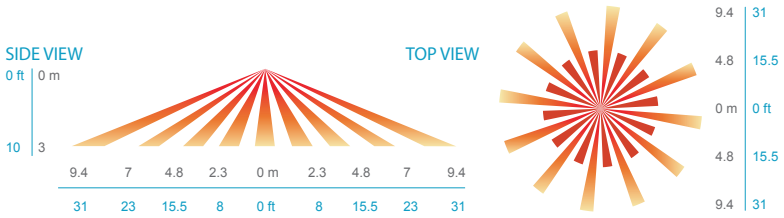
1 XX denotes dimming range.(Ex. 3V, 4V, etc.)

HOLOPHANE
An AcuityBrands Company
3825 Columbus Road, Granville, OH 43023 Phone: 1-740-345-9631 www.holophane.com

COVERAGE PATTERNS

PARKING GARAGE / LOW MOUNT APPLICATIONS

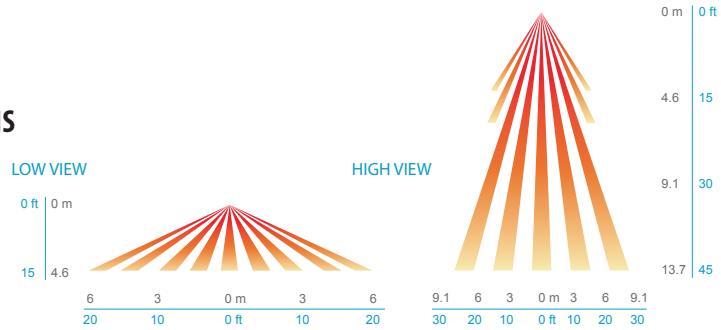
In general, the SBOR 10 is recommended for 8-15 ft (2.44-4.57 m) mounting and provides a coverage area radius for walking motion of greater than 2x the mounting height. The SBOR 10 ODP is ideal for parking garage and low pole mount applications. When mounted 10 ft high, for example, on a luminaire in a parking garage, the sensor's coverage for walking motion extends out 30 ft in a 360º pattern. This closely matches the lighting distribution of a typical parking garage luminaire. When mounted to a light pole, for example, in a parking lot or along a path, the sensor provides 270º of coverage (90º is blocked by the pole). Note, walking askew to sensor typically results in earlier detection than walking directly at sensor.



Coverage Pattern of Low Mount Lens Option (SBOR 10)

SITE & AREA LIGHTING / HIGH MOUNT APPLICATIONS

The SBOR 6 is intended for higher pole mount applications, between 15-30 ft (4.57-9.14 m), and provides a coverage area radius for walking motion of 15-20 ft (4.57-6.10 m). When mounted to a pole the sensor provides 270º of coverage (90º is blocked by the pole).



Coverage Pattern of High Mount Lens Option (SBOR 6)

HOLOPHANE®
An AcuityBrands Company
3825 Columbus Road, Granville, OH 43023 Phone: 1-740-345-9631 www.holophane.com

D-Series
LED Parking Garage

Catalog Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

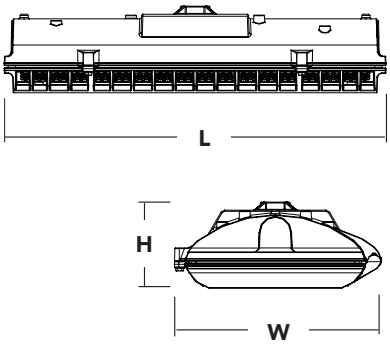
Specifications

Length: 17-3/4" *(45.1 cm)*

Width: 8-1/2" *(21.6 cm)*

Height: 3-7/16" *(8.7 cm)*

Weight (max): 16 lbs *(7.3 kg)*



Introduction

The D-Series LED Parking Garage luminaire provides energy savings of 88% when replacing 175W metal halide luminaires. With an expected service life of over 100,000 hours (10+ years of 24/7 operation), up to ten metal halide lamp changes are avoided over the life of the product. All of this adds up to quick paybacks and a very low total cost of ownership.

Five dedicated precision refractive optics allow the D-Series Parking Garage luminaire to meet the desired criteria for minimums, verticals and uniformity. Exceptional glare control is achieved while delivering the required vertical illumination.

Ordering Information

EXAMPLE: DSXPG LED 20C 1000 40K T5M MVOLT DWHXD

DSXPG LED			3K		480	
Series	**LEDs**	**Drive current**	**Color temperature**	**Distribution**	**Voltage**	**Mounting**
DSXPG LED	10C 10 LEDs (one engine) [1,2] 20C 20 LEDs (two engines) 30C 30 LEDs (three engines)	350 350 mA 530 530 mA 700 700 mA 1000 1000 mA (1 A)	30K 3000 K 40K 4000 K 50K 5000 K AMBPC Amber phosphor converted[3]	T5E Type V, entryway T5M Type V, medium T5W Type V, wide T5R Type V, rectangular ASY Asymmetric	MVOLT [4] 120 [4] 208 [4] 240 [4] 277 [4] 347 [5] 480 [5]	**Shipped included** (blank) Pendant mount [6] (36-inch length supply leads) SRM Surface mount (12-inch length supply leads) **Shipped separately** YK Yoke/trunnion mount [7]

3K / BZ / NL / P7 / RFD200357

Options

Shipped installed

HS House-side shield (housing visor) [7]
SF Single fuse (120, 277, 347V) [8,9]
DF Double fuse (208, 240, 480V) [8,9]
SPD Separate surge protection [10]
CFMH Cover finish matches housing [11]

Shipped installed

PIR Motion/ambient sensor for 8-15' mounting heights [12]
PIRH Motion/ambient sensor for 15-30' mounting heights [12]
PIR3FC3V Motion/ambient sensor for 8-15' mounting heights and for typical applications requiring daylight harvesting and Title 24 compliance [12]
PIRH3FC3V Motion/ambient sensor for 15-30' mounting heights and typical applications requiring daylight harvesting and Title 24 compliance [12]
XAD XPoint™ Wireless enabled [13]
XADN XPoint™ Wireless enabled for emergency circuit [13]
XAD PIR XPoint™ Wireless enabled motion/ambient sensor for 8-15' mounting heights [13,14]
XAD PIRH XPoint™ Wireless enabled motion/ambient sensor for 15-30' mounting heights [13,14]

Shipped separately

SLVRD Pendant swivel cover for round or octagonal j-box
SLVSQ Pendant swivel cover for 4" square j-box
BDS Bird shroud [7]

Finish *(required)*

DWHXD White
DNAXD Natural aluminum
DDBXD Dark bronze

Accessories

Ordered and shipped separately.

DSXPGSRM U Surface mount kit
DSXPGYK DWHXD U Yoke/trunnion accessory, white (other finishes available)
DSXPGHS U House-side shield (1 per light engine)
DSXPGBDS DWHXD U Bird shroud for pendant or yoke, white (other finishes available)
DSXPGBDSSJ DWHXD U Bird shroud for SRM on surface J-box only, white (other finishes available)

NOTES

1 Available with 700mA or 1000mA option only.
2 Not available with 347 or 480V.
3 AMBPC only available with 530mA or 700mA.
4 MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Specify 120, 208, 240 or 277 options only when ordering with fusing (SF, DF options).
5 N/A with one light engine (10C). Only available with 700mA or 1000mA.
6 Compatible with 3/4" NPT pendant stem, by others.
7 Also available as a separate accessory; see Accessories information at left.
8 Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.
9 Not available with XAD.
10 See the electrical section on page 3 for more details.
11 Available with DNAXD or DDBXD only.
12 PIR & PIR3FC3V specifies the Acuity Controls SBOR 10 ODP motion/ambient sensor, the PIRH & PIRH3FC3V specifies the Acuity Controls SBOR 6 ODP motion/ambient sensor.
13 Dimming driver standard. Not available with 347V or 480V. Not available with fusing.
14 XAD PIR specifies the Acuity Controls XPA SBOR10 wireless controller, the XADN PIR specifies the Acuity Controls XPA SBON10 wireless controller, the XAD PIRH specifies the Acuity Controls XPA SBOR6 wireless controller, and the XADN PIRH specifies the XPA SBON6 wireless controller.

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts.

Light Engines	Drive Current (mA)	Performance Package	System Watts	Dist. Type	30K (3000 K, 80 CRI)					40K (4000 K, 70 CRI)					50K (5000 K, 65 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
10C (10 LEDs)	700 mA	10C 700--K	26W	ASY	1,792	0	0	1	69	2,253	1	0	1	87	2,428	1	0	1	93
				T5E	1,882	1	0	0	72	2,366	1	0	0	91	2,550	1	0	0	98
				T5M	1,889	1	0	0	73	2,375	2	0	0	91	2,560	2	0	0	98
				T5R	1,860	2	0	2	72	2,339	2	0	2	90	2,521	2	0	2	97
				T5W	1,771	2	0	1	68	2,226	2	0	1	86	2,399	2	0	1	92
	1000 mA	10C1000 --K	37W	ASY	2,444	1	0	1	66	3,074	1	0	1	83	3,314	1	0	1	90
				T5E	2,566	1	0	0	69	3,227	2	0	0	87	3,479	2	0	0	94
				T5M	2,576	2	0	0	70	3,241	2	0	1	88	3,493	2	0	1	94
				T5R	2,537	2	0	2	69	3,191	2	0	2	86	3,440	3	0	3	93
				T5W	2,414	2	0	1	65	3,037	2	0	1	82	3,274	3	0	1	88
20C (20 LEDs)	350 mA	20C 350 --K	25W	ASY	1,995	1	0	1	80	2,511	1	0	1	100	2,705	1	0	1	108
				T5E	2,095	1	0	0	84	2,637	1	0	0	105	2,840	2	0	0	114
				T5M	2,103	2	0	0	84	2,647	2	0	0	106	2,851	2	0	1	114
				T5R	2,071	2	0	2	83	2,607	2	0	2	104	2,808	2	0	2	112
				T5W	1,971	2	0	1	79	2,481	2	0	1	99	2,672	2	0	1	107
	530 mA	20C 530 --K	37W	ASY	2,803	1	0	1	76	3,526	1	0	1	95	3,799	1	0	1	103
				T5E	2,943	2	0	0	80	3,702	2	0	0	100	3,989	2	0	0	108
				T5M	2,955	2	0	1	80	3,717	2	0	1	100	4,005	2	0	1	108
				T5R	2,910	2	0	2	79	3,660	3	0	3	99	3,944	3	0	3	107
				T5W	2,770	2	0	1	75	3,483	3	0	1	94	3,754	3	0	1	101
	700 mA	20C 700 --K	46W	ASY	3,449	1	0	1	75	4,337	1	0	1	94	4,675	1	0	1	102
				T5E	3,621	2	0	0	79	4,554	2	0	0	99	4,909	2	0	0	107
				T5M	3,636	2	0	1	79	4,572	3	0	1	99	4,928	3	0	1	107
				T5R	3,580	3	0	3	78	4,502	3	0	3	98	4,853	3	0	3	106
				T5W	3,407	3	0	1	74	4,285	3	0	1	93	4,619	3	0	1	100
	1000 mA	20C 1000 --K	74W	ASY	4,632	1	0	1	63	5,828	1	0	1	79	6,283	1	0	2	85
				T5E	4,864	2	0	0	66	6,119	2	0	0	83	6,597	2	0	1	89
				T5M	4,883	3	0	1	66	6,143	3	1	1	83	6,623	3	0	1	90
				T5R	4,808	3	0	3	65	6,050	3	0	3	82	6,522	3	0	3	88
				T5W	4,577	3	0	1	62	5,758	3	0	2	78	6,207	3	0	2	84
30C (30 LEDs)	350 mA	30C 350 --K	35W	ASY	3,022	1	0	1	86	3,799	1	0	1	109	4,097	1	0	1	117
				T5E	3,172	2	0	0	91	3,989	2	0	0	114	4,302	2	0	0	123
				T5M	3,185	2	0	1	91	4,005	2	0	1	114	4,319	3	0	1	123
				T5R	3,137	2	0	2	90	3,944	3	0	3	113	4,253	3	0	3	122
				T5W	2,985	2	0	1	85	3,754	3	0	1	107	4,048	3	0	1	116
	530 mA	30C 530 --K	53W	ASY	4,239	1	0	1	80	5,333	1	0	1	101	5,748	1	0	1	108
				T5E	4,451	2	0	0	84	5,599	2	0	0	106	6,035	2	0	0	114
				T5M	4,468	3	0	1	84	5,622	3	0	1	106	6,059	3	0	1	114
				T5R	4,400	3	0	3	83	5,536	3	0	3	104	5,967	3	0	3	113
				T5W	4,188	3	0	1	79	5,269	3	0	1	99	5,679	3	0	1	107
	700 mA	30C 700 --K	67W	ASY	5,170	1	0	1	77	6,504	1	0	2	97	7,011	1	0	2	105
				T5E	5,428	2	0	0	81	6,829	3	0	1	102	7,362	3	0	1	110
				T5M	5,450	3	0	1	81	6,856	3	0	1	102	7,391	3	0	2	110
				T5R	5,367	3	0	3	80	6,752	3	0	3	101	7,278	3	0	3	109
				T5W	5,108	3	0	1	76	6,426	3	0	2	96	6,927	3	0	2	103
	1000 mA	30C 1000 --K	107W	ASY	6,775	1	0	2	63	8,520	2	0	2	80	9,187	2	0	2	86
				T5E	7,113	3	0	1	66	8,946	3	0	1	84	9,646	3	0	1	90
				T5M	7,141	3	0	1	67	8,982	3	0	2	84	9,685	3	0	2	91
				T5R	7,032	3	0	3	66	8,845	4	0	4	83	9,537	4	0	4	89
				T5W	6,693	3	0	2	63	8,418	4	0	2	79	9,077	4	0	2	85

Note: Available with phosphor-converted amber LEDs (nomenclature AMBPC). These LEDs produce light with 97+% >530 nm. Output can be calculated by applying a 0.7 factor to 4000 K lumen values and photometric files (for 530mA and 700mA drive currents only).

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.02
10°C	50°F	1.01
20°C	68°F	1.00
25°C	**77°F**	**1.00**
30°C	86°F	1.00
40°C	104°F	0.98

Electrical Load

LEDs	Drive Current (mA)	System Watts	Current (A)					
			120V	208V	240V	277V	347V	480V
10C	700	26W	0.25	0.15	0.13	0.11	–	–
	1000	37W	0.37	0.21	0.18	0.16	–	–
20C	350	25W	0.23	0.13	0.12	0.10	–	–
	530	37W	0.33	0.19	0.17	0.14	–	–
	700	46W	0.43	0.25	0.22	0.19	0.15	0.11
	1000	74W	0.68	0.39	0.34	0.29	0.23	0.17
30C	350	35W	0.33	0.19	0.16	0.14	–	–
	530	53W	0.50	0.29	0.25	0.22	–	–
	700	67W	0.66	0.38	0.33	0.29	0.23	0.17
	1000	107W	1.01	0.58	0.50	0.44	0.35	0.25

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a 25°C ambient, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

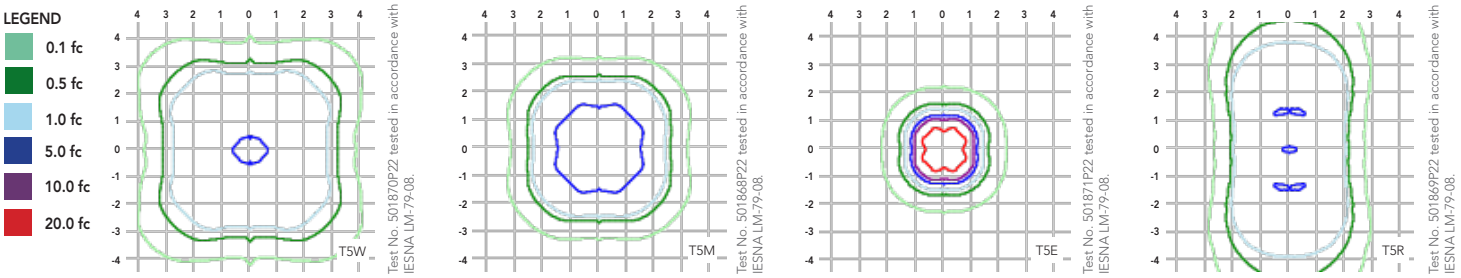
To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	DSXPG LED 10C 1000			
	1.0	0.97	0.94	0.90
	DSXPG LED 30C 1000			
	1.0	0.93	0.89	0.80
	DSXPG LED 30C 700			
	1.0	0.98	0.97	0.95

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's D-Series Parking Garage homepage.

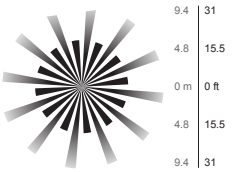
Isofootcandle plots for the DSXPG LED 30C 700 40K. Distances are in units of mounting height (8').



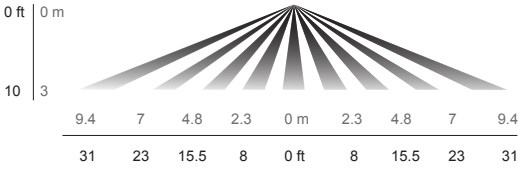
Motion Sensing

The motion sensor options (PIR360SS or PIRH360SS) have 360° of passive infrared sensing and adjustable bi-level dimming to save energy when there is no occupancy.

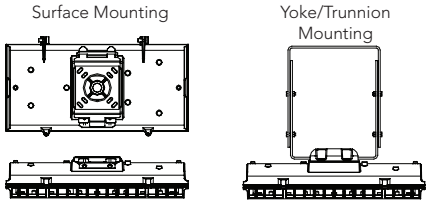
TOP VIEW



SIDE VIEW



Mounting Options



FEATURES & SPECIFICATIONS

INTENDED USE

The energy savings, long life, and easy-to-install design of the D-Series LED Parking Garage luminaire make it the smart choice for commercial and municipal garage applications. It is designed to meet or exceed recommended illuminance criteria when installed as a direct replacement of most HID parking garage luminaires.

CONSTRUCTION

Two-piece die-cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convective cooling. Modular design allows for ease of maintenance and future light engine upgrades. The LED drivers are mounted in direct contact with the casting to promote low operating temperature and long life. Housing is completely sealed against moisture and environmental contaminants (IP66) and is suitable for hose-down.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling.

OPTICS

Precision-molded proprietary acrylic lenses provide five different photometric distributions tailored specifically to parking garage applications. Light engines are available in 3000 K (80 min. CRI), 4000 K (70 min. CRI) or 5000 K (65 min. CRI) configurations.

ELECTRICAL

Light engines consist of 10 high-efficacy LEDs mounted to a metal-core circuit board to maximize heat dissipation and promote long life. The electronic driver has a power factor of >90%, THD <20%, and a minimum 2.5 KV surge rating. When ordering the SPD option, a separate surge protection device is installed within the luminaire which meets a minimum Category C low operation (per ANSI/IEEE C62.41.2).

INSTALLATION

Standard configuration accepts a rigid or free-swinging 3/4" NPT stem (by others) for pendant mounting. The surface mount option attaches to a 4x4" recessed or surface mount outlet box using a quick-mount kit (included); kit contains galvanized steel luminaire and outlet box plates and a full pad gasket. Kit has an integral mounting support that allows the luminaire to hinge down for easy electrical connections. Luminaire and plates are secured with set screws. Also available with a yoke/trunnion mount option with 3/4" NPT provision for flexible conduit entry (conduit by others); height can be adjusted from 10-18". Supply leads are 12" in length as standard. For longer supply leads, please consult factory.

LISTINGS

CSA certified to U.S. and Canadian standards. Light engines and luminaire are IP66 rated. Rated for -40°C minimum ambient.

DesignLights Consortium® (DLC) qualified product — Parking Garage Luminaires category. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org to confirm which versions are qualified.

WARRANTY

Five-year limited warranty. Complete warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx.

Note: Actual performance may differ as a result of end-user environment and application.
All values are design or typical values, measured under laboratory conditions at 25 °C.
Specifications subject to change without notice.

WSTM LED
LED Mini Wall Sconce

Catalog Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Introduction

The Architectural WSTM Mini-Wall Sconce is now available with the latest in LED technology. The result is a long-life, maintenance-free product with typical energy savings of 87% over metal halide versions. The diffuse lens eliminates harsh glare while producing comfortable illumination.

The WSTM LED is ideal for replacing existing 50-100W metal halide or 26-42W compact fluorescent wall-mounted products and can be mounted in either lens up or lens down orientation. The expected service life is over 10 years of nighttime use.

Specifications

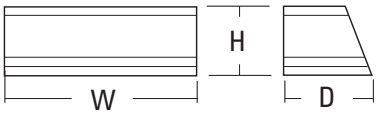
Luminaire

Height: 5-3/4" *(14.6 cm)*

Width: 12-1/2" *(31.8 cm)*

Depth: 7-1/2" *(19.1 cm)*

Weight: 6 lbs. *(2.7 kg)*



Ordering Information

EXAMPLE: WSTM LED 2A 40K 120 DDBTXD

WSTM LED		3K	480				
Series	**LEDs**	**Color temperature**	**Voltage**	**Mounting**	**Control options**	**Other options**	**Finish** *(required)*
WSTM LED	1A One engine 2A Two engines	30K 3000K 40K 4000K	120 277 [1]	**Shipped included** (blank) Surface mount **Shipped separately** [2] UT5 Uptilt 5 degrees	**Shipped installed** PE Photoelectric cell, button type	**Shipped installed** (blank) Diffusing glass lens CGL Clear glass lens **Shipped separately** [2] WG Wire guard [3]	DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white DSSTXD Textured sandstone

Stock configurations are offered for shorter lead times:

Stock Part Number
WSTM LED 1A 40K 120 DDBTXD
WSTM LED 2A 40K 120 DDBTXD

Accessories

Ordered and shipped separately.

WSTMUT5 DDBXD U	5 degree uptilt accessory (specify finish)
WSTMWG U	Wire guard accessory

NOTES

1. Includes step-down transformer; see page 2 for more information.
2. Also available as a separate accessory; see Accessories information at left.
3. Not for inverted mounting.

LITHONIA LIGHTING

One Lithonia Way • Conyers, Georgia 30012 • Phone: 800.279.8041 • Fax: 770.918.1209 • www.lithonia.com

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts.

LEDs	Performance Package	System Watts[1]	30K (3000K, 80 CRI)					40K (4000K, 80 CRI)				
			Nominal Lumens	B	U	G	LPW	Nominal Lumens	B	U	G	LPW
1A	1A --K	9	673	0	0	0	75	733	0	0	1	81
2A	2A --K	17	1,308	1	0	0	77	1,277	1	0	0	75

1 See electrical load chart for 277V system watts.

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.05
10°C	50°F	1.03
20°C	68°F	1.01
25°C	**77°F**	**1.00**
30°C	86°F	0.99
40°C	104°F	0.97

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the **WSTM LED** platform in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	0.86	0.74	0.54

Electrical Load

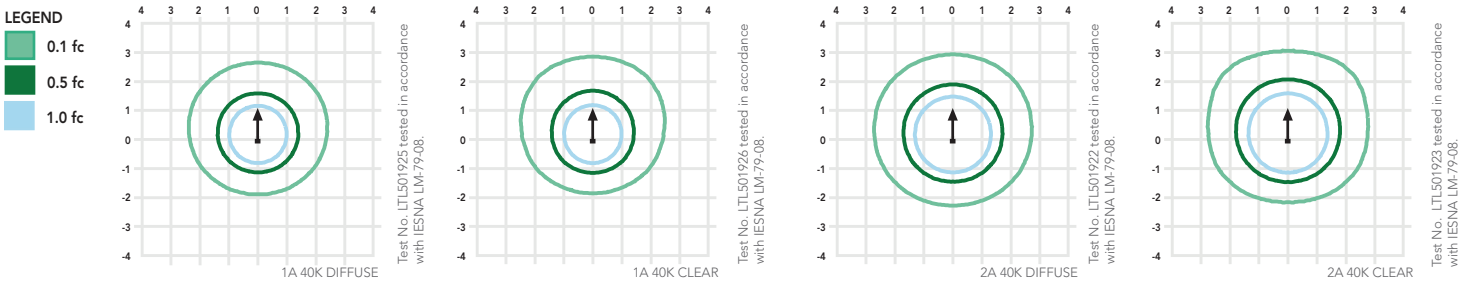
LEDs	System Watts	Current (A)	
		120	277
1A	9W	0.08	–
	13W[1]	–	0.06
2A	17W	0.15	–
	22W[1]	–	0.09

1 Higher wattage is due to electrical losses from step-down transformer.

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's WSTM LED homepage.

Isofootcandle plots for the WSTM LED 40K. Distances are in units of mounting height (8').



FEATURES & SPECIFICATIONS

INTENDED USE
The classic architectural shape of the WSTM LED was designed for applications such as hospitals, schools, malls, restaurants, and commercial buildings. The long-life LEDs make this luminaire nearly maintenance-free.

CONSTRUCTION
The single-piece die-cast aluminum housing integrates a heat sink to optimize thermal transfer from the internal light engine and promote long life. The die-cast door frame is fully gasketed with a one-piece solid silicone gasket to keep out moisture and dust, providing an IP65 rating for the luminaire.

FINISH
Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder-coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Standard Super Durable colors include dark bronze, black, natural aluminum, sandstone and white. Available in textured and non-textured finishes.

OPTICS
Light engines are 3000K (>80 CRI) or 4000K (>80 CRI). The WSTM LED has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL
Light engine(s) consist of 42 high-efficacy LEDs mounted to a circuit board and integral aluminum heat sink to maximize heat dissipation and promote long life (50,000 hrs at 25°C, L74).

INSTALLATION
Easily installed using provided mounting strap. Mount to any non-combustible vertical surface, over a 4" round or square recessed outlet box (by others). Back access through slotted gasket.

LISTINGS
CSA certified to U.S. standards. Luminaire is IP65 rated and suitable for wet locations when mounted with the lens down. Rated for -30°C minimum ambient.

DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org to confirm which versions are qualified.

WARRANTY
Five-year limited warranty. Complete warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx.
Actual performance may differ as a result of end-user environment and application.
All values are design or typical values, measured under laboratory conditions at 25 °C.
Note: Specifications subject to change without notice.

City/State Garage
Main Garage Deck

Retro-Tech Systems
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Date:12/22/2015

Luminaire Schedule					
Scene: High Level					
Symbol	**Qty**	**Label**	**Description**	**Lum. Lumens**	**LLF**
▭	6	LED N 37PG-ML-T5M	DSXPG LED 20C 530 30K T5M MVOLT	2955	0.855

Calculation Summary							
Scene: High Level							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Main Parking_Floor	Illuminance	Fc	2.92	4.3	1.3	2.25	3.31

Scene Summary				
Scene: High Level				
Channel	Switched	Dimming	LumNo	Label
All	On	0.80	23	LED N 37PG-ML-T5M
			24	LED N 37PG-ML-T5M
			25	LED N 37PG-ML-T5M
			26	LED N 37PG-ML-T5M
			27	LED N 37PG-ML-T5M
			28	LED N 37PG-ML-T5M

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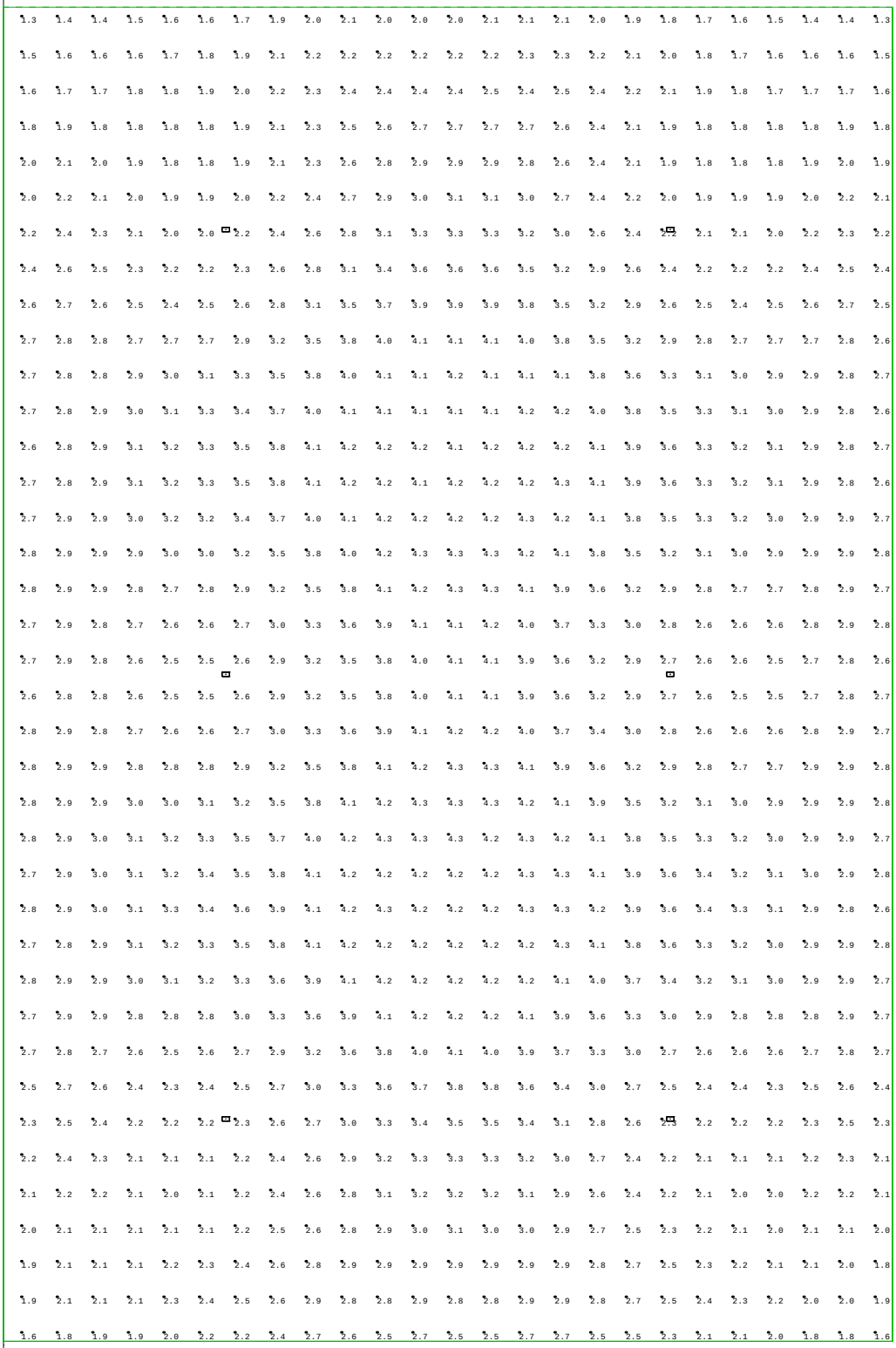

View of point by point

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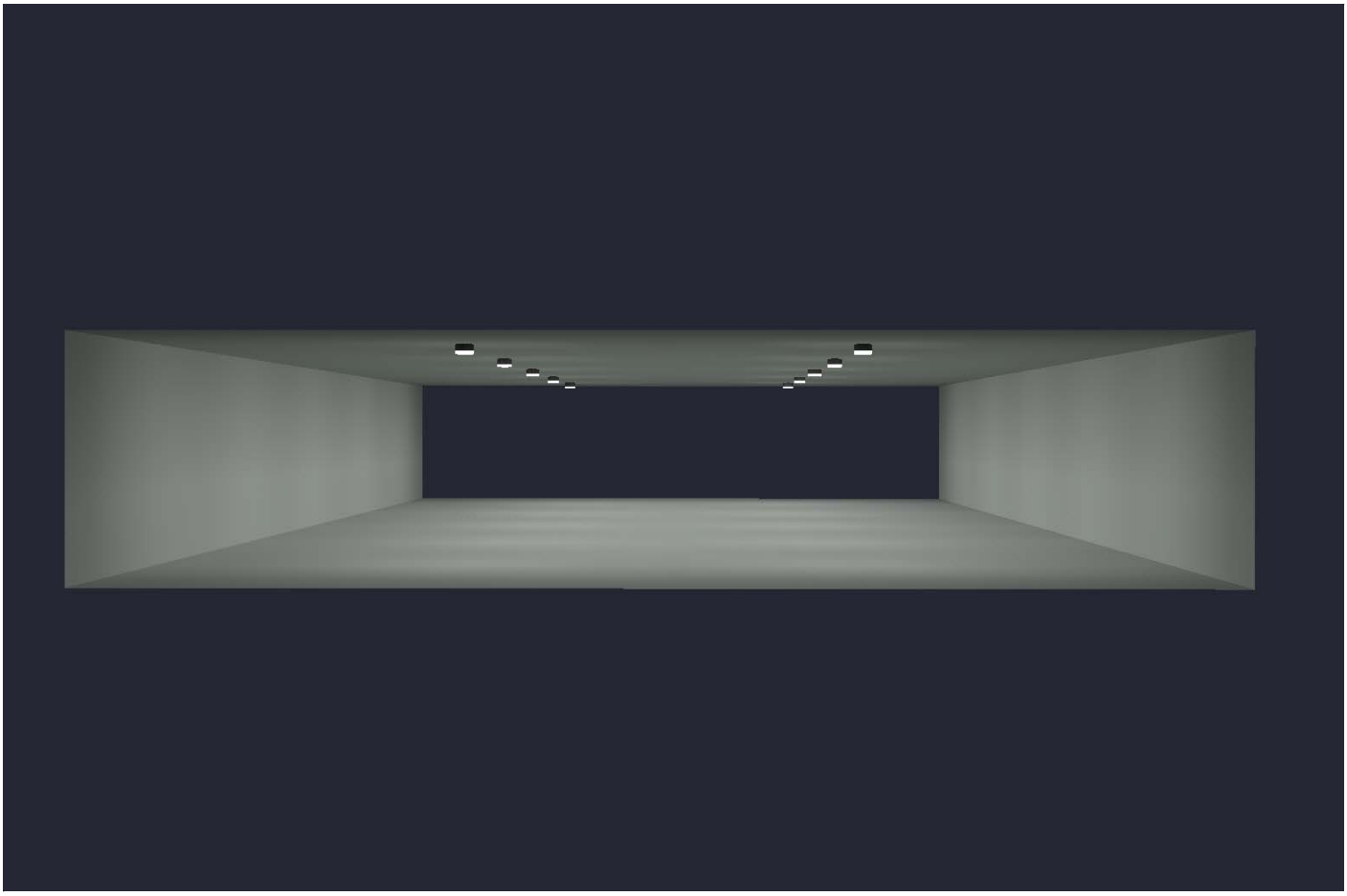

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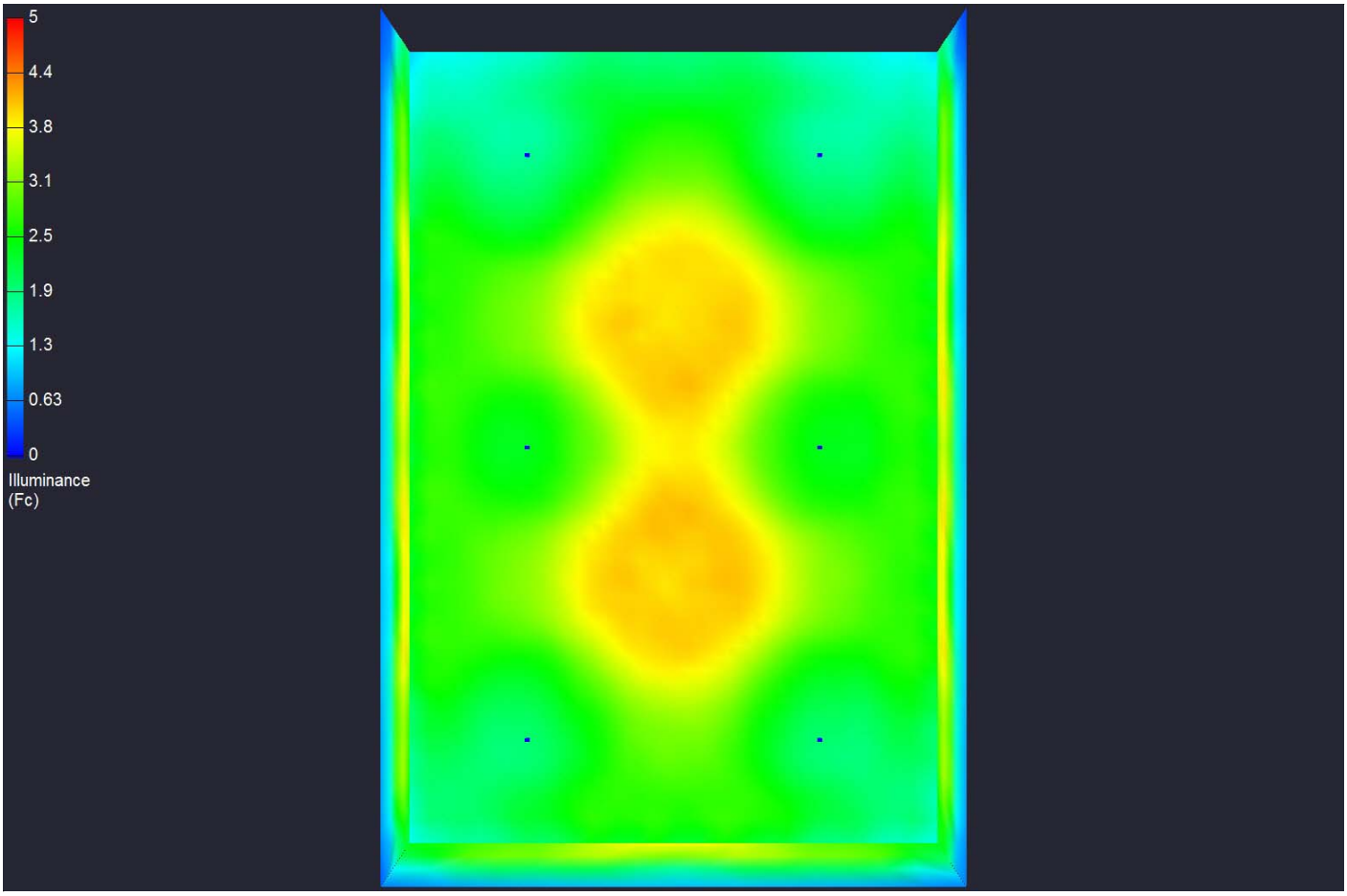

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Tucson Garages - Depot Plaza Garage
Main Parking Deck

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Luminaire Schedule					
Scene: High Level					
Symbol	**Qty**	**Label**	**Description**	**Lum. Lumens**	**LLF**
▭	15	LED N 37PG-ML-T5M	DSXPG LED 20C 530 30K T5M MVOLT	2955	0.855

Calculation Summary							
Scene: High Level							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Main Parking_Floor	Illuminance	Fc	2.81	4.00	1.29	2.18	3.10

Scene Summary				
Scene: High Level				
Channel	Switched	Dimming	LumNo	Label
All	On	0.60	29	LED N 37PG-ML-T5M
			30	LED N 37PG-ML-T5M
			31	LED N 37PG-ML-T5M
			32	LED N 37PG-ML-T5M
			33	LED N 37PG-ML-T5M
			40	LED N 37PG-ML-T5M
			41	LED N 37PG-ML-T5M
			42	LED N 37PG-ML-T5M
			43	LED N 37PG-ML-T5M
			44	LED N 37PG-ML-T5M
			51	LED N 37PG-ML-T5M
			52	LED N 37PG-ML-T5M
			53	LED N 37PG-ML-T5M
			54	LED N 37PG-ML-T5M
			55	LED N 37PG-ML-T5M

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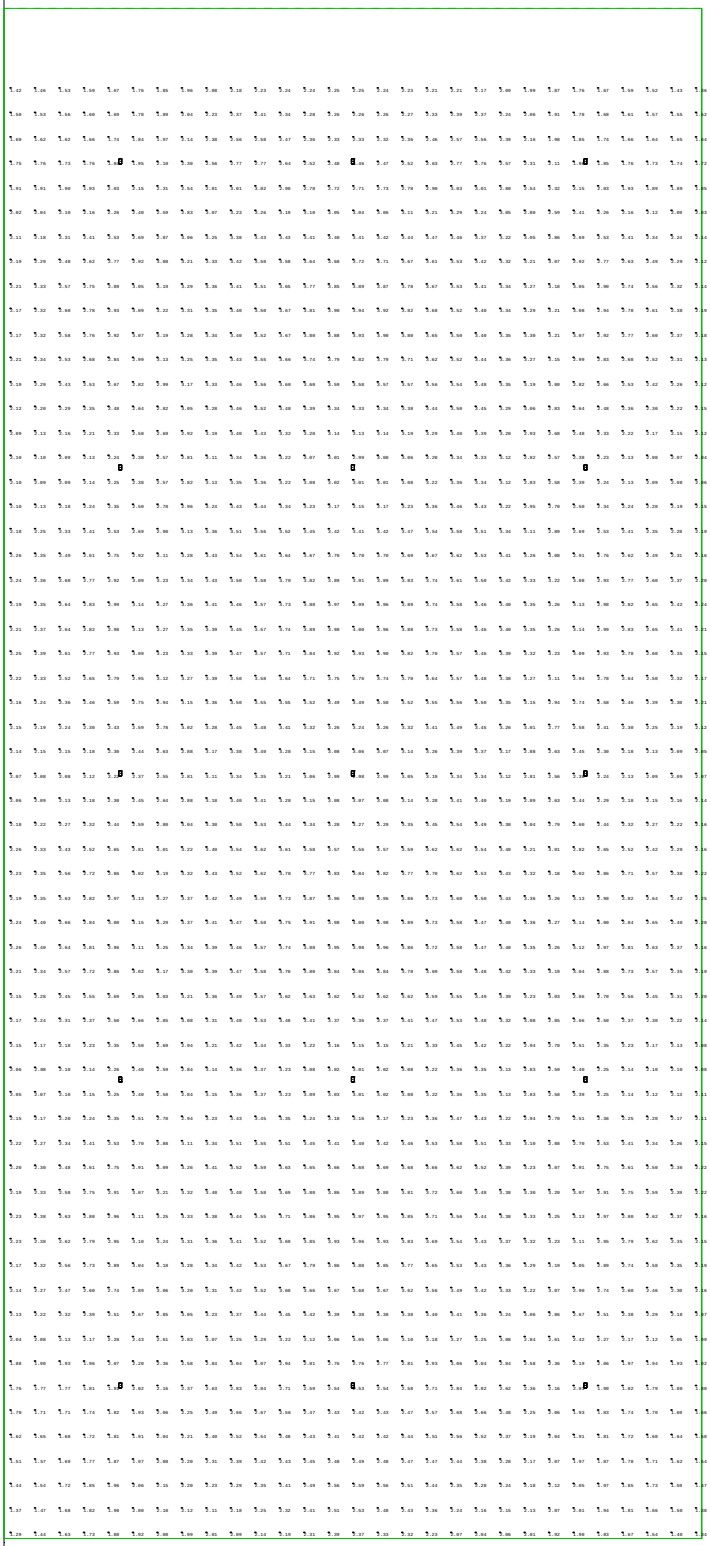

View of point by point

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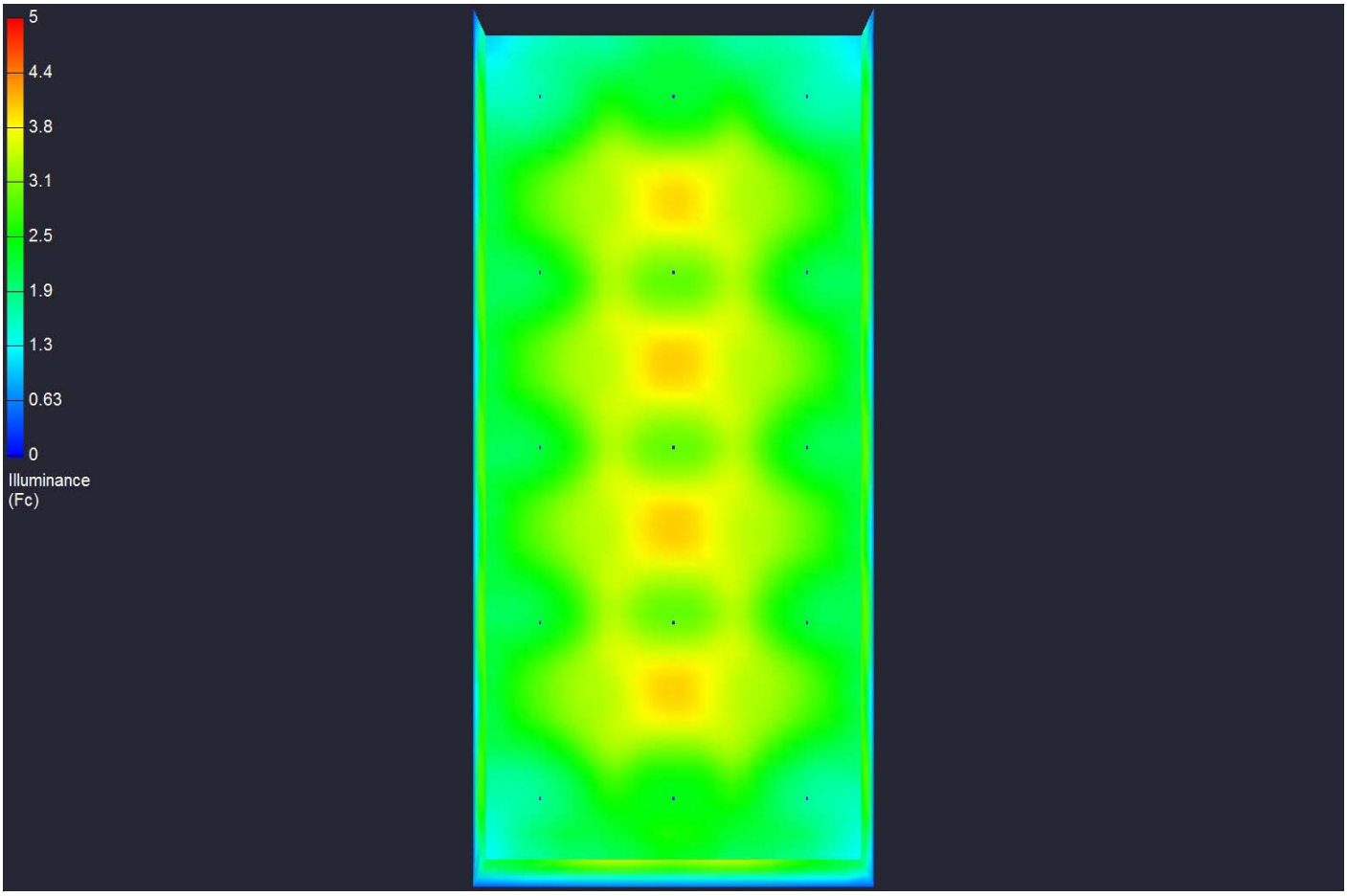

Render Image - View Name : Render

El Centro Garage
Main Garage Deck

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Date:12/22/2015

Luminaire Schedule					
Scene: High Level					
Symbol	**Qty**	**Label**	**Description**	**Lum. Lumens**	**LLF**
▭	10	LED N 26PG-ML-T5M	DSXPG LED 10C 700 30K T5M MVOLT	1889	0.855

Calculation Summary							
Scene: High Level							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Main Parking_Workplane	Illuminance	Fc	2.81	4.3	1.3	2.16	3.31

Scene Summary				
Scene: High Level				
Channel	Switched	Dimming	LumNo	Label
All	On	0.85	11	LED N 26PG-ML-T5M
			12	LED N 26PG-ML-T5M
			13	LED N 26PG-ML-T5M
			14	LED N 26PG-ML-T5M
			15	LED N 26PG-ML-T5M
			17	LED N 26PG-ML-T5M
			18	LED N 26PG-ML-T5M
			19	LED N 26PG-ML-T5M
			20	LED N 26PG-ML-T5M
			21	LED N 26PG-ML-T5M

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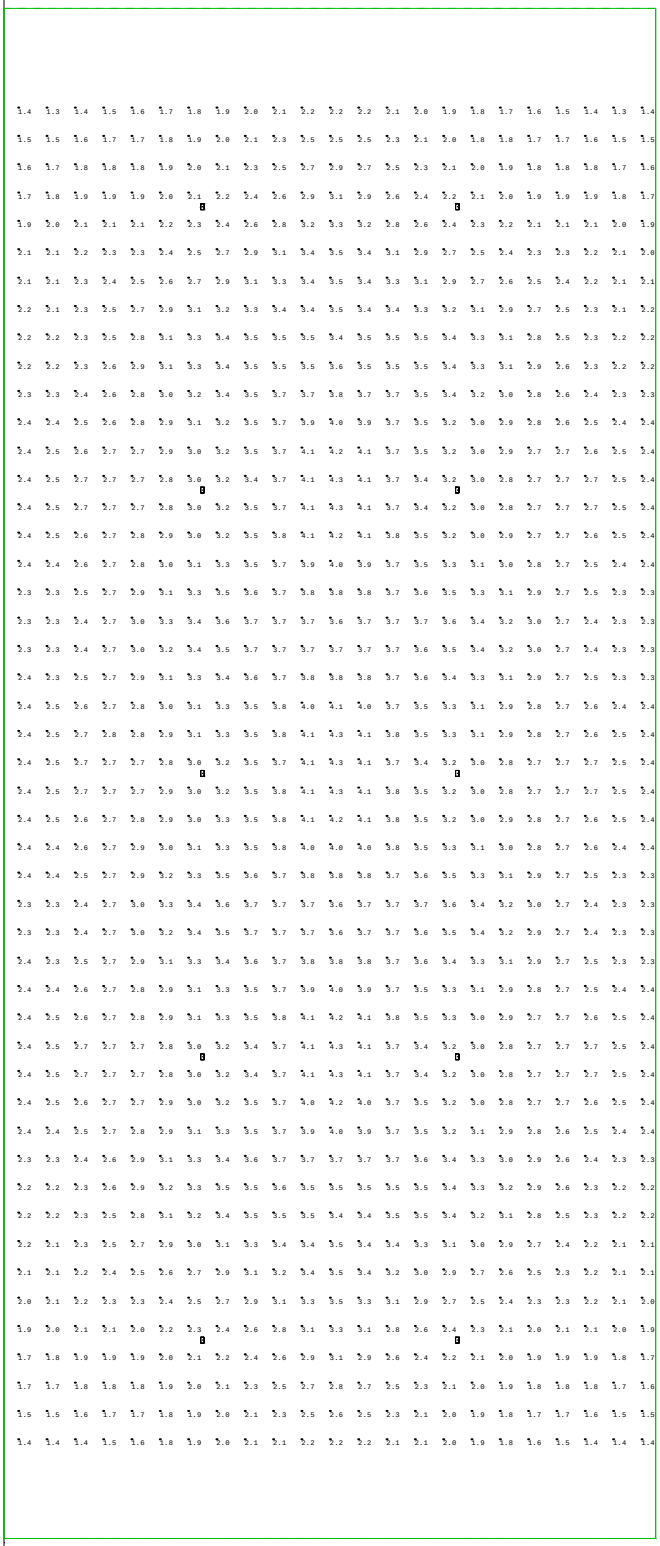

View of point by point

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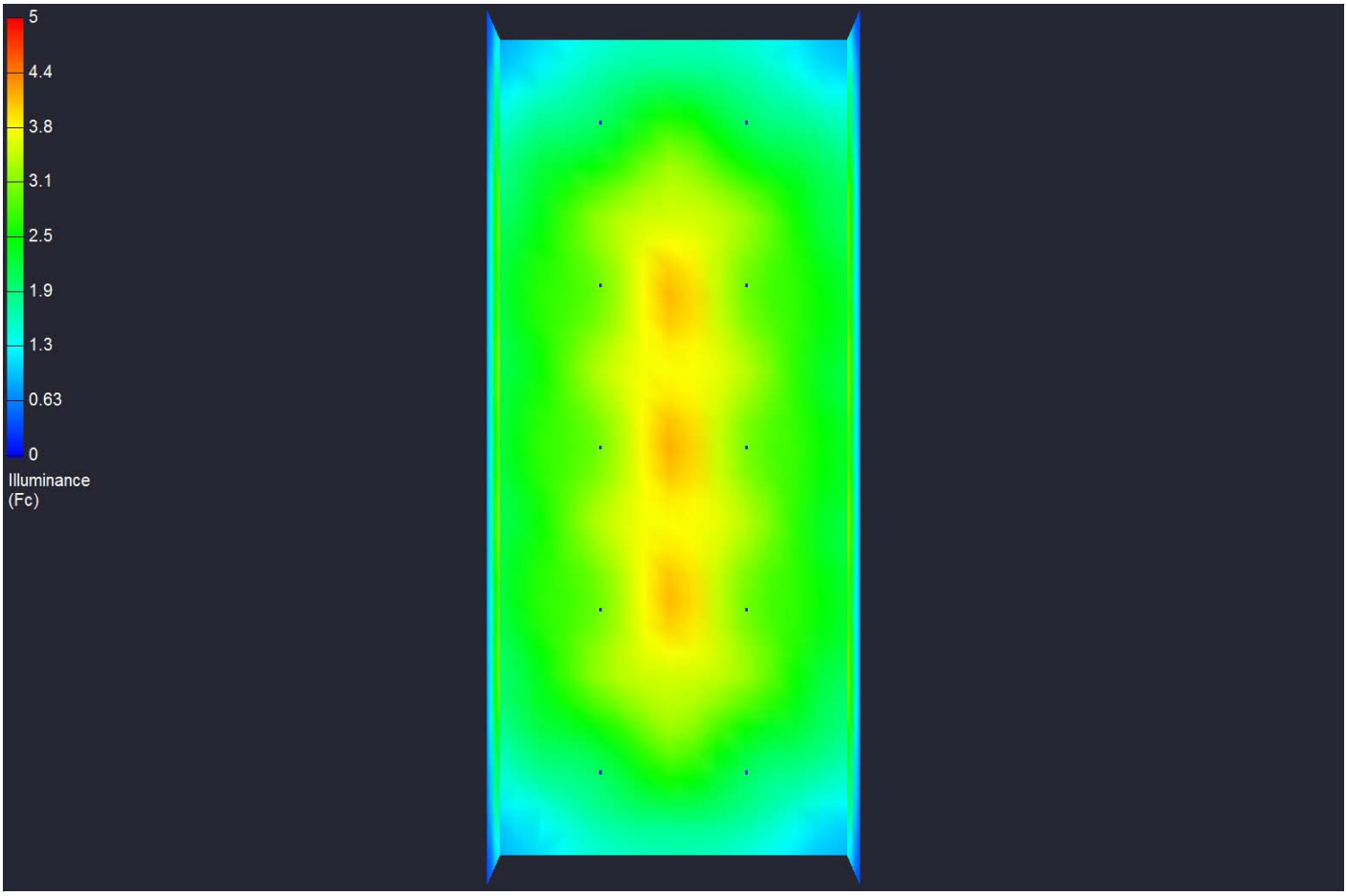

Render Image - View Name : Render

Tucson Garages
La Entrada Garage Main Deck

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Date:12/22/2015

Luminaire Schedule					
Scene: Full Output					
Symbol	**Qty**	**Label**	**Description**	**Lum. Lumens**	**LLF**
	34	LED N 37PG-ML-T5M	DSXPG LED 20C 530 40K T5M MVOLT	3717	0.855

Calculation Summary							
Scene: Full Output							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Main Parking_Floor	Illuminance	Fc	2.44	3.0	1.2	2.03	2.50

Scene Summary				
Scene: Full Output				
Channel	Switched	Dimming	LumNo	Label
All	On	0.80	42	LED N 37PG-ML-T5M
			43	LED N 37PG-ML-T5M
			44	LED N 37PG-ML-T5M
			45	LED N 37PG-ML-T5M
			46	LED N 37PG-ML-T5M
			47	LED N 37PG-ML-T5M
			48	LED N 37PG-ML-T5M
			49	LED N 37PG-ML-T5M
			50	LED N 37PG-ML-T5M
			51	LED N 37PG-ML-T5M
			52	LED N 37PG-ML-T5M
			53	LED N 37PG-ML-T5M
			54	LED N 37PG-ML-T5M
			55	LED N 37PG-ML-T5M
			56	LED N 37PG-ML-T5M
			57	LED N 37PG-ML-T5M
			58	LED N 37PG-ML-T5M
			59	LED N 37PG-ML-T5M
			68	LED N 37PG-ML-T5M
			71	LED N 37PG-ML-T5M
			73	LED N 37PG-ML-T5M
			82	LED N 37PG-ML-T5M
			83	LED N 37PG-ML-T5M
			84	LED N 37PG-ML-T5M
			85	LED N 37PG-ML-T5M
			86	LED N 37PG-ML-T5M
			87	LED N 37PG-ML-T5M
			109	LED N 37PG-ML-T5M
			110	LED N 37PG-ML-T5M
			111	LED N 37PG-ML-T5M
			112	LED N 37PG-ML-T5M
			113	LED N 37PG-ML-T5M
			114	LED N 37PG-ML-T5M
			115	LED N 37PG-ML-T5M

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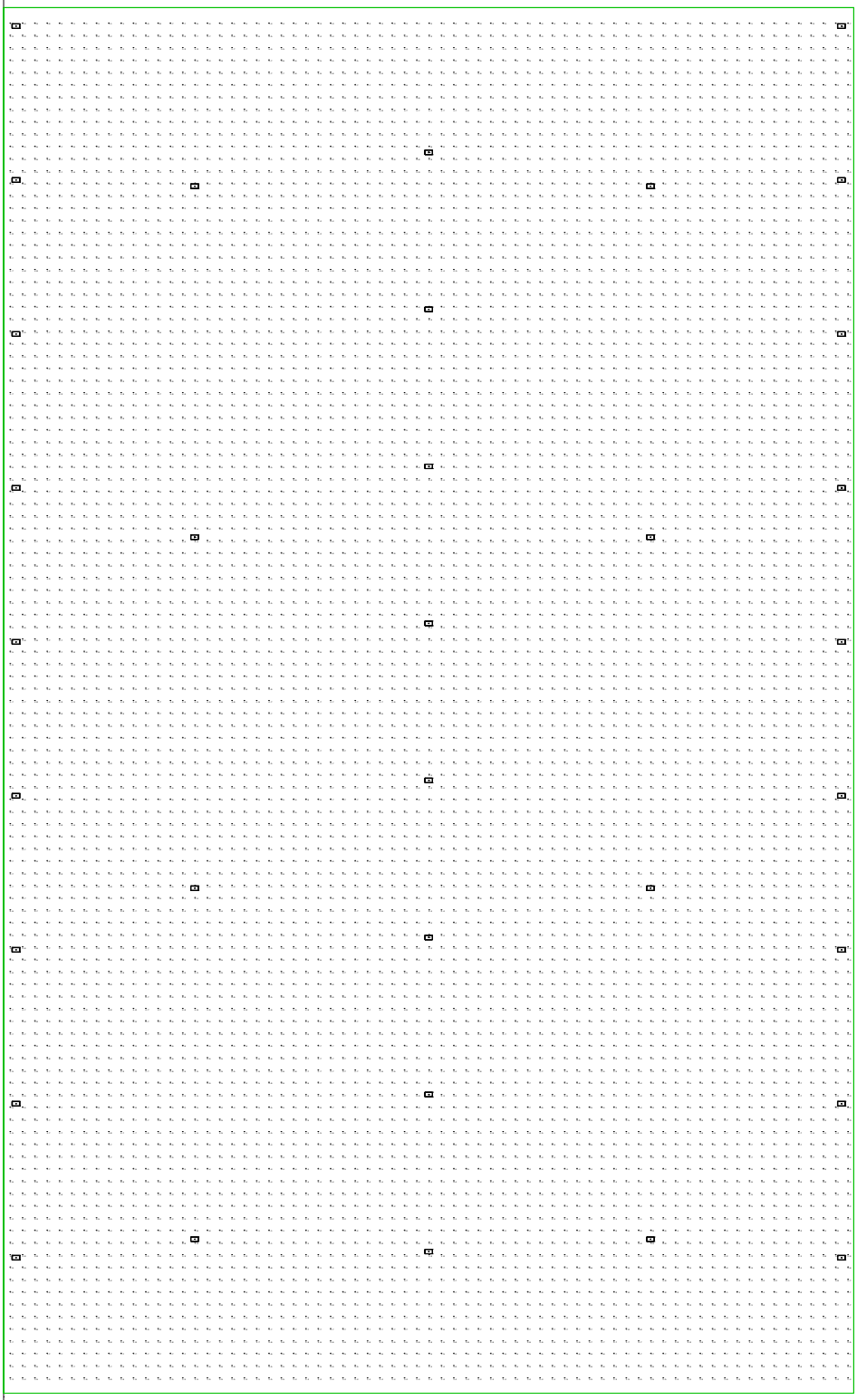

View of point by point

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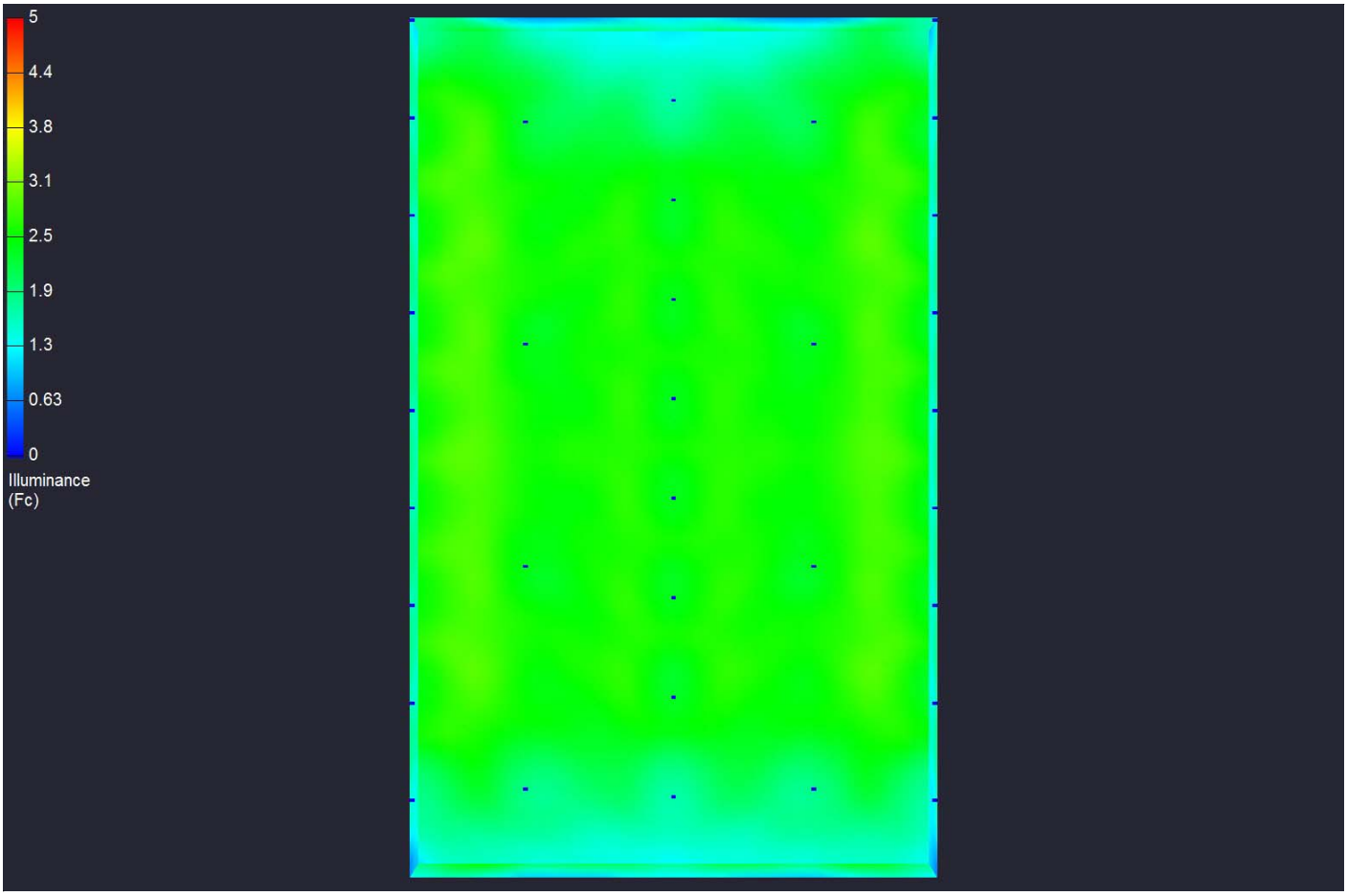

Render Image - View Name : Render

Tucson Garages
Main Library Garage
Main Deck - 1st Floor

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Date:12/22/2015

Luminaire Schedule					
Scene: Full Output					
Symbol	**Qty**	**Label**	**Description**	**Lum. Lumens**	**LLF**
	11	LED N 37PG-ML-T5M	DSXPG LED 20C 530 40K T5M MVOLT	3717	0.855

Calculation Summary							
Scene: Full Output							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Main Parking_Floor	Illuminance	Fc	3.90	5.7	1.6	2.44	3.56

Scene Summary				
Scene: Full Output				
Channel	Switched	Dimming	LumNo	Label
All	On	0.80	23	LED N 37PG-ML-T5M
			25	LED N 37PG-ML-T5M
			26	LED N 37PG-ML-T5M
			27	LED N 37PG-ML-T5M
			28	LED N 37PG-ML-T5M
			29	LED N 37PG-ML-T5M
			30	LED N 37PG-ML-T5M
			31	LED N 37PG-ML-T5M
			32	LED N 37PG-ML-T5M
			33	LED N 37PG-ML-T5M
			34	LED N 37PG-ML-T5M

Tucson Garages
Main Library Garage
Main Deck - 1st Floor

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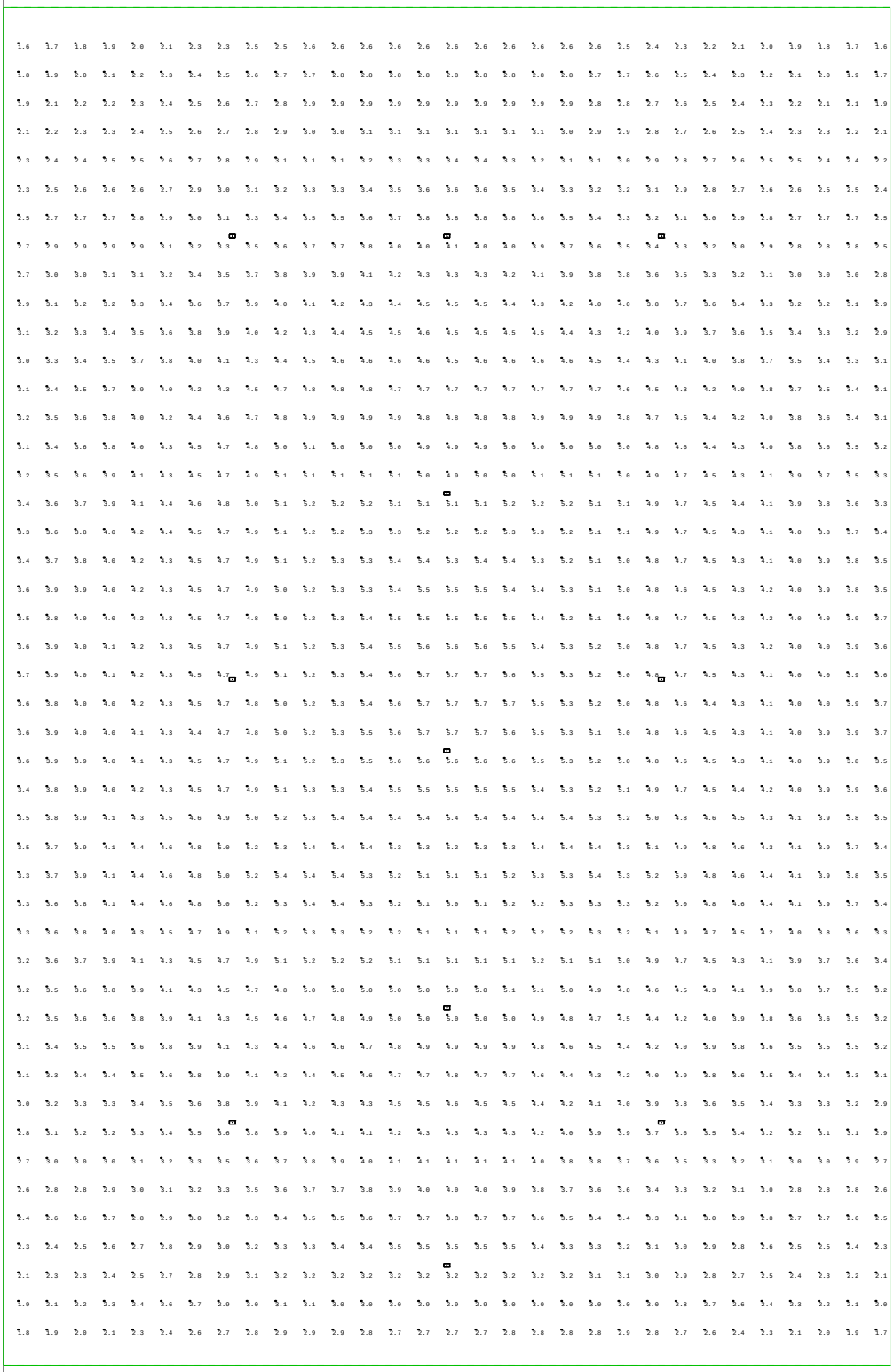

View of point by point

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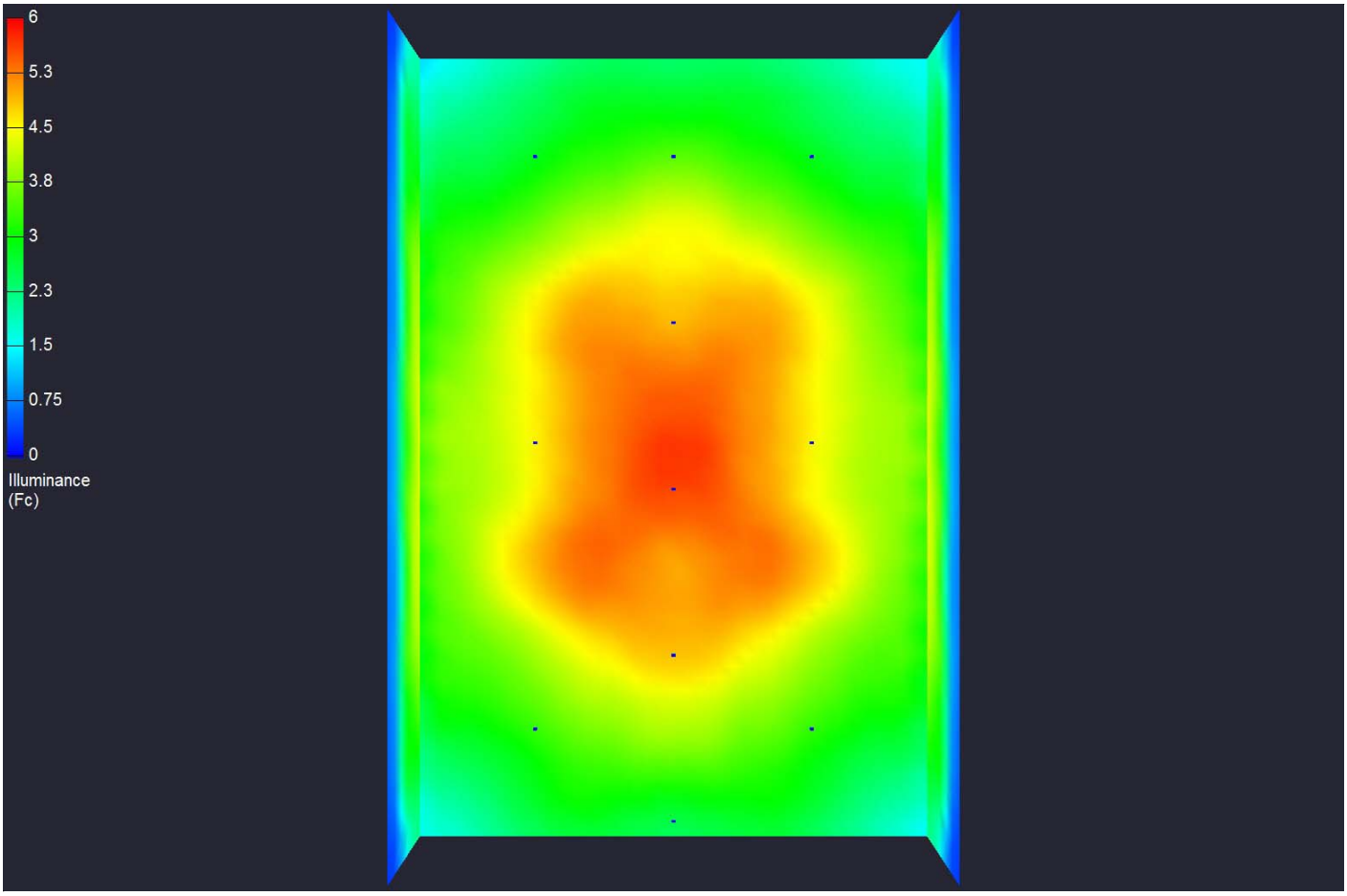

Render Image - View Name : Render

Tucson Garages - Main Library Garage
Main Parking Deck
2nd & 3rd floors

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Date:12/22/2015

Luminaire Schedule					
Scene: High Level					
Symbol	**Qty**	**Label**	**Description**	**Lum. Lumens**	**LLF**
▭	6	LED N 37PG-ML-T5M	DSXPG LED 20C 530 30K T5M MVOLT	2955	0.855

Calculation Summary							
Scene: High Level							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Main Parking_Floor	Illuminance	Fc	2.62	4.0	1.3	2.02	3.08

Scene Summary				
Scene: High Level				
Channel	Switched	Dimming	LumNo	Label
All	On	0.80	23	LED N 37PG-ML-T5M
			29	LED N 37PG-ML-T5M
			30	LED N 37PG-ML-T5M
			31	LED N 37PG-ML-T5M
			32	LED N 37PG-ML-T5M
			33	LED N 37PG-ML-T5M

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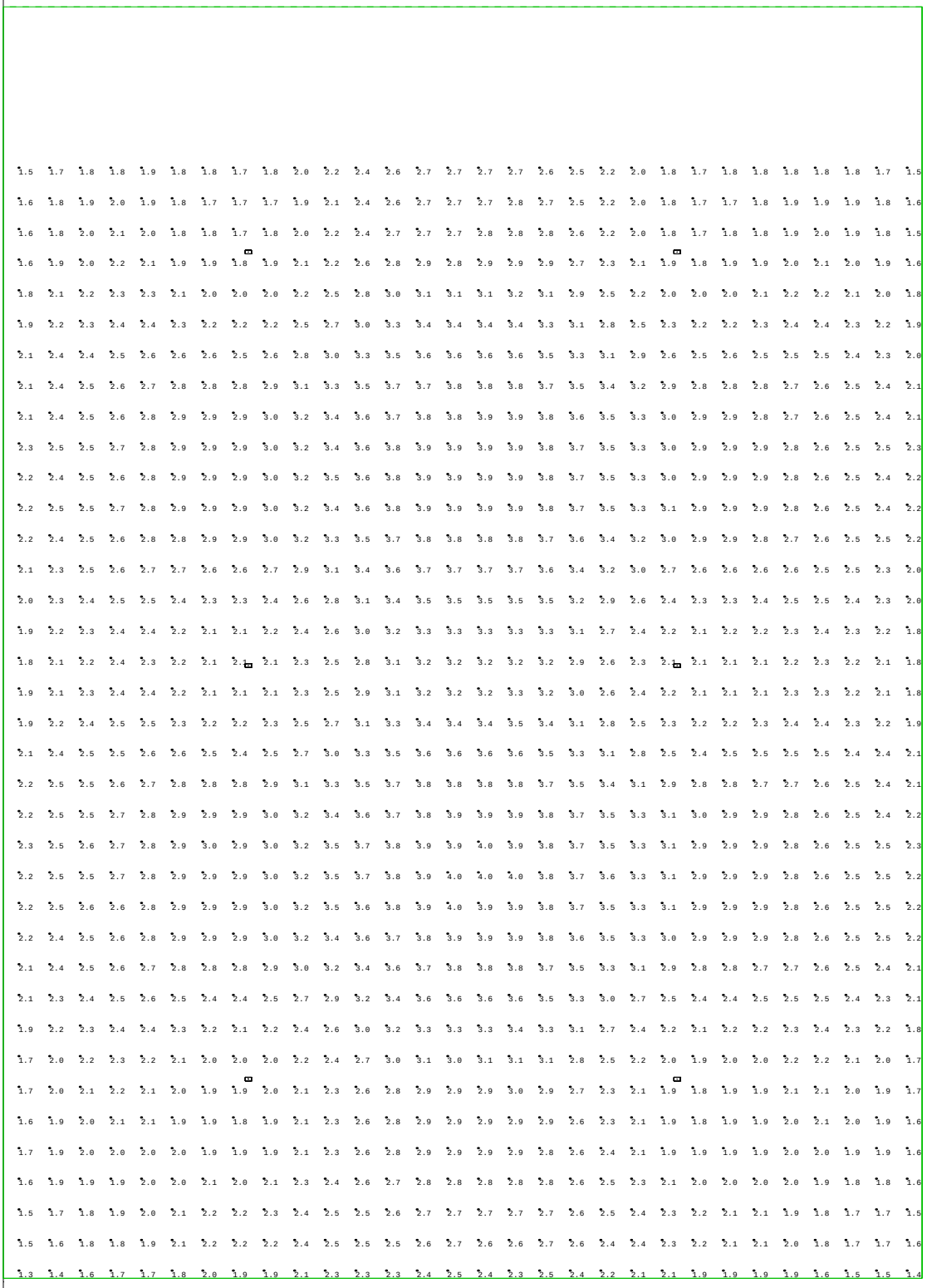

View of point by point

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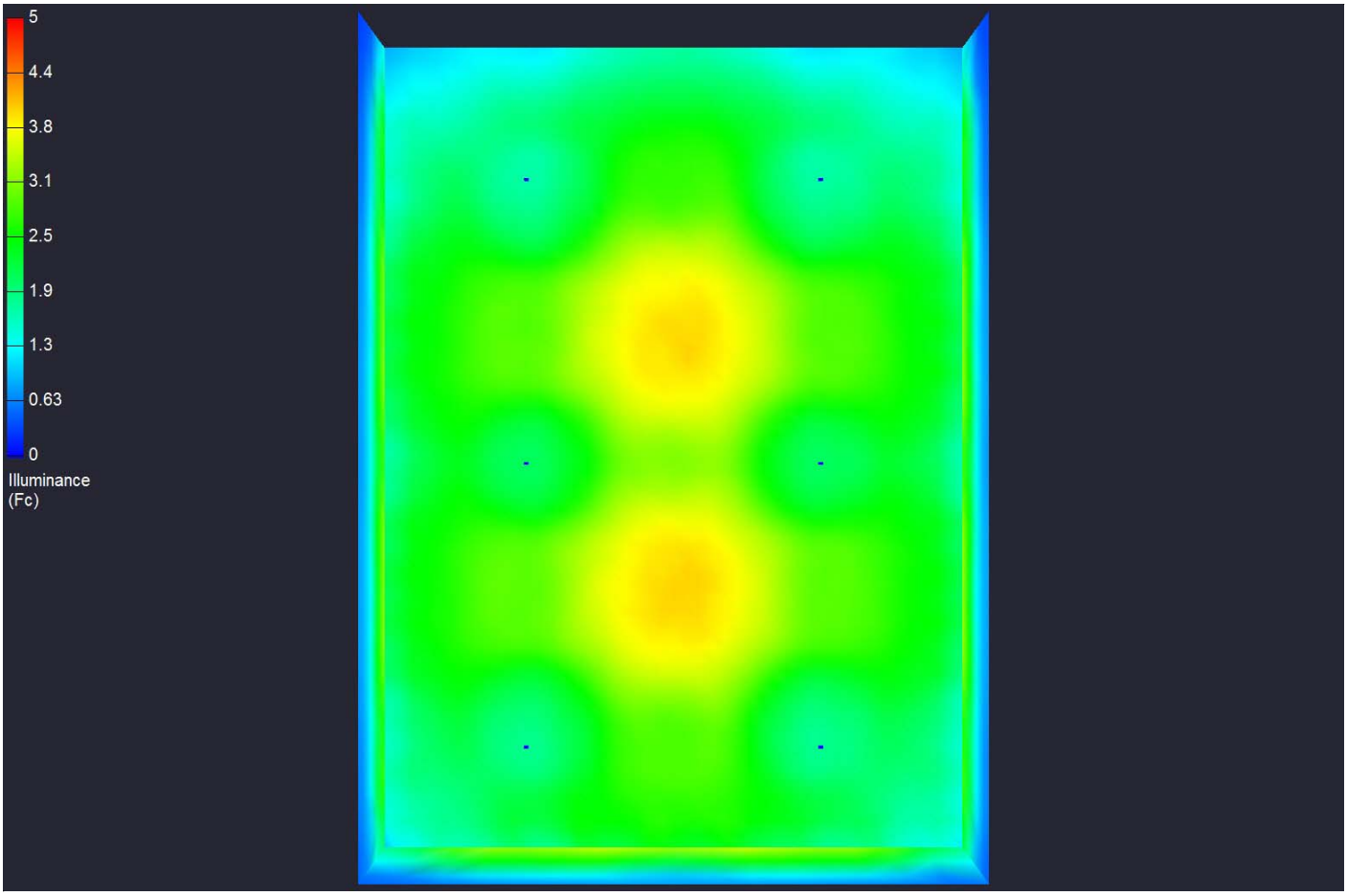

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Pennington Garage
Main Garage Deck

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Date:12/22/2015

Luminaire Schedule					
Scene: High Level					
Symbol	**Qty**	**Label**	**Description**	**Lum. Lumens**	**LLF**
▭	12	LED N 37PG-ML-T5M	DSXPG LED 20C 530 30K T5M MVOLT	2955	0.855

Calculation Summary							
Scene: High Level							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Main Parking_Floor	Illuminance	Fc	2.54	3.35	1.27	2.00	2.64

Scene Summary				
Scene: High Level				
Channel	Switched	Dimming	LumNo	Label
All	On	0.70	29	LED N 37PG-ML-T5M
			30	LED N 37PG-ML-T5M
			31	LED N 37PG-ML-T5M
			32	LED N 37PG-ML-T5M
			33	LED N 37PG-ML-T5M
			34	LED N 37PG-ML-T5M
			35	LED N 37PG-ML-T5M
			36	LED N 37PG-ML-T5M
			37	LED N 37PG-ML-T5M
			38	LED N 37PG-ML-T5M
			39	LED N 37PG-ML-T5M
			40	LED N 37PG-ML-T5M

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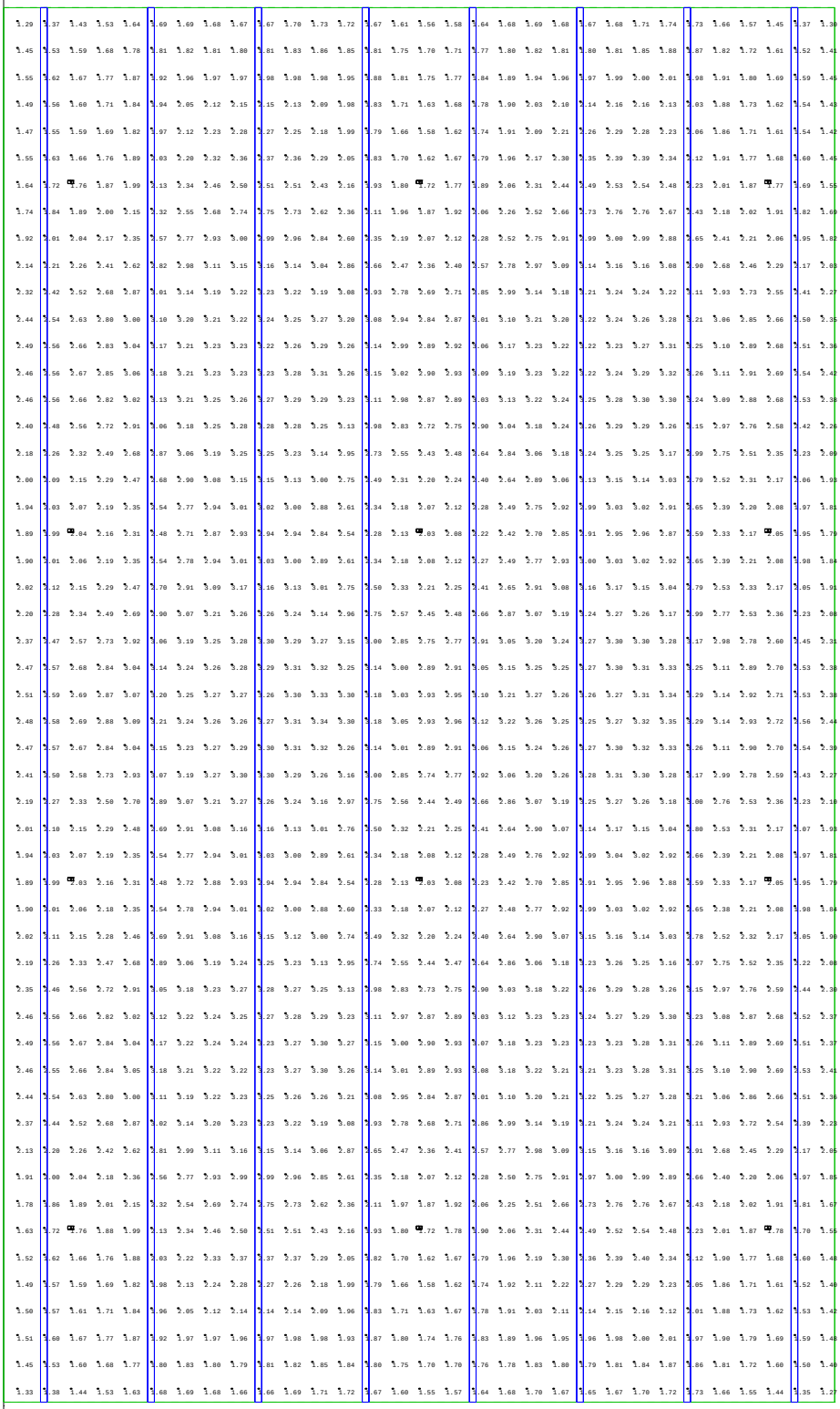

View of point by point

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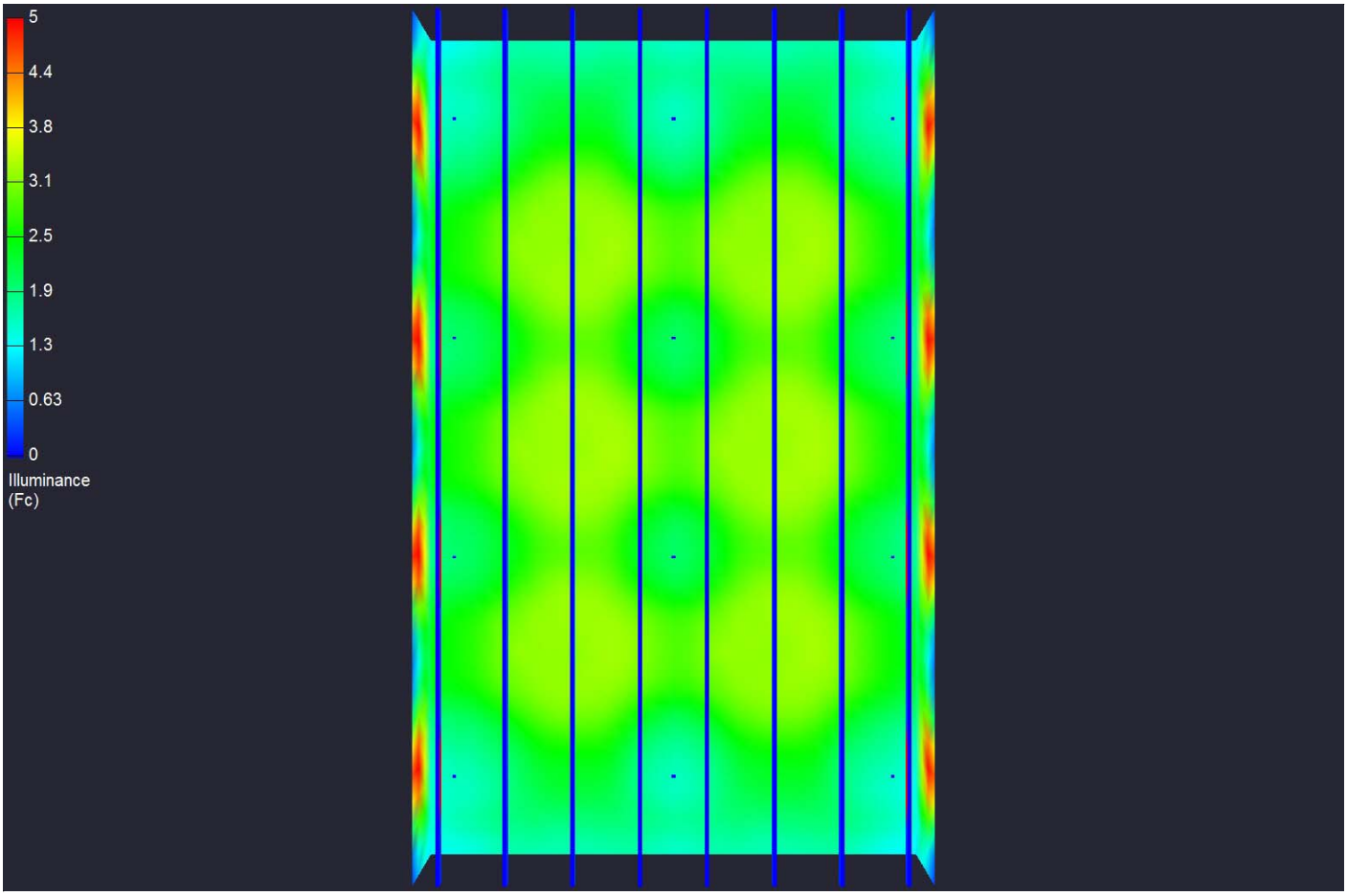

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E.3 Sample Area Lighting Layouts

ALTERNATE **MAJOR and COLLECTOR** **INTERSECTION** **AT** **GRANT RD AND TUCSON BLVD** **SITE PARAMETERS** **(measurements taken across Grant Rd on east side of intersection)**		
* **ROADWAY DATA:**	Dimension units (Check one).	☑ Feet ☐ Meters
	Number of travel lanes “right side”	2
	Width of “right side” travel lanes	11
	Median width	12 (Turn Lane)
	Number of travel lanes “left side”	2
	Width of “left side” travel lanes	11
	Shoulder and gutter width ”right” side: (Distance from edge of drive lane to edge of pavement or curb)	4 (Bike Path)
	Shoulder width ”left” side : (Distance from edge of drive lane to edge of pavement or curb)	4 (Bike Path)
	Pavement Type (Most typical Asphalt is R3, Most typical Concrete is R1)	R3
SIDEWALK DATA:	Sidewalk width	4
	Near edge of sidewalk to edge of drive lanes	8
* **LIGHT POLE DATA:**	Luminaire mounting height	35
	Arm length, horizontal	15
	Luminaires per pole	1
	Pole set-back from travel lane (The distance from near edge of travel lane to pole center. Include shoulder and rain gutter)	10
	Pole spacing (For staggered spacing: the distance along the road between the pole on the “right” side to the pole on the “left” side)	84
	Pole Layout **(see picture)**	☑Intersection Corners ☐One side ☐ Opposite ☐ Staggered ☐ Median Mounted

GRANT-KOLB AND TANQUE VERDE INTERSECTION SITE PARAMETERS (rev2)		
* **ROADWAY DATA:**	Dimension units (Check one).	☑ Feet ☐ Meters
	Number of travel lanes “right side”	3
	Width of “right side” travel lanes	10
	Median width **(includes 2-10’ turn lanes plus 6.5’ median)**	26.5
	Number of travel lanes “left side”	3
	Width of “left side” travel lanes	12
	Shoulder and gutter width ”right” side: (Distance from edge of drive lane to edge of pavement or curb) **(includes 2-12’ turn lanes plus 3’ bike path)**	27
	Shoulder width ”left” side : (Distance from edge of drive lane to edge of pavement or curb) **(includes 10’ bus/bike path lane)**	10
	Pavement Type (Most typical Asphalt is R3, Most typical Concrete is R1)	asphalt
SIDEWALK DATA:	Sidewalk width	3
	Near edge of sidewalk to edge of drive lanes	31’(R) 14’(L)
* **LIGHT POLE DATA:**	Luminaire mounting height **(same as Oracle and River intersection light poles)**	(see note)
	Arm length, horizontal **(same as Oracle and River intersection light poles)**	(see note)
	Luminaires per pole	1
	Pole set-back from travel lane (The distance from near edge of travel lane to pole center. Include shoulder and rain gutter)	35’(R), 18’(L)
	Pole spacing (For staggered spacing: the distance along the road between the pole on the “right” side to the pole on the “left” side)	152’ (pole to pole) 136’ (curb to curb)
	Pole Layout **(2 poles per corner)**	☑Intersection Corners ☐One side ☐ Opposite ☐ Staggered ☐ Median Mounted

SAMPLE AREA 1 168 N CAROLINA AVE (AVENIDA) SITE PARAMETERS			
* **ROADWAY DATA:**	Dimension units (Check one).		☑ Feet ☐ Meters
	Number of travel lanes “right side”		1
	Width of “right side” travel lanes		12
	Median width		0
	Number of travel lanes “left side”		1
	Width of “left side” travel lanes		12
	Shoulder and gutter width ”right” side: (Distance from edge of drive lane to edge of pavement or curb)		2.5
	Shoulder width ”left” side : (Distance from edge of drive lane to edge of pavement or curb)		2.5
	Pavement Type (Most typical Asphalt is R3, Most typical Concrete is R1)		R3
SIDEWALK DATA:	Sidewalk width		-
	Near edge of sidewalk to edge of drive lanes		-
* **LIGHT POLE DATA:**	Luminaire mounting height		35
	Arm length, horizontal		12
	Luminaires per pole		1
	Pole set-back from travel lane (The distance from near edge of travel lane to pole center. Include shoulder and rain gutter)		8
	Pole spacing (For staggered spacing: the distance along the road between the pole on the “right” side to the pole on the “left” side)		115 AVG (111-119)
	Pole Layout	☑**One side** ☐ Opposite ☐ Staggered ☐ Median Mounted	

SAMPLE AREA 2 1231 N PALO VERDE BLVD SITE PARAMETERS			
* **ROADWAY DATA:**	Dimension units (Check one).		☑ Feet ☐ Meters
	Number of travel lanes “right side”		1
	Width of “right side” travel lanes		12
	Turn Lane width		6
	Number of travel lanes “left side”		1
	Width of “left side” travel lanes		12
	Shoulder and gutter width ”right” side: (Distance from edge of drive lane to edge of pavement or curb)		6 (Bike Path)
	Shoulder width ”left” side : (Distance from edge of drive lane to edge of pavement or curb)		6 (Bike Path)
	Pavement Type (Most typical Asphalt is R3, Most typical Concrete is R1)		R3
SIDEWALK DATA:	Sidewalk width		-
	Near edge of sidewalk to edge of drive lanes		-
* **LIGHT POLE DATA:**	Luminaire mounting height		35
	Arm length, horizontal		8
	Luminaires per pole		1
	Pole set-back from travel lane (The distance from near edge of travel lane to pole center. Include shoulder and rain gutter)		12
	Pole spacing (For staggered spacing: the distance along the road between the pole on the “right” side to the pole on the “left” side)		231 AVG (259-263)
	Pole Layout	☑**One side** ☐ Opposite ☐ Staggered ☐ Median Mounted	

SAMPLE AREA 3 818 N ANITA AVE SITE PARAMETERS			
* ROADWAY DATA:	Dimension units (Check one).		☑ Feet ☐ Meters
	Number of travel lanes “right side”		1
	Width of “right side” travel lanes		12
	Median width		0
	Number of travel lanes “left side”		1
	Width of “left side” travel lanes		12
	Shoulder and gutter width ”right” side: (Distance from edge of drive lane to edge of pavement or curb)		5 (lanes not marked)
	Shoulder width ”left” side : (Distance from edge of drive lane to edge of pavement or curb)		5 (lanes not marked)
	Pavement Type (Most typical Asphalt is R3, Most typical Concrete is R1)		R3
SIDEWALK DATA:	Sidewalk width		4
	Near edge of sidewalk to edge of drive lanes		2
* LIGHT POLE DATA:	Luminaire mounting height		35
	Arm length, horizontal		12
	Luminaires per pole		1
	Pole set-back from travel lane (The distance from near edge of travel lane to pole center. Include shoulder and rain gutter)		11
	Pole spacing (For staggered spacing: the distance along the road between the pole on the “right” side to the pole on the “left” side)		105 AVG (102-107)
	Pole Layout	☑**One side** ☐ Opposite ☐ Staggered ☐ Median Mounted	

SAMPLE AREA 4 6962 E STELLA RD SITE PARAMETERS			
* **ROADWAY DATA:**	Dimension units (Check one).		☑ Feet ☐ Meters
	Number of travel lanes “right side”		1
	Width of “right side” travel lanes		12
	Turn Lane width		12
	Number of travel lanes “left side”		1
	Width of “left side” travel lanes		12
	Shoulder and gutter width ”right” side: (Distance from edge of drive lane to edge of pavement or curb)		5 (lane not marked)
	Shoulder width ”left” side : (Distance from edge of drive lane to edge of pavement or curb)		5 (lane not marked)
	Pavement Type (Most typical Asphalt is R3, Most typical Concrete is R1)		R3
SIDEWALK DATA:	Sidewalk width		3
	Near edge of sidewalk to edge of drive lanes		12
* **LIGHT POLE DATA:**	Luminaire mounting height		35
	Arm length, horizontal		18
	Luminaires per pole		1
	Pole set-back from travel lane (The distance from near edge of travel lane to pole center. Include shoulder and rain gutter)		15
	Pole spacing (For staggered spacing: the distance along the road between the pole on the “right” side to the pole on the “left” side)		132 AVG (126-139)
	Pole Layout	☑**One side** ☐ Opposite ☐ Staggered ☐ Median Mounted	

SAMPLE AREA 5 8859 E OLD VAIL RD SITE PARAMETERS			
* **ROADWAY DATA:**	Dimension units (Check one).		☑ Feet ☐ Meters
	Number of travel lanes “right side”		2
	Width of “right side” travel lanes		12
	Turn Lane width		10
	Number of travel lanes “left side”		2
	Width of “left side” travel lanes		12
	Shoulder and gutter width ”right” side: (Distance from edge of drive lane to edge of pavement or curb)		4 (Bike Path)
	Shoulder width ”left” side : (Distance from edge of drive lane to edge of pavement or curb)		4 (Bike Path)
	Pavement Type (Most typical Asphalt is R3, Most typical Concrete is R1)		R3
SIDEWALK DATA:	Sidewalk width		3
	Near edge of sidewalk to edge of drive lanes		0
* **LIGHT POLE DATA:**	Luminaire mounting height		35
	Arm length, horizontal		18
	Luminaires per pole		1
	Pole set-back from travel lane (The distance from near edge of travel lane to pole center. Include shoulder and rain gutter)		13
	Pole spacing (For staggered spacing: the distance along the road between the pole on the “right” side to the pole on the “left” side)		219 AVG (215-222)
	Pole Layout	☐One side ☐ Opposite ☑**Staggered** ☐ Median Mounted	

SAMPLE AREA 6 5742 EAST 29TH ST. SITE PARAMETERS			
* **ROADWAY DATA:**	Dimension units (Check one).		☑ Feet ☐ Meters
	Number of travel lanes “right side”		1
	Width of “right side” travel lanes		12
	Turn Lane width		10
	Number of travel lanes “left side”		1
	Width of “left side” travel lanes		12
	Shoulder and gutter width ”right” side: (Distance from edge of drive lane to edge of pavement or curb)		6 (Bike Path)
	Shoulder width ”left” side : (Distance from edge of drive lane to edge of pavement or curb)		6 (Bike Path)
	Pavement Type (Most typical Asphalt is R3, Most typical Concrete is R1)		R3
SIDEWALK DATA:	Sidewalk width		4
	Near edge of sidewalk to edge of drive lanes		3
* **LIGHT POLE DATA:**	Luminaire mounting height		35
	Arm length, horizontal		15
	Luminaires per pole		1
	Pole set-back from travel lane (The distance from near edge of travel lane to pole center. Include shoulder and rain gutter)		12
	Pole spacing (For staggered spacing: the distance along the road between the pole on the “right” side to the pole on the “left” side)		157 AVG (156-158)
	Pole Layout	☑**One side** ☐Opposite ☐Staggered ☐ Median Mounted	

SAMPLE AREA 7 111 W DRACHMAN ST. SITE PARAMETERS			
* **ROADWAY DATA:**	Dimension units (Check one).		☑ Feet ☐ Meters
	Number of travel lanes “right side”		1
	Width of “right side” travel lanes		12
	Turn Lane width		10
	Number of travel lanes “left side”		1
	Width of “left side” travel lanes		12
	Shoulder and gutter width ”right” side: (Distance from edge of drive lane to edge of pavement or curb)		12 (Bike Path)
	Shoulder width ”left” side : (Distance from edge of drive lane to edge of pavement or curb)		12 (Bike Path)
	Pavement Type (Most typical Asphalt is R3, Most typical Concrete is R1)		R3
SIDEWALK DATA:	Sidewalk width		3
	Near edge of sidewalk to edge of drive lanes		0
* **LIGHT POLE DATA:**	Luminaire mounting height		32
	Arm length, horizontal		14
	Luminaires per pole		1
	Pole set-back from travel lane (The distance from near edge of travel lane to pole center. Include shoulder and rain gutter)		14
	Pole spacing (For staggered spacing: the distance along the road between the pole on the “right” side to the pole on the “left” side)		108 AVG (88-127)
	Pole Layout	☐One side ☐ Opposite ☑**Staggered** ☐ Median Mounted	

SAMPLE AREA 8 1115 E GRANT RD. SITE PARAMETERS			
* ROADWAY DATA:	Dimension units (Check one).		☑ Feet ☐ Meters
	Number of travel lanes “right side”		2
	Width of “right side” travel lanes		12
	Median width		12
	Number of travel lanes “left side”		2
	Width of “left side” travel lanes		12
	Shoulder and gutter width ”right” side: (Distance from edge of drive lane to edge of pavement or curb)		5.5
	Shoulder width ”left” side : (Distance from edge of drive lane to edge of pavement or curb)		5.5
	Pavement Type (Most typical Asphalt is R3, Most typical Concrete is R1)		R3
SIDEWALK DATA:	Sidewalk width		4
	Near edge of sidewalk to edge of drive lanes		2
* LIGHT POLE DATA:	Luminaire mounting height		40
	Arm length, horizontal		18
	Luminaires per pole		1
	Pole set-back from travel lane (The distance from near edge of travel lane to pole center. Include shoulder and rain gutter)		10.5
	Pole spacing (For staggered spacing: the distance along the road between the pole on the “right” side to the pole on the “left” side)		170 AVG (166-174)
	Pole Layout	☑**One side** ☐ Opposite ☐ Staggered ☐ Median Mounted	

SAMPLE AREA 9 ALVERNON (from Broadway to Speedway) SITE PARAMETERS			
* ROADWAY DATA:	Dimension units (Check one).		☑ Feet ☐ Meters
	Number of travel lanes “right side”		2
	Width of “right side” travel lanes		12
	Median width		10
	Number of travel lanes “left side”		2
	Width of “left side” travel lanes		12
	Shoulder and gutter width ”right” side: (Distance from edge of drive lane to edge of pavement or curb)		5 (Bike Route)
	Shoulder width ”left” side : (Distance from edge of drive lane to edge of pavement or curb)		5 (Bike Route)
	Pavement Type (Most typical Asphalt is R3, Most typical Concrete is R1)		R3
SIDEWALK DATA:	Sidewalk width		2.5
	Near edge of sidewalk to edge of drive lanes		2
* LIGHT POLE DATA:	Luminaire mounting height		35
	Arm length, horizontal		18
	Luminaires per pole **COOLIE HATS- 400 HPS**		1
	Pole set-back from travel lane (The distance from near edge of travel lane to pole center. Include shoulder and rain gutter)		15
	Pole spacing (For staggered spacing: the distance along the road between the pole on the “right” side to the pole on the “left” side)		208 AVG
	Pole Layout	☐One side ☐Opposite ☑**Staggered** ☐ Median Mounted	

SAMPLE AREA 10 SOUTH 6th AVE. (near W Veteran Blvd) SITE PARAMETERS			
* ROADWAY DATA:	Dimension units (Check one).		☑ Feet ☐ Meters
	Number of travel lanes “right side”		2
	Width of “right side” travel lanes		12
	Turn Lane width		10
	Number of travel lanes “left side”		2
	Width of “left side” travel lanes		12
	Shoulder and gutter width ”right” side: (Distance from edge of drive lane to edge of pavement or curb)		4 (Bike Path)
	Shoulder width ”left” side : (Distance from edge of drive lane to edge of pavement or curb)		4 (Bike Path)
	Pavement Type (Most typical Asphalt is R3, Most typical Concrete is R1)		R3
SIDEWALK DATA:	Sidewalk width		10
	Near edge of sidewalk to edge of drive lanes		0
* LIGHT POLE DATA:	Luminaire mounting height		35
	Arm length, horizontal		18
	Luminaires per pole		1
	Pole set-back from travel lane (The distance from near edge of travel lane to pole center. Include shoulder and rain gutter)		16
	Pole spacing (For staggered spacing: the distance along the road between the pole on the “right” side to the pole on the “left” side)		100 AVG (94-106)
	Pole Layout	☐One side ☑**Opposite** ☐Staggered ☐ Median Mounted	

SAMPLE AREA 11 6150 E. GRANT RD/BROADWAY (Country Club - Alvernon) SITE PARAMETERS			
* **ROADWAY DATA:**	Dimension units (Check one).		☑ Feet ☐ Meters
	Number of travel lanes “right side”		3
	Width of “right side” travel lanes		12
	Median width		16 (median)
	Number of travel lanes “left side”		3
	Width of “left side” travel lanes		12
	Shoulder and gutter width ”right” side: (Distance from edge of drive lane to edge of pavement or curb)		6 (Bike Route)
	Shoulder width ”left” side : (Distance from edge of drive lane to edge of pavement or curb)		6 (Bike Route)
	Pavement Type (Most typical Asphalt is R3, Most typical Concrete is R1)		R3
SIDEWALK DATA:	Sidewalk width		-
	Near edge of sidewalk to edge of drive lanes		-
* **LIGHT POLE DATA:**	Luminaire mounting height		35
	Arm length, horizontal		3
	Luminaires per pole **COOLIE HATS- 400 HPS**		1
	Pole set-back from travel lane (The distance from near edge of travel lane to pole center. Include shoulder and rain gutter)		8
	Pole spacing (For staggered spacing: the distance along the road between the pole on the “right” side to the pole on the “left” side)		152 AVG
	Pole Layout	☐One side ☐Opposite ☑**Staggered** ☐ Median Mounted	

SAMPLE AREA 12 8778 E. GOLF LINKS RD SITE PARAMETERS			
* **ROADWAY DATA:**	Dimension units (Check one).		☑ Feet ☐ Meters
	Number of travel lanes “right side”		3
	Width of “right side” travel lanes		12
	Median width		20
	Number of travel lanes “left side”		3
	Width of “left side” travel lanes		12
	Shoulder and gutter width ”right” side: (Distance from edge of drive lane to edge of pavement or curb)		5 (Bike Path)
	Shoulder width ”left” side : (Distance from edge of drive lane to edge of pavement or curb)		5 (Bike Path)
	Pavement Type (Most typical Asphalt is R3, Most typical Concrete is R1)		R3
SIDEWALK DATA:	Sidewalk width		6
	Near edge of sidewalk to edge of drive lanes		2
* **LIGHT POLE DATA:**	Luminaire mounting height		35
	Arm length, horizontal		18
	Luminaires per pole		1
	Pole set-back from travel lane (The distance from near edge of travel lane to pole center. Include shoulder and rain gutter)		15
	Pole spacing (For staggered spacing: the distance along the road between the pole on the “right” side to the pole on the “left” side)		211 AVG (207-215)
	Pole Layout	☐One side ☐Opposite ☑**Staggered** ☐ Median Mounted	

SAMPLE AREA 13 SPEEDWAY BLVD (Alvernon - Wilmot) SITE PARAMETERS			
* **ROADWAY DATA:**	Dimension units (Check one).		☑ Feet ☐ Meters
	Number of travel lanes “right side”		3
	Width of “right side” travel lanes		12
	Median width		**20**
	Number of travel lanes “left side”		**3**
	Width of “left side” travel lanes		12
	Shoulder and gutter width ”right” side: (Distance from edge of drive lane to edge of pavement or curb)		5 (Bike Route)
	Shoulder width ”left” side : (Distance from edge of drive lane to edge of pavement or curb)		5 (Bike Route)
	Pavement Type (Most typical Asphalt is R3, Most typical Concrete is R1)		R3
SIDEWALK DATA:	Sidewalk width		2.5
	Near edge of sidewalk to edge of drive lanes		0
* **LIGHT POLE DATA:**	Luminaire mounting height		40
	Arm length, horizontal Median Mounted Pole with two (2) 15ft Mast Arms		15
	Luminaires per pole **(2) COBRA 400 HPS**		**2**
	Pole set-back from travel lane (The distance from near edge of travel lane to pole center. Include shoulder and rain gutter)		**10**
	Pole spacing (For staggered spacing: the distance along the road between the pole on the “right” side to the pole on the “left” side)		169 AVG
	Pole Layout	☐One side ☐Opposite ☐Staggered ☑**Median Mounted**	

SAMPLE AREA 14 E. GRANT RD AND N. TUCSON BLVD (MAJOR and COLLECTOR) INTERSECTION SITE PARAMETERS (measurements taken across Grant Rd on east side of intersection)			
* **ROADWAY DATA:**	Dimension units (Check one).		☑ Feet ☐ Meters
	Number of travel lanes “right side”		2
	Width of “right side” travel lanes		11
	Median width		12 (Turn Lane)
	Number of travel lanes “left side”		2
	Width of “left side” travel lanes		11
	Shoulder and gutter width ”right” side: (Distance from edge of drive lane to edge of pavement or curb)		4 (Bike Path)
	Shoulder width ”left” side : (Distance from edge of drive lane to edge of pavement or curb)		4 (Bike Path)
	Pavement Type (Most typical Asphalt is R3, Most typical Concrete is R1)		R3
SIDEWALK DATA:	Sidewalk width		4
	Near edge of sidewalk to edge of drive lanes		8
* **LIGHT POLE DATA:**	Luminaire mounting height		35
	Arm length, horizontal		15
	Luminaires per pole		1
	Pole set-back from travel lane (The distance from near edge of travel lane to pole center. Include shoulder and rain gutter)		10
	Pole spacing (For staggered spacing: the distance along the road between the pole on the “right” side to the pole on the “left” side)		84
	Pole Layout **(see picture)**	☑Intersection Corners ☐One side ☐ Opposite ☐ Staggered ☐ Median Mounted	

SAMPLE AREA 15 TANQUE VERDE\GRANT-KOLB INTERSECTION (MAJOR and MAJOR) SITE PARAMETERS		
* **ROADWAY DATA:**	Dimension units (Check one).	☑ Feet ☐ Meters
	Number of travel lanes “right side”	3
	Width of “right side” travel lanes	10
	Median width **(includes 2-10’ turn lanes plus 6.5’ median)**	26.5
	Number of travel lanes “left side”	3
	Width of “left side” travel lanes	12
	Shoulder and gutter width ”right” side: (Distance from edge of drive lane to edge of pavement or curb) **(includes 2-12’ turn lanes plus 3’ bike path)**	27
	Shoulder width ”left” side : (Distance from edge of drive lane to edge of pavement or curb) **(includes 10’ bus/bike path lane)**	10
	Pavement Type (Most typical Asphalt is R3, Most typical Concrete is R1)	asphalt
SIDEWALK DATA:	Sidewalk width	3
	Near edge of sidewalk to edge of drive lanes	31’(R) 14’(L)
* **LIGHT POLE DATA:**	Luminaire mounting height	35
	Arm length, horizontal	15
	Luminaires per pole **(2 poles on each corner – 8 total)**	1
	Pole set-back from travel lane (The distance from near edge of travel lane to pole center. Include shoulder and rain gutter)	35’(R), 18’(L)
	Pole spacing (For staggered spacing: the distance along the road between the pole on the “right” side to the pole on the “left” side)	152’ (pole to pole) 136’ (curb to curb)
	Pole Layout **(2 poles per corner)**	☑Intersection Corners ☐One side ☐ Opposite ☐ Staggered ☐ Median Mounted

E.4 New Roadway Fixture Selections

Visual - Roadway Tool

www.Visual-3D.com

Wednesday, September 23, 2015

Design Information

Project Name	LOCAL SHORTLOCAL SHORT 1 168 N CAROLINA AVE. (AVENDIA)
Project Description	ATBS B R2

User Name
Company Name
Your Phone
Your Email

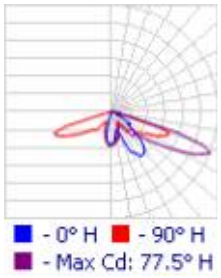
Roadway

Calculation Method	RP-8-2000 2007 errata		**Median**		
Road Surface	R3		Width	0 ft	
Road Class	Local		**Sidewalk**		
Pedestrians	Low		Width	Left: 0 ft	Right: 0 ft
Roadway Length	1,000 (9 Pole Locations)		Setback	Left: 0 ft	Right: 0 ft
Lane Quantity	Left: 1	Right: 1	**Bikelane**		
Lane Width	Left: 12 ft	Right: 12 ft	Width	Left: 0 ft	Right: 0 ft
			Setback	Left: 0 ft	Right: 0 ft

Luminaire Information

Left Side - American Electric Lighting: ATBS B XXXXX R2

Cycle Spacing:	123.38 ft	Configuration:	Single
Setback:	8 ft	Arm Length:	12 ft
Orientation:	90	Tilt:	0
Mounting Height:	35 ft	Lamp Lumens:	2302
Staggered:	False	Wattage:	24
Light Loss Factor:	0.78	Lamp Count:	1



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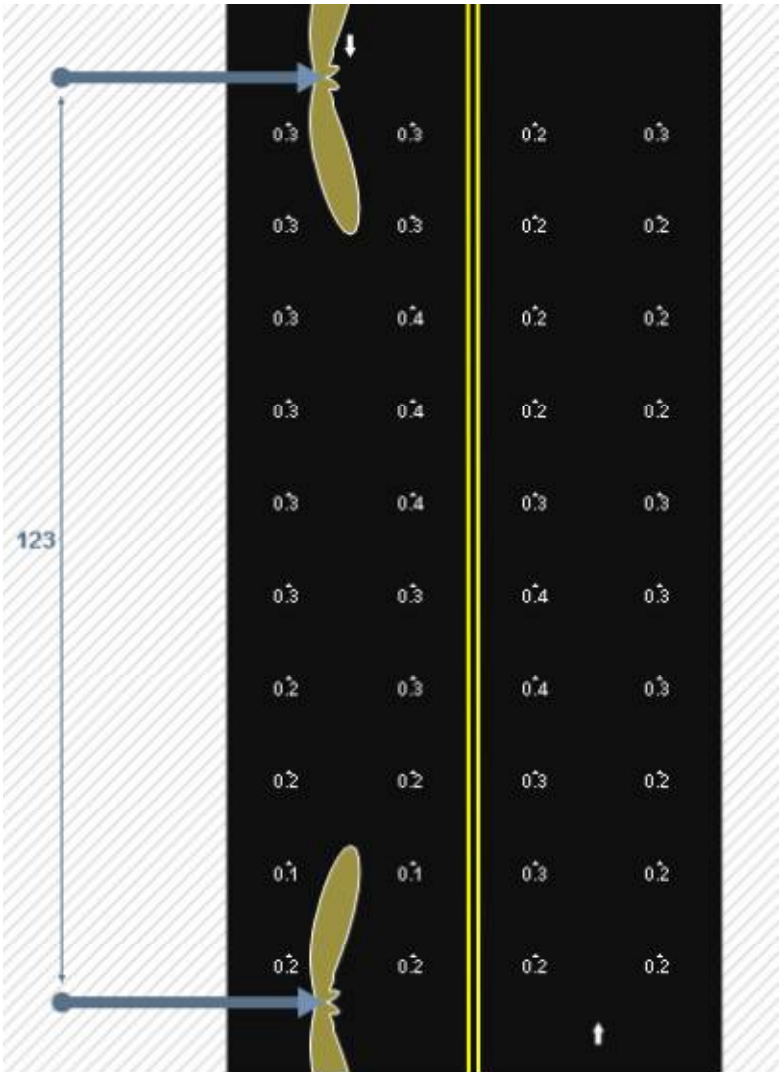
www.Visual-3D.com



Luminance

Calculation Results

Luminance	Left	Right	
Average:	0.3	0.3	cd/m²
Max:	0.4	0.4	cd/m²
Min	0.1	0.2	cd/m²
Ave/Min:	2.6	1.6	
Max/Min:	4	2.3	
Lv Ratio:	0.2	0.2	
STV:	0.9	1.1	

Illuminance	Left	Right	
Average:	0.2	0.3	fc
Max:	0.5	0.5	fc
Min	0.2	0.3	fc
Ave/Min:	1.6	1.2	
Max/Min:	3.3	2	

Sidewalk	Left	Right	
Average:	--	--	fc
Min	--	--	fc
Ave/Min:	--	--	
Ev Min:	--	--	fc

Bikelane			
Average:	--	--	fc
Min	--	--	fc
Ave/Min:	--	--	
Ev Min:	--	--	fc

AcuityBrands.

Visual - Roadway Tool

www.Visual-3D.com

Design Information

Wednesday, September 23, 2015

Project Name Local Med-1 5952 E 24 st
Project Description ATBS E R2

User Name
Company Name
Your Phone
Your Email

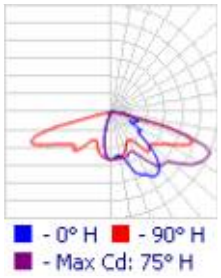
Roadway

Calculation Method	RP-8-2000 2007 errata		**Median**		
Road Surface	R3		Width	0 ft	
Road Class	Local		**Sidewalk**		
Pedestrians	Low		Width	Left: 0 ft	Right: 0 ft
Roadway Length	1,000 (6 Pole Locations)		Setback	Left: 0 ft	Right: 0 ft
Lane Quantity	Left: 1	Right: 1	**Bikelane**		
Lane Width	Left: 12 ft	Right: 12 ft	Width	Left: 0 ft	Right: 0 ft
			Setback	Left: 0 ft	Right: 0 ft

Luminaire Information

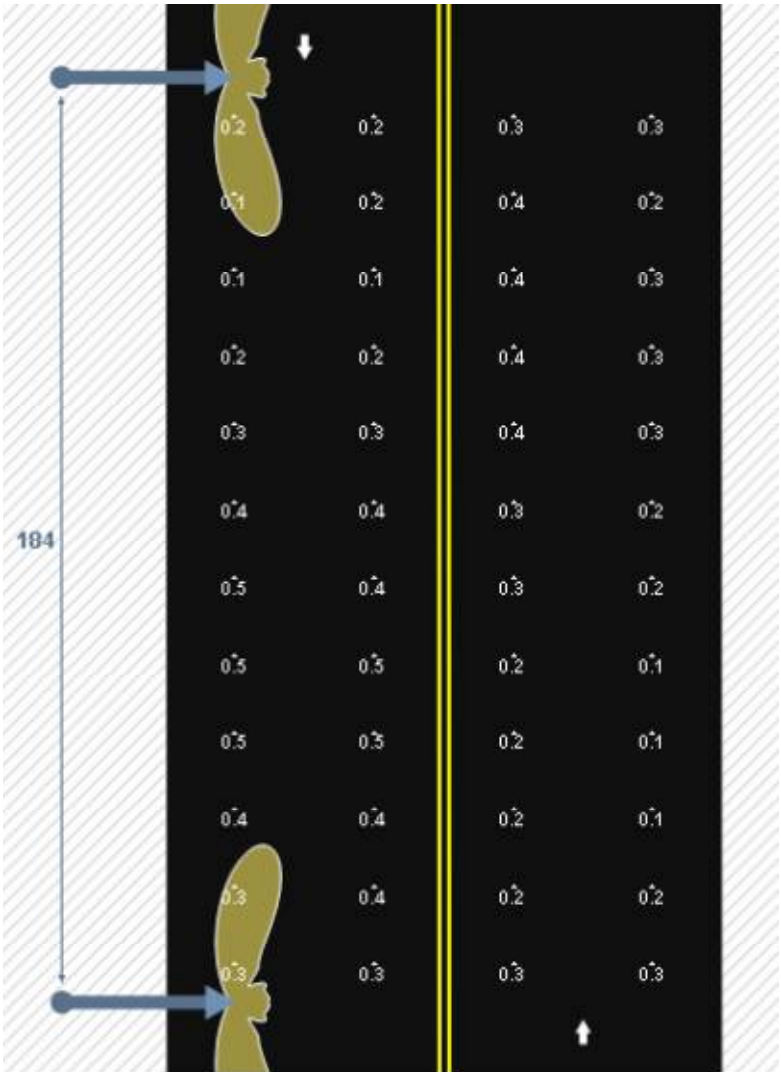
Left Side - American Electric Lighting: ATBS E XXXXX R2

Cycle Spacing:	183.54 ft	Configuration:	Single
Setback:	4.5 ft	Arm Length:	7 ft
Orientation:	90	Tilt:	0
Mounting Height:	31 ft	Lamp Lumens:	3962
Staggered:	False	Wattage:	39
Light Loss Factor:	0.78	Lamp Count:	1



Visual - Roadway Tool

www.Visual-3D.com



Luminance

Calculation Results

Luminance	Left	Right	
Average:	0.3	0.3	cd/m²
Max:	0.5	0.4	cd/m²
Min	0.1	0.1	cd/m²
Ave/Min:	2.8	2	
Max/Min:	4.5	3.2	
Lv Ratio:	0.2	0.3	
STV:	2.5	2.9	

Illuminance	Left	Right	
Average:	0.3	0.4	fc
Max:	0.8	0.9	fc
Min	0.1	0.1	fc
Ave/Min:	3.1	3.3	
Max/Min:	7.5	7.8	

Sidewalk	Left	Right	
Average:	--	--	fc
Min	--	--	fc
Ave/Min:	--	--	
Ev Min:	--	--	fc

Bikelane			
Average:	--	--	fc
Min	--	--	fc
Ave/Min:	--	--	
Ev Min:	--	--	fc

Visual - Roadway Tool

www.Visual-3D.com

Design Information

Wednesday, September 23, 2015

Project Name Local Far - 1 1231 N Palo Verde Blvd.
Project Description ATBM D R3

User Name
Company Name
Your Phone
Your Email

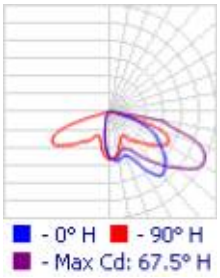
Roadway

Calculation Method	RP-8-2000 2007 errata		**Median**		
Road Surface	R3		Width	0 ft	
Road Class	Local		**Sidewalk**		
Pedestrians	Low		Width	Left: 0 ft	Right: 0 ft
Roadway Length	1,000 (4 Pole Locations)		Setback	Left: 0 ft	Right: 0 ft
Lane Quantity	Left: 1	Right: 1	**Bikelane**		
Lane Width	Left: 12 ft	Right: 12 ft	Width	Left: 6 ft	Right: 6 ft
			Setback	Left: 0 ft	Right: 0 ft

Luminaire Information

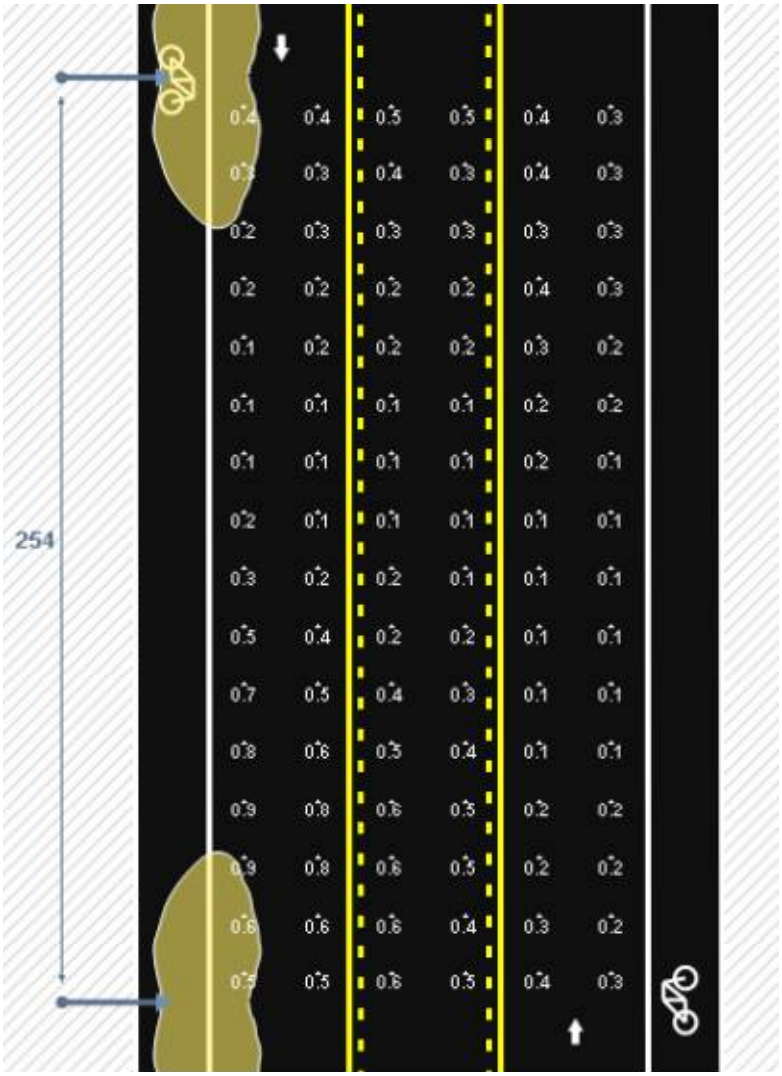
Left Side - American Electric Lighting:

Cycle Spacing:	253.86 ft	Configuration:	Single
Setback:	12 ft	Arm Length:	8 ft
Orientation:	90	Tilt:	0
Mounting Height:	35 ft	Lamp Lumens:	11689
Staggered:	False	Wattage:	95
Light Loss Factor:	0.74	Lamp Count:	1



Visual - Roadway Tool

www.Visual-3D.com



Luminance

Calculation Results

Luminance	Left	Right	
Average:	0.4	0.3	cd/m²
Max:	0.9	0.6	cd/m²
Min	0.1	0.1	cd/m²
Ave/Min:	3.6	3.4	
Max/Min:	9.2	8	
Lv Ratio:	0.3	0.3	
STV:	4.4	3.9	

Illuminance	Left	Right	
Average:	0.5	0.5	fc
Max:	1.5	1.5	fc
Min	0.1	0.1	fc
Ave/Min:	10.6	8	
Max/Min:	29.4	24.5	

Sidewalk	Left	Right	
Average:	--	--	fc
Min	--	--	fc
Ave/Min:	--	--	
Ev Min:	--	--	fc

Bikelane			
Average:	0.4	0.3	fc
Min	0	0.1	fc
Ave/Min:	8.8	4.1	
Ev Min:	0	0	fc

Visual - Roadway Tool

www.Visual-3D.com

Design Information

Wednesday, September 23, 2015

Project Name Collector Short - 1 818 N Anita Ave
Project Description ATBS E R2

User Name
Company Name
Your Phone
Your Email

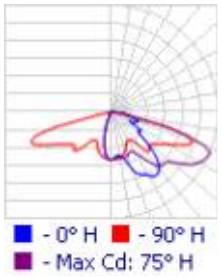
Roadway

Calculation Method	RP-8-2000 2007 errata		**Median**		
Road Surface	R3		Width	0 ft	
Road Class	Collector		**Sidewalk**		
Pedestrians	Low		Width	Left: 0 ft	Right: 0 ft
Roadway Length	1,000 (9 Pole Locations)		Setback	Left: 0 ft	Right: 0 ft
Lane Quantity	Left: 1	Right: 1	**Bikelane**		
Lane Width	Left: 12 ft	Right: 12 ft	Width	Left: 5 ft	Right: 5 ft
			Setback	Left: 0 ft	Right: 0 ft

Luminaire Information

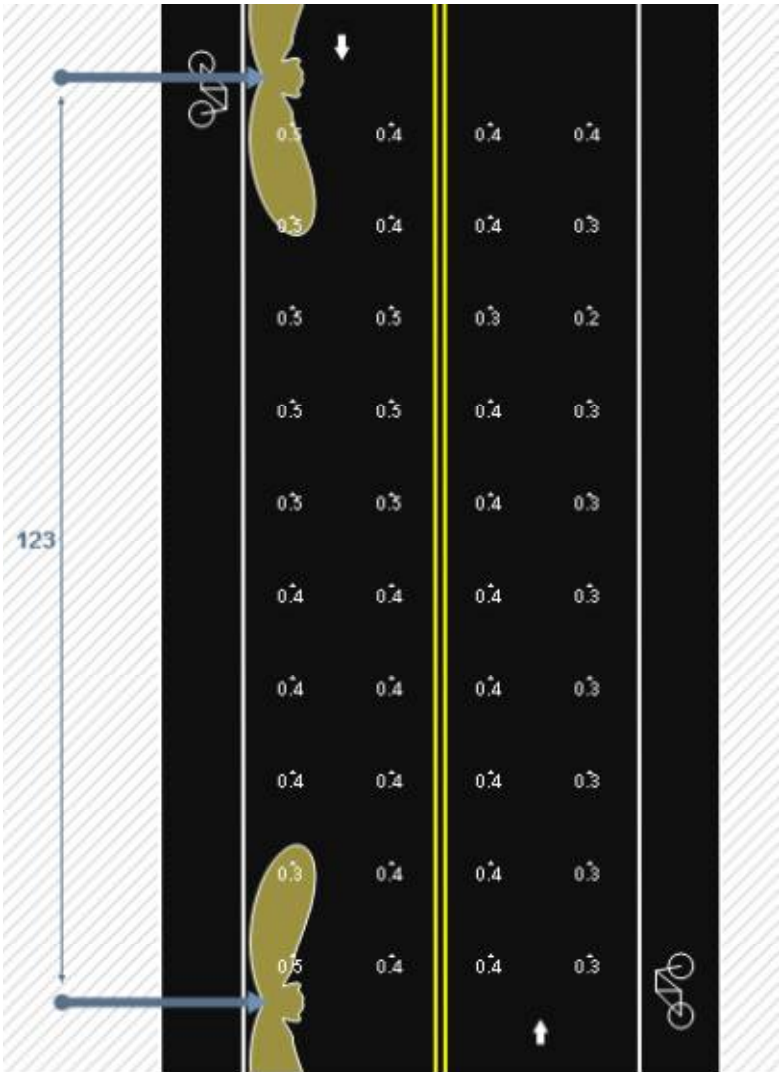
Left Side - American Electric Lighting: ATBS E XXXXX R2

Cycle Spacing:	123.13 ft	Configuration:	Single
Setback:	11 ft	Arm Length:	12 ft
Orientation:	90	Tilt:	0
Mounting Height:	35 ft	Lamp Lumens:	3962
Staggered:	False	Wattage:	39
Light Loss Factor:	0.78	Lamp Count:	1



Visual - Roadway Tool

www.Visual-3D.com



Luminance

Calculation Results

Luminance	Left	Right	
Average:	0.4	0.4	cd/m²
Max:	0.5	0.4	cd/m²
Min	0.3	0.3	cd/m²
Ave/Min:	1.3	1.4	
Max/Min:	1.5	1.6	
Lv Ratio:	0.1	0.1	
STV:	1	1.3	

Illuminance	Left	Right	
Average:	0.5	0.5	fc
Max:	0.7	0.8	fc
Min	0.3	0.3	fc
Ave/Min:	1.8	1.5	
Max/Min:	2.8	2.4	

Sidewalk	Left	Right	
Average:	--	--	fc
Min	--	--	fc
Ave/Min:	--	--	
Ev Min:	--	--	fc

Bikelane			
Average:	0.3	0.4	fc
Min	0.2	0.3	fc
Ave/Min:	1.6	1.3	
Ev Min:	0.1	0.1	fc

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Design Information

Wednesday, September 23, 2015

Project Name Collector Med - 1 6962 E Stella rd.
Project Description ATBS H R2

User Name
Company Name
Your Phone
Your Email

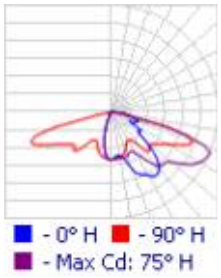
Roadway

Calculation Method	RP-8-2000 2007 errata		**Median**		
Road Surface	R3		Width	0 ft	
Road Class	Collector		**Sidewalk**		
Pedestrians	Low		Width	Left: 0 ft	Right: 0 ft
Roadway Length	1,000 (7 Pole Locations)		Setback	Left: 0 ft	Right: 0 ft
Lane Quantity	Left: 1	Right: 1	**Bikelane**		
Lane Width	Left: 12 ft	Right: 12 ft	Width	Left: 5 ft	Right: 5 ft
			Setback	Left: 0 ft	Right: 0 ft

Luminaire Information

Left Side - American Electric Lighting: ATBS H XXXXX R2

Cycle Spacing:	160.71 ft	Configuration:	Single
Setback:	15 ft	Arm Length:	18 ft
Orientation:	90	Tilt:	0
Mounting Height:	35 ft	Lamp Lumens:	6250
Staggered:	False	Wattage:	72
Light Loss Factor:	0.78	Lamp Count:	1



Visual - Roadway Tool

www.Visual-3D.com

Luminance

Calculation Results

Luminance	Left	Right	
Average:	0.5	0.4	cd/m²
Max:	0.7	0.6	cd/m²
Min	0.3	0.2	cd/m²
Ave/Min:	1.5	2.3	
Max/Min:	2.2	4	
Lv Ratio:	0.2	0.2	
STV:	1.7	2.1	

Illuminance	Left	Right	
Average:	0.6	0.6	fc
Max:	1.2	1.2	fc
Min	0.3	0.3	fc
Ave/Min:	2.4	2.2	
Max/Min:	4.7	4.7	

Sidewalk	Left	Right	
Average:	--	--	fc
Min	--	--	fc
Ave/Min:	--	--	
Ev Min:	--	--	fc

Bikelane			
Average:	0.4	0.3	fc
Min	0.2	0.2	fc
Ave/Min:	1.7	1.4	
Ev Min:	0	0	fc

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Design Information

Wednesday, September 23, 2015

Project Name Collector Far - 1 8859 E Old Vail Rd
Project Description ATBM B R3

User Name
Company Name
Your Phone
Your Email

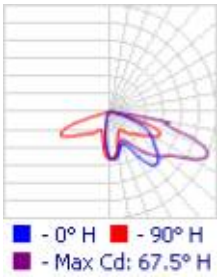
Roadway

Calculation Method	RP-8-2000 2007 errata		**Median**		
Road Surface	R3		Width	0 ft	
Road Class	Collector		**Sidewalk**		
Pedestrians	Low		Width	Left: 0 ft	Right: 0 ft
Roadway Length	1,000 (9 Pole Locations)		Setback	Left: 0 ft	Right: 0 ft
Lane Quantity	Left: 2	Right: 3	**Bikelane**		
Lane Width	Left: 12 ft	Right: 12 ft	Width	Left: 4 ft	Right: 4 ft
			Setback	Left: 0 ft	Right: 0 ft

Luminaire Information

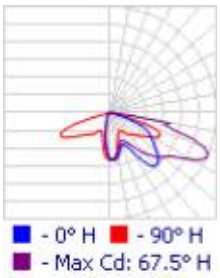
Left Side - American Electric Lighting:

Cycle Spacing:	244.29 ft	Configuration:	Single
Setback:	13 ft	Arm Length:	18 ft
Orientation:	90	Tilt:	0
Mounting Height:	35 ft	Lamp Lumens:	8016
Staggered:	False	Wattage:	70
Light Loss Factor:	0.71	Lamp Count:	1



Right Side - American Electric Lighting:

Cycle Spacing:	244.29 ft	Configuration:	Single
Setback:	13 ft	Arm Length:	18 ft
Orientation:	270	Tilt:	0
Mounting Height:	35 ft	Lamp Lumens:	8016
Staggered:	True	Wattage:	70
Light Loss Factor:	0.71	Lamp Count:	1



Visual - Roadway Tool

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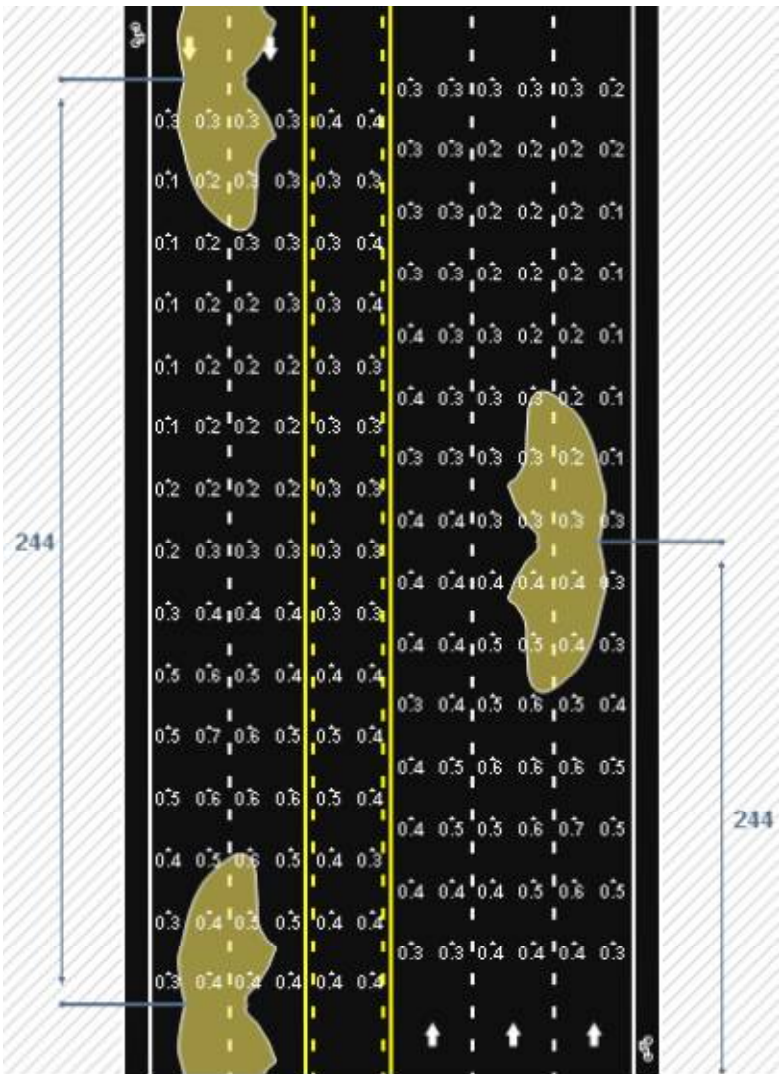

Luminance

Calculation Results

Luminance	Left	Right	
Average:	0.4	0.4	cd/m²
Max:	0.7	0.7	cd/m²
Min	0.1	0.1	cd/m²
Ave/Min:	2.7	2.7	
Max/Min:	5.2	5.2	
Lv Ratio:	0.3	0.3	
STV:	2	2	

Illuminance	Left	Right	
Average:	0.5	0.5	fc
Max:	1	1	fc
Min	0.2	0.2	fc
Ave/Min:	2.8	3	
Max/Min:	5.5	5.6	

Sidewalk	Left	Right	
Average:	--	--	fc
Min	--	--	fc
Ave/Min:	--	--	
Ev Min:	--	--	fc

Bikelane			
Average:	0.2	0.2	fc
Min	0.1	0.1	fc
Ave/Min:	1.7	1.6	
Ev Min:	0	0	fc

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Design Information

Wednesday, September 23, 2015

Project Name Major Short - 1 (III W Drachman ST)
Project Description ATBS F R3

User Name
Company Name
Your Phone
Your Email

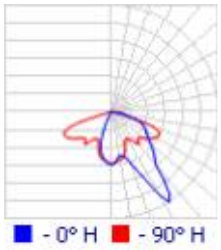
Roadway

Calculation Method	RP-8-2000 2007 errata		**Median**		
Road Surface	R3		Width	0 ft	
Road Class	Major		**Sidewalk**		
Pedestrians	Low		Width	Left: 0 ft	Right: 0 ft
Roadway Length	1,000 (16 Pole Locations)		Setback	Left: 0 ft	Right: 0 ft
Lane Quantity	Left: 1	Right: 1	**Bikelane**		
Lane Width	Left: 12 ft	Right: 12 ft	Width	Left: 12 ft	Right: 12 ft
			Setback	Left: 0 ft	Right: 0 ft

Luminaire Information

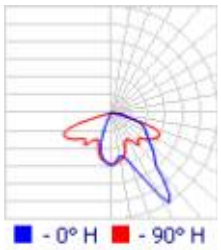
Left Side - American Electric Lighting: ATBS F XXXXX R3

Cycle Spacing:	132.71 ft	Configuration:	Single
Setback:	14 ft	Arm Length:	14 ft
Orientation:	90	Tilt:	0
Mounting Height:	32 ft	Lamp Lumens:	4477
Staggered:	False	Wattage:	49
Light Loss Factor:	0.78	Lamp Count:	1



Right Side - American Electric Lighting: ATBS F XXXXX R3

Cycle Spacing:	132.71 ft	Configuration:	Single
Setback:	14 ft	Arm Length:	14 ft
Orientation:	270	Tilt:	0
Mounting Height:	32 ft	Lamp Lumens:	4477
Staggered:	True	Wattage:	49
Light Loss Factor:	0.78	Lamp Count:	1



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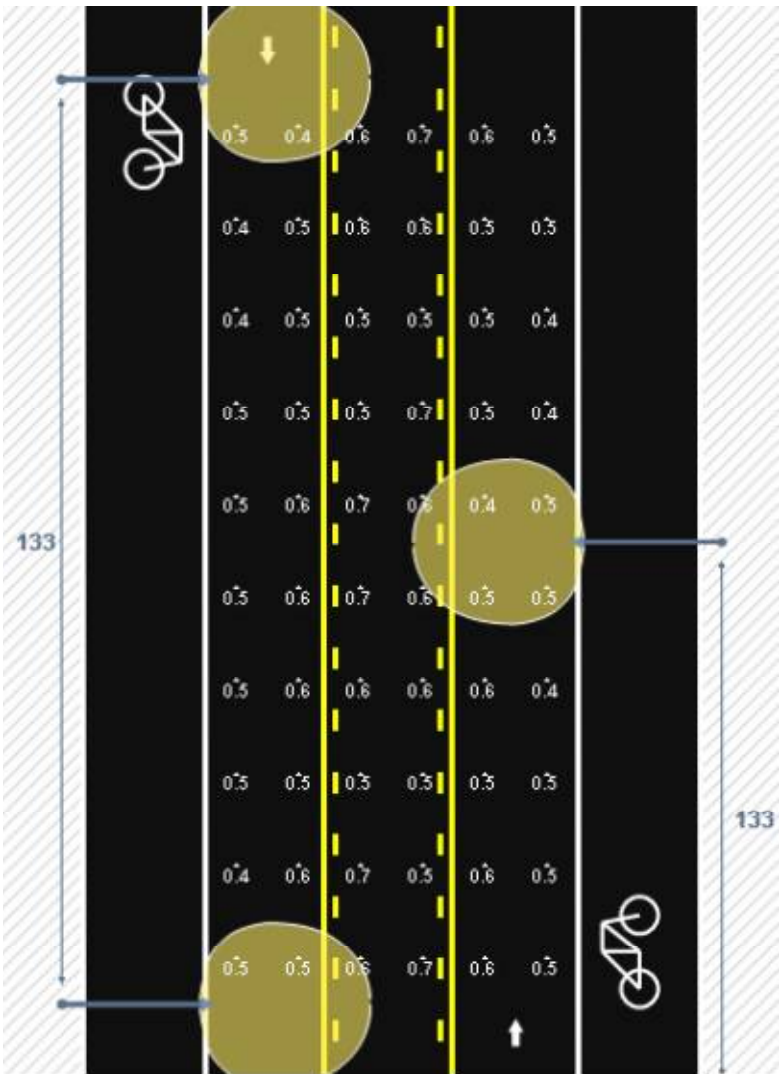

Luminance

Calculation Results

Luminance	Left	Right	
Average:	0.6	0.6	cd/m²
Max:	0.7	0.7	cd/m²
Min	0.4	0.4	cd/m²
Ave/Min:	1.4	1.4	
Max/Min:	1.9	1.9	
Lv Ratio:	0.1	0.1	
STV:	1.1	1.1	

Illuminance	Left	Right	
Average:	0.9	0.9	fc
Max:	1.4	1.4	fc
Min	0.5	0.5	fc
Ave/Min:	1.8	1.8	
Max/Min:	2.6	2.6	

Sidewalk	Left	Right	
Average:	--	--	fc
Min	--	--	fc
Ave/Min:	--	--	
Ev Min:	--	--	fc

Bikelane			
Average:	0.5	0.5	fc
Min	0.3	0.3	fc
Ave/Min:	1.3	1.3	
Ev Min:	0.2	0.2	fc

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Design Information

Wednesday, September 23, 2015

Project Name Major Short - 2 (6th Ave. @ West veteran blvd).VSL
Project Description ATBS H R3

User Name
Company Name
Your Phone
Your Email

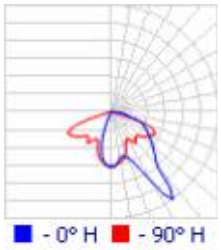
Roadway

Calculation Method	RP-8-2000 2007 errata		**Median**		
Road Surface	R3		Width	0 ft	
Road Class	Major		**Sidewalk**		
Pedestrians	Low		Width	Left: 0 ft	Right: 0 ft
Roadway Length	1,000 (16 Pole Locations)		Setback	Left: 0 ft	Right: 0 ft
Lane Quantity	Left: 2	Right: 2	**Bikelane**		
Lane Width	Left: 12 ft	Right: 12 ft	Width	Left: 4 ft	Right: 4 ft
			Setback	Left: 0 ft	Right: 0 ft

Luminaire Information

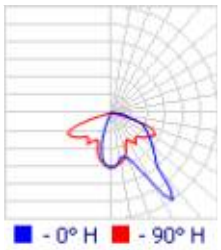
Left Side - American Electric Lighting: ATBS H XXXXX R3

Cycle Spacing:	128.86 ft	Configuration:	Single
Setback:	16 ft	Arm Length:	18 ft
Orientation:	90	Tilt:	0
Mounting Height:	35 ft	Lamp Lumens:	6321
Staggered:	False	Wattage:	72
Light Loss Factor:	0.78	Lamp Count:	1



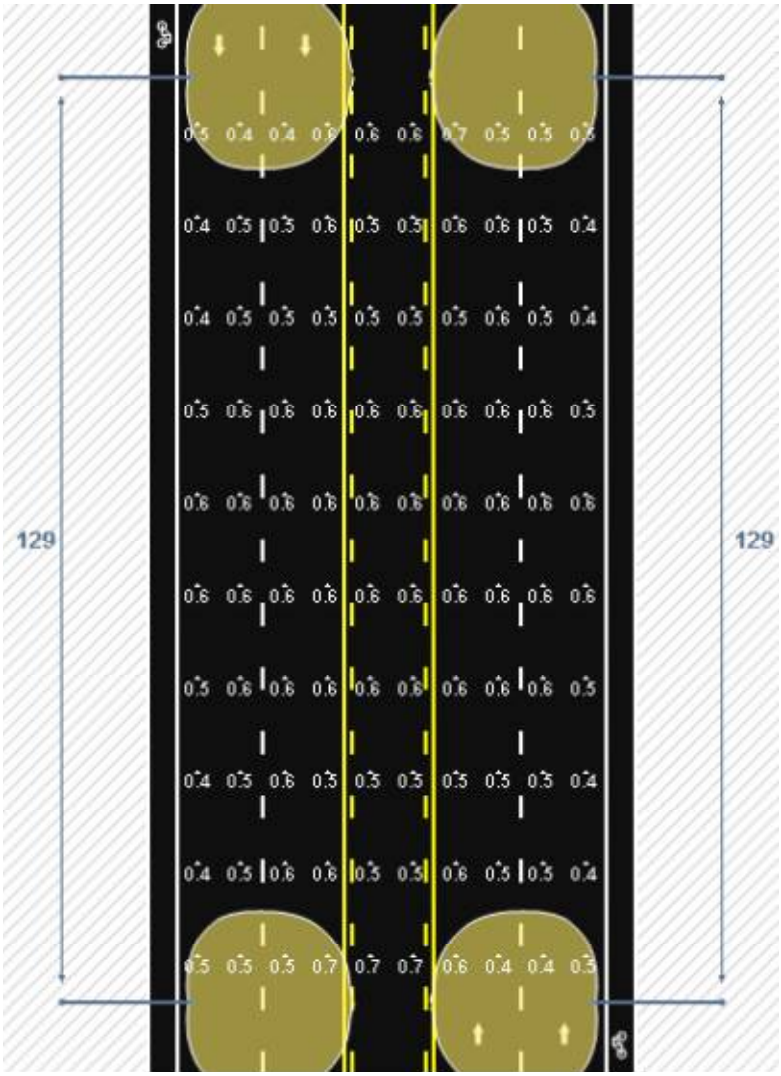
Right Side - American Electric Lighting: ATBS H XXXXX R3

Cycle Spacing:	128.86 ft	Configuration:	Single
Setback:	16 ft	Arm Length:	18 ft
Orientation:	270	Tilt:	0
Mounting Height:	35 ft	Lamp Lumens:	6321
Staggered:	False	Wattage:	72
Light Loss Factor:	0.78	Lamp Count:	1



Visual - Roadway Tool

www.Visual-3D.com



Luminance

Calculation Results

Luminance	Left	Right	
Average:	0.6	0.6	cd/m²
Max:	0.7	0.7	cd/m²
Min	0.4	0.4	cd/m²
Ave/Min:	1.4	1.4	
Max/Min:	1.8	1.8	
Lv Ratio:	0.1	0.1	
STV:	2.1	2.1	

Illuminance	Left	Right	
Average:	1	1	fc
Max:	1.9	1.9	fc
Min	0.5	0.5	fc
Ave/Min:	2.1	2.1	
Max/Min:	4.2	4.2	

Sidewalk	Left	Right	
Average:	--	--	fc
Min	--	--	fc
Ave/Min:	--	--	
Ev Min:	--	--	fc

Bikelane			
Average:	0.6	0.6	fc
Min	0.4	0.4	fc
Ave/Min:	1.5	1.5	
Ev Min:	0	0	fc

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Design Information

Wednesday, September 23, 2015

Project Name Major Short - 3 (517 S, Stone Ave)
Project Description ATBS F R3

User Name
Company Name
Your Phone
Your Email

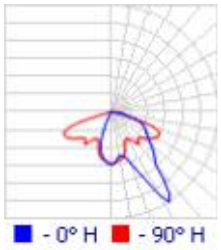
Roadway

Calculation Method	RP-8-2000 2007 errata		**Median**		
Road Surface	R3		Width	0 ft	
Road Class	Major		**Sidewalk**		
Pedestrians	Low		Width	Left: 0 ft	Right: 0 ft
Roadway Length	1,000 (18 Pole Locations)		Setback	Left: 0 ft	Right: 0 ft
Lane Quantity	Left: 1	Right: 1	**Bikelane**		
Lane Width	Left: 12 ft	Right: 12 ft	Width	Left: 12 ft	Right: 12 ft
			Setback	Left: 0 ft	Right: 0 ft

Luminaire Information

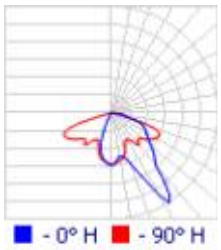
Left Side - American Electric Lighting: ATBS F XXXXX R3

Cycle Spacing:	116.91 ft	Configuration:	Single
Setback:	14 ft	Arm Length:	9 ft
Orientation:	90	Tilt:	0
Mounting Height:	30 ft	Lamp Lumens:	4477
Staggered:	False	Wattage:	49
Light Loss Factor:	0.78	Lamp Count:	1



Right Side - American Electric Lighting: ATBS F XXXXX R3

Cycle Spacing:	116.91 ft	Configuration:	Single
Setback:	14 ft	Arm Length:	9 ft
Orientation:	270	Tilt:	0
Mounting Height:	30 ft	Lamp Lumens:	4477
Staggered:	True	Wattage:	49
Light Loss Factor:	0.78	Lamp Count:	1



Visual - Roadway Tool

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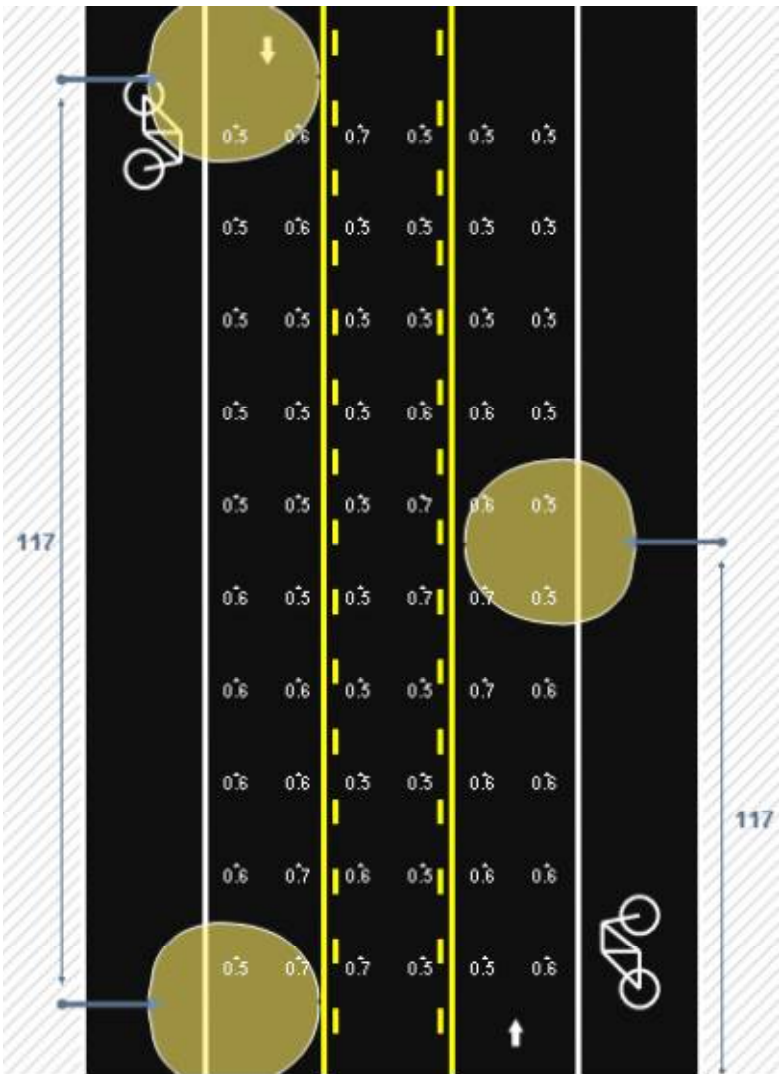

Luminance

Calculation Results

Luminance	Left	Right	
Average:	0.6	0.6	cd/m²
Max:	0.7	0.7	cd/m²
Min	0.5	0.5	cd/m²
Ave/Min:	1.2	1.2	
Max/Min:	1.6	1.6	
Lv Ratio:	0.1	0.1	
STV:	1.4	1.4	

Illuminance	Left	Right	
Average:	1	1	fc
Max:	1.6	1.6	fc
Min	0.6	0.6	fc
Ave/Min:	1.8	1.8	
Max/Min:	2.9	2.9	

Sidewalk	Left	Right	
Average:	--	--	fc
Min	--	--	fc
Ave/Min:	--	--	
Ev Min:	--	--	fc

Bikelane			
Average:	0.6	0.6	fc
Min	0.4	0.4	fc
Ave/Min:	1.6	1.6	
Ev Min:	0.2	0.2	fc

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Design Information

Wednesday, September 23, 2015

Project Name Major Med - 1 (5742 E. 29th St.).
Project Description ATBM G R3

User Name
Company Name
Your Phone
Your Email

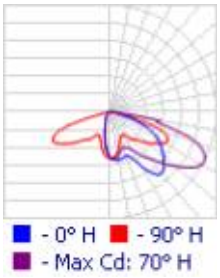
Roadway

Calculation Method	RP-8-2000 2007 errata		**Median**		
Road Surface	R3		Width	0 ft	
Road Class	Major		**Sidewalk**		
Pedestrians	Low		Width	Left: 0 ft	Right: 0 ft
Roadway Length	1,000 (5 Pole Locations)		Setback	Left: 0 ft	Right: 0 ft
Lane Quantity	Left: 1	Right: 1	**Bikelane**		
Lane Width	Left: 12 ft	Right: 12 ft	Width	Left: 6 ft	Right: 6 ft
			Setback	Left: 0 ft	Right: 0 ft

Luminaire Information

Left Side - American Electric Lighting:

Cycle Spacing:	211.5 ft	Configuration:	Single
Setback:	12 ft	Arm Length:	15 ft
Orientation:	90	Tilt:	0
Mounting Height:	35 ft	Lamp Lumens:	16974
Staggered:	False	Wattage:	150
Light Loss Factor:	0.71	Lamp Count:	1



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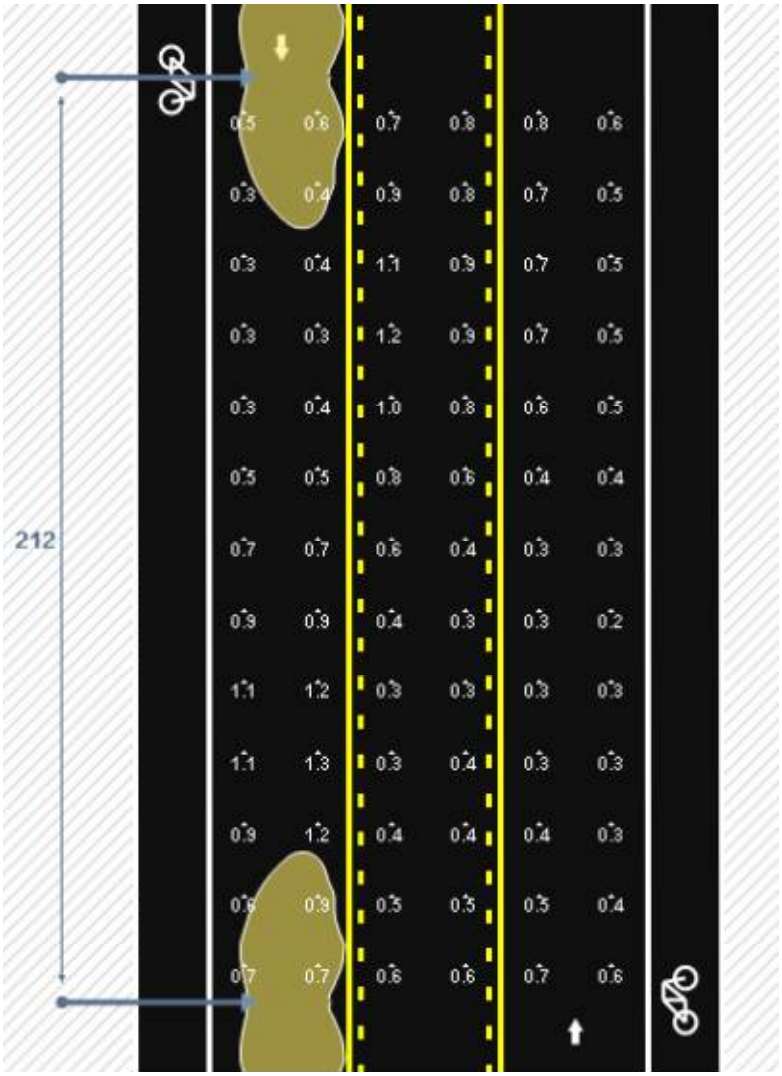

Luminance

Calculation Results

Luminance	Left	Right		**Illuminance**	Left	Right		**Sidewalk**	Left	Right	
Average:	0.7	0.6	cd/m²	Average:	0.8	0.9	fc	Average:	--	--	fc
Max:	1.3	1.2	cd/m²	Max:	2	2.1	fc	Min	--	--	fc
Min	0.3	0.2	cd/m²	Min	0.2	0.2	fc	Ave/Min:	--	--	
Ave/Min:	2.4	2.3		Ave/Min:	5.5	4.5		Ev Min:	--	--	fc
Max/Min:	4.7	4.8		Max/Min:	13.6	10.7		**Bikelane**			
Lv Ratio:	0.2	0.3						Average:	0.4	0.7	fc
STV:	4.4	4.4						Min	0.1	0.2	fc
								Ave/Min:	3.5	3	
								Ev Min:	0	0	fc

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Design Information

Wednesday, September 23, 2015

Project Name Major Med - 2A 1115 E Grant RD
Project Description ATB80B E10 R3

User Name
Company Name
Your Phone
Your Email

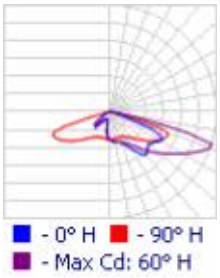
Roadway

Calculation Method	RP-8-2000 2007 errata		**Median**		
Road Surface	R3		Width	12 ft	
Road Class	Major		**Sidewalk**		
Pedestrians	Low		Width	Left: 0 ft	Right: 0 ft
Roadway Length	1,000 (6 Pole Locations)		Setback	Left: 0 ft	Right: 0 ft
Lane Quantity	Left: 2	Right: 2	**Bikelane**		
Lane Width	Left: 12 ft	Right: 12 ft	Width	Left: 5.5 ft	Right: 5.5 ft
			Setback	Left: 0 ft	Right: 0 ft

Luminaire Information

Left Side - American Electric Lighting: ATB2 80BLEDE10 XXXXX R3

Cycle Spacing:	172.37 ft	Configuration:	Single
Setback:	10.5 ft	Arm Length:	18 ft
Orientation:	90	Tilt:	0
Mounting Height:	40 ft	Lamp Lumens:	25050
Staggered:	False	Wattage:	284
Light Loss Factor:	0.75	Lamp Count:	1



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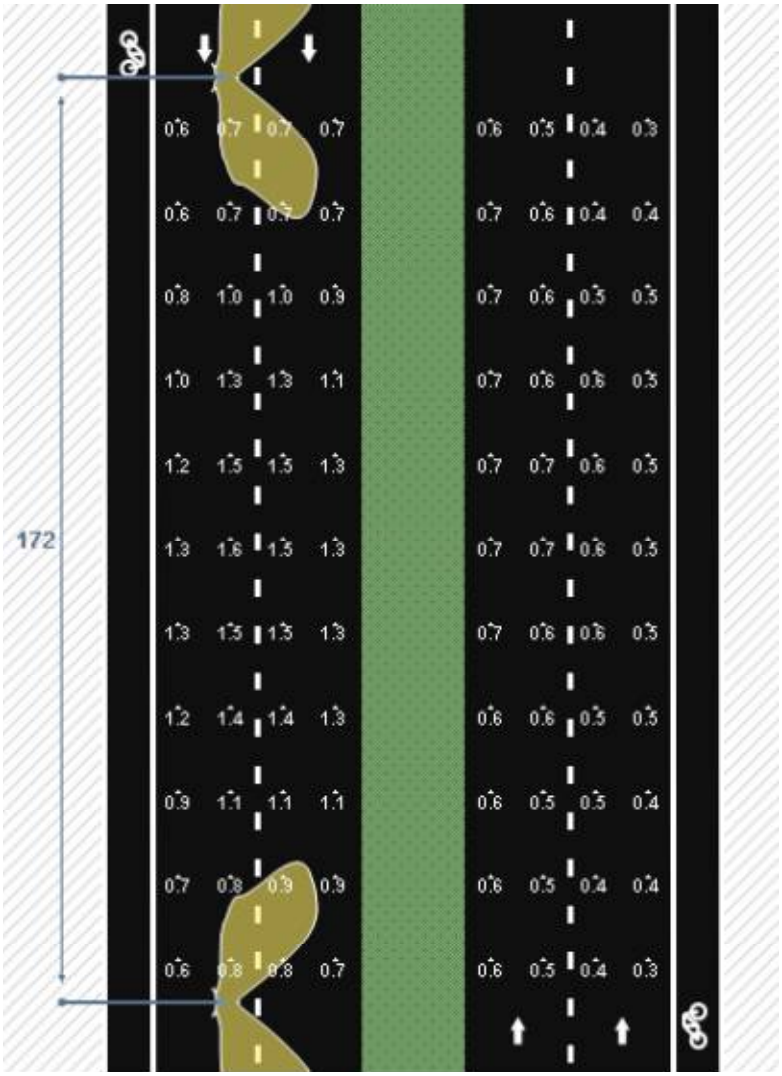

Luminance

Calculation Results

Luminance	Left	Right	
Average:	1.1	0.6	cd/m²
Max:	1.6	0.7	cd/m²
Min	0.6	0.3	cd/m²
Ave/Min:	1.8	1.8	
Max/Min:	2.7	2.4	
Lv Ratio:	0.2	0.2	
STV:	2	3.1	

Illuminance	Left	Right	
Average:	1.1	1	fc
Max:	1.9	1.8	fc
Min	0.5	0.7	fc
Ave/Min:	2.1	1.4	
Max/Min:	3.6	2.5	

Sidewalk	Left	Right	
Average:	--	--	fc
Min	--	--	fc
Ave/Min:	--	--	
Ev Min:	--	--	fc

Bikelane			
Average:	0.5	0.8	fc
Min	0.3	0.7	fc
Ave/Min:	1.7	1.1	
Ev Min:	0	0	fc

Visual - Roadway Tool

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Design Information

Wednesday, September 23, 2015

Project Name	Major Med - 3A 6150 E GRANT RD	User Name	JOHN CARATOZZOLO
Project Description	ATBM D R3	Company Name	
		Your Phone	
		Your Email	

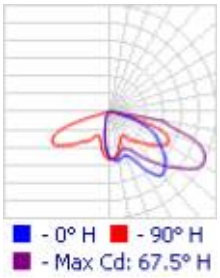
Roadway

Calculation Method	RP-8-2000 2007 errata		**Median**		
Road Surface	R3		Width	22 ft	
Road Class	Major		**Sidewalk**		
Pedestrians	Low		Width	Left: 0 ft	Right: 0 ft
Roadway Length	1,000 (11 Pole Locations)		Setback	Left: 0 ft	Right: 0 ft
Lane Quantity	Left: 3	Right: 3	**Bikelane**		
Lane Width	Left: 12 ft	Right: 12 ft	Width	Left: 0 ft	Right: 0 ft
			Setback	Left: 0 ft	Right: 0 ft

Luminaire Information

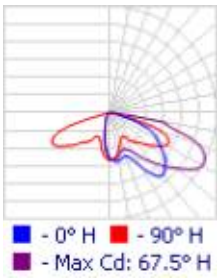
Left Side - American Electric Lighting:

Cycle Spacing:	192.88 ft	Configuration:	Single
Setback:	12 ft	Arm Length:	15 ft
Orientation:	90	Tilt:	0
Mounting Height:	35 ft	Lamp Lumens:	11689
Staggered:	False	Wattage:	95
Light Loss Factor:	0.74	Lamp Count:	1



Right Side - American Electric Lighting:

Cycle Spacing:	192.88 ft	Configuration:	Single
Setback:	12 ft	Arm Length:	15 ft
Orientation:	270	Tilt:	0
Mounting Height:	35 ft	Lamp Lumens:	11689
Staggered:	True	Wattage:	95
Light Loss Factor:	0.74	Lamp Count:	1



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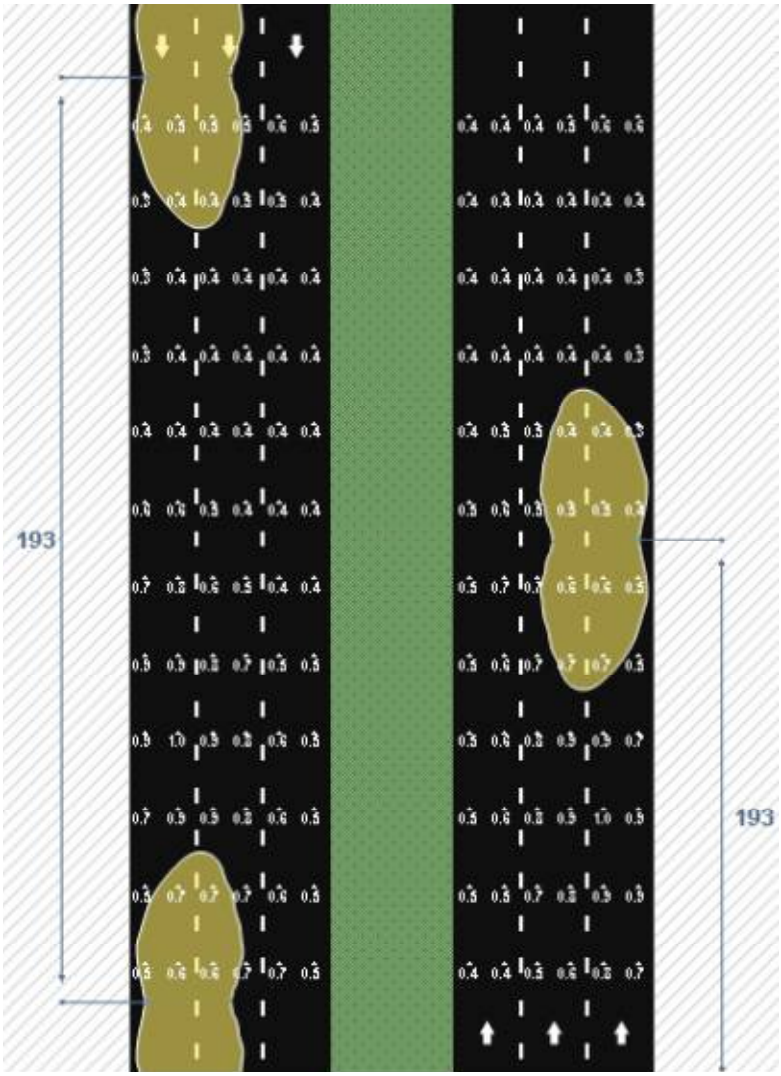

Luminance

Calculation Results

Luminance	Left	Right	
Average:	0.6	0.6	cd/m²
Max:	1	1	cd/m²
Min	0.3	0.3	cd/m²
Ave/Min:	2	2	
Max/Min:	3.7	3.7	
Lv Ratio:	0.2	0.2	
STV:	2.7	2.7	

Illuminance	Left	Right	
Average:	0.8	0.8	fc
Max:	1.6	1.6	fc
Min	0.2	0.2	fc
Ave/Min:	3.3	3.3	
Max/Min:	6.8	6.8	

Sidewalk	Left	Right	
Average:	--	--	fc
Min	--	--	fc
Ave/Min:	--	--	
Ev Min:	--	--	fc

Bikelane			
Average:	--	--	fc
Min	--	--	fc
Ave/Min:	--	--	
Ev Min:	--	--	fc

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Design Information

Wednesday, September 23, 2015

Project Name	Major Med - 3B Broadway (from County Club to Alvernon)	User Name	JOHN CARATOZZOLO
Project Description	ATBM D R3	Company Name	
		Your Phone	
		Your Email	

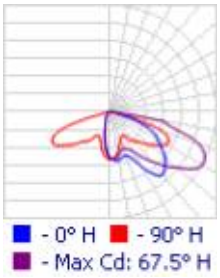
Roadway

Calculation Method	RP-8-2000 2007 errata		**Median**		
Road Surface	R3		Width	16 ft	
Road Class	Major		**Sidewalk**		
Pedestrians	Low		Width	Left: 0 ft	Right: 0 ft
Roadway Length	1,000 (12 Pole Locations)		Setback	Left: 0 ft	Right: 0 ft
Lane Quantity	Left: 3	Right: 3	**Bikelane**		
Lane Width	Left: 12 ft	Right: 12 ft	Width	Left: 6 ft	Right: 6 ft
			Setback	Left: 0 ft	Right: 0 ft

Luminaire Information

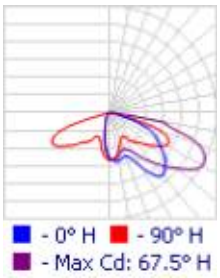
Left Side - American Electric Lighting:

Cycle Spacing:	170.85 ft	Configuration:	Single
Setback:	8 ft	Arm Length:	3 ft
Orientation:	90	Tilt:	0
Mounting Height:	35 ft	Lamp Lumens:	11689
Staggered:	False	Wattage:	95
Light Loss Factor:	0.74	Lamp Count:	1



Right Side - American Electric Lighting:

Cycle Spacing:	170.85 ft	Configuration:	Single
Setback:	8 ft	Arm Length:	3 ft
Orientation:	270	Tilt:	0
Mounting Height:	35 ft	Lamp Lumens:	11689
Staggered:	True	Wattage:	95
Light Loss Factor:	0.74	Lamp Count:	1



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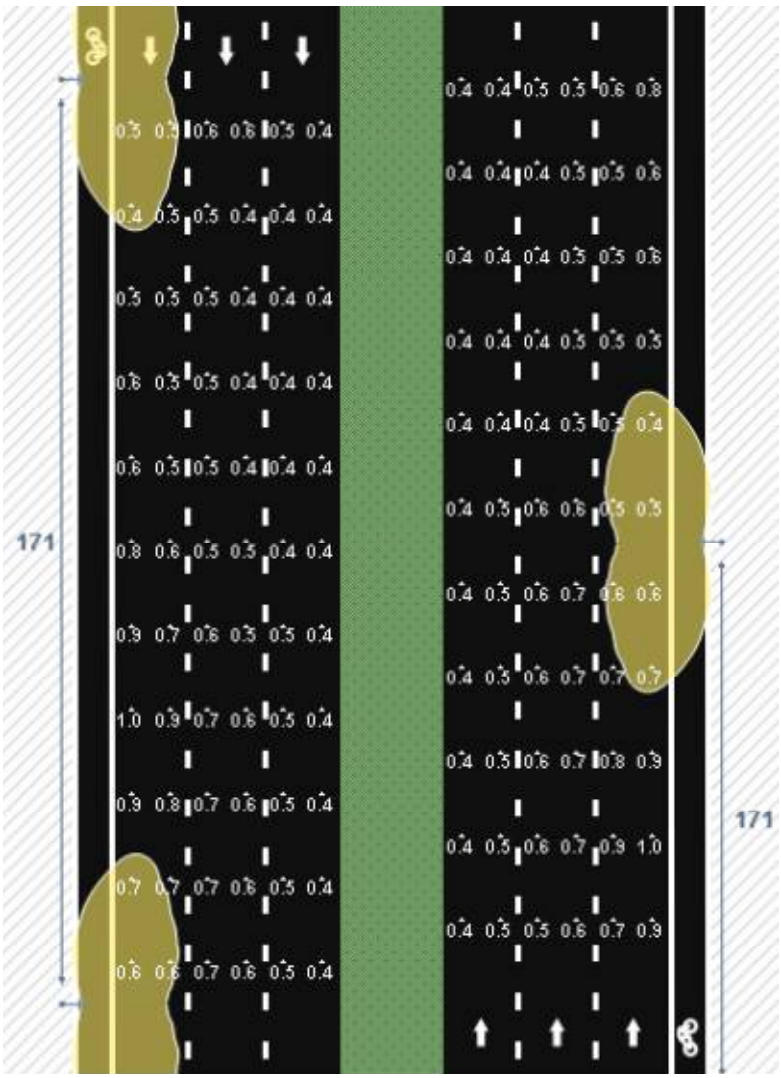

Luminance

Calculation Results

Luminance	Left	Right	
Average:	0.6	0.6	cd/m²
Max:	1	1	cd/m²
Min	0.4	0.4	cd/m²
Ave/Min:	1.4	1.4	
Max/Min:	2.6	2.6	
Lv Ratio:	0.2	0.2	
STV:	2.6	2.6	

Illuminance	Left	Right	
Average:	0.9	0.9	fc
Max:	1.6	1.6	fc
Min	0.4	0.4	fc
Ave/Min:	2.4	2.4	
Max/Min:	4.4	4.4	

Sidewalk	Left	Right	
Average:	--	--	fc
Min	--	--	fc
Ave/Min:	--	--	
Ev Min:	--	--	fc

Bikelane	Left	Right	
Average:	0.6	0.7	fc
Min	0.3	0.3	fc
Ave/Min:	2	2.2	
Ev Min:	0.1	0.1	fc

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Design Information

Wednesday, September 23, 2015

Project Name	Major Med - 3C Speedway (from Alvernon to Wilmont)	User Name	JOHN CARATOZZOLO
Project Description	ATBM E R3	Company Name	
		Your Phone	
		Your Email	

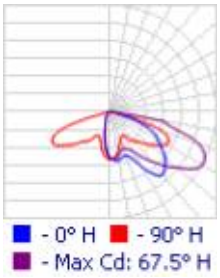
Roadway

Calculation Method	RP-8-2000 2007 errata		**Median**		
Road Surface	R3		Width	20 ft	
Road Class	Major		**Sidewalk**		
Pedestrians	Low		Width	Left: 0 ft	Right: 0 ft
Roadway Length	1,000 (6 Pole Locations)		Setback	Left: 0 ft	Right: 0 ft
Lane Quantity	Left: 3	Right: 3	**Bikelane**		
Lane Width	Left: 12 ft	Right: 12 ft	Width	Left: 5 ft	Right: 5 ft
			Setback	Left: 0 ft	Right: 0 ft

Luminaire Information

Median - American Electric Lighting:

Cycle Spacing:	178.14 ft	Configuration:	Twin
Setback:	0 ft	Arm Length:	15 ft
Orientation:	90	Tilt:	0
Mounting Height:	40 ft	Lamp Lumens:	13416
Staggered:	False	Wattage:	115
Light Loss Factor:	0.74	Lamp Count:	1



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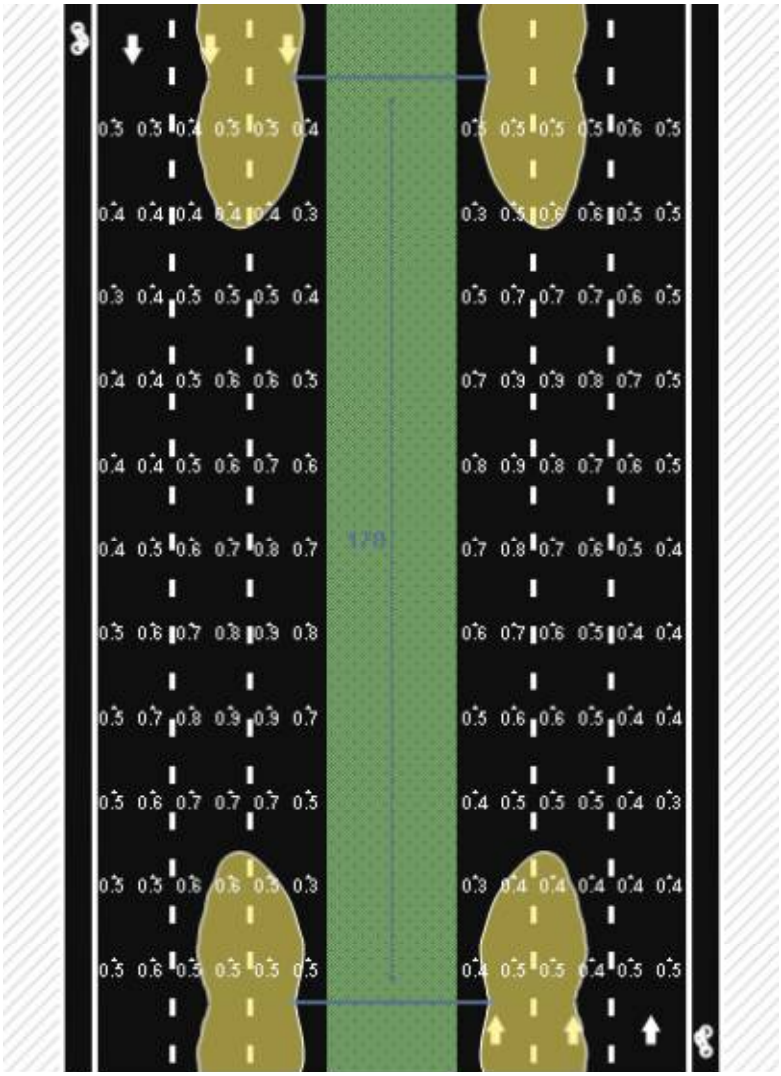

Luminance

Calculation Results

Luminance	Left	Right	
Average:	0.6	0.6	cd/m²
Max:	0.9	0.9	cd/m²
Min	0.3	0.3	cd/m²
Ave/Min:	1.8	1.8	
Max/Min:	3	3	
Lv Ratio:	0.2	0.2	
STV:	2.3	2.3	

Illuminance	Left	Right	
Average:	0.7	0.7	fc
Max:	1.4	1.4	fc
Min	0.3	0.3	fc
Ave/Min:	2.3	2.3	
Max/Min:	4.3	4.3	

Sidewalk	Left	Right	
Average:	--	--	fc
Min	--	--	fc
Ave/Min:	--	--	
Ev Min:	--	--	fc

Bikelane			
Average:	0.7	0.7	fc
Min	0.4	0.4	fc
Ave/Min:	1.8	1.8	
Ev Min:	0.1	0.1	fc

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Design Information

Wednesday, September 23, 2015

Project Name	Major Med - 2A 5814 S Campbell Ave.	User Name	JOHN CARATOZZOLO
Project Description	ATBM D R3	Company Name	
		Your Phone	
		Your Email	

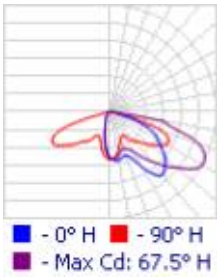
Roadway

Calculation Method	RP-8-2000 2007 errata		**Median**		
Road Surface	R3		Width	12 ft	
Road Class	Major		**Sidewalk**		
Pedestrians	Low		Width	Left: 0 ft	Right: 0 ft
Roadway Length	1,000 (9 Pole Locations)		Setback	Left: 0 ft	Right: 0 ft
Lane Quantity	Left: 2	Right: 2	**Bikelane**		
Lane Width	Left: 12 ft	Right: 12 ft	Width	Left: 6 ft	Right: 6 ft
			Setback	Left: 0 ft	Right: 0 ft

Luminaire Information

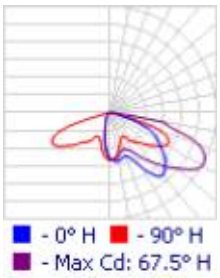
Left Side - American Electric Lighting:

Cycle Spacing:	248.94 ft	Configuration:	Single
Setback:	16 ft	Arm Length:	18 ft
Orientation:	90	Tilt:	0
Mounting Height:	35 ft	Lamp Lumens:	11689
Staggered:	False	Wattage:	95
Light Loss Factor:	0.74	Lamp Count:	1



Right Side - American Electric Lighting:

Cycle Spacing:	248.94 ft	Configuration:	Single
Setback:	16 ft	Arm Length:	18 ft
Orientation:	270	Tilt:	0
Mounting Height:	35 ft	Lamp Lumens:	11689
Staggered:	True	Wattage:	95
Light Loss Factor:	0.74	Lamp Count:	1



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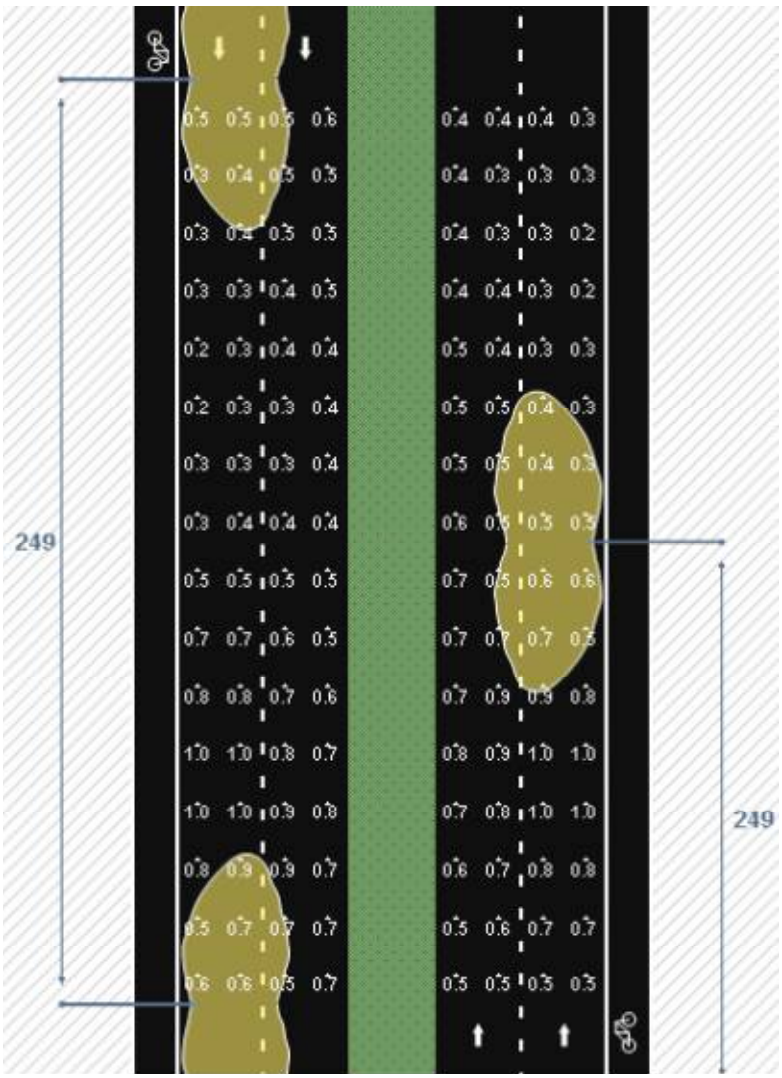

Luminance

Calculation Results

Luminance	Left	Right	
Average:	0.6	0.6	cd/m²
Max:	1	1	cd/m²
Min	0.2	0.2	cd/m²
Ave/Min:	2.3	2.3	
Max/Min:	4.3	4.3	
Lv Ratio:	0.2	0.2	
STV:	2.3	2.3	

Illuminance	Left	Right	
Average:	0.8	0.8	fc
Max:	1.6	1.6	fc
Min	0.4	0.4	fc
Ave/Min:	2.1	2.1	
Max/Min:	4.1	4.1	

Sidewalk	Left	Right	
Average:	--	--	fc
Min	--	--	fc
Ave/Min:	--	--	
Ev Min:	--	--	fc

Bikelane			
Average:	0.4	0.4	fc
Min	0.3	0.3	fc
Ave/Min:	1.4	1.5	
Ev Min:	0	0.1	fc

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Design Information

Wednesday, September 23, 2015

Project Name	Major FAR - 2B St. Mary's (from Grande to Silverbell).	User Name	JOHN CARATOZZOLO
Project Description	ATBM D R3	Company Name	
		Your Phone	
		Your Email	

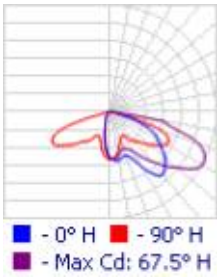
Roadway

Calculation Method	RP-8-2000 2007 errata		**Median**		
Road Surface	R3		Width	10 ft	
Road Class	Major		**Sidewalk**		
Pedestrians	Low		Width	Left: 0 ft	Right: 0 ft
Roadway Length	1,000 (8 Pole Locations)		Setback	Left: 0 ft	Right: 0 ft
Lane Quantity	Left: 2	Right: 2	**Bikelane**		
Lane Width	Left: 12 ft	Right: 12 ft	Width	Left: 6 ft	Right: 6 ft
			Setback	Left: 0 ft	Right: 0 ft

Luminaire Information

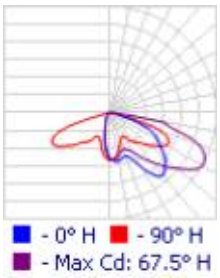
Left Side - American Electric Lighting:

Cycle Spacing:	252.55 ft	Configuration:	Single
Setback:	16 ft	Arm Length:	18 ft
Orientation:	90	Tilt:	0
Mounting Height:	35 ft	Lamp Lumens:	11689
Staggered:	False	Wattage:	95
Light Loss Factor:	0.74	Lamp Count:	1



Right Side - American Electric Lighting:

Cycle Spacing:	252.55 ft	Configuration:	Single
Setback:	16 ft	Arm Length:	18 ft
Orientation:	270	Tilt:	0
Mounting Height:	35 ft	Lamp Lumens:	11689
Staggered:	True	Wattage:	95
Light Loss Factor:	0.74	Lamp Count:	1



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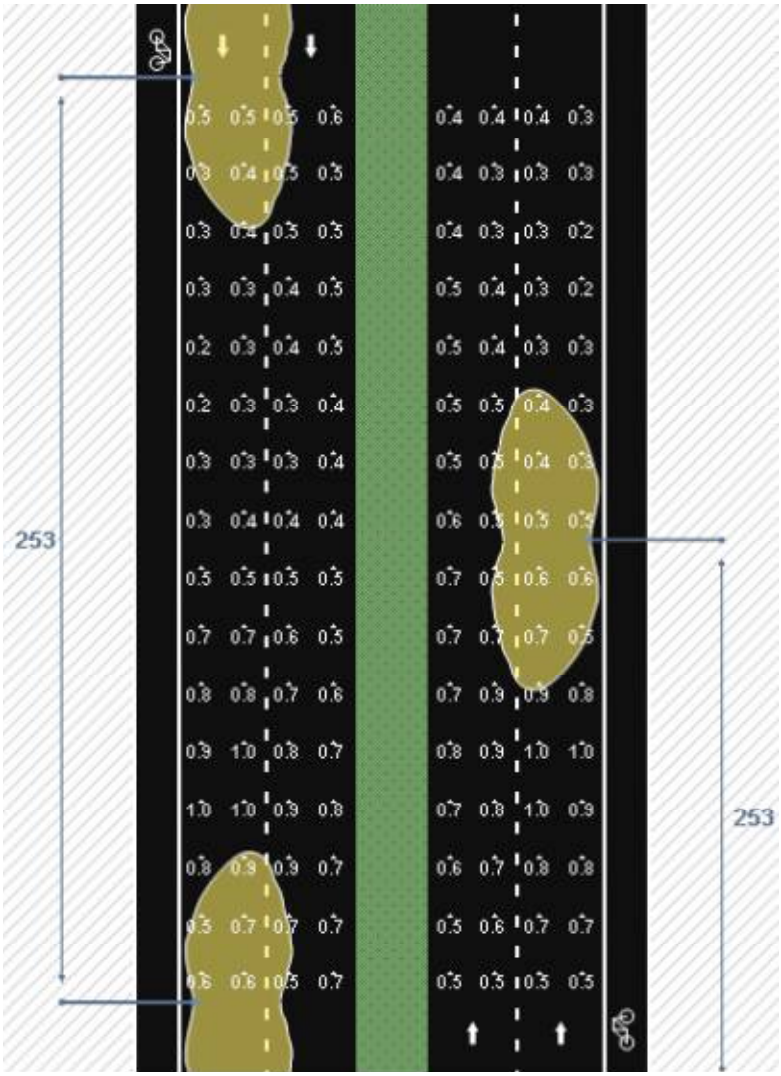

Luminance

Calculation Results

Luminance	Left	Right	
Average:	0.6	0.6	cd/m²
Max:	1	1	cd/m²
Min	0.3	0.3	cd/m²
Ave/Min:	2.2	2.2	
Max/Min:	4.1	4.1	
Lv Ratio:	0.2	0.2	
STV:	2.2	2.2	

Illuminance	Left	Right	
Average:	0.8	0.8	fc
Max:	1.5	1.5	fc
Min	0.4	0.4	fc
Ave/Min:	2	2	
Max/Min:	3.9	3.9	

Sidewalk	Left	Right	
Average:	--	--	fc
Min	--	--	fc
Ave/Min:	--	--	
Ev Min:	--	--	fc

Bikelane			
Average:	0.4	0.4	fc
Min	0.3	0.3	fc
Ave/Min:	1.4	1.4	
Ev Min:	0	0.1	fc

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Design Information

Project Name	Major Far - 2C Swan Rd (from E Grant Rd to E Speedway Blvd.)	Wednesday, September 23, 2015	
Project Description	ATBM D R3	User Name	JOHN CARATOZZOLO
		Company Name	
		Your Phone	
		Your Email	

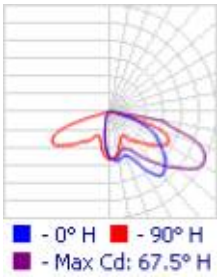
Roadway

Calculation Method	RP-8-2000 2007 errata		**Median**		
Road Surface	R3		Width	12 ft	
Road Class	Major		**Sidewalk**		
Pedestrians	Low		Width	Left: 0 ft	Right: 0 ft
Roadway Length	1,000 (9 Pole Locations)		Setback	Left: 0 ft	Right: 0 ft
Lane Quantity	Left: 2	Right: 2	**Bikelane**		
Lane Width	Left: 12 ft	Right: 12 ft	Width	Left: 5 ft	Right: 5 ft
			Setback	Left: 0 ft	Right: 0 ft

Luminaire Information

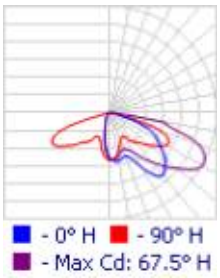
Left Side - American Electric Lighting:

Cycle Spacing:	249.89 ft	Configuration:	Single
Setback:	17 ft	Arm Length:	20 ft
Orientation:	90	Tilt:	0
Mounting Height:	35 ft	Lamp Lumens:	11689
Staggered:	False	Wattage:	95
Light Loss Factor:	0.74	Lamp Count:	1



Right Side - American Electric Lighting:

Cycle Spacing:	249.89 ft	Configuration:	Single
Setback:	17 ft	Arm Length:	20 ft
Orientation:	270	Tilt:	0
Mounting Height:	35 ft	Lamp Lumens:	11689
Staggered:	True	Wattage:	95
Light Loss Factor:	0.74	Lamp Count:	1



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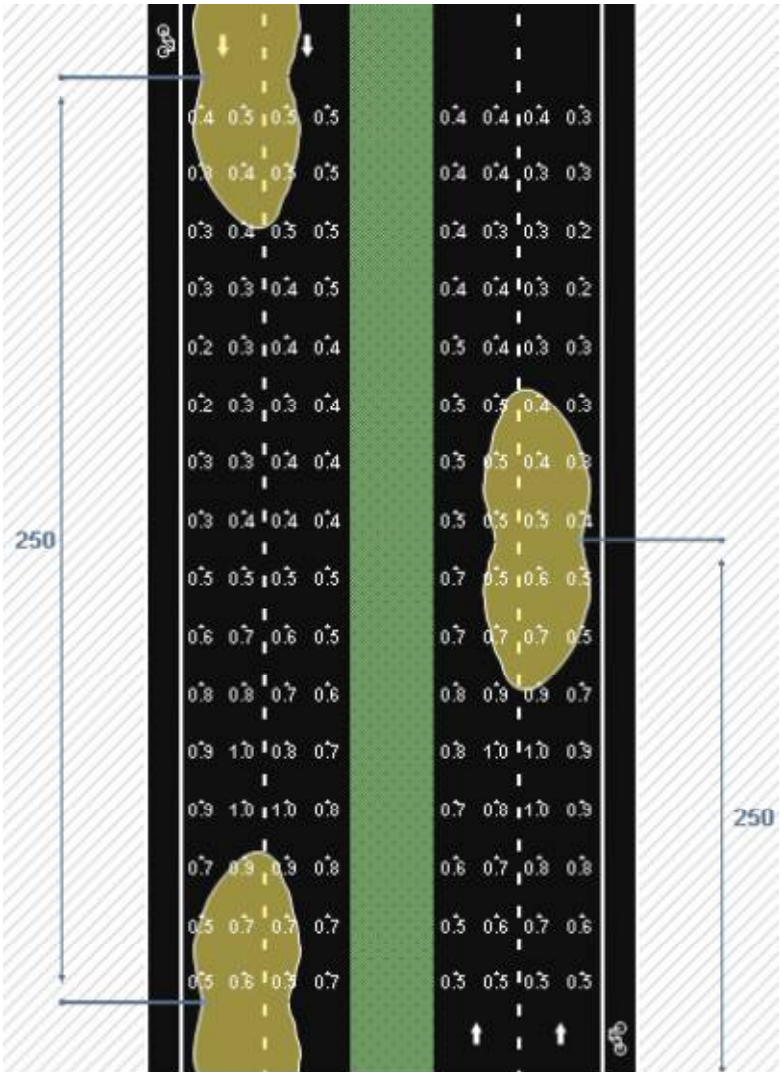

Luminance

Calculation Results

Luminance	Left	Right	
Average:	0.6	0.6	cd/m²
Max:	1	1	cd/m²
Min	0.2	0.2	cd/m²
Ave/Min:	2.3	2.3	
Max/Min:	4.3	4.3	
Lv Ratio:	0.2	0.2	
STV:	2.2	2.2	

Illuminance	Left	Right	
Average:	0.8	0.8	fc
Max:	1.5	1.5	fc
Min	0.4	0.4	fc
Ave/Min:	2	2	
Max/Min:	3.9	3.9	

Sidewalk	Left	Right	
Average:	--	--	fc
Min	--	--	fc
Ave/Min:	--	--	
Ev Min:	--	--	fc

Bikelane			
Average:	0.4	0.4	fc
Min	0.3	0.3	fc
Ave/Min:	1.4	1.4	
Ev Min:	0	0.1	fc

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Design Information

Wednesday, September 23, 2015

Project Name	Major Far - 2D Swan rd. (from E Speedway to Golf Links)	User Name	JOHN CARATOZZOLO
Project Description	ATBM D R3	Company Name	
		Your Phone	
		Your Email	

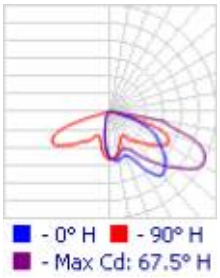
Roadway

Calculation Method	RP-8-2000 2007 errata		**Median**		
Road Surface	R3		Width	20 ft	
Road Class	Major		**Sidewalk**		
Pedestrians	Low		Width	Left: 0 ft	Right: 0 ft
Roadway Length	1,000 (9 Pole Locations)		Setback	Left: 0 ft	Right: 0 ft
Lane Quantity	Left: 2	Right: 2	**Bikelane**		
Lane Width	Left: 12 ft	Right: 12 ft	Width	Left: 4 ft	Right: 4 ft
			Setback	Left: 0 ft	Right: 0 ft

Luminaire Information

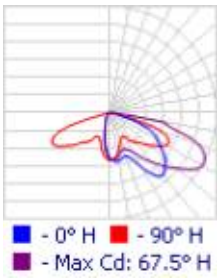
Left Side - American Electric Lighting:

Cycle Spacing:	233.28 ft	Configuration:	Single
Setback:	18 ft	Arm Length:	20 ft
Orientation:	90	Tilt:	0
Mounting Height:	35 ft	Lamp Lumens:	11689
Staggered:	False	Wattage:	95
Light Loss Factor:	0.74	Lamp Count:	1



Right Side - American Electric Lighting:

Cycle Spacing:	233.28 ft	Configuration:	Single
Setback:	18 ft	Arm Length:	20 ft
Orientation:	270	Tilt:	0
Mounting Height:	35 ft	Lamp Lumens:	11689
Staggered:	True	Wattage:	95
Light Loss Factor:	0.74	Lamp Count:	1



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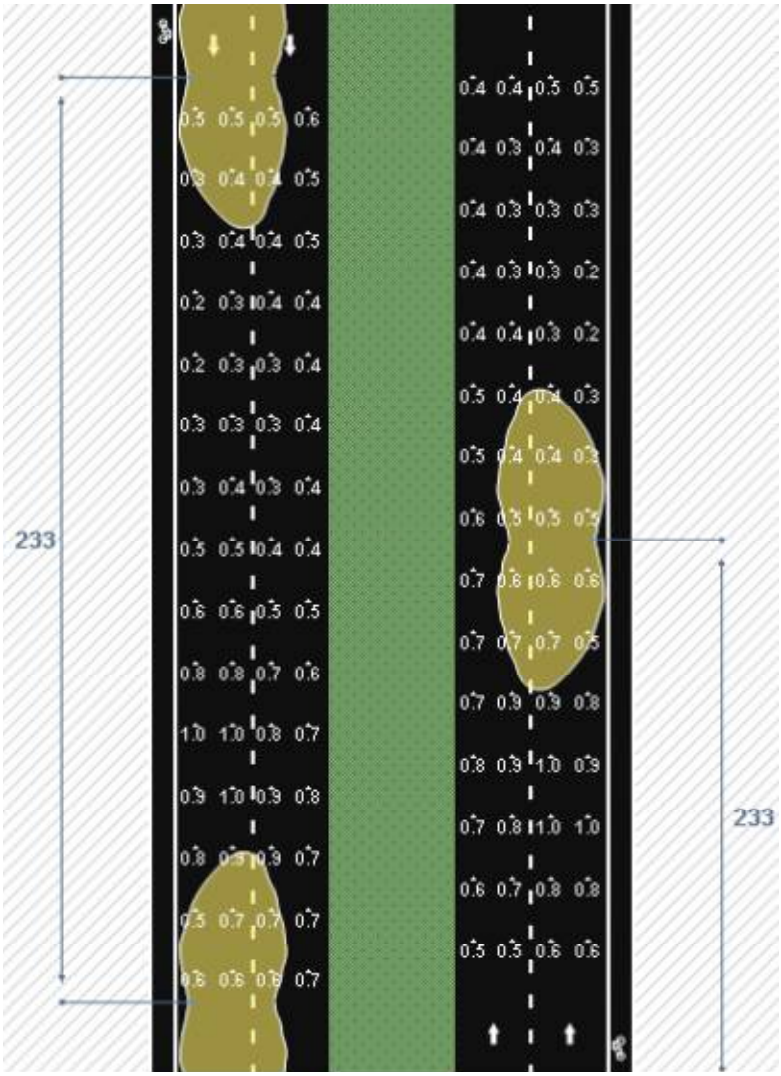

Luminance

Calculation Results

Luminance	Left	Right	
Average:	0.6	0.6	cd/m²
Max:	1	1	cd/m²
Min	0.2	0.2	cd/m²
Ave/Min:	2.3	2.3	
Max/Min:	4.3	4.3	
Lv Ratio:	0.2	0.2	
STV:	2.5	2.5	

Illuminance	Left	Right	
Average:	0.8	0.8	fc
Max:	1.6	1.6	fc
Min	0.3	0.3	fc
Ave/Min:	2.6	2.6	
Max/Min:	5.2	5.2	

Sidewalk	Left	Right	
Average:	--	--	fc
Min	--	--	fc
Ave/Min:	--	--	
Ev Min:	--	--	fc

Bikelane			
Average:	0.4	0.5	fc
Min	0.2	0.3	fc
Ave/Min:	1.8	1.8	
Ev Min:	0.1	0.1	fc

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Design Information

Wednesday, September 23, 2015

Project Name	Major Far - 2E 12th Ave. (from Ajo Way to Irvington)	User Name	JOHN CARATOZZOLO
Project Description	ATBM D R3	Company Name	
		Your Phone	
		Your Email	

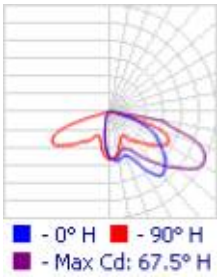
Roadway

Calculation Method	RP-8-2000 2007 errata		**Median**		
Road Surface	R3		Width	10 ft	
Road Class	Major		**Sidewalk**		
Pedestrians	Low		Width	Left: 0 ft	Right: 0 ft
Roadway Length	1,000 (8 Pole Locations)		Setback	Left: 0 ft	Right: 0 ft
Lane Quantity	Left: 2	Right: 2	**Bikelane**		
Lane Width	Left: 12 ft	Right: 12 ft	Width	Left: 0 ft	Right: 0 ft
			Setback	Left: 0 ft	Right: 0 ft

Luminaire Information

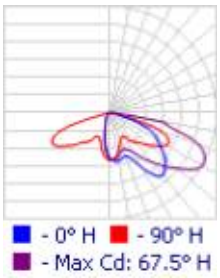
Left Side - American Electric Lighting:

Cycle Spacing:	260.03 ft	Configuration:	Single
Setback:	4 ft	Arm Length:	10 ft
Orientation:	90	Tilt:	0
Mounting Height:	35 ft	Lamp Lumens:	11689
Staggered:	False	Wattage:	95
Light Loss Factor:	0.74	Lamp Count:	1



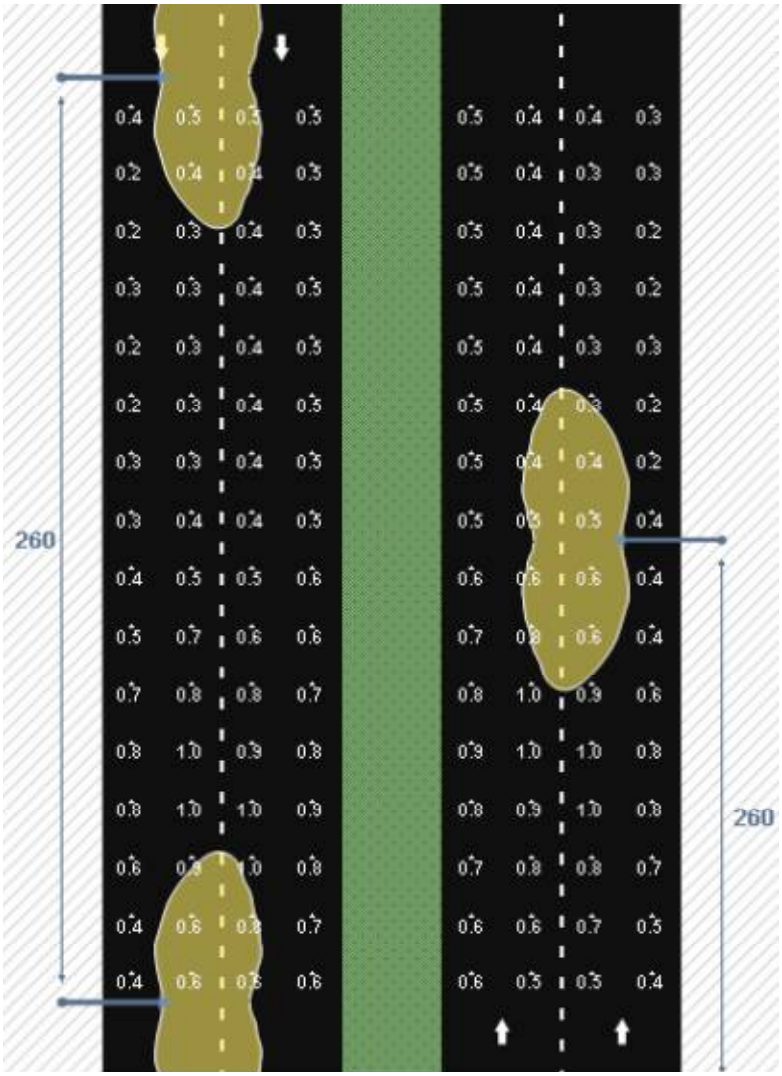
Right Side - American Electric Lighting:

Cycle Spacing:	260.03 ft	Configuration:	Single
Setback:	4 ft	Arm Length:	10 ft
Orientation:	270	Tilt:	0
Mounting Height:	35 ft	Lamp Lumens:	11689
Staggered:	True	Wattage:	95
Light Loss Factor:	0.74	Lamp Count:	1



Visual - Roadway Tool

www.Visual-3D.com



Luminance

Calculation Results

Luminance	Left	Right	
Average:	0.6	0.6	cd/m²
Max:	1	1	cd/m²
Min	0.2	0.2	cd/m²
Ave/Min:	2.3	2.3	
Max/Min:	4.3	4.3	
Lv Ratio:	0.2	0.2	
STV:	2	2	

Illuminance	Left	Right	
Average:	0.8	0.8	fc
Max:	1.4	1.4	fc
Min	0.4	0.4	fc
Ave/Min:	2	2	
Max/Min:	3.6	3.6	

Sidewalk	Left	Right	
Average:	--	--	fc
Min	--	--	fc
Ave/Min:	--	--	
Ev Min:	--	--	fc

Bikelane			
Average:	--	--	fc
Min	--	--	fc
Ave/Min:	--	--	
Ev Min:	--	--	fc

Visual - Roadway Tool

www.Visual-3D.com

Design Information

Wednesday, September 23, 2015

Project Name	MAJOR FAR - 3 Golf Links Rd. (Heartstone)	User Name	JOHN CARATOZZOLO
Project Description	ATBM E R3	Company Name	
		Your Phone	
		Your Email	

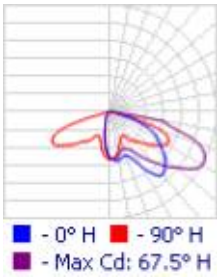
Roadway

Calculation Method	RP-8-2000 2007 errata		**Median**		
Road Surface	R3		Width	20 ft	
Road Class	Major		**Sidewalk**		
Pedestrians	Low		Width	Left: 0 ft	Right: 0 ft
Roadway Length	1,000 (9 Pole Locations)		Setback	Left: 0 ft	Right: 0 ft
Lane Quantity	Left: 3	Right: 3	**Bikelane**		
Lane Width	Left: 12 ft	Right: 12 ft	Width	Left: 5 ft	Right: 5 ft
			Setback	Left: 0 ft	Right: 0 ft

Luminaire Information

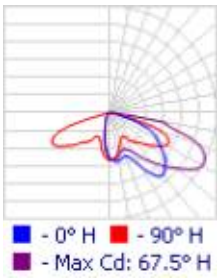
Left Side - American Electric Lighting:

Cycle Spacing:	223.19 ft	Configuration:	Single
Setback:	15 ft	Arm Length:	18 ft
Orientation:	90	Tilt:	0
Mounting Height:	35 ft	Lamp Lumens:	13416
Staggered:	False	Wattage:	115
Light Loss Factor:	0.74	Lamp Count:	1



Right Side - American Electric Lighting:

Cycle Spacing:	223.19 ft	Configuration:	Single
Setback:	15 ft	Arm Length:	18 ft
Orientation:	270	Tilt:	0
Mounting Height:	35 ft	Lamp Lumens:	13416
Staggered:	True	Wattage:	115
Light Loss Factor:	0.74	Lamp Count:	1



Visual - Roadway Tool

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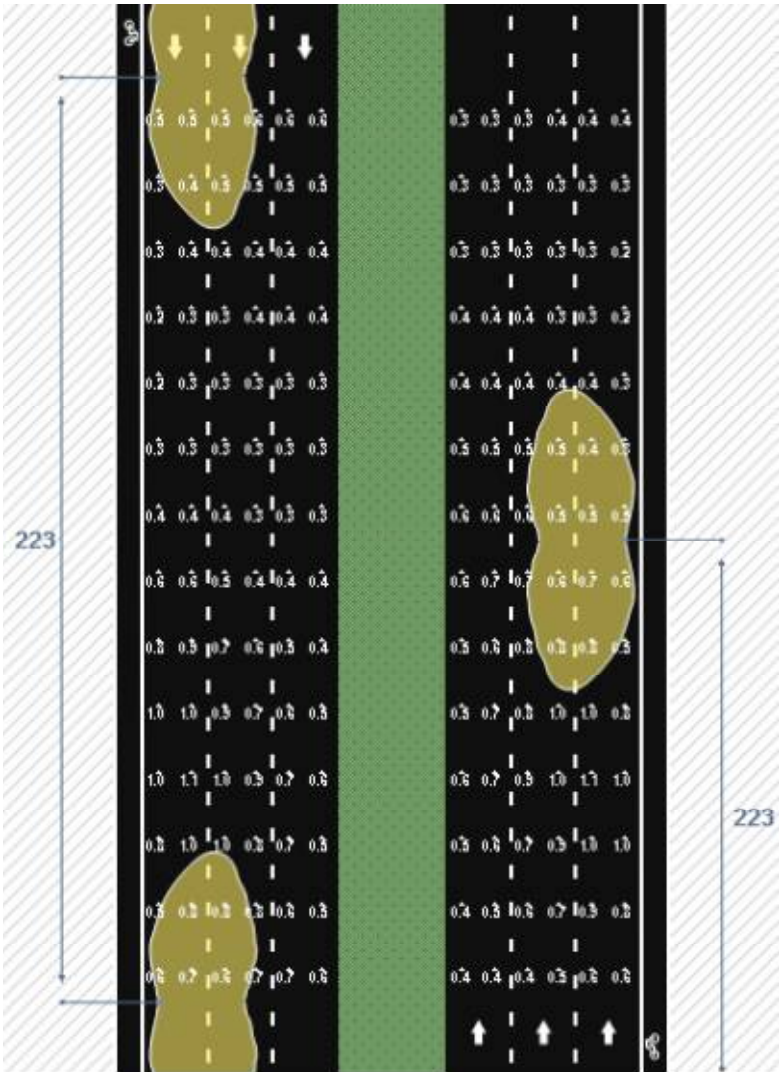

Luminance

Calculation Results

Luminance	Left	Right	
Average:	0.6	0.6	cd/m²
Max:	1.1	1.1	cd/m²
Min	0.2	0.2	cd/m²
Ave/Min:	2.4	2.4	
Max/Min:	5	5	
Lv Ratio:	0.2	0.2	
STV:	3.1	3.1	

Illuminance	Left	Right	
Average:	0.8	0.8	fc
Max:	1.8	1.8	fc
Min	0.2	0.2	fc
Ave/Min:	4.2	4.2	
Max/Min:	9.6	9.6	

Sidewalk	Left	Right	
Average:	--	--	fc
Min	--	--	fc
Ave/Min:	--	--	
Ev Min:	--	--	fc

Bikelane			
Average:	0.4	0.4	fc
Min	0.2	0.1	fc
Ave/Min:	2.9	2.9	
Ev Min:	0.1	0.1	fc