TEN Connected Solutions

SUBMITTAL APPROVAL

TEN Project #17-01-009

PROJECT:
Portland ME Street Lighting Retrofit

Upon Customer's execution of this Submittal Approval, TCS is hereby authorized to commence the Installation Work on the above referenced Project.

Execution of this Submittal Approval by Customer:

Signature: _____

By: Troy Moon

Title: Sustainability Coordinator

Date: 11/16/2017

Design Approval Acknowledgement by TCS:

Signature: _____

By: Shawn Deegan

Title: Senior Project Manager

Date: November 15, 2017

List of equipment/material provided in this efficiency upgrade:

Street Lighting

LIGHTING EQUIPMENT & LED LAMP WATTAGES

Contract Quantities	Existing Equipment	Pre-(billing) Wattage*	New Equipment	Proposed Wattage**
86	250 or 400W Sodium Cobra Head	300 or 465 W	Cree RSWM-A-HT-3ME-9L-30K7-UL-GY-N	83 W
1,008	50, 70, 100, 150W Sodium Cobra Head	65, 95, 130, 195 W	Cree RSWM-A-HT-3ME-9L-30K7-UL-GY-N-X1	50 W
302	150 or 250W Sodium Cobra Head	195 or 300 W	Cree RSWM-A-HT-3ME-9L-30K7-UL-GY-N-X6	74 W
2,738	50 or 70W Sodium Cobra Head	65 or 95 W	Cree RSWS-A-HT-2ME-3L-30K7-UL-GY-N-X3	23 W
713	100W Sodium Cobra Head	130 W	Cree RSWS-A-HT-2ME-5L-30K7-UL-GY-N-X1	30 W
1	100W Mercury Dusk to Dawn	130 W	E-conolight E-DD1L50N1	50 W
178	250 or 400 W Sodium or Metal Halide Flood	300 or 465 W	***To be submitted under separate cover***	79 W
19	400 W Shoe Box Fixture	465 W	***To be submitted under separate cover***	110 W
85	250 W Sodium Shoe Box Fixture	250 W	***To be submitted under separate cover***	72 W

Contract Quantities total 5,130

Cree Fixture Cut Sheets:

Cree RSWM-A-HT-3ME-9L-30K7-UL-GY-N (83W)

Cree RSWM-A-HT-3ME-9L-30K7-UL-GY-N-X1 (50W)

Cree RSWM-A-HT-3ME-9L-30K7-UL-GY-N-X6 (74W)

Cree RSWS-A-HT-2ME-3L-30K7-UL-GY-N-X3 (23W)

Cree RSWS-A-HT-2ME-5L-30K7-UL-GY-N-X1 (30W)

Econolight Fixture Cut Sheet:

E-conolight E-DD1L50N1

RSW Series

RSW™ LED Street Luminaire – Medium

RSWM-A-HT-3ME-9L-30K7-UL-GY-N (83W)

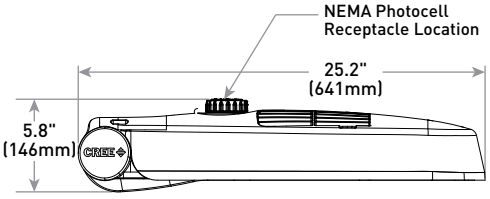
Product Description

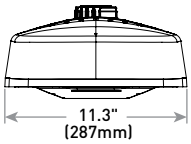
The Cree® RSW Series, utilizing WaveMax® Technology, will transform the way utilities and municipalities light their residential streets, interchanges, and expressways. With the first viable LED streetlight at warm CCT, the RSW Series delivers up to 124 LPW, enhanced visual comfort with reduced glare and high color contrast leading to improved overall illumination using less energy. The RSW Series provides warm, inviting dark sky friendly lighting that makes good economic sense.
Applications: Roadway

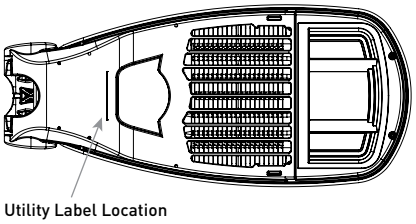
Performance Summary

Utilizes Cree WaveMax® Technology
Assembled in the U.S.A. of U.S. and imported parts
Efficacy: Up to 124 LPW
CRI: Minimum 70 CRI (3000K, 4000K & 5000K); 80 CRI (2700K, 3000K, 4000K & 5000K)
CCT: 2700K, 3000K, 4000K, 5000K
Limited Warranty†: 10 years

† See http://lighting.cree.com/warranty for warranty terms







Accessories

Field-Installed	
Backlight Control Shield RSW-BLSM - Provides 1 mounting height cutoff	**Bird Guard** RSW-BRDGRDM

Weight*
13.8 lbs (6.3kg)

*RSW-BLSM Accessory: add 0.4 lbs. (0.2kg)

Ordering Information

Example: RSWM-A-HT-2ME-9L-27K8-UL-GY-N

RSWM	A	HT		9L		UL	GY	N	
Product	**Version**	**Mounting**	**Optic**	**Lumen Package****	**CCT/CRI**	**Voltage**	**Color Options**	**Utility Label/Receptacle**	**Options**
RSWM Medium	**A**	**HT** Horizontal Tenon	**2LG*** Type II Long **2ME*** Type II Medium **3ME*** Type III Medium	**9L** 9,325 Lumens	**27K8** 2700K, 80 CRI **30K7** 3000K, 70 CRI **30K8** 3000K, 80 CRI **40K7** 4000K, 70CRI **40K8** 4000K, 80 CRI **50K7** 5000K, 70CRI **50K8** 5000K, 80CRI	**UL** Universal 120-277V	**GY** Grey	**N** **Utility Label and NEMA® 7-Pin Photocell Receptacle** - External wattage label per ANSI C136.15 - 7-pin receptacle per ANSI C136.41 - Factory connected 0-10V dim leads - Photocell and shorting cap by others	**Q8/Q7/Q6/Q5/Q4/Q3/Q2/Q1 Field Adjustable Lumen Output** - Must select Q8, Q7, Q6, Q5, Q4, Q3, Q2, or Q1 - Offers full range lumen adjustability - Includes wattage label for setting selected - Refer to pages 5 & 6 for power and lumen values **X7/X6/X5/X4/X3/X2/X1 Locked Lumen Output** - Must select X7, X6, X5, X4, X3, X2, or X1 - Lumen output is permanently locked to the setting selected - Includes wattage label for setting selected - Refer to pages 5 & 6 for power and lumen values

* Available with Backlight Shield when ordered with field-installed accessory (see table above)
** Lumen Package codes identify approximate light output only. Actual lumen output levels vary depending on CCT and optic selection. Refer to Initial Delivered Lumen tables for specific lumen values

Rev. Date: V3 08/16/2017

US: lighting.cree.com T (800) 236-6800 F (262) 504-5415

Canada: www.cree.com/canada T (800) 473-1234 F (800) 890-7507

Product Specifications

CREE WAVEMAX® TECHNOLOGY

Featuring up to 90% optical efficiency and precise control, Cree WaveMax® Technology provides unmatched comfort and decreased LED source luminance by smoothly spreading brightness over a broader area. When integrated with luminous surfaces made of a polymer medium engineered with DiamondFacet™ optical elements, extremely high efficacy luminaires are the result – ultimately creating more visually comfortable and appealing environments while exceeding illumination performance.

CONSTRUCTION & MATERIALS

- Housing constructed of high strength, lightweight bulk molding compound for long weathering and durability
- UV stabilized polymeric door with handle pocket for tool-less entry
- Straight in wiring to terminal block for power input (#6-#14 AWG)
- IP66 rated optic box and driver enclosure inside optic box
- Mounts on 1.25" (32mm) IP, 1.66" (42mm) O.D. or 2" (51mm) IP, 2.375" (60mm) O.D. horizontal tenon (minimum 8" [203mm] in length) and is adjustable +/- 5˚ in 2.5˚increments to allow for fixture leveling (two axis T-level included)
- Luminaire secures with two mounting bolts
- Comes standard with Utility Label per ANSI C136.15 and 7-pin NEMA® Photocell Receptacle per ANSI C136.41
- **Weight:** 13.8 lbs. (6.3kg); add 0.4 lbs. (0.2kg) for RSW-BLSM accessory

ELECTRICAL SYSTEM

- **Input Voltage:** 120-277V, 50/60Hz, Class 1 drivers
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- Integral 10kV surge suppression protection standard
- When code dictates fusing, a slow blow fuse or type C/D breaker should be used to address inrush current
- **10V Source Current:** 0.25mA
- **Operating Temperature Range:** -40˚C - +50˚C (-40˚F - + 122˚F)

REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for wet locations
- Certified to ANSI C136.31-2001, 3G bridge and overpass vibration standards pending
- Meets CALTrans 611 Vibration testing pending
- 10kV surge suppression protection tested in accordance with IEEE/ANSI C62.41.2
- Meets FCC Part 15, Subpart B, Class A standards for conducted and radiated emissions
- RoHS compliance pending. Consult factory for additional details
- Dark Sky Friendly, IDA Approved when ordered with 27K or 30K CCT
- DLC and DLC Premium qualified versions available. Please refer to https://www.designlights.org/search/ for most current information

Electrical Data*

Lumen Package	CCT/CRI	System Watts 120-277V	Utility Label Wattage	Efficacy	Total Current (A)			
					120V	208V	240V	277V
9L	27K8	93	90	98	0.83	0.48	0.43	0.38
	30K7	83	80	112	0.70	0.40	0.36	0.32
	30K8	93	90	100	0.78	0.45	0.40	0.35
	40K7	76	80	123	0.64	0.38	0.33	0.30
	40K8	85	90	110	0.71	0.41	0.37	0.33
	50K7	75	80	124	0.63	0.37	0.33	0.30
	50K8	78	80	120	0.66	0.38	0.34	0.30

* Electrical data at 25˚C (77˚F). Actual wattage may differ by +/- 10% when operating between 120-277V +/- 10%

Recommended RSW Series Lumen Maintenance Factors (LMF)[1]

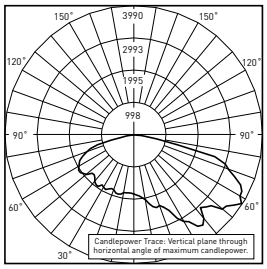
Ambient	Initial LMF	25K hr Projected[2] LMF	50K hr Projected[2] LMF	75K hr Projected[2] LMF	100K hr Calculated[3] LMF
0˚C (32˚F)	1.05	1.04	1.04	1.03	1.03
5˚C (41˚F)	1.04	1.03	1.03	1.02	1.02
10˚C (50˚F)	1.03	1.02	1.02	1.02	1.01
15˚C (59˚F)	1.02	1.01	1.01	1.01	1.00
20˚C (68˚F)	1.01	1.00	1.00	1.00	0.99
25˚C (77˚F)	1.00	0.99	0.99	0.99	0.99

[1] Lumen maintenance values at 4000K and 25˚C (77˚F) are calculated per TM-21 based on LM-80 data and in-situ luminaire testing
[2] In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing ([DUT] i.e. the packaged LED chip)
[3] In accordance with IESNA TM-21-11, Calculated Values represent time durations that exceed six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing ([DUT] i.e. the packaged LED chip)

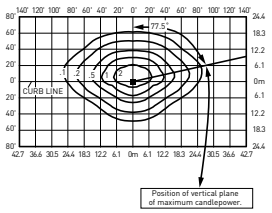
Photometry

All published luminaire photometric testing performed to IESNA LM-79-08 standards by a NVLAP accredited laboratory. To obtain an IES file specific to your project consult: http://lighting.cree.com/products/outdoor/street-and-roadway/rsw-series

2LG



CESTL Test Report #: 11683107.08
RSWM-A-**-2LG-9L-30K7-UL-GY-N
Initial Delivered Lumens: 9,285

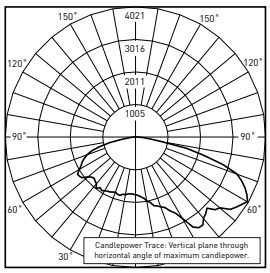


RSWM-A-**-2LG-9L-30K7-UL-GY-N
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 9,325
Initial FC at grade

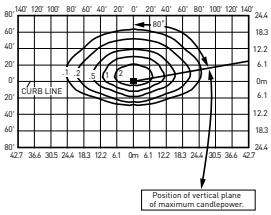
Type II Long Distribution

Lumen Package	CRI	2700K		3000K/4000K/5000K	
		Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
9L	All	9,125	B2 U0 G2	9,325	B2 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt



CESTL Test Report #: 11705478-02
RSWM-A-**-2LG-9L-30K7-UL-GY-N
w/RSW-BLSS
Initial Delivered Lumens: 8,466



RSWM-A-**-2LG-9L-30K7-UL-GY-N
w/RSW-BLSS
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 8,550
Initial FC at grade

Type II Long w/BLS Distribution

Lumen Package	CRI	2700K		3000K/4000K/5000K	
		Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
9L	All	8,375	B2 U0 G2	8,550	B2 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
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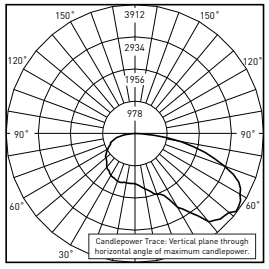
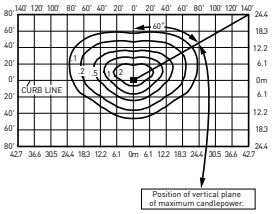
2ME



CESTL Test Report #: 11683107.07
RSWM-A-**-2ME-9L-30K7-UL-GY-N
Initial Delivered Lumens: 9,093

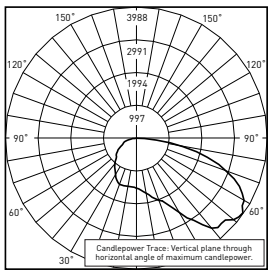


RSWM-A-**-2ME-9L-30K7-UL-GY-N
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 9,325
Initial FC at grade

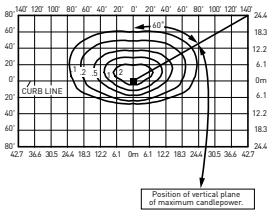
Type II Medium Distribution

Lumen Package	CRI	2700K		3000K/4000K/5000K	
		Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
9L	All	9,125	B2 U0 G2	9,325	B2 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt



CESTL Test Report #: 11705478.01
RSWM-A-**-2ME-9L-30K7-UL-GY-N
w/RSW-BLSM
Initial Delivered Lumens: 8,383



RSWM-A-**-2ME-9L-30K7-UL-GY-N
w/RSW-BLSM
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 8,550
Initial FC at grade

Type II Medium w/BLS Distribution

Lumen Package	CRI	2700K		3000K/4000K/5000K	
		Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
9L	All	8,375	B2 U0 G3	8,550	B2 U0 G3

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
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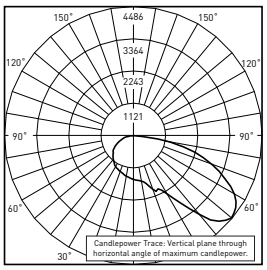
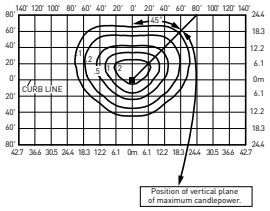
Photometry

All published luminaire photometric testing performed to IESNA LM-79-08 standards by a NVLAP accredited laboratory. To obtain an IES file specific to your project consult: http://lighting.cree.com/products/outdoor/street-and-roadway/rsw-series

3ME



CESTL Test Report #: 11683107.09
RSWM-A-**-3ME-9L-30K7-UL-GY-N
Initial Delivered Lumens: 9,275



RSWM-A-**-3ME-9L-30K7-UL-GY-N
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 9,325
Initial FC at grade

Type III Medium Distribution

Lumen Package	CRI	2700K		3000K/4000K/5000K	
		Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
9L	All	9,125	B2 U0 G2	9,325	B2 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
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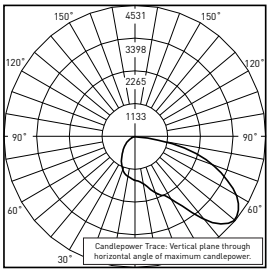
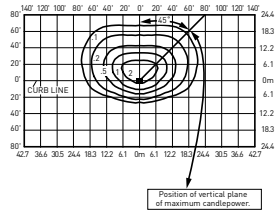


CESTL Test Report #: 11705478.03
RSWM-A**-3ME-9L-30K7-UL-GY-N w/RSW-BLSM
Initial Delivered Lumens: 8,532



RSWM-A-**-3ME-9L-30K7-UL-GY-N w/RSW-BLSM
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 8,550
Initial FC at grade

Type III Medium w/BLS Distribution

Lumen Package	CRI	2700K		3000K/4000K/5000K	
		Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
9L	All	8,375	B1 U1 G2	8,550	B2 U1 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

Luminaire EPA

Horizontal Tenon Mount – Weight: 13.8 lbs. (6.3kg); RSW-BLSM Accessory: add 0.4 lbs. (0.2kg)					
Luminaire	Single	2 @ 90°	2 @ 180°	3 @ 90°	4 @ 90°
Tenon Configuration If used with Cree tenons, please add tenon EPA with luminaire EPA					
	 PD-1H4; PT-1H	 PD-2H4(90); PT-2H(90)	 PD-2H4(180); PT-2H(180)	 PD-3H4(90); PT-3H(90)	 PD-4H4(90); PT-4H(90)
Standard Luminiare	0.86	1.24	1.71	2.10	2.49
Luminiare w/RSW-BLSM Accessory	0.86	1.59	1.71	2.45	3.19

Tenon EPA

Part Number	EPA
PD Series Tenons	0.09
PT Series Tenons	0.10
WM-2L	0.13
XA-TMDA8	0.19

Tenons and Brackets* (must specify color)

Square Internal Mount Horizontal Tenons (Aluminum)
- Mounts to 4" (102mm) square aluminum or steel poles
PD-1H4 – Single
PD-2H4(90) – 90° Twin
PD-2H4(180) – 180° Twin
PD-3H4(90) – 90° Triple
PD-4H4(90) – 90° Quad

Wall Mount Brackets
- Mounts to wall or roof
WM-2L – Extended Horizontal

Round External Mount Horizontal Tenons (Aluminum)
- Mounts to 2.375"-3" (60-76mm) O.D. round aluminum or steel poles or tenons
PT-1H – Single
PT-2H(90) – 90° Twin
PT-2H(180) – 180° Twin
PT-3H(90) – 90° Triple
PT-4H(90) – 90° Quad

Direct Arm Pole Adaptor Bracket
- Mounts to 3-6" (76-152mm) round or square aluminum or steel poles
XA-TMDA8

* Refer to the Bracket and Tenons spec sheet for more details

Field Adjustable Output (Q8/Q7/Q6/Q5/Q4/Q3/Q2/Q1) Option Description:

The Field Adjustable Output option enables the street and area luminaire within the RSW Series on this page to be tuned to the exact needs of a particular application through multiple levels of adjustment. When ordered with the Q option, the luminaire will be shipped from the factory at the selected lumen output, will be fully adjustable between the outputs, and will include a wattage label that indicates the wattage of the luminaire at the selected lumen output.

Locked Lumen Output (X7/X6/X5/X4/X3/X2/X1) Option Description:

The Locked Lumen Output option on this page permanently locks the lumen output on the RSW Series street and area luminaire to the setting selected. When ordered with the X option, the luminaire will be shipped from the factory at the lumen output setting selected, and will include a wattage label that indicates the wattage of the setting selected. When this option is selected, the luminaire output is not able to be adjusted in the field.

Q & X Option Power & Lumen Data – 9L

Q Option Setting	X Option Setting	CCT/CRI	System Watts	Label Wattage	Lumen Values		Optics Qualified on DLC QPL	
			120-277V		2LG, 2ME & 3ME	w/BLS	Standard	Premium
Q8 (Full Power)	N/A (Full Power)	27K8	93	90	9,125	8,375	2LG, 2ME, 3ME	
		30K7	83	80	9,325	8,550		2LG, 2ME, 3ME
		30K8	93	90			2LG, 2ME, 3ME	
		40K7	76	80				2LG, 2ME, 3ME
		40K8	85	90			2LG, 2ME, 3ME	
		50K7	75	80				2LG, 2ME, 3ME
		50K8	78	80				2LG, 2ME, 3ME
Q7	X7	27K8	90	90	8,900	8,175	2LG, 2ME, 3ME	
		30K7	81	80	9,100	8,350		2LG, 2ME, 3ME
		30K8	90	90			2LG, 2ME, 3ME	
		40K7	74	70				2LG, 2ME, 3ME
		40K8	82	80			2LG, 2ME, 3ME	
		50K7	73	70				2LG, 2ME, 3ME
		50K8	77	80				2LG, 2ME, 3ME
Q6	X6	27K8	84	80	8,775	8,050	2LG, 2ME, 3ME	
		30K7	74	70	8,975	8,225		2LG, 2ME, 3ME
		30K8	84	80			2LG, 2ME, 3ME	
		40K7	70	70				2LG, 2ME, 3ME
		40K8	76	80			2LG, 2ME, 3ME	
		50K7	69	70				2LG, 2ME, 3ME
		50K8	73	70				2LG, 2ME, 3ME
Q5	X5	27K8	80	80	8,150	7,475	2LG, 2ME, 3ME	
		30K7	69	70	8,325	7,650		2LG, 2ME, 3ME
		30K8	80	80			2LG, 2ME, 3ME	
		40K7	65	70				2LG, 2ME, 3ME
		40K8	71	70			2LG, 2ME, 3ME	
		50K7	64	60				2LG, 2ME, 3ME
		50K8	65	70				2LG, 2ME, 3ME

Field Adjustable Output (Q8/Q7/Q6/Q5/Q4/Q3/Q2/Q1) Option Description:

The Field Adjustable Output option enables the street and area luminaire within the RSW Series on this page to be tuned to the exact needs of a particular application through multiple levels of adjustment. When ordered with the Q option, the luminaire will be shipped from the factory at the selected lumen output, will be fully adjustable between the outputs, and will include a wattage label that indicates the wattage of the luminaire at the selected lumen output.

Locked Lumen Output (X7/X6/X5/X4/X3/X2/X1) Option Description:

The Locked Lumen Output option on this page permanently locks the lumen output on the RSW Series street and area luminaire to the setting selected. When ordered with the X option, the luminaire will be shipped from the factory at the lumen output setting selected, and will include a wattage label that indicates the wattage of the setting selected. When this option is selected, the luminaire output is not able to be adjusted in the field.

Q & X Option Power & Lumen Data – 9L

Q Option Setting	X Option Setting	CCT/CRI	System Watts	Label Wattage	Lumen Values		Optics Qualified on DLC QPL	
			120-277V		2LG, 2ME & 3ME	w/BLS	Standard	Premium
Q4	X4	27K8	75	80	7,575	6,950	2LG, 2ME, 3ME	
		30K7	65	70	7,750	7,100		2LG, 2ME, 3ME
		30K8	75	80			2LG, 2ME, 3ME	
		40K7	60	60				2LG, 2ME, 3ME
		40K8	67	70			2LG, 2ME, 3ME	
		50K7	60	60				2LG, 2ME, 3ME
		50K8	61	60				2LG, 2ME, 3ME
Q3	X3	27K8	71	70	7,150	6,550	2LG, 2ME, 3ME	
		30K7	62	60	7,300	6,700		2LG, 2ME, 3ME
		30K8	71	70			2LG, 2ME, 3ME	
		40K7	58	60				2LG, 2ME, 3ME
		40K8	64	60			2LG, 2ME, 3ME	
		50K7	57	60				2LG, 2ME, 3ME
		50K8	58	60				2LG, 2ME, 3ME
Q2	X2	27K8	67	70	6,825	6,275	2LG, 2ME, 3ME	
		30K7	60	60	7,000	6,400		2LG, 2ME, 3ME
		30K8	67	70			2LG, 2ME, 3ME	
		40K7	55	60				2LG, 2ME, 3ME
		40K8	61	60			2LG, 2ME, 3ME	
		50K7	54	50				2LG, 2ME, 3ME
		50K8	56	60				2LG, 2ME, 3ME
Q1	X1	27K8	56	60	6,350	5,825	2LG, 2ME, 3ME	
		30K7	50	50	6,500	5,950		2LG, 2ME, 3ME
		30K8	56	60			2LG, 2ME, 3ME	
		40K7	47	50				2LG, 2ME, 3ME
		40K8	51	50			2LG, 2ME, 3ME	
		50K7	46	50				2LG, 2ME, 3ME
		50K8	47	50				2LG, 2ME, 3ME

US: lighting.cree.com T (800) 236-6800 F (262) 504-5415 **Canada: www.cree.com/canada** T (800) 473-1234 F (800) 890-7507

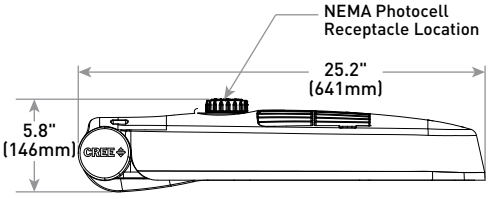
RSW Series

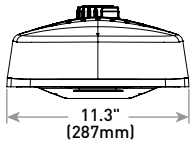
RSW™ LED Street Luminaire – Medium

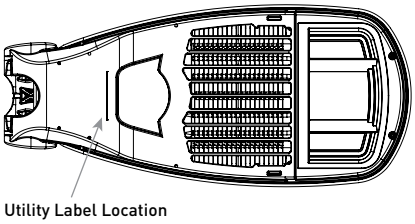
RSWM-A-HT-3ME-9L-30K7-UL-GY-N-X1 (50W)

Product Description

The Cree® RSW Series, utilizing WaveMax® Technology, will transform the way utilities and municipalities light their residential streets, interchanges, and expressways. With the first viable LED streetlight at warm CCT, the RSW Series delivers up to 124 LPW, enhanced visual comfort with reduced glare and high color contrast leading to improved overall illumination using less energy. The RSW Series provides warm, inviting dark sky friendly lighting that makes good economic sense.
Applications: Roadway







Performance Summary

Utilizes Cree WaveMax® Technology
Assembled in the U.S.A. of U.S. and imported parts
Efficacy: Up to 124 LPW
CRI: Minimum 70 CRI (3000K, 4000K & 5000K); 80 CRI (2700K, 3000K, 4000K & 5000K)
CCT: 2700K, 3000K, 4000K, 5000K
Limited Warranty†: 10 years

† See http://lighting.cree.com/warranty for warranty terms

Accessories

Field-Installed	
Backlight Control Shield RSW-BLSM - Provides 1 mounting height cutoff	**Bird Guard** RSW-BRDGRDM

Weight*
13.8 lbs (6.3kg)

*RSW-BLSM Accessory: add 0.4 lbs. (0.2kg)

Ordering Information

Example: RSWM-A-HT-2ME-9L-27K8-UL-GY-N

RSWM	A	HT		9L		UL	GY	N	
Product	**Version**	**Mounting**	**Optic**	**Lumen Package****	**CCT/CRI**	**Voltage**	**Color Options**	**Utility Label/Receptacle**	**Options**
RSWM Medium	**A**	**HT** Horizontal Tenon	**2LG*** Type II Long **2ME*** Type II Medium **3ME*** Type III Medium	**9L** 9,325 Lumens	**27K8** 2700K, 80 CRI **30K7** 3000K, 70 CRI **30K8** 3000K, 80 CRI **40K7** 4000K, 70CRI **40K8** 4000K, 80 CRI **50K7** 5000K, 70CRI **50K8** 5000K, 80CRI	**UL** Universal 120-277V	**GY** Grey	**N** **Utility Label and NEMA® 7-Pin Photocell Receptacle** - External wattage label per ANSI C136.15 - 7-pin receptacle per ANSI C136.41 - Factory connected 0-10V dim leads - Photocell and shorting cap by others	**Q8/Q7/Q6/Q5/Q4/Q3/Q2/Q1 Field Adjustable Lumen Output** - Must select Q8, Q7, Q6, Q5, Q4, Q3, Q2, or Q1 - Offers full range lumen adjustability - Includes wattage label for setting selected - Refer to pages 5 & 6 for power and lumen values **X7/X6/X5/X4/X3/X2/X1** **Locked Lumen Output** - Must select X7, X6, X5, X4, X3, X2, or X1 - Lumen output is permanently locked to the setting selected - Includes wattage label for setting selected - Refer to pages 5 & 6 for power and lumen values

* Available with Backlight Shield when ordered with field-installed accessory (see table above)
** Lumen Package codes identify approximate light output only. Actual lumen output levels vary depending on CCT and optic selection. Refer to Initial Delivered Lumen tables for specific lumen values

Rev. Date: V3 08/16/2017

US: lighting.cree.com T (800) 236-6800 F (262) 504-5415

Canada: www.cree.com/canada T (800) 473-1234 F (800) 890-7507

Product Specifications

CREE WAVEMAX® TECHNOLOGY

Featuring up to 90% optical efficiency and precise control, Cree WaveMax® Technology provides unmatched comfort and decreased LED source luminance by smoothly spreading brightness over a broader area. When integrated with luminous surfaces made of a polymer medium engineered with DiamondFacet™ optical elements, extremely high efficacy luminaires are the result – ultimately creating more visually comfortable and appealing environments while exceeding illumination performance.

CONSTRUCTION & MATERIALS

- Housing constructed of high strength, lightweight bulk molding compound for long weathering and durability
- UV stabilized polymeric door with handle pocket for tool-less entry
- Straight in wiring to terminal block for power input (#6-#14 AWG)
- IP66 rated optic box and driver enclosure inside optic box
- Mounts on 1.25" (32mm) IP, 1.66" (42mm) O.D. or 2" (51mm) IP, 2.375" (60mm) O.D. horizontal tenon (minimum 8" [203mm] in length) and is adjustable +/- 5˚ in 2.5˚increments to allow for fixture leveling (two axis T-level included)
- Luminaire secures with two mounting bolts
- Comes standard with Utility Label per ANSI C136.15 and 7-pin NEMA® Photocell Receptacle per ANSI C136.41
- **Weight:** 13.8 lbs. (6.3kg); add 0.4 lbs. (0.2kg) for RSW-BLSM accessory

ELECTRICAL SYSTEM

- **Input Voltage:** 120-277V, 50/60Hz, Class 1 drivers
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- Integral 10kV surge suppression protection standard
- When code dictates fusing, a slow blow fuse or type C/D breaker should be used to address inrush current
- **10V Source Current:** 0.25mA
- **Operating Temperature Range:** -40˚C - +50˚C (-40˚F - + 122˚F)

REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for wet locations
- Certified to ANSI C136.31-2001, 3G bridge and overpass vibration standards pending
- Meets CALTrans 611 Vibration testing pending
- 10kV surge suppression protection tested in accordance with IEEE/ANSI C62.41.2
- Meets FCC Part 15, Subpart B, Class A standards for conducted and radiated emissions
- RoHS compliance pending. Consult factory for additional details
- Dark Sky Friendly, IDA Approved when ordered with 27K or 30K CCT
- DLC and DLC Premium qualified versions available. Please refer to https://www.designlights.org/search/ for most current information

Electrical Data*

Lumen Package	CCT/CRI	System Watts 120-277V	Utility Label Wattage	Efficacy	Total Current (A)			
					120V	208V	240V	277V
9L	27K8	93	90	98	0.83	0.48	0.43	0.38
	30K7	83	80	112	0.70	0.40	0.36	0.32
	30K8	93	90	100	0.78	0.45	0.40	0.35
	40K7	76	80	123	0.64	0.38	0.33	0.30
	40K8	85	90	110	0.71	0.41	0.37	0.33
	50K7	75	80	124	0.63	0.37	0.33	0.30
	50K8	78	80	120	0.66	0.38	0.34	0.30

* Electrical data at 25˚C (77˚F). Actual wattage may differ by +/- 10% when operating between 120-277V +/- 10%

Recommended RSW Series Lumen Maintenance Factors (LMF)[1]

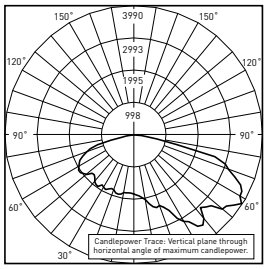
Ambient	Initial LMF	25K hr Projected[2] LMF	50K hr Projected[2] LMF	75K hr Projected[2] LMF	100K hr Calculated[3] LMF
0˚C (32˚F)	1.05	1.04	1.04	1.03	1.03
5˚C (41˚F)	1.04	1.03	1.03	1.02	1.02
10˚C (50˚F)	1.03	1.02	1.02	1.02	1.01
15˚C (59˚F)	1.02	1.01	1.01	1.01	1.00
20˚C (68˚F)	1.01	1.00	1.00	1.00	0.99
25˚C (77˚F)	1.00	0.99	0.99	0.99	0.99

[1] Lumen maintenance values at 4000K and 25˚C (77˚F) are calculated per TM-21 based on LM-80 data and in-situ luminaire testing
[2] In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing ([DUT] i.e. the packaged LED chip)
[3] In accordance with IESNA TM-21-11, Calculated Values represent time durations that exceed six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing ([DUT] i.e. the packaged LED chip)

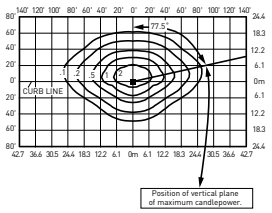
Photometry

All published luminaire photometric testing performed to IESNA LM-79-08 standards by a NVLAP accredited laboratory. To obtain an IES file specific to your project consult: http://lighting.cree.com/products/outdoor/street-and-roadway/rsw-series

2LG



CESTL Test Report #: 11683107.08
RSWM-A-**-2LG-9L-30K7-UL-GY-N
Initial Delivered Lumens: 9,285

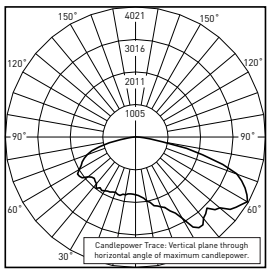


RSWM-A-**-2LG-9L-30K7-UL-GY-N
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 9,325
Initial FC at grade

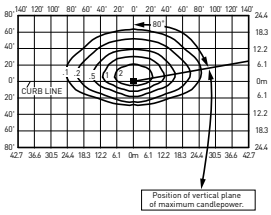
Type II Long Distribution

Lumen Package	CRI	2700K		3000K/4000K/5000K	
		Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
9L	All	9,125	B2 U0 G2	9,325	B2 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt



CESTL Test Report #: 11705478-02
RSWM-A-**-2LG-9L-30K7-UL-GY-N
w/RSW-BLSS
Initial Delivered Lumens: 8,466



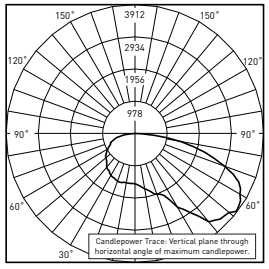
RSWM-A-**-2LG-9L-30K7-UL-GY-N
w/RSW-BLSS
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 8,550
Initial FC at grade

Type II Long w/BLS Distribution

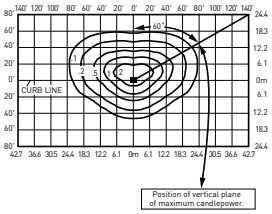
Lumen Package	CRI	2700K		3000K/4000K/5000K	
		Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
9L	All	8,375	B2 U0 G2	8,550	B2 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

2ME



CESTL Test Report #: 11683107.07
RSWM-A-**-2ME-9L-30K7-UL-GY-N
Initial Delivered Lumens: 9,093

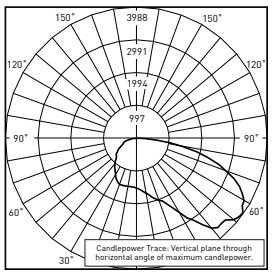


RSWM-A-**-2ME-9L-30K7-UL-GY-N
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 9,325
Initial FC at grade

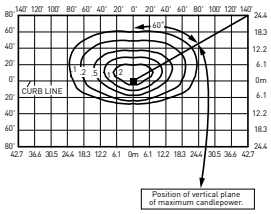
Type II Medium Distribution

Lumen Package	CRI	2700K		3000K/4000K/5000K	
		Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
9L	All	9,125	B2 U0 G2	9,325	B2 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt



CESTL Test Report #: 11705478.01
RSWM-A-**-2ME-9L-30K7-UL-GY-N
w/RSW-BLSM
Initial Delivered Lumens: 8,383



RSWM-A-**-2ME-9L-30K7-UL-GY-N
w/RSW-BLSM
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 8,550
Initial FC at grade

Type II Medium w/BLS Distribution

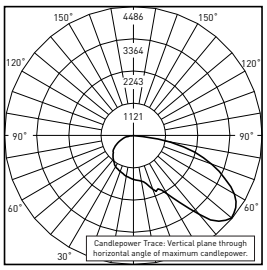
Lumen Package	CRI	2700K		3000K/4000K/5000K	
		Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
9L	All	8,375	B2 U0 G3	8,550	B2 U0 G3

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

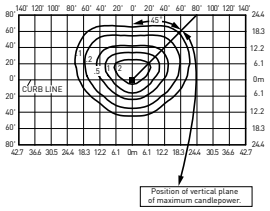
Photometry

All published luminaire photometric testing performed to IESNA LM-79-08 standards by a NVLAP accredited laboratory. To obtain an IES file specific to your project consult: http://lighting.cree.com/products/outdoor/street-and-roadway/rsw-series

3ME



CESTL Test Report #: 11683107.09
RSWM-A-**-3ME-9L-30K7-UL-GY-N
Initial Delivered Lumens: 9,275

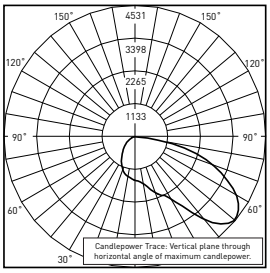


RSWM-A-**-3ME-9L-30K7-UL-GY-N
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 9,325
Initial FC at grade

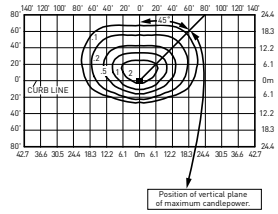
Type III Medium Distribution

Lumen Package	CRI	2700K		3000K/4000K/5000K	
		Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
9L	All	9,125	B2 U0 G2	9,325	B2 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt



CESTL Test Report #: 11705478.03
RSWM-A**-3ME-9L-30K7-UL-GY-N w/RSW-BLSM
Initial Delivered Lumens: 8,532



RSWM-A-**-3ME-9L-30K7-UL-GY-N w/RSW-BLSM
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 8,550
Initial FC at grade

Type III Medium w/BLS Distribution

Lumen Package	CRI	2700K		3000K/4000K/5000K	
		Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
9L	All	8,375	B1 U1 G2	8,550	B2 U1 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

Luminaire EPA

Horizontal Tenon Mount – Weight: 13.8 lbs. (6.3kg); RSW-BLSM Accessory: add 0.4 lbs. (0.2kg)					
Luminaire	Single	2 @ 90°	2 @ 180°	3 @ 90°	4 @ 90°
Tenon Configuration If used with Cree tenons, please add tenon EPA with luminaire EPA					
	 PD-1H4; PT-1H	 PD-2H4(90); PT-2H(90)	 PD-2H4(180); PT-2H(180)	 PD-3H4(90); PT-3H(90)	 PD-4H4(90); PT-4H(90)
Standard Luminiare	0.86	1.24	1.71	2.10	2.49
Luminiare w/RSW-BLSM Accessory	0.86	1.59	1.71	2.45	3.19

Tenon EPA

Part Number	EPA
PD Series Tenons	0.09
PT Series Tenons	0.10
WM-2L	0.13
XA-TMDA8	0.19

Tenons and Brackets* (must specify color)

Square Internal Mount Horizontal Tenons (Aluminum)
- Mounts to 4" (102mm) square aluminum or steel poles
PD-1H4 – Single
PD-2H4(90) – 90° Twin
PD-2H4(180) – 180° Twin
PD-3H4(90) – 90° Triple
PD-4H4(90) – 90° Quad

Wall Mount Brackets
- Mounts to wall or roof
WM-2L – Extended Horizontal

Round External Mount Horizontal Tenons (Aluminum)
- Mounts to 2.375"-3" (60-76mm) O.D. round aluminum or steel poles or tenons
PT-1H – Single
PT-2H(90) – 90° Twin
PT-2H(180) – 180° Twin
PT-3H(90) – 90° Triple
PT-4H(90) – 90° Quad

Direct Arm Pole Adaptor Bracket
- Mounts to 3-6" (76-152mm) round or square aluminum or steel poles
XA-TMDA8

* Refer to the Bracket and Tenons spec sheet for more details

Field Adjustable Output (Q8/Q7/Q6/Q5/Q4/Q3/Q2/Q1) Option Description:

The Field Adjustable Output option enables the street and area luminaire within the RSW Series on this page to be tuned to the exact needs of a particular application through multiple levels of adjustment. When ordered with the Q option, the luminaire will be shipped from the factory at the selected lumen output, will be fully adjustable between the outputs, and will include a wattage label that indicates the wattage of the luminaire at the selected lumen output.

Locked Lumen Output (X7/X6/X5/X4/X3/X2/X1) Option Description:

The Locked Lumen Output option on this page permanently locks the lumen output on the RSW Series street and area luminaire to the setting selected. When ordered with the X option, the luminaire will be shipped from the factory at the lumen output setting selected, and will include a wattage label that indicates the wattage of the setting selected. When this option is selected, the luminaire output is not able to be adjusted in the field.

Q & X Option Power & Lumen Data – 9L

Q Option Setting	X Option Setting	CCT/CRI	System Watts	Label Wattage	Lumen Values		Optics Qualified on DLC QPL	
			120-277V		2LG, 2ME & 3ME	w/BLS	Standard	Premium
Q8 (Full Power)	N/A (Full Power)	27K8	93	90	9,125	8,375	2LG, 2ME, 3ME	
		30K7	83	80	9,325	8,550		2LG, 2ME, 3ME
		30K8	93	90			2LG, 2ME, 3ME	
		40K7	76	80				2LG, 2ME, 3ME
		40K8	85	90			2LG, 2ME, 3ME	
		50K7	75	80				2LG, 2ME, 3ME
		50K8	78	80				2LG, 2ME, 3ME
Q7	X7	27K8	90	90	8,900	8,175	2LG, 2ME, 3ME	
		30K7	81	80	9,100	8,350		2LG, 2ME, 3ME
		30K8	90	90			2LG, 2ME, 3ME	
		40K7	74	70				2LG, 2ME, 3ME
		40K8	82	80			2LG, 2ME, 3ME	
		50K7	73	70				2LG, 2ME, 3ME
		50K8	77	80				2LG, 2ME, 3ME
Q6	X6	27K8	84	80	8,775	8,050	2LG, 2ME, 3ME	
		30K7	74	70	8,975	8,225		2LG, 2ME, 3ME
		30K8	84	80			2LG, 2ME, 3ME	
		40K7	70	70				2LG, 2ME, 3ME
		40K8	76	80			2LG, 2ME, 3ME	
		50K7	69	70				2LG, 2ME, 3ME
		50K8	73	70				2LG, 2ME, 3ME
Q5	X5	27K8	80	80	8,150	7,475	2LG, 2ME, 3ME	
		30K7	69	70	8,325	7,650		2LG, 2ME, 3ME
		30K8	80	80			2LG, 2ME, 3ME	
		40K7	65	70				2LG, 2ME, 3ME
		40K8	71	70			2LG, 2ME, 3ME	
		50K7	64	60				2LG, 2ME, 3ME
		50K8	65	70				2LG, 2ME, 3ME

Field Adjustable Output (Q8/Q7/Q6/Q5/Q4/Q3/Q2/Q1) Option Description:

The Field Adjustable Output option enables the street and area luminaire within the RSW Series on this page to be tuned to the exact needs of a particular application through multiple levels of adjustment. When ordered with the Q option, the luminaire will be shipped from the factory at the selected lumen output, will be fully adjustable between the outputs, and will include a wattage label that indicates the wattage of the luminaire at the selected lumen output.

Locked Lumen Output (X7/X6/X5/X4/X3/X2/X1) Option Description:

The Locked Lumen Output option on this page permanently locks the lumen output on the RSW Series street and area luminaire to the setting selected. When ordered with the X option, the luminaire will be shipped from the factory at the lumen output setting selected, and will include a wattage label that indicates the wattage of the setting selected. When this option is selected, the luminaire output is not able to be adjusted in the field.

Q & X Option Power & Lumen Data – 9L

Q Option Setting	X Option Setting	CCT/CRI	System Watts	Label Wattage	Lumen Values		Optics Qualified on DLC QPL	
			120-277V		2LG, 2ME & 3ME	w/BLS	Standard	Premium
Q4	X4	27K8	75	80	7,575	6,950	2LG, 2ME, 3ME	
		30K7	65	70	7,750	7,100		2LG, 2ME, 3ME
		30K8	75	80			2LG, 2ME, 3ME	
		40K7	60	60				2LG, 2ME, 3ME
		40K8	67	70			2LG, 2ME, 3ME	
		50K7	60	60				2LG, 2ME, 3ME
		50K8	61	60				2LG, 2ME, 3ME
Q3	X3	27K8	71	70	7,150	6,550	2LG, 2ME, 3ME	
		30K7	62	60	7,300	6,700		2LG, 2ME, 3ME
		30K8	71	70			2LG, 2ME, 3ME	
		40K7	58	60				2LG, 2ME, 3ME
		40K8	64	60			2LG, 2ME, 3ME	
		50K7	57	60				2LG, 2ME, 3ME
		50K8	58	60				2LG, 2ME, 3ME
Q2	X2	27K8	67	70	6,825	6,275	2LG, 2ME, 3ME	
		30K7	60	60	7,000	6,400		2LG, 2ME, 3ME
		30K8	67	70			2LG, 2ME, 3ME	
		40K7	55	60				2LG, 2ME, 3ME
		40K8	61	60			2LG, 2ME, 3ME	
		50K7	54	50				2LG, 2ME, 3ME
		50K8	56	60				2LG, 2ME, 3ME
Q1	X1	27K8	56	60	6,350	5,825	2LG, 2ME, 3ME	
		30K7	50	50	6,500	5,950		2LG, 2ME, 3ME
		30K8	56	60			2LG, 2ME, 3ME	
		40K7	47	50				2LG, 2ME, 3ME
		40K8	51	50			2LG, 2ME, 3ME	
		50K7	46	50				2LG, 2ME, 3ME
		50K8	47	50				2LG, 2ME, 3ME

US: lighting.cree.com T (800) 236-6800 F (262) 504-5415 **Canada: www.cree.com/canada** T (800) 473-1234 F (800) 890-7507

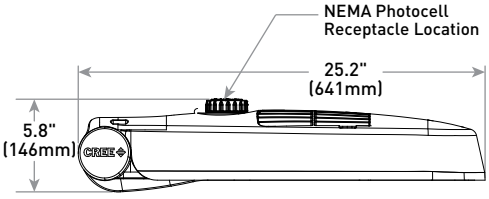
RSW Series

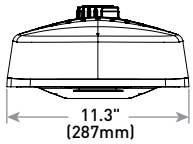
RSW™ LED Street Luminaire – Medium

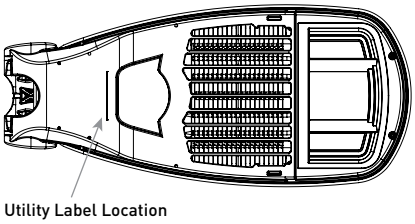
RSWM-A-HT-3ME-9L-30K7-UL-GY-N-X6 (74W)

Product Description

The Cree® RSW Series, utilizing WaveMax® Technology, will transform the way utilities and municipalities light their residential streets, interchanges, and expressways. With the first viable LED streetlight at warm CCT, the RSW Series delivers up to 124 LPW, enhanced visual comfort with reduced glare and high color contrast leading to improved overall illumination using less energy. The RSW Series provides warm, inviting dark sky friendly lighting that makes good economic sense.
Applications: Roadway







Performance Summary

Utilizes Cree WaveMax® Technology
Assembled in the U.S.A. of U.S. and imported parts
Efficacy: Up to 124 LPW
CRI: Minimum 70 CRI (3000K, 4000K & 5000K); 80 CRI (2700K, 3000K, 4000K & 5000K)
CCT: 2700K, 3000K, 4000K, 5000K
Limited Warranty†: 10 years

† See http://lighting.cree.com/warranty for warranty terms

Accessories

Field-Installed	
Backlight Control Shield RSW-BLSM - Provides 1 mounting height cutoff	**Bird Guard** RSW-BRDGRDM

Weight*
13.8 lbs (6.3kg)

*RSW-BLSM Accessory: add 0.4 lbs. (0.2kg)

Ordering Information

Example: RSWM-A-HT-2ME-9L-27K8-UL-GY-N

RSWM	A	HT		9L		UL	GY	N	
Product	**Version**	**Mounting**	**Optic**	**Lumen Package****	**CCT/CRI**	**Voltage**	**Color Options**	**Utility Label/Receptacle**	**Options**
RSWM Medium	**A**	**HT** Horizontal Tenon	**2LG*** Type II Long **2ME*** Type II Medium **3ME*** Type III Medium	**9L** 9,325 Lumens	**27K8** 2700K, 80 CRI **30K7** 3000K, 70 CRI **30K8** 3000K, 80 CRI **40K7** 4000K, 70CRI **40K8** 4000K, 80 CRI **50K7** 5000K, 70CRI **50K8** 5000K, 80CRI	**UL** Universal 120-277V	**GY** Grey	**N** **Utility Label and NEMA® 7-Pin Photocell Receptacle** - External wattage label per ANSI C136.15 - 7-pin receptacle per ANSI C136.41 - Factory connected 0-10V dim leads - Photocell and shorting cap by others	**Q8/Q7/Q6/Q5/Q4/Q3/Q2/Q1 Field Adjustable Lumen Output** - Must select Q8, Q7, Q6, Q5, Q4, Q3, Q2, or Q1 - Offers full range lumen adjustability - Includes wattage label for setting selected - Refer to pages 5 & 6 for power and lumen values **X7/X6/X5/X4/X3/X2/X1 Locked Lumen Output** - Must select X7, X6, X5, X4, X3, X2, or X1 - Lumen output is permanently locked to the setting selected - Includes wattage label for setting selected - Refer to pages 5 & 6 for power and lumen values

* Available with Backlight Shield when ordered with field-installed accessory (see table above)
** Lumen Package codes identify approximate light output only. Actual lumen output levels vary depending on CCT and optic selection. Refer to Initial Delivered Lumen tables for specific lumen values

Rev. Date: V3 08/16/2017

US: lighting.cree.com T (800) 236-6800 F (262) 504-5415

Canada: www.cree.com/canada T (800) 473-1234 F (800) 890-7507

Product Specifications

CREE WAVEMAX® TECHNOLOGY

Featuring up to 90% optical efficiency and precise control, Cree WaveMax® Technology provides unmatched comfort and decreased LED source luminance by smoothly spreading brightness over a broader area. When integrated with luminous surfaces made of a polymer medium engineered with DiamondFacet™ optical elements, extremely high efficacy luminaires are the result – ultimately creating more visually comfortable and appealing environments while exceeding illumination performance.

CONSTRUCTION & MATERIALS

- Housing constructed of high strength, lightweight bulk molding compound for long weathering and durability
- UV stabilized polymeric door with handle pocket for tool-less entry
- Straight in wiring to terminal block for power input (#6-#14 AWG)
- IP66 rated optic box and driver enclosure inside optic box
- Mounts on 1.25" (32mm) IP, 1.66" (42mm) O.D. or 2" (51mm) IP, 2.375" (60mm) O.D. horizontal tenon (minimum 8" [203mm] in length) and is adjustable +/- 5˚ in 2.5˚increments to allow for fixture leveling (two axis T-level included)
- Luminaire secures with two mounting bolts
- Comes standard with Utility Label per ANSI C136.15 and 7-pin NEMA® Photocell Receptacle per ANSI C136.41
- **Weight:** 13.8 lbs. (6.3kg); add 0.4 lbs. (0.2kg) for RSW-BLSM accessory

ELECTRICAL SYSTEM

- **Input Voltage:** 120-277V, 50/60Hz, Class 1 drivers
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- Integral 10kV surge suppression protection standard
- When code dictates fusing, a slow blow fuse or type C/D breaker should be used to address inrush current
- **10V Source Current:** 0.25mA
- **Operating Temperature Range:** -40˚C - +50˚C (-40˚F - + 122˚F)

REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for wet locations
- Certified to ANSI C136.31-2001, 3G bridge and overpass vibration standards pending
- Meets CALTrans 611 Vibration testing pending
- 10kV surge suppression protection tested in accordance with IEEE/ANSI C62.41.2
- Meets FCC Part 15, Subpart B, Class A standards for conducted and radiated emissions
- RoHS compliance pending. Consult factory for additional details
- Dark Sky Friendly, IDA Approved when ordered with 27K or 30K CCT
- DLC and DLC Premium qualified versions available. Please refer to https://www.designlights.org/search/ for most current information

Electrical Data*

Lumen Package	CCT/CRI	System Watts 120-277V	Utility Label Wattage	Efficacy	Total Current (A)			
					120V	208V	240V	277V
9L	27K8	93	90	98	0.83	0.48	0.43	0.38
	30K7	83	80	112	0.70	0.40	0.36	0.32
	30K8	93	90	100	0.78	0.45	0.40	0.35
	40K7	76	80	123	0.64	0.38	0.33	0.30
	40K8	85	90	110	0.71	0.41	0.37	0.33
	50K7	75	80	124	0.63	0.37	0.33	0.30
	50K8	78	80	120	0.66	0.38	0.34	0.30

* Electrical data at 25˚C (77˚F). Actual wattage may differ by +/- 10% when operating between 120-277V +/- 10%

Recommended RSW Series Lumen Maintenance Factors (LMF)[1]

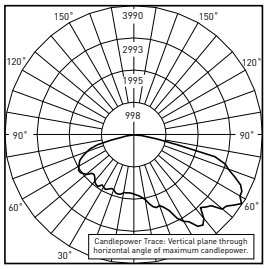
Ambient	Initial LMF	25K hr Projected[2] LMF	50K hr Projected[2] LMF	75K hr Projected[2] LMF	100K hr Calculated[3] LMF
0˚C (32˚F)	1.05	1.04	1.04	1.03	1.03
5˚C (41˚F)	1.04	1.03	1.03	1.02	1.02
10˚C (50˚F)	1.03	1.02	1.02	1.02	1.01
15˚C (59˚F)	1.02	1.01	1.01	1.01	1.00
20˚C (68˚F)	1.01	1.00	1.00	1.00	0.99
25˚C (77˚F)	1.00	0.99	0.99	0.99	0.99

[1] Lumen maintenance values at 4000K and 25˚C (77˚F) are calculated per TM-21 based on LM-80 data and in-situ luminaire testing
[2] In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing ([DUT] i.e. the packaged LED chip)
[3] In accordance with IESNA TM-21-11, Calculated Values represent time durations that exceed six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing ([DUT] i.e. the packaged LED chip)

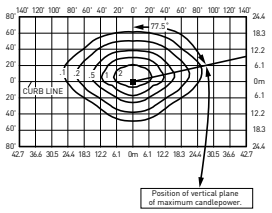
Photometry

All published luminaire photometric testing performed to IESNA LM-79-08 standards by a NVLAP accredited laboratory. To obtain an IES file specific to your project consult: http://lighting.cree.com/products/outdoor/street-and-roadway/rsw-series

2LG



CESTL Test Report #: 11683107.08
RSWM-A-**-2LG-9L-30K7-UL-GY-N
Initial Delivered Lumens: 9,285

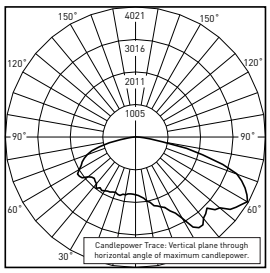


RSWM-A-**-2LG-9L-30K7-UL-GY-N
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 9,325
Initial FC at grade

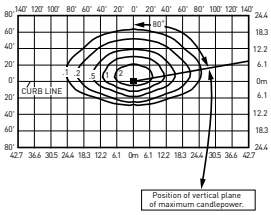
Type II Long Distribution

Lumen Package	CRI	2700K		3000K/4000K/5000K	
		Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
9L	All	9,125	B2 U0 G2	9,325	B2 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt



CESTL Test Report #: 11705478-02
RSWM-A-**-2LG-9L-30K7-UL-GY-N
w/RSW-BLSS
Initial Delivered Lumens: 8,466



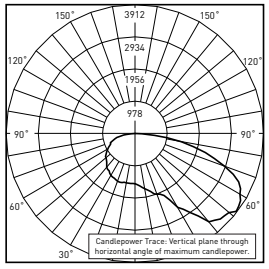
RSWM-A-**-2LG-9L-30K7-UL-GY-N
w/RSW-BLSS
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 8,550
Initial FC at grade

Type II Long w/BLS Distribution

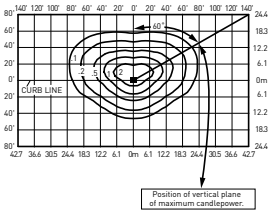
Lumen Package	CRI	2700K		3000K/4000K/5000K	
		Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
9L	All	8,375	B2 U0 G2	8,550	B2 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

2ME



CESTL Test Report #: 11683107.07
RSWM-A-**-2ME-9L-30K7-UL-GY-N
Initial Delivered Lumens: 9,093

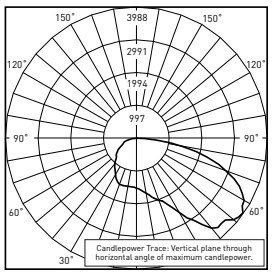


RSWM-A-**-2ME-9L-30K7-UL-GY-N
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 9,325
Initial FC at grade

Type II Medium Distribution

Lumen Package	CRI	2700K		3000K/4000K/5000K	
		Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
9L	All	9,125	B2 U0 G2	9,325	B2 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt



CESTL Test Report #: 11705478.01
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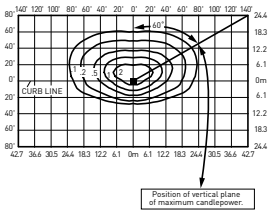
w/RSW-BLSM
Initial Delivered Lumens: 8,383



RSWM-A-**-2ME-9L-30K7-UL-GY-N
w/RSW-BLSM
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 8,550
Initial FC at grade

Type II Medium w/BLS Distribution

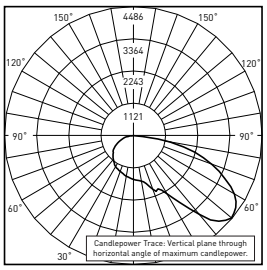
Lumen Package	CRI	2700K		3000K/4000K/5000K	
		Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
9L	All	8,375	B2 U0 G3	8,550	B2 U0 G3

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

Photometry

All published luminaire photometric testing performed to IESNA LM-79-08 standards by a NVLAP accredited laboratory. To obtain an IES file specific to your project consult: http://lighting.cree.com/products/outdoor/street-and-roadway/rsw-series

3ME



CESTL Test Report #: 11683107.09
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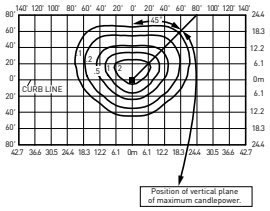
Initial Delivered Lumens: 9,275

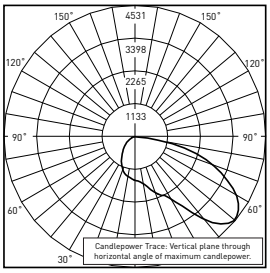


RSWM-A-**-3ME-9L-30K7-UL-GY-N
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 9,325
Initial FC at grade

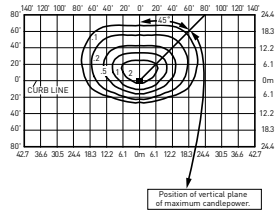
Type III Medium Distribution

Lumen Package	CRI	2700K		3000K/4000K/5000K	
		Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
9L	All	9,125	B2 U0 G2	9,325	B2 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt



CESTL Test Report #: 11705478.03
RSWM-A**-3ME-9L-30K7-UL-GY-N w/RSW-BLSM
Initial Delivered Lumens: 8,532



RSWM-A-**-3ME-9L-30K7-UL-GY-N w/RSW-BLSM
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 8,550
Initial FC at grade

Type III Medium w/BLS Distribution

Lumen Package	CRI	2700K		3000K/4000K/5000K	
		Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
9L	All	8,375	B1 U1 G2	8,550	B2 U1 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

Luminaire EPA

Horizontal Tenon Mount – Weight: 13.8 lbs. (6.3kg); RSW-BLSM Accessory: add 0.4 lbs. (0.2kg)					
Luminaire	Single	2 @ 90°	2 @ 180°	3 @ 90°	4 @ 90°
Tenon Configuration If used with Cree tenons, please add tenon EPA with luminaire EPA					
	 PD-1H4; PT-1H	 PD-2H4(90); PT-2H(90)	 PD-2H4(180); PT-2H(180)	 PD-3H4(90); PT-3H(90)	 PD-4H4(90); PT-4H(90)
Standard Luminiare	0.86	1.24	1.71	2.10	2.49
Luminiare w/RSW-BLSM Accessory	0.86	1.59	1.71	2.45	3.19

Tenon EPA

Part Number	EPA
PD Series Tenons	0.09
PT Series Tenons	0.10
WM-2L	0.13
XA-TMDA8	0.19

Tenons and Brackets* (must specify color)

Square Internal Mount Horizontal Tenons (Aluminum)
- Mounts to 4" (102mm) square aluminum or steel poles
PD-1H4 – Single
PD-2H4(90) – 90° Twin
PD-2H4(180) – 180° Twin
PD-3H4(90) – 90° Triple
PD-4H4(90) – 90° Quad

Wall Mount Brackets
- Mounts to wall or roof
WM-2L – Extended Horizontal

Round External Mount Horizontal Tenons (Aluminum)
- Mounts to 2.375"-3" (60-76mm) O.D. round aluminum or steel poles or tenons
PT-1H – Single
PT-2H(90) – 90° Twin
PT-2H(180) – 180° Twin
PT-3H(90) – 90° Triple
PT-4H(90) – 90° Quad

Direct Arm Pole Adaptor Bracket
- Mounts to 3-6" (76-152mm) round or square aluminum or steel poles
XA-TMDA8

* Refer to the Bracket and Tenons spec sheet for more details

Field Adjustable Output (Q8/Q7/Q6/Q5/Q4/Q3/Q2/Q1) Option Description:

The Field Adjustable Output option enables the street and area luminaire within the RSW Series on this page to be tuned to the exact needs of a particular application through multiple levels of adjustment. When ordered with the Q option, the luminaire will be shipped from the factory at the selected lumen output, will be fully adjustable between the outputs, and will include a wattage label that indicates the wattage of the luminaire at the selected lumen output.

Locked Lumen Output (X7/X6/X5/X4/X3/X2/X1) Option Description:

The Locked Lumen Output option on this page permanently locks the lumen output on the RSW Series street and area luminaire to the setting selected. When ordered with the X option, the luminaire will be shipped from the factory at the lumen output setting selected, and will include a wattage label that indicates the wattage of the setting selected. When this option is selected, the luminaire output is not able to be adjusted in the field.

Q & X Option Power & Lumen Data – 9L

Q Option Setting	X Option Setting	CCT/CRI	System Watts	Label Wattage	Lumen Values		Optics Qualified on DLC QPL	
			120-277V		2LG, 2ME & 3ME	w/BLS	Standard	Premium
Q8 (Full Power)	N/A (Full Power)	27K8	93	90	9,125	8,375	2LG, 2ME, 3ME	
		30K7	83	80	9,325	8,550		2LG, 2ME, 3ME
		30K8	93	90			2LG, 2ME, 3ME	
		40K7	76	80				2LG, 2ME, 3ME
		40K8	85	90			2LG, 2ME, 3ME	
		50K7	75	80				2LG, 2ME, 3ME
		50K8	78	80				2LG, 2ME, 3ME
Q7	X7	27K8	90	90	8,900	8,175	2LG, 2ME, 3ME	
		30K7	81	80	9,100	8,350		2LG, 2ME, 3ME
		30K8	90	90			2LG, 2ME, 3ME	
		40K7	74	70				2LG, 2ME, 3ME
		40K8	82	80			2LG, 2ME, 3ME	
		50K7	73	70				2LG, 2ME, 3ME
		50K8	77	80				2LG, 2ME, 3ME
Q6	X6	27K8	84	80	8,775	8,050	2LG, 2ME, 3ME	
		30K7	74	70	8,975	8,225		2LG, 2ME, 3ME
		30K8	84	80			2LG, 2ME, 3ME	
		40K7	70	70				2LG, 2ME, 3ME
		40K8	76	80			2LG, 2ME, 3ME	
		50K7	69	70				2LG, 2ME, 3ME
		50K8	73	70				2LG, 2ME, 3ME
Q5	X5	27K8	80	80	8,150	7,475	2LG, 2ME, 3ME	
		30K7	69	70	8,325	7,650		2LG, 2ME, 3ME
		30K8	80	80			2LG, 2ME, 3ME	
		40K7	65	70				2LG, 2ME, 3ME
		40K8	71	70			2LG, 2ME, 3ME	
		50K7	64	60				2LG, 2ME, 3ME
		50K8	65	70				2LG, 2ME, 3ME

Field Adjustable Output (Q8/Q7/Q6/Q5/Q4/Q3/Q2/Q1) Option Description:

The Field Adjustable Output option enables the street and area luminaire within the RSW Series on this page to be tuned to the exact needs of a particular application through multiple levels of adjustment. When ordered with the Q option, the luminaire will be shipped from the factory at the selected lumen output, will be fully adjustable between the outputs, and will include a wattage label that indicates the wattage of the luminaire at the selected lumen output.

Locked Lumen Output (X7/X6/X5/X4/X3/X2/X1) Option Description:

The Locked Lumen Output option on this page permanently locks the lumen output on the RSW Series street and area luminaire to the setting selected. When ordered with the X option, the luminaire will be shipped from the factory at the lumen output setting selected, and will include a wattage label that indicates the wattage of the setting selected. When this option is selected, the luminaire output is not able to be adjusted in the field.

Q & X Option Power & Lumen Data – 9L

Q Option Setting	X Option Setting	CCT/CRI	System Watts	Label Wattage	Lumen Values		Optics Qualified on DLC QPL	
			120-277V		2LG, 2ME & 3ME	w/BLS	Standard	Premium
Q4	X4	27K8	75	80	7,575	6,950	2LG, 2ME, 3ME	
		30K7	65	70	7,750	7,100		2LG, 2ME, 3ME
		30K8	75	80			2LG, 2ME, 3ME	
		40K7	60	60				2LG, 2ME, 3ME
		40K8	67	70			2LG, 2ME, 3ME	
		50K7	60	60				2LG, 2ME, 3ME
		50K8	61	60				2LG, 2ME, 3ME
Q3	X3	27K8	71	70	7,150	6,550	2LG, 2ME, 3ME	
		30K7	62	60	7,300	6,700		2LG, 2ME, 3ME
		30K8	71	70			2LG, 2ME, 3ME	
		40K7	58	60				2LG, 2ME, 3ME
		40K8	64	60			2LG, 2ME, 3ME	
		50K7	57	60				2LG, 2ME, 3ME
		50K8	58	60				2LG, 2ME, 3ME
Q2	X2	27K8	67	70	6,825	6,275	2LG, 2ME, 3ME	
		30K7	60	60	7,000	6,400		2LG, 2ME, 3ME
		30K8	67	70			2LG, 2ME, 3ME	
		40K7	55	60				2LG, 2ME, 3ME
		40K8	61	60			2LG, 2ME, 3ME	
		50K7	54	50				2LG, 2ME, 3ME
		50K8	56	60				2LG, 2ME, 3ME
Q1	X1	27K8	56	60	6,350	5,825	2LG, 2ME, 3ME	
		30K7	50	50	6,500	5,950		2LG, 2ME, 3ME
		30K8	56	60			2LG, 2ME, 3ME	
		40K7	47	50				2LG, 2ME, 3ME
		40K8	51	50			2LG, 2ME, 3ME	
		50K7	46	50				2LG, 2ME, 3ME
		50K8	47	50				2LG, 2ME, 3ME

US: lighting.cree.com T (800) 236-6800 F (262) 504-5415 **Canada: www.cree.com/canada** T (800) 473-1234 F (800) 890-7507

RSW Series

RSW™ LED Street Luminaire – Small

RSWS-A-HT-2ME-3L-30K7-UL-GY-N-X3 (23W)

Product Description

The Cree® RSW Series, utilizing WaveMax® Technology, will transform the way utilities and municipalities light their residential streets. With the first viable LED streetlight at warm CCT, the RSW Series delivers up to 127 LPW, enhanced visual comfort with reduced glare and high color contrast leading to improved overall illumination using less energy. The RSW Series provides warm, inviting dark sky friendly lighting that makes good economic sense.

Applications: Roadway - Local/Collector

Performance Summary

Utilizes Cree WaveMax® Technology

Assembled in the U.S.A. of U.S. and imported parts

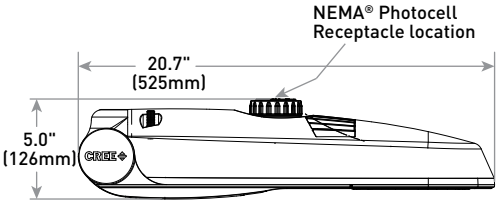
Efficacy: Up to 127 LPW

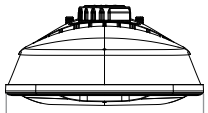
CRI: Minimum 70 CRI (3000K, 4000K & 5000K); 80 CRI (2700K, 3000K, 4000K & 5000K)

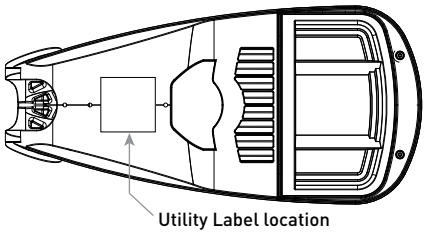
CCT: 2700K, 3000K, 4000K, 5000K

Limited Warranty†: 10 years

†See http://lighting.cree.com/warranty for warranty terms







Accessories

Field-Installed	
Backlight Control Shield RSW-BLSS - Provides 1 mounting height cutoff	**Bird Guard** RSW-BRDGRDS

Weight*
8.45 lbs (3.8kg)

*RSW-BLSS Accessory: add 0.4 lbs. (0.2kg)

Ordering Information

Example: RSWS-A-HT-2ME-3L-27K8-UL-GY-N

RSWS	A	HT				UL	GY	N	
Product	**Version**	**Mounting**	**Optic**	**Lumen Package****	**CCT/CRI**	**Voltage**	**Color Options**	**Utility Label/Receptacle**	**Options**
RSWS Small	**A**	**HT** Horizontal Tenon	**2LG*** Type II Long **2ME*** Type II Medium **3ME*** Type III Medium	**3L** 3,300 Lumens **5L** 5,000 Lumens	**27K8** 2700K, 80 CRI **30K7** 3000K, 70 CRI **30K8** 3000K, 80 CRI **40K7** 4000K, 70CRI **40K8** 4000K, 80 CRI **50K7** 5000K, 70CRI **50K8** 5000K, 80CRI	**UL** Universal 120-277V	**GY** Grey	**N** **Utility Label and NEMA® 7-Pin Photocell Receptacle** - External wattage label per ANSI C136.15 - 7-pin receptacle per ANSI C136.41 - Factory connected 0-10V dim leads - Photocell and shorting cap by others	**Q4/Q3/Q2/Q1 Field Adjustable Output** - Must select Q4, Q3, Q2, or Q1 - Offers full range lumen adjustability - Includes wattage label for setting selected - Refer to pages 5 & 6 for power and lumen values **X3/X2/X1 Locked Lumen Output** - Must select X3, X2, or X1 - Lumen output is permanently locked to the setting selected - Includes wattage label for setting selected - Refer to pages 5 & 6 for power and lumen values

* Available with Backlight Shield when ordered with field-installed accessory (see table above)

** Lumen Package codes identify approximate light output only. Actual lumen output levels vary depending on CCT and optic selection. Refer to Initial Delivered Lumen tables for specific lumen values

Rev. Date: V11 07/11/2017

Product Specifications

CREE WAVEMAX® TECHNOLOGY

Featuring up to 90% optical efficiency and precise control, Cree WaveMax® Technology provides unmatched comfort and decreased LED source luminance by smoothly spreading brightness over a broader area. When integrated with luminous surfaces made of a polymer medium engineered with DiamondFacet™ optical elements, extremely high efficacy luminaires are the result – ultimately creating more visually comfortable and appealing environments while exceeding illumination performance.

CONSTRUCTION & MATERIALS

- Housing constructed of high strength, lightweight bulk molding compound for long weathering and durability
- UV stabilized polymeric door with handle pocket for tool-less entry
- Straight in wiring to terminal block for power input (#6-#14 AWG)
- IP66 rated optic box and driver enclosure inside optic box
- Mounts on 1.25" (32mm) IP, 1.66" (42mm) O.D. or 2" (51mm) IP, 2.375" (60mm) O.D. horizontal tenon (minimum 8" [203mm] in length) and is adjustable +/- 5˚ in 2.5˚increments to allow for fixture leveling (two axis T-level included)
- Luminaire secures with two mounting bolts
- Comes standard with Utility Label per ANSI C136.15 and 7-pin NEMA® Photocell Receptacle per ANSI C136.41
- **Weight:** 8.45 lbs. (3.8kg); add 0.4 lbs. (0.2kg) for RSW-BLSS accessory

ELECTRICAL SYSTEM

- **Input Voltage:** 120-277V, 50/60Hz
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- Integral 10kV surge suppression protection standard
- When code dictates fusing, a slow blow fuse or type C/D breaker should be used to address inrush current
- **10V Source Current:** 0.25mA
- **Operating Temperature Range:** -40˚C - +50˚C (-40˚F - + 122˚F)

REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for wet locations
- Certified to ANSI C136.31-2001, 3G bridge and overpass vibration standards
- Meets CALTrans 611 Vibration testing
- 10kV surge suppression protection tested in accordance with IEEE/ANSI C62.41.2
- Meets FCC Part 15, Subpart B, Class A standards for conducted and radiated emissions
- RoHS compliant. Consult factory for additional details
- Dark Sky Friendly, IDA Approved when ordered with 27K or 30K CCT
- DLC and DLC Premium qualified versions available. Please refer to https://www.designlights.org/search/ for most current information

Electrical Data*

Lumen Package	CCT/CRI	System Watts 120-277V	Utility Label Wattage	Efficacy	Total Current (A)			
					120V	208V	240V	277V
3L	27K8	32	30	103	0.27	0.16	0.14	0.13
	30K7	28	30	118	0.23	0.14	0.12	0.11
	30K8	31	30	106	0.25	0.15	0.13	0.12
	40K7	26	30	127	0.21	0.13	0.11	0.10
	40K8	29	30	114	0.24	0.14	0.13	0.11
	50K7	26	30	127	0.21	0.13	0.11	0.10
	50K8	28	30	118	0.23	0.14	0.12	0.11
5L	27K8	53	50	94	0.44	0.26	0.23	0.20
	30K7	45	50	111	0.37	0.22	0.20	0.18
	30K8	51	50	98	0.42	0.25	0.22	0.20
	40K7	41	40	122	0.34	0.20	0.18	0.16
	40K8	47	50	106	0.39	0.23	0.20	0.18
	50K7	41	40	122	0.34	0.20	0.18	0.16
	50K8	45	50	111	0.37	0.22	0.20	0.18

* Electrical data at 25˚C (77˚F). Actual wattage may differ by +/- 10% when operating between 120-277V +/- 10%

Recommended RSW Series Lumen Maintenance Factors (LMF)[1]

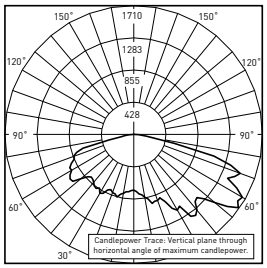
Ambient	Initial LMF	25K hr Projected[2] LMF	50K hr Projected[2] LMF	75K hr Calculated[3] LMF	100K hr Calculated[3] LMF
0˚C (32˚F)	1.05	1.02	0.99	0.97	0.94
5˚C (41˚F)	1.04	1.01	0.99	0.96	0.93
10˚C (50˚F)	1.03	1.00	0.98	0.95	0.92
15˚C (59˚F)	1.02	0.99	0.97	0.94	0.91
20˚C (68˚F)	1.01	0.98	0.96	0.93	0.90
25˚C (77˚F)	1.00	0.98	0.95	0.92	0.90

[1] Lumen maintenance values at 25˚C (77˚F) are calculated per TM-21 based on LM-80 data and in-situ luminaire testing
[2] In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing ([DUT] i.e. the packaged LED chip)
[3] In accordance with IESNA TM-21-11, Calculated Values represent time durations that exceed six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing ([DUT] i.e. the packaged LED chip)

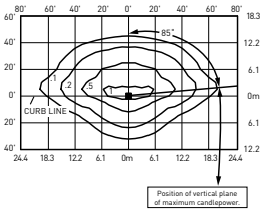
Photometry

All published luminaire photometric testing performed to IESNA LM-79-08 standards by a NVLAP accredited laboratory. To obtain an IES file specific to your project consult: http://lighting.cree.com/products/outdoor/street-and-roadway/rsw-series

2LG



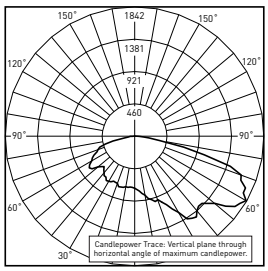
UL Verification Services Test Report #:
11624878.01
RSWS-A-**-2LG-3L-30K7-UL-GY-N
Initial Delivered Lumens: 3,294



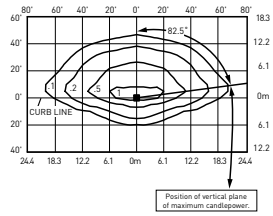
RSWS-A-**-2LG-3L-30K7-UL-GY-N
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 3,300
Initial FC at grade

Type II Long Distribution			
Lumen Package	CRI	2700K/3000K/4000K/5000K	
		Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
3L	All	3,300	B1 U0 G1
5L	All	5,000	B1 U0 G1

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt



CESTL Test Report #: 11675461.06
RSWS-A-**-2LG-3L-30K7-UL-GY-N
w/RSW-BLSS
Initial Delivered Lumens: 3,080

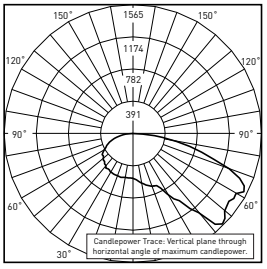


RSWS-A-**-2LG-3L-30K7-UL-GY-N
w/RSW-BLSS
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 3,050
Initial FC at grade

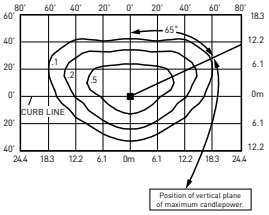
Type II Long w/BLS Distribution			
Lumen Package	CRI	2700K/3000K/4000K/5000K	
		Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
3L	All	3,050	B1 U0 G1
5L	All	4,630	B1 U0 G1

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

2ME



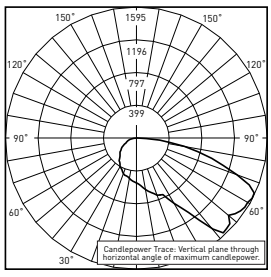
UL Verification Services Test Report #:
11644102.09
RSWS-A-**-2ME-3L-30K7-UL-GY-N
Initial Delivered Lumens: 3,251



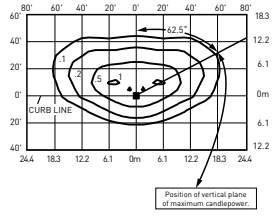
RSWS-A-**-2ME-3L-30K7-UL-GY-N
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 3,300
Initial FC at grade

Type II Medium Distribution			
Lumen Package	CRI	2700K/3000K/4000K/5000K	
		Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
3L	All	3,300	B1 U0 G1
5L	All	5,000	B1 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt



CESTL Test Report #: 11675461.02
RSWS-A-**-2ME-3L-30K7-UL-GY-N
w/RSW-BLSS
Initial Delivered Lumens: 2,975



RSWS-A-**-2ME-3L-30K7-UL-GY-N
w/RSW-BLSS
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 3,050
Initial FC at grade

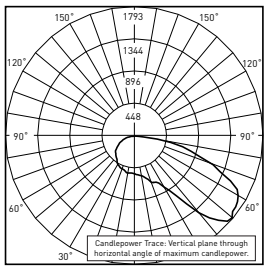
Type II Medium w/BLS Distribution			
Lumen Package	CRI	2700K/3000K/4000K/5000K	
		Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
3L	All	3,050	B1 U0 G1
5L	All	4,630	B1 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

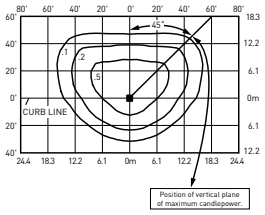
Photometry

All published luminaire photometric testing performed to IESNA LM-79-08 standards by a NVLAP accredited laboratory. To obtain an IES file specific to your project consult: http://lighting.cree.com/products/outdoor/street-and-roadway/rsw-series

3ME



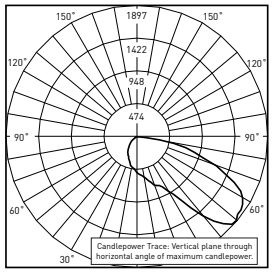
UL Verification Services Test Report #:
11644102.08
RSWS-A-**-3ME-3L-30K7-UL-GY-N
Initial Delivered Lumens: 3,399



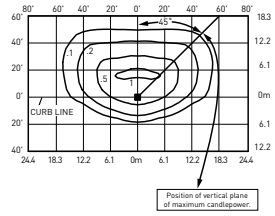
RSWS-A-**-3ME-3L-30K7-UL-GY-N
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 3,300
Initial FC at grade

Type III Medium Distribution			
Lumen Package	CRI	2700K/3000K/4000K/5000K	
		Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
3L	All	3,300	B1 U0 G1
5L	All	5,000	B1 U0 G1

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt



CESTL Test Report #: 11675461.01
RSWS-A-**-3ME-3L-30K7-UL-GY-N w/RSW-BLSS
Initial Delivered Lumens: 3,113



RSWS-A-**-3ME-3L-30K7-UL-GY-N w/RSW-BLSS
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 3,050
Initial FC at grade

Type III Medium w/BLS Distribution			
Lumen Package	CRI	2700K/3000K/4000K/5000K	
		Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
3L	All	3,050	B1 U1 G1
5L	All	4,630	B1 U1 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

Luminaire EPA

Horizontal Tenon Mount – Weight: 8.45 lbs. (3.8kg); RSW-BLSS Accessory: add 0.4 lbs. (0.2kg)					
Luminaire	Single	2 @ 90°	2 @ 180°	3 @ 90°	4 @ 90°
Tenon Configuration If used with Cree tenons, please add tenon EPA with luminaire EPA					
	PD-1H4; PT-1H	PD-2H4(90); PT-2H(90)	PD-2H4(180); PT-2H(180)	PD-3H4(90); PT-3H(90)	PD-4H4(90); PT-4H(90)
Standard Luminiare	0.61	0.89	1.22	1.50	1.78
Luminiare w/RSW-BLSS Accessory	0.61	1.25	1.22	1.85	2.49

Tenon EPA

Part Number	EPA
PD Series Tenons	0.09
PT Series Tenons	0.10
WM-2L	0.13
XA-TMDA8	0.19

Tenons and Brackets* (must specify color)

Square Internal Mount Horizontal Tenons (Aluminum)
- Mounts to 4" (102mm) square aluminum or steel poles
PD-1H4 – Single
PD-2H4(90) – 90° Twin
PD-2H4(180) – 180° Twin
PD-3H4(90) – 90° Triple
PD-4H4(90) – 90° Quad

Wall Mount Brackets
- Mounts to wall or roof
WM-2L – Extended Horizontal

Round External Mount Horizontal Tenons (Aluminum)
- Mounts to 2.375"-3" (60-76mm) O.D. round aluminum or steel poles or tenons
PT-1H – Single
PT-2H(90) – 90° Twin
PT-2H(180) – 180° Twin
PT-3H(90) – 90° Triple
PT-4H(90) – 90° Quad

Direct Arm Pole Adaptor Bracket
- Mounts to 3-6" (76-152mm) round or square aluminum or steel poles
XA-TMDA8

* Refer to the Bracket and Tenons spec sheet for more details

Field Adjustable Output (Q4/Q3/Q2/Q1) Option Description:

The Field Adjustable Output option enables the street and area luminaire within the RSW Series on this page to be tuned to the exact needs of a particular application through multiple levels of adjustment. When ordered with the Q option, the luminaire will be shipped from the factory at the selected lumen output, will be fully adjustable between the outputs, and will include a wattage label that indicates the wattage of the luminaire at the selected lumen output.

Locked Lumen Output (X3/X2/X1) Option Description:

The Locked Lumen Output option on this page permanently locks the lumen output on the RSW Series street and area luminaire to the setting selected. When ordered with the X option, the luminaire will be shipped from the factory at the lumen output setting selected, and will include a wattage label that indicates the wattage of the setting selected. When this option is selected, the luminaire output is not able to be adjusted in the field.

Q & X Option Power & Lumen Data – 3L

Q Option Setting	X Option Setting	CCT/CRI	System Watts	Label Wattage	Lumen Values		Optics Qualified on DLC QPL	
			120-277V		2LG, 2ME & 3ME	w/BLS	Standard	Premium
Q4 (Full Power)	N/A (Full Power)	27K8	32	30	3,300	3,050	2LG, 2ME, 3ME	
		30K7	28	30				2LG, 2ME, 3ME
		30K8	31	30			2LG, 2ME, 3ME	
		40K7	26	30				2LG, 2ME, 3ME
		40K8	29	30				2LG, 2ME, 3ME
		50K7	26	30				2LG, 2ME, 3ME
		50K8	28	30				2LG, 2ME, 3ME
Q3	X3	27K8	26	30	2,756	2,547	2LG, 2ME, 3ME	
		30K7	23	20				2LG, 2ME, 3ME
		30K8	25	30			2LG, 2ME, 3ME	
		40K7	21	20				2LG, 2ME, 3ME
		40K8	23	20				2LG, 2ME, 3ME
		50K7	21	20				2LG, 2ME, 3ME
		50K8	23	20				2LG, 2ME, 3ME
Q2	X2	27K8	20	20	2,169	2,004	2LG, 2ME, 3ME	
		30K7	17	20				2LG, 2ME, 3ME
		30K8	19	20			2LG, 2ME, 3ME	
		40K7	16	20				2LG, 2ME, 3ME
		40K8	18	20				2LG, 2ME, 3ME
		50K7	16	20				2LG, 2ME, 3ME
		50K8	17	20				2LG, 2ME, 3ME
Q1	X1	27K8	15	20	1,633	1,509	2LG (120V), 2ME (120V), 3ME (120V)	
		30K7	13	10				2LG (120V), 2ME (120V), 3ME (120V)
		30K8	15	20			2LG (120V), 2ME (120V), 3ME (120V)	
		40K7	12	10				2LG (120V), 2ME (120V), 3ME (120V)
		40K8	14	10				2LG (120V), 2ME (120V), 3ME (120V)
		50K7	12	10				2LG (120V), 2ME (120V), 3ME (120V)
		50K8	13	10				2LG (120V), 2ME (120V), 3ME (120V)

Field Adjustable Output (Q4/Q3/Q2/Q1) Option Description:

The Field Adjustable Output option enables the street and area luminaire within the RSW Series on this page to be tuned to the exact needs of a particular application through multiple levels of adjustment. When ordered with the Q option, the luminaire will be shipped from the factory at the selected lumen output, will be fully adjustable between the outputs, and will include a wattage label that indicates the wattage of the luminaire at the selected lumen output.

Locked Lumen Output (X3/X2/X1) Option Description:

The Locked Lumen Output option on this page permanently locks the lumen output on the RSW Series street and area luminaire to the setting selected. When ordered with the X option, the luminaire will be shipped from the factory at the lumen output setting selected, and will include a wattage label that indicates the wattage of the setting selected. When this option is selected, the luminaire output is not able to be adjusted in the field.

Q & X Option Power & Lumen Data – 5L

Q Option Setting	X Option Setting	CCT/CRI	System Watts	Label Wattage	Lumen Values		Optics Qualified on DLC QPL	
			120-277V		2LG, 2ME & 3ME	w/BLS	Standard	Premium
Q4 (Full Power)	N/A (Full Power)	27K8	53	50	5,000	4,630	2LG, 2ME, 3ME	
		30K7	45	50				2LG, 2ME, 3ME
		30K8	51	50			2LG, 2ME, 3ME	
		40K7	41	40				2LG, 2ME, 3ME
		40K8	47	50			2LG, 2ME, 3ME	
		50K7	41	40				2LG, 2ME, 3ME
		50K8	45	50			2LG, 2ME, 3ME	
Q3	X3	27K8	49	50	4,654	4,310	2LG, 2ME, 3ME	
		30K7	41	40				2LG, 2ME, 3ME
		30K8	46	50			2LG, 2ME, 3ME	
		40K7	38	40				2LG, 2ME, 3ME
		40K8	43	40			2LG, 2ME, 3ME	
		50K7	38	40				2LG, 2ME, 3ME
		50K8	41	40			2LG, 2ME, 3ME	
Q2	X2	27K8	42	40	4,105	3,801	2LG, 2ME, 3ME	
		30K7	36	40				2LG, 2ME, 3ME
		30K8	40	40			2LG, 2ME, 3ME	
		40K7	33	30				2LG, 2ME, 3ME
		40K8	38	40			2LG, 2ME, 3ME	
		50K7	33	30				2LG, 2ME, 3ME
		50K8	36	40				2LG, 2ME, 3ME
Q1	X1	27K8	36	40	3,617	3,350	2LG, 2ME, 3ME	
		30K7	30	30				2LG, 2ME, 3ME
		30K8	34	30			2LG, 2ME, 3ME	
		40K7	28	30				2LG, 2ME, 3ME
		40K8	32	30			2LG, 2ME, 3ME	
		50K7	28	30				2LG, 2ME, 3ME
		50K8	30	30				2LG, 2ME, 3ME

RSW Series

RSW™ LED Street Luminaire – Small

RSWS-A-HT-2ME-5L-30K7-UL-GY-N-X1 (30W)

Product Description

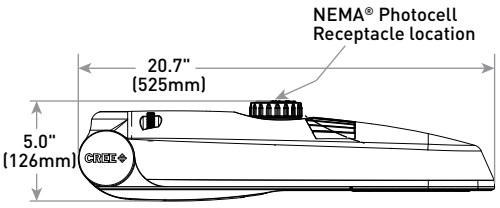
The Cree® RSW Series, utilizing WaveMax® Technology, will transform the way utilities and municipalities light their residential streets. With the first viable LED streetlight at warm CCT, the RSW Series delivers up to 127 LPW, enhanced visual comfort with reduced glare and high color contrast leading to improved overall illumination using less energy. The RSW Series provides warm, inviting dark sky friendly lighting that makes good economic sense.

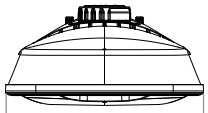
Applications: Roadway - Local/Collector

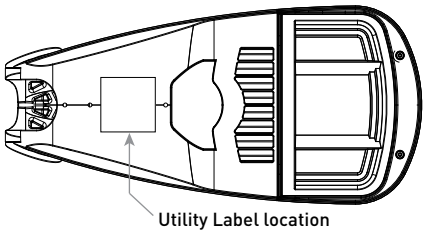
Performance Summary

Utilizes Cree WaveMax® Technology
Assembled in the U.S.A. of U.S. and imported parts
Efficacy: Up to 127 LPW
CRI: Minimum 70 CRI (3000K, 4000K & 5000K); 80 CRI (2700K, 3000K, 4000K & 5000K)
CCT: 2700K, 3000K, 4000K, 5000K
Limited Warranty†: 10 years

† See http://lighting.cree.com/warranty for warranty terms







Accessories

Field-Installed	
Backlight Control Shield RSW-BLSS - Provides 1 mounting height cutoff	**Bird Guard** RSW-BRDGRDS

Weight*
8.45 lbs (3.8kg)

*RSW-BLSS Accessory: add 0.4 lbs. (0.2kg)

Ordering Information

Example: RSWS-A-HT-2ME-3L-27K8-UL-GY-N

RSWS	A	HT				UL	GY	N	
Product	**Version**	**Mounting**	**Optic**	**Lumen Package****	**CCT/CRI**	**Voltage**	**Color Options**	**Utility Label/Receptacle**	**Options**
RSWS Small	**A**	**HT** Horizontal Tenon	**2LG*** Type II Long **2ME*** Type II Medium **3ME*** Type III Medium	**3L** 3,300 Lumens **5L** 5,000 Lumens	**27K8** 2700K, 80 CRI **30K7** 3000K, 70 CRI **30K8** 3000K, 80 CRI **40K7** 4000K, 70CRI **40K8** 4000K, 80 CRI **50K7** 5000K, 70CRI **50K8** 5000K, 80CRI	**UL** Universal 120-277V	**GY** Grey	**N** **Utility Label and NEMA® 7-Pin Photocell Receptacle** - External wattage label per ANSI C136.15 - 7-pin receptacle per ANSI C136.41 - Factory connected 0-10V dim leads - Photocell and shorting cap by others	**Q4/Q3/Q2/Q1 Field Adjustable Output** - Must select Q4, Q3, Q2, or Q1 - Offers full range lumen adjustability - Includes wattage label for setting selected - Refer to pages 5 & 6 for power and lumen values **X3/X2/X1 Locked Lumen Output** - Must select X3, X2, or X1 - Lumen output is permanently locked to the setting selected - Includes wattage label for setting selected - Refer to pages 5 & 6 for power and lumen values

* Available with Backlight Shield when ordered with field-installed accessory (see table above)

** Lumen Package codes identify approximate light output only. Actual lumen output levels vary depending on CCT and optic selection. Refer to Initial Delivered Lumen tables for specific lumen values

Rev. Date: V11 07/11/2017

Product Specifications

CREE WAVEMAX® TECHNOLOGY

Featuring up to 90% optical efficiency and precise control, Cree WaveMax® Technology provides unmatched comfort and decreased LED source luminance by smoothly spreading brightness over a broader area. When integrated with luminous surfaces made of a polymer medium engineered with DiamondFacet™ optical elements, extremely high efficacy luminaires are the result – ultimately creating more visually comfortable and appealing environments while exceeding illumination performance.

CONSTRUCTION & MATERIALS

- Housing constructed of high strength, lightweight bulk molding compound for long weathering and durability
- UV stabilized polymeric door with handle pocket for tool-less entry
- Straight in wiring to terminal block for power input (#6-#14 AWG)
- IP66 rated optic box and driver enclosure inside optic box
- Mounts on 1.25" (32mm) IP, 1.66" (42mm) O.D. or 2" (51mm) IP, 2.375" (60mm) O.D. horizontal tenon (minimum 8" [203mm] in length) and is adjustable +/- 5˚ in 2.5˚increments to allow for fixture leveling (two axis T-level included)
- Luminaire secures with two mounting bolts
- Comes standard with Utility Label per ANSI C136.15 and 7-pin NEMA® Photocell Receptacle per ANSI C136.41
- **Weight:** 8.45 lbs. (3.8kg); add 0.4 lbs. (0.2kg) for RSW-BLSS accessory

ELECTRICAL SYSTEM

- **Input Voltage:** 120-277V, 50/60Hz
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- Integral 10kV surge suppression protection standard
- When code dictates fusing, a slow blow fuse or type C/D breaker should be used to address inrush current
- **10V Source Current:** 0.25mA
- **Operating Temperature Range:** -40˚C - +50˚C (-40˚F - + 122˚F)

REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for wet locations
- Certified to ANSI C136.31-2001, 3G bridge and overpass vibration standards
- Meets CALTrans 611 Vibration testing
- 10kV surge suppression protection tested in accordance with IEEE/ANSI C62.41.2
- Meets FCC Part 15, Subpart B, Class A standards for conducted and radiated emissions
- RoHS compliant. Consult factory for additional details
- Dark Sky Friendly, IDA Approved when ordered with 27K or 30K CCT
- DLC and DLC Premium qualified versions available. Please refer to https://www.designlights.org/search/ for most current information

Electrical Data*

Lumen Package	CCT/CRI	System Watts 120-277V	Utility Label Wattage	Efficacy	Total Current (A)			
					120V	208V	240V	277V
3L	27K8	32	30	103	0.27	0.16	0.14	0.13
	30K7	28	30	118	0.23	0.14	0.12	0.11
	30K8	31	30	106	0.25	0.15	0.13	0.12
	40K7	26	30	127	0.21	0.13	0.11	0.10
	40K8	29	30	114	0.24	0.14	0.13	0.11
	50K7	26	30	127	0.21	0.13	0.11	0.10
	50K8	28	30	118	0.23	0.14	0.12	0.11
5L	27K8	53	50	94	0.44	0.26	0.23	0.20
	30K7	45	50	111	0.37	0.22	0.20	0.18
	30K8	51	50	98	0.42	0.25	0.22	0.20
	40K7	41	40	122	0.34	0.20	0.18	0.16
	40K8	47	50	106	0.39	0.23	0.20	0.18
	50K7	41	40	122	0.34	0.20	0.18	0.16
	50K8	45	50	111	0.37	0.22	0.20	0.18

* Electrical data at 25˚C (77˚F). Actual wattage may differ by +/- 10% when operating between 120-277V +/- 10%

Recommended RSW Series Lumen Maintenance Factors (LMF)[1]

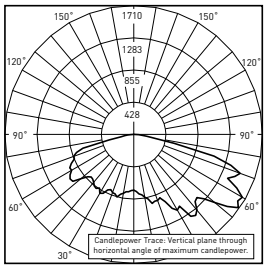
Ambient	Initial LMF	25K hr Projected[2] LMF	50K hr Projected[2] LMF	75K hr Calculated[3] LMF	100K hr Calculated[3] LMF
0˚C (32˚F)	1.05	1.02	0.99	0.97	0.94
5˚C (41˚F)	1.04	1.01	0.99	0.96	0.93
10˚C (50˚F)	1.03	1.00	0.98	0.95	0.92
15˚C (59˚F)	1.02	0.99	0.97	0.94	0.91
20˚C (68˚F)	1.01	0.98	0.96	0.93	0.90
25˚C (77˚F)	1.00	0.98	0.95	0.92	0.90

[1] Lumen maintenance values at 25˚C (77˚F) are calculated per TM-21 based on LM-80 data and in-situ luminaire testing
[2] In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing ([DUT] i.e. the packaged LED chip)
[3] In accordance with IESNA TM-21-11, Calculated Values represent time durations that exceed six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing ([DUT] i.e. the packaged LED chip)

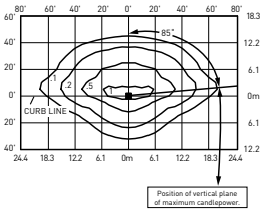
Photometry

All published luminaire photometric testing performed to IESNA LM-79-08 standards by a NVLAP accredited laboratory. To obtain an IES file specific to your project consult: http://lighting.cree.com/products/outdoor/street-and-roadway/rsw-series

2LG



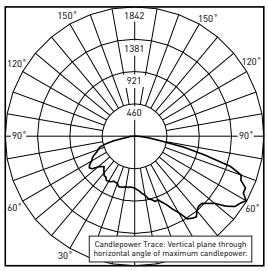
UL Verification Services Test Report #:
11624878.01
RSWS-A-**-2LG-3L-30K7-UL-GY-N
Initial Delivered Lumens: 3,294



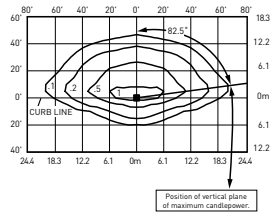
RSWS-A-**-2LG-3L-30K7-UL-GY-N
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 3,300
Initial FC at grade

Type II Long Distribution			
Lumen Package	CRI	2700K/3000K/4000K/5000K	
		Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
3L	All	3,300	B1 U0 G1
5L	All	5,000	B1 U0 G1

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt



CESTL Test Report #: 11675461.06
RSWS-A-**-2LG-3L-30K7-UL-GY-N
w/RSW-BLSS
Initial Delivered Lumens: 3,080

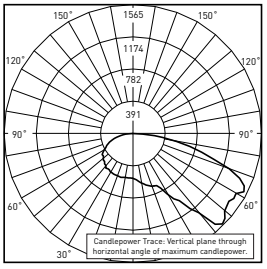


RSWS-A-**-2LG-3L-30K7-UL-GY-N
w/RSW-BLSS
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 3,050
Initial FC at grade

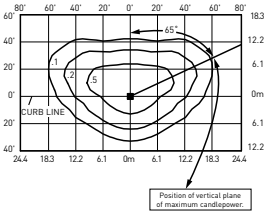
Type II Long w/BLS Distribution			
Lumen Package	CRI	2700K/3000K/4000K/5000K	
		Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
3L	All	3,050	B1 U0 G1
5L	All	4,630	B1 U0 G1

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

2ME



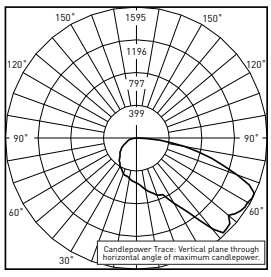
UL Verification Services Test Report #:
11644102.09
RSWS-A-**-2ME-3L-30K7-UL-GY-N
Initial Delivered Lumens: 3,251



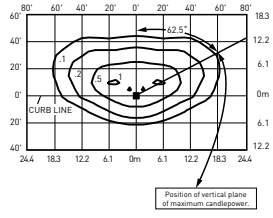
RSWS-A-**-2ME-3L-30K7-UL-GY-N
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 3,300
Initial FC at grade

Type II Medium Distribution			
Lumen Package	CRI	2700K/3000K/4000K/5000K	
		Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
3L	All	3,300	B1 U0 G1
5L	All	5,000	B1 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt



CESTL Test Report #: 11675461.02
RSWS-A-**-2ME-3L-30K7-UL-GY-N
w/RSW-BLSS
Initial Delivered Lumens: 2,975



RSWS-A-**-2ME-3L-30K7-UL-GY-N
w/RSW-BLSS
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 3,050
Initial FC at grade

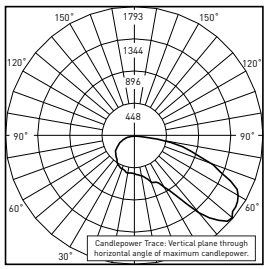
Type II Medium w/BLS Distribution			
Lumen Package	CRI	2700K/3000K/4000K/5000K	
		Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
3L	All	3,050	B1 U0 G1
5L	All	4,630	B1 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

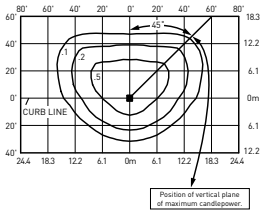
Photometry

All published luminaire photometric testing performed to IESNA LM-79-08 standards by a NVLAP accredited laboratory. To obtain an IES file specific to your project consult: http://lighting.cree.com/products/outdoor/street-and-roadway/rsw-series

3ME



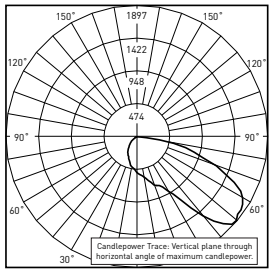
UL Verification Services Test Report #:
11644102.08
RSWS-A-**-3ME-3L-30K7-UL-GY-N
Initial Delivered Lumens: 3,399



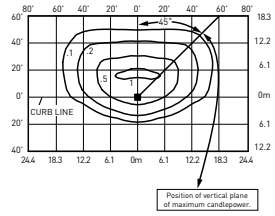
RSWS-A-**-3ME-3L-30K7-UL-GY-N
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 3,300
Initial FC at grade

Type III Medium Distribution			
Lumen Package	CRI	2700K/3000K/4000K/5000K	
		Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
3L	All	3,300	B1 U0 G1
5L	All	5,000	B1 U0 G1

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt



CESTL Test Report #: 11675461.01
RSWS-A-**-3ME-3L-30K7-UL-GY-N w/RSW-BLSS
Initial Delivered Lumens: 3,113



RSWS-A-**-3ME-3L-30K7-UL-GY-N w/RSW-BLSS
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 3,050
Initial FC at grade

Type III Medium w/BLS Distribution			
Lumen Package	CRI	2700K/3000K/4000K/5000K	
		Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
3L	All	3,050	B1 U1 G1
5L	All	4,630	B1 U1 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

Luminaire EPA

Horizontal Tenon Mount – Weight: 8.45 lbs. (3.8kg); RSW-BLSS Accessory: add 0.4 lbs. (0.2kg)					
Luminaire	Single	2 @ 90°	2 @ 180°	3 @ 90°	4 @ 90°
Tenon Configuration If used with Cree tenons, please add tenon EPA with luminaire EPA					
	PD-1H4; PT-1H	PD-2H4(90); PT-2H(90)	PD-2H4(180); PT-2H(180)	PD-3H4(90); PT-3H(90)	PD-4H4(90); PT-4H(90)
Standard Luminiare	0.61	0.89	1.22	1.50	1.78
Luminiare w/RSW-BLSS Accessory	0.61	1.25	1.22	1.85	2.49

Tenon EPA

Part Number	EPA
PD Series Tenons	0.09
PT Series Tenons	0.10
WM-2L	0.13
XA-TMDA8	0.19

Tenons and Brackets* (must specify color)

Square Internal Mount Horizontal Tenons (Aluminum)
- Mounts to 4" (102mm) square aluminum or steel poles
PD-1H4 – Single
PD-2H4(90) – 90° Twin
PD-2H4(180) – 180° Twin
PD-3H4(90) – 90° Triple
PD-4H4(90) – 90° Quad

Wall Mount Brackets
- Mounts to wall or roof
WM-2L – Extended Horizontal

Round External Mount Horizontal Tenons (Aluminum)
- Mounts to 2.375"-3" (60-76mm) O.D. round aluminum or steel poles or tenons
PT-1H – Single
PT-2H(90) – 90° Twin
PT-2H(180) – 180° Twin
PT-3H(90) – 90° Triple
PT-4H(90) – 90° Quad

Direct Arm Pole Adaptor Bracket
- Mounts to 3-6" (76-152mm) round or square aluminum or steel poles
XA-TMDA8

* Refer to the Bracket and Tenons spec sheet for more details

Field Adjustable Output (Q4/Q3/Q2/Q1) Option Description:

The Field Adjustable Output option enables the street and area luminaire within the RSW Series on this page to be tuned to the exact needs of a particular application through multiple levels of adjustment. When ordered with the Q option, the luminaire will be shipped from the factory at the selected lumen output, will be fully adjustable between the outputs, and will include a wattage label that indicates the wattage of the luminaire at the selected lumen output.

Locked Lumen Output (X3/X2/X1) Option Description:

The Locked Lumen Output option on this page permanently locks the lumen output on the RSW Series street and area luminaire to the setting selected. When ordered with the X option, the luminaire will be shipped from the factory at the lumen output setting selected, and will include a wattage label that indicates the wattage of the setting selected. When this option is selected, the luminaire output is not able to be adjusted in the field.

Q & X Option Power & Lumen Data – 3L

Q Option Setting	X Option Setting	CCT/CRI	System Watts	Label Wattage	Lumen Values		Optics Qualified on DLC QPL	
			120-277V		2LG, 2ME & 3ME	w/BLS	Standard	Premium
Q4 (Full Power)	N/A (Full Power)	27K8	32	30	3,300	3,050	2LG, 2ME, 3ME	
		30K7	28	30				2LG, 2ME, 3ME
		30K8	31	30			2LG, 2ME, 3ME	
		40K7	26	30				2LG, 2ME, 3ME
		40K8	29	30				2LG, 2ME, 3ME
		50K7	26	30				2LG, 2ME, 3ME
		50K8	28	30				2LG, 2ME, 3ME
Q3	X3	27K8	26	30	2,756	2,547	2LG, 2ME, 3ME	
		30K7	23	20				2LG, 2ME, 3ME
		30K8	25	30			2LG, 2ME, 3ME	
		40K7	21	20				2LG, 2ME, 3ME
		40K8	23	20				2LG, 2ME, 3ME
		50K7	21	20				2LG, 2ME, 3ME
		50K8	23	20				2LG, 2ME, 3ME
Q2	X2	27K8	20	20	2,169	2,004	2LG, 2ME, 3ME	
		30K7	17	20				2LG, 2ME, 3ME
		30K8	19	20			2LG, 2ME, 3ME	
		40K7	16	20				2LG, 2ME, 3ME
		40K8	18	20				2LG, 2ME, 3ME
		50K7	16	20				2LG, 2ME, 3ME
		50K8	17	20				2LG, 2ME, 3ME
Q1	X1	27K8	15	20	1,633	1,509	2LG (120V), 2ME (120V), 3ME (120V)	
		30K7	13	10				2LG (120V), 2ME (120V), 3ME (120V)
		30K8	15	20			2LG (120V), 2ME (120V), 3ME (120V)	
		40K7	12	10				2LG (120V), 2ME (120V), 3ME (120V)
		40K8	14	10				2LG (120V), 2ME (120V), 3ME (120V)
		50K7	12	10				2LG (120V), 2ME (120V), 3ME (120V)
		50K8	13	10				2LG (120V), 2ME (120V), 3ME (120V)

Field Adjustable Output (Q4/Q3/Q2/Q1) Option Description:

The Field Adjustable Output option enables the street and area luminaire within the RSW Series on this page to be tuned to the exact needs of a particular application through multiple levels of adjustment. When ordered with the Q option, the luminaire will be shipped from the factory at the selected lumen output, will be fully adjustable between the outputs, and will include a wattage label that indicates the wattage of the luminaire at the selected lumen output.

Locked Lumen Output (X3/X2/X1) Option Description:

The Locked Lumen Output option on this page permanently locks the lumen output on the RSW Series street and area luminaire to the setting selected. When ordered with the X option, the luminaire will be shipped from the factory at the lumen output setting selected, and will include a wattage label that indicates the wattage of the setting selected. When this option is selected, the luminaire output is not able to be adjusted in the field.

Q & X Option Power & Lumen Data – 5L

Q Option Setting	X Option Setting	CCT/CRI	System Watts	Label Wattage	Lumen Values		Optics Qualified on DLC QPL	
			120-277V		2LG, 2ME & 3ME	w/BLS	Standard	Premium
Q4 (Full Power)	N/A (Full Power)	27K8	53	50	5,000	4,630	2LG, 2ME, 3ME	
		30K7	45	50				2LG, 2ME, 3ME
		30K8	51	50			2LG, 2ME, 3ME	
		40K7	41	40				2LG, 2ME, 3ME
		40K8	47	50			2LG, 2ME, 3ME	
		50K7	41	40				2LG, 2ME, 3ME
		50K8	45	50			2LG, 2ME, 3ME	
Q3	X3	27K8	49	50	4,654	4,310	2LG, 2ME, 3ME	
		30K7	41	40				2LG, 2ME, 3ME
		30K8	46	50			2LG, 2ME, 3ME	
		40K7	38	40				2LG, 2ME, 3ME
		40K8	43	40			2LG, 2ME, 3ME	
		50K7	38	40				2LG, 2ME, 3ME
		50K8	41	40			2LG, 2ME, 3ME	
Q2	X2	27K8	42	40	4,105	3,801	2LG, 2ME, 3ME	
		30K7	36	40				2LG, 2ME, 3ME
		30K8	40	40			2LG, 2ME, 3ME	
		40K7	33	30				2LG, 2ME, 3ME
		40K8	38	40			2LG, 2ME, 3ME	
		50K7	33	30				2LG, 2ME, 3ME
		50K8	36	40				2LG, 2ME, 3ME
Q1	X1	27K8	36	40	3,617	3,350	2LG, 2ME, 3ME	
		30K7	30	30				2LG, 2ME, 3ME
		30K8	34	30			2LG, 2ME, 3ME	
		40K7	28	30				2LG, 2ME, 3ME
		40K8	32	30			2LG, 2ME, 3ME	
		50K7	28	30				2LG, 2ME, 3ME
		50K8	30	30				2LG, 2ME, 3ME

US: lighting.cree.com T (800) 236-6800 F (262) 504-5415 **Canada: www.cree.com/canada** T (800) 473-1234 F (800) 890-7507

FLOOD & AREA

E-DD1L50N1

LED Dusk to Dawn - Small (50W)
Replaces 100W HPS / 175W Mercury Vapor

Efficient
- Driverless unit uses less than half the energy of comparable HPS / MV fixtures
- Greater defense against power surges with integrated 10kV protection device
- Die-cast aluminum heat dissipating fins for optimal thermal management

Recommended Use
- Security & area lighting
- Service roads
- General area lighting
- Yard & dock illumination

Durable
- Rugged housing is powder-coat finished to last longer
- Acrylic prismatic refractor with white polycarbonate reflector withstands the test of time

Value
- Mounting arm included
- Twist-lock photocell included
- Direct mounting hardware included

Input Voltage
- 120V Operation

Certifications

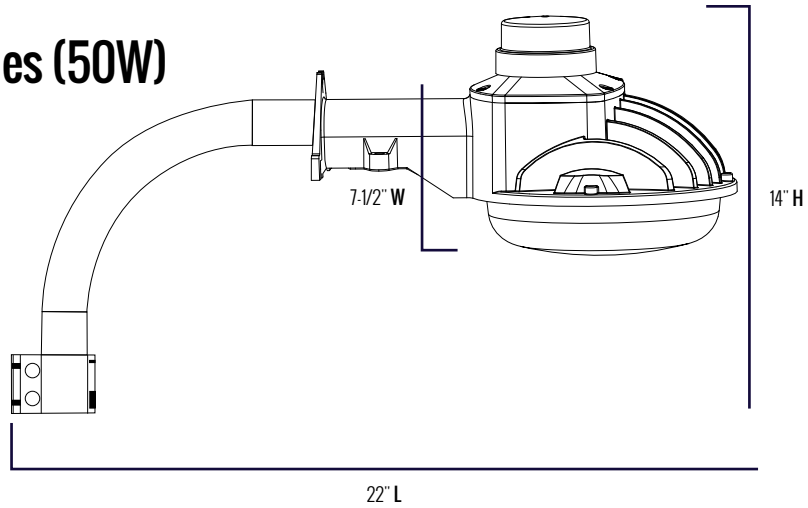
5-YEAR LIMITED 5 WARRANTY · UL LISTED · Suitable for WET LOCATIONS · DLC QPL LISTED · NON-DIMMABLE · CREE LEDs

e-conolight® | Making LED easy.

1501 96th Street, Sturtevant, WI 53177 | Phone (888) 243-9445 | Fax (262) 504-5409 | www.e-conolight.com

FLOOD & AREA

E-DD1L Series (50W)



Series Overview

DIMENSIONS	PRODUCT WEIGHT	MOUNTING HEIGHT	SPACING
22" **L** x 7-1/2" **W** x 14" **H** (Dimensions include mounting arm and photocell)	3.3 lbs. 5.2 lbs. (w/ mounting arm)	10 to 25 feet	---

Fixture Specifications

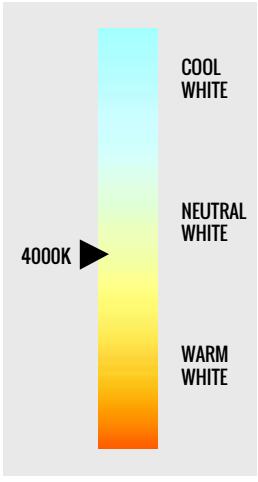
HOUSING	Durable, die-cast aluminum housing Gray polyester powder-coat finish Twist-lock photocell included
LENS ASSEMBLY	UV-stabilized acrylic prismatic refractor White polycarbonate reflector
MOUNTING	Mounts directly or with mounting arm (included)

Electrical Performance

OPERATING MINIMUM	LIFESPAN L_{70} AT 25°C (77°F)	POWER FACTOR	TOTAL HARMONIC DISTORTION	DIMMABLE
-30°C (-22°F)	Estimated 150,000 Hours	› 0.9	‹ 20%	No

INPUT VOLTAGE	120V	208V	240V	277V
Current Draw (Amps)	0.5A	---	---	---

CORRELATED COLOR TEMPERATURE (CCT)



Warranty & Certifications

WARRANTY	UL LISTED	DLC	ENERGY STAR
5-Year Limited	Wet Locations	Yes	---

Output Specifications

SKU	LIGHT OUTPUT	COLOR TEMP (See chart)	POWER CONSUMPTION	COLOR ACCURACY	REPLACES
E-DD1L50N1	5300 Lumens	Neutral White (4000K)	50W	≥ 70 CRI	100W HPS / 175W Mercury Vapor

Due to continuous product improvement, information in this document is subject to change.

Revision Date: 05/04/16

1501 96th Street, Sturtevant, WI 53177 | Phone (888) 243-9445 | Fax (262) 504-5409 | www.e-conolight.com

e-conolight®

CONTROLS EQUIPMENT

Quantities	Description	New Equipment
5,130	Control System – Fixture Control Node	Echelon TOP900 TLX-E GPS
6	Control System – Gateway	Echelon Base Station
1	1 Year Service and Software {hosted by City or Vendor??}	Echelon
1	Mapping Program and Software	Echelon
1	Factory Onsite Startup and Training on Control System	Echelon
5,130	Utility Grade Fuses	Sicame USA FTSC25SCO 2L300N 10A

Echelon Parts/Pieces Cutsheets:

- TOP900TLX-E GPS – custsheet TOP900TLX-E GPS
- BASESTATION 2.0 – cutsheet Lumewave IoT Basestation
- LUMINSIGHT 2.0 CMS (+) - cutsheet LumInsight 2 Cloud CMS Base Annual Subscription

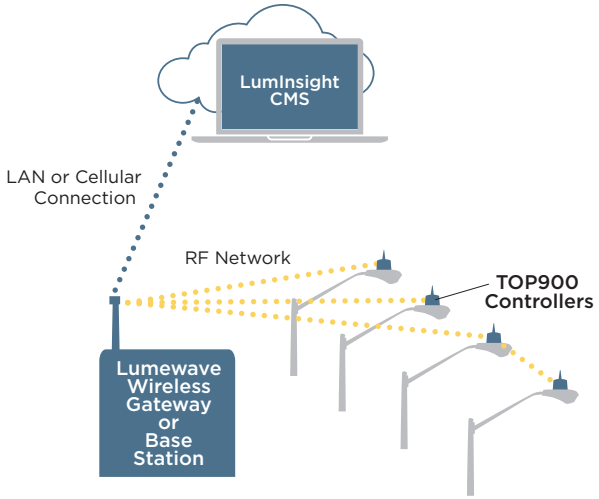
Misc. Parts Cutsheets:

SICAME USA CMP Approved Fuse Holder – cutsheet Sicame USAA FTSC25SCO 2L900N 10A – note spec sheet references a 3’ line for use on each end of fuse. We will only need a 1’ line in our case. This changes the number to 2L300N.

LUMEWAVE
By ECHELON

DATASHEET

Wireless Outdoor Lighting Controller (TOP900TLX-E)



Typical smart city or campus RF communication network.

Product Description

Part of a *Lumewave by Echelon®* intelligent control system, the TOP900TLX-E is a small wireless controller that installs directly to an exterior lighting fixture, enabling energy metering, remote monitoring and control. The controller mounts to the NEMA standard ANSI C136.41-2013 twist-lock receptacle, typically installed by the fixture manufacturer, and operates on 120-277VAC. The controller gathers data regarding the operational condition of lamps, energy usage, voltage, current, power factor, and fixture location that is transmitted over the Lumewave by Echelon control network and analyzed by the LumInsight® central management system (CMS) software.

Operation

With the controller, fixtures can be addressed and grouped for unified ON/OFF, high-low stepped dimming with OFF, or 0-10 volt continuous dimming operation. The TOP900TLX-E provides adjustable photocell thresholds as well as time of day and astronomical clock functionality. It can operate without a network connection, using onboard distributed intelligence, and it stores energy data for 31 days. The TOP900TLX-E supports peer to peer communications and over-the-air upgrades.

Features and Benefits

- Wireless communications for remote control, energy management and monitoring
- Compatible with most lamp types, including LED, eHID, plasma, and induction
- Interfaces to any 0-10V driver/ballast
- Internal real time clock for autonomous operation
- Energy metering calibrated to 0.5% accuracy
- Built-in photocell for daylighting control
- Secure AES 128-bit encryption
- High end trim for enhanced energy savings
- Supports automatic repeater functionality for optimal coverage
- Supports peer to peer communications
- Provides continuous and up-to-the-moment status updates to the CMS
- Knock down tilt sensor
- Integral GPS receiver (optional)

Project:	
Date:	**Detail:**

Product Specifications

Control parameters

- Control profiles and interfaces
  - Power to fixture ON/OFF
  - Bi-level with OFF
  - Continuous dimming control with OFF
- Control events and schedules
  - Calendar based scheduling
  - Scheduled events based on time of day and/or astronomical time
  - Scheduled use of photocell
  - Real-time commands and overrides
- Photocell daytime override
- Data logging
- Failure detection and reporting
- Photocell thresholds synchronization
- Continuous status messages
- Over the air flashing (program updates)

Electrical and operational specifications

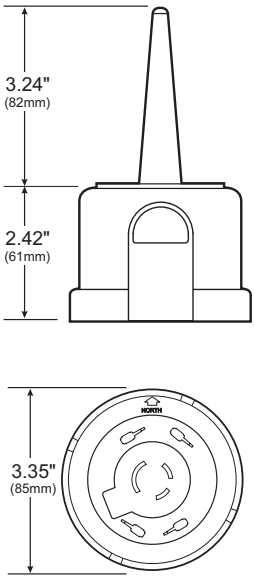
Operating voltage:	100–277VAC, 50/60 Hz
Power switching:	1000W
Power consumption:	<2W @ 120/277V
Operating temperature:	-40°C to +70°C
Surge protection:	6KV, 405J
Relay protection:	Zero crossing
Failsafe:	Power ON, lamp level high
Wireless communication:	IEEE 802.15.4; 902-928 MHz 10 channel DSSS (Direct Sequence Spread Spectrum) RF power adjustable to +24 dBm (250 mW)
Node to node range:	TOP900 to TOP900, 1 mile+ (line of sight)
Range extender:	TOP900 can be used as repeater
Outputs/interfaces:	0-10V (sink) dimming

Safety, compliance and warranty

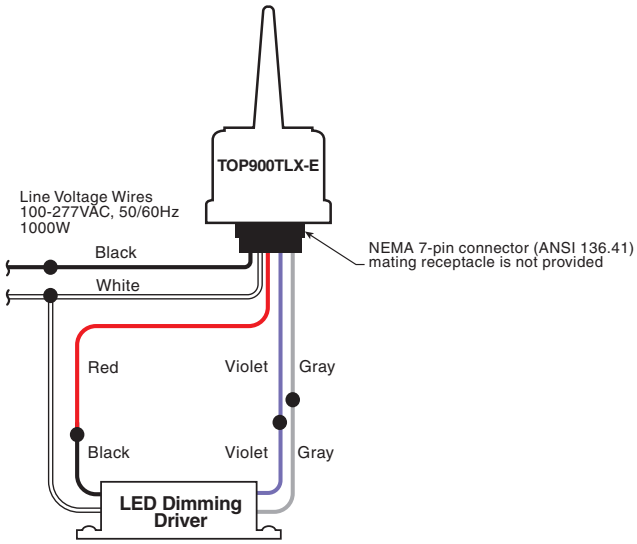
- IP66 certified
- FCC certified
- UL 916 and 773 Listed
- RoHS compliant
- 5 year limited warranty*

***Subject to terms and conditions found at http://echelon.com/lp/warranty_five_year**

Dimensions and Wiring



Dimensions identical for all models.



Device must be mounted vertically, as shown, with antenna pointed up.

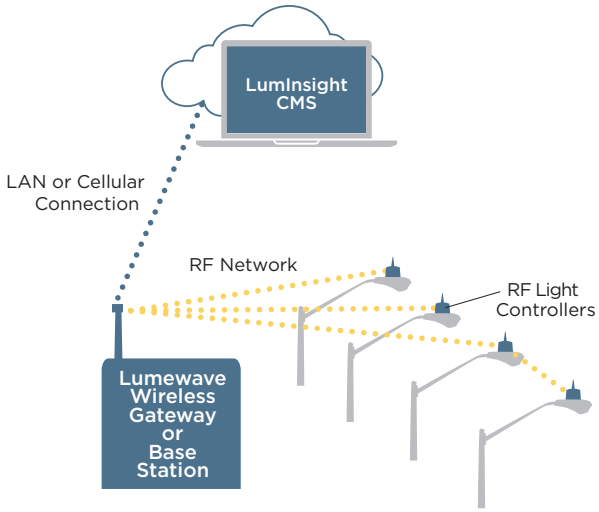
Ordering #	Product Name	Product Description
100220	TOP900TLX-E	Wireless controller, NEMA standard ANSI C136.41-2013, 120-277V
100210	TOP900TLX-E-GPS	Wireless controller, NEMA standard ANSI C136.41-2013, 120-277, integral GPS

info@echelon.com

LUMEWAVE
By ECHELON

DATASHEET

Lumewave IoT Base Station



Typical Smart City or campus RF communication network.

Product Description

The Lumewave IoT Base Station is comparable to the Lumewave IoT Gateway, but with a bi-directional pole-mounted amplifier that doubles the range. Part of a *Lumewave by Echelon®* intelligent control system, the Base Station connects wireless lighting controllers with the central management system through an Ethernet link for LAN connections or a cellular link via an integrated modem. The Base Station supports up to 2,000 controllers over a range of up to 4 miles, line of sight, facilitating secure and robust network communication. Lumewave intelligent networks are designed to handle multiple Gateways and Base Stations for large scale deployment support.

Operation

The Base Station is housed in an IP66-rated NEMA 4x enclosure that can be pole- or wall-mounted. It uses a 900 MHz antenna that is connected via a lightning protected port, either affixed directly to the device or remotely mounted. All models operate from 120–240VAC at 50/60Hz. The Base Station is supplied with a secondary amplifier, with an extension cable, that is pole-mounted to extend the range of communication. The device is built on a powerful and scalable Linux-based platform with a built-in modem for cellular connection from multiple wireless carriers.

Features and Benefits

- Doubles the wireless range compared to a Lumewave Gateway using a bi-directional pole-mounted amplifier
- Compatible with LumInsight 2 Cloud CMS
- Supports distributed intelligence for reliable operation in case of loss of communication
- Ethernet link for LAN connection or cellular link via built-in modem
- Supports up to 2,000 controllers up to a 4-mile line of sight
- Secure AES 128-bit encryption for wireless data transmission
- External RF port for extended coax antenna runs
- Lightning surge arrester on all antenna ports
- Wall or pole mount inside of UL IP66 rated polycarbonate enclosure
- Works in extended temperature range conditions without service interruptions

Project:	
Date:	**Detail:**

Product Specifications

Wireless parameters

Network type:	Star-mesh topology
	IEEE 802.15.4
Operating frequency:	902-928 MHz
RF Power:	+30dBm
Range:	4 miles (6.4km), line of sight
Number of controllers supported:	2000
Status messages:	Supports continuous status messages from wireless controllers

Connectivity

Cellular model:	Multiple carriers
Ethernet model:	10/100 Ethernet

Mounting and operation

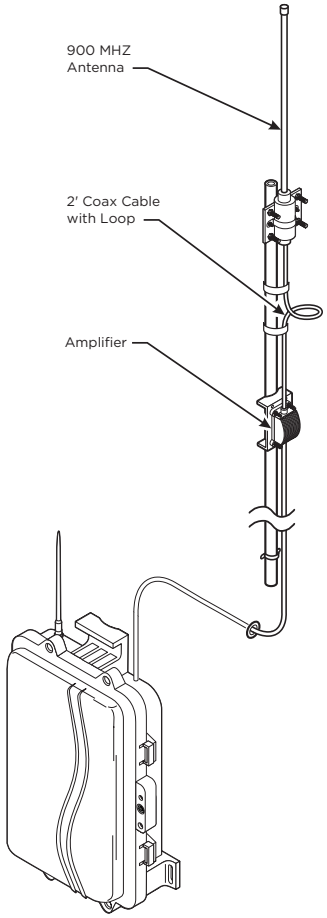
Housing:	Polycarbonate with built-in pole mounting brackets
Mounting:	Wall or pole
Dimensions:	17.6″ x 13″ x 4.1″ (H X W x D)
Operating voltage:	120-240VAC, 50/60Hz
Temperature range:	-30°C to +70°C (Base Station box); -40°C to +70°C (external ampliphier)

Safety, compliance and warranty

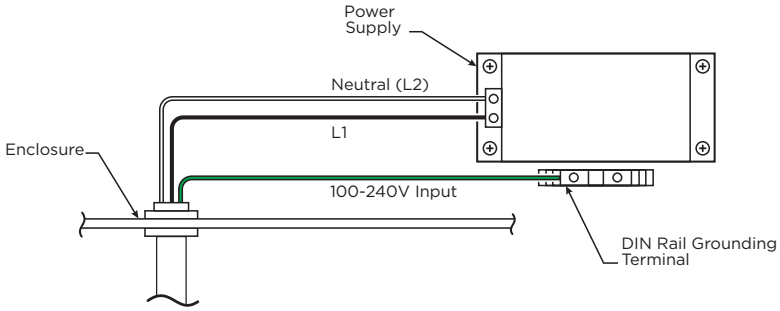
- IP66 certified
- NEMA 4x
- FCC and IC approved
- 5 year limited warranty*

***Subject to terms and conditions found at http://echelon.com/lp/warranty_five_year**

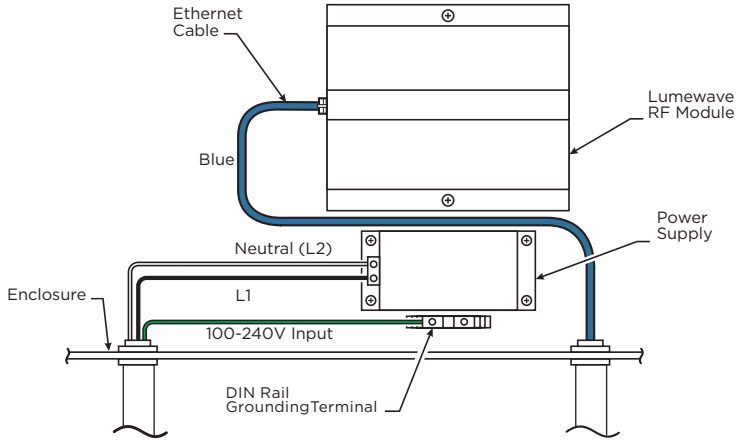
Wiring Diagrams



Base Station - Cellular



Base Station - Ethernet



Ordering #	Product Name	Product Description
100150-281	Lumewave IoT Base Station - Ethernet	Ethernet connection gateway with bi-directional amplifier for range extension
100150-291	Lumewave IoT Base Station - Cellular	Cellular connection gateway with bi-directional amplifier for range extension

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LUMEWAVE
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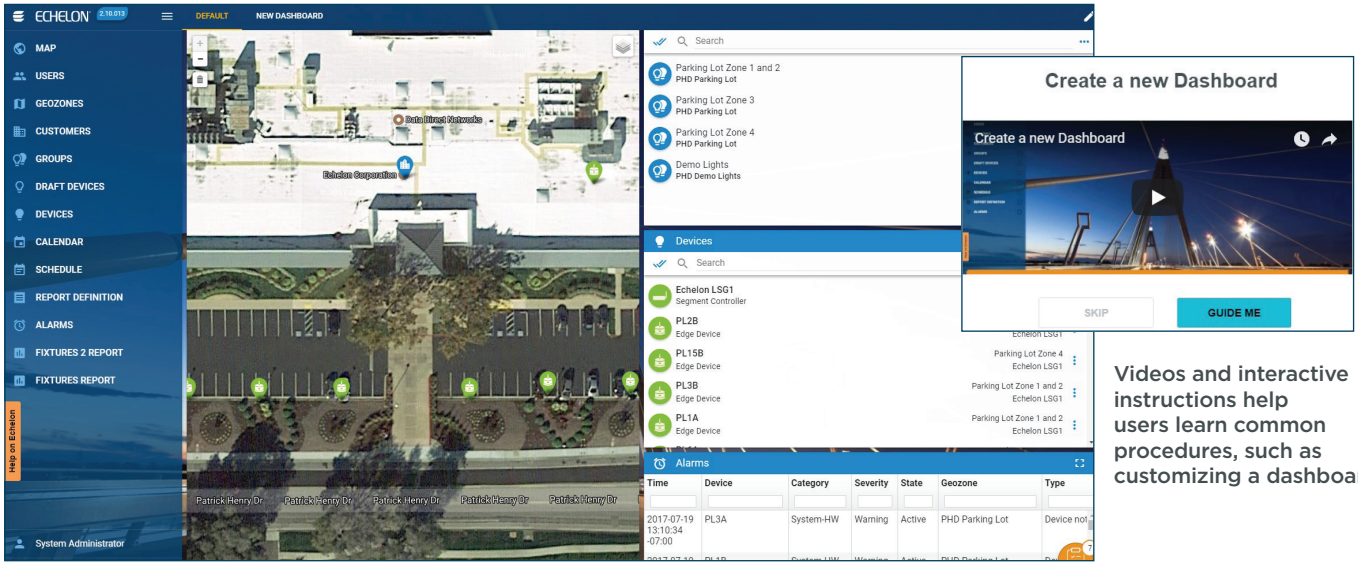
PRODUCT DATASHEET

LumInsight® 2 Central Management System Software



Videos and interactive instructions help users learn common procedures, such as customizing a dashboard.

Product Description

LumInsight 2 provides a cloud-based central management system (CMS) for provisioning, monitoring, controlling and analyzing outdoor lighting systems. This secure platform helps cities, utilities and operators reduce energy usage and maintenance costs, while also increasing safety. LumInsight integrates automated asset monitoring of controlled lighting with real-time data capture providing access to critical system data such as power consumption, lamp run time and fixture faults. The result is improved maintenance and operational savings. LumInsight 2 also facilitates development of IoT applications.

Operation

Users access LumInsight securely over the Internet via a web browser on a computer or mobile device to manage, monitor, and control lighting networks. LumInsight 2 includes a modern and intuitive graphical map that facilitates lighting control network design, with representative illustrations of individual control devices. For indoor applications, a floor plan is integrated with the map application for seamless control. Managers can set up notifications for critical alerts to update maintenance staff about faults in real time.

Features and Benefits

- Scales to thousands of locations with a unified single user interface for all
- Accessible via browser on laptop, tablet or smartphone using highly secure encrypted communication
- Enables managers to monitor assets in real time, validate and audit energy code compliance, and identify performance changes over time
- Enables management of RF and PL networks through a single central management software platform
- Simplifies real-time schedule overrides using graphical map and floor plan views
- Interactive help with step by step guidance and video tutorials for common user tasks
- Works with motion and daylight sensors to reduce energy use and extend lamp life
- Continued on next page

Project:	
Date:	**Detail:**

Features and Benefits, continued

- E-mail notifications for fixture failures and other critical faults to improve lighting system up-time
- Enhanced reporting and event logging functionality provides insights into system operation and performance
- Enables IoT apps via an open IoT message bus with an easy-to-use REST interface implemented over Web Sockets and an MQTT interface
- Peer-to-peer communication between network devices (e.g., sensors and controllers) for adaptive light level adjustment to environmental changes and monitoring of devices

Product Specifications

Compatible client browser

- Any HTML 5/Javascript compatible browser including smartphone, tablet, and desktop versions of Google Chrome, Mozilla Firefox and Microsoft Edge

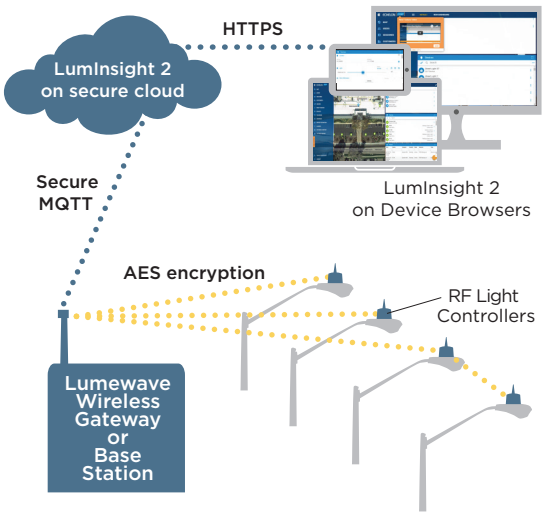
Compatible segment controllers:

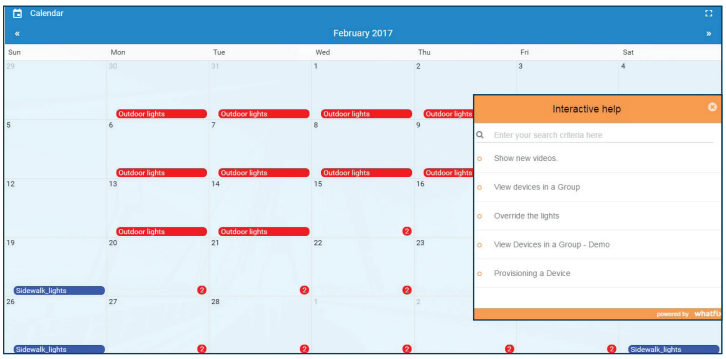
- Lumewave Gateway
- Lumewave Base Station
- Lumewave PL-RF Gateway

Compatible lighting controllers:

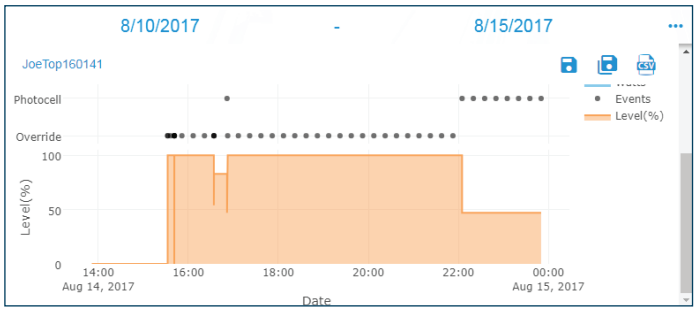
- RF controllers; TOP 900 and EMB Series
- PL controllers; CPD 3000
- Lumewave-supported motion and photo sensors

Security and Dashboard Screenshots





The calendar widget provides an intuitive way to view and manage lighting schedules, and a searchable help menu offers users extensive guidance.



Echelon HQ Asset Report

8/1/2017 - 8/31/2017

Number of Devices	Edge Device	Gateway
Provisioned	110	1
Unprovisioned(Full report)	16	1
Total	126	2

Provisioned Device Summary - RF

Number of Devices	Edge Device		Gateway
	Repeater	Non-Repeater	
Communicating	0	110	1
Non-Communicating(Full report)	0	0	0
Total	0	110	1

Typical report screens help users track energy use and manage assets.

Ordering #	Product Name	Product Description
38600-20	LumInsight 2 Cloud CMS Base Annual Subscription	One-year subscription for CMS; includes updates and minor upgrades
38610-20	LumInsight 2 Cloud CMS Standard Lighting Controller Annual Subscription	One-year subscription for each lighting controller managed by CMS; standard features only
38620-20	LumInsight 2 Cloud CMS Professional Lighting Controller Annual Subscription	One-year subscription for each lighting controller managed by CMS; includes advanced features

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KIT FTSC25SCO 2L900N 10A

Technical Data Sheet

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KIT FTC25SCO 2L900N 10A

Fused protection kit for street lighting and servicing applications

TTD1010XFBTUNI
Insulation Piercing Connector

Main Section: 1/0 - #8
Tightening:
Torque: 80 in.lb
Hex: ½ in

FUSE HOLDER
« Supply » side

Cable: 3 ft long

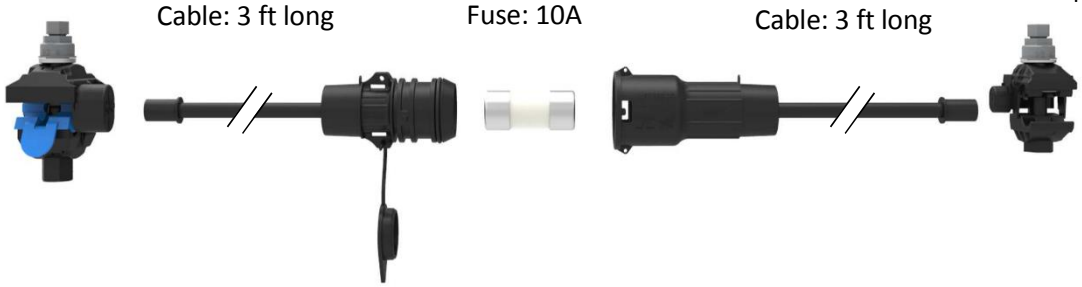
Fuse: 10A

FUSE HOLDER
« Customer » side

Cable: 3 ft long

TTD0510XFT
Insulation Piercing Connector

Tap Section: #8 - #14
Tightening:
Torque: 80 in.lb
Hex: ½ in



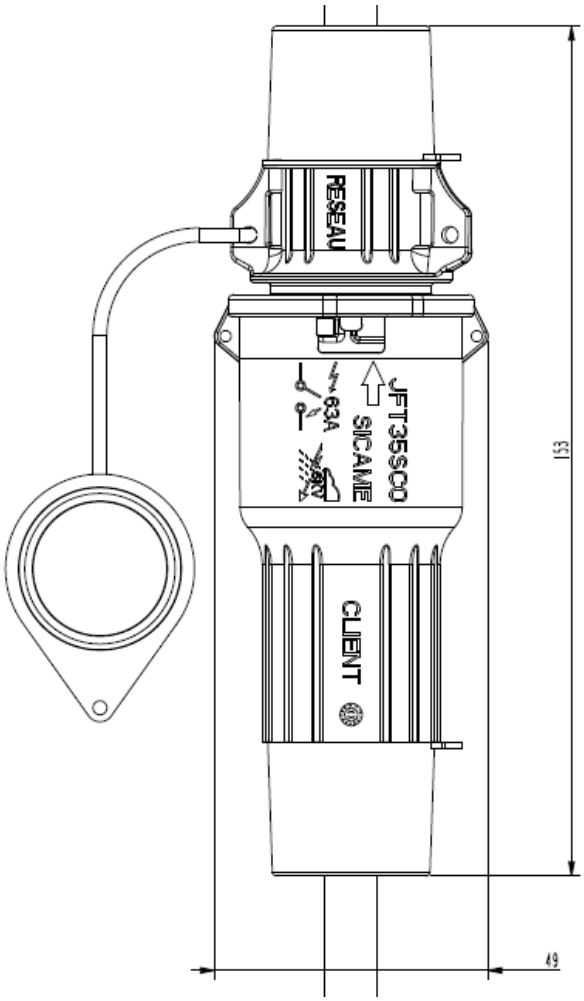
A	04/26/2017	V. Rineau	File creation
Rev.	**Date**	**Written by**	**Comments**

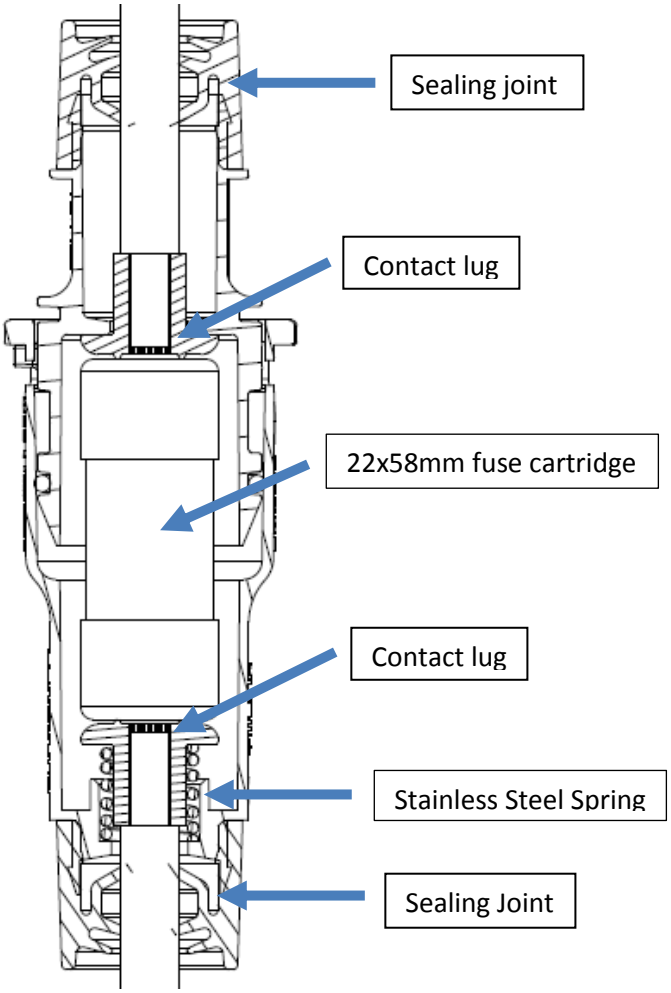
Summary

1. PRODUCT DESCRIPTION

The KIT FTSC25SCO 2L900N 10A is a cut-out fuse holder kit for overhead servicing to protect the service line or the public lighting network (with a fuse cartridge), connect or disconnect a customer (on load up to 63Amps), and limit non-technical losses (anti-theft solution with a mini-switch). Once installed, his cutout fuse holder provides a watertight connection and is insulated 6kV under water. This product comes with all the benefits of Sicame ABC accessories such as torque controlled shear bolts and soft end caps for the cables' ends.

2. GENERAL PART DESCRIPTION





3. PRODUCT TECHNICAL CHARACTERISTICS

Description	Results
Product standards	Fuse holder : STS 0032 (Sicame Technical Specification based on BS EN 50483, HN 33-S-83 Connectors : ANSI C119.5, UL 486A, , NF C33-020:2013, and BS EN 50483
Rated voltage	1kV
Insulated Level	6kV under water
Fuse Dimensions	22 x 58mm
Rated Torque	Connectors: 80 in.lb
Fuse Holder Weight	~196g (without fuse)
Insulation Piercing Connector Features	1) Watertight 2) Fully Insulated- No cover needed 3) No stripping required 4) Torque controlled shear heads (impact wrench compatible) 5) Admissible cross sections: 1/0 - #8 on network side, #8 - #14 on branching side
Size of the tightening hex	½”
Plastic Requirement	Shock proof and suitable for outdoor use and UV stable
Technical/Safety Features	1) Fuse is captive on load side 2) Bayonet system opening for securing the closed position- no tools needed 3) Small diameter and finger positions for ease of use with glove operations 4) Watertight and Anti-corrosion 5) Slots for 9mm wide cable ties to secure assembly on the pole 6) On-load connection/disconnection up to 63A 7) Cables come with soft end caps 8) Safety seals allow the lead wires to seal product in opened or closed configurations
Product overall dimension: Length x Width	153 x 49 mm

4. INSTALLATION INSTRUCTIONS