

TOWN OF LUNENBURG COUNCIL MEETING MINUTES

TUESDAY, MAY 24, 2022 AT 6:00 P.M.

COUNCIL CHAMBER

PRESENT: Mayor Matt Risser
Deputy Mayor Peter Mosher
Councillor Jenni Birtles
Councillor Melissa Duggan
Councillor Stephen Ernst
Councillor Ed Halverson
Councillor Susan Sanford

ALSO PRESENT: Ann Covey, Recording Secretary
Lisa Dagley, Finance Director
Lucas Doucette, Strum Engineering (6:33 p.m. left)
Lisa Kendall, Acting Town Engineer
Kevin Malloy, Interim Chief Administrative Officer
Heather McCallum, Assistant Municipal Clerk

1. Call to Order

The Mayor called the meeting to order at 6:00 p.m.

2. Acknowledgement of Mi'kma'ki the ancestral and unceded territory of the Mi'kmaq People

The Mayor recognized Lunenburg's location on the unceded territory of the Mi'kmaq people.

He also acknowledged that this is Kevin Malloy's last Lunenburg Town Council Meeting as Interim CAO for the Town and thanked him for his service.

3. Agenda

Motion: moved and seconded approval of the agenda. Motion carried.

4. May 10, 2022 Council Meeting Minutes

Motion: moved and seconded approval of the May 10, 2022 Council meeting minutes.
Motion carried.

5. Public Hearings, Presentations and Questions (Nil)

6. Correspondence, Petitions and Proclamations Consideration (Nil)

7. Business Arising from the Minutes/Unfinished Business

a. Electric Utility LED Streetlight Conversion Study Results

Lucas Doucette, Electrical Engineer, Strum Engineering, summarized the study results (Schedule A).

Motion: moved and seconded to approve an increase in the 22-23 Electric Utility's Street Light Capital budget to \$411,000 with \$311,000 of the project anticipated to be funded with a capital borrowing and staff will continue to seek grant opportunities (Schedule A). Motion carried.

8. Committee Meeting Minutes, Recommendations, Reports and Notices of Motion - nil

9. New Business

a. Wastewater and Water Treatment Quarterly Information Reports – January 2022 – March 2022

The Acting Town Engineer reviewed the reports. (Schedule B).

b. Noise By-law Revisions

The Assistant Municipal Clerk reviewed the report (Schedule C).

Council agreed by unanimous consent to further revise the proposed Bylaw amendments to remove the words "the Royal Canadian Mounted Police (RCMP) Lilydale detachment" at the end of the second paragraph in Section 13, Penalty.

Motion: moved and seconded to proceed with first reading to amend Bylaw #58 "Noise" (as revised) and advertise for a public hearing prior to holding second reading. Motion carried.

10. Meet in camera

Motion: moved and seconded to meet in camera to consider the following matters pursuant to section 22 (2), Municipal Government Act:

- Contract negotiations
- Personnel matters
- Potential acquisition of municipal property

Motion carried.

Council recessed to meet in camera at 6:43 p.m.

11. Resumption of Council meeting in public session

The public portion of the Council meeting resumed at 8:34 p.m. Council considered the following in camera meeting recommendations.

a. Sustainability of Lunenburg Electric Utility Operations

Motion: moved and seconded that staff issue an RFP for a Sustainability Report that addresses the current challenges facing the Lunenburg Electric Utility. Considering the upcoming anniversary of the Nova Scotia Power (NSP) service agreement the Town of Lunenburg wishes to evaluate the long-term sustainability of its electric utility operations and wants to explore options and collect data to ensure the Town can continue to provide a reliable electrical infrastructure in a cost-effective manner for the foreseeable future.

Possible options to be considered:

- Retain ownership and renew service contract with NSP
- Retain ownership and enter a service contract with another provider
- Sell the utility
- Re-establish our own in-house field staff

The Sustainability Report will need to include customer rate estimates for the various options along with price ranges for any possible sale (formal valuation).

Staff are to engage in discussions with NSP regarding a potential one-year extension of the current service contract.

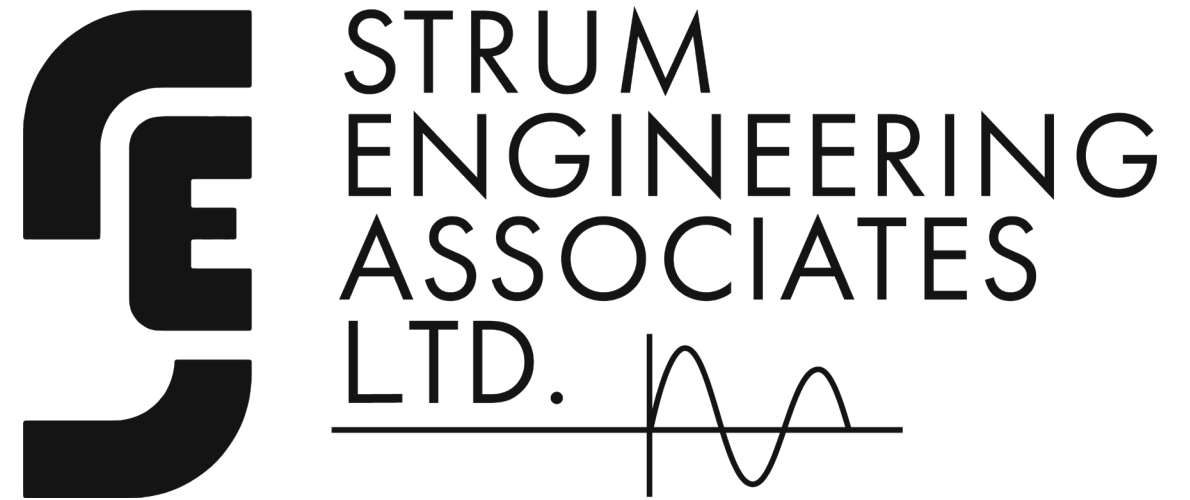
Motion carried.

12. Adjournment

The meeting was adjourned at 8:34 p.m. by the Mayor.

Ann Covey, Recording Secretary
for Kevin Malloy, Interim CAO

Town of Lunenburg



**LED STREET LIGHTING
STUDY**

LED Street Light Study Methodology

- A site survey of the Town of Lunenburg to determine the light fixture types, installation methods and quantities.
- Collection of lighting manufacturer's datasheets and product availability to determine appropriate solutions for light fixture replacements.
- Review of available funding through Efficiency Nova Scotia for the replacement of municipal street lighting.
- Calculation of energy and cost savings associated with the lighting upgrade.
- Development of a comprehensive report, including rough order of magnitude estimates and estimated person hours to complete lighting replacements.





High Pressure Sodium Fixture
Installed in the
Overhead Line High Voltage Zone



High Pressure Sodium Fixture
Installed below the
Overhead Line High Voltage Zone



LED Fixture
Installed below the
Overhead Line High Voltage Zone



High Pressure Sodium Fixture
Installed on a
Low Voltage Pole



Historic Style Non-LED
Light Fixture (1 of 4)



Historic Style Non-LED
Light Fixture (2 of 4)



Historic Style Non-LED
Light Fixture (3 of 4)



Historic Style Non-LED
Light Fixture (4 of 4)



Street Light Replacement Quantities

Non-LED Light Installations	High Voltage Zone Installation	Low Voltage Zone Installation	Low Voltage Pole Installation
UNESCO Heritage Area (Old Town)	66	22	62
Non-Heritage Area (New Town)	111	28	53
Historic Style Lighting			33
Total	177	50	148

Street Light Replacement Cost Estimates

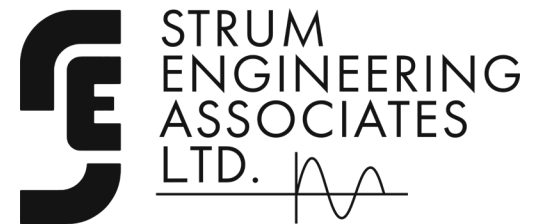
- Typical Streetlighting Outside of the UNESCO Heritage Zone (New Town)
192 replacements, installing 3000-4000 degree kelvin fixtures: \$177, 600.00
- UNESCO Heritage Zone Street Lighting (Old Town)
150 replacements, installing 1800 degree kelvin fixtures: \$165, 000.00
- UNESCO Heritage Zone Historic Lighting (Old Town)
33 replacements, installing historic style fixtures: \$ 68, 475.00
- **Total estimated street lighting replacement cost** \$411, 075.00

Energy Savings Estimates

- Estimated efficiency improvement per fixture upgrade to LED: 46.25%
- Estimated total street lighting energy requirement, pre-LED replacements: 35, 460W
- Total estimated energy saved from street light replacements: 71, 833 kWh per year
- Total Estimated Cost Savings: \$8, 974.04 per year



Thank you.



Document No:
Meeting: Council – May 24, 2022
Circulate To:
File: Electric

MEMORANDUM

TO: TOWN COUNCIL

FROM: LISA DAGLEY, FINANCE DIRECTOR

DATE: MAY 18, 2022

RE: ELECTRIC UTILITY - LED STREET LIGHT CONVERSION STUDY RESULTS

1. FACTS

The Energy-Efficient Appliances Act and Regulations outline that Conventional lighting that is not LED and fails to comply with American National Standard Practice for Roadway Lighting must be replaced by Municipal units on or before December 31, 2022.

In February Council approved an LED Street Lighting Study to be carried out. Strum Engineering Associates Ltd. (Strum) was awarded this work. At the May 24, 2022 Council meeting Strum will present a summary of their draft study. This report is to determine the next steps for the Lunenburg Electric Utility (LEU) to carry out the LED conversions before the December 31, 2022 deadline.

2. ISSUES AND OPTIONS ANALYSIS

Staff directed Strum to consider Nova Scotia Power (NSP) street lighting standards as preferred for all areas outside of the UNESCO Old Town area. Outside of Old Town houses generally have a greater set back from street lighting. Anytime NSP standard street lights can be used it will simplify utility operations as NSP is our service provider for field operations. Strum was asked to consider lighting in Old Town that would mimic the HPS Lights currently installed. Strum is recommending an 1800 degree kelvin light for Old Town.

Strum has identified 375 street lights that require conversion to LED before end of 2022.

UNESCO Old Town Non-Historic HSP Light Fixtures	150
UNESCO Old Town Historic HSP Light Fixtures	33
Total UNESCO Old Town	183
New Town Non-Historic HSP Light Fixtures	192
Total HSP Fixtures requiring conversion	375

There are 51 LED street lights currently in Old Town of varying kelvins. Staff are recommending for consistency that all Old Town be converted to the 1800 kelvin street lights and the 51 currently installed be redeployed in other areas of Town.

It is estimated that this work could take between 18 to 20 weeks to complete. As of the May 24 Council meeting there will be 31 weeks remaining in the year. The procurement process for both the lights and contractor resources to complete the conversions will begin immediately to minimize the risk of not meeting the 2022 year end deadline.

Staff have considered all previous public feedback regarding LED street lighting conversions in providing direction to Strum for this study. Staff want to ensure the public has an opportunity to hear Strum’s LED Street Light Study presentation and therefore have arranged for another session on May 26, 2022 at the Lunenburg Fire Hall starting at 6:00pm including a question-and-answer period.

3. **FINANCIAL IMPACT**

Strum’s study has provided a Rough Order of Magnitude Estimate of \$411,000 to complete the required LED lighting conversions. The approved 22-23 Electric Utility budgeted included \$100,000 for this project. The Electric Utility’s Depreciation Reserve isn’t sufficient to cover the additional \$311,000 cost and as such will have to be financed with a capital borrowing. To date an external funding partner has not been identified but staff continue to make inquiries on possible programs.

Strum are estimating energy savings of \$9,000 annually after the conversions are completed.

4. **STRATEGIC PLAN RELEVANCE**

This project supports Strategic Direction Urban Design 8.1-Streetscapes: Maintain the heritage identity of Lunenburg while meeting the provincial streetlight standards.

5. **RECOMMENDATION AND DRAFT MOTION**

It is recommended that Council approve the following draft motion:

Draft Motion:

Moved and seconded to approve an increase in the 22-23 Electric Utility's Street Light Capital budget to \$411,000 with \$311,000 of the project anticipated to be funded with a capital borrowing and staff will continue to seek grant opportunities.

Acknowledged only by:

Kevin Malloy
Interim CAO



Dartmouth Office
80 Eileen Stubbs Ave.
Dartmouth, N.S. B3B 1Y6
Tel: (902) 468-7325
Fax: (902) 468-1908

Sydney Office
401 Esplanade
Sydney, N.S. B1P 1B2
Tel: (902) 562-3311
Fax: (902) 562-4152

Saint John Office
76 Princess Street
Saint John, NB E2L 1K4
Tel: (506) 343-3016

**TOWN OF LUNENBURG ELECTRICAL UTILITY
LUNENBURG, NOVA SCOTIA**

LED STREET LIGHTING STUDY

MAY 2022

**REPORT No.
041-016-1-22 Rev. 2**

DRAFT



Dartmouth Office
80 Eileen Stubbs Ave.
Dartmouth, N.S. B3B 1Y6
Tel: (902) 468-7325
Fax: (902) 468-1908

Sydney Office
401 Esplanade
Sydney, N.S. B1P 1B2
Tel: (902) 562-3311
Fax: (902) 562-4152

Saint John Office
76 Princess Street
Saint John, NB E2L 1K4
Tel: (506) 343-3016

REPORT

TOWN OF LUNENBURG ELECTRICAL UTILITY LUNENBURG, NOVA SCOTIA

LED STREET LIGHTING STUDY

REPORT No. 041-016-1-22 Rev. 2

SIGNED:

**FRANK FAHEY, P. ENG.
SENIOR ELECTRICAL ENGINEER**

SIGNED AND SEALED:

**LUCAS DOUCETTE, P. ENG.
ELECTRICAL ENGINEER**

STRUM ENGINEERING ASSOCIATES LTD.

MAY 2022

AUTHORIZATION

This Study was authorized by Purchase Order No. 019644, dated 17 February 2022, issued by Town of Lunenburg, to Strum Engineering Associates Ltd.

DRAFT

TABLE OF CONTENTS

AUTHORIZATION..... i

TABLE OF CONTENTS..... ii

LIST OF FIGURES iii

LIST OF TABLES iv

LIST OF APPENDICES..... v

1.0 INTRODUCTION 1

 1.1 SCOPE OF WORK..... 1

 1.2 SOURCES OF INFORMATION 1

 1.3 METHODOLOGY 2

2.0 SYSTEM DESCRIPTION..... 3

3.0 GENERAL LIGHTING SYSTEM CONFIGURATION 4

4.0 LIGHTING SYSTEM SURVEY..... 13

5.0 ORDER OF MAGNITUDE COST ESTIMATES 17

 5.1 ESTIMATION ASSUMPTIONS 17

 5.2 REPLACEMENT OF TYPICAL STREETLIGHTING
 (OUTSIDE OF THE UNESCO HERITAGE SITE..... 17

 5.3 REPLACEMENT OF UNESCO HERITAGE SITE STREET LIGHTING 17

 5.4 REPLACEMENT OF UNESCO HERITAGE SITE HISTORIC LIGHTING 18

 5.5 COST ESTIMATE SUMMARY 18

6.0 ENERGY SAVINGS 19

7.0 FUNDING OPPORTUNITIES 20

8.0 RECOMMENDATIONS AND CONSIDERATIONS 21

 5.1 GENERAL STREET LIGHTING 21

 5.3 UNESCO HERITAGE SITE 21

 5.4 UNESCO HERITAGE SITE HISTORIC STYLE LIGHTING 21

9.0 CONCLUSIONS 22

LIST OF FIGURES

FIGURE 1: High Pressure Sodium Fixture Installed below the Overhead Line Primary Zone 4

FIGURE 2: High Pressure Sodium Fixture Installed in the Overhead Line Primary Zone..... 5

FIGURE 3: LED Fixture Installed below the Overhead Line Primary Zone 6

FIGURE 4: High Pressure Sodium Fixture Installed on a Secondary Conductor Utility Pole..... 7

FIGURE 5: HPS Lighting Fixture Installed on Centennial Avenue..... 8

FIGURE 6: Historic Lighting Fixture Style 1 Installed on a Utility Pole 9

FIGURE 7: Historic Lighting Fixture Style 2 Installed on a Custom Pole 10

FIGURE 8: Historic Lighting Fixture Style 3 Dual Fixture Installed on a Custom Pole 11

FIGURE 9: Historic Lighting Fixture Style 4 Dual Fixture Installed on a Custom Pole 12

DRAFT

LIST OF TABLES

TABLE 1: Town of Lunenburg Street Lighting Survey 13
TABLE 2: Town of Lunenburg Historic Street Lighting Survey 16
TABLE 3: Approximate Wattage of LED Equivalent Lighting 19

DRAFT

LIST OF APPENDICES

Appendix A: List of References

Appendix B: Town of Lunenburg Map

Appendix C: Street Lighting Manufacturer Documentation

Appendix D: Historic Lighting Manufacturer Documentation

Appendix E: Efficiency Nova Scotia Documentation and Discourse

DRAFT

1.0 INTRODUCTION

1.1 Scope of Work

The intent of the Lunenburg LED Lighting Study is to provide a comprehensive review and assessment of the Lunenburg street lighting system. The report addresses the conversion to an LED fixture-based lighting system from the typical existing “cobra” head high-pressure sodium fixtures and historic style fixtures.

Light fixtures throughout the UNESCO Heritage Site have been taken into further consideration to ensure satisfactory aesthetic, color temperature and light dispersion are achieved. The report identifies locations throughout the town at which the street lighting installations do not meet NSPI lighting installation standards and provides recommendations for the replacement of specific fixtures.

The report provides information regarding specific funding, where available, to assist in the upgrade of the lighting system to an LED based system. Information on cost savings, material costs and installation costs are provided.

In general, the scope of the Lighting System Study includes:

- .1 Compilation of field notes obtained during site visits, which were used to determine the quantity and fixture types in the Town of Lunenburg street lighting system. The site visit field notes are provided in an excel spreadsheet as part of the report.
- .2 Collection of manufacturer data to assist with the determination of options available for street light replacements.
- .3 A comprehensive report to present the lighting system upgrade options, cost estimates, energy reduction, cost savings and potential funding opportunities for the upgrade to LED street lighting.

1.2 Sources of Information

The information used to carry out the LED lighting system study/assessment was obtained from the following sources:

.1 Town of Lunenburg Street Lighting System

The following documents were provided by the Town of Lunenburg for reference and review:

1. Town of Lunenburg – Town Street Lights Map

.2 Site Survey of the Town of Lunenburg Lighting System

A site survey of the Town of Lunenburg lighting system was performed to determine the quantity and locations of light fixtures, the type of light fixtures and their installation methods.

1.3 Methodology

The Town of Lunenburg lighting system review was performed using the following procedure:

- .1 A site survey of the Town of Lunenburg to determine the light fixture types, installation methods and quantities.
- .2 Collection of lighting manufacturer's datasheets and product availability to determine appropriate solutions for light fixture replacements.
- .3 Review of available funding through Efficiency Nova Scotia for the replacement of municipal street lighting.
- .4 Calculation of energy and cost savings associated with the lighting upgrade.
- .5 Development of a comprehensive report, including rough order of magnitude estimates and estimated person hours to complete lighting replacements.

2.0 LIGHTING SYSTEM DESCRIPTION

The Town of Lunenburg street lighting system is comprised of typical “cobra” head fixtures with high-pressure sodium lamps and fixtures with an LED source. The UNESCO Heritage Site, as indicated on the Town of Lunenburg Town Street Lights Map includes areas as well, utilizing “Historic Style” light fixtures, which are not currently LED type.

The street lighting installations throughout the Town of Lunenburg generally falls within one of the following descriptive categories:

1. Historical style lighting Post and Pole Mounted
2. Fixture installed within the Overhead Line Primary Zone.
 - a. LED Lighting
 - b. High-Pressure Sodium Lighting
3. Fixture installed below the Overhead Line Primary Zone (below the secondary conductors).
 - a. LED Lighting
 - b. High-Pressure Sodium Lighting
4. Fixture installed on a pole that does not have primary conductors.
 - a. LED Lighting
 - b. High-Pressure Sodium Lighting

3.0 GENERAL LIGHTING SYSTEM CONFIGURATION

The street lighting system throughout the Town of Lunenburg is generally comprised of typical “cobra” head fixtures with high-pressure sodium lamps and fixtures with an LED source. Some areas include historic style fixtures, either utility pole mounted or mounted on custom light poles.

The lighting fixtures throughout the Town of Lunenburg have varying installation methods. Examples of typical installations can be found in figures 1 through 9.



*Figure 1: High Pressure Sodium Fixture
Installed below the Overhead Line Primary Zone*

Figure 1: *High Pressure Sodium Fixture Installed below the Overhead Line Primary Zone* depicts an installation recommended for upgrade to an LED fixture. This utility pole is not configured to NSPI standards, as it is an underslung transformer configuration.



*Figure 2: High Pressure Sodium Fixture
Installed in the Overhead Line Primary Zone*

Figure 2: *High Pressure Sodium Fixture Installed in the Overhead Line Primary Zone* depicts an installation that is recommended for upgrade to an LED fixture. The light fixture installation is within the Overhead Line Primary Zone. Typically, lights installed in this configuration are at a height of approximately 27 feet above grade on a typical 35-foot utility pole.



*Figure 3: LED Fixture
Installed below the Overhead Line Primary Zone*

Figure 3: *LED Fixture Installed below the Overhead Line Primary Zone* depicts an installation that meets an NSPI standard lighting installation. The utility pole is configured appropriately for an upgrade to 12.47kV and the light is installed below the utility secondary conductors.



*Figure 4: High Pressure Sodium Fixture
Installed on a Secondary Conductor Utility Pole*

Figure 4: High Pressure Sodium *Fixture Installed on a Secondary Conductor Utility Pole* depicts an installation that meets an NSPI standard lighting installation. The utility pole does not pose any concern with respect to a utility system upgrade or lighting upgrade. The light fixture can be upgraded to an LED fixture without considering pole modifications.



*Figure 5: HPS Lighting Fixture
Installed on Centennial Avenue*

Figure 5: *HPS Lighting Fixture Installed on Centennial Avenue* depicts one of several HPS light fixtures that are not installed on utility poles.



Figure 6: Historic Lighting Fixture Style 1
Installed on a Utility Pole

Figure 6: Historic Lighting Fixture Style 1 depicts a non-LED light fixture that can be replaced with a similar fixture with an LED source.



*Figure 7: Historic Lighting Fixture Style 2
Installed on a Custom Pole*

Figure 7: Historic Lighting Fixture Style 2 depicts a non-LED light fixture that can be replaced with a similar fixture with an LED source.



*Figure 8: Historic Lighting Fixture Style 3
Dual Fixture Installed on a Custom Pole*

Figure 8: Historic Lighting Fixture Style 3 depicts a non-LED light fixture that can be replaced with a similar fixture with an LED source.



*Figure 9: Historic Lighting Fixture Style 4
Dual Fixture Installed on a Custom Pole*

Figure 9: Historic Lighting Fixture Style 4 depicts a non-LED light fixture. The fixture is recommended to be replaced with a light fixture of similar style to Figure 7.

4.0 LIGHTING SYSTEM SURVEY

The Town of Lunenburg lighting system survey was performed on a street-by-street basis. Table 1: *Town of Lunenburg Lighting System Survey* provides an overview of the survey findings.

Town of Lunenburg Street Lighting Survey						
Street	Primary Zone Installation		Secondary Only Pole		Secondary Zone Installation	
	LED	HPS	LED	HPS	LED	HPS
Sandy Hollow				2		1
Maple Lane	1	9	2	2	1	
Dufferin Street	14	3	17	5	2	3
High Street		1		7		
Broad Street	4	16			1	2
Brook Street	2	11		4	2	1
Green Street	2	16	1	1	1	
Montgomery Street		2				
Churchill Street	2	1	1			
Tupper Street		4	1			
McDonald Street		1		2		
Mackenzie Street			2	3		
Archibald Street			1	4		
Lorne Street		3				1
Starr Street					2	1
Faulkland Street		1	5	1		
Creighton Street		2		3		1
Lawrence Street	1	3	1	1		1
York Street		2	1	7		1
Fox Street	1	5				1
Townsend Street			1	8		
Cumberland Street		2		4	1	2
Lincoln Street	1	3	10	12	1	1
Blockhouse Hill	1	1		1		
Sawpit Road	3					
Pelham Street	5	6	2	13	3	2
Linden Avenue		2		4		
Kaulbach Street	2	2		3		2
Kinley Drive		1				1
Cornwallis Street		4		1	1	6
Duke Street	2	3	1	1		

Town of Lunenburg Street Lighting Survey						
Street	Primary Zone Installation		Secondary Only Pole		Secondary Zone Installation	
	LED	HPS	LED	HPS	LED	HPS
Montague Street	4	13	1	2	3	2
Lower Street			2	1		1
Bluenose Drive				2		
King Street	1		2			
Oxner Drive		1			1	
Prince Street	1	5	1	5		1
Hopson Street	1	8	3			1
Kempt Street		8				1
Hill Street				3		
Shipyards Hill Road	1					
Bayview Drive				1	1	
HWY 332			3			
Station Lane						1
Young Street						3
Medway Street						1
Tannery Road	1	12				1
Cove Road		1				
Mason's Beach Road (To Mason's Pt Wy)		4		3		2
Knickle Road		5				
Schwartz Street				1		1
Hall Street		4				1
Curling Club	1	2				1
James Road					1	2
Hebb Street		3				
Centennial Avenue		1		6		
Wolf Avenue	1	3				
Knock Lane		1				

Town of Lunenburg Street Lighting Survey						
Street	Primary Zone Installation		Secondary Only Pole		Secondary Zone Installation	
	LED	HPS	LED	HPS	LED	HPS
Morash Lane		1				2
Rudolf Drive						1
Victoria Road to Front Center Road	13	1	5	2	11	1
Total UNESCO Area Light Fixtures (Non-Historic)	19	66	23	62	9	22
Total UNESCO Area HPS Light Fixtures (Non-Historic)	150					
Total Non-UNESCO Area Fixtures	46	111	40	53	23	28
Total Non-UNESCO Area HPS Lighting	192					
Total Fixtures:	65	177	63	115	32	50
Total HPS Lighting:	342					
Notes:	HPS: High Pressure Sodium					
	Primary Zone Installation: The light fixture is installed between the primary and secondary conductors.					
	Secondary Zone Installation: The light fixture is installed below the secondary conductors.					
	Secondary Pole Installation: The light fixture is installed on a pole that only includes secondary electrical conductors (telecoms may or may not be installed on the pole as well).					
	Highlighted rows are part of the UNESCO Heritage Site.					

Table 1: Town of Lunenburg Street Lighting Survey

Historic Style Lighting				
	Single Light Metal Pole	Single Light Wood Pole	Two Light Metal structure	Orange Lighting
Bluenose Drive	17	4		
Montague Street		1		
King Street			2	
Duke Street				6
Cornwallis Street				3
Total Historic Style Fixtures:	17	5	2	9

Table 2: Town of Lunenburg Historic Street Lighting Survey

DRAFT

5.0 ORDER OF MAGNITUDE COST ESTIMATES

5.1 Estimation Assumptions

1. A crew of three (3) members can replace four (4) typical utility light fixtures during an eight-hour period.
2. A crew of two (2) members can replace four (4) historic light fixtures during an eight-hour period.
3. Only non-LED fixtures are considered for replacement.
4. Light fixtures in the primary zone of a utility pole that is not prepared for upgrade to 12.47kV will be replaced in-situ.
5. Light fixtures in the primary zone of a utility pole that is prepared for upgrade to 12.47kV will be relocated to an area below the neutral and secondary conductors of the pole.
6. Utility poles will not be replaced or upgraded as part of this project.

5.2 Replacement of Typical Streetlighting (Outside of the UNESCO Heritage Site)

Estimated cost of materials per fixture:	\$325.00
Estimated cost of labour per fixture: (3 crew members, bucket truck, 2 hours of labour)	\$600.00
<u>Materials (192 Fixtures):</u>	<u>\$62, 400.00</u>
<u>Labour: (192 Fixtures):</u>	<u>\$115, 200.00</u>
<u>Total Rough Order of Magnitude Estimate:</u>	<u>\$177, 600.00</u>

5.3 Replacement of UNESCO Heritage Site Streetlighting

Estimated cost of materials per fixture: (1800 degrees kelvin)	\$500.00
Estimated cost of labour per fixture: (3 crew members, bucket truck, 2 hours of labour)	\$600.00
<u>Materials (150 Fixtures):</u>	<u>\$75, 000.00</u>
<u>Labour: (150 Fixtures):</u>	<u>\$90, 000.00</u>
<u>Total Rough Order of Magnitude Estimate:</u>	<u>\$165, 000.00</u>

5.4 Replacement of UNESCO Heritage Site Historic Lighting

Estimated cost of materials per fixture (no pole): \$1,675.00

Estimated cost of materials per fixture (with pole): \$3175.00

Estimated cost of labour per fixture: \$400.00
(2 crew members, 2 hours of labour)

Materials (33 Fixtures, no pole replacements): \$55,275.00

Labour (33 Fixtures): \$13,200.00

Total Rough Order of Magnitude Estimate: \$68,475.00

5.5 Cost Estimate Summary

5.2: \$177,600.00

5.3: \$165,000.00

5.4: \$68,475.00

Total Rough Order of Magnitude Estimate: \$411,075.00

6.0 ENERGY SAVINGS

The following table indicates the proposed equivalent LED fixtures for installations throughout the Town of Lunenburg (Note, these values are approximate and contingent on the design provided by the selected manufacturer):

Existing Source	Existing Wattage	New Source	New Wattage	Reduction of Load (%)
HPS	70W	LED	40W	43
HPS	100W	LED	50W	50
HPS	150W	LED	75W	50
HPS	200W	LED	115W	42

Table 3: Approximate Wattage of LED Equivalent Lighting

To approximate the energy savings in the town, the average savings per fixture conversion is considered:

$$\frac{43 + 50 + 50 + 42}{4} = 46.25\%$$

Approximate Energy Savings Per Fixture Replacement

Additionally, it is assumed that the UNESCO heritage fixtures are generally 70W HPS, while areas outside of the UNESCO heritage area are 70W, 100W, 150W and 200W. For the energy savings calculations, it is assumed that the area outside of the heritage area has an even distribution of each high-pressure sodium fixture wattage. It is assumed that streetlights operate for approximately 12 hours per 24-hour period. The Town of Lunenburg electricity rate is \$0.09171/kWh + \$12.125/kVA demand.

$$192 \text{ units} * \frac{70W + 100W + 150W + 200W}{4} = 24,960W$$

Approximate Street Light Energy Consumption Outside of the UNESCO Heritage Area

$$150 \text{ units} * 70W = 10,500W$$

Approximate Street Light Energy Consumption In The UNESCO Heritage Area

$$\text{Total Energy Saved (MWh)} = 35,460W * 4380 \frac{\text{hr}}{\text{yr}} * 0.4625 = \frac{71.833MWh}{\text{year}}$$

$$\text{Total Savings} = \frac{71.833MWh}{\text{year}} * \frac{\$91.71}{MWh} + (\$12.125 * 35.46kW * 0.4625) * 12 \text{ months} = \$8,974.04 \text{ per year}$$

Approximate Savings Per Year Following the LED Conversion

7.0 FUNDING OPPORTUNITIES

Efficiency Nova Scotia provides funding opportunities to assist in transitioning to energy efficient solutions in residential, commercial, and industrial environments. Efficiency Nova Scotia is generally funded by supplying efficiency and conservation activities to Nova Scotia Power, assisting NSPI in meeting the electrical needs of Nova Scotia. The cost of Efficiency Nova Scotia's efforts is included in the Nova Scotia Power electrical rates.

Due to the Energy-efficient Appliances Act mandating that municipality owned streetlights must not be used after December 31, 2022, Efficiency Nova Scotia deems the replacement of the Town of Lunenburg street lighting ineligible for funding. However, the decorative lighting would qualify for reimbursement of \$60 - \$100 per fixture through Efficiency Nova Scotia. Copies of correspondence with Efficiency Nova Scotia and rebate documentation can be found in Appendix D.

DRAFT

8.0 RECOMMENDATIONS AND CONSIDERATIONS

8.1 General Street Lighting

The Town of Lunenburg utility system is currently maintained by Nova Scotia Power Inc. (NSPI). Generally, the street lighting system fixtures are mounted to utility poles throughout the town. As indicated in Section 5.0, a significant number of the typical streetlights are installed within the “Overhead Line Primary Zone” of the power system. The Primary Zone installations pose concerns as they do not adhere to NSPI standard street lighting installations, and non-utility personnel (i.e., contractors) are not permitted to work within the Primary Zone without additional training and authorization, provided by the Utility.

Due to the high quantity of high-pressure sodium lighting installed within the utility Primary Zone, it is recommended that NSPI be contacted to determine specific steps required to allow a contracted electrical worker to replace light fixtures within the restricted area. The requirements, as specified by NSPI would be included in Tender or Contract documentation for the contracted installations. It is expected that NSPI will require any contractor that plans to work within the Primary Zone to complete NSPI’s Standard Protection Code training, which would be subject to NSPI availability to provide the training.

The Town of Lunenburg aims to replace all non-LED street lighting. As indicated in Section 5.0, 342 typical high pressure sodium light fixtures require replacement. Of the 342 fixtures, 177 fixtures are located in the NSPI Primary Zone, requiring the utility to perform the fixture replacements, or training is required for the successful bidding contractor.

8.2 UNESCO Heritage Site

Throughout the UNESCO Heritage Site, it is requested that the replacement light fixtures maintain a similar lighting profile to the existing, with respect to luminosity, color temperature and aesthetic. The existing high-pressure sodium streetlights are estimated to be within the 1500 Kelvin to 2500 Kelvin color temperature range. Appendix B includes manufacturer specification documentation for products that can meet the required temperature range.

8.3 UNESCO Heritage Site Historic Style Lighting

Within the UNESCO Heritage Site there are several non-LED fixtures that have a “historic” aesthetic. Section 3.0, figures 6, 7, 8 and 9 depict the historic style fixtures. Proposed fixture replacement manufacturer specification documentation for figures 6 and 7 can be found in Appendix C. It is proposed that the light fixture selected for the replacement of the fixture depicted in figure 7 be used to replace the fixtures depicted in figure 9.

9.0 CONCLUSIONS

The Town of Lunenburg aims to replace their approximately 342 high pressure sodium streetlights and 33 decorative streetlights with LED alternatives. The town aims to provide lighting similar to that of NSPI standard lighting throughout the “New Town” area, while replacing fixtures in the UNESCO Heritage Site that maintain a similar light quality to the existing fixtures.

It is recommended that the street lighting within the UNESCO Heritage Site be replaced with a fixture that has a color temperature of approximately 1800 degrees kelvin, which is a similar color temperature to high pressure sodium lighting. Outside of the heritage site, a color temperature of 3000 kelvin or higher is recommended. It is also recommended that all historic style lighting be replaced with equivalent fixtures.

To complete the street lighting replacements, it is recommended that NSPI be engaged to determine whether it is feasible to provide Standard Protection Code training for a contractor group, to allow a contractor group to perform the upgrades throughout the town, regardless of the installation location. The total estimated cost of replacement for lighting throughout the Town of Lunenburg is \$411, 075.00. The conversion to LED will save approximately \$8,974.04 in electricity costs per year.

Efficiency Nova Scotia provides funding opportunities for the replacement of lighting to LED sources. Due to Nova Scotia legislation mandating the retirement of non-LED municipal street lighting by December 31, 2022, the Town of Lunenburg street lighting upgrades do not qualify for funding, although, the historic style lighting upgrades do qualify for a \$60-\$100 reimbursement per fixture.

DRAFT

APPENDIX A

LIST OF REFERENCES

DRAFT

LIST OF REFERENCES

1. CSA Standard C22.1-21, "Canadian Electrical Code".
2. CSA C22.3 No.1-15, "Overhead Systems".
3. Nova Scotia Power Inc., "Overhead Distribution Standard", 1994.
4. NFPA Standard 70E-2015, "Standard for Electrical Safety in the Workplace".
5. Street and Area Lighting| Nova Scotia Power (nspower.ca)
6. Nova Scotia Energy-efficient Appliances Act - Section 5

APPENDIX B

TOWN OF LUNENBURG MAP

DRAFT

Legend

- TOL_StreetLightsApprox
- Footprints3D
- Town Boundary
- Heritage_Conservation_District
- Parcels
- Streets
- Town Owned Land



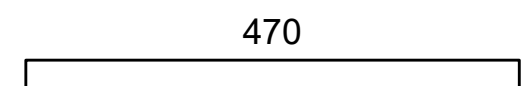
Document Path: H:\Data\Electric_UTILITY\StreetLightsRFP\Work.mxd Date Saved: 2021-12-16 9:00:15 AM



Maps are for graphical purposes only. They do not represent a legal survey. While every effort has been made to ensure that these data are accurate and reliable within the limits of the current state of the art, The Town of Lunenburg cannot assume liability for any damages caused by any errors or omissions in the data. Users of our maps and other analysis products are solely responsible for interpretations made from these products.

TOWN OF LUNENBURG
Town Street Lights

North



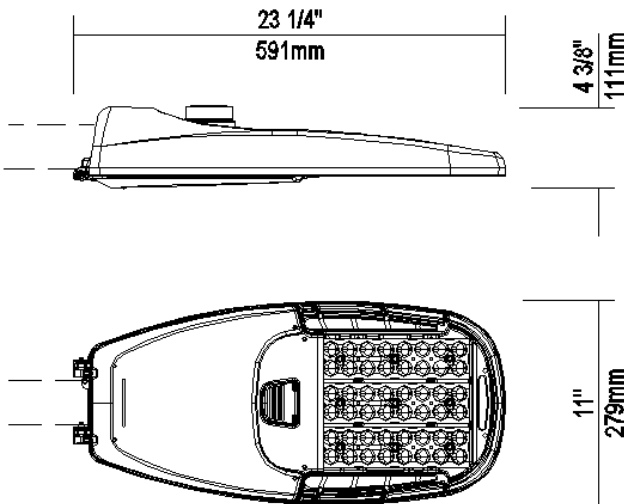
1:7,200

Metres

APPENDIX C

STREET LIGHTING MANUFACTURER DOCUMENTATION

Lunenburg Town of Lunenburg (84710)



EPA: 0.523 sq ft / weight: 12.3 lb (5.6 kg)

Note: 3D image may not represent color or option selected.
Logos above include link, click to access.

Qty	1000	Luminaire	RFM-55W48LEDA-G2-R3M-UNV-DMG-RCD7-GY3
-----	------	-----------	---------------------------------------

Description of Components:

Housing: Made of a low copper die cast Aluminum alloy (A360), 0.100" (2.5mm) minimum thickness. Fits on a 1.66" (42mm) O.D. (1.25" NPS), 1.9" (48mm) O.D. (1.5" NPS) or 2 3/8" (60mm) O.D. (2" NPS) by 5 1/2" (140mm) minimum long tenon. Comes with a zinc plated clamp fixed by 2 zinc plated hexagonal bolts 3/8 16 UNC for ease of installation. Provides an easy step adjustment of +/- 5° tilt in 2.5° increments. Includes integral bubble level standard (always included). A quick release, tool less entry, single latch, hinged, removable door opens downward to provide access to electronic components and to a terminal block. Door is secured to prevent accidental dropping or disengagement. A clearance of 13" (330mm) at the rear is required in order to remove the door. Complete with a bird guard protecting against birds and similar intruders and an ANSI label as per C136.15-2015 to identify wattage and source (both included in box).

Light Engine: Composed of 4 main components: **Heat Sink / LED Module / Optical System / Driver**

Electrical components are RoHS compliant, IP66 sealed light engine.

LEDs tested by ISO 17025-2005 accredited lab in accordance with IESNA LM-80 guidelines, extrapolations in accordance with IESNA TM-21. Metal core board ensures greater heat transfer and longer lifespan.

Heat Sink: Made of cast aluminum optimising the LEDs efficiency and life. Product does not use any cooling device with moving parts (only passive cooling device).

LED Module: Composed of 48 high-performance amber LEDs. Color temperature as per ANSI/NEMA bin Phosphor Corrected Amber, 1800 Kelvin nominal, CRI 30 Min.

Driver: High power factor of 90% minimum. Electronic driver, operating range 50/60 Hz. Auto-adjusting universal voltage input from 120 to 277 VAC rated for both application line to line or line to neutral, Class 1, THD of 20% max. **Driver comes with dimming compatible 0-10 volts.**

Lunenburg Town of Lunenburg (84710)

The current supplying the LEDs will be reduced by the driver if the driver experiences internal overheating as a protection to the LEDs and the electrical components. Output is protected from short circuits, voltage overload and current overload. Automatic recovery after correction. Standard built-in driver surge protection of 2.5kV (min).

Driver Options: (DMG) Integrated Feature, Dimming compatible 0-10 volts. For applicable warranty, certification and operation guide see Lumec dimmable luminaire specification document for unapproved device installed by other. To get document, click on this link: [Specification document](#) or go on web site on this address: https://www.signify.com/b-dam/signify/en-us/brands/lumec/Lumec-un-approved-control-device-installed-by-others-7_d.pdf

Surge Protector: Integrated Feature, Surge protector tested in accordance with ANSI/IEEE C62.45 per ANSI/IEEE C62.41.2 Scenario I Category C High Exposure 10kV/10kA waveforms for Line-Ground, Line-Neutral and Neutral-Ground, and in accordance with U.S. DOE (Department of Energy) MSSLC (Municipal Solid-State Street Lighting Consortium) model specification for LED roadway luminaires electrical immunity requirements for High Test Level 10kV/10kA.

Luminaire Options: (RCD7), Receptacle with 7 pins enabling dimming and with two extra connections for future use (these connections are capped off at the factory - requires connections to be made in the field), can be used with a twist-lock control device or photoelectric cell or a shorting cap. Use of photocell or shorting cap is required to ensure proper illumination.

Luminaire Useful Life: Refer to IES files for energy consumption and delivered lumens for each option. Based on ISTMT in-situ thermal testing in accordance with UL1598 and UL8750, System Reliability Tool. Advance data and LED manufacturer LM-80/TM-21 data, expected to reach 100,000 + hours with >L70 lumen maintenance @ 25°C. Luminaire Useful Life accounts for LED lumen maintenance AND all of these additional factors including: LED life, driver life, PCB substrate, solder joints, on/off cycles, burning hours and corrosion.

Lunenburg Town of Lunenburg (84710)

Miscellaneous

Description of Components:

Wiring: The connection of the luminaire is done using a terminal block connector 600V, 85A for use with #2-14 AWG. wires from the primary circuit, located inside the housing. Due to the inrush current that occurs with electronic drivers, recommend using a 10Amp time delay fuse to avoid unwanted fuse blowing (false tripping) that can occur with normal or fast acting fuses.

Hardware: All exposed screws shall be complete with Ceramic primer-seal basecoat to reduce seizing of the parts and offers a high resistance to corrosion. All seals and sealing devices are made and/or lined with EPDM and/or silicone and/or rubber.

Finish: Color to be **medium grey (GY3)** and in accordance with the AAMA 2603 standard. Application of polyester powder coat paint (4 mils/100 microns) with ± 1 mils/24 microns of tolerance. The Thermosetting resins provides a discoloration resistant finish in accordance with the ASTM D2244 standard, as well as luster retention in keeping with the ASTM D523 standard and humidity proof in accordance with the ASTM D2247 standard.

The surface treatment achieves a minimum of 5000 hours for salt spray resistant finish in accordance with testing performed and per ASTM B117 standard.

LED products manufacturing standard: The electronic components sensitive to electrostatic discharge (ESD) such as light emitting diodes (LEDs) are assembled in compliance with IEC61340-5-1 and ANSI/ESD S20.20 standards so as to eliminate ESD events that could decrease the useful life of the product.

Vibration Resistance: The RFM meets the **ANSI C136.31, 2010**, American National Standard for Roadway Luminaire Vibration specifications for Bridge/overpass applications (Tested 3G over 100 000 cycles).

The RFM meets the **California Test 611, Testing durability of mast arm mounted luminaires**, specifications (a 2 000 000 cycles test).

Service Tag: Each individual luminaire is uniquely identifiable, thanks to the Service tag application. With a simple scan of a QR code, placed on the inside of the mast door, you gain instant access to the luminaire configuration, making installation and maintenance operations faster and easier, no matter what stage of the luminaire's lifetime. Just download the APP and register your product right away. For more details visit: Signify.com/servicetag

Warranty: Luminaire comes with a warranty of 10 years on product and finish.

Certifications and Compliance: cULus Listed for Canada and USA. Luminaire meets DOE and MSSLC Model Specification for LED Roadway Luminaires. Medium RoadFocus LED Cobra head luminaires are DesignLights Consortium qualified, consult DLC QPL to confirm your specific fixture selection is approved. Luminaire complies with or exceeds the following ANSI C136 standards: .2, .3, .10, .14, .15, .22, .25, .31, .37, .41.

Web site information details: Click on any specific information details you need: / [cULus Certification](#)



Consistent with LEED® goals & Green Globes™ criteria for light pollution reduction



Buy American

Autobahn Series ATBS Roadway & Security Lighting

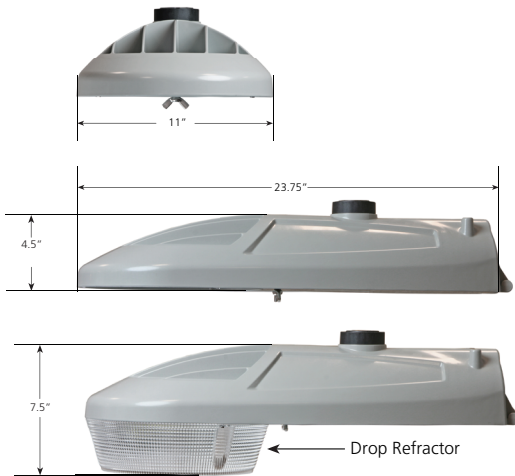
PRODUCT OVERVIEW



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)

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.

Color temperatures of $\leq 3000\text{K}$ must be specified for International Dark-Sky Association certification.

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

BUY AMERICAN — Product with the BAA option is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT. Please refer to www.acuitybrands.com/buy-american for additional information.

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

Features:

OPTICAL

Same Light: Performance is comparable to 100W – 200W HPS and up to 175W Mercury Vapor roadway and security lighting luminaires.

White Light: Correlated color temperature - 4000K, 70 CRI minimum, 3000K, 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.

Standard surge protection is 20kV/10kA "Extreme Level" per ANSI C136.2. An optional MOV pack provides 10kV/5kA "Enhanced Level".

Luminaire ships with a 0-10v dimmable driver. Luminaire is continuous and step dimming capable via AO option or controls installed on P7 photocontrol receptacle option.

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 C136.31.

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 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.

Autobahn Series ATBS

Roadway & Security Lighting

ORDERING INFORMATION

Series	Performance Packages	Voltage	Optics
ATBS Autobahn LED Roadway & Security	P10 5,500 lumens P20 6,800 lumens P30 8,300 lumens P40 9,400 lumens P50 10,800 lumens P60 ⁴ 11,850 lumens	MVOLT Multi-volt, 120-277V 347 347V 480 480V	R2 Roadway Type II R3 Roadway Type III R5 Roadway Type V D3 Type III, Drop Refractor included D5 Type V, Drop Refractor included

Options

Color Temperature (CCT)

(Blank)	4000K CCT, 70 CRI Min.
3K	3000K CCT, 70 CRI Min.
5K	5000K CCT, 70 CRI Min.

Paint

Blank	Gray (Standard)
BK	Black
WH	White
BZ	Bronze

Surge Protection

Blank	Standard 20kV/10kA SPD
MP	MOV Pack 10kV/5kA

Misc.

HS	House Side Shield
NL	NEMA Label
XL	Not CSA Certified
VR ³	Visual Comfort Optic

UMR-XX	8" Horizontal Arm for Round Pole, Painted to match Fixture
UMS-XX	8" Horizontal Arm for Square Pole, Painted to match Fixture
UMR-GALV	8" Horizontal Arm for Round Pole, Painted to match Fixture
UMS-GALV	8" Horizontal Arm for Square Pole, Painted to match Fixture
BAA	Buy America(n) Act Compliant

Controls

(Blank)	3 Pin NEMA Photocontrol Receptacle
NR ¹	No Photocontrol Receptacle
DM ²	0V-10V Dimmable Driver
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

Packages

(Blank)	Standard Pack
JP	Job Pack (54/pallet)

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
ATBS LOUVER KIT	Louver Kit for field installation
ATBSVR-XX	Visual Comfort Refractor and painted skirt for field installation

Notes

1. Not available with Install Packages.
2. Not available with AO option.
3. Not available with D3 or D5 option.
4. Not available with 347V and 480V supply voltage options.



Autobahn Series ATBS

Roadway & Security Lighting

PERFORMANCE PACKAGE

ATBS

Performance Package	Distribution	Input Watts	3K (3000K CCT, 70 CRI)					4K/5K (4000K/5000K CCT, 70 CRI)					LLD @ 25°C		
			Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	50k Hours	75k Hours	100k Hours
P10	R2	40	5,360	134	1	0	2	5,577	139	1	0	2	0.92	0.89	0.85
	R3		5,287	132	1	0	1	5,524	138	1	0	1			
	R5		5,576	139	3	0	1	5,758	144	3	0	1			
	D3		4,963	124	1	3	3	5,163	129	1	3	3			
	D5		5,372	134	2	3	3	5,590	140	2	3	3			
P20	R2	50	6,707	134	1	0	2	6,809	136	1	0	2	0.92	0.89	0.85
	R3		6,687	134	2	0	2	6,760	135	2	0	2			
	R5		6,926	139	3	0	1	7,108	142	3	0	1			
	D3		6,496	130	2	3	4	6,244	125	1	3	4			
	D5		7,032	141	3	4	4	7,317	146	3	4	4			
P30	R2	60	8,092	135	2	0	2	8,067	134	1	0	1	0.92	0.89	0.85
	R3		7,971	133	2	0	2	8,328	139	2	0	2			
	R5		8,470	141	3	0	2	8,760	146	3	0	2			
	D3		7,491	125	2	3	4	7,795	130	2	3	4			
	D5		8,110	135	3	4	4	8,438	141	3	4	4			
P40	R2	70	9,138	131	2	0	2	9,533	136	2	0	2	0.92	0.89	0.85
	R3		9,136	131	2	0	2	9,355	134	2	0	2			
	R5		9,868	141	3	0	2	9,710	139	3	0	2			
	D3		8,460	121	2	3	4	8,802	126	2	3	5			
	D5		9,158	131	3	4	5	9,529	136	3	4	5			
P50	R2	82	10,628	130	2	0	3	10,829	132	2	0	3	0.92	0.89	0.85
	R3		10,624	130	2	0	2	10,826	132	2	0	2			
	R5		11,450	140	4	0	2	11,181	136	4	0	2			
	D3		10,143	124	2	4	5	10,553	129	2	4	5			
	D5		10,651	130	3	4	5	11,082	135	3	4	5			
P60	R2	92	11,050	120	2	0	3	11,848	129	2	0	3	0.92	0.89	0.85
	R3		10,911	119	2	0	2	11,862	129	2	0	2			
	R5		12,199	133	4	0	2	12,756	139	4	0	2			
	D3		10,230	111	2	4	5	10,644	116	2	4	5			
	D5		11,074	120	3	4	5	11,523	125	3	4	5			

ATBS with VR

Performance Package	Distribution	Input Watts	3K (3000K CCT, 70 CRI)					4K/5K (4000K/5000K CCT, 70 CRI)					LLD @ 25°C		
			Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	50k Hours	75k Hours	100k Hours
P10	R2 with VR	40	4,450	111	1	0	1	4,561	114	1	0	1	0.92	0.89	0.85
	R3 with VR		4,273	107	1	0	1	4,605	115	1	0	1			
	R5 with VR		4,539	113	2	0	1	4,679	117	2	0	1			
P20	R2 with VR	50	5,491	110	1	0	1	5,550	111	1	0	1	0.92	0.89	0.85
	R3 with VR		5,379	108	1	0	1	5,582	112	2	0	1			
	R5 with VR		5,647	113	2	0	1	5,692	114	2	0	1			
P30	R2 with VR	60	6,479	108	2	0	1	6,530	109	2	0	1	0.92	0.89	0.85
	R3 with VR		6,400	107	2	0	1	6,564	109	2	0	1			
	R5 with VR		6,703	112	3	0	1	6,693	112	2	0	1			
P40	R2 with VR	70	7,307	104	2	0	1	7,561	108	2	0	1	0.92	0.89	0.85
	R3 with VR		7,347	105	2	0	1	7,638	109	2	0	1			
	R5 with VR		7,693	110	3	0	1	7,749	111	3	0	1			
P50	R2 with VR	82	8,552	104	2	0	2	8,711	106	2	0	2	0.92	0.89	0.85
	R3 with VR		8,494	104	2	0	1	8,814	107	2	0	1			
	R5 with VR		8,895	108	3	0	1	8,911	109	3	0	1			
P60	R2 with VR	92	8,989	98	2	0	2	9,815	107	2	0	2	0.92	0.89	0.85
	R3 with VR		8,899	97	2	0	1	9,857	107	2	0	2			
	R5 with VR		9,309	101	3	0	1	10,256	111	3	0	1			

Note: Individual fixture performance may vary. Specifications subject to change without notice.



Warranty Five-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at www.acuitybrands.com/support/warranty/terms-and-conditions
 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.

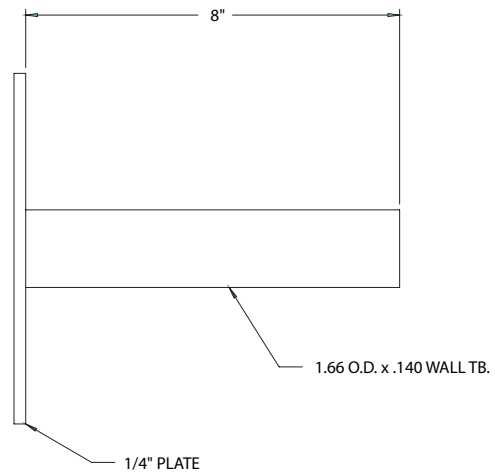
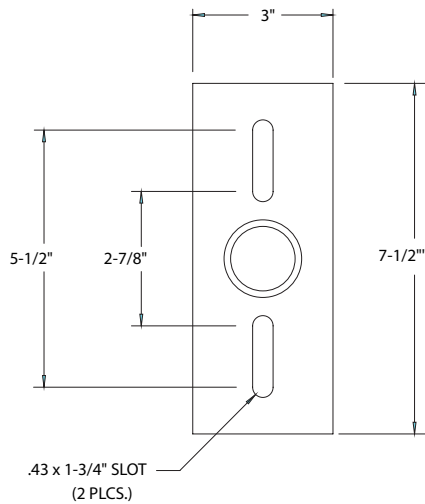
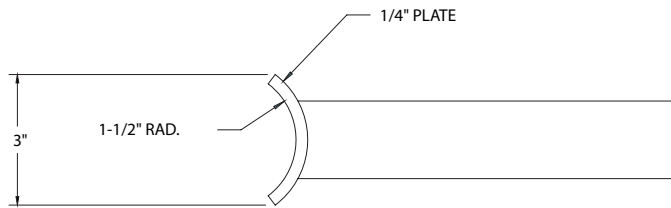
Please contact your sales representative for the latest product information.

Autobahn Series ATBS

Roadway & Security Lighting

UMR POLE ADAPTOR

RECOMMENDED FOR USE WITH POLES OF 4" DIAMETER OR SMALLER



UMS POLE ADAPTOR



AEL Headquarters, 3825 Columbus Road, Granville, OH 43023
www.americanelectriclighting.com
© 2014-2022 Acuity Brands Lighting, Inc. All Rights Reserved. Rev. 04/04/22 ATBS

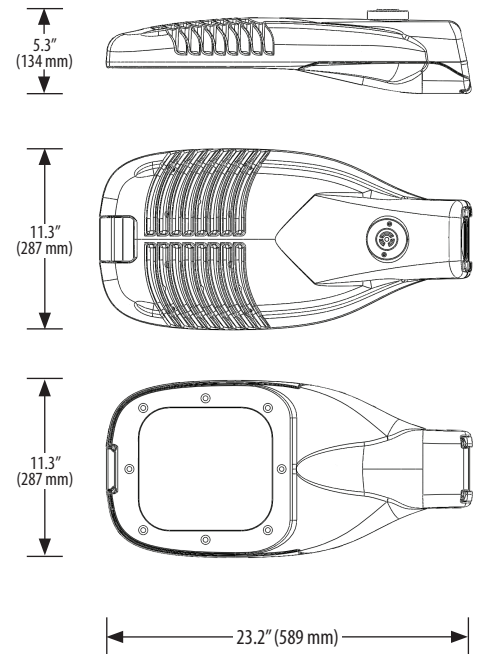
Warranty Five-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions
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.



Housing: Single piece, die-cast A360 aluminum
Operating Temperature: -40°C to +40°C (-40°F to +104°F)*
Mounting: 1.625" - 2.375" (42 - 60 mm) O.D. Tenons
Mounting Methods: Horizontal Entry or Post-Top Mount
Weight: 18 lbs (8.2 kg)
EPA Rating: <0.46 ft² (< 0.043 m²)
Lens Material: IK09 Rated Glass
Finish: Durable polyester powdercoat topcoat
Available Colors:

GREY (RAL 7035)
BRONZE (RAL 7022)
BLACK (RAL 9005)



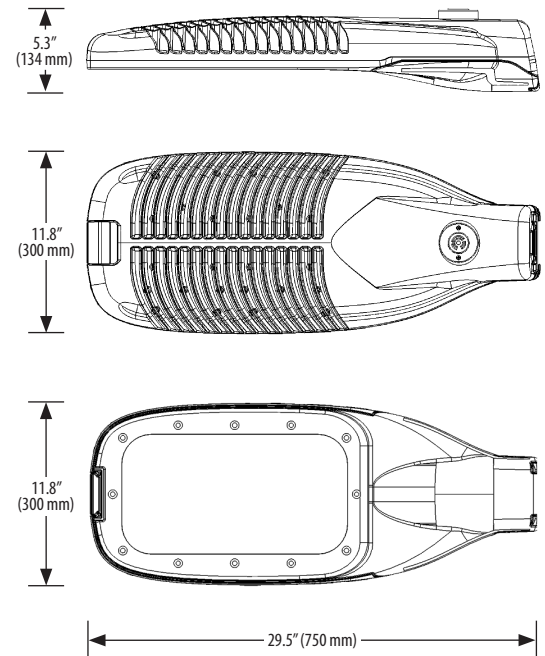
NOTE: If post-top version is specified, add 5.4" (137 mm) to overall length dimension.

ELECTRICAL	NXT-12S (12 LEDs)					NXT-24S (24 LEDs)					NXT-36S (36 LEDs)				
Drive Currents (mA)	350mA	450mA	525mA	600mA	700mA	350mA	450mA	525mA	600mA	700mA	350mA	450mA	525mA	600mA	700mA
Power Consumption* (W)	14 W	17 W	20 W	23 W	27 W	28 W	35 W	41 W	46 W	54 W	42 W	52 W	60 W	69 W	80 W
Input Voltage* (V)	120 - 240V (Standard), 277V (Optional), 347 - 480V (Optional)														
Surge Protection	Meets the requirements of ANSI C-High (10kV/10kA)														
Power Factor	> 0.90														
OPTICS & PERFORMANCE	NXT-12S (12 LEDs)					NXT-24S (24 LEDs)					NXT-36S (36 LEDs)				
Photometry (Distribution Types)	Type II, III, IV, V														
Color Temperature* (CCT)	4000K (Standard) 3000K & 5000K (Optional)														
Color Rendering Index* (CRI)	~70														
Drive Currents (mA)	350mA	450mA	525mA	600mA	700mA	350mA	450mA	525mA	600mA	700mA	350mA	450mA	525mA	600mA	700mA
Fixture Efficacy* (Lm/W)	111	118	108	112	107	115	116	112	109	106	117	114	112	109	107
Fixture Output* (Lm)	1,550	2,000	2,160	2,570	2,900	3,230	4,070	4,600	5,000	5,750	4,900	5,950	6,720	7,540	8,520
LED L70 (Hours)	> 100,000 hours (@ 350mA)														
PHOTOCELL & CONTROLS	NXT-12S (12 LEDs)					NXT-24S (24 LEDs)					NXT-36S (36 LEDs)				
Photocell Options	20-year life photocell available.														
Control & Monitoring	Dimming power supply (1-10V) is standard equipment. LRL offers a complete range of control and monitoring solutions.														

* NOTES: VALUES SHOWN ARE SUBJECT TO ±5% TOLERANCE. 347 - 480V MAXIMUM TEMPERATURE IS 45°C. COLOR TEMPERATURE SHOWN IS ±500K. BASED ON 4000K CCT AND TYPE 2ES DISTRIBUTION. ONLY PRODUCTS WITH A CCT OF 3000K (OR LESS) MEET INTERNATIONAL DARK SKY ASSOCIATION REQUIREMENTS. ILLUSTRATED ABOVE: NXT-S IN GREY (RAL 7035). † NOT ALL MODEL CONFIGURATIONS ARE DLC QUALIFIED - CONSULT FACTORY FOR DETAILS. ALL INFORMATION PROVIDED IS SUBJECT TO CHANGE WITHOUT NOTICE.



Housing: Single piece, die-cast A360 aluminum
Operating Temperature: -40°C to +40°C (-40°F to +104°F)*
Mounting: 1.625" - 2.375" (42 - 60 mm) O.D. Tenons
Mounting Methods: Horizontal Entry or Post-Top Mount
Weight: 26 lbs (11.8 kg)
EPA Rating: <0.9 ft² (< 0.084 m²)
Lens Material: IK09 Rated Glass
Finish: Durable polyester powdercoat topcoat
Available Colors:



NOTE: If post-top version is specified, add 5.4" (137 mm) to overall length dimension.



ELECTRICAL	NXT-48M (48 LEDs)					NXT-60M (60 LEDs)					NXT-72M (72 LEDs)				
Drive Currents (mA)	350mA	450mA	525mA	600mA	700mA	350mA	450mA	525mA	600mA	700mA	350mA	450mA	525mA	600mA	700mA
Power Consumption* (W)	53 W	68 W	80 W	92 W	108 W	65 W	84 W	99 W	113 W	133 W	78 W	100 W	117 W	135 W	158 W
Input Voltage* (V)	120 - 240V (Standard), 277V (Optional), 347 - 480V (Optional)														
Surge Protection	Meets the requirements of ANSI C-High (10kV/10kA)														
Power Factor	> 0.90														
OPTICS & PERFORMANCE	NXT-48M (48 LEDs)					NXT-60M (60 LEDs)					NXT-72M (72 LEDs)				
Photometry (Distribution Types)	Type II, III, IV, V														
Color Temperature* (CCT)	4000K (Standard) 3000K & 5000K (Optional)														
Color Rendering Index* (CRI)	~70														
Drive Currents (mA)	350mA	450mA	525mA	600mA	700mA	350mA	450mA	525mA	600mA	700mA	350mA	450mA	525mA	600mA	700mA
Fixture Efficacy* (Lm/W)	125	122	116	111	106	125	121	118	111	106	125	121	118	112	109
Fixture Output* (Lm)	6,660	8,280	9,250	10,170	11,420	8,130	10,190	11,720	12,520	14,090	9,750	12,080	13,750	15,160	17,160
LED L70 (Hours)	> 100,000 hours (@ 350mA)														
PHOTOCELL & CONTROLS	NXT-48M (48 LEDs)					NXT-60M (60 LEDs)					NXT-72M (72 LEDs)				
Photocell Options	20-year life photocell available.														
Control & Monitoring	Dimming power supply (1-10V) is standard equipment. LRL offers a complete range of control and monitoring solutions.														

* NOTES: VALUES SHOWN ARE SUBJECT TO ±5% TOLERANCE. 277V MAXIMUM TEMPERATURE IS 30°C. COLOR TEMPERATURE SHOWN IS ±500K. BASED ON 4000K CCT AND TYPE 2ES DISTRIBUTION. ONLY PRODUCTS WITH A CCT OF 3000K (OR LESS) MEET INTERNATIONAL DARK SKY ASSOCIATION REQUIREMENTS. ILLUSTRATED ABOVE: NXT-M IN GREY (RAL 7035). † NOT ALL MODEL CONFIGURATIONS ARE DLC QUALIFIED - CONSULT FACTORY FOR DETAILS. ALL INFORMATION PROVIDED IS SUBJECT TO CHANGE WITHOUT NOTICE.



Lumec RoadFocus LED Cobra head luminaires feature a sleek design that provides seamless replacement of existing HID luminaires. RoadFocus is available in three sizes, offers multiple lumen packages, and a complete array of optical distributions, making it an outstanding solution for all types of roadway applications. Includes Service Tag, innovative way to provide assistance throughout the life of the product.

Project: _____
 Location: _____
 Cat.No: _____
 Type: _____
 Lumens: _____ Qty: _____
 Notes: _____

Ordering guide

example: RFL-215W96LED4K-G2-R3M-UNV-DMG-RCD7-GY3

Series	LED module	CCT	Generation	Distribution	Voltage	Controls ⁴	Options	Finish
RFL			G2					
RFL RoadFocus large	145W64LED 135W80LED 180W80LED 270W80LED 215W96LED 85W100LED ¹⁴ 105W100LED ¹⁴ 165W100LED ¹⁴ 225W100LED ¹⁴ 305W100LED ¹⁴ 190W112LED 241W112LED 350W112LED 130W120LED ¹⁴ 200W120LED ¹⁴ 270W120LED ¹⁴ 155W140LED ¹⁴ 230W140LED ¹⁴ 310W140LED ¹⁴	4K 4000K 3K 3000K 2.7K ¹¹ 2700K	G2 Generation 2	Type 2 R2S Type II short (ASYM) R2M Type II Medium (ASYM) Type 3 R3S Type III short (ASYM) R3M Type III Medium (ASYM) Type 4 4 Type IV (ASYM) Type 5 5 Type V (SYMM)	UNV 120-277V HVV 347-480V	DALI ¹ Digitally addressable lighting interface DMG ⁵ 0-10V SRD ¹ Sensor ready driver, standard configuration SRD1 ¹ Sensor ready driver, alternate configuration	API Factory installed NEMA label, ANSI C136.15-2015 compliant FAWS ⁷ Field adjustable wattage selector CSS ^{2,15} Cul-de-Sac Shield FSS ^{2,15} Front Side Shield HS ^{2,15} House Side Shield LSS ^{2,15} Left Side Shield RSS ^{2,15} Right Side Shield NRC ⁸ No receptacle NYBC 4 - position terminal block PH8 ^{1,10} Twist-lock photoelectric cell, UNV (120-277VAC) PH8/347 ^{10,13} Twist-lock photoelectric cell (347VAC) PH8/480 ^{10,13} Twist-lock photoelectric cell (480VAC) PHXL ^{1,10} Twist-lock photoelectric cell, extended life, UNV (120-277VAC) PH9 ¹⁰ Shorting cap RCD ^{3,9} Receptacle for twist-lock photocell or shorting cap, 5-pin (optional) RCD7 ^{3,5} Receptacle for twist-lock photocell or shorting cap, 7-pin (standard) SP2 20kV / 10kA Surge protector TLRSR ⁶ SR receptacle BAC ¹⁶ Meets the requirements of the Buy American Act of 1933 (BAA)	BK Black BR Bronze GY3 Gray WH White

¹ Not available with HVU.

² Refer to Accessories section to confirm compatibility of shields with optical distribution.

³ Use of photoelectric cell or shorting cap is required to ensure proper illumination.

⁴ Select either DALI or DMG or SRD or SRD1 mandatory option.

⁵ Please note this integrated feature come standard with RoadFocus.

⁶ Only available with SRD or SRD1 Driver Options.

⁷ Only available with DMG Driver Options

⁸ Not available with PH8, PH8/347, PH8/480, PHXL, PH9, DALI, SRD or SRD1 Driver Options.

⁹ Not available with SRD Driver Options.

¹⁰ Either RCD or RCD7 must be selected for this option.

¹¹ Extended lead-time may apply. Consult factory.

¹² FAWS table accuracy +/- 15% on these models.

¹³ Not available with UNV.

¹⁴ Only available with R2M or R3M distributions.

¹⁵ 1 shield provided per LED light engine.

¹⁶ Failure to properly select the "BAC" suffix could result in you receiving product that is not BAA compliant product with no recourse for an RMA or refund. This BAC designation hereunder does not address (i) the applicability of, or availability of a waiver under, the Trade Agreements Act, or (ii) the "Buy America" domestic content requirements imposed on states, localities, and other non-federal entities as a condition of receiving funds administered by the Department of Transportation or other federal agencies.

¹⁷ Consult Signify to confirm whether specific accessories are BAA-compliant.

Accessories¹⁷ (must be ordered as separate line items - quickly and easily installed in the field)

Interact City Connector node (Contact the factory for additional support when connected lighting or additional services are desired.)

Shielding accessories

Description	Luminaire Option Code	Accessory Ordering Code		Shield vs Distribution Compatibility					
		12/16 LED version*	20 LED version*	R2M	R2S	R3M	R3S	4	5
Cul-de-sac shield	CSS	ACC-LG66V16LED-CSS	ACC-LG66V20LED-CSS	Yes	Yes	Yes	Yes	Yes	Yes
Front side shield	FSS	ACC-LG66V16LED-FSS	ACC-LG66V20LED-FSS	Yes	Yes	Yes	Yes	No	Yes
House side shield	HS	ACC-LG66V16LED-HS	ACC-LG66V20LED-HS	Yes	Yes	Yes	Yes	Yes	No
Left side shield	LSS	ACC-LG66V16LED-LSS	ACC-LG66V20LED-LSS	Yes	Yes	Yes	Yes	Yes	Yes
Right side shield	RSS	ACC-LG66V16LED-RSS	ACC-LG66V20LED-RSS	Yes	Yes	Yes	Yes	Yes	Yes

*Refer to Wattage table to confirm light engine configuration. Example, if configuration is 2x16LED, 2 of the desired shields must be ordered per luminaire.



RFL RoadFocus

LED Cobra head (large)

Predicted Lumen Depreciation Data

Predicted performance derived from LED manufacturer's data and engineering design estimates, based on IESNA LM-80 methodology. Actual experience may vary due to field application conditions. L70 is the predicted time when LED performance depreciates to 70% of initial lumen output. Calculated per IESNA TM21-11 Addendum B. Published L70 hours limited to 6 times actual LED test hours.

Ambient Temperature °C	L70 per TM-21	Lumen Maintenance % at 60,000 hrs
25°C	>60,000 hours	>97.6%

LED Wattage values

Ordering Code	Total LEDs	Light Engine Configuration	Average System Watts ¹⁶	Wattage label ¹⁷
RFL-145W64LED	64	4x16LED	137	140
RFL-135W80LED	80	5x16LED	136	140
RFL-180W80LED	80	5x16LED	174	170
RFL-270W80LED	80	5x16LED	268	270
RFL-215W96LED	96	6x16LED	207	210
RFL-85W100LED	100	5x20LED	88	90
RFL-105W100LED	100	5x20LED	106	110
RFL-165W100LED	100	5x20LED	165	170
RFL-225W100LED	100	5x20LED	224	220
RFL-305W100LED	100	5x20LED	306	310

Ordering Code	Total LEDs	Light Engine Configuration	Average System Watts ¹⁶	Wattage label ¹⁷
RFL-190W112LED	112	7x16LED	188	190
RFL-241W112LED	112	7x16LED	243	240
RFL-350W112LED ¹⁸	112	7x16LED	340	340
RFL-130W120LED	120	6x20LED	133	130
RFL-200W120LED	120	6x20LED	196	200
RFL-270W120LED	120	6x20LED	269	270
RFL-155W140LED	140	7x20LED	154	150
RFL-230W140LED	140	7x20LED	229	230
RFL-310W140LED	140	7x20LED	311	310

16. Typical values, rounded.

17. As per ANSI C136.15-2015. Consult factory for other labeling needs.

18. Rated for +40°C / +104°F.

4000K LED Lumen values

Ordering Code	Color Temp.	Type R2M			Type R2S			Type R3M			Type R3S			Type 4			Type 5		
		Lumen Out-put	Effi-cacy (LPW)	BUG Rating	Lumen Out-put	Effi-cacy (LPW)	BUG Rating	Lumen Out-put	Effi-cacy (LPW)	BUG Rating	Lumen Out-put	Effi-cacy (LPW)	BUG Rating	Lumen Out-put	Effi-cacy (LPW)	BUG Rating	Lumen Out-put	Effi-cacy (LPW)	BUG Rating
RFL-145W64LED	4000	19,162	140	B3-U0-G3	19,841	145	B3-U0-G2	19,102	139	B3-U0-G2	19,358	141	B2-U0-G3	19,012	139	B2-U0-G3	19,777	144	B4-U0-G2
RFL-135W80LED	4000	18,819	138	B3-U0-G3	19,486	143	B3-U0-G2	18,761	137	B3-U0-G2	19,012	139	B2-U0-G3	18,673	137	B2-U0-G3	19,423	142	B4-U0-G2
RFL-180W80LED	4000	23,952	138	B3-U0-G3	24,800	143	B3-U0-G2	23,877	137	B3-U0-G3	24,197	139	B3-U0-G3	23,765	137	B3-U0-G4	24,721	142	B5-U0-G3
RFL-270W80LED	4000	32,506	121	B3-U0-G3	33,658	126	B4-U0-G3	32,405	121	B3-U0-G3	32,839	122	B3-U0-G4	32,254	120	B3-U0-G4	33,549	125	B5-U0-G3
RFL-215W96LED	4000	28,742	139	B3-U0-G3	29,760	144	B3-U0-G2	28,653	138	B3-U0-G3	29,037	140	B3-U0-G4	28,519	138	B3-U0-G4	29,664	143	B5-U0-G3
RFL-85W100LED	4000	13,504	154	B3-U0-G3	N/A	N/A	N/A	13,576	155	B3-U0-G2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFL-105W100LED	4000	16,168	153	B3-U0-G3	N/A	N/A	N/A	16,255	153	B3-U0-G3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFL-165W100LED	4000	22,561	137	B3-U0-G3	N/A	N/A	N/A	22,683	137	B3-U0-G3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFL-225W100LED	4000	28,600	128	B4-U0-G4	N/A	N/A	N/A	28,753	128	B4-U0-G4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFL-305W100LED	4000	37,480	122	B4-U0-G4	N/A	N/A	N/A	37,681	123	B4-U0-G4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFL-190W112LED	4000	26,347	140	B3-U0-G3	27,280	145	B3-U0-G2	26,265	140	B3-U0-G3	26,617	142	B3-U0-G3	26,143	139	B3-U0-G4	27,192	145	B5-U0-G3
RFL-241W112LED	4000	32,955	136	B4-U0-G3	34,122	140	B4-U0-G3	32,853	135	B3-U0-G3	33,293	137	B3-U0-G4	32,699	135	B3-U0-G4	34,012	140	B5-U0-G3
RFL-350W112LED	4000	42,515	125	B4-U0-G4	44,021	130	B4-U0-G3	42,382	125	B4-U0-G4	42,950	127	B3-U0-G4	42,184	124	B3-U0-G5	43,879	129	B5-U0-G4
RFL-130W120LED	4000	19,401	146	B3-U0-G3	N/A	N/A	N/A	19,505	147	B3-U0-G3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFL-200W120LED	4000	27,073	138	B4-U0-G3	N/A	N/A	N/A	27,219	139	B3-U0-G3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFL-270W120LED	4000	34,319	128	B4-U0-G4	N/A	N/A	N/A	34,504	128	B4-U0-G4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFL-155W140LED	4000	22,635	147	B3-U0-G3	N/A	N/A	N/A	22,756	148	B3-U0-G3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFL-230W140LED	4000	31,586	138	B4-U0-G4	N/A	N/A	N/A	31,756	139	B4-U0-G4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFL-310W140LED	4000	40,039	129	B4-U0-G4	N/A	N/A	N/A	40,255	129	B4-U0-G4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Actual performance may vary due to installation variables including optics, mounting/ceiling height, dirt depreciation, light loss factor, etc.; highly recommended to confirm performance with a layout - contact Applications at signify.com/outdoorluminaires. Consult DLC QPL to confirm your specific fixture selection is DLC approved.

Note: Some data may be scaled based on tests of similar but not identical luminaires.

RFL RoadFocus

LED Cobra head (large)

3000K LED Lumen values

Ordering Code	Color Temp.	Type R2M			Type R2S			Type R3M			Type R3S			Type 4			Type 5		
		Lumen Out-put	Efficiency (LPW)	BUG Rating	Lumen Out-put	Efficiency (LPW)	BUG Rating	Lumen Out-put	Efficiency (LPW)	BUG Rating	Lumen Out-put	Efficiency (LPW)	BUG Rating	Lumen Out-put	Efficiency (LPW)	BUG Rating	Lumen Out-put	Efficiency (LPW)	BUG Rating
RFL-145W64LED	3000	17,976	131	B3-U0-G3	18,613	136	B3-U0-G2	17,920	131	B3-U0-G2	18,160	133	B2-U0-G3	17,836	130	B2-U0-G3	18,553	135	B4-U0-G2
RFL-135W80LED	3000	17,655	129	B3-U0-G3	18,280	134	B3-U0-G2	17,600	129	B3-U0-G2	17,836	131	B2-U0-G3	17,518	128	B2-U0-G3	18,221	134	B4-U0-G2
RFL-180W80LED	3000	22,470	129	B3-U0-G3	23,266	134	B3-U0-G2	22,400	129	B3-U0-G3	22,700	130	B3-U0-G3	22,295	128	B3-U0-G4	23,191	133	B5-U0-G3
RFL-270W80LED	3000	30,495	114	B3-U0-G3	31,575	118	B4-U0-G3	30,400	113	B3-U0-G3	30,807	115	B3-U0-G4	30,258	113	B3-U0-G4	31,473	117	B5-U0-G3
RFL-215W96LED	3000	26,964	130	B3-U0-G3	27,919	135	B3-U0-G2	26,880	130	B3-U0-G3	27,240	132	B3-U0-G4	26,754	129	B3-U0-G4	27,829	134	B5-U0-G3
RFL-85W100LED	3000	12,839	147	B3-U0-G3	N/A	N/A	N/A	12,908	147	B3-U0-G2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFL-105W100LED	3000	15,372	145	B3-U0-G3	N/A	N/A	N/A	15,455	146	B3-U0-G3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFL-165W100LED	3000	21,451	130	B3-U0-G3	N/A	N/A	N/A	21,566	131	B3-U0-G3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFL-225W100LED	3000	27,192	121	B4-U0-G3	N/A	N/A	N/A	27,338	122	B4-U0-G4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFL-305W100LED	3000	35,636	116	B4-U0-G4	N/A	N/A	N/A	35,828	117	B4-U0-G4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFL-190W112LED	3000	24,717	132	B3-U0-G3	25,592	136	B3-U0-G2	24,640	131	B3-U0-G3	24,970	133	B3-U0-G3	24,525	131	B3-U0-G4	25,510	136	B5-U0-G3
RFL-241W112LED	3000	30,916	127	B4-U0-G3	32,011	132	B4-U0-G3	30,820	127	B3-U0-G3	31,233	129	B3-U0-G4	30,676	126	B3-U0-G4	31,908	131	B5-U0-G3
RFL-350W112LED	3000	39,884	117	B4-U0-G4	41,297	122	B4-U0-G3	39,760	117	B4-U0-G4	40,293	119	B3-U0-G4	39,574	117	B3-U0-G5	41,164	121	B5-U0-G4
RFL-130W120LED	3000	18,446	139	B3-U0-G3	N/A	N/A	N/A	18,545	139	B3-U0-G3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFL-200W120LED	3000	25,741	131	B3-U0-G3	N/A	N/A	N/A	25,880	132	B3-U0-G3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFL-270W120LED	3000	32,631	121	B4-U0-G4	N/A	N/A	N/A	32,807	122	B4-U0-G4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFL-155W140LED	3000	21,521	140	B3-U0-G3	N/A	N/A	N/A	21,637	141	B3-U0-G3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFL-230W140LED	3000	30,032	131	B4-U0-G3	N/A	N/A	N/A	30,194	132	B4-U0-G4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFL-310W140LED	3000	38,069	122	B4-U0-G4	N/A	N/A	N/A	38,274	123	B4-U0-G4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

2700K LED Lumen values

Ordering Code	Color Temp.	Type R2M			Type R2S			Type R3M			Type R3S			Type 4			Type 5		
		Lumen Out-put	Efficiency (LPW)	BUG Rating	Lumen Out-put	Efficiency (LPW)	BUG Rating	Lumen Out-put	Efficiency (LPW)	BUG Rating	Lumen Out-put	Efficiency (LPW)	BUG Rating	Lumen Out-put	Efficiency (LPW)	BUG Rating	Lumen Out-put	Efficiency (LPW)	BUG Rating
RFL-145W64LED	2700	16,484	120	B3-U0-G3	17,068	125	B3-U0-G2	16,433	120	B3-U0-G2	16,653	122	B2-U0-G3	16,356	119	B2-U0-G3	17,013	124	B4-U0-G2
RFL-135W80LED	2700	16,190	119	B3-U0-G3	16,763	123	B3-U0-G2	16,140	118	B3-U0-G2	16,356	120	B2-U0-G3	16,064	118	B2-U0-G3	16,709	122	B4-U0-G2
RFL-180W80LED	2700	20,605	118	B3-U0-G3	21,335	123	B3-U0-G2	20,541	118	B3-U0-G3	20,816	120	B3-U0-G3	20,445	118	B3-U0-G4	21,267	122	B5-U0-G3
RFL-270W80LED	2700	27,965	104	B3-U0-G3	28,955	108	B4-U0-G3	27,877	104	B3-U0-G3	28,251	105	B3-U0-G4	27,747	103	B3-U0-G4	28,861	108	B5-U0-G3
RFL-215W96LED	2700	24,727	119	B3-U0-G3	25,602	124	B3-U0-G2	24,649	119	B3-U0-G3	24,980	121	B3-U0-G4	24,534	119	B3-U0-G4	25,520	123	B5-U0-G3
RFL-85W100LED	2700	11,731	134	B3-U0-G2	N/A	N/A	N/A	11,794	135	B2-U0-G2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFL-105W100LED	2700	14,046	133	B3-U0-G3	N/A	N/A	N/A	14,122	133	B3-U0-G2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFL-165W100LED	2700	19,600	119	B3-U0-G3	N/A	N/A	N/A	19,705	119	B3-U0-G3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFL-225W100LED	2700	24,846	111	B3-U0-G3	N/A	N/A	N/A	24,980	112	B3-U0-G3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFL-305W100LED	2700	32,561	106	B4-U0-G4	N/A	N/A	N/A	32,736	107	B4-U0-G4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFL-190W112LED	2700	22,666	121	B3-U0-G3	23,468	125	B3-U0-G2	22,595	120	B3-U0-G3	22,898	122	B3-U0-G3	22,490	120	B3-U0-G4	23,393	125	B5-U0-G3
RFL-241W112LED	2700	28,351	117	B4-U0-G3	29,355	121	B4-U0-G3	28,263	116	B3-U0-G3	28,641	118	B3-U0-G4	28,130	116	B3-U0-G4	29,260	120	B5-U0-G3
RFL-350W112LED	2700	36,574	108	B4-U0-G4	37,870	112	B4-U0-G3	36,461	107	B4-U0-G4	36,949	109	B3-U0-G4	36,290	107	B3-U0-G5	37,748	111	B5-U0-G4
RFL-130W120LED	2700	16,855	127	B3-U0-G3	N/A	N/A	N/A	16,946	127	B3-U0-G3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFL-200W120LED	2700	23,520	120	B3-U0-G3	N/A	N/A	N/A	23,647	121	B3-U0-G3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFL-270W120LED	2700	29,815	111	B4-U0-G4	N/A	N/A	N/A	29,975	111	B4-U0-G4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFL-155W140LED	2700	19,664	128	B3-U0-G3	N/A	N/A	N/A	19,770	128	B3-U0-G3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFL-230W140LED	2700	27,440	120	B4-U0-G3	N/A	N/A	N/A	27,588	120	B3-U0-G3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFL-310W140LED	2700	34,784	112	B4-U0-G4	N/A	N/A	N/A	34,971	112	B4-U0-G4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Actual performance may vary due to installation variables including optics, mounting/ceiling height, dirt depreciation, light loss factor, etc.; highly recommended to confirm performance with a layout - contact Applications at signify.com/outdoorluminaires. Consult DLC QPL to confirm your specific fixture selection is DLC approved.

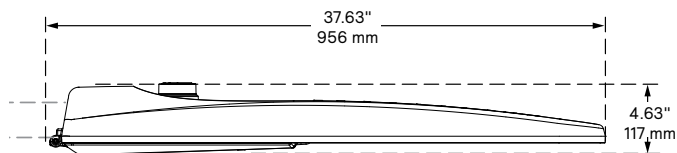
Note: Some data may be scaled based on tests of similar but not identical luminaires.

RFL RoadFocus

LED Cobra head (large)

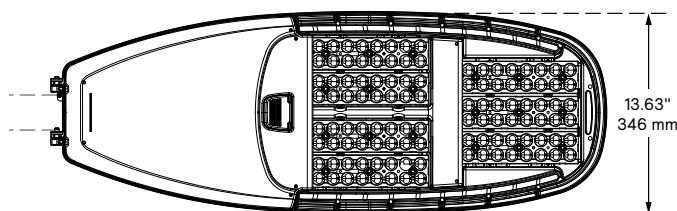
Dimensions

Side View



Weight: 27.3 Lbs
EPA: 0.92 sq. ft.

Bottom View



Specifications

Housing

Made of a low copper die cast Aluminum alloy (A360), 0.100" (2.5mm) minimum thickness. Fits on a 1.66" (42mm) O.D. (1.25" NPS), 1.9" (48mm) O.D. (1.5" NPS) or 2 3/8" (60mm) O.D. (2" NPS) by 5 1/2" (140mm) minimum long tenon. Comes with 2 zinc plated clamps fixed by 4 zinc plated hexagonal bolts 3/8 16 UNC for ease of installation. Provides an easy step adjustment of +/- 5° tilt in 2.5° increments. Includes integral bubble level standard (always included). A quick release, tool less entry, single latch, hinged, removable door opens downward to provide access to electronic components and to a terminal block. Door is secured to prevent accidental dropping or disengagement. A clearance of 13" (330mm) at the rear is required in order to remove the door. Complete with a bird guard protecting against birds and similar intruders and an ANSI label as per C136.15-2015 to identify wattage and source (both included in box). Housing (including electrical compartment) rated IP54 per ANSI C136.37.

Light Engine

Composed of 4 main components: LED Module / Optical System / Heat Sink / Driver.

Electrical components are RoHS compliant, IP66 sealed light engine LEDs tested by ISO 17025-2005 accredited lab in accordance with IESNA LM-80 guidelines in compliance with EPA ENERGY STAR, extrapolations in accordance with IESNA TM-21. Metal core board ensures greater heat transfer and longer lifespan.

LED Module: Composed of high-performance white LEDs. Color temperature as per ANSI/NEMA bin 2700 Kelvin nominal (2725 ±145K), 3000 Kelvin nominal (3045K +/- 175K) or 4000 Kelvin nominal (3985K +/- 275K), CRI 70 Min. 75 Typical. Other CCT/CRI also available, consult factory.

Optical System: Composed of high performance UV stabilized optical grade polymer refractor lenses to achieve desired distribution optimized to get maximum spacing, target lumens and a superior lighting uniformity. System is rated IP66. Performance shall be tested per LM-63, LM-79 and TM-15 (IESNA) certifying its photometric performance. 0% uplight and U0 per IESNA TM-15.

Heat Sink: Built in the housing, designed to ensure high efficacy and superior cooling by natural vertical convection air flow pattern always close to LEDs and driver optimising their efficiency and life. Product does not use any cooling device with moving parts (only passive cooling). Wide openings enable natural cleaning and removal of dirt and debris. Entire luminaire is rated for operation in ambient temperature of -40°C / -40°F up to +50°C / +122°F unless otherwise specified, refer to LED Wattages Values Table.

Driver: High power factor of 90% min. Electronic driver, operating range 50/60 Hz. Auto adjusting universal voltage input from 120 to 277 or 347 to 480 VAC rated for both application line to line or line to neutral, Class I, THD of 20% max. 1 driver (64 LED); 2 drivers (all others).

DMG: Dimming compatible 0-10 volts. The current supplying the LEDs will be reduced by the driver if the driver experiences internal overheating as a protection to the LEDs and the electrical components. Output is protected from short circuits, voltage overload and current overload. Automatic recovery after correction. Standard built in driver surge protection of 2.5kV (min). Integrated Features

RCD7*: Receptacle with 7 pins enabling dimming and additional functionality (to be determined), can be used with a twist lock Interact City node or photoelectric cell or a shorting cap.

SP1: Surge protection device tested in accordance with ANSI/IEEE C62.45 per ANSI/IEEE C62.41.2 Scenario I Category C High Exposure 10kV/10kA waveforms for Line-Ground, Line-Neutral and Neutral-Ground, and in accordance with DOE MSSLC Model Specification for LED Roadway Luminaires Appendix D Electrical Immunity High test level 10kV/10kA.

Please note that these integrated features always come with RoadFocus luminaire.

* Use of photoelectric cell or shorting cap is required to ensure proper illumination.

Driver and Luminaire Options

DALI*: Pre-set driver compatible with the DALI control system.

SRD: Sensor Ready Driver including SR communication (used for dimming and other functionalities), 24V auxiliary supply and a logical signal input (LSI) connected to the top NEMA twist lock receptacle and bottom TLRSR receptacle, if this option included/ chosen. This configuration is compatible with Interact City controllers.

SRD1: Sensor Ready Driver including SR communication (used for dimming and other functionalities) but with 24V auxiliary supply and a logical signal input (LSI) not connected to the top NEMA twist lock. If TLRSR receptacle option included, standard SR communication, 24V auxiliary supply and LSI are connected to the TLRSR receptacle.

FAWS: Field Adjustable Wattage Selector, pre-set to the highest position, can be easily switched in the field to the required position. This reduces total luminaire wattage consumption and reduces the light level - see the FAWS multiplier chart for more details.

Note: It is not recommended to use FAWS with other dimming or controls; if you do, set the switch to position 10 (maximum output) to enable the other dimming or controls. Switching FAWS to any position other than 10 will disable the other dimming or controls.

SP2: 20kV / 10kA surge protection device that provides extra protection beyond the SP1 10kV/10kA level.

NRC: No receptacle. Fixture is shipped with a cap instead of a receptacle.

NYBC: 4 - position terminal block.

RCD*: Receptacle with 5 pins enabling dimming, can be used with a twist lock Interact City or photoelectric cell or a shorting cap.

TLRSR: SR Sensor connector, installed in fixture door. Shipped with protective cover.

PH8: Twist-lock photoelectric cell, UNV (120-277VAC).

PH8/347: Twist-lock photoelectric cell, HVU (347VAC).

PH8/480: Twist-lock photoelectric cell, HVU (480VAC).

PHXL: Twist-lock photoelectric cell, extended life, UNV (120-277VAC).

Field Adjustable Wattage (FAWS) Multiplier Chart

FAWS Position	Typical Delivered Lumens Multiplier	Typical System wattage
1	0.31	0.28
2	0.53	0.50
3	0.62	0.58
4	0.70	0.67
5	0.78	0.75
6	0.83	0.81
7	0.89	0.87
8	0.92	0.91
9	0.96	0.95
10	1.00	1.00

Note: Typical value accuracy +/- 5%

RFL RoadFocus

LED Cobra head (large)

Specifications (continued)

PH9: Shorting cap.

API: Factory Installed NEMA label, ANSI C136.15-2015 compliant. Consult factory for other labeling needs.

* Use of photoelectric cell or shorting cap is required to ensure proper illumination.

Factory Installed Shield Options

(One per Light Engine)

CSS: Cul-de-Sac Shield. Shields light output on the left and right side of fixture.

FSS: Front Side Shield. Shields light output on the front side of fixture.

HS: House Side Shield. Shields light output to the back side of fixture.

LSS: Left Side Shield. Shields light output on the left side of fixture.

RSS: Right Side Shield. Shields light output on the right side of fixture.

Luminaire Useful Life

Refer to IES files for energy consumption and delivered lumens for each option. Based on ISTMT in situ thermal testing in accordance with UL1598 and UL8750, System Reliability Tool, Advance data and LED manufacturer LM-80/TM-21 data, expected to reach 100,000 + hours with >L70 lumen maintenance @ 25°C. Luminaire Useful Life accounts for LED lumen maintenance AND all of these additional factors including: LED life, driver life, PCB substrate, solder joints, on/off cycles, burning hours and corrosion.

Wiring

The connection of the luminaire is done using a terminal block connector 600V, 85A for use with #2 14 AWG. wires from the primary circuit, located inside the housing. Due to the inrush current that occurs with electronic drivers, recommend using a 10Amp time-delay fuse to avoid unwanted fuse blowing (false tripping) that can occur with normal or fast acting fuses.

Hardware

All exposed screws shall be complete with Ceramic primer seal to reduce seizing of the parts, also offers a high resistance to corrosion. All seals and sealing devices are made and/or lined with EPDM and/or silicone and/or rubber.

Finish

Color in accordance with the AAMA 2603 standard. Application of polyester powder coat paint (4 mils/100 microns) with ± 1 mils/24 microns of tolerance. The Thermosetting resins provides a discoloration resistant finish in accordance with the ASTM D2244 standard, as well as luster retention in keeping with the ASTM D523 standard and humidity proof in accordance with the ASTM D2247 standard.

The surface treatment achieves a minimum of 5000 hours for salt spray resistant finish in accordance with testing performed and per ASTM B117 standard.

LED products manufacturing standard

The electronic components sensitive to electrostatic discharge (ESD) such as light emitting diodes (LEDs) are assembled in compliance with IEC61340-5-1 and ANSI/ESD S20.20 standards so as to eliminate ESD events that could decrease the useful life of the product.

Vibration Resistance

The RFL meets the ANSI C136.31-2018, American National Standard for Roadway Luminaire Vibration specifications for Bridge/overpass applications. (Tested for 3G over 100,000 cycles by independent lab)

Certifications and Compliance

cULus Listed for Canada and USA. Luminaire meets DOE and MSSLC Model Specification for LED Roadway Luminaires. Most versions of RoadFocus LED Cobrahead luminaires are DesignLights Consortium qualified, consult DLC QPL to confirm your specific fixture selection is approved. CCTs 3000K and warmer are Dark Sky Approved. Luminaire complies with or exceeds the following ANSI C136 standards: .2, .3, .10, .14, .15, .22, .25, .31, .37, .41.

Service Tag

Each individual luminaire is uniquely identifiable, thanks to the Service tag application. With a simple scan of a QR code, placed on the inside of the mast door, you gain instant access to the luminaire configuration, making installation and maintenance operations faster and easier, no matter what stage of the luminaire's lifetime. Just download the APP and register your product right away.

For more details visit: philips.com/servicetag

Limited Warranty

10-year limited warranty.

See signify.com/warranties for details and restrictions.

Brackets/Arms

For brackets / arms available with this luminaire, see Lumec 3D for details.





LumeC RoadFocus LED cobra head luminaires feature a sleek design that provides seamless replacement of existing HID luminaires. RoadFocus is available in three sizes, offers multiple lumen packages, and a complete array of optical distributions, making it an outstanding solution for all types of roadway applications. Includes Service Tag, innovative way to provide assistance throughout the life of the product.

Project: _____
 Location: _____
 Cat.No: _____
 Type: _____
 Lumens: _____ Qty: _____
 Notes: _____

Ordering guide

example: RFM-108W48LED3K-G2-R2M-UNV-DMG-HS-PH8-RCD7-GY3

Series	LED module	CCT	Generation	Distribution	Voltage	Options		Finish
						Controls ⁴	Options	
RFM			G2					
RFM RoadFocus medium	130W32LED ⁷ 135W40LED ¹⁴ 55W48LED ¹² 80W48LED 108W48LED 160W48LED 50W60LED ¹⁴ 75W60LED ¹⁴ 100W60LED ¹⁴ 120W60LED ¹⁴ 150W60LED ¹⁴ 170W60LED ¹⁴	4K 4000K 3K 3000K 2.7K ¹¹ 2700K	G2 Generation 2	Type 2 R2S Type II short (ASYM) R2M Type II Medium (ASYM) Type 3 R3S Type III short (ASYM) R3M Type III Medium (ASYM) Type 4 4 Type IV (ASYM) Type 5 5 Type V (SYMM)	UNV 120-277V HVU 347-480V	DALI ¹ Digitally addressable lighting interface DMG ⁵ 0-10V SRD ¹ Sensor ready driver, standard configuration SRD1 ¹ Sensor ready driver, alternate configuration	2C API Two clamp with 4 bolts Factory installed NEMA label, ANSI C136.15-2015 compliant FAWS ⁷ Field adjustable wattage selector CSS ^{2,5} Cul-de-Sac Shield FSS ^{2,15} Front Side Shield HS ^{2,15} House Side Shield LSS ^{2,15} Left Side Shield RSS ^{2,15} Right Side Shield NRC ⁶ No receptacle NYBC 4-position terminal block PH8 ^{1,10} Twist-lock photoelectric cell, UNV (120-277VAC) PH8/347 ^{10,13} Twist-lock photoelectric cell (347VAC) PH8/480 ^{10,13} Twist-lock photoelectric cell (480VAC) PHXL ^{1,10} Twist-lock photoelectric cell, extended life, UNV (120-277VAC) PH9 ¹⁰ Shorting cap RCD ^{3,9} Tool less receptacle for twist-lock photocell or shorting cap, 5-pin (optional) RCD7 ^{3,5} Tool less receptacle for twist-lock photocell or shorting cap, 7-pin (standard) SP2 20kV / 10kA Surge protector TLRSR ⁶ SR receptacle BAC ¹⁶ Meets the requirements of the Buy American Act of 1933 (BAA)	BK Black BR Bronze GY3 Gray WH White

¹ Not available with HVU.
² Refer to Accessories section to confirm compatibility of shields with optical distribution
³ Use of photoelectric cell or shorting cap is required to ensure proper illumination.
⁴ Select either **DALI** or **DMG** or **SRD** or **SRD1** mandatory option.
⁵ Please note this integrated feature come standard with RoadFocus.
⁶ Only available with **SRD** or **SRD1** Driver Options.
⁷ Only available with **DMG** Driver Options
⁸ Not available with **PH8, PH8/347, PH8/480, PHXL, PH9, DALI, SRD** or **SRD1** Driver Options.
⁹ Not available with **SRD** Driver Options.
¹⁰ Either **RCD** or **RCD7** must be selected for this option.
¹¹ Extended lead-time may apply. Consult factory.
¹² **FAWS** table accuracy +/- 15% on these models.
¹³ Not available with **UNV**.
¹⁴ Only available with R2M or R3M distributions.
¹⁵ 1 shield provided per LED light engine.
¹⁶ Failure to properly select the "BAC" suffix could result in you receiving product that is not BAA compliant product with no recourse for an RMA or refund. This BAC designation hereunder does not address (i) the applicability of, or availability of a waiver under, the Trade Agreements Act, or (ii) the "Buy America" domestic content requirements imposed on states, localities, and other non-federal entities as a condition of receiving funds administered by the Department of Transportation or other federal agencies.
¹⁷ Consult Signify to confirm whether specific accessories are BAA-compliant.

Accessories¹⁷ (must be ordered as separate line item - quickly and easily installed in the field)

Interact City connector node (Contact the factory for additional support when connected lighting or additional services are desired.)

Shielding accessories

Description	Luminaire Option Code	Accessory Ordering Code		Shield vs Distribution Compatibility					
		12/16 LED version*	20 LED version*	R2M	R2S	R3M	R3S	4	5
Cul-de-sac shield	CSS	ACC-LG66V16LED-CSS	ACC-LG66V20LED-CSS	Yes	Yes	Yes	Yes	Yes	Yes
Front side shield	FSS	ACC-LG66V16LED-FSS	ACC-LG66V20LED-FSS	Yes	Yes	Yes	Yes	No	Yes
House side shield	HS	ACC-LG66V16LED-HS	ACC-LG66V20LED-HS	Yes	Yes	Yes	Yes	Yes	No
Left side shield	LSS	ACC-LG66V16LED-LSS	ACC-LG66V20LED-LSS	Yes	Yes	Yes	Yes	Yes	Yes
Right side shield	RSS	ACC-LG66V16LED-RSS	ACC-LG66V20LED-RSS	Yes	Yes	Yes	Yes	Yes	Yes

*Refer to Wattage table to confirm light engine configuration. Example, if configuration is 2x16LED, 2 of the desired shields must be ordered per luminaire.



RFM RoadFocus

LED Cobra head (medium)

Predicted Lumen Depreciation Data

Predicted performance derived from LED manufacturer's data and engineering design estimates, based on IESNA LM-80 methodology. Actual experience may vary due to field application conditions. L₇₀ is the predicted time when LED performance depreciates to 70% of initial lumen output. Calculated per IESNA TM21-11 Addendum B. Published L₇₀ hours limited to 6 times actual LED test hours.

Ambient Temperature °C	L70 per TM-21	Lumen Maintenance % at 60,000 hrs
25°C	>60,000 hours	>97.6%

LED Wattage values

Ordering Code	Total LEDs	Light Engine Configuration	Average System Watts ¹⁶	Wattage label ¹⁷
RFM-130W32LED	32	2x16LED	129	130
RFM-135W40LED	40	2x12LED+1x16LED	135	140
RFM-55W48LED	48	3x16LED	55	60
RFM-80W48LED	48	3x16LED	81	80
RFM-108W48LED	48	3x16LED	106	110
RFM-160W48LED ¹⁸	48	3x16LED	161	160
RFM-50W60LED	60	3x20LED	52	50
RFM-75W60LED	60	3x20LED	77	80
RFM-100W60LED	60	3x20LED	99	100
RFM-120W60LED	60	3x20LED	122	120
RFM-150W60LED	60	3x20LED	149	150
RFM-170W60LED ¹⁸	60	3x20LED	170	170

16. Typical values, rounded.

17. As per ANSI C136.15-2015. Consult factory for other labeling needs.

18. Rated for +40°C / +104°F.

4000K LED Lumen values

Ordering Code	Color Temp.	Type R2M			Type R2S			Type R3M			Type R3S			Type 4			Type 5		
		Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating
RFM-130W32LED	4000	14,913	116	B3-U0-G2	15,633	121	B3-U0-G2	14,971	116	B3-U0-G2	15,172	118	B2-U0-G2	14,901	116	B2-U0-G3	15,500	120	B4-U0-G2
RFM-135W40LED	4000	15,954	118	B3-U0-G3	N/A	N/A	N/A	16,040	119	B3-U0-G3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFM-55W48LED	4000	7,747	141	B2-U0-G1	8,123	147	B2-U0-G1	7,778	141	B2-U0-G1	7,883	143	B1-U0-G2	7,742	141	B1-U0-G2	8,053	146	B3-U0-G1
RFM-80W48LED	4000	11,109	138	B2-U0-G2	11,647	145	B2-U0-G2	11,153	138	B2-U0-G2	11,302	140	B2-U0-G2	11,101	138	B2-U0-G2	11,546	143	B4-U0-G2
RFM-108W48LED	4000	14,024	132	B3-U0-G2	14,702	139	B3-U0-G2	14,079	133	B3-U0-G2	14,268	135	B2-U0-G2	14,013	132	B2-U0-G2	14,576	138	B4-U0-G2
RFM-160W48LED	4000	19,412	121	B3-U0-G3	20,351	127	B3-U0-G2	19,489	121	B3-U0-G3	19,750	123	B2-U0-G3	19,397	121	B3-U0-G3	20,176	126	B4-U0-G2
RFM-50W60LED	4000	8,038	154	B2-U0-G2	N/A	N/A	N/A	8,081	155	B2-U0-G2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFM-75W60LED	4000	10,979	143	B2-U0-G2	N/A	N/A	N/A	11,038	143	B2-U0-G2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFM-100W60LED	4000	13,615	138	B3-U0-G3	N/A	N/A	N/A	13,688	138	B3-U0-G2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFM-120W60LED	4000	16,094	132	B3-U0-G3	N/A	N/A	N/A	16,181	133	B3-U0-G3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFM-150W60LED	4000	19,078	128	B3-U0-G3	N/A	N/A	N/A	19,180	129	B3-U0-G3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFM-170W60LED	4000	21,037	124	B3-U0-G3	N/A	N/A	N/A	21,150	124	B3-U0-G3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Actual performance may vary due to installation variables including optics, mounting/ceiling height, dirt depreciation, light loss factor, etc.; highly recommended to confirm performance with a layout - contact Applications at signify.com/outdoorluminaires. Consult DLC QPL to confirm your specific fixture selection is DLC approved.

Note: Some data may be scaled based on tests of similar but not identical luminaires.

RFM RoadFocus

LED Cobra head (medium)

3000K LED Lumen values

Ordering Code	Color Temp.	Type R2M			Type R2S			Type R3M			Type R3S			Type 4			Type 5		
		Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating
RFM-130W32LED	3000	13,990	109	B3-U0-G2	14,666	114	B3-U0-G2	14,045	109	B3-U0-G2	14,233	111	B2-U0-G2	13,979	109	B2-U0-G3	14,541	113	B4-U0-G2
RFM-135W40LED	3000	15,169	112	B3-U0-G3	N/A	N/A	N/A	15,251	113	B3-U0-G3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFM-55W48LED	3000	7,268	132	B2-U0-G1	7,620	138	B2-U0-G1	7,297	132	B2-U0-G1	7,395	134	B1-U0-G2	7,263	132	B1-U0-G2	7,555	137	B3-U0-G1
RFM-80W48LED	3000	10,422	129	B2-U0-G2	10,926	136	B2-U0-G2	10,463	130	B2-U0-G2	10,603	132	B2-U0-G2	10,414	129	B2-U0-G2	10,832	134	B4-U0-G2
RFM-108W48LED	3000	13,156	124	B3-U0-G2	13,792	130	B3-U0-G2	13,208	125	B3-U0-G2	13,385	126	B2-U0-G2	13,146	124	B2-U0-G2	13,674	129	B4-U0-G2
RFM-160W48LED	3000	18,211	113	B3-U0-G3	19,092	119	B3-U0-G2	18,283	114	B3-U0-G3	18,528	115	B2-U0-G3	18,197	113	B3-U0-G3	18,928	118	B4-U0-G2
RFM-50W60LED	3000	7,643	146	B2-U0-G2	N/A	N/A	N/A	7,684	147	B2-U0-G2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFM-75W60LED	3000	10,439	136	B2-U0-G2	N/A	N/A	N/A	10,495	136	B2-U0-G2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFM-100W60LED	3000	12,945	131	B3-U0-G2	N/A	N/A	N/A	13,015	131	B3-U0-G2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFM-120W60LED	3000	15,302	125	B3-U0-G3	N/A	N/A	N/A	15,384	126	B3-U0-G3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFM-150W60LED	3000	18,139	122	B3-U0-G3	N/A	N/A	N/A	18,237	122	B3-U0-G3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFM-170W60LED	3000	20,002	118	B3-U0-G3	N/A	N/A	N/A	20,110	118	B3-U0-G3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

2700K LED Lumen values

Ordering Code	Color Temp.	Type R2M			Type R2S			Type R3M			Type R3S			Type 4			Type 5		
		Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating
RFM-130W32LED	2700	12,829	100	B3-U0-G2	13,449	104	B3-U0-G2	14,045	109	B3-U0-G2	13,052	109	B2-U0-G2	12,819	100	B2-U0-G3	13,334	104	B4-U0-G2
RFM-135W40LED	2700	13,860	103	B3-U0-G3	N/A	N/A	N/A	13,935	103	B3-U0-G2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFM-55W48LED	2700	6,665	121	B2-U0-G1	6,988	127	B2-U0-G1	7,297	132	B2-U0-G1	6,781	132	B1-U0-G2	6,660	121	B1-U0-G2	6,928	126	B3-U0-G1
RFM-80W48LED	2700	9,557	119	B2-U0-G2	10,019	124	B2-U0-G2	10,560	131	B2-U0-G2	9,723	131	B2-U0-G2	9,550	119	B2-U0-G2	9,933	123	B4-U0-G2
RFM-108W48LED	2700	12,064	114	B3-U0-G2	12,648	119	B3-U0-G2	13,208	125	B3-U0-G2	12,274	125	B2-U0-G2	12,055	114	B2-U0-G2	12,539	118	B4-U0-G2
RFM-160W48LED	2700	16,700	104	B3-U0-G3	17,508	109	B3-U0-G2	18,283	114	B3-U0-G3	16,991	114	B2-U0-G3	16,687	104	B3-U0-G3	17,357	108	B4-U0-G2
RFM-50W60LED	2700	6,983	134	B2-U0-G2	N/A	N/A	N/A	7,021	134	B2-U0-G1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFM-75W60LED	2700	9,538	124	B2-U0-G2	N/A	N/A	N/A	9,589	125	B2-U0-G2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFM-100W60LED	2700	11,828	119	B2-U0-G2	N/A	N/A	N/A	11,892	120	B2-U0-G2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFM-120W60LED	2700	13,982	115	B3-U0-G3	N/A	N/A	N/A	14,057	115	B3-U0-G2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFM-150W60LED	2700	16,574	111	B3-U0-G3	N/A	N/A	N/A	16,663	112	B3-U0-G3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFM-170W60LED	2700	18,276	108	B3-U0-G3	N/A	N/A	N/A	18,374	108	B3-U0-G3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Actual performance may vary due to installation variables including optics, mounting/ceiling height, dirt depreciation, light loss factor, etc.; highly recommended to confirm performance with a layout - contact Applications at signify.com/outdoorluminaires. Consult DLC QPL to confirm your specific fixture selection is DLC approved.

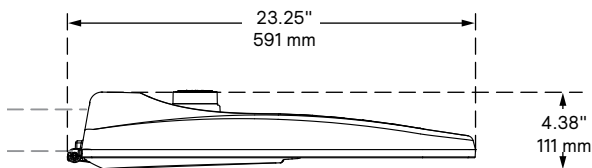
Note: Some data may be scaled based on tests of similar but not identical luminaires.

RFM RoadFocus

LED Cobra head (medium)

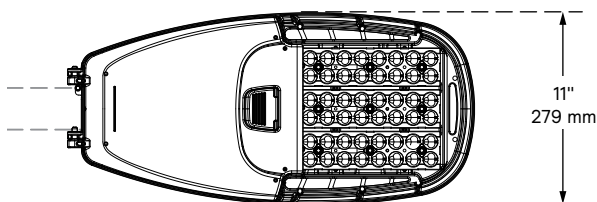
Dimensions

Side View



Weight: 12.2 Lbs
EPA: 0.53 sq. ft.

Bottom View



Field Adjustable Wattage (FAWS) Multiplier Chart

FAWS Position	Typical Delivered Lumens Multiplier	Typical System wattage
1	0.31	0.28
2	0.53	0.50
3	0.62	0.58
4	0.70	0.67
5	0.78	0.75
6	0.83	0.81
7	0.89	0.87
8	0.92	0.91
9	0.96	0.95
10	1.00	1.00

Note: Typical value accuracy +/- 5%

Specifications

Housing

Made of a low copper die cast Aluminum alloy (A360), 0.100" (2.5mm) minimum thickness. Fits on a 1.66" (42mm) O.D. (1.25" NPS), 1.9" (48mm) O.D. (1.5" NPS) or 2 3/8" (60mm) O.D. (2" NPS) by 5 1/2" (140mm) minimum long tenon. Comes with a zinc plated clamp fixed by 2 zinc plated hexagonal bolts 3/8 16 UNC for ease of installation. Provides an easy step adjustment of +/- 5° tilt in 2.5° increments. Includes integral bubble level standard (always included). A quick release, tool less entry, single latch, hinged, removable door opens downward to provide access to electronic components and to a terminal block. Door is secured to prevent accidental dropping or disengagement. A clearance of 13" (330mm) at the rear is required in order to remove the door. Complete with a bird guard protecting against birds and similar intruders and an ANSI label as per C136.15-2015 to identify wattage and source (both included in box). Housing (including electrical compartment) rated IP54 per ANSI C136.37.

Light Engine

Composed of 4 main components: LED Module / Optical System / Heat Sink / Driver.

Electrical components are RoHS compliant, IP66 sealed light engine LEDs tested by ISO 17025-2005 accredited lab in accordance with IESNA LM-80 guidelines in compliance with EPA ENERGY STAR, extrapolations in accordance with IESNA TM-21. Metal core board ensures greater heat transfer and longer lifespan.

LED Module: Composed of high-performance white LEDs. Color temperature as per ANSI/NEMA bin 2700 Kelvin nominal (2725 ±145K), 3000 Kelvin nominal (3045K +/- 175K) or 4000 Kelvin nominal (3985K +/- 275K), CRI 70 Min. 75 Typical. Other CCT/CRI also available, consult factory.

Optical System: Composed of high performance UV stabilized optical grade polymer refractor lenses to achieve desired distribution optimized to get maximum spacing, target lumens and a superior lighting uniformity. System is rated IP66. Performance shall be tested per LM-63, LM-79 and TM-15 (IESNA) certifying its photometric performance. 0% uplight and U0 per IESNA TM-15.

Heat Sink: Built in the housing, designed to ensure high efficacy and superior cooling by natural vertical convection air flow pattern always close to LEDs and driver optimizing their efficiency and life. Product does not use any cooling device with moving parts (only passive cooling). Wide openings enable natural cleaning and removal of dirt and debris. Entire luminaire is rated for operation in ambient temperature of -40°C / -40°F up to +50°C / +122°F unless otherwise specified, refer to LED Wattages Values Table.

Driver: High power factor of 90% min. Electronic driver, operating range 50/60 Hz. Auto adjusting universal voltage input from 120 to 277 or 347 to 480 VAC rated for both application line to line or line to neutral, Class I, THD of 20% max.

DMG: Dimming compatible 0-10 volts. The current supplying the LEDs will be reduced by the driver if the driver experiences internal overheating as a protection to the LEDs and the electrical components. Output is protected from short circuits, voltage overload and current overload. Automatic recovery after correction. Standard built in driver surge protection of 2.5kV (min).

Integrated Features

DMG: Dimmable driver 0-10V.

RCD7*: Tool less orientable receptacle with 7 pins enabling dimming and additional functionality (to be determined), can be used with a twist lock Interact City node or photoelectric cell or a shorting cap.

SP1: Surge protection device tested in accordance with ANSI/IEEE C62.45 per ANSI/IEEE C62.41.2 Scenario I Category C High Exposure 10kV/10kA waveforms for Line-Ground, Line-Neutral and Neutral-Ground, and in accordance with DOE MSSLC Model Specification for LED Roadway Luminaires Appendix D Electrical Immunity High test level 10kV/10kA.

Please note that these integrated features always come with RoadFocus luminaire.

* Use of photoelectric cell or shorting cap is required to ensure proper illumination.

Driver and Luminaire Options

DALI: Pre-set driver compatible with the DALI control system.

SRD: Sensor Ready Driver including SR communication (used for dimming and other functionalities), 24V auxiliary supply and a logical signal input (LSI) connected to the top NEMA twist lock receptacle and bottom TLRSR receptacle, if this option included/chosen. This configuration is compatible with Interact City controllers.

SRD1: Sensor Ready Driver including SR communication (used for dimming and other functionalities) but with 24V auxiliary supply and a logical signal input (LSI) not connected to the top NEMA twist lock. If TLRSR receptacle option included, standard SR communication, 24V auxiliary supply and LSI are connected to the TLRSR receptacle.

FAWS: Field Adjustable Wattage Selector, pre-set to the highest position, can be easily switched in the field to the required position. This reduces total luminaire wattage consumption and reduces the light level – see the FAWS multiplier chart for more details.

Note: It is not recommended to use FAWS with other dimming or controls; if you do, set the switch to position 10 (maximum output) to enable the other dimming or controls. Switching FAWS to any position other than 10 will disable the other dimming or controls.

RFM RoadFocus

LED Cobra head (medium)

Specifications (continued)

SP2: 20kV / 10kA surge protection device that provides extra protection beyond the SP1 10kV/10kA level.

NRC: No Receptacle. Fixture is shipped with a cap instead of a receptacle.

NYBC: 4-position terminal block

RCD*: Tool Less orientable receptacle with 5 pins enabling dimming, can be used with a twist lock Interact City or photoelectric cell or a shorting cap.

TLRSR: SR Sensor connector, installed in fixture door. Shipped with protective cover.

PH8: Twist-lock photoelectric cell, UNV (120-277VAC).

PH8/347: Twist-lock photoelectric cell, HVU (347VAC).

PH8/480: Twist-lock photoelectric cell, HVU (480VAC).

PHXL: Twist-lock photoelectric cell, extended life, UNV (120-277VAC).

PH9: Shorting cap.

API: Factory Installed NEMA label, ANSI C136.15-2015 compliant. Consult factory for other labeling needs.

* Use of photoelectric cell or shorting cap is required to ensure proper illumination.

Factory Installed Shield Options (One per Light Engine)

CSS: Cul-de-Sac Shield. Shields light output on the left and right side of fixture.

FSS: Front Side Shield. Shields light output on the front side of fixture.

HS: House Side Shield. Shields light output to the back side of fixture.

LSS: Left Side Shield. Shields light output on the left side of fixture.

RSS: Right Side Shield. Shields light output on the right side of fixture.

Luminaire Useful Life

Refer to IES files for energy consumption and delivered lumens for each option. Based on ISTMT in situ thermal testing in accordance with UL1598 and UL8750, System Reliability Tool, Advance data and LED manufacturer LM-80/TM-21 data, expected to reach 100,000 + hours with >L70 lumen maintenance @ 25°C. Luminaire Useful Life accounts for LED lumen maintenance AND all of these additional factors including: LED life, driver life, PCB substrate, solder joints, on/off cycles, burning hours and corrosion.

Wiring

The connection of the luminaire is done using a terminal block connector 600V, 85A for use with #2 14 AWG. wires from the primary circuit, located inside the housing. Due to the inrush current that occurs with electronic drivers, recommend using a 10Amp time-delay fuse to avoid unwanted fuse blowing (false tripping) that can occur with normal or fast acting fuses.

Hardware

All exposed screws shall be complete with Ceramic primer seal to reduce seizing of the parts, also offers a high resistance to corrosion. All seals and sealing devices are made and/or lined with EPDM and/or silicone and/or rubber.

Finish

Color in accordance with the AAMA 2603 standard. Application of polyester powder coat paint (4 mils/100 microns) with ± 1 mils/24 microns of tolerance. The Thermosetting resins provides a discoloration resistant finish in accordance with the ASTM D2244 standard, as well as luster retention in keeping with the ASTM D523 standard and humidity proof in accordance with the ASTM D2247 standard.

The surface treatment achieves a minimum of 5000 hours for salt spray resistant finish in accordance with testing performed and per ASTM B117 standard.

LED products manufacturing standard
The electronic components sensitive to electrostatic discharge (ESD) such as light emitting diodes (LEDs) are assembled in compliance with IEC61340-5-1 and ANSI/ESD S20.20 standards so as to eliminate ESD events that could decrease the useful life of the product.

Vibration Resistance

The RFM meets the ANSI C136.31-2018, American National Standard for Roadway Luminaire Vibration specifications for Bridge/overpass applications. (Tested for 3G over 100,000 cycles by independent lab)

Certifications and Compliance

cULus Listed for Canada and USA. Luminaire meets DOE and MSSLC Model Specification for LED Roadway Luminaires. Most versions of RoadFocus LED Cobrahead luminaires are DesignLights Consortium qualified, consult DLC QPL to confirm your specific fixture selection is approved. CCTs 3000K and warmer are Dark Sky Approved. Luminaire complies with or exceeds the following ANSI C136 standards:
.2, .3, .10, .14, .15, .22, .25, .31, .37, .41.

Service Tag

Each individual luminaire is uniquely identifiable, thanks to the Service tag application. With a simple scan of a QR code, placed on the inside of the mast door, you gain instant access to the luminaire configuration, making installation and maintenance operations faster and easier, no matter what stage of the luminaire's lifetime. Just download the APP and register your product right away.

For more details visit: philips.com/servicetag

Limited Warranty

10-year limited warranty.
See signify.com/warranties for details and restrictions.

Brackets/Arms

For brackets / arms available with this luminaire, see Lumec 3D for details.





Lumec RoadFocus LED cobra head luminaires feature a sleek design that provides seamless replacement of existing HID luminaires. RoadFocus is available in three sizes, offers multiple lumen packages, and a complete array of optical distributions, making it an outstanding solution for all types of roadway applications. Includes Service Tag, innovative way to provide assistance throughout the life of the product.

Project: _____
 Location: _____
 Cat.No: _____
 Type: _____
 Lumens: _____ Qty: _____
 Notes: _____

Ordering guide

example: RFS-35W16LED4K-G2-R2M-UNV-DMG-HS-PH8-RCD7-GY3

Series	LED module	CCT	Generation	Distribution	Voltage	Options		Finish
						Controls ⁴	Options	
RFS RoadFocus small	15W12LED 20W12LED 25W12LED 25W16LED 30W16LED 35W16LED 45W16LED 50W16LED 54W16LED 60W16LED ⁷ 20W20LED ¹³ 40W20LED ¹³ 65W20LED ¹³ 35W32LED 55W32LED 60W32LED 72W32LED 108W32LED ⁷ 35W40LED ¹³ 50W40LED ¹³ 55W40LED ¹³ 65W40LED ¹³ 80W40LED ¹³ 100W40LED ^{13,15}	4K 4000K 3K 3000K 2.7K ¹¹ 2700K	G2 Generation 2	Type 2 R2S Type II short (ASYM) R2M Type II Medium (ASYM) Type 3 R3S Type III short (ASYM) R3M Type III Medium (ASYM) Type 4 4 Type IV (ASYM) Type 5 5 Type V (SYMM)	UNV 120-277V HVV 347-480V	DALI ¹ Digitally addressable lighting interface DMG ⁵ 0-10V SRD ¹ Sensor ready driver, standard configuration SRD1 ¹ Sensor ready driver, alternate configuration	API Factory installed NEMA label, ANSI C136.15-2015 compliant FAWS ⁷ Field adjustable wattage selector CSS ^{2,14} Cul-de-Sac Shield FSS ^{2,14} Front Side Shield HS ^{2,14} House Side Shield LSS ^{2,14} Left Side Shield RSS ^{2,14} Right Side Shield NRC ⁸ No receptacle NYBC 4-position terminal block PH8 ^{1,10} Twist-lock photoelectric cell, UNV (120-277VAC) PH8/347 ^{10,12} Twist-lock photoelectric cell (347VAC) PH8/480 ^{10,12} Twist-lock photoelectric cell (480VAC) PHXL ^{1,10} Twist-lock photoelectric cell, extended life, UNV (120-277VAC) PH9 ¹⁰ Shorting cap RCD ^{3,9} Tool less receptacle for twist-lock photocell or shorting cap, 5-pin (optional) RCD7 ^{3,5} Tool less receptacle for twist-lock photocell or shorting cap, 7-pin (standard) SP2 20kV / 10kA Surge protector TLRSR ⁶ SR receptacle BAC ¹⁵ Meets the requirements of the Buy American Act of 1933 (BAA)	BK Black BR Bronze GY3 Gray WH White

¹ Not available with HVU.
² Refer to Accessories section to confirm compatibility of shields with optical distribution.
³ Use of photoelectric cell or shorting cap is required to ensure proper illumination.
⁴ Select either DALI or DMG or SRD or SRD1 mandatory option.
⁵ Please note this integrated feature come standard with RoadFocus.
⁶ Only available with SRD or SRD1 Driver Options.
⁷ Only available with DMG Driver Options.
⁸ Not available with PH8, PH8/347, PH8/480, PHXL, PH9, DALI, SRD or SRD1 Driver Options.
⁹ Not available with SRD Driver Options.
¹⁰ Either RCD or RCD7 must be selected for this option.
¹¹ Extended lead-time may apply. Consult factory.
¹² Not available with UNV.
¹³ Only available with R2M or R3M distributions.
¹⁴ 1 shield provided per LED light engine.
¹⁵ Failure to properly select the "BAC" suffix could result in you receiving product that is not BAA compliant product with no recourse for an RMA or refund. This BAC designation hereunder does not address (i) the applicability of, or availability of a waiver under, the Trade Agreements Act, or (ii) the "Buy America" domestic content requirements imposed on states, localities, and other non-federal entities as a condition of receiving funds administered by the Department of Transportation or other federal agencies.
¹⁶ Consult Signify to confirm whether specific accessories are BAA-compliant.

Accessories¹⁶ (must be ordered as separate line item - quickly and easily installed in the field)

Interact City connector node (Contact the factory for additional support when connected lighting or additional services are desired.)

Shielding accessories

Description	Luminaire Option Code	Accessory Ordering Code		Shield vs Distribution Compatibility					
		12/16 LED version*	20 LED version*	R2M	R2S	R3M	R3S	4	5
Cul-de-sac shield	CSS	ACC-LG66V16LED-CSS	ACC-LG66V20LED-CSS	Yes	Yes	Yes	Yes	Yes	Yes
Front side shield	FSS	ACC-LG66V16LED-FSS	ACC-LG66V20LED-FSS	Yes	Yes	Yes	Yes	No	Yes
House side shield	HS	ACC-LG66V16LED-HS	ACC-LG66V20LED-HS	Yes	Yes	Yes	Yes	Yes	No
Left side shield	LSS	ACC-LG66V16LED-LSS	ACC-LG66V20LED-LSS	Yes	Yes	Yes	Yes	Yes	Yes
Right side shield	RSS	ACC-LG66V16LED-RSS	ACC-LG66V20LED-RSS	Yes	Yes	Yes	Yes	Yes	Yes

*Refer to Wattage table to confirm light engine configuration. Example, if configuration is 2x16LED, 2 of the desired shields must be ordered per luminaire.



RFS RoadFocus

LED Cobra head (small)

Predicted Lumen Depreciation Data

Predicted performance derived from LED manufacturer's data and engineering design estimates, based on IESNA LM-80 methodology. Actual experience may vary due to field application conditions. L70 is the predicted time when LED performance depreciates to 70% of initial lumen output. Calculated per IESNA TM21-11 Addendum B. Published L70 hours limited to 6 times actual LED test hours.

Ambient Temperature °C	L70 per TM-21	Lumen Maintenance % at 60,000 hrs
25°C	>60,000 hours	>97.6%

LED Wattage values

Ordering Code	Total LEDs	Light Engine Configuration	Average System Watts ¹⁵	Wattage label ¹⁶
RFS-15W12LED	12	1x12LED	14	10
RFS-20W12LED	12	1x12LED	19	20
RFS-25W12LED	12	1x12LED	25	20
RFS-25W16LED	16	1x16LED	24	20
RFS-30W16LED	16	1x16LED	29	30
RFS-35W16LED	16	1x16LED	38	40
RFS-45W16LED	16	1x16LED	45	50
RFS-50W16LED	16	1x16LED	50	50
RFS-54W16LED	16	1x16LED	53	50
RFS-60W16LED	16	1x16LED	61	60
RFS-20W20LED	20	1x20LED	20	20
RFS-40W20LED	20	1x20LED	40	40

Ordering Code	Total LEDs	Light Engine Configuration	Average System Watts ¹⁵	Wattage label ¹⁶
RFS-35W32LED	32	2x16LED	37	40
RFS-55W32LED	32	2x16LED	53	50
RFS-60W32LED	32	2x16LED	59	60
RFS-72W32LED	32	2x16LED	73	70
RFS-108W32LED	32	2x16LED	108	110
RFS-35W40LED	40	2x20LED	35	40
RFS-50W40LED	40	2x20LED	49	50
RFS-55W40LED	40	2x20LED	54	50
RFS-65W40LED	40	2x20LED	66	70
RFS-80W40LED	40	2x20LED	79	80
RFS-100W40LED	40	2x20LED	101	100

15. Typical values, rounded.

16. As per ANSI C136.15-2015. Consult factory for other labeling needs.

4000K LED Lumen values

Ordering Code	Color Temp.	Type R2M			Type R2S			Type R3M			Type R3S			Type 4			Type 5		
		Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating
RFS-15W12LED	4000	1,863	132	B1-U0-G1	1,940	138	B1-U0-G1	1,858	132	B1-U0-G1	1,882	134	B1-U0-G1	1,849	131	B1-U0-G1	1,924	137	B1-U0-G1
RFS-20W12LED	4000	2,525	130	B1-U0-G1	2,629	136	B1-U0-G1	2,518	130	B1-U0-G1	2,552	132	B1-U0-G1	2,506	129	B1-U0-G1	2,606	134	B1-U0-G1
RFS-25W12LED	4000	2,887	116	B1-U0-G1	3,005	121	B1-U0-G1	2,878	116	B1-U0-G1	2,916	117	B1-U0-G1	2,864	115	B1-U0-G1	2,979	120	B1-U0-G1
RFS-25W16LED	4000	3,323	137	B1-U0-G1	3,458	143	B1-U0-G1	3,312	137	B1-U0-G1	3,357	139	B1-U0-G1	3,296	136	B1-U0-G1	3,429	142	B1-U0-G1
RFS-30W16LED	4000	3,764	130	B1-U0-G1	3,918	136	B1-U0-G1	3,752	130	B1-U0-G1	3,802	132	B1-U0-G1	3,735	129	B1-U0-G1	3,884	135	B1-U0-G1
RFS-35W16LED	4000	4,810	127	B1-U0-G1	5,007	132	B1-U0-G1	4,795	126	B1-U0-G1	4,859	128	B1-U0-G1	4,772	126	B1-U0-G1	4,964	131	B1-U0-G1
RFS-45W16LED	4000	5,497	121	B1-U0-G1	5,722	126	B1-U0-G1	5,480	121	B1-U0-G1	5,554	123	B1-U0-G1	5,454	121	B1-U0-G1	5,673	125	B1-U0-G1
RFS-50W16LED	4000	5,825	116	B2-U0-G1	6,064	121	B2-U0-G1	5,807	116	B2-U0-G1	5,885	117	B2-U0-G1	5,780	115	B2-U0-G1	6,012	120	B2-U0-G1
RFS-54W16LED	4000	6,356	120	B2-U0-G1	6,616	125	B2-U0-G1	6,336	120	B2-U0-G1	6,421	121	B2-U0-G1	6,306	119	B2-U0-G1	6,560	124	B2-U0-G1
RFS-60W16LED	4000	6,929	113	B2-U0-G1	7,213	118	B2-U0-G1	6,907	113	B2-U0-G1	7,000	115	B2-U0-G1	6,875	113	B2-U0-G1	7,151	117	B2-U0-G1
RFS-20W20LED	4000	2,553	130	B1-U0-G1	N/A	N/A	N/A	2,567	131	B1-U0-G1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFS-40W20LED	4000	5,083	128	B1-U0-G1	N/A	N/A	N/A	5,110	129	B1-U0-G1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFS-65W20LED	4000	7,827	122	B2-U0-G2	N/A	N/A	N/A	7,869	123	B2-U0-G2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFS-35W32LED	4000	5,197	141	B1-U0-G1	5,410	146	B1-U0-G1	5,181	140	B1-U0-G1	5,250	142	B1-U0-G1	5,156	139	B1-U0-G1	5,364	145	B1-U0-G1
RFS-55W32LED	4000	7,528	141	B2-U0-G1	7,836	147	B2-U0-G1	7,504	140	B2-U0-G1	7,605	142	B2-U0-G1	7,469	140	B2-U0-G1	7,770	145	B2-U0-G1
RFS-60W32LED	4000	7,630	130	B2-U0-G1	7,943	136	B2-U0-G1	7,607	130	B2-U0-G1	7,709	132	B2-U0-G1	7,571	129	B2-U0-G1	7,875	134	B2-U0-G1
RFS-72W32LED	4000	9,408	129	B2-U0-G2	9,794	134	B2-U0-G2	9,379	128	B2-U0-G2	9,505	130	B2-U0-G2	9,336	128	B2-U0-G2	9,711	133	B2-U0-G2
RFS-108W32LED	4000	13,025	121	B3-U0-G2	13,559	126	B3-U0-G2	12,984	120	B3-U0-G2	13,158	122	B3-U0-G2	12,924	120	B3-U0-G2	13,443	124	B3-U0-G2
RFS-35W40LED	4000	5,472	155	B1-U0-G1	N/A	N/A	N/A	5,502	156	B1-U0-G1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFS-50W40LED	4000	7,319	150	B2-U0-G2	N/A	N/A	N/A	7,359	151	B2-U0-G2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFS-55W40LED	4000	7,675	141	B2-U0-G2	N/A	N/A	N/A	7,716	142	B2-U0-G2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFS-65W40LED	4000	9,024	137	B2-U0-G2	N/A	N/A	N/A	9,073	137	B2-U0-G2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFS-80W40LED	4000	10,546	133	B2-U0-G2	N/A	N/A	N/A	10,603	134	B2-U0-G2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFS-100W40LED	4000	12,861	127	B3-U0-G3	N/A	N/A	N/A	12,930	128	B3-U0-G2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Actual performance may vary due to installation variables including optics, mounting/ceiling height, dirt depreciation, light loss factor, etc.; highly recommended to confirm performance with a layout - contact Applications at signify.com/outdoorluminaires. Consult DLC QPL to confirm your specific fixture selection is DLC approved.

Note: Some data may be scaled based on tests of similar but not identical luminaires.

RFS RoadFocus

LED Cobra head (small)

3000K LED Lumen values

Ordering Code	Color Temp.	Type R2M			Type R2S			Type R3M			Type R3S			Type 4			Type 5		
		Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating
RFS-15W12LED	3000	1,748	124	B1-U0-G1	1,820	129	B1-U0-G0	1,743	124	B1-U0-G1	1,766	125	B0-U0-G0	1,735	123	B0-U0-G1	1,805	128	B1-U0-G0
RFS-20W12LED	3000	2,369	122	B1-U0-G1	2,466	127	B1-U0-G0	2,362	122	B1-U0-G1	2,394	123	B1-U0-G1	2,351	121	B1-U0-G1	2,445	126	B2-U0-G1
RFS-25W12LED	3000	2,708	109	B1-U0-G1	2,819	113	B1-U0-G0	2,700	108	B1-U0-G1	2,736	110	B1-U0-G1	2,687	108	B1-U0-G1	2,795	112	B2-U0-G1
RFS-25W16LED	3000	3,117	129	B1-U0-G1	3,244	134	B1-U0-G0	3,107	128	B1-U0-G1	3,149	130	B1-U0-G1	3,092	128	B1-U0-G1	3,217	133	B2-U0-G1
RFS-30W16LED	3000	3,531	122	B1-U0-G1	3,676	127	B1-U0-G0	3,520	122	B1-U0-G1	3,567	124	B1-U0-G1	3,504	121	B1-U0-G1	3,644	126	B2-U0-G1
RFS-35W16LED	3000	4,512	119	B1-U0-G1	4,697	124	B1-U0-G1	4,498	118	B1-U0-G1	4,558	120	B1-U0-G1	4,477	118	B1-U0-G1	4,657	123	B3-U0-G1
RFS-45W16LED	3000	5,157	114	B1-U0-G1	5,368	119	B1-U0-G1	5,141	114	B1-U0-G1	5,210	115	B1-U0-G1	5,117	113	B1-U0-G2	5,322	118	B3-U0-G1
RFS-50W16LED	3000	5,465	109	B1-U0-G1	5,689	113	B1-U0-G1	5,448	109	B1-U0-G1	5,521	110	B1-U0-G1	5,422	108	B1-U0-G2	5,640	112	B3-U0-G1
RFS-54W16LED	3000	5,963	113	B2-U0-G1	6,207	117	B2-U0-G1	5,944	112	B1-U0-G1	6,024	114	B1-U0-G1	5,916	112	B1-U0-G2	6,154	116	B3-U0-G1
RFS-60W16LED	3000	6,500	106	B2-U0-G1	6,767	111	B2-U0-G1	6,480	106	B2-U0-G1	6,567	107	B1-U0-G2	6,450	106	B1-U0-G2	6,709	110	B3-U0-G1
RFS-20W20LED	3000	2,427	124	B1-U0-G1	N/A	N/A	N/A	2,440	124	B1-U0-G1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFS-40W20LED	3000	4,833	122	B1-U0-G1	N/A	N/A	N/A	4,859	122	B1-U0-G1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFS-65W20LED	3000	7,442	116	B2-U0-G2	N/A	N/A	N/A	7,482	117	B2-U0-G2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFS-35W32LED	3000	4,875	132	B1-U0-G1	5,075	137	B1-U0-G1	4,860	131	B1-U0-G1	4,925	133	B1-U0-G1	4,837	131	B1-U0-G1	5,032	136	B3-U0-G1
RFS-55W32LED	3000	7,062	132	B2-U0-G1	7,351	137	B2-U0-G1	7,040	132	B2-U0-G1	7,134	133	B1-U0-G2	7,007	131	B1-U0-G2	7,289	136	B3-U0-G1
RFS-60W32LED	3000	7,158	122	B2-U0-G1	7,452	127	B2-U0-G1	7,136	122	B2-U0-G1	7,232	123	B1-U0-G2	7,103	121	B1-U0-G2	7,388	126	B3-U0-G1
RFS-72W32LED	3000	8,826	121	B2-U0-G2	9,188	126	B2-U0-G1	8,799	121	B2-U0-G2	8,917	122	B1-U0-G2	8,758	120	B2-U0-G2	9,110	125	B3-U0-G2
RFS-108W32LED	3000	12,219	113	B3-U0-G2	12,720	118	B3-U0-G2	12,181	113	B2-U0-G2	12,344	114	B2-U0-G2	12,124	112	B2-U0-G2	12,611	117	B4-U0-G2
RFS-35W40LED	3000	5,203	147	B1-U0-G1	N/A	N/A	N/A	5,231	148	B1-U0-G1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFS-50W40LED	3000	6,959	143	B2-U0-G2	N/A	N/A	N/A	6,996	144	B2-U0-G1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFS-55W40LED	3000	7,297	134	B2-U0-G2	N/A	N/A	N/A	7,336	135	B2-U0-G2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFS-65W40LED	3000	8,580	130	B2-U0-G2	N/A	N/A	N/A	8,626	131	B2-U0-G2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFS-80W40LED	3000	10,027	127	B2-U0-G2	N/A	N/A	N/A	10,081	128	B2-U0-G2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFS-100W40LED	3000	12,228	121	B3-U0-G3	N/A	N/A	N/A	12,294	122	B3-U0-G2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

2700K LED Lumen values

Ordering Code	Color Temp.	Type R2M			Type R2S			Type R3M			Type R3S			Type 4			Type 5		
		Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating
RFS-15W12LED	2700	1,603	114	B1-U0-G1	1,669	119	B1-U0-G0	1,598	113	B1-U0-G1	1,619	115	B0-U0-G0	1,591	113	B0-U0-G1	1,655	118	B1-U0-G0
RFS-20W12LED	2700	2,172	112	B1-U0-G1	2,261	117	B1-U0-G0	2,166	112	B1-U0-G1	2,195	113	B1-U0-G1	2,156	111	B1-U0-G1	2,242	116	B2-U0-G1
RFS-25W12LED	2700	2,483	100	B1-U0-G1	2,585	104	B1-U0-G0	2,476	99	B1-U0-G1	2,509	101	B1-U0-G1	2,464	99	B1-U0-G1	2,563	103	B2-U0-G1
RFS-25W16LED	2700	2,858	118	B1-U0-G1	2,975	123	B1-U0-G0	2,849	118	B1-U0-G1	2,888	119	B1-U0-G1	2,835	117	B1-U0-G1	2,950	122	B2-U0-G1
RFS-30W16LED	2700	3,238	112	B1-U0-G1	3,371	117	B1-U0-G0	3,228	112	B1-U0-G1	3,271	113	B1-U0-G1	3,213	111	B1-U0-G1	3,342	116	B2-U0-G1
RFS-35W16LED	2700	4,138	109	B1-U0-G1	4,307	113	B1-U0-G1	4,125	109	B1-U0-G1	4,180	110	B1-U0-G1	4,105	108	B1-U0-G1	4,271	112	B3-U0-G1
RFS-45W16LED	2700	4,729	104	B1-U0-G1	4,923	109	B1-U0-G1	4,714	104	B1-U0-G1	4,778	106	B1-U0-G1	4,692	104	B1-U0-G2	4,880	108	B3-U0-G1
RFS-50W16LED	2700	5,012	100	B1-U0-G1	5,217	104	B1-U0-G1	4,996	100	B1-U0-G1	5,063	101	B1-U0-G1	4,972	99	B1-U0-G2	5,172	103	B3-U0-G1
RFS-54W16LED	2700	5,468	103	B2-U0-G1	5,692	107	B2-U0-G1	5,451	103	B1-U0-G1	5,524	104	B1-U0-G1	5,425	102	B1-U0-G2	5,643	106	B3-U0-G1
RFS-60W16LED	2700	5,961	98	B2-U0-G1	6,205	102	B2-U0-G1	5,942	97	B2-U0-G1	6,022	99	B1-U0-G2	5,915	97	B1-U0-G2	6,152	101	B3-U0-G1
RFS-20W20LED	2700	2,218	113	B1-U0-G1	N/A	N/A	N/A	2,230	114	B1-U0-G1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFS-40W20LED	2700	4,416	111	B1-U0-G1	N/A	N/A	N/A	4,440	112	B1-U0-G1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFS-65W20LED	2700	6,800	106	B2-U0-G2	N/A	N/A	N/A	6,837	107	B2-U0-G1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFS-35W32LED	2700	4,470	121	B1-U0-G1	4,654	126	B1-U0-G1	4,457	121	B1-U0-G1	4,516	122	B1-U0-G1	4,436	120	B1-U0-G1	4,614	125	B3-U0-G1
RFS-55W32LED	2700	6,476	121	B2-U0-G1	6,741	126	B2-U0-G1	6,456	121	B2-U0-G1	6,542	122	B1-U0-G2	6,426	120	B1-U0-G2	6,684	125	B3-U0-G1
RFS-60W32LED	2700	6,564	112	B2-U0-G1	6,834	117	B2-U0-G1	6,544	112	B2-U0-G1	6,632	113	B1-U0-G2	6,514	111	B1-U0-G2	6,775	116	B3-U0-G1
RFS-72W32LED	2700	8,094	111	B2-U0-G2	8,426	115	B2-U0-G1	8,069	111	B2-U0-G2	8,177	112	B1-U0-G2	8,031	110	B2-U0-G2	8,354	114	B3-U0-G2
RFS-108W32LED	2700	11,205	104	B3-U0-G2	11,664	108	B3-U0-G2	11,170	103	B2-U0-G2	11,320	105	B2-U0-G2	11,118	103	B2-U0-G2	11,565	107	B4-U0-G2
RFS-35W40LED	2700	4,754	135	B1-U0-G1	N/A	N/A	N/A	4,780	135	B1-U0-G1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFS-50W40LED	2700	6,359	131	B2-U0-G2	N/A	N/A	N/A	6,393	131	B2-U0-G1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFS-55W40LED	2700	6,667	123	B2-U0-G2	N/A	N/A	N/A	6,703	123	B2-U0-G1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFS-65W40LED	2700	7,840	119	B2-U0-G2	N/A	N/A	N/A	7,882	119	B2-U0-G2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFS-80W40LED	2700	9,162	116	B2-U0-G2	N/A	N/A	N/A	9,211	117	B2-U0-G2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RFS-100W40LED	2700	11,173	111	B2-U0-G2	N/A	N/A	N/A	11,233	111	B2-U0-G2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Actual performance may vary due to installation variables including optics, mounting/ceiling height, dirt depreciation, light loss factor, etc.; highly recommended to confirm performance with a layout - contact Applications at signify.com/outdoorluminaire. Consult DLC QPL to confirm your specific fixture selection is DLC approved.

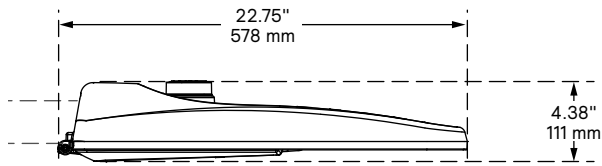
Note: Some data may be scaled based on tests of similar but not identical luminaires.

RFS RoadFocus

LED Cobra head (small)

Dimensions

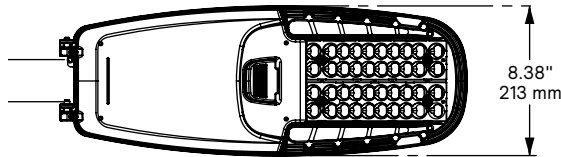
Side View



Weight: 9.4 lbs

EPA: 0.52 sq. feet

Bottom View



Field Adjustable Wattage (FAWS) Multiplier Chart

FAWS Position	Typical Delivered Lumens Multiplier	Typical System wattage
1	0.31	0.28
2	0.53	0.50
3	0.62	0.58
4	0.70	0.67
5	0.78	0.75
6	0.83	0.81
7	0.89	0.87
8	0.92	0.91
9	0.96	0.95
10	1.00	1.00

Note: Typical value accuracy +/- 5%

Specifications

Housing

Made of a low copper die cast Aluminum alloy (A360), 0.100" (2.5mm) minimum thickness. Fits on a 1.66" (42mm) O.D. (1.25" NPS), 1.9" (48mm) O.D. (1.5" NPS) or 2 3/8" (60mm) O.D. (2" NPS) by 5 1/2" (140mm) minimum long tenon. Comes with a zinc plated clamp fixed by 2 zinc plated hexagonal bolts 3/8 16 UNC for ease of installation. Provides an easy step adjustment of +/- 5° tilt in 2.5° increments. Includes integral bubble level standard (always included). A quick release, tool less entry, single latch, hinged, removable door opens downward to provide access to electronic components and to a terminal block. Door is secured to prevent accidental dropping or disengagement. A clearance of 13" (330mm) at the rear is required in order to remove the door. Complete with a bird guard protecting against birds and similar intruders and an ANSI label as per C136.15-2015 to identify wattage and source (both included in box). Housing (including electrical compartment) rated IP54 per ANSI C136.37.

Light Engine

Composed of 4 main components: LED Module / Optical System / Heat Sink / Driver.

Electrical components are RoHS compliant, IP66 sealed light engine equipped LEDs tested by ISO 17025-2005 accredited lab in accordance with IESNA LM-80 guidelines in compliance with EPA ENERGY STAR, extrapolations in accordance with IESNA TM-21. Metal core board ensures greater heat transfer and longer lifespan.

LED Module: Composed of high-performance white LEDs. Color temperature as per ANSI/ NEMA bin 2700 Kelvin nominal (2725 ±145K), 3000 Kelvin nominal (3045K +/- 175K) or 4000 Kelvin nominal (3985K +/- 275K), CRI 70 Min. 75 Typical. Other CCT/CRI also available, consult factory.

Optical System: Composed of high performance UV stabilized optical grade polymer refractor lenses to achieve desired distribution optimized to get maximum spacing, target lumens and a superior lighting uniformity. System is rated IP66. Performance shall be tested per LM-63, LM-79 and TM-15 (IESNA) certifying its photometric performance. 0% upright and UO per IESNA TM-15.

Heat Sink: Built in the housing, designed to ensure high efficacy and superior cooling by natural vertical convection air flow pattern always close to LEDs and driver optimising their efficiency and life. Product does not use any cooling device with moving parts (only passive cooling). Wide openings enable natural cleaning and removal of dirt and debris. Entire luminaire is rated for operation in ambient temperature of -40°C / -40°F up to +50°C / +122°F.

Driver: High power factor of 90% min. Electronic driver, operating range 50/60 Hz. Auto adjusting universal voltage input from 120 to 277 VAC rated for both application line to line or line to neutral, Class I or 2, THD of 20% max.

DMG: Dimming compatible 0-10 volts. The current supplying the LEDs will be reduced by the driver if the driver experiences internal overheating as a protection to the LEDs and the electrical components. Output is protected from short circuits, voltage overload and current overload. Automatic recovery after correction. Standard built in driver surge protection of 2.5kV (min).

Integrated Features

DMG: Dimmable driver 0-10V.

RCD7*: Tool less orientable receptacle with 7 pins enabling dimming and additional functionality (to be determined), can be used with a twist lock Interact City node or photoelectric cell or a shorting cap.

Please note: Additional hardware will be required to utilize the additional 2 pins on this receptacle.

SP1: Surge protection device tested in accordance with ANSI/IEEE C62.45 per ANSI/IEEE C62.41.2 Scenario I Category C High Exposure 10kV/10kA waveforms for Line-Ground, Line-Neutral and Neutral-Ground, and in accordance with DOE MSSLC Model Specification for LED Roadway Luminaires Appendix D Electrical Immunity High test level 10kV/10kA.

Please note that these integrated features always come with RoadFocus luminaire.

* Use of photoelectric cell or shorting cap is required to ensure proper illumination.

RFS RoadFocus

LED Cobra head (small)

Specifications (continued)

Driver and Luminaire Options

DALI: Pre-set driver compatible with the DALI control system.

SRD: Sensor Ready Driver including SR communication (used for dimming and other functionalities), 24V auxiliary supply and a logical signal input (LSI) connected to the top NEMA twist lock receptacle and bottom TLRSR receptacle, if this option included/ chosen. This configuration is compatible with Interact City controllers.

SRD1: Sensor Ready Driver including SR communication (used for dimming and other functionalities) but with 24V auxiliary supply and a logical signal input (LSI) not connected to the top NEMA twist lock. If TLRSR receptacle option included, standard SR communication, 24V auxiliary supply and LSI are connected to the TLRSR receptacle.

FAWS: Field Adjustable Wattage Selector, pre-set to the highest position, can be easily switched in the field to the required position. This reduces total luminaire wattage consumption and reduces the light level – see the FAWS multiplier chart for more details.

Note: It is not recommended to use FAWS with other dimming or controls; if you do, set the switch to position 10 (maximum output) to enable the other dimming or controls. Switching FAWS to any position other than 10 will disable the other dimming or controls.

NRC: No Receptacle. Fixture is shipped with a cap instead of a receptacle.

NYBC: 4-position terminal block

SP2: 20kV / 10kA surge protection device that provides extra protection beyond the SP1 10kV/10kA level.

RCD*: Tool Less orientable receptacle with 5 pins enabling dimming, can be used with a twist lock Interact City or photoelectric cell or a shorting cap.

TLRSR: SR Sensor connector, installed in fixture door. Shipped with protective cover.

PH8: Twist-lock photoelectric cell, UNV (120-277VAC).

PH8/347: Twist-lock photoelectric cell, UNV (120-277VAC).

PH8/480: Twist-lock photoelectric cell, UNV (120-277VAC).

PHXL: Twist-lock Photoelectric Cell, extended life, UNV (120-277VAC).

PH9*: Shorting cap.

API: Factory Installed NEMA label, ANSI C136.15-2015 compliant. Consult factory for other labeling needs.

* Use of photoelectric cell or shorting cap is required to ensure proper illumination.

Factory Installed Shield Options

(One per Light Engine)

CSS: Cul-de-Sac Shield. Shields light output on the left and right side of fixture.

FSS: Front Side Shield. Shields light output on the front side of fixture.

HS: House Side Shield. Shields light output to the back side of fixture.

LSS: Left Side Shield. Shields light output on the left side of fixture.

RSS: Right Side Shield. Shields light output on the right side of fixture.

Luminaire Useful Life

Refer to IES files for energy consumption and delivered lumens for each option. Based on ISTMT in situ thermal testing in accordance with UL1598 and UL8750, System Reliability Tool, Advance data and LED manufacturer LM-80/TM-21 data, expected to reach 100,000 + hours with >L70 lumen maintenance @ 25°C. Luminaire Useful Life accounts for LED lumen maintenance AND all of these additional factors including: LED life, driver life, PCB substrate, solder joints, on/off cycles, burning hours and corrosion.

Wiring

The connection of the luminaire is done using a terminal block connector 600V, 85A for use with #2 14 AWG. wires from the primary circuit, located inside the housing. Due to the inrush current that occurs with electronic drivers, recommend using a 10Amp time-delay fuse to avoid unwanted fuse blowing (false tripping) that can occur with normal or fast acting fuses.

Hardware

All exposed screws shall be complete with Ceramic primer seal to reduce seizing of the parts, also offers a high resistance to corrosion. All seals and sealing devices are made and/or lined with EPDM and/or silicone and/or rubber.

Finish

Color in accordance with the AAMA 2603 standard. Application of polyester powder coat paint (4 mils/100 microns) with ± 1 mils/24 microns of tolerance. The Thermosetting resins provides a discoloration resistant finish in

accordance with the ASTM D2244 standard, as well as luster retention in keeping with the ASTM D523 standard and humidity proof in accordance with the ASTM D2247 standard.

The surface treatment achieves a minimum of 5000 hours for salt spray resistant finish in accordance with testing performed and per ASTM B117 standard.

LED products manufacturing standard

The electronic components sensitive to electrostatic discharge (ESD) such as light emitting diodes (LEDs) are assembled in compliance with IEC61340-5-1 and ANSI/ESD S20.20 standards so as to eliminate ESD events that could decrease the useful life of the product.

Vibration Resistance

The RFS meets the ANSI C136.31-2018, American National Standard for Roadway Luminaire Vibration specifications for Bridge/overpass applications. (Tested for 3G over 100,000 cycles by independent lab)

Certifications and Compliance

cULus Listed for Canada and USA. Luminaire meets DOE and MSSLC Model Specification for LED Roadway Luminaires. Most versions of RoadFocus LED Cobrahead luminaires are DesignLights Consortium qualified, consult DLC QPL to confirm your specific fixture selection is approved. CCTs 3000K and warmer are Dark Sky Approved. Luminaire complies with or exceeds the following ANSI C136 standards: .2, .3, .10, .14, .15, .22, .25, .31, .37, .41.

Service Tag

Each individual luminaire is uniquely identifiable, thanks to the Service tag application. With a simple scan of a QR code, placed on the inside of the mast door, you gain instant access to the luminaire configuration, making installation and maintenance operations faster and easier, no matter what stage of the luminaire's lifetime. Just download the APP and register your product right away.

For more details visit: signify.com/servicetag

Limited Warranty

10-year limited warranty. See signify.com/warranties for details and restrictions.

Brackets/Arms

For brackets / arms available with this luminaire, see Lumec 3D for details.



APPENDIX D

HISTORIC LIGHTING MANUFACTURER DOCUMENTATION

Catalog Number	
Notes	Type

PTUE3

Utility Taft Postop LED



SPECIFICATIONS

General Description

The decorative post top lantern is ideal for lighting city streets, residential areas, campuses, parking lots, and walkways. The architectural luminaire consists of a luminaire housing, a prismatic optic, and a decorative cover.

Optical Assembly

The optical assembly consists of a prismatic glass or acrylic refractor to precisely distribute light with excellent visual comfort and reduced glare. Configurable with CCT options of 2700K, 3000K, and 4000K. CRI is 70 minimum. Available in symmetric and asymmetric distributions.

Electrical Assembly

The cast aluminum electrical housing allows tool-less access with a spring loaded latch. The hidden hinge allows the door to swing open and remain open for easy access. A (3) station terminal block is provided to accept #14 through #2 size wire. The programmable LED driver includes 0-10V dimming with optional DALI dimming. Driver is available in 120-277V, 347-480V, and 277V-480V options (50/60 Hz). Driver life is rated to at least 100,000 hours. The 277V-480V (XVOLT) option includes enhanced power quality protection for maximum robustness against loss of neutral, voltage transients, harmonic disturbances, and other real-world power quality disturbances.

Finish

The luminaire housing and decorative cover are low copper cast aluminum and finished with corrosion resistant super durable powder coat paint for maximum durability. Rigorous multi-stage pre-treating and painting process yields a finish that achieves a scribe creepage rating of 8 (per ASTM D1654) after over 5,000 hours exposure to salt fog chamber (operated per ASTM B117)

Mounting

Luminaire includes an integral slipfitter that accepts a 3" tall by $\varnothing 2\text{-}7/8\text{'}$ - $3\text{-}1/8\text{'}$ O.D. tenon. Secured to the tenon by 6 set screws

Listing

The luminaire is CSA certified to US and Canadian standards. 20kV/10kA extreme surge protection per ANSI/IEEE C136.2. Suitable for operation in ambient temperatures from -40°C to 40°C. Optical chamber is sealed to IP66.

Control Options

Optional controls include:

- Field adjustable output (AO) module for manual adjustment of lumen output of the luminaire
- Industry standard 3-pin and 7-pin NEMA photocontrols, optionally mounted inside the housing or externally in place of the finial
- "nLight AIR enabled" via motion-sensing photocontrol (RSBOR6) for connection to nLight AIR wireless control networks
- DALI compatible drivers. Contact factory for details.
- Customization of lumen packages is possible. Consult factory for details.

Listing

The luminaire is CSA certified to US and Canadian standards. 20kV/10kA extreme surge protection per ANSI/IEEE C136.2. Suitable for operation in ambient temperatures from -40°C to 40°C. Optical chamber is sealed to IP66.

Buy American

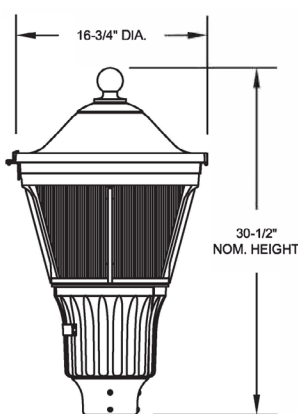
This product is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT. Please refer to www.acuitybrands.com/resources/buy-american for additional information.

Warranty - 5 Years Limited

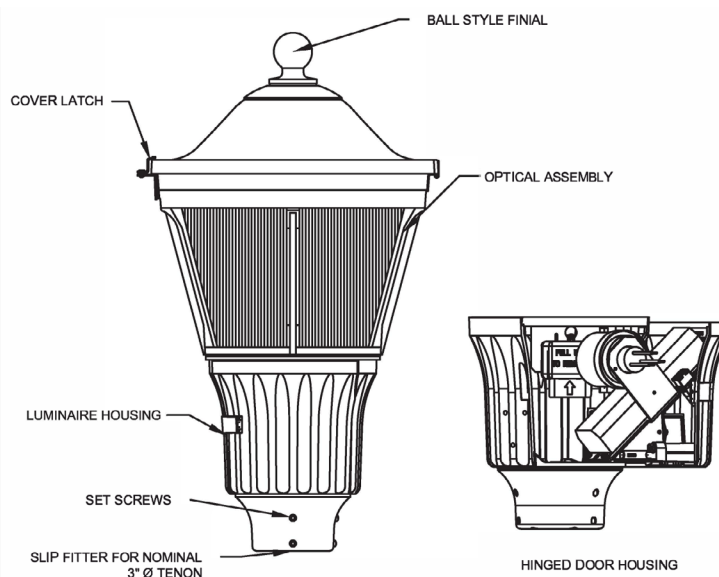
Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

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.

DIMENSIONAL DATA



Maximum Weight - 43 lbs
Maximum Effective Projected Area: 1.4 sq. ft.



PTUE3

Utility Taft Postop LED



ORDERING INFORMATION

EXAMPLE: PTUE3 P30 30K MVOLT GL3 BK BL

Housing Style	LED Performance Package	Color Temperature	Voltage	Optics	Color	Finial
PTUE3 Utility Taft LED Post Top	P10 30W nominal	27K 2700K CCT	MVOLT 120-277V	<u>Acrylic Refractor</u>	BK Black	BL Ball
	P20 40W nominal	30K 3000K CCT	HVOLT 347-480V	AL3 Acrylic refractor type 3	BZ Bronze	SK Spike
	P30 50W nominal	40K 4000K CCT	XVOLT 277-480V with enhanced power quality protection	AL5 Acrylic refractor type 5	CMC Custom Match Color	NF None
	P40 60W nominal			<u>Glass Refractor</u>	GH Graphite	
	P50 70W nominal			GL3 Glass refractor type 3	GN Green	
	P60 80W nominal			GL5 Glass refractor type 5	GR Grey	
	P70 90W nominal				RALxxxxSDCR RAL Super Durable Corrosion Resistant, 80% Gloss Paint, replace xxxx with RAL number.	
	P80 100W nominal				WH White	

Options		
Control Options:	NEMA Label Options:	Prewire Lead Options:
A0 Field adjustable output	NL1x1 1"x1" ANSI wattage label	L1H 1.5' of prewire leads
RSBOR6 nLight Air motion sensing photocontrol	NL2x2 2"x2" ANSI wattage label	L03 3' of prewire leads
PR3 3-pin NEMA twistlock receptacle, internally mounted		L10 10' of prewire leads
PR3E 3-pin NEMA twistlock receptacle, replaces finial		L20 20' of prewire leads
PR7 7-pin NEMA twistlock receptacle, internally mounted		L25 25' of prewire leads
PR7E 7-pin NEMA twistlock receptacle, replaces finial		L30 30' of prewire leads
P34 Long Life DTL Twistlock Photocontrol for Solid State, 347V		
P48 Long Life DTL Twistlock Photocontrol for Solid State, 480V		
PCLL Long Life DTL Twistlock Photocontrol for Solid State, MVOLT		
SH Shorting cap		
DALI DALI driver (RFD Required)		

Accessories: Order as separate catalog number.	
House Side Shield Field Installed Options:	
PHSS90	House side shield solid 90 degree
PHSS120	House side shield solid 120 degree
PHSS180	House side shield solid 180 degree
Surge Replacement Field Installed Options:	
SPDPLUGIN-MVOLT-20KV	Replacement for 120-277V 20KV/ 10KA
SPDPLUGIN-HVOLT-20KV	Replacement for 347-480V 20KV/ 10KA

MARK APPROPRIATE BOX FOR FINIAL OPTION

FINIALS



No Finial (NF)

Ball (BL)

Spike (SK)

PERFORMANCE DATA

Performance Package	System Watts	Optical Distribution	27K (2700K, 70 CRI)		30K (3000K, 70 CRI)		40K (4000K, 70 CRI)	
			Lumens	LPW	Lumens	LPW	Lumens	LPW
P10	31	GL3	3,526	113	3,806	122	3,876	125
		GL5	3,437	110	3,709	119	3,777	121
		AL3	3,542	114	3,823	123	3,893	125
		AL5	3,545	114	3,826	123	3,896	125
P20	40	GL3	4,617	114	4,983	123	5,075	125
		GL5	4,500	111	4,856	120	4,946	122
		AL3	4,638	115	5,006	124	5,098	126
		AL5	4,641	115	5,009	124	5,101	126
P30	51	GL3	5,692	112	6,144	121	6,257	124
		GL5	5,548	110	5,987	118	6,097	120
		AL3	5,718	113	6,171	122	6,285	124
		AL5	5,722	113	6,176	122	6,289	124
P40	59	GL3	6,869	116	7,413	125	7,550	127
		GL5	6,694	113	7,225	122	7,358	124
		AL3	6,900	116	7,447	126	7,584	128
		AL5	6,905	117	7,452	126	7,589	128
P50	70	GL3	7,873	113	8,497	122	8,653	124
		GL5	7,673	110	8,281	119	8,433	121
		AL3	7,909	113	8,535	122	8,692	125
		AL5	7,914	114	8,542	122	8,699	125
P60	80	GL3	8,811	111	9,509	119	9,684	122
		GL5	8,587	108	9,267	116	9,438	119
		AL3	8,851	111	9,552	120	9,728	122
		AL5	8,857	111	9,559	120	9,735	122
P70	90	GL3	9,730	108	10,501	117	10,694	119
		GL5	9,482	105	10,234	114	10,422	116
		AL3	9,774	108	10,549	117	10,743	119
		AL5	9,781	109	10,556	117	10,750	119
P80	100	GL3	10,504	105	11,337	113	11,545	115
		GL5	10,237	102	11,048	110	11,251	112
		AL3	10,551	105	11,388	114	11,597	116
		AL5	10,559	105	11,396	114	11,605	116

OPTIONS MATRIX

		Voltage			Optic				Finial			Control			Photocontrol Receptacle				Photocontrol			
		MVOLT	HVOLT	XVOLT	GL3	GL5	AL3	AL5	BL	SK	NF	A0	DALI	RSBOR6	PR3	PR7	PR3E	PR7E	PCLL	P34	P48	SH
Performance Package	P10	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y	Y	Y	Y	Y	Y	Y	Y	Y
	P20	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y	Y	Y	Y	Y	Y	Y	Y	Y
	P30	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y	Y	Y	Y	Y	Y	Y	Y	Y
	P40	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y	Y	Y	Y	Y	Y	Y	Y	Y
	P50	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y	Y	Y	Y	Y	Y	Y	Y	Y
	P60	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y	Y	Y	Y	Y	Y	Y	Y	Y
	P70	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y	Y	Y	Y	Y	Y	Y	Y	Y
	P80	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	RFD	Y	Y	Y	Y	Y	Y	Y	Y	Y
Voltage	MVOLT				Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y	Y	Y	Y	Y	Y	N	N	Y
	HVOLT				Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	N	Y	Y	Y
	XVOLT				Y	Y	N	N	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y
Optic	GL3	Y	Y	Y					Y	Y	Y	Y	RFD	Y	Y	Y	Y	Y	Y	Y	Y	Y
	GL5	Y	Y	Y					Y	Y	Y	Y	RFD	Y	Y	Y	Y	Y	Y	Y	Y	Y
	AL3	Y	Y	N					Y	Y	Y	Y	RFD	Y	Y	Y	Y	Y	Y	Y	Y	Y
	AL5	Y	Y	N					Y	Y	Y	Y	RFD	Y	Y	Y	Y	Y	Y	Y	Y	Y
Finial	BL	Y	Y	Y	Y	Y	Y	Y				Y	RFD	Y	Y	Y	N	N	Y	Y	Y	Y
	SK	Y	Y	Y	Y	Y	Y	Y				Y	RFD	Y	Y	Y	N	N	Y	Y	Y	Y
	NF	Y	Y	Y	Y	Y	Y	Y				Y	RFD	Y	Y	Y	Y	Y	Y	Y	Y	Y
Control	A0	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y				Y	Y	Y	Y	Y	Y	Y	Y
	DALI	RFD	N	N	RFD	RFD	RFD	RFD	RFD	RFD	RFD				RFD	RFD	RFD	RFD	RFD	RFD	RFD	RFD
	RSBOR6	Y	Y	N	Y	Y	Y	Y	Y	Y	Y				N	N	N	N	N	N	N	N
Photocontrol Receptacle	PR3	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	N					Y	Y	Y	Y	
	PR7	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	N					Y	Y	Y	Y	
	PR3E	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	RFD	N					Y	Y	Y	Y
	PR7E	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	RFD	N					Y	Y	Y	Y
Photocontrol	PCLL	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	RFD	N	Y	Y	Y	Y					
	P34	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	N	Y	Y	Y	Y					
	P48	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	N	Y	Y	Y	Y					
	SH	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	N	Y	Y	Y	Y				

OPTIONS MATRIX Legend

Y = Option combination is available
 N = Option combination is not available
 RFD = Additional information required, consult factory

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Luminaire Ambient Temperature (LAT) Factor		
Temperature (°C)	Temperature (°F)	Lumen Multiplier
0°C	32°F	1.04
5°C	41°F	1.03
10°C	50°F	1.02
15°C	59°F	1.01
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
35°C	95°F	0.98
40°C	104°F	0.98

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a 25°C ambient, based on 9,000 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.

LED Lumen Maintenance							
Performance Package	Initial	25,000 hours	36,000 hours	50,000 hours	60,000 hours	75,000 hours	100,000 hours
P10 thru P70	1.00	0.95	0.94	0.91	<i>0.90</i>	<i>0.88</i>	<i>0.84</i>
P80	1.00	0.94	0.91	0.89	<i>0.86</i>	<i>0.83</i>	<i>0.79</i>

The italicized data is extrapolated beyond the TM-21 standard.

Catalog Number	
Notes	Type

PTE3

Taft Posttop LED



SPECIFICATIONS

General Description

The decorative post top lantern is ideal for lighting city streets, residential areas, campuses, parking lots, and walkways. The architectural luminaire consists of a luminaire housing, a prismatic optic, and a decorative cover.

Optical Assembly

The optical assembly consists of a prismatic glass or acrylic refractor to precisely distribute light with excellent visual comfort and reduced glare. Configurable with CCT options of 2700K, 3000K, and 4000K. CRI is 70 minimum. Available in symmetric and asymmetric distributions.

Electrical Assembly

The programmable LED driver includes 0-10V dimming with optional DALI dimming. Driver is available in 120-277V, 347-480V, and 277V-480V options (50/60 Hz). Driver life is rated to at least 100,000 hours. The 277V-480V (XVOLT) option includes enhanced power quality protection for maximum robustness against loss of neutral, voltage transients, harmonic disturbances, and other real-world power quality disturbances.

Finish

The luminaire housing is low copper cast aluminum and finished with corrosion resistant super durable powder coat paint for maximum durability. Rigorous multi-stage pre-treating and painting process yields a finish that achieves a scribe creepage rating of 8 (per ASTM D1654) after over 5,000 hours exposure to salt fog chamber (operated per ASTM B117)

Mounting

Luminaire includes an integral slipfitter that accepts a 3" tall by $\varnothing 2-7/8"$ - $3-1/8"$ O.D. tenon. Secured to the tenon by 6 set screws

Control Options

Optional controls include:

- Industry standard 3-pin and 7-pin NEMA photocontrols, mounted externally in place of the finial
- DALI compatible drivers. Contact factory for details.
- Customization of lumen packages is possible. Consult factory for details.

Listing

The luminaire is CSA certified to US and Canadian standards. 20kV/10kA extreme surge protection per ANSI/IEEE C136.2. Suitable for operation in ambient temperatures from -40°C to 40°C. Optical chamber is sealed to IP66.

Buy American

This product is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT. Please refer to www.acuitybrands.com/resources/buy-american for additional information.

Warranty - 5 Years Limited

Complete warranty terms located at:

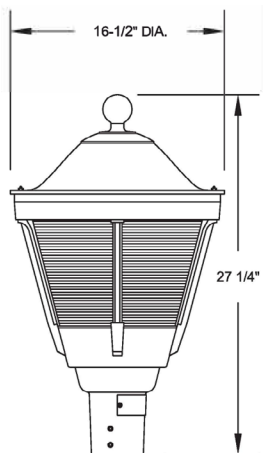
www.acuitybrands.com/support/warranty/terms-and-conditions

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

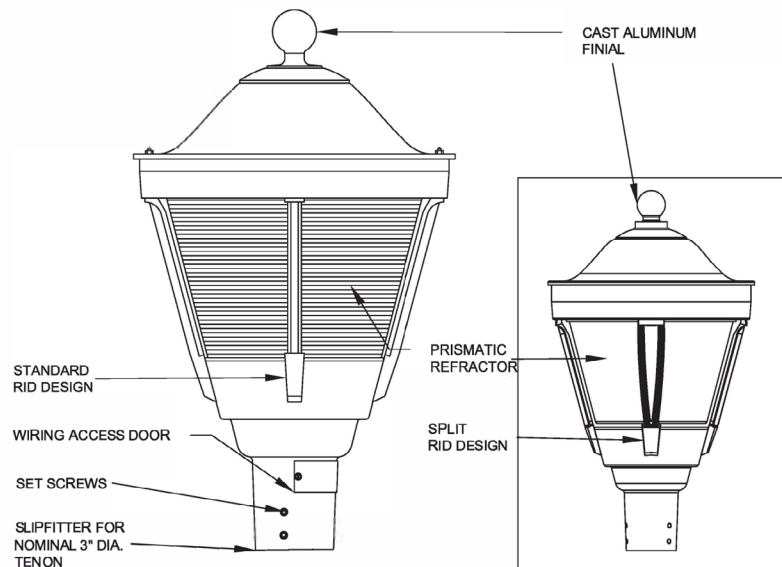
All values are design or typical values, measured under laboratory conditions at 25 °C.



DIMENSIONAL DATA



Maximum Weight - 32 lbs
Maximum Effective Projected Area:
1.3 sq. ft.



ORDERING INFORMATION

EXAMPLE: PTE3 P30 30K MVOLT GL3 BK BL SR

Housing Style	LED Performance Package	Color Temperature	Voltage	Optics	Color	Finial	Ribs
PTE3 Taft LED Post Top	P10 30W nominal	27K 2700K CCT	MVOLT 120-277V	<u>Acrylic Refractor</u>	BK Black	BL Ball	SR Solid rib
	P20 40W nominal	30K 3000K CCT	HVOLT 347-480V	AL3 Acrylic refractor type 3	BZ Bronze	NF None	SRS Split rib
	P30 50W nominal	40K 4000K CCT	XVOLT 277-480V with enhanced power quality protection	AL5 Acrylic refractor type 5	CMC Custom Match Color		
	P40 60W nominal			<u>Glass Refractor</u>	GH Graphite		
	P50 70W nominal			GL3 Glass refractor type 3	GN Green		
	P60 80W nominal			GL5 Glass refractor type 5	GR Grey		
	P70 90W nominal				RALxxxxSDCR RAL Super Durable Corrosion Resistant, 80% Gloss Paint, replace xxxx with RAL number.		
	P80 100W nominal				WH White		

Options		
Control Options:	NEMA Label Options:	Prewire Lead Options:
PR3E 3-pin NEMA twistlock receptacle, replaces finial	NL1x1 1"x1" ANSI wattage label	L1H 1.5' of prewire leads
PR7E 7-pin NEMA twistlock receptacle, replaces finial	NL2x2 2"x2" ANSI wattage label	L03 3' of prewire leads
P34 Long Life DTL Twistlock Photocontrol for Solid State, 347V		L10 10' of prewire leads
P48 Long Life DTL Twistlock Photocontrol for Solid State, 480V		L20 20' of prewire leads
PCLL Long Life DTL Twistlock Photocontrol for Solid State, MVOLT		L25 25' of prewire leads
SH Shorting cap		L30 30' of prewire leads
DALI DALI driver (RFD Required)		

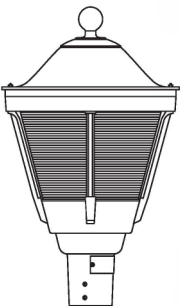

Accessories: Order as separate catalog number.	
House Side Shield Field Installed Options:	Decorative field installed options
PHSS90 House side shield solid 90 degree	RPCP** Decorative Cupola (**=select color)
PHSS120 House side shield solid 120 degree	RPGF** Decorative filligree (**= select color)
PHSS180 House side shield solid 180 degree	RPSC** Decorative cast scroll (**= select color)
Surge Replacement Field Installed Options:	Photocontrol kit field installed options
SPDPLUGIN-MVOLT-20KV Replacement for 120-277V 20KV/ 10KA	RPB12** Photocontrol kit for 120V (**=select color)
SPDPLUGIN-HVOLT-20KV Replacement for 347-480V 20KV/ 10KA	RPB27** Photocontrol kit for 208-277V (**= select color)
	RPB347** Photocontrol kit for 347V (**=select color)

MARK APPROPRIATE BOX FOR FINIAL AND RIB OPTIONS

FINIALS

No Finial (NF)
 Ball (BL)

RIB OPTIONS

Standard Ribs (SR)
 Split Ribs (SRS)

PERFORMANCE DATA

Performance Package	System Watts	Optical Distribution	27K (2700K, 70 CRI)		30K (3000K, 70 CRI)		40K (4000K, 70 CRI)	
			Lumens	LPW	Lumens	LPW	Lumens	LPW
P10	31	GL3	3,526	113	3,806	122	3,876	125
		GL5	3,437	110	3,709	119	3,777	121
		AL3	3,542	114	3,823	123	3,893	125
		AL5	3,545	114	3,826	123	3,896	125
P20	40	GL3	4,617	114	4,983	123	5,075	125
		GL5	4,500	111	4,856	120	4,946	122
		AL3	4,638	115	5,006	124	5,098	126
		AL5	4,641	115	5,009	124	5,101	126
P30	51	GL3	5,692	112	6,144	121	6,257	124
		GL5	5,548	110	5,987	118	6,097	120
		AL3	5,718	113	6,171	122	6,285	124
		AL5	5,722	113	6,176	122	6,289	124
P40	59	GL3	6,869	116	7,413	125	7,550	127
		GL5	6,694	113	7,225	122	7,358	124
		AL3	6,900	116	7,447	126	7,584	128
		AL5	6,905	117	7,452	126	7,589	128
P50	70	GL3	7,873	113	8,497	122	8,653	124
		GL5	7,673	110	8,281	119	8,433	121
		AL3	7,909	113	8,535	122	8,692	125
		AL5	7,914	114	8,542	122	8,699	125
P60	80	GL3	8,811	111	9,509	119	9,684	122
		GL5	8,587	108	9,267	116	9,438	119
		AL3	8,851	111	9,552	120	9,728	122
		AL5	8,857	111	9,559	120	9,735	122
P70	90	GL3	9,730	108	10,501	117	10,694	119
		GL5	9,482	105	10,234	114	10,422	116
		AL3	9,774	108	10,549	117	10,743	119
		AL5	9,781	109	10,556	117	10,750	119
P80	100	GL3	10,504	105	11,337	113	11,545	115
		GL5	10,237	102	11,048	110	11,251	112
		AL3	10,551	105	11,388	114	11,597	116
		AL5	10,559	105	11,396	114	11,605	116

OPTIONS MATRIX

		Voltage			Optic				Finial			Control			Photocontrol Receptacle				Photocontrol							
		MVOLT	HVOLT	XVOLT	GL3	GL5	AL3	AL5	BL	SK	NF	AO	DALI	RSBOR6	PR3	PR7	PR3E	PR7E	PCLL	P34	P48	SH				
Performance Package	P10	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y	Y	Y	Y	Y	Y	Y	Y	Y				
	P20	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y	Y	Y	Y	Y	Y	Y	Y	Y				
	P30	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y	Y	Y	Y	Y	Y	Y	Y	Y				
	P40	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y	Y	Y	Y	Y	Y	Y	Y	Y				
	P50	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y	Y	Y	Y	Y	Y	Y	Y	Y				
	P60	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y	Y	Y	Y	Y	Y	Y	Y	Y				
	P70	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y	Y	Y	Y	Y	Y	Y	Y	Y				
	P80	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	RFD	Y	Y	Y	Y	Y	Y	Y	Y	Y				
Voltage	MVOLT				Y	Y	Y	Y	Y	Y	Y	Y	RFD	Y	Y	Y	Y	Y	Y	N	N	Y				
	HVOLT				Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	N	Y	Y	Y				
	XVOLT				Y	Y	N	N	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y				
Optic	GL3	Y	Y	Y					Y	Y	Y	Y	RFD	Y	Y	Y	Y	Y	Y	Y	Y	Y				
	GL5	Y	Y	Y					Y	Y	Y	Y	RFD	Y	Y	Y	Y	Y	Y	Y	Y	Y				
	AL3	Y	Y	N					Y	Y	Y	Y	RFD	Y	Y	Y	Y	Y	Y	Y	Y	Y				
	AL5	Y	Y	N					Y	Y	Y	Y	RFD	Y	Y	Y	Y	Y	Y	Y	Y	Y				
Finial	BL	Y	Y	Y	Y	Y	Y	Y				Y	RFD	Y	Y	Y	N	N	Y	Y	Y	Y				
	SK	Y	Y	Y	Y	Y	Y	Y				Y	RFD	Y	Y	Y	N	N	Y	Y	Y	Y				
	NF	Y	Y	Y	Y	Y	Y	Y				Y	RFD	Y	Y	Y	Y	Y	Y	Y	Y	Y				
Control	AO	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			N	N	Y	Y	Y	Y	Y	Y	Y				
	DALI	RFD	N	N	RFD	RFD	RFD	RFD	RFD	RFD	RFD	N						RFD	RFD	RFD	RFD	RFD	RFD			
	RSBOR6	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N						N	N	N	N	N	N			
Photocontrol Receptacle	PR3	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	N									Y	Y	Y	Y
	PR7	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	N									Y	Y	Y	Y
	PR3E	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	RFD	N									Y	Y	Y	Y
	PR7E	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	RFD	N									Y	Y	Y	Y
Photocontrol	PCLL	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	N	Y	Y	Y	Y								
	P34	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	N	Y	Y	Y	Y								
	P48	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	N	Y	Y	Y	Y								
	SH	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	RFD	N	Y	Y	Y	Y								

OPTIONS MATRIX Legend

Y = Option combination is available
 N = Option combination is not available
 RFD = Additional information required, consult factory

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Luminaire Ambient Temperature (LAT) Factor		
Temperature (°C)	Temperature (°F)	Lumen Multiplier
0°C	32°F	1.04
5°C	41°F	1.03
10°C	50°F	1.02
15°C	59°F	1.01
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
35°C	95°F	0.98
40°C	104°F	0.98

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a 25°C ambient, based on 9,000 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.

LED Lumen Maintenance							
Performance Package	Initial	25,000 hours	36,000 hours	50,000 hours	60,000 hours	75,000 hours	100,000 hours
P10 thru P70	1.00	0.95	0.94	0.91	<i>0.90</i>	<i>0.88</i>	<i>0.84</i>
P80	1.00	0.94	0.91	0.89	<i>0.86</i>	<i>0.83</i>	<i>0.79</i>

The italicized data is extrapolated beyond the TM-21 standard.

Catalog Number	
Notes	Type

PUCL2

Utility Taft Series Luminaire Full Cutoff LED2



Mechanical

- Heavy grade A360 cast aluminum (<1% copper)
- Tool-less access with a spring-loaded latch
- Hidden hinge door allowing the door to swing open and remain open
- Optional internal or external NEMA twist lock photocontrol receptacle. Housing contains a tempered glass window to allow light to reach the cell for internal versions.
- Mount to slip-fitter that will accept 3" high by 2-7/8" to 3-1/8" O.D. pole tenon
- Decorative top cover contains stainless steel hinge which secures entry the LED optical chamber
- Polyester power coat paint to ensure maximum durability
- Rigorous multi-stage pre-treating and painting process yields a finish that achieves a scribe creepage rating of 8 (per ASTM D1654) after over 5,000 hours exposure to salt fog chamber (operated per ASTM B117) on standard and RAL finish options.
- RAL (RALxxxxSDCR) paint colors are Super Durable Corrosion Resistant, 80% gloss.

Electrical

- All surge protection meets ANSI/IEEE C62.41.2 10kV/10kA.
- Standard SPD meets 10kV/5kA per ANSI C136.2-2015.
- 20KV Option meets 20kV/10kA per ANSI C136.2-2015.
- Quick disconnect connectors for ease of installation and maintenance.
- Three pole terminal block is standard, with optional prewired leads for ease of installation
- LED drivers meet maximum total harmonic distortion (THD) of 20%, >0.90 Power Factor and are ROHS compliant. Minimum operating temperature is -40°C. Electronic driver has an estimated minimum life of 100,000 hours at 25°C.

Optical

- IP65 rated optical compartment
- LED circuit board located in the top cover
- Asymmetric or Symmetric full cutoff distributions
- 2700K, 3000K, 4000K, and 5000K CCT
- 70CRI Standard

Control Options

- Field Adjustable Output (AO) module - Onboard device that adjusts the light output and input wattage to meet site specific requirements. The AO module is preset at the factory to position number 8 (see chart).
- Factory Programmed Driver (FPDxx) - Customize lumen output prior to manufacturing and still enables control leads so other options can also be used
- Long Life Photocontrols (PCLL) - 20 Year Life
- 3 and 7 pin photocontrol receptacles internally (PR3, PR7) or externally (PR3E, PR7E) mounted

Testing/Compliance

- UL 1598 - Wet Locations Safety Listing
- Suitable for ambient temperatures -40°C to 40°C

Manufacturing

- Manufactured in Crawfordsville, Indiana, ARRA compliant
- 100% electrical testing on all luminaires before shipment
- Ten (10) years minimum experience in manufacturing LED based products

Buy American

This product is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT. Please refer to www.acuitybrands.com/resources/buy-american for additional information.

Warranty

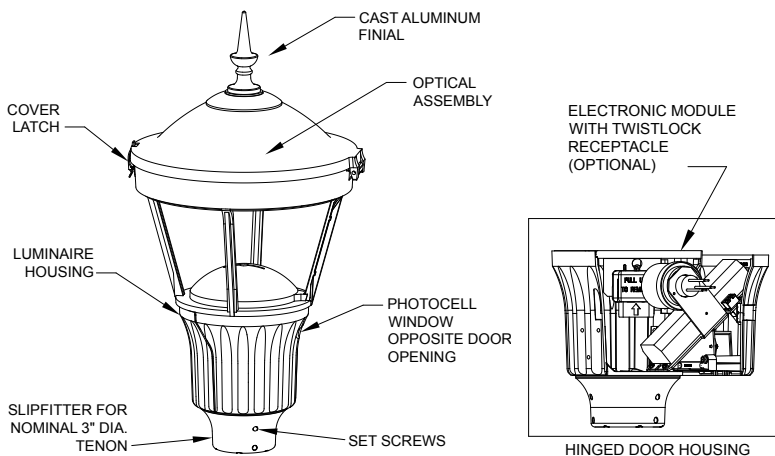
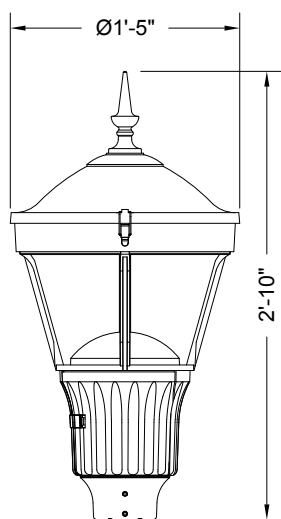
5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

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.

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.

DIMENSIONAL DATA



Maximum Weight - 39 lbs
Maximum Effective Projected Area - 1.24 sq. ft.

PUCL2

Utility Taft Series Luminaire Full Cutoff LED2

ORDERING INFORMATION

Example: PUCL2 P20 30K MVOLT FC2 GN NF PR7E

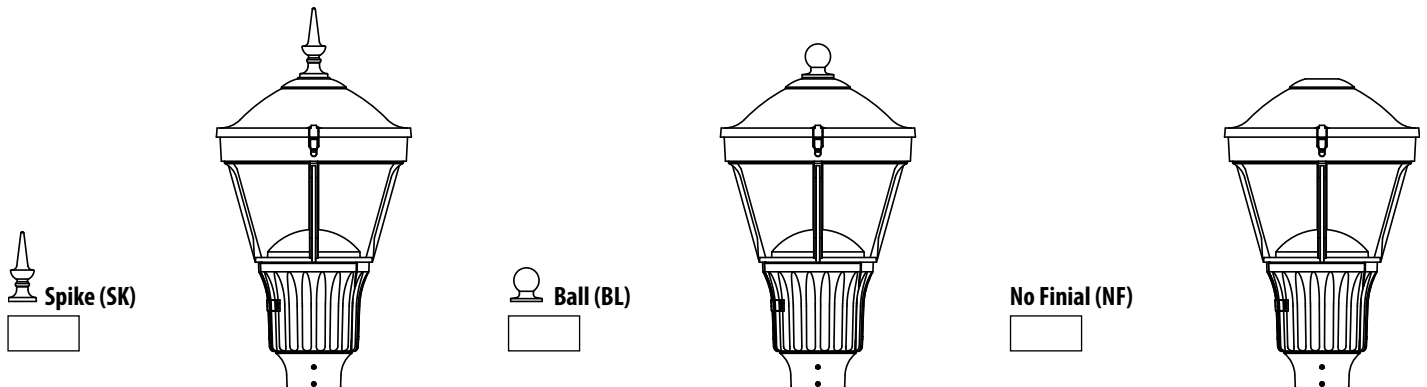
Series	Led performance package	LED Color temperature	Voltage	Optics	Housing color	Finial
PUCL2 Utility Taft LED FCO	P10	1,500 nominal lumens (amber only)	AMB True amber	MVOLT Auto-sensing voltage (120 thru 277) 50/60 HZ	FC2 Type 2 distribution full cutoff FC3 Type 3 distribution full cutoff FC4 Type 4 distribution full cutoff FC5 Type 5 distribution full cutoff	BK Black
	P20	4,500 nominal lumens	27K 2700K CCT			GR Gray
	P30	6,500 nominal lumens	30K 3000K CCT	GH Graphite		
	P40	8,500 nominal lumens	40K 4000K CCT	GN Green		
	P50	11,500 nominal lumens	50K 5000K CCT	PP Prime paint		
					WH White	NF None
					BZ Bronze	BL Ball
					RALxxxxSDCR RAL Super Durable Corrosion Resistant, 80% Gloss Paint, replace xxxx with RAL number.	SK Spike
					CMC Custom color match	

Options: Option Compatibility Matrix on page 3 of 4		
A0	Field Adjustable Output	PR3E NEMA Twist Lock Photocontrol Receptacle - 3 PIN. Externally mounted, available with NF option
FPDxx	Factory Programmed Driver	PR7E NEMA Twist Lock Photocontrol Receptacle - 7 PIN. Externally mounted, available with NF option
PR3	NEMA Twist Lock photocontrol receptacle - 3 PIN receptacle only.	SH Shorting cap
PR7	NEMA Twist Lock Dimming photocontrol receptacle - 7 PIN receptacle only.	HSS House side shield
PCLL	DTL long life twistlock photocontrol for solid-state MVOLT	L1H 1.5 ft prewired leads
P34	DTL long life twistlock photocontrol for solid-state 347V	L03 3ft prewired leads
P48	DTL long life twistlock photocontrol for solid-state 480V	L10 10 ft prewired leads
		L20 20 ft prewired leads
		L25 25 ft prewired leads
		L30 30 ft prewired leads
		NL1X1 NEMA Label 1" X 1"
		NL2X2 NEMA Label 2" X 2"
		20KV 20kV/10kA surge protection

Accessories: Order as separate catalog number.	
XXCL2HSS1	Field Accessory - Louvered house side shield (Qty 1)
XXCL2HSSJ50	Field Accessory - Louvered house side shield (Bulk Qty 50)
XXCL2SPD10KAS	10kV/5kA Extreme surge 120-277V
XXCL2SPD10KAH	10kV/5kA Extreme surge 480V
XXCL2SPD20KAS	20kV/10kA Extreme surge 120-277V
XXCL2SPD20KAH	20kV/10kA Extreme surge 480V

FINIAL INFORMATION

Mark Appropriate Box for Finial Options



OPTIONS MATRIX

Mounting		SELECTED OPTION (start here)										
		AO	FPDxx	PR3	PR3E	PR7	PR7E	P34	P48	PCLL	SH	20kV
LED Performance Package	P10	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	P20	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	P30	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	P40	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	P50	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N
Voltage	MVOLT	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y
	HVOLT	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Finial	BL	Y	Y	Y	N	Y	N	Y	Y	Y	Y	Y
	SK	Y	Y	Y	N	Y	N	Y	Y	Y	Y	Y
	NF	Y	Y	Y	M	Y	M	Y	Y	Y	Y	Y
Compatible Options	AO		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	FPDxx	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y
	PR3	Y	Y		N	N	N	Y	Y	Y	Y	Y
	PR3E	Y	Y	N		N	N	Y	Y	Y	Y	Y
	PR7	Y	Y	N	N		N	Y	Y	Y	Y	Y
	PR7E	Y	Y	N	N	N		Y	Y	Y	Y	Y
	P34	Y	Y	Y	Y	Y	Y		N	N	N	Y
	P48	Y	Y	Y	Y	Y	Y	N		N	N	Y
	PCLL	Y	Y	Y	Y	Y	Y	N	N		N	Y
	SH	Y	Y	Y	Y	Y	Y	N	N	N		Y
20kV	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		

Y = Valid Option Combination

M = Must have: one of these must be installed for the luminaire to operate

N = Combination Not available

LUMEN AMBIENT TEMPERATURE (LAT) MULTIPLIERS

Use the factors to determine relative lumen output for average ambient temperatures from 0-40C (32-104F)

Ambient Temp (degrees C) Lumen Multiplier								
0	5	10	15	20	25	30	35	40
1.05	1.04	1.03	1.02	1.01	1.00	0.99	0.98	0.97

PROJECTED LED LUMEN MAINTENANCE

Data references the extrapolated performance projections for the platforms noted in 25C ambient, based on 6,000 hours of IED 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.

Package	Lumen Maintenance						L70 Hrs
	25k hrs	36k hrs	50k hrs	60k hrs	75k hrs	100k hrs	
P20-P40	0.97	0.96	0.95	0.94	0.93	0.91	383,000
P50	0.96	0.94	0.93	0.91	0.90	0.87	267,667

PERFORMANCE DATA

LED Package	Distribution	System Watts	2700K		3000K		4000K		5000K	
			Lumens	LPW	Lumens	LPW	Lumens	LPW	Lumens	LPW
P20	FC2	45	4633	103	4734	105	5218	116	5375	119
	FC3	45	4101	91	4190	93	4618	103	4758	106
	FC4	45	4414	98	4510	100	4971	110	5121	114
	FC5	45	4500	100	4598	102	5068	113	5221	116
P30	FC2	66	6711	102	6857	104	7557	115	7785	118
	FC3	66	5940	90	6069	92	6689	101	6891	104
	FC4	66	6394	97	6533	99	7200	109	7418	112
	FC5	66	6518	99	6660	101	7340	112	7562	115
P40	FC2	89	8528	96	8714	98	9604	108	9894	111
	FC3	89	7549	85	7714	87	8501	96	8758	98
	FC4	89	8125	91	8303	93	9151	103	9427	106
	FC5	89	8283	93	8464	95	9329	105	9610	108
P50	FC2	139	12327	89	12596	91	13882	100	14301	103
	FC3	139	10911	78	11149	80	12288	88	12658	91
	FC4	139	11744	84	12001	86	13226	95	13626	98
	FC5	139	11972	86	12234	88	13483	97	13890	100

FPDXX DATA OPTIONS

FPDxx Setting	Wattage	P20 27K				P20 30K				P20 40K				P20 50K			
		FC2	FC3	FC4	FC5	FC2	FC3	FC4	FC5	FC2	FC3	FC4	FC5	FC2	FC3	FC4	FC5
Standard	45	4633	4101	4414	4500	4732	4190	4510	4598	5218	4618	4971	5068	5375	4758	5121	5221
FPD95	43	4401	3896	4193	4275	4497	3981	4285	4368	4957	4387	4722	4815	5106	4520	4865	4960
FPD90	41	4170	3691	3973	4050	4261	3771	4059	4138	4696	4156	4474	4561	4838	4282	4609	4699
FPD85	38	3938	3486	3752	3825	4024	3562	3834	3908	4435	3925	4225	4308	4569	4044	4353	4438
FPD80	36	3706	3281	3531	3600	3787	3352	3608	3678	4174	3694	3977	4054	4300	3806	4097	4177

FPDxx Setting	Wattage	P30 27K				P30 30K				P30 40K				P30 50K			
		FC2	FC3	FC4	FC5	FC2	FC3	FC4	FC5	FC2	FC3	FC4	FC5	FC2	FC3	FC4	FC5
Standard	66	6711	5940	6394	6518	6857	6069	6533	6660	7557	6689	7200	7340	7785	6891	7418	7562
FPD95	63	6375	5643	6074	6192	6514	5766	6206	6327	7179	6355	6840	6973	7396	6546	7047	7184
FPD90	59	6040	5346	5755	5866	6171	5462	5880	5994	6801	6020	6480	6606	7007	6202	6676	6806
FPD85	56	5704	5049	5435	5540	5828	5159	5553	5661	6423	5686	6120	6239	6617	5857	6305	6428
FPD80	53	5369	4752	5115	5214	5846	4855	5226	5328	6046	5351	5760	5872	6228	5513	5934	6050
FPD75	50	5033	4455	4796	4889	5143	4552	4900	4995	5668	5017	5400	5505	5839	5564	5564	5672
FPD70	46	4698	4158	4476	4563	4800	4248	4573	4662	5290	4682	5040	5138	5450	5193	5193	5293

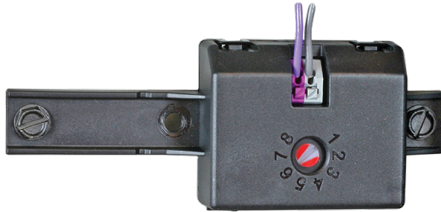
FPDxx Setting	Wattage	P40 27K				P40 30K				P40 40K				P40 50K			
		FC2	FC3	FC4	FC5	FC2	FC3	FC4	FC5	FC2	FC3	FC4	FC5	FC2	FC3	FC4	FC5
Standard	89	8528	7549	8125	8283	8714	7714	8303	8464	9604	8501	9151	9329	9894	8758	9427	9610
FPD95	85	8102	7172	7719	7869	8278	7328	7888	8041	9124	8076	8693	8863	9400	8320	8956	9130
FPD90	80	7675	6794	7313	7455	7483	6943	7473	7618	8644	7651	8236	8396	8905	7882	8484	8649
FPD85	76	7249	6417	6906	7041	7407	6557	7058	7194	8163	7226	7778	7930	8410	7444	8013	8169
FPD80	71	6822	6039	6500	6626	6971	6171	6642	6771	7683	6801	7321	7463	7916	7006	7542	7688

FPDxx Setting	Wattage	P50 27K				P50 30K				P50 40K				P50 50K			
		FC2	FC3	FC4	FC5	FC2	FC3	FC4	FC5	FC2	FC3	FC4	FC5	FC2	FC3	FC4	FC5
Standard	139	12327	10911	11744	11972	12596	11149	12001	12234	13882	12288	13226	13483	14301	12658	13626	13890
FPD95	132	11710	10365	11157	11374	11966	10591	11401	11622	13188	11673	12565	12809	13586	12026	12944	13196
FPD90	125	11094	9820	10570	10775	11336	10034	10801	11010	12494	11059	11904	12135	12871	11393	12263	12501
FPD85	118	10478	9274	9983	10176	10706	9476	10201	10399	11800	10444	11242	11461	12156	10760	11582	11807
FPD80	111	9861	8729	9395	9578	10076	8919	9600	9787	11106	9830	10581	10786	11441	10127	10900	11112

PUCL2

Utility Taft Series Luminaire Full Cutoff LED2

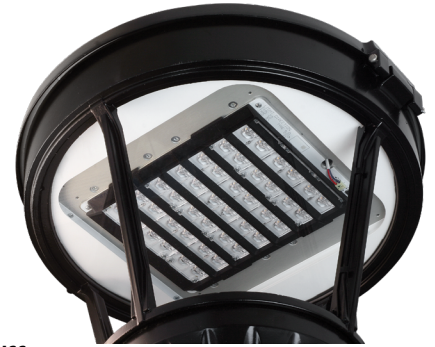
COMPONENTS & OPTIONS DATA



AO
Manual field adjustable output dimming device



20kV
Safeguard your investment from extreme voltage spikes with our new Extreme 20kV/10kA SPD



HSS
Minimize backlight with a lowered house-side-shield. Available as a factory option or field accessory



Lumec Square Lantern LED post top luminaires draw on the designs of yesteryear in order to evoke a feeling of harmony and warmth in any project. This series is another example of how Lumec melds feelings of old-time luminaires with modern lighting techniques and technology. It can complement many settings thanks to its two sizes and its internal components assure long life, reliability, and durability. The blend of form and function makes the Square Lantern luminaires an excellent choice for older neighborhoods or contemporary environments.

Project: _____
 Location: _____
 Cat.No: _____
 Type: _____
 Lamps: _____ Qty: _____
 Notes: _____

Ordering guide

example: S40-72W32LED4K-G3-ACDR-C-LE3-120-DMG-SFR-HS-GN8TX

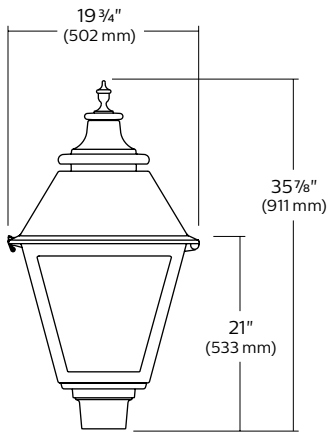
Series	LED module	Gen.	Globe material	Globe finish	Optical system	Voltage	Driver options	Adapter	Luminaire options	Poles/ Brackets	Finish
		G3									
S40 S41	3000K 35W32LED3K 55W32LED3K 55W48LED3K 72W32LED3K 80W48LED3K 108W48LED3K 4000K 35W32LED4K 55W32LED4K 55W48LED4K 72W32LED4K 80W48LED4K 108W48LED4K	G3 Gen3	ACDR Acrylic Globe PC Poly- carbonate	C Clear Globe CS¹ Satin Clear Globe	LE2 Type II (ASYM) LE3 Type III (ASYM) LE4 Type IV (ASYM) LE5² Type V (SYM)	120 208 240 277 347 480	AST³ Pre-set driver for progressive start-up CDMGE25³ (2) 8 hrs. 25% reduction CDMGE50³ (2) 8 hrs. 50% reduction CDMGE75³ (2) 8 hrs. 75% reduction CDMGM25³ (2) 6 hrs. 25% reduction CDMGM50³ (2) 6 hrs. 50% reduction CDMGM75³ (2) 6 hrs. 75% reduction CDMGS25³ (2) 4 hrs. 25% reduction CDMGS50³ (2) 4 hrs. 50% reduction CDMGS75³ (2) 4 hrs. 75% reduction CLO³ Pre-set driver to manage lumen depreciation DMG 0-10V OTL³ Pre-set driver to signal end of life of the lamp SRD¹ Sensor ready driver (standard configuration) SRD1¹ Sensor ready driver (alternate configuration)	SFR S40 SF41 S41	HS House Side Shield PH7⁴ Photoelectric cell button type RCD7⁵ Receptacle 7-pin SP2 20kV/20kA surge protector TN2.875C 2 7/8" dia. Tenon adaptor TN3 3" dia. Tenon adaptor TN3.5 3 1/2" dia. Tenon adaptor	Consult with signify.com/ outdoorluminaires for details and the complete line of Signify poles and brackets.	Textured BE2TX Midnight Blue BE6TX Ocean Blue BE8TX Royal Blue BG2TX Sandstone BKTX Black BRTX Bronze GN4TX Blue Green GN6TX Forest Green GN8TX Dark Forest Green GNTX Green GY3TX Medium Grey RD2TX Burgundy RD4TX Scarlet WHTX White Other GR Gray Sandtex NP Natural Aluminum TG Hammertone Gold

1. Only available in Polycarbonate.
 2. Not available with HS option.
 3. Not available 347-480 volt.
 4. Not available with WC option.
 5. If RCD7 is required you need to select WC without cupola. The RCD7 is located on top of the roof in place of the cupola for use with a control node.

S40-S41 Square Lantern LED Post Top

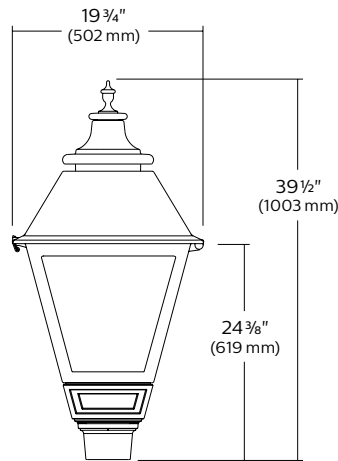
Urban Luminaire

Dimensions



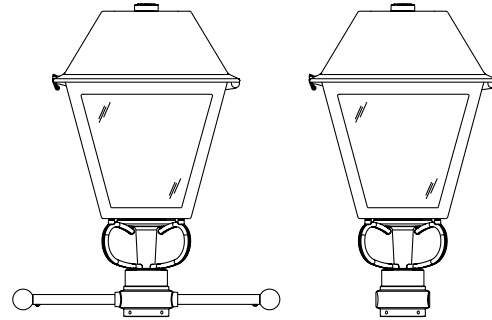
S40

EPA: 2.97 sq ft
Weight: 44 lbs (20 kg)



S41

EPA: 3.25 sq ft
Weight: 45 lbs (20.4 kg)



LED Wattage and Lumen Values: for S40 / S41 with Clear Globe

Ordering Code: Clear Globe (3000K)	Total LEDs	LED current (mA)	Average System Wattage ¹ (W)	LE2			LE3			LE4			LE5		
				Lumen Output ²	BUG Rating	Efficacy (LPW)	Lumen Output ²	Efficacy (LPW)	BUG Rating	Lumen Output ²	Efficacy (LPW)	BUG Rating	Lumen Output ²	Efficacy (LPW)	BUG Rating
35W32LED3K-G3-C-x	32	350	37	3876	B1-U3-G1	105	3859	B1-U3-G1	104	3769	B1-U3-G1	102	3870	B3-U3-G1	105
55W32LED3K-G3-C-x	32	530	54	5560	B1-U3-G1	103	5536	B1-U3-G1	103	5406	B1-U3-G2	100	5552	B3-U3-G1	103
72W32LED3K-G3-C-x	32	700	73	7011	B2-U3-G2	96	6981	B1-U3-G2	96	6818	B1-U3-G2	93	7002	B3-U3-G2	96
55W48LED3K-G3-C-x	48	350	55	5813	B1-U3-G1	105	5789	B1-U3-G1	105	5653	B1-U3-G2	103	5805	B3-U3-G1	105
80W48LED3K-G3-C-x	48	530	81	8339	B2-U3-G2	103	8304	B2-U3-G2	103	8108	B1-U3-G2	101	8327	B3-U3-G2	103
108W48LED3K-G3-C-x	48	700	106	10516	B2-U3-G2	99	10473	B2-U3-G2	99	10227	B2-U3-G2	96	10502	B4-U3-G2	99

Ordering Code: Clear Globe (4000K)	Total LEDs	LED current (mA)	Average System Wattage ¹ (W)	LE2			LE3			LE4			LE5		
				Lumen Output ²	BUG Rating	Efficacy (LPW)	Lumen Output ²	Efficacy (LPW)	BUG Rating	Lumen Output ²	Efficacy (LPW)	BUG Rating	Lumen Output ²	Efficacy (LPW)	BUG Rating
35W32LED4K-G3-C-x	32	350	37	4302	B1-U3-G1	116	4284	B1-U3-G1	116	4183	B1-U3-G1	113	4296	B3-U3-G1	116
55W32LED4K-G3-C-x	32	530	54	6171	B1-U3-G1	114	6145	B1-U3-G2	114	6000	B1-U3-G2	111	6162	B3-U3-G1	114
72W32LED4K-G3-C-x	32	700	73	7782	B2-U3-G2	107	7750	B2-U3-G2	106	7568	B1-U3-G2	104	7771	B3-U3-G2	106
55W48LED4K-G3-C-x	48	350	55	6453	B1-U3-G1	117	6426	B1-U3-G2	117	6275	B1-U3-G2	114	6444	B3-U3-G2	117
80W48LED4K-G3-C-x	48	530	81	9256	B2-U3-G2	115	9217	B2-U3-G2	114	9001	B2-U3-G2	112	9243	B4-U3-G2	115
108W48LED4K-G3-C-x	48	700	106	11674	B2-U3-G2	110	11625	B2-U3-G2	110	11352	B2-U3-G2	107	11657	B4-U3-G2	110

Actual performance may vary due to installation variables including optics, mounting/ceiling height, dirt depreciation, light loss factor, etc.; highly recommended to confirm performance with a layout - contact Applications at signify.com/outdoorluminaires.

Note: Some data may be scaled based on tests on similar but not identical luminaires.

S40-S41 Square Lantern LED Post Top

Urban Luminaire

LED Wattage and Lumen Values: for S40 / S41 with Clear Satin Globe

Ordering Code: Clear Satin Globe (3000K)	Total LEDs	LED current (mA)	Average System Wattage ¹ (W)	LE2			LE3			LE4			LE5		
				Lumen Output ²	BUG Rating	Efficacy (LPW)	Lumen Output ²	Efficacy (LPW)	BUG Rating	Lumen Output ²	Efficacy (LPW)	BUG Rating	Lumen Output ²	Efficacy (LPW)	BUG Rating
35W32LED3K-G3-CS-x	32	350	37	3509	B1-U3-G1	95	3555	B1-U3-G1	96	3413	B1-U3-G1	92	3677	B2-U3-G1	99
55W32LED3K-G3-CS-x	32	530	54	5034	B1-U3-G2	93	5100	B1-U3-G2	94	4896	B1-U3-G2	91	5274	B3-U3-G2	98
72W32LED3K-G3-CS-x	32	700	73	6349	B2-U3-G2	87	6432	B1-U3-G2	88	6175	B1-U3-G2	85	6652	B3-U3-G2	91
55W48LED3K-G3-CS-x	48	350	55	5264	B1-U3-G2	96	5333	B1-U3-G2	97	5120	B1-U3-G2	93	5515	B3-U3-G2	100
80W48LED3K-G3-CS-x	48	530	81	7551	B2-U3-G2	94	7650	B2-U3-G2	95	7345	B1-U3-G2	91	7913	B3-U3-G2	98
108W48LED3K-G3-CS-x	48	700	106	9523	B2-U3-G2	90	9648	B2-U3-G3	91	9262	B2-U3-G3	87	9979	B4-U3-G3	94

Ordering Code: Clear Satin Globe (4000K)	Total LEDs	LED current (mA)	Average System Wattage ¹ (W)	LE2			LE3			LE4			LE5		
				Lumen Output ²	BUG Rating	Efficacy (LPW)	Lumen Output ²	Efficacy (LPW)	BUG Rating	Lumen Output ²	Efficacy (LPW)	BUG Rating	Lumen Output ²	Efficacy (LPW)	BUG Rating
35W32LED4K-G3-CS-x	32	350	37	3895	B1-U3-G1	105	3947	B1-U3-G1	107	3789	B1-U3-G1	102	4082	B3-U3-G1	110
55W32LED4K-G3-CS-x	32	530	54	5587	B1-U3-G2	103	5661	B1-U3-G2	105	5435	B1-U3-G2	101	5855	B3-U3-G2	108
72W32LED4K-G3-CS-x	32	700	73	7047	B2-U3-G2	97	7140	B2-U3-G2	98	6854	B1-U3-G2	94	7384	B3-U3-G2	101
55W48LED4K-G3-CS-x	48	350	55	5843	B1-U3-G2	106	5920	B1-U3-G2	107	5683	B1-U3-G2	103	6123	B3-U3-G2	111
80W48LED4K-G3-CS-x	48	530	81	8381	B2-U3-G2	104	8492	B2-U3-G2	105	8152	B2-U3-G2	101	8782	B3-U3-G2	109
108W48LED4K-G3-CS-x	48	700	106	10570	B2-U3-G2	100	10710	B2-U3-G3	101	10281	B2-U3-G3	97	11076	B4-U3-G3	104

Actual performance may vary due to installation variables including optics, mounting/ceiling height, dirt depreciation, light loss factor, etc.; highly recommended to confirm performance with a layout - contact Applications at signify.com/outdoorluminares.
Note: Some data may be scaled based on tests on similar but not identical luminaires.

Specifications

Housing

Finial: Decorative cast 356 aluminum, mechanically assembled.

Cupola: Decorative spun aluminum 1100 O, mechanically mounted on hood.

Hood: In a square tapered shape, the hood is made of a one-piece die cast injection molded A360 aluminium. Mechanically assembled to the guard.

Guard: In a square tapered shape, the guard is made of one-piece die cast injection molded A360 aluminium.

Access-mechanism

Two integrated hinges on the hood with a stopper and a latch shall offer a tool-free access to the inside of the luminaire. An embedded memory-retentive gasket shall ensure weatherproofing.

Light engine

LED engine composed of 5 main components: Heat Sink / Lens / LED lamp / Driver / Optical System. Electrical components are RoHS compliant.

LED engine

Composed of high-performance white LEDs. Color temperature as per ANSI/NEMA bin Neutral White, 4000 Kelvin nominal (3985K +/- 275K or 3710K to 4260K) or Warm white, 3000 Kelvin nominal (3045K +/- 175K or 2870K to 3220K), CRI 70 Min. 75 Typical.

Globe/Panels

ACDR-C: Made of one-piece seamless injection-molded clear impact-resistant (DR) acrylic. The globe is assembled on the access-mechanism.

PC-CS: Made of one-piece seamless injection-molded satin clear polycarbonate. The globe is assembled on the access-mechanism.

Heat sink

Made of cast aluminum optimizing the LEDs efficiency and life. Product does not use any cooling device with moving parts (only passive cooling device).

Optical system

Composed of high performance optical grade PMMA acrylic refractor lenses to achieve desired distribution optimized to get maximum spacing, target lumens and a superior lighting uniformity. Optical system is rated IP66.

Performance shall be tested per LM 63, LM 79 and TM 15 (IESNA) certifying its photometric performance. Street side indicated.

LE2 - Type II (ASYM)

LE3 - Type III (ASYM)

LE4 - Type IV (ASYM)

LE5 - Type V (SYMM)

Driver

Driver comes standard with dimming compatible 0-10V. High power factor of 90% minimum. Electronic driver, operating range 50/60 Hz. Auto adjusting universal voltage input from 120 to 277 or 347 to 480 VAC rated for both application line to line or line to neutral, Class I, THD of 20% max. Maximum ambient operating temperature from 40°F (40°C) to 130°F (55°C).

Certified in compliance to UL1310 cULus requirement. Dry and damp location.

Assembled on a unitized removable tray with Tyco quick disconnect plug resisting to 221°F (105°C). The current supplying the LEDs will be reduced by the driver if the driver experiences internal overheating as a protection to the LEDs and the electrical components. Output is protected from short circuits, voltage overload and current overload. Automatic recovery after correction. Standard built in driver surge protection of 2.5kV (min).

S40-S41 Square Lantern LED Post Top

Urban Luminaire

Specifications (continued)

Driver options

AST: Pre-set driver for progressive start-up of the LED module(s) to optimize energy management and enhance visual comfort at start-up.

CLO: Pre-set driver to manage the lumen depreciation by adjusting the power given to the LEDs offering the same lighting intensity during the entire lifespan of the LED module.

OTL: Pre-set driver to signal end of life of the LED module(s) for better fixture management.

DMG: Dimmable driver 0-10V.

CDMG: Dynadimmer standard dimming functionalities including pre-programmed scenarios to suit many applications and needs from safety to maximum energy savings.

* Contact factory for DALI options.

Order Code	Dimming		
	Scenario	Duration	Level
CDMGS25	Safety	4 hours	25%
CDMGS50	Safety	4 hours	50%
CDMGS75	Safety	4 hours	75%
CDMGM25	Median	6 hours	25%
CDMGM50	Median	6 hours	50%
CDMGM75	Median	6 hours	75%
CDMGE25	Economy	8 hours	25%
CDMGE50	Economy	8 hours	50%
CDMGE75	Economy	8 hours	75%

SRD: Sensor Ready Driver including SR communication (used for dimming and other functionalities), 24V auxiliary supply and a logical signal input (LSI) connected to the top NEMA twist lock receptacle.

SRD1: Sensor Ready Driver including SR communication (used for dimming and other functionalities) but with 24V auxiliary supply and a logical signal input (LSI) not connected to the top NEMA twist lock.

Surge protector

Surge protector tested in accordance with ANSI/IEEE C62.45 per ANSI/IEEE C62.41.2 Scenario I Category C High Exposure 10kV/10kA waveforms for Line Ground, Line Neutral and Neutral Ground, and in accordance with U.S. DOE (Department of Energy) MSSLC (Municipal Solid State Street Lighting Consortium) model specification for LED roadway luminaires electrical immunity requirements for High Test Level 10kV / 10kA. SP2 20kV/20kA optional.

Luminaire options

HS
House side shield

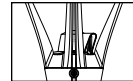


PH7 Photoelectric cell button type

SP2 20kV/20kA integral surge protector (optional)

WC Without Cupola

RCD7
Receptacle 7-pins.

TN2.875C
2-7/8" dia. tenon adaptor



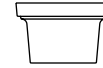
TN3
3" dia. tenon adaptor



TN3.5
3-1/2" dia. tenon adaptor

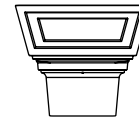


Fitter



S40 uses the SFR

Cast 356 aluminum c/w 4 set screws 3/8-16 UNC. Slip-fits on a 4" (102mm) outside diameter by 4" (102mm) long tenon.



S41 uses the SF41

Cast 356 aluminum c/w 4 set screws 3/8-16 UNC. Slip-fits on a 4" (102mm) outside diameter by 4" (102mm) long tenon.

Finish

In accordance with the AAMA 2603 standard. Application of polyester powder coat paint (4 mils/100 microns) with +/- 1 mils/24 microns of tolerance. The Thermosetting resins provides a discoloration resistant finish in accordance with the ASTM D2244 standard, as well as luster retention in keeping with the ASTM D523 standard and humidity proof in accordance with the ASTM D2247 standard. The surface treatment achieves a minimum of 2000 hours for salt spray resistant finish in accordance with testing performed and per ASTM B117 standard.

Textured Finish Options:

- BE2TX:** Textured Midnight Blue
- BE6TX:** Textured Ocean Blue
- BE8TX:** Textured Royal Blue
- BG2TX:** Textured Sandstone
- BKTX:** Textured Black
- BRTX:** Textured Bronze
- GN4TX:** Textured Blue Green
- GN6TX:** Textured Forest Green
- GN8TX:** Textured Dark Forest Green
- GNTX:** Textured Green
- GY3TX:** Textured Medium Grey
- RD2TX:** Textured Burgundy
- RD4TX:** Textured Scarlet
- WHTX:** Textured White

Non-Textured Finish Options:

- GR:** Gray Sandtex
- NP:** Natural Aluminum
- TG:** Hammer-tone Gold

LED Performance

Predicted lumen depreciation data ¹				
Ambient Temperature (°C)	Driver mA	Calculated L ₇₀ hours ^{1,2}	L ₇₀ per TM-21 ^{2,3}	Lumen Maintenance % @ 60,000 hours
25°C	700 mA	>100,000	>60,000	86%

1. Predicted performance derived from LED manufacturer's data and engineering design estimates, based on IESNA LM-80 methodology. Actual experience may vary due to field application conditions.
2. L₇₀ is the predicted time when LED performance depreciates to 70% of initial lumen output.
3. Calculated per IESNA TM21-11. Published L₇₀ hours limited to 6 times actual LED test hours.

Luminaire useful life

Refer to IES files for energy consumption and delivered lumens for each option. Based on ISTMT in situ thermal testing in accordance with UL1598 and UL8750, using LM-80 data from LED manufacturers and engineering prediction methods, the luminaire useful life is expected to reach 100,000+ hours with >L70 lumen maintenance @ 25°C. Luminaire Useful Life accounts for LED lumen maintenance AND all of these additional factors including: LED life, driver life, PCB substrate, solder joints, on/off cycles, burning hours and corrosion. Entire luminaire is rated for operation in ambient temperature of -40°C / -40°F up to +35°C / +95°F.

S40-S41 Square Lantern LED Post Top

Urban Luminaire

Specifications (continued)

Hardware

All exposed screws shall be complete with Ceramic primer-seal base coat to reduce seizing of the parts and offers a high resistance to corrosion. All seals and sealing devices are made and/or lined with EPDM and/or silicone and/or rubber.

Wiring

Gauge (#14) TEW/AWM 1015 or 1230 wires, 6" (152mm) minimum exceeding from luminaire.

Quality control

Manufactured to ISO 9001 2008 standards and ISO 14001-2004 International Quality Standards Certification.

LED products (manufacturing standard)

The electronic components sensitive to electrostatic discharge (ESD) such as light emitting diodes (LEDs) are assembled in compliance with IEC61340 5 1 and ANSI/ESD S20.20 standards so as to eliminate ESD events that could decrease the useful life of the product.

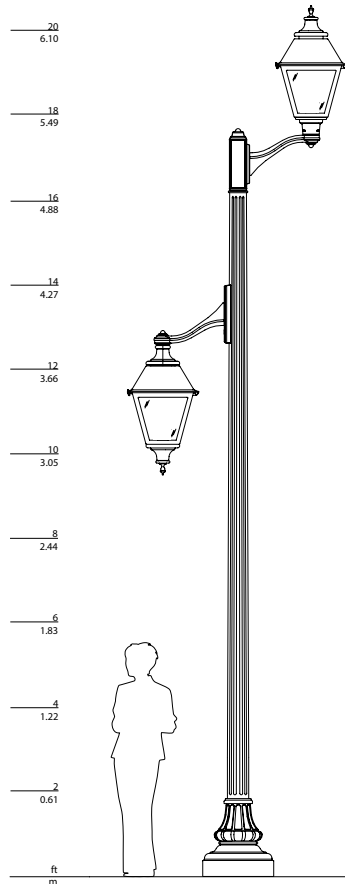
Quality control

Manufactured to ISO 9001 2008 standards and ISO 14001-2004 International Quality Standards Certification.

Certifications and Compliance

CSA, cULus Listed for Canada and USA.
Luminaires are DesignLights Consortium qualified.

Assembly example



S40-LE2
Mounting: CRF-1A
Mid pole Luminaire: S26P-LE3-CP
Mounting: CRFT-F
Pole: RTA500-MPL

Consult signify.com/outdoorluminaires for details and the complete line of Signify poles and brackets.



APPENDIX E

EFFICIENCY NOVA SCOTIA DOCUMENTS AND CORRESPONDENCE

From: Kaelan Keys <KKeys@efficiencyns.ca>
Sent: May 9, 2022 10:30 AM
To: I.doucette@strumengineering.ca
Subject: RE: Lunenburg Street Lighting

Hi Lucas,

Following up on the below email. Unfortunately, it doesn't appear that Lunenburg is eligible for Street Light rebates.

This act

<https://www.novascotia.ca/just/regulations/regs/eeappliances.htm?msclid=9dd45522cf9411eca9bc5cbe2f081f5d>
mandates that municipally owned street lights are switched to LED prior to Dec 31, 2022 and specifically mentions Municipal Electric Utilities.

However, the decorative lights would qualify.

Let me know if you have any questions.

Thanks,

Kaelan Keys
Business Development Manager

Direct 902 223 1615
Main 877 999 6035
Fax 902 470 3599

Efficiency Nova Scotia
230 Brownlow Avenue, Suite 300 | Dartmouth, NS | B3B 0G5

efficiencyns.ca | [@efficiencyns](https://twitter.com/efficiencyns) | facebook.com/efficiencyns

From: Kaelan Keys
Sent: Thursday, May 05, 2022 4:43 PM
To: Idoucette@strumengineering.ca
Subject: Lunenburg Street Lighting

Hi Lucas,

I am still awaiting confirmation that Lunenburg is indeed eligible for rebates on the street lighting, but I will send along the rebate forms in the meantime.

[Before You Buy](#) or [After You Buy](#)

[Commercial Light Rebate Worksheet](#)

[Lighting Rebate Guide](#)

Let me know if you have any questions. I'll let you know when I have confirmed that the lights are eligible.

Kaelan Keys

Business Development Manager

Direct 902 223 1615

Main 877 999 6035

Fax 902 470 3599

Efficiency Nova Scotia

230 Brownlow Avenue, Suite 300 | Dartmouth, NS | B3B 0G5

efficiencyns.ca | [@efficiencyns](https://www.facebook.com/efficiencyns) | [facebook.com/efficiencyns](https://www.facebook.com/efficiencyns)

Efficient Product Rebates

Commercial Lighting Rebate Guide

To meet rebate requirements, many measures must be ENERGY STAR® certified, and DesignLights Consortium® qualified. These lighting products provide high performance and value for your business.

Find ENERGY STAR® and DesignLights Consortium® qualified products at:
energystar.gov/products and designlights.org/search

Projects replacing existing energy efficient lighting may not be available for rebates. Please contact us to confirm before you purchase and install your product.

Rebates that state availability as “in-store” have a rebate applied at the time of purchase at one of our participating distributor partners.

If your utility bill is less than \$3,800 monthly and you have not yet purchased your products, your business may qualify for rebates in addition to those listed here. Receive project approval from Efficiency Nova Scotia before purchasing products in-store, to obtain additional rebates. Products marked as “Pre-approval” must receive project approval from Efficiency Nova Scotia before purchase using the “Before you Buy” application.

If product has already been purchased, additional rebates are not available on products marked as “in-store”. The following tables list the product requirements and rebates available for energy-efficient commercial lighting products. For more information please visit our website efficiencyns.ca/business.

Indoor Lighting

Product	Availability	Criteria	Rebate
Decorative Lamp	Small Business Pre-Approval Only	<ul style="list-style-type: none"> Includes common decorative shaped lamps such as chandelier and candle lamps Must be ENERGY STAR® certified Business must use less than 350,000 kWh annually 	All \$3
General Use Lamp	Small Business Pre-Approval Only	<ul style="list-style-type: none"> Includes omnidirectional lamps such as A-lamps and globes Must be ENERGY STAR® certified Business must use less than 350,000 kWh annually 	All \$3
Reflector (Directional) Lamp	Small Business Pre-Approval Only	<ul style="list-style-type: none"> Includes R, BR, MR, PAR lamp shapes Must be ENERGY STAR® certified Business must use less than 350,000 kWh annually 	All \$6

Product	Availability	Criteria	Rebate	
Downlight Luminaire	Small Business Pre-Approval Only	<ul style="list-style-type: none"> Includes recessed luminaires, ceiling mounted luminaires, surface mounted luminaires, pendant luminaires, inseparable solid state luminaires, downlight solid state retrofit kit Includes fixtures with integrated occupancy sensors Must be ENERGY STAR® certified Business must use less than 350,000 kWh annually 	400 - 999 lm	\$8
			1,000 - 2,999 lm	\$12
			≥ 3,000 lm	\$15
LED Wall Sconces	Small Business Pre-Approval Only	<ul style="list-style-type: none"> Includes wall sconces and retrofit kits Must be ENERGY STAR® certified Business must use less than 350,000 kWh annually 	400 - 999 lm	\$10
			1,000 - 2,999 lm	\$18
			≥ 3,000 lm	\$30
High-bay Luminaire (DLC Premium)	Mail-in	<ul style="list-style-type: none"> Includes high-bay aisle luminaires and high-bay luminaires for commercial and industrial buildings Must be qualified as a DLC premium product 	10,000 - 19,999 lm	\$100
			20,000 - 29,999 lm	\$150
			30,000 - 39,999 lm	\$250
			40,000 - 54,999 lm	\$350
			≥ 55,000 lm	\$450
High-bay Luminaire (DLC Standard)	Mail-in	<ul style="list-style-type: none"> Includes high-bay aisle luminaires and high-bay luminaires for commercial and industrial buildings Must be DLC qualified 	10,000 - 19,999 lm	\$65
			20,000 - 29,999 lm	\$100
			30,000 - 39,999 lm	\$175
			40,000 - 54,999 lm	\$275
			≥ 55,000 lm	\$375
Low-bay Luminaire	In-store	<ul style="list-style-type: none"> Includes low-bay luminaires for commercial and industrial buildings and retrofit kits Must be DLC qualified 	5,000 - 9,999 lm	\$30
			≥ 10,000 lm	\$50
Stairwell and Passageway Luminaire	Mail-in	<ul style="list-style-type: none"> Must be replacing non-dimmable stairwell and passageway fixture Must be able to dim to < 25% of full output when no occupants are detected Must be in operation 24 hours/7 days a week Must be DLC qualified 	All	\$55

Product	Availability	Criteria	Rebate	
1x1 Troffer	In-store	<ul style="list-style-type: none"> Includes luminaires for ambient lighting of interior commercial spaces and retrofit kits Must be DLC qualified 	All	
1x2 Troffer				\$10
1x4 Troffer				\$30
2x2 Troffer				\$30
2x4 Troffer				\$35
Linear Ambient Luminaire	In-store	<ul style="list-style-type: none"> Includes direct linear ambient luminaires, linear ambient luminaires with indirect component, strip/wrap lighting and retrofit kits Must be DLC qualified or ENERGY STAR® certified 	≤ 2,499 lm	\$15
			2,500 - 4,999 lm	\$25
			5,000 - 9,999 lm	\$40
			≥ 10,000 lm	\$55
Refrigerated Case Luminaire	Mail-in	<ul style="list-style-type: none"> Includes both horizontal refrigerated case luminaires and vertical refrigerated case luminaires installed in refrigerators and freezers Must be DLC qualified 	All	\$6 / ft
Wall-wash Luminaire	In-store	<ul style="list-style-type: none"> Includes luminaires that illuminate walls in interior spaces Must be DLC qualified 	575 - 1,199 lm	\$10
			≥ 1,200 lm	\$20
Track or Mono-point Direction Luminaire/Accent Light Line Voltage	In-store	<ul style="list-style-type: none"> Includes ceiling-mounted tracks or fixed single head Replacement lamps not eligible (such as PAR38) Must be DLC qualified or ENERGY STAR® certified 	All	\$15 / head
Four Pin-Base Replacement Lamps for CFLs	Mail-in	<ul style="list-style-type: none"> Designed to replace four-pin compact fluorescent lamps including: horizontal, vertical and 2G11 lamps Must be DLC qualified 	All	\$5
Linear Replacement Lamp	In-store	<ul style="list-style-type: none"> Designed to replace T5/T8/T12 fluorescent lamps Must be DLC qualified 	2 foot	\$2.50
			3 foot	\$3
			4 foot	\$5
			8 foot	\$6
			U-Bend	\$5
Horticultural Lighting	Mail-in	<ul style="list-style-type: none"> Designed to replace 1000W HIDs Must be DLC qualified on the Horticultural Lighting Qualified Products List Must be used in horticultural applications 	< 650W	\$325

Outdoor Lighting

Product	Availability	Criteria	Rebate	
Wall-Mounted Area Luminaire (Full-Cutoff)	In-store	<ul style="list-style-type: none"> Includes outdoor full-cutoff wall-mounted area luminaires and retrofit kits Must be DLC qualified 	300 - 1,999 lm	\$15
			2,000 - 4,999 lm	\$30
			5,000 - 14,999 lm	\$60
			15,000 - 24,999 lm	\$100
			≥ 25,000 lm	\$200
Wall-Mounted Area Luminaire (Non-Cutoff and Semi-Cutoff)	In-store	<ul style="list-style-type: none"> Includes outdoor non-cutoff and semi-cutoff wall-mounted area luminaires Must be DLC qualified 	300 - 1,999 lm	\$15
			2,000 - 4,999 lm	\$30
			5,000 - 14,999 lm	\$60
			15,000 - 24,999 lm	\$100
			≥ 25,000 lm	\$200
Flood and Spot Luminaires	In-store	<ul style="list-style-type: none"> Includes landscape/accent flood and spot luminaires landscape, and architectural flood and spot luminaires and retrofit kits Must be DLC qualified 	250 - 999 lm	\$20
			1,000 - 4,999 lm	\$30
			5,000 - 14,999 lm	\$75
			15,000 - 29,999 lm	\$185
			30,000 - 49,999 lm	\$250
Pole/Arm-Mounted Area Luminaire	Mail-in	<ul style="list-style-type: none"> Includes outdoor pole/arm-mounted area luminaires and retrofit kits Roadway lighting not eligible Must be DLC qualified 	1,000 - 4,999 lm	\$50
			5,000 - 9,999 lm	\$100
			10,000 - 24,999 lm	\$150
			25,000 - 39,999 lm	\$250
			40,000 - 54,999 lm	\$350
Pole/Arm-Mounted Decorative Luminaire	Mail-in	<ul style="list-style-type: none"> Includes outdoor pole/arm-mounted decorative luminaires and retrofit kits Must be DLC qualified 	1,000 - 1,999 lm	\$60
			2,000 - 5,499 lm	\$75
			≥ 5,500 lm	\$100
Parking Garage Luminaire	Mail-in	<ul style="list-style-type: none"> Includes parking garage luminaires and retrofit kits Must be DLC qualified 	2,000 - 6,499 lm	\$50
			≥ 6,500 lm	\$75
Fuel Pump Canopy Luminaire	Mail-in	<ul style="list-style-type: none"> Includes fuel pump canopy luminaires and retrofit kits Must be DLC qualified 	2,000 - 6,999 lm	\$80
			≥ 7,000 lm	\$150

Product	Availability	Criteria	Rebate	
LED Replacement Lamps for HID Lamps	Mail-in	<ul style="list-style-type: none"> Designed to replace high intensity discharge lamps New construction projects are not eligible (retrofit only) Roadway lighting not eligible Must be DLC qualified 	250 - 4,999 lm	\$20
			5,000 - 9,999 lm	\$40
			≥ 10,000 lm	\$60
Case Lighting for Sign Retrofit Applications	Mail-in	<ul style="list-style-type: none"> Minimum three year warranty Minimum 60 lumens per watt Undergone IES testing (LM-79 and LM-80 or equivalent) New construction projects are not eligible (retrofit only) Include pictures clearly showing the new LED case lighting installed in the sign 	\$2.50 / ft	

Lighting Controls

Product	Availability	Criteria	Rebate
Occupancy Sensor - Wall-Switch or Fixture Mounted	In-store	<ul style="list-style-type: none"> For use with LED or fluorescent systems The use of a program start ballast is recommended for fluorescent systems Excludes ENERGY STAR® certified or DLC approved fixtures with integrated occupancy sensors 	\$20
Occupancy Sensor - Ceiling or Wall Remote Mounted			\$40
Occupancy Sensor - Exterior	In-store	<ul style="list-style-type: none"> Fixture must automatically shut off during the day by using a timer, photo-sensor or similar technology For use with LED or fluorescent systems The use of a program start ballast is recommended for fluorescent systems 	\$10
Fixture Integrated Controls	Mail-in	<ul style="list-style-type: none"> Must be DLC qualified High-Bay Luminaires with Integral Controls capability Controls must be enabled and programmed for use 	\$20
Daylighting Controls - Wall-Switch or Fixture Mounted	Mail-in	<ul style="list-style-type: none"> System commissioning is strongly recommended to ensure maximum energy savings For indoor use only 	\$10
Daylighting Controls - Ceiling or Wall Remote Mounted			\$30

Efficient Product Rebates

Commercial Lighting Rebate Worksheet

For assistance in completing this Commercial Lighting Rebate Worksheet please refer to the [Commercial Lighting Rebate Guide](#).

To receive your rebates, enter the product details in the table(s) below. To prevent unnecessary delays in the processing of your application, please complete all of the information below.

General Business Information:

Hours of operation

	Open	Close
MON		
TUES		
WED		
THURS		
FRI		
SAT		
SUN		

Is your facility greater than 20,000 sq.ft?

Yes

No

Are there times of the year when your business is non-operational?

No

Yes - general holidays

Yes - seasonal shutdown

Yes - for other reasons

Explain: _____

Explain: _____

NOTES:

Instructions

- Review the criteria on the [Commercial Lighting Rebate Guide](#) to verify that your selected products qualify for rebates.
- If products are eligible, complete the Commercial Lighting Rebate Worksheet.
- Attach completed Commercial Lighting Rebate Worksheet to the rest of your application.

Area 1 (Please state the area where these products are installed, i.e parking lot, store front, staff room)

Area:	EXAMPLE: Staff room				
Product 1	Manufacturer	Model	Watts	DLC Certification Number	Quantity
Existing	MNOP Lighting	HIDHB-3000K-80CRI	456	PIVT5EUW	10
Replacement	ABCD Lighting	HBV-3000K-80CRI	231	PIVT5EUW	10
Product 2	Manufacturer	Model	Watts	DLC Certification Number	Quantity
Existing	MNOP Lighting	HIDHB-3000K-80CRI	456	PIVT5EUW	10
Replacement	ABCD Lighting	HBV-3000K-80CRI	231	PIVT5EUW	10
Is this area used seasonally?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Cooling System	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
How is the area heated?	<input checked="" type="checkbox"/> Electrical Resistance <input type="checkbox"/> Heat Pump		<input type="checkbox"/> No Heating <input type="checkbox"/> Other		
Will this area be in operation between 5pm and 7pm from December to February?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO				
Hours of use per week:	EXAMPLE: 65 hrs.				

Area 1 (Please state the area where these products are installed, i.e parking lot, store front, staff room)

Area:					
Product 1	Manufacturer	Model	Watts	DLC Certification Number	Quantity
Existing					
Replacement					
Product 2	Manufacturer	Model	Watts	DLC Certification Number	Quantity
Existing					
Replacement					
Product 3	Manufacturer	Model	Watts	DLC Certification Number	Quantity
Existing					
Replacement					
Is this area used seasonally? <input type="checkbox"/> YES <input type="checkbox"/> NO			Cooling System <input type="checkbox"/> YES <input type="checkbox"/> NO		
How is the area heated? <input type="checkbox"/> Electrical Resistance <input type="checkbox"/> Heat Pump <input type="checkbox"/> No Heating <input type="checkbox"/> Other					
Will this area be in operation between 5pm and 7pm from December to February? <input type="checkbox"/> YES <input type="checkbox"/> NO					
Hours of use per week:					

Area 2 (Please state the area where these products are installed, i.e parking lot, store front, staff room)

Area:					
Product 1	Manufacturer	Model	Watts	DLC Certification Number	Quantity
Existing					
Replacement					
Product 2	Manufacturer	Model	Watts	DLC Certification Number	Quantity
Existing					
Replacement					
Product 3	Manufacturer	Model	Watts	DLC Certification Number	Quantity
Existing					
Replacement					
Is this area used seasonally? <input type="checkbox"/> YES <input type="checkbox"/> NO			Cooling System <input type="checkbox"/> YES <input type="checkbox"/> NO		
How is the area heated? <input type="checkbox"/> Electrical Resistance <input type="checkbox"/> Heat Pump <input type="checkbox"/> No Heating <input type="checkbox"/> Other					
Will this area be in operation between 5pm and 7pm from December to February? <input type="checkbox"/> YES <input type="checkbox"/> NO					
Hours of use per week:					

Area 3 (Please state the area where these products are installed, i.e parking lot, store front, staff room)

Area:					
Product 1	Manufacturer	Model	Watts	DLC Certification Number	Quantity
Existing					
Replacement					
Product 2	Manufacturer	Model	Watts	DLC Certification Number	Quantity
Existing					
Replacement					
Product 3	Manufacturer	Model	Watts	DLC Certification Number	Quantity
Existing					
Replacement					
Is this area used seasonally? <input type="checkbox"/> YES <input type="checkbox"/> NO			Cooling System <input type="checkbox"/> YES <input type="checkbox"/> NO		
How is the area heated? <input type="checkbox"/> Electrical Resistance <input type="checkbox"/> Heat Pump <input type="checkbox"/> No Heating <input type="checkbox"/> Other					
Will this area be in operation between 5pm and 7pm from December to February? <input type="checkbox"/> YES <input type="checkbox"/> NO					
Hours of use per week:					

Area 4 (Please state the area where these products are installed, i.e parking lot, store front, staff room)

Area:					
Product 1	Manufacturer	Model	Watts	DLC Certification Number	Quantity
Existing					
Replacement					
Product 2	Manufacturer	Model	Watts	DLC Certification Number	Quantity
Existing					
Replacement					
Product 3	Manufacturer	Model	Watts	DLC Certification Number	Quantity
Existing					
Replacement					
Is this area used seasonally? <input type="checkbox"/> YES <input type="checkbox"/> NO			Cooling System <input type="checkbox"/> YES <input type="checkbox"/> NO		
How is the area heated? <input type="checkbox"/> Electrical Resistance <input type="checkbox"/> Heat Pump <input type="checkbox"/> No Heating <input type="checkbox"/> Other					
Will this area be in operation between 5pm and 7pm from December to February? <input type="checkbox"/> YES <input type="checkbox"/> NO					
Hours of use per week:					

Circulated: _____

Document No:
Meeting: Council
Circulate To: Council,
File: Water/Wastewater - General

MEMORANDUM

TO: TOWN COUNCIL

FROM: LISA KENDALL, EIT, ACTING TOWN ENGINEER

DATE: May 6, 2022

RE: POTABLE WATER, QUALITY TEST RESULTS: JANUARY 2022 TO MARCH 2022

1. FACTS

The Nova Scotia Environment and Climate Change (NSECC) Approval documents to operate for the Water Treatment Plant (WTP) require that certain tests be carried out to verify the quality of treated potable water. There are also Federal testing standards that must be followed. Routine testing is conducted in the Town of Lunenburg (TOL) lab at the WTP, and independently by accredited laboratories to determine compliance levels with both the Provincial and Federal standards. If any test result exceeds the standards, then explanations are provided. This report provides a monthly summary of these results.

The timing of this document follows from the testing schedule at the WTP, which is performed on a quarterly cycle. The next Council report will be prepared at the end of the next quarter.

At the end of each year an annual report is also prepared for the WTP and filed with the Provincial and Federal governments.

2. Summary of Water System Performance

The TOL water system operates according to two Nova Scotia Environment Approvals:

- Approval for Operation – Water Treatment Facility (Approval # 2010-071794-01)
- Approval to Withdraw Water – Dares Lake (Approval # 2011-079411)

2.1 Water Quality

The Approval to Operate document requires the following water quality sampling:

- Weekly total coliform and fecal coliform tests for water entering the distribution system and various water distribution system sample points (maximum none/100 mL).
- Monthly tests for aluminum.
- Quarterly tests for parameters for corrosion control:
 - Lead (maximum 0.005 mg/L).
 - Manganese (maximum 0.12 mg/L).
- Quarterly tests for disinfection by-products:
 - Trihalomethanes (maximum 0.1 mg/L).
 - Haloacetic acids (maximum 0.08 mg/L).
- Turbidity at each filtration unit must be between 0.1-0.3 NTU measured continuously.
- Chlorine residual must be between 0.2-4.0 mg/L measured continuously.
- The Province can also request virus testing for *Giardia* and *Cryptosporidium* at any time. Treatment efficiencies are required to meet:
 - 3-log reduction (99.9%) of *Giardia* and *Cryptosporidium*.
 - 4-log reduction (99.9%) of viruses.
- Treatment must also limit corrosion of water distribution and/or plumbing systems and reduce odors.

Federal Guidelines for Monitoring Public Drinking Water Supplies require annual testing of raw water and treated water for compliance. A more in-depth assessment is required every five years.

Results

From January to March 2022, all weekly and monthly regulatory testing and in-house daily testing complied with the Approval requirements. The quarterly samples were taken the first week of April due to the sample bottles being delayed, but results were received on May 2, 2022 and were all in compliance.

The following table summarizes the sampling results for this quarter, including parameters identified in the Approval to Operate. This table reports periodic turbidity and chlorine residual testing, but not continuous testing. Turbidity and chlorine residual are continuously monitored and recorded on the WTP Supervisory Control and Data Acquisition (SCADA) system. There are safeguards in place that automatically raise alarms for the operator and shut down equipment when the required conditions are not met.

Parameter Tested	Approval Limit	Exceeded Approval Limit
Aluminum	<0.1 mg/L for conventional treatment	None
	<0.2 mg/L for other treatment	None
Lead	<0.005 mg/L	None
Manganese	<0.12 mg/L	None
Trihalomethanes	<0.1 mg/L	None
Haloacetic Acids	<0.08 mg/L	None
Turbidity	0.1-0.3 NTU	None
Chlorine Residual	0.2-4.0 mg/L	None
Total Coliforms	None/100 mL	None
Fecal Coliforms	None/100 mL	None
Comment: None		

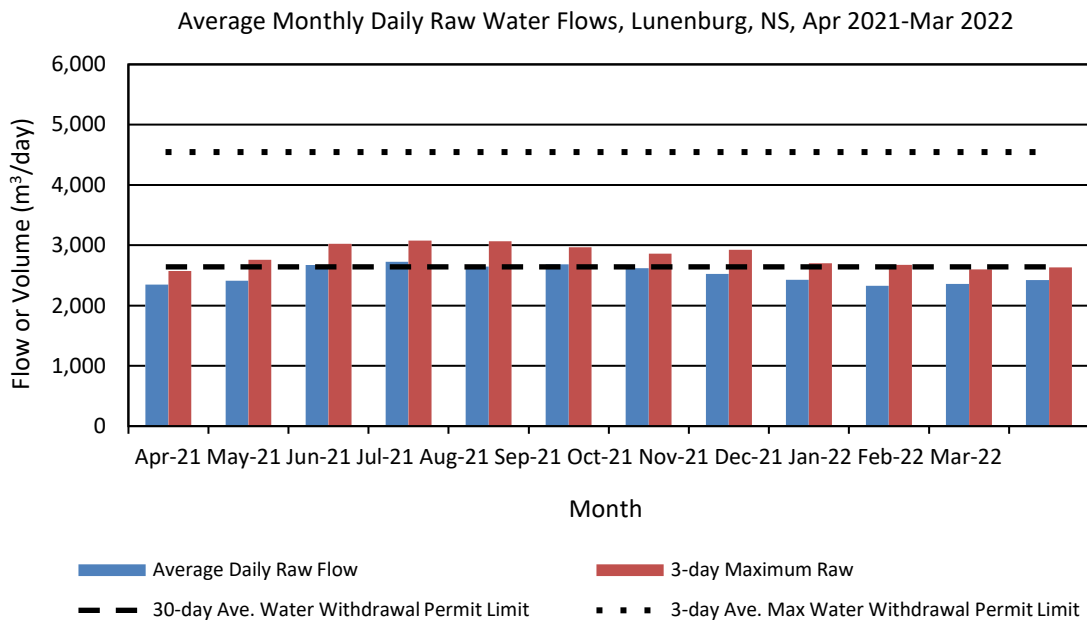
2.2 Raw and Treated Water Flows

The WTP withdraws water from Dares Lake and can withdraw water at a rate outlined in the Approval to Withdraw Water. The approved rates of withdrawal are as follows:

- Average rate of withdrawal: 2,634,000 L/day (averaged over 30 days).
- Maximum rate of withdrawal: 4,546,000 L/day (averaged over 3 days).

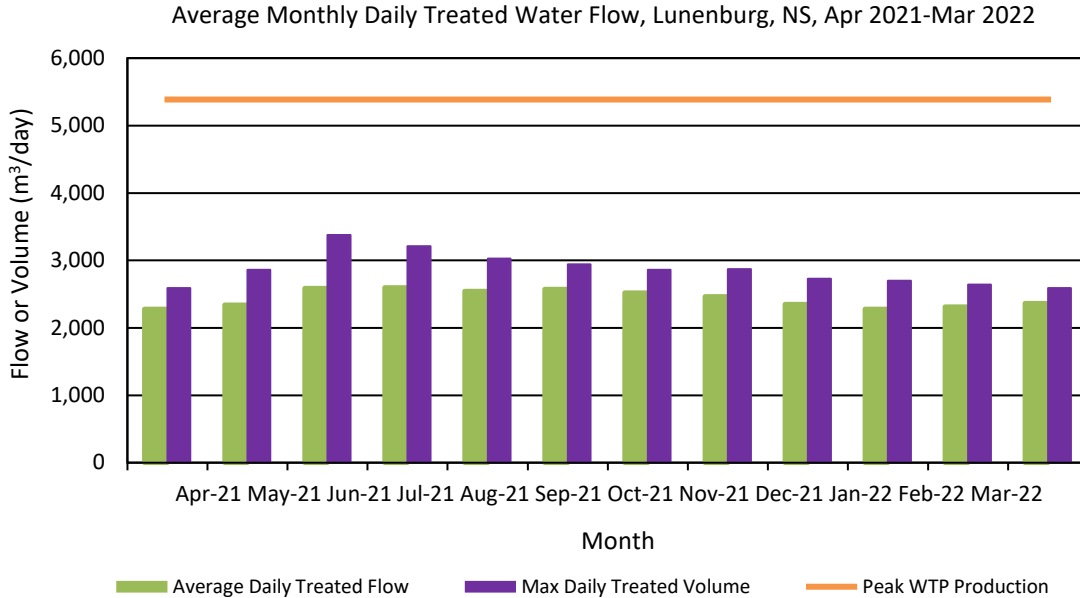
Average Monthly and Daily Flow of Raw Water:

The following graph shows the historical monthly flows and the 3-day maximum flows for the raw water entering the WTP over the past year, inclusive of this quarter:



Average Monthly and Daily Flow of Treated Water:

The following graph shows the historical monthly flows and the maximum daily flow for the treated water from the WTP over the past year, inclusive of this quarter:



Results

The average daily raw water flow did not exceed the 30-day average Water Withdrawal Permit Limit during this quarter. The Town is still in the process of renewing the Water Withdrawal Permit and is requesting a higher withdrawal limit.

The 3-day maximum average withdrawal limit was not exceeded this quarter.

The average daily treated water flow did not exceed the peak production rate within this quarter.

2.3 Water Main Breaks and Repairs:

There were five leaks reported in this quarter, which are detailed in the following table:

Month	Date	Street	Address or Block	Problem or Cause
January	22	High Street	Civic 42	6" Cast Iron pipe. Repair clamp applied under pressure.
February	7	Prince Street	Civic 146	6" Cast Iron pipe. Repair clamp applied under pressure.
February	11	Masons Beach Road		2" Galvanized pipe. Repair clamp applied under pressure.

March	3	Northwest Road	Civic 524	Obsolete 8" Cast Iron transmission line to WTP cracked, C.I. line isolated from 16" Transite line in use.
March	14	Pelham Street	Civic 344	4" cast iron watermain cracked. Repair clamp applied under pressure.

3. FINANCIAL IMPACT

Funds are included in the WTP operating budget to pay for these water quality tests.

4. STRATEGIC PLAN RELEVANCE

Strategic Planning Goal #3. A. (a.) of the Town's Strategic Plan is to "Champion opportunities for our community's health and well-being by ... Protecting our natural environment ... Continue to provide solid waste management, sewage treatment and high-quality water to all of our residents".

5. RECOMMENDATION

This report is provided for Town Council's information.

Acknowledged only by:

Kevin Malloy,

Interim CAO

Encls. X

Circulated: _____

Document No:
Meeting: Council
Circulate To: Council,
File: Water/Wastewater - General

MEMORANDUM

TO: TOWN COUNCIL

FROM: LISA KENDALL, EIT, ACTING TOWN ENGINEER

DATE: May 6, 2022

RE: JANUARY 2022 TO MARCH 2022 WASTEWATER: QUALITY TEST RESULTS

1. FACTS

The Nova Scotia Environment “Approval” documents to operate for the Wastewater Treatment Plant (Class II wastewater treatment facility) require that certain tests be carried out to verify the quality of treated wastewater at the plant. There are also Federal testing standards that must also be followed. Routine testing is conducted both in the Town of Lunenburg (TOL) labs at the WWTP and independently by accredited laboratories to determine compliance levels with both the Provincial and Federal standards. If any test result exceeds the standards, then explanations are provided. This report provides a monthly and quarterly summary of these results.

The timing of this document follows from the testing schedule at the WWTP, which is performed on a quarterly cycle. The next Council report will be prepared at the end of the next quarter.

At the end of each year an annual report is also prepared for the treatment plant and filed with the Provincial and Federal governments.

2. ISSUES AND OPTIONS

The Lunenburg WWTP was issued an amended Approval to Operate by Nova Scotia Environment in 2020. The requirements of this Approval, as well as the Federal Requirements are summarized below:

Provincial Approval 2012-082710-02 Testing Requirements

<p>Treated wastewater must be tested a minimum of five times per month (once per week) for:</p> <ul style="list-style-type: none"> • Carbonaceous Biochemical Oxygen Demand (CBOD, maximum 20 mg/L) • Suspended Solids (SS, maximum 20 mg/L); and • <i>E. coli</i> (maximum 1000 counts/100 mL).
<ul style="list-style-type: none"> • pH is tested daily (five times per week). Acceptable pH is in the range 6.0 - 9.0.
<ul style="list-style-type: none"> • The facility is considered to be in “compliance with the treated effluent discharge criteria if the average value calculated for the averaging period meets the specified limits. All average residuals shall be the arithmetic mean with the exception of <i>E. coli</i>, which shall be the geometric mean.” The averaging period is defined as quarterly.

Federal Wastewater Systems Effluent Regulations Testing Requirements

<p>Treated wastewater must be tested every two weeks for:</p> <ul style="list-style-type: none"> • Carbonaceous Biochemical Oxygen Demand (CBOD maximum 25 mg/L) • Total Suspended Solids (TSS maximum 25 mg/L) • Un-ionized ammonia (maximum 1.25 mg/L) and • pH (between 5.5 - 9.5)
<ul style="list-style-type: none"> • Acute Lethality Tests are mandated to be conducted quarterly. In this test, rainbow trout are used to determine if they can survive in wastewater effluent over a 96-hour period. According to the regulations, if four consecutive Acute Lethality Tests pass when taken quarterly (over a year), then the testing for acute lethality can be reduced to once per year. The WWTP is currently on the reduced program of one lethality test per year.

Results

The required number of tests per month for CBOD, SS, *E. coli* and pH were carried out, and all pH tests were within the required ranges.

Quarterly Averages:

Quarterly averages for this reporting period are summarized in the following table. As per the Approval, an arithmetic mean is used for CBOD and SS, and a geometric mean is used for *E. coli*.

Quarter	Quarterly Average		
	CBOD (20 mg/L)	SS (20 mg/L)	<i>E. coli</i> (1000 counts/100 mL)
Qtr. 1 2022	6.6	7.4	119

There were two instances in February 2022 where *E. coli* was above the provincial standard, at 1300 counts/100 mL on February 2, and 2400 counts/100 mL on February 23. Nonetheless, on a quarterly average basis, which is the basis for meeting the requirements in the Provincial Approval, CBOD, SS and *E. coli* test results all met the Provincial and Federal requirements.

Lethality Testing:

According to the *Wastewater Systems Effluent Regulations* we are now only required to test for acute lethality yearly because the last five consecutive samples passed the test requirements.

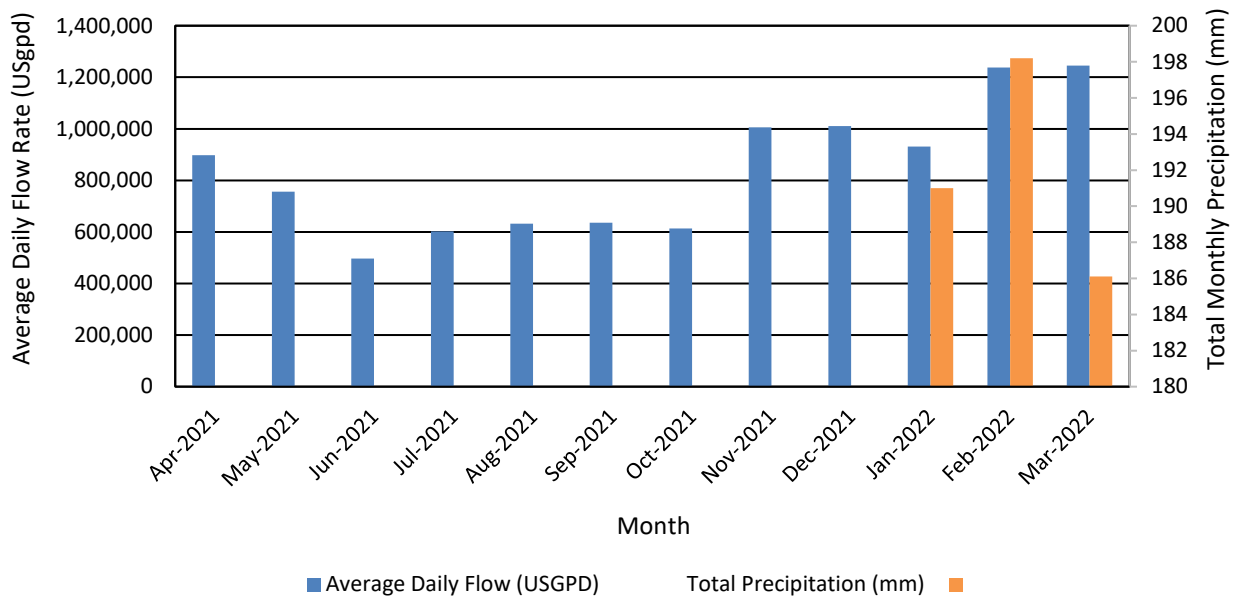
The last acute lethality test was performed on November 17, 2021, and no trout died during this test.

The next acute lethality test will be performed in November 2022.

Average Monthly Daily Flow of Wastewater with Total Monthly Precipitation:

The following graph shows the monthly flows for the wastewater treatment plant over the past year, along with the total monthly precipitation over this quarter. This data was taken from Western Head, Nova Scotia.

Average Daily Flow of Treated Wastewater and
Monthly Precipitation, Lunenburg, NS,
Apr 2021–Mar 2022



3. FINANCIAL IMPACT

Funds are included in the Wastewater Treatment Plant operating budget to pay for these effluent quality tests.

4. STRATEGIC PLAN RELEVANCE

Strategic Planning Goal #3. A. (a.) of the Town's Strategic Plan is to "Champion opportunities for our community's health and well-being by ... Protecting our natural environment ... Continue to provide solid waste management, sewage treatment and high-quality water to all of our residents".

5. RECOMMENDATION

This report is provided for Town Council's information.

Acknowledged only by:

Kevin Malloy,

Interim CAO

Encls. X

Document No:
Meeting: Council May 24/22
Circulate: Council, CAO
File:

MEMORANDUM

TO: TOWN COUNCIL
FROM: HEATHER MCCALLUM, ASSISTANT MUNICIPAL CLERK
DATE: MAY 17, 2022
RE: PROPOSED NOISE BYLAW AMENDMENTS

1. FACTS

The Town of Lunenburg's Bylaw #58 was enacted in November 2002 and has not been amended since that time. The Town has a full Bylaw and Policy Review scheduled for 2022/23. MC Advisory have been contracted to carry out this work, which will begin in Fall 2022.

In March 2022 the Town was notified that a request from the Town to amend the provincial Summary Offence Ticket Regulations to include offences under Bylaw #58 was approved by the Attorney General and Minister of Justice (Schedule A). This amendment amounted to a change in enforcement to allow ticketing of offences under the bylaw.

The public was notified of the change per direction of the Town Solicitor, and some public feedback was received that prompted a commitment by the Mayor to advance consideration of this bylaw. A draft amended bylaw is attached for consideration, with certain targeted changes only (Schedule B).

2. ISSUES AND OPTIONS ANALYSIS

Issues

Penalty

This section should be updated to indicate that a contravention is now a summary ticketing offence and state the enforcement body, i.e., local RCMP.

Schedule A

Part 1: *“Activities proscribed at all times:”*

Due to concerns expressed about noise and safety, Council may wish to consider adding fireworks to this list.

Part 2: *“Activities proscribed on any day of the week before 7:00 a.m. or after a half hour beyond sunset:”*

A half hour beyond sunset varies widely depending on time of year. Setting a specific time such as 11:00 p.m. may be more reasonable and may also remove the need for certain exemption applications.

Public Consultation

As part of the bylaw review process later in the year, staff recommend that public consultation in the form of an online survey be circulated soliciting feedback. Print copies can also be made available at the Finance counter.

3. FINANCIAL IMPACT

Other than the costs associated with advertising for a bylaw amendment process Public Hearing, there are no additional financial implications for the Town. Ticketing revenue is not anticipated to be significant.

4. STRATEGIC PLAN RELEVANCE

Strategic Goal

- **Governance:** A Town where positive relationships, communication, continual engagement, and shared vision are the foundation to municipal decision-making.
 - 11.1.b) Undertake a policy, procedure and bylaw review to enable implementation of the CCP.

5. RECOMMENDATION AND DRAFT MOTION

Draft Motion: moved and seconded to proceed with first reading to amend Bylaw #58 “Noise” as presented (Schedule B) and advertise for a public hearing prior to holding second reading.

Draft Motion: moved and seconded to instruct staff to conduct a public consultation survey to solicit feedback and report back for a more comprehensive review of the Noise Bylaw to follow later in the year.

Attachments - 2

Acknowledged only by:

Kevin Malloy
Interim CAO



8th Floor North, Maritime Centre
1505 Barrington St.
PO Box 216
Halifax, NS B3J 2M4

Ph: 902-424-4656
Fax: 902-424-0821
E-mail: Nick.Barr@novascotia.ca
File Number: 07-

Municipal Affairs and Housing

March 16, 2022

Patrick A. Burke, Q.C.
Burke, Macdonald & Luczak
Wolff House – 28 King Street
PO Box 549
Lunenburg, NS B0J 2C0

Dear Patrick A. Burke, Q.C.:

Re: Summary Offence Ticket Regulations, Town of Lunenburg, Schedule M-22 to the Summary Offence Ticket Regulations

I am pleased to advise that the Attorney General and Minister of Justice has approved your request to amend SOT Schedule M-22 to the *Summary Offence Ticket Regulations*. The amendments include the following:

Town of Lunenburg

- *Noise By-law*

I have attached a copy of the Minister's Order, dated March 10, 2022, and the accompanying Schedule showing the amendments. These were filed with the Registrar of Regulations on March 10, 2022. **As per clause 3(6)(a) of the *Regulations Act*, the effective date of the amendments is March 10, 2022.** The Minister's Order has been filed with the Registry of Regulations as N.S. Reg 36/2022 and will be published in the March 25, 2022, edition of the Royal Gazette Vol II.

I suggest that you take steps to inform the public that these regulations are in effect. Except for publication in the Royal Gazette and on the Registry of Regulations website, it is the Town's responsibility to provide this information to the public.

Finally, please be advised that changes to the regulations may be required if the Town amends or creates a new edition of any of the listed by-laws. The language used in the regulations is based on the versions of the by-laws that were submitted to the Department of Municipal Affairs and Housing in August 2021.

If you have any questions or concerns, please do not hesitate to contact me.

Yours truly,

A handwritten signature in blue ink that reads "Nicolas Barr". The signature is written in a cursive, slightly slanted style.

Nick Barr
Director of Governance & Advisory Services

cc Genevieve Harvey, Solicitor, Department of Justice

N.S. Regulations 36/2022
FILED
Date March 10, 2022
RACHEL L. JONES
REGISTRAR OF REGULATIONS

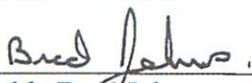
Order

**Made under Section 8 of Chapter 450
of the Revised Statutes of Nova Scotia, 1989,
the *Summary Proceedings Act***

I, Brad Johns, Attorney General and Minister of Justice for the Province of Nova Scotia, pursuant to Section 8 of Chapter 450 of the Revised Statutes of Nova Scotia, 1989, the *Summary Proceedings Act*, effective on and after the date of this order, hereby

- (a) amend Schedule M-22 to the *Summary Offence Tickets Regulations*, N.S. Reg. 281/2011, made by order of the Attorney General and Minister of Justice dated October 4, 2011, to designate an offence under the Town of Lunenburg's Noise By-law – No. 58 as a summary offence ticket offence, in the manner set forth in the attached Schedule "A"; and
- (b) order and direct that the penalty to be entered on a summons in respect of the offence set out in amendments to the schedules to the *Summary Offence Tickets Regulations*, N.S. Reg. 281/2011, as set forth in the attached Schedule "A", is the out-of-court settlement amount listed in the out-of-court settlement column set out opposite the description for the offence, and includes the charge provided for in, and in accordance with, Sections 8 and 9 of the Act.

Dated and made March 10, 2022, at Halifax, Halifax Regional Municipality,
Province of Nova Scotia.



Honourable Brad Johns
Attorney General and Minister of Justice

Schedule "A"

**Amendment to the *Summary Offence Tickets Regulations*
made by the Attorney General and Minister of Justice pursuant to Section 8
of Chapter 450 of the Revised Statutes of Nova Scotia, 1989,
the *Summary Proceedings Act***

Schedule M-22 to the *Summary Offence Tickets Regulations*, N.S. Reg. 281/2011, made by Order of the Attorney General and Minister of Justice dated October 4, 2011, is amended by adding the following heading and item immediately before the heading "Peace and Good Order By-Law – No. 15":

Noise By-law – No. 58:

- | | | | |
|---|---|---|----------|
| 1 | Engaging in activity likely to generate noise or sound that unreasonably disturbs peace and tranquillity of neighbourhood | 3 | \$237.50 |
|---|---|---|----------|

TOWN OF LUNENBURG BY-LAW #58

NOISE BY-LAW – DRAFT AMENDMENTS (REV)

Title

1. This By-Law is entitled the “Noise By-Law”.

Definitions

2. In this By-Law:
 - (1) “construction” includes erection, alteration, repair, dismantling and demolition of structures and includes structural maintenance, hammering, land clearing, moving of earth, rock or felled trees, rock breaking, grading, excavating, the laying of pipe or conduit whether above or below ground level, working with concrete, alteration or installation of any equipment, the structural installation of construction components or materials in any form whatsoever, the placing or removing of any construction related materials and includes any related work, but does not include blasting;
 - (2) “construction equipment” means any equipment or device designed and intended for use in construction or material handling including but not limited to air compressors, air tracks, pile drivers, pneumatic or hydraulic tools, bulldozers, tractors, excavators, trenchers, cranes, derricks, loaders, backhoes, scrapers, pavers, generators, off-highway haulers or trucks, ditchers, compactors and rollers, pumps, concrete mixers, graders and other material handling equipment;
 - (3) “emergency response personnel” includes police, fire department or brigades, registered emergency services providers, search and rescue personnel, provincial, regional or municipal Emergency Measures Organizations, ambulance or emergency health services providers and includes volunteer or military personnel responding to an apparent condition of emergency;
 - (4) “motor vehicle” includes an automobile, motorcycle and any other vehicle propelled or driven otherwise than by muscular, gravitational or wind power, [provided that it shall not include a motorized wheelchair, a vehicle running only upon rails, a farm tractor or a self-propelled implement of husbandry];
 - (5) “point of reception” means any point on premises where sound, originating from other premises, including other dwelling units, is received;

- (6) “public address system” means any system comprised of one or more of the following and in any combination: loudspeaker, amplifier, microphone, turntable, reproducer, receiver or tuner, where such equipment is part of a system used to reproduce or amplify sound;

Prohibitions and Interpretations

3. No person shall engage in any activity which is likely to generate noise or sound that unreasonably disturbs the peace and tranquility of a neighbourhood. For the purpose of this section, evidence that one neighbour is unreasonably disturbed by a noise is prima facie evidence that the neighbourhood is unreasonably disturbed by the noise.
4. Without limiting the generality of section 3, the activities or noises listed in **Schedule “A”** during the proscribed times as set out therein are deemed to be activities which are likely to generate noise or sound that unreasonably disturbs the peace and tranquility of a neighbourhood if the sound resulting from the activity is audible at a point of reception.

Fixed Exemptions

5. This By-Law does not apply to:
- (1) emergency response personnel engaged in the execution of their emergency response duties; or
 - (2) persons acting at the request of emergency response personnel during an actual or apparent emergency condition;
- and, without limiting the generality of the foregoing, noises caused by emergency response vehicles and air ambulances are specifically exempt from prosecution.
6. Notwithstanding any other provisions of this By-Law, this By-Law shall not apply to or proscribe:
- (1) the emission of sound in connection with any organized traditional, festive or religious activity celebrating:
 - (a) Canada Day;
 - (b) New Year’s Eve;
 - (c) religious holidays; or
 - (d) Remembrance Day;

- (2) the emission of sound in connection with calls to worship, ringing of bells at places of religious worship, or services of religious worship;
- (3) noise caused by the Municipality, the Government of Canada, the Province of Nova Scotia, the Nova Scotia Power Inc., and telecommunication companies, and the contractors engaged by the foregoing entities and employees of the foregoing entities, when acting in the reasonable execution of their duties;
- (4) noises in connection with organized athletic or recreational activities in municipal or public park areas, arenas or community centres and noises associated with maintenance or improvement of the property occupied or used by organized athletic or recreational or sporting clubs or municipal or public park areas, arenas or community centres, including without limiting the foregoing, the grooming, tilling, mowing, and contouring of grass and soil and other activities associated therewith.
- (5) noises from the organized and scheduled activities and events of festivals, parades, street dances, rallies, or other community activities approved by the Town;
- (6) noises emitted by audible pedestrian signals;
- (7) garbage trucks operating in the Town between 6:00 a.m. and 10:00 p.m.;
- (8) noises emitted from transport trucks, including refrigerated transport trucks, servicing the fishing firms on or near the waterfront in the Town of Lunenburg.

Grant of Exemptions By Council

7. Any person may make application to Council to be granted an exemption from any of the provisions of this By-Law with respect to the emission of noise from an industrial, institutional, commercial or community activity for which that person might otherwise be prosecuted. Council, by resolution, may refuse to grant the exemption, or may grant the exemption applied for, or may grant any exemption of lesser effect. Any exemption so granted shall:
 - (1) specify a time period of not greater than 5 years during which the exemption shall be effective;
 - (2) shall be confirmed in writing by the Town Manager/Clerk before becoming effective; and

- (3) shall include such terms and conditions as Council deems appropriate.
8. In deciding whether or not to grant an exemption under section 8 or in determining terms or conditions of the exemption, Council shall give consideration to:
 - (1) the social or economic benefit of the proposed activity to the municipality;
 - (2) the volume, nature, duration and consistency of noise emission from the proposed activity;
 - (3) the proximity and nature of abutting or adjacent land uses;
 - (4) the hours of operation of the proposed activity;
 - (5) any other factor relevant to balancing the interests of the applicant in the proposed activity against the interests of those persons who might be disturbed by the proposed activity.
9. Applications for an exemption for an activity of less than 14 days duration do not require a public hearing pursuant to this section or notice pursuant to section 11, but all other exemptions, renewals of exemptions, or amendments expanding the scope of an exemption shall only be granted after a public hearing at which Council shall give the applicant and any person interested in the application an opportunity to be heard.
10. Ten days' notice of the time, date and purpose of a public hearing pursuant to section 10, shall be mailed by the applicant to the assessed owner or owners, as shown in the records of the Assessment Office, of each property which contains a building located within 150 meters of the property which will be the subject of the hearing, except that where the exemption is sought for an outdoor event not conducted at a fixed location, notice may be given by advertisement, of not less than 25 square cm. in size, in a local newspaper of mass circulation.
11. Any contravention of the terms or conditions of an exemption pursuant to section 8 shall constitute a contravention of this By-Law. In addition to any other available remedies for such contravention, the Town Manager/Clerk may, on reasonable and probable grounds, and without a hearing, suspend an exemption for a period of up to 30 days pending Council's review of the exemption.
12. Any exemption pursuant to section 8 shall be reviewable by Council at any time upon 10 days' notice to the person exempted, and Council is free to revoke, suspend or restrict the exemption with or without cause having regard to the

criteria set forth in section 9, without giving notice to adjacent owners in accordance with section 10.

Penalty

13. ~~An offence under this By-law is a summary offence ticket offence. Any person who contravenes any provision of this By-Law is punishable on summary conviction by a fine of not less than \$100.00 and not more than \$10,000.00 and to imprisonment of not more than 6 months in default of payment thereof.~~ Any person engaging in activity likely to generate noise or sound that unreasonably disturbs peace and tranquility of the neighbourhood according to the terms of this Bylaw is subject to a fine of \$237.20 (per Schedule M-22 to the Summary Offence Tickets Regulations, pursuant to Section 8 of Chapter 450 of the Summary Proceedings Act).

The enforcement body is the Town of Lunenburg's designated policing provider.

Repeal

14. By-Law No. 15, the By-Law Respecting Peace and Good Order, is hereby repealed.

Schedule "A"

Part 1: Activities proscribed at all times:

1. The operation of any combustion engine or pneumatic device without an effective exhaust or intake muffling device in good working order and in constant operation;
2. The operation of a vehicle or a vehicle with a trailer resulting in banging, clanking, squealing or other like sounds due to an improperly secured load or equipment or inadequate maintenance;
3. The operation of a motor vehicle horn or other warning device except where required or authorized by law or in accordance with good safety practices;
4. The discharge of firearms except when used as a signaling device in a sporting competition with blank ammunition;
5. The operation of any item of construction equipment in an area designated as a residential zone under the Land Use By-law without effective muffling devices in good working order and in constant operation;
6. **The release of private fireworks and similar aerial pyrotechnics.**

Part 2: Activities proscribed on any day of the week before 7:00 a.m. or after ~~a half hour beyond sunset~~ **11:00 p.m.:**

1. The operation in the outdoors of any power tool for domestic purposes (including, without limiting the foregoing, lawn mowers) but not including snow removal equipment;
2. Yelling, shouting, hooting, whistling, singing or playing musical instruments that can be heard from a distance of 200 feet;
3. The operation of any public address system, television set, disc player, tape deck, D.V.D., phonograph, or radio or any similar device in a manner such that the sound from the equipment being operated is audible beyond the bounds of the property from which the noise is emitted;
4. Construction or the use or operation of construction equipment, except where such equipment is used or operated on any highway.

Part 3: Activities proscribed on a Monday, Tuesday, Wednesday, Thursday, or Friday before 7:00 a.m. or after ~~a half hour beyond sunset~~ **11:00 p.m.**; on a Saturday before 8:00 a.m. or after ~~7:00~~ **11:00** p.m.; and on a Sunday, Statutory Holiday or Remembrance Day at all times during any such day:

1. All selling or advertising by shouting or outcry or amplified sound.

Clerk's Annotation for Official Bylaw Book regarding Amendments to Bylaw #58
A By-law Respecting Noise Town of Lunenburg

Date of first reading:

Date of proposed second reading advertisement:

Date of second reading:

Date of third and final reading:

Date of advertisement of passage of Bylaw:

Date of mailing to Provincial Minister a certified copy of the By-Law:

I certify that the above Bylaw amendments shown in were adopted by Council and published as indicated above.

Date

CAO/Clerk