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Mike Davey <mdavey@eeiservices.com>

LighTec, Inc.
Attn: Peter Mikolajczuk
37 Depot Street
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Efficient LED Lighting Systems
Peter Salvitti
5 Elm Street PO Box 894
Sunapee NH .3782
617-281-8282

EVERSOURCE ENERGY

Town of Lyndeborough NH Streetlight NBV

		Values			
company	utility_account	Sum of quantity	Sum of book_cost	Sum of allocated_reserve	Sum of net_book_value
Public Service Co of New Hampshire	373390 SL- Fixtures - Overhead	18.00	2,538.58	1,826.49	712.09
Public Service Co of New Hampshire Total		**18.00**	**2,538.58**	**1,826.49**	**712.09**
Grand Total		**18.00**	**2,538.58**	**1,826.49**	**712.09**

FOR ILLUSTRATIVE PURPOSES ONLY*
COMPARISON OF ANNUAL BILLS ON OUTDOOR LIGHTING DELIVERY SERVICE RATE OL
CONVERSION OF FIXTURES TO LED
Based on Rates Effective 04/01/2018

SUMMARY OF BILL SAVINGS

	Number of Fixtures	Annual Bill
Current Rate OL	18	$ 3,209
LED Option	18	$ 1,224
Annual Savings		$ 1,985

CURRENT RATE OL

Light Type	Lumens	Watts	Current # Fixtures	Annual kWh Per Fixture	Total Annual KWH	Monthly Distribution Rate per Fixture	ANNUAL BILL AMOUNTS PSNH Delivery Service	Energy Service	Total Bill
HPS	4,000	50	2	252	504	$ 15.83	$ 401	$ 35	$ 436
	5,800	70	-	376	-	$ 15.83	-	-	-
	9,500	100	-	550	-	$ 21.05	-	-	-
	16,000	150	-	821	-	$ 29.77	-	-	-
	30,000	250	-	1,326	-	$ 30.51	-	-	-
	50,000	400	-	2,026	-	$ 30.85	-	-	-
	130,000	1,000	-	4,765	-	$ 49.51	-	-	-
Metal Halide	5,000	70	-	386	-	$ 16.51	-	-	-
	8,000	100	-	527	-	$ 22.60	-	-	-
	13,000	150	-	825	-	$ 31.01	-	-	-
	13,500	175	-	896	-	$ 31.67	-	-	-
	20,000	250	-	1,251	-	$ 31.67	-	-	-
	36,000	400	-	1,956	-	$ 31.96	-	-	-
	100,000	1,000	-	4,692	-	$ 47.91	-	-	-
Incandescent	600	105	-	456	-	$ 9.12	-	-	-
	1,000	105	16	456	7,296	$ 10.18	2,260	512	2,772
	2,500	205	-	890	-	$ 13.06	-	-	-
	6,000	448	-	1,947	-	$ 22.44	-	-	-
Mercury	3,500	100	-	509	-	$ 13.96	-	-	-
	7,000	175	-	890	-	$ 16.80	-	-	-
	11,000	250	-	1,269	-	$ 20.77	-	-	-
	15,000	400	-	1,968	-	$ 23.76	-	-	-
	20,000	400	-	1,968	-	$ 25.65	-	-	-
	56,000	1,000	-	4,701	-	$ 40.77	-	-	-
Fluorescent	20,000	330	-	1,433	-	34.79	-	-	-
HPS in Mercury	12,000	150	-	784	-	21.77	-	-	-
	34,200	360	-	1,794	-	27.87	-	-	-
			18		7,800		$ 2,661	$ 547	$ 3,209

LED OPTION

Assumed LED Wattage	Number of Fixtures	Annual kWh Per Fixture	Total Annual KWH	Monthly Distribution Rate per Fixture	PSNH Delivery Service	Energy Service	Total Bill
25	18	109	1,955	$ 4.65	$ 1,087	$ 137	$ 1,224
0	-	-	-	3.37	-	$ -	-
0	-	-	-	3.37	-	$ -	-
0	-	-	-	3.37	-	$ -	-
0	-	-	-	3.37	-	$ -	-
0	-	-	-	3.37	-	$ -	-
0	-	-	-	3.37	-	$ -	-
0	-	-	-	3.37	-	$ -	-
0	-	-	-	3.37	-	$ -	-
0	-	-	-	3.37	-	$ -	-
0	-	-	-	3.37	-	$ -	-
0	-	-	-	3.37	-	$ -	-
0	-	-	-	3.37	-	$ -	-
0	-	-	-	3.37	-	$ -	-
0	-	-	-	3.37	-	$ -	-
0	-	-	-	3.37	-	$ -	-
	18		1,955		$ 1,087	$ 137	$ 1,224

LED Option, Distribution Charges per month:

Per fixture per month: $ 3.37 (excludes maintenance)
Per watt per month: $ 0.05130

Rates per kWh effective 04/01/2018, applicable to all light types:

Transmission	$ 0.01738
SCRC	0.01940
SBC	0.00455
Tax	0.00055
Energy Service	0.07018
	$ 0.12091

ENH POWER

SOURCES:

KWh and charges for the current Rates EOL and OL were taken from PSNH's tariff.
Annual kWh totals under the LED Option are calculated as follows: lamp wattage divided by 1,000 times 4,345 hours of annual operation.

affinity led lighting

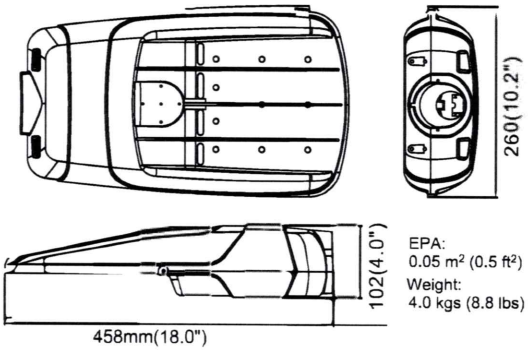
AMERICAN BUILT

ASSEMBLED WITH PRIDE
BY US VETERANS
IN DOVER, NEW HAMPSHIRE

S800 Series Roadway Luminaire

LED Street & Area Lighting

The S800 Series distills the benefits of combining industry-leading components and LED technology with pragmatic design and American-Built reliability. The outstanding photometric performance results in sites with excellent uniformity, allowing greater pole spacing and lower power density. The S800 Series is the best alternative available for traditional street and area lighting with quick payback and improved performance.



Standard Features

- ★ Night Sky Friendly (zero uplight) with integrated backlight-shield
- ★ Reduced-glare optical lenses standard in Type II, Type III and Type V photometric distributions
- ★ Available in 3000K, 4000K and 5000K Correlated Color Temperatures
- ★ Tool-Less Entry with Connect-Safe™ for Lineman Friendly installation
- ★ Die-Cast Aluminum Housing and Housing Door with Ultra-durable powder-coat finish that resists corrosion, abrasion and UV-degradation
- ★ Integrated Tilt Adjustment ±5°
- ★ Built-in Bird-Guard
- ★ Input Voltage: 120-277V or 347-480V, 50/60Hz
- ★ Ambient Operating Temperatures -40°C to +50°C
- ★ Smart Ready with 7-pin Photocontrol Receptacle (per ANSI C136.41) and 0-10V Dimming Capability
- ★ LED Lifetime Rating >120,000 hours L70 @55°C (per IESNA TM-21-11)
- ★ 10-Year Limited Warranty

Product Specifications

EXAMPLE: S80X-XXW-XXK-TX-10-XX-M ⇨ S800-65W-40K-T2-10-GR-M						
MODEL	POWER	COLOR	DISTRIBUTION	CONTROL OPTION	FINISH	DRIVER
S800	25W 40W 65W	30K: 3000K 40K: 4000K 50K: 5000K 57K: 5700K	T2: Type II T3: Type III T5: Type V	10: 0-10V Dimming	BR: Bronze BL: Black GR: Gray WH: White	M: Meanwell
S801	80W 100W					

S800 Series Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Actual performance may differ as a result of end user environment and application. Actual wattage may differ by +/-10% when operating between 120-277V +/-10%. Contact us directly for performance data on any configurations not shown here.

MODEL	LEDS	LED CURRENT	SYSTEM WATTS	DIST TYPE	3000K					4000K				
					LUMENS	B	U	G	LPW	LUMENS	B	U	G	LPW
S800	10	0.7A	25W	T2	2916	1	0	1	117	3175	1	0	1	127
				T3	2935	1	0	1	117	3196	1	0	1	128
				T5	2780	2	0	2	111	3027	2	0	2	121
	16	0.75A	40W	T2	4936	1	0	1	123	5374	1	0	1	134
				T3	4893	1	0	1	121	5328	1	0	1	133
				T5	4692	3	0	2	117	5109	3	0	3	128
		1.15A	65W	T2	6997	2	0	2	108	7619	2	0	2	117
				T3	7070	2	0	2	109	7698	2	0	2	118
				T5	6628	3	0	3	102	7217	3	0	3	111
S801	28	0.85A	80W	T2	9474	3	0	3	118	10316	3	0	3	129
				T3	9516	2	0	2	119	10362	2	0	2	130
				T5	9054	3	0	3	113	9859	3	0	3	123
		1.0A	100W	T2	10827	3	0	3	108	11789	3	0	3	118
				T3	10792	2	0	2	108	11751	2	0	2	118
				T5	10392	4	0	4	104	11316	4	0	4	113

Certifications and Qualifications

- ★ DesignLights Consortium® Qualified Products Listed (DLC QPL)
- ★ UL® Certified Manufacturing Site in Dover, NH
- ★ Certified Electrical & Photometric Measurements (per IESNA LM-79-08)
- ★ Certified to ANSI C136.31-2001 3G Bridge & Overpass Vibration standards
- ★ 10Kv Surge Suppression Protection tested in accordance with IEEE/ANSI C62.41.2
- ★ Luminaire & finish endurance tested to ASTM B1117-11 Salty Fog test standards
- ★ Additional Powder-Coating Strength & Adhesion testing (meets ASTM D454/D522 standards)
- ★ Suitable for Wet Location, meets IP66 (per IEC 60529-2013 standards)
- ★ Meets FCC Part15, Subpart B, Class B per ANSI C63.4-2014
- ★ Meets International Dark Sky Association requirements for reduced glare, light trespass & light pollution
- ★ RoHS Compliant
- ★ American Built by U.S. Veterans

UL LISTED · DLC QPL LISTED · Dark Sky Friendly · IP66 · RoHS COMPLIANT · CREE LEDs · MEAN WELL · WAGO INNOVATIVE CONNECTIONS · FC

affinity led lighting

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AMERICAN BUILT

ASSEMBLED WITH PRIDE ★ BY US VETERANS ★ IN DOVER, NEW HAMPSHIRE

PHILIPS
LUMEC

Roadway

RoadFocus

RFS: 35 and 54 W

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

The Philips 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 multiple roadway applications.

Ordering guide

example: RFS-35W16LED4K-T-R2S-UNIV-DMG-CLO-RCD-PHXL-GY3

Luminaire	LED Module	Optical System	Voltage	Driver and Dimming	Wattage Switch	Twist-Lock Receptacle	Surge Protection	Luminaire Options	Finish
RFS									
RFS RoadFocus Small	*4000K:* **35W16LED4K-T** **54W16LED4K-T**[2] *3000K:* **35W16LED3K-T** **54W16LED3K-T**[2]	**R2S** Type II Short **R2M** Type II Medium **R3S** Type III Short **R3M** Type III Medium **4** Type IV **5** Type V	**UNIV** 120-277VAC	*Standard:* **DMG**[1,6] Dimmable driver 0-10V *Optional:* **Dynadimmer** Economy Profile **CDMGE25**[2,5,6] **CDMGE50**[2,5,6] **CDMGE75**[2,5,6] Median Profile **CDMGM25**[2,5,6] **CDMGM50**[2,5,6] **CDMGM75**[2,5,6] Safety Profile **CDMGS25**[2,5,6] **CDMGS50**[2,5,6] **CDMGS75**[2,5,6] **DALI**[2,5,6] Digitally Adressable Lighting Interface **DMG-AST***[2] Adjustable Startup Time **DMG-CLO***[2,5] Constant Light Output **DMG-OTL***[2] Over The Life **Includes 0-10v dimming*	None (leave blank) **FAWS**[5] Field Adjustable Wattage Selector (optional)	*Standard:* **RCD**[1,3,7] Receptacle for twist-lock photocell or shorting cap, 5-pin (standard) *Optional:* **RCD7**[3,7] Receptacle for twist-lock photocell or shorting cap, 7-pin (optional)	**SP2**[8] 20kV / 20kA Surge Protector (optional)	**HS** House side shield, 1 per 16 LED light engine **PH8**[3] Twist-lock Photoelectric Cell, UNIV (120-277VAC) **PHXL**[3] Twist-lock Photoelectric Cell, extended life, UNIV (120-277VAC) **PH9**[3] Shorting cap **API** Factory installed NEMA label	**BK** Black finish **BR** Bronze finish **GY3** Gray finish **WH** White finish

1. Please note these integrated features come standard with RoadFocus luminaires.
2. Denotes programmable driver option. Not available on 1050 mA version (54W16LED).
3. Use of photoelectric cell or shorting cap is required to ensure proper illumination.
4. Not available with HVU (347-480volt).
5. FAWS not available with CDMG options, DALI or CLO.
6. Dimming choices: Select either DMG or one of the CDMG options or DALI.
7. When RDC7 option is selected you will get 7-pin instead of standard RCD 5-pin.
8. When SP2 option is selected you will get SP2 instead of standard SP1.

RFS RoadFocus

Small, LED Cobrahead: 35 and 54 W

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

CPC or CPCD[1]
CityTouch Connector Node.

1. Contact the factory for additional support when connected lighting or additional services are desired.

LED Wattage and Lumen Values

LED = Philips Lumileds LUXEON T, CRI = 70, CCT = 4000K (+/- 350K)
System (LED + driver) rated life = 100,000 hrs[1]

LED Module	Typical Delivered Lumens	Typical System Wattage (W)[2]	LED Current (mA)	Typical System Current (A) @				Efficacy (Lm/W)	BUG Rating
				120V	208V	240V	277V		
35W16LED4K-T-R2S	4,167	38	700	0.32	0.19	0.17	0.15	110	B1-U0-G1
35W16LED4K-T-R2M	3,955	38	700	0.32	0.19	0.17	0.15	104	B1-U0-G1
35W16LED4K-T-R3S	4,083	38	700	0.32	0.19	0.17	0.15	107	B1-U0-G1
35W16LED4K-T-R3M	4,030	38	700	0.32	0.19	0.17	0.15	108	B1-U0-G1
35W16LED4K-T-4	3,682	37	700	0.32	0.19	0.17	0.15	100	B1-U0-G1
35W16LED4K-T-5	3,800	38	700	0.32	0.19	0.17	0.15	100	B2-U0-G1
54W16LED4K-T-R2S	5,593	54	1050	0.46	0.27	0.23	0.20	104	B2-U0-G1
54W16LED4K-T-R2M	5,309	54	1050	0.46	0.27	0.23	0.20	99	B1-U0-G1
54W16LED4K-T-R3S	5,480	54	1050	0.46	0.27	0.23	0.20	102	B1-U0-G1
54W16LED4K-T-R3M	5,405	54	1050	0.46	0.27	0.23	0.20	100	B1-U0-G1
54W16LED4K-T-4	4,886	54	1050	0.46	0.27	0.23	0.20	91	B1-U0-G2
54W16LED4K-T-5	5,100	54	1050	0.46	0.27	0.23	0.20	96	B3-U0-G1

1. L_{70} >100,000 hrs (at ambient temperature = 25°C).
2. System wattage or total luminaire wattage includes the LED module and the LED driver.

Note: Due to rapid and continuous advances in LED technology, LED luminaire data is subject to change without notice and at the discretion of Philips.

LED = Philips Lumileds LUXEON T, CRI = 70, CCT = 3000K (+/- 350K)
System (LED + driver) rated life = 100,000 hrs[1]

LED Module	Typical Delivered Lumens	Typical System Wattage (W)[2]	LED Current (mA)	Typical System Current (A) @				Efficacy (Lm/W)	BUG Rating
				120V	208V	240V	277V		
35W16LED3K-T-R2S	3,672	38	700	0.32	0.19	0.17	0.15	97	B1-U0-G1
35W16LED3K-T-R2M	3,565	38	700	0.32	0.19	0.17	0.15	94	B1-U0-G1
35W16LED3K-T-R3S	3,558	38	700	0.32	0.19	0.17	0.15	94	B1-U0-G1
35W16LED3K-T-R3M	3,496	38	700	0.32	0.19	0.17	0.15	92	B1-U0-G1
35W16LED3K-T-4	3,585	37	700	0.32	0.19	0.17	0.15	97	B1-U0-G1
35W16LED3K-T-5	3,589	38	700	0.32	0.19	0.17	0.15	94	B2-U0-G1
54W16LED3K-T-R2S	4,945	54	1050	0.46	0.27	0.23	0.20	91	B1-U0-G1
54W16LED3K-T-R2M	4,800	54	1050	0.46	0.27	0.23	0.20	89	B1-U0-G1
54W16LED3K-T-R3S	4,791	54	1050	0.46	0.27	0.23	0.20	88	B1-U0-G1
54W16LED3K-T-R3M	4,707	54	1050	0.46	0.27	0.23	0.20	87	B1-U0-G1
54W16LED3K-T-4	4,828	54	1050	0.46	0.27	0.23	0.20	89	B1-U0-G2
54W16LED3K-T-5	4,833	54	1050	0.46	0.27	0.23	0.20	89	B3-U0-G1

1. L_{70} >100,000 hrs (at ambient temperature = 25°C).
2. System wattage or total luminaire wattage includes the LED module and the LED driver.

Note: Due to rapid and continuous advances in LED technology, LED luminaire data is subject to change without notice and at the discretion of Philips.

RFS RoadFocus

Small, LED Cobrahead: 35 and 54 W

Field Adjustable Wattage (FAWS) Multiplier Chart

35W16LED4K-T (700mA)
35W16LED3K-T (700mA)

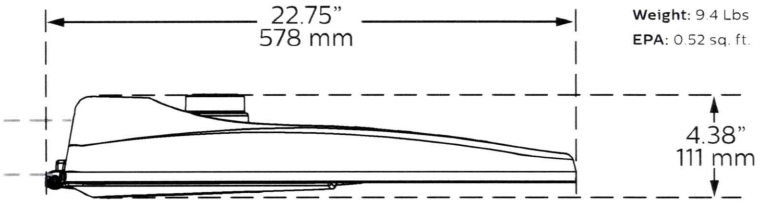
FAWS Position	Typical Delivered Lumens Multiplier	Typical System wattage and typical current
1	0.37	0.29
2	0.55	0.50
3	0.62	0.58
4	0.71	0.69
5	0.77	0.75
6	0.81	0.81
7	0.84	0.87
8	0.94	0.91
9	0.98	0.96
10	1.00	1.00

54W16LED4K-T (1050mA)
54W16LED3K-T (1050mA)

FAWS Position	Typical Delivered Lumens Multiplier	Typical System wattage and typical current
1	0.33	0.27
2	0.56	0.48
3	0.64	0.57
4	0.71	0.65
5	0.79	0.74
6	0.84	0.79
7	0.89	0.85
8	0.92	0.90
9	0.96	0.95
10	1.00	1.00

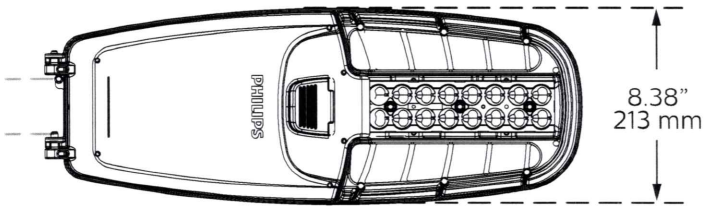
Dimensions

Side View



Weight: 9.4 Lbs
EPA: 0.52 sq. ft.

Bottom View



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. L_{70} is the predicted time when LED performance depreciates to 70% of initial lumen output. Calculated per IESNA TM21-11. Published L_{70} hours limited to 6 times actual LED test hours

Ambient Temperature °C	Driver mA	Calculated L_{70} Hours	L_{70} per TM-21	Lumen Maintenance % at 60,000 hrs
25°C	up to 1050 mA	>100,000 hours	>60,000 hours	>96%

RFS RoadFocus

Small, LED Cobrahead: 35 and 54 W

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 2.5º 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 to identify wattage and source (both included in box).

Light Engine

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

Electrical components are RoHS compliant, IP66 sealed light engine equipped with Philips Lumileds LUXEON T LEDs.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: LED type Philips Lumileds LUXEON T. Composed of high-performance white LEDs. Color temperature as per ANSI/NEMA bin Neutral White, 3000 Kelvin nominal (3045K +/- 175K) or 4000 Kelvin nominal (3985K +/- 275K), CRI 70 Min. 75 Typical.

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 +40°C / +104°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, 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.

RCD*: Receptacle with 5 pins enabling dimming, can be used with a twist lock Starsense 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

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.

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

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

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

Safety Mode:
CDMGS25: 4 hours, 25% power dimming
CDMGS50: 4 hours 50% power dimming
CDMGS75: 4 hours 75% power dimming

Median Mode:
CDMGM25: 6 hours 25% power dimming
CDMGM50: 6 hours 50% power dimming
CDMGM75: 6 hours 75% power dimming

Economy Mode:
CDMGE25: 8 hours 25% power dimming
CDMGE50: 8 hours 50% power dimming
CDMGE75: 8 hours 75% power dimming

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

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

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

HS: House side shield, 1 per 16 LED light engine.

PH8*: Twist-lock Photoelectric Cell, UNIV (120-277VAC).

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

PH9*: Shorting cap.

API: Factory Installed NEMA label, ANSI C136.15 compliant

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

RFS RoadFocus

Small, LED Cobrahead: 35 and 54 W

Specifications (continued)

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, Philips System Reliability Tool, Philips Advance data and Philips Lumileds 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 3000 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, 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. RoadFocus LED Cobrahead luminaires are DesignLights Consortium qualified. Luminaire complies with or exceeds the following ANSI C136 standards: .2, .3, .10, .14, .15, .22, .25, .31, .37, .41.

Limited Warranty

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

Brackets/Arms

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

Philips Lighting North America Corporation
200 Franklin Square Drive, Somerset, NJ 08873
Tel. 855-486-2216

Philips Lighting Canada Ltd.
281 Hillmount Rd, Markham, ON, Canada L6C 2S3
Tel. 800-668-9008

The LED Option under Energy Efficient Outdoor Lighting Delivery Service Rate EOL

EVERSOURCE

The LED Option

- ***Available to municipalities served under Rate EOL, and to those municipalities currently served under Outdoor Lighting Delivery Service Rate OL that successfully convert to Rate EOL.***
- Rate EOL customers may choose any combination of LED, High Pressure Sodium (HPS) or Metal Halide (MH) fixtures.
- Customer is responsible for selecting and purchasing LED fixtures that are compatible with Eversource's system and are subject to acceptance.
- Customer is responsible for the installation cost of LED fixtures, as well as the removal and disposal of the existing fixtures. Disposal must be performed according to standards provided by the Eversource Environmental Operations group.
- Customer is responsible for providing replacement LED fixtures upon failure.
- All maintenance shall be done by Eversource or its agents. Customers will be billed for LED maintenance at a flat fee of $95 per fixture, plus the cost of materials, if any, per visit. Eversource is responsible for maintaining nominal voltage.

Process

- ***For all technical and design questions concerning LED projects, customers should work directly with an LED vendor to assess their lighting and project needs.***
- Customers choose fixtures that meet the published Eversource standards of acceptable lighting attributes.
- Customer is responsible for the cost of installation. The *initial* installation may be performed by Eversource or by a third party vendor chosen by the customer. The customer is responsible for ensuring that third party vendors have all requisite training and certifications, and are liable for any damage to the Eversource system caused by their vendor.
- Fixtures become the property of Eversource while installed on its poles.
- Rate EOL customers will review and sign an "acknowledgement of responsibilities" under the LED option.

Energy Efficiency Incentive

- ***All energy efficiency incentives are subject to funding availability and approval.***
- To qualify for an energy efficiency incentive, projects must be reviewed by Eversource before materials and fixtures are purchased.
- Qualifying fixtures may receive up to $100 per fixture, with total incentive limited by customer caps.
- LED streetlight projects *do not* qualify for Eversource's Municipal Smart Start financing.

Note: Please refer to the Company's Delivery Service Tariff for more details on Availability, Requirements, Rates and other provisions.

To ensure compliance with Eversource's standards and energy efficiency incentive programs, please contact your Account Executive before beginning any lighting project.

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2018 Lighting Incentive

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Section A: CUSTOMER INFORMATION

Customer Name	Electric Account Number	Rate	Application Number
Facility Address	City	State	Zip Code
Service Location Identification	Email		
Mailing Address (if different from above)	City	State	Zip Code
Contact Person/Title	Telephone Number	Incorporated? (Check one) ☐ Yes ☐ No ☐ Exempt	
Please Assign Payment to Contractor. Customer Signature:	Additional Information	Incentive Payment Preference (Check one.) ☐ Check ☐ Bill Credit ☐ Pay Contractor	

Section B: CONTRACTOR INFORMATION

Contractor Name	Contact Person/Title (Print)	Contact Person Signature	
Mailing Address	City	State	Zip Code
Email	Telephone Number	Additional Information	Incorporated? (Check one) ☐ Yes ☐ No ☐ Exempt

Section C: DOCUMENT APPROVALS

PRE-INSTALLATION INSPECTION

Utility Signature	Date

PRE-APPROVAL OFFER

Technical Review - Utility Signature		Date	
Utility Signature	Date	Amount of Incentive Offer ($)	Offer Valid Through:

By signing and dating below, customer accepts this incentive offer and agrees to the Utility Terms and Conditions available from your Utility. Pursuant to a Commission order, customers also agree that the utility alone may capture all kW and kWh savings and any ISO-NE capacity payments resulting from this energy efficiency project. This agreement is contingent upon continued approval and authorization by the Commission to recover said amounts from the System Benefits Charge. The incentive, in conjunction with all other sources of funding, cannot exceed the total project cost.

Customer Signature: Date:

POST-INSTALLATION INSPECTION

Utility Signature	Date	Incremental Cost ($)	Amount of Incentive ($)
Customer Signature	Date		

MANAGEMENT APPROVAL

Utility Signature	Date

Public Service Company of New Hampshire d/b/a Eversource Energy
Customer Responsibilities under the LED Option of Energy Efficient Outdoor Lighting Delivery Service Rate EOL

Municipal lighting customers of Public Service Company of New Hampshire d/b/a Eversource Energy ("Eversource" or the "Company") served under Energy Efficient Outdoor Lighting Delivery Service Rate EOL ("Rate EOL") may opt to have LED fixtures installed, in place of, or in addition to, the metal halide or high pressure sodium fixtures offered under this rate. This is an acknowledgement of customer responsibilities under the LED option of Rate EOL, under the terms and conditions of the Company's Electric Tariff on file with the New Hampshire Public Utilities Commission. The City/Town of LYNDEBOROUGH New Hampshire (the "Customer"), hereby agrees to accept service under the terms and conditions of the Tariff.

Requirements for the LED Option:

- Customer is responsible for selecting and purchasing accepted LED fixtures from a vendor and for providing replacement fixtures in the event an installed fixture fails for any reason.
- Fixtures must be accepted by the Company in advance of installation and must be compatible with existing line voltage, brackets and photoelectric controls, and must require no special tools or training to install and maintain.
- Customer will pay the Company, or a private contractor approved by the Company, for removal and installation of LED fixtures. Private contractors must be accepted by the Company in advance of commencement of work.
- The Company will hold title to all fixtures during the time they are installed. All maintenance of the fixtures will be performed by the Company or its agent.
- The Company will correct system voltage problems at no charge to the Customer. The Customer will be charged a per-fixture per-visit charge, as specified in the Tariff, when it is necessary for the Company to replace photoelectric controls; or to remove a non-working fixture, return it to the customer, and install a new fixture provided by the Customer. LED fixtures will be considered to have failed if, after confirmation of adequate voltage and an operational photo electric control, the fixture fails to work.

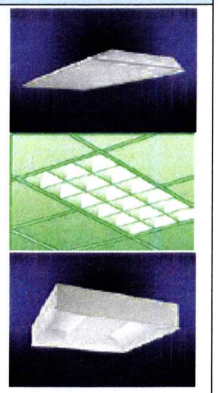
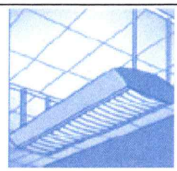
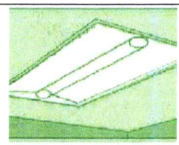
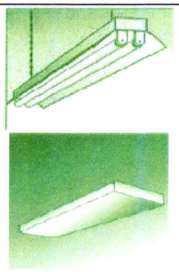
Accepted: Town/City of LYNDEBOROUGH
Account Number(s) 8000972-01

By: _____ Date: _____

Accepted: Eversource Energy

By: _____ Date: _____

Table A: Lighting Systems Incentives

Product Code	Product Description	Per Fixture Incentive	Eligibility Criteria	
20L	LED High Efficiency Interior Fixtures	**$50**	1x4, 2x2 and 2x4 Prismatic, Parabolic, Recessed Direct and Recessed Indirect fixtures. Fixtures are required to be listed by Design Lights Consortium (for more information see www.designlights.org)	
21L	LED Linear Indirect or Indirect/Direct Pendant Fixtures	**$65**	Fixtures may have a Down-Light component of no greater than 45%. Fixtures with a Down-Light component must incorporate glare limiting louvers or a perforated cover shielding the lamps. Ceiling finish must be white and unobstructed. Fixtures are required to be listed by Design Lights Consortium (for more information see www.designlights.org)	
22L	LED Advanced Recessed Fixtures	**$50**	Fixtures are required to be listed by Design Lights Consortium (for more information see www.designlights.org)	
30L	LED Industrial/Commercial Fixtures	**$50**	4 ft. and 8ft. fixtures LED industrial/commercial strip or wrap fixtures. Applies to fixtures installed 16 feet or less above the floor. Only one incentive may be counted per fixture. Fixtures are required to be listed by Design Lights Consortium (for more information see www.designlights.org)	

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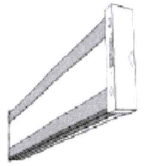
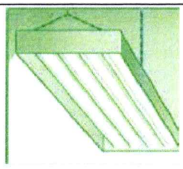
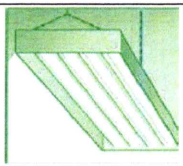
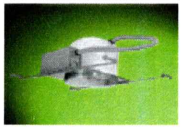
Product Code	Product Description	Per Fixture Incentive	Eligibility Criteria	
31L	LED Clean Room Rated or Vapor Tight Fixtures	**$65**	1x4 or 2x4 Fixtures are required to be listed by Design Lights Consortium (for more information see www.designlights.org)	
32L	LED Stairwell Fixture with integral Occupancy sensor controls	**$65**	To be eligible for incentives, fixtures must be installed in an 8,760 hour stairwell application with integral occupancy sensor control, setting lights to 50% or less output in control mode (not occupied). Not eligible for additional control incentive. Fixtures are required to be listed by Design Lights Consortium (for more information see www.designlights.org)	
40L	LED High and Low Bay High Intensity Fixtures	**$100**	Wattage range is 35 watts to 149 watts. Recommended mounting height is > 16 feet above the floor. Fixtures are required to be listed by Design Lights Consortium (for more information see www.designlights.org)	
41L	LED High and Low Bay High Intensity Fixtures	**$150**	Minimum Wattage is 150 watts. Recommended mounting height is > 16 feet above the floor. Fixtures are required to be listed by Design Lights Consortium (for more information see www.designlights.org)	
50L	LED Down Light Fixtures	**$20**	Eligible LED Down Lights are required to be less than 25 watts and hardwired or GU-24 (pin) base. Screw Base LED Down Light Retrofit Kits are also eligible. Replacement lamps not eligible. Fixtures are required to be listed by Design Lights Consortium (for more information see www.designlights.org)	

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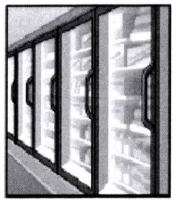
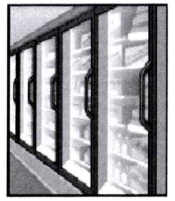
Product Code	Product Description	Per Fixture Incentive	Eligibility Criteria	
51L	LED Hardwired Track Heads or Mono-Point Directional Fixtures	**$20**	LED track heads hardwired installations only, replacement lamps not eligible. Fixtures are required to be listed by Design Lights Consortium (for more information see www.designlights.org).	
60L	LED Cooler , Freezer, or Refrigerated 3' & 4' Fixture	**$30**	Fixtures are required to be listed by Design Lights Consortium (for more information see www.designlights.org)	
61L	LED Cooler , Freezer, or Refrigerated 5' & 6' Fixture	**$45**	Fixtures are required to be listed by Design Lights Consortium (for more information see www.designlights.org)	
70L	LED Low Bay Fixtures Garage & Canopy	**$50**	LED Low Bay for Garages and Canopies 25-99 watts. Fixtures are required to be listed by Design Lights Consortium (for more information see www.designlights.org).	
71L	LED Low Bay Fixtures Garage & Canopy	**$75**	LED Low Bay for Garages and Canopies greater than 99 watts. Fixtures are required to be listed by Design Lights Consortium (for more information see www.designlights.org).	

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Product Code	Product Description	Per Fixture Incentive	Eligibility Criteria	
80L	LED Exterior Wall, Post, Ground, and Arm Mount Floods and Fixtures	**$50**	Must be automatically controlled to avoid daylight operation. Wattage range is 25 watts to 99 watts. Fixtures are required to be listed by Design Lights Consortium (for more information see www.designlights.org).	
81L	LED Exterior Wall, Post, Ground, and Arm Mount Floods and Fixtures	**$75**	Must be automatically controlled to avoid daylight operation. Minimum wattage is 100 watts. Fixtures are required to be listed by Design Lights Consortium (for more information see www.designlights.org).	
90L	LED Pole Mounted Parking, or Roadway Fixtures	**$100**	Must be automatically controlled to avoid daylight operation. Wattage range is 45 watts to 149 watts. Fixtures are required to be listed by Design Lights Consortium (for more information see www.designlights.org).	
91L	LED Pole Mounted Parking, or Roadway Fixtures	**$150**	Must be automatically controlled to avoid daylight operation. Minimum Wattage is 150 watts. Fixtures are required to be listed by Design Lights Consortium (for more information see www.designlights.org).	
99L	LED New Fixtures	**$15**	LED fixture categories not covered under other codes. Fixtures are required to be listed by Design Lights Consortium or ENERGY STAR. (for more information see www.designlights.org). Linear LED Tubes (T8 style) not eligible for code 99L.	

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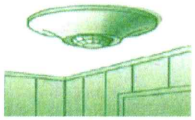
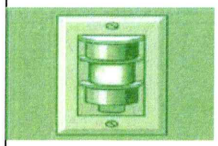
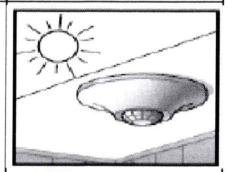
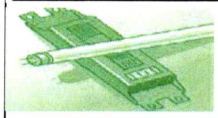
Please note that only one incentive control strategy will be approved per fixture/area.

Table A-1: Lighting Control Incentives

Product Code	Product Description	Incentive	Eligibility Criteria	Min Controlled Wattage	
1	Remote Mounted Occupancy Sensor	**$50 per control**	Only for customers under 5000 sq-ft. Comply with manufacturer's coverage recommendations. No manual "ON" overrides.	**90 (total)**	
2	Wall mounted Occupancy/Vacancy Sensors	**$20 per control**	Only for customers under 5000 sq-ft. Occupancy Sensors must operate as Automatic On, and Automatic Off or Manual On and Off. Sensors are wall mounted devices only. Not recommended in multi stall restrooms, locker rooms, stairwells or rooms of greater than 250 square feet.	**45 (total)**	
3	Daylight Dimming System and/or Occupancy Controlled Step-Dimming System	**$20 per fixture**	Only for customers under 5000 sq-ft. Daylight: Must have continuous dimming or adjust to a minimum of 4 levels. Step-Dimming: LED's must be automatically controlled based on occupancy. Power consumption in low mode must not exceed 60%.	**45 (per fixture)**	 
4	Integral High Bay Fixture Occupancy Control Systems	**$20 per fixture**	Only for customers under 5000 sq-ft. LED's must be automatically controlled based on occupancy. Systems with manual "ON" or override switches are not eligible. Occupancy sensors are integral (built into) or permanently attached to each fixture.	**45 (per fixture)**