

# Lighting Report

ESSO  
1545 Woodroffe Ave. & Medhurst Dr.  
Ottawa, Ontario

February 10, 2015  
Rev. 00

Prepared by:  
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This report contains relevant information on the site lighting and anticipated values of the horizontal illuminance at grade level. The area calculated encompasses the entire IOL property, as well as an area of the adjoining properties that is 5m in width and an area of the adjoining streets that is 5m in width. Included in this report are luminaire data sheets, a detailed luminaire/layout plan, and calculation results. The calculated values for the horizontal illuminance are in lux.

Attached are the catalogue sheets of the fixtures used.

Luminaire schedule:

Yard Lights:

(Type S1)

Manufacturer: Beta Lighting Inc.

Model: 'The Edge' LED Area Light with type III optic.

ARE-EDG-3M-DA-08-D-UL-PB-525

Light Source: 1 - 133W LED, Initial Lumens 10,026

Light Loss Factor: 0.9

Pole Height: 6.1m

(Type S3)

Manufacturer: Beta Lighting Inc.

Model: 'The Edge' LED Area Light with type III optic.

ARE-EDG-3M-DA-08-D-UL-PB-525

Light Source: 2 - 133W LEDS, Initial Lumens 10,026, per fixture.

Light Loss Factor: 0.9

Pole Height: 4.9

(Type S4)

Manufacturer: Beta Lighting Inc.

Model: 'The Edge' LED Area Light with type III optic and backlight control.

ARE-EDG-3MB-DA-08-D-UL-PB-525

Light Source: 1 – 133W LED, Initial Lumens 7,417.

Light Loss Factor: 0.9

Pole Height: 6.1m

Canopy Lights:

(Type R)

Manufacturer: Beta Lighting Inc.

Model: 'The Edge' Recessed Canopy light CAN-228-PS-RM-09-D-UL-WH-525

Light Source: 169W LED, Initial lumens: 14,551

Light Loss Factor: 0.9

C-Store Soffit Lights:

(Type S)

Manufacturer: Beta Lighting Inc.

Model: Recessed LED Soffit Fixture SFT-227-3M-RM-03-D-UL-WH-525

Light Source: 52W LED, Initial lumens: 3,755

Light Loss Factor: 0.9

C-Store Pot Lights:

(Type M)

Manufacturer: Beta Lighting Inc.

Model: Recessed Downlight Fixture LR6-10L-40K-120V- LT6WH-DR-RC6

Light Source: 11W LED, Initial lumens: 1,026

Light Loss Factor: 0.9

Summary

	Average	Minimum	Maximum	Max/Avg	Min/Avg	CV
lux	42	0	611	14.55	0.00	2.410

Conclusions

The data shows that there is some illumination of the neighbouring streets with highest levels of spill over lighting occurring from the yard lights at the entrances. The light levels in the rear of the c-store are the lowest in the yard. The yard lights located at the East side of the property have been provided with backside shields to eliminate spill over lighting onto the adjacent property.

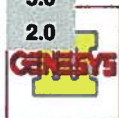
# Grid Results: Site (Horizontal) Origin = -58, 39, 0.00

## Summary

Stat Area	Metric	Average	Maximum	Minimum	Min / Avg	Min / Max
Entire Grid	ILL: 0,0	42 lux	611 lux	0.00 lux	0.00	0.00

## Results

	2.0	5.0	8.0	11	14	17	20	23	26	29	32	35	38	41	44	47	50	53
128															6.7	5.2	4.6	5.1
125				0.58	1.1	2.3	6.6	9.0	18	18	25	19	11	7.9	6.5	7.2	9.6	
122	0.09	0.14	0.34	0.58	0.76	1.4	2.9	6.7	11	11	22	24	20	14	9.2	8.6	10	15
119		0.15	0.40	0.67	1.1	2.1	4.7	9.3	18	19	26	26	25	14	10	11	13	17
116		0.04	0.51	0.93	1.6	2.9	5.2	9.2	15	26	28	30	24	15	12	11	14	24
113		0.06	0.00	1.2	2.2	3.6	6.2	9.5	15	28	30	33	28	21	15	11	12	15
110		0.07	0.00	1.7	3.1	4.4	6.6	9.8	16	22	25	29	34	22	13	11	10	11
107		0.08	0.00	2.4	5.1	6.3	7.7	8.7	13	20	23	35	33	19	12	11	10	12
104		0.12	0.00	2.8	8.3	9.2	10	10	13	17	16	25	42	19	13	28	48	85
101		0.16	0.00	2.2	11	16	15	12			26	23	38	24	16	59	152	242
98		0.19	0.48	2.0	12	22	24	18				17	26	27	23	80	235	368
95			0.26	2.1	9.7	21	30	26				26	23	18	17	97	289	466
92			0.00	0.00	1.9	18	30	42				15	19	14	11	77	280	499
89			0.17	0.00	6.0	18	24	42					45	22	9.4	62	237	452
86			0.31	0.00	4.6	16	18	15					94	42	11	45	204	412
83			0.20	0.00	2.8	9.0	9.5	9.6	10				141	70	14	31	165	415
80			0.12	0.01	2.2	6.3	6.9	8.1	8.7				138	92	17	22	158	391
77			0.11	0.04	1.2	3.1	5.0	10	35				110	98	19	16	126	364
74				0.12	0.77	1.8	4.0	12	36				67	75	19	13	103	318
71				0.08	0.59	1.2	2.7	9.8	14				37	39	17	11	88	285
68				0.06	0.00	0.93	1.8	11	21				23	20	15	12	63	244
65				0.05	0.00	0.86	2.1	9.4	19					16	15	13	50	201
62				0.05	0.00	0.51	1.0	2.7	23					24	22	17	32	133
59				0.05	0.05	0.52	1.1	4.2	23	51			36	25	26	23	21	70
56				0.07	0.10	0.63	1.5	3.7	18	28	11	41	24	22	27	26	16	34
53				0.10	0.16	0.79	1.3	2.9	12	15	18	19	22	24	27	25	16	11
50					0.22	0.86	1.3	2.5	8.1	10	11	15	20	21	32	20	15	12
47					0.28	0.00	1.5	2.2	5.2	7.1	8.4	12	16	20	23	20	15	14
44					0.29	0.00	2.1	2.8	4.7	5.8	7.2	11	15	19	21	19	16	16
41					0.20	0.00	3.2	4.3	5.9	7.2	9.0	12	20	21	30	25	17	17
38					0.26	0.00	5.9	7.4	8.4	8.6	10	17	15	25	27	25	19	17
35					0.21	1.4	7.6	10	12	12	14	18	22	25	30	30	20	18
32					0.29	0.75	8.5	18	22	22	16	18	24	31	36	34	24	21
29						1.1	5.9	18	28	31	21	19	28	39	41	41	35	27
26						0.44	2.9	12	28	33	24	19	22	30	37	35	33	
23						0.14	0.00	13	21	30	23	17	18	24	25	20	20	45
20						0.26	0.00	11	22	20	18	13	14	15	13	7.6	10	64
17						0.33	0.00	6.4	13	12	11	7.8	6.3	5.0	4.3	3.6	4.3	12
14						0.20	0.27	3.6	8.2	7.6	6.8	5.2	3.6	2.9	2.5	1.8	1.8	2.2
11						0.11	0.23	1.8	4.2	4.2	3.9	3.3	2.5	2.0	1.6	1.1	0.90	0.87
8.0						0.07	0.15	0.83	2.0	2.3	2.2	2.0	1.7	1.4	1.1	0.82	0.60	0.51
5.0							0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.0							0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



**Designer Project**

Prepared For:

Prepared By:

Produced: 02 Oct 2015

**Grid Results: Site (Horizontal) Origin = -58, 39, 0.00**

Results											
56	59	62	65	68	71	74	77	80	83	86	89
9.3	7.5	8.5	6.4	5.7	4.0	2.4					
11	12	16	12	8.4	6.3	3.6	2.1				
20	16	20	22	14	8.7	5.4	3.2				
23	23	26	27	16	9.4	6.3	3.9	2.4			
25	26	27	21	14	9.7	6.9	4.6	2.8			
19	24	22	17	13	9.6	7.6	5.3	3.3			
12	12	12	13	12	12	9.0	6.5	3.9			
16	17	14	12	16	19	13	9.0	5.7			
97	75	50	19	21	27	18	16	8.2			
275	220	95	32	26	26	20	12	12			
438	351	172	50	27	27	20	16	8.5			
553	430	230	66	23	25	23	15	9.1			
611	485	269	82	17	22	19	11	6.5	3.8		
594	511	310	103	15	12	11	8.3	6.3	3.7		
562	510	347	111	17	10	9.5	7.2	6.4	3.7		
555	523	360	148	23	9.7	9.7	8.4	10	5.7		
568	576	404	175	34	12	14	15	16	11		
546	610	460	199	47	16	17	19	15	19		
503	592	460	243	65	23	26	23	22	24		
472	579	460	262	78	20	25	25	25	26		
478	600	492	293	97	18	20	25	24	18	13	
403	534	470	294	97	16	13	13	13	12	8.8	
283	366	324	220	73	16	11	11	10	8.3	5.9	
166	204	177	106	53	15	13	12	11	7.6	5.2	
48	59	51	30	18	15	22	23	14	10	6.0	
10	9.6	8.8	11	14	21	25	23	20	14	7.3	
11	13	14	17	19	26	29	26	15	16	11	
17	21	25	27	26	29	30	27	19	19	9.2	
22	34	46	51	42	33	27	30	19	13	7.5	
27	48	63	67	56	43	24	21	15	11	6.9	4.0
32	59	63	43	60	49	26	18	13	11	6.9	4.3
26	46	63	64	68	47	32	24	17	11	7.9	4.7
22	26	46	48	54	49	41	33	19	13	8.2	4.7
9.4			23	44	41	36	29	25	13	8.4	4.7
				31	33	18	18	15	10	7.1	3.6
					27	5.8	5.1	3.7	2.3	1.8	0.98
37	21	40	25	26	9.2	3.5	2.1	1.8	1.1	0.73	0.46
10	5.6	6.0	4.4	4.0	2.0	1.7	1.3	0.96	0.79	0.52	0.35
1.9	1.4	1.3	1.3	1.1	0.77	0.98	0.76	0.62	0.52	0.40	0.27
0.57	0.60	0.46	0.55	0.49	0.39	0.60	0.49	0.41	0.34	0.24	0.22
0.40	0.32	0.28	0.30	0.27	0.23	0.21	0.33	0.28	0.24	0.20	0.17
0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.26	0.22	0.19	0.15	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	



**Designer Project**  
**Prepared For:**  
**Prepared By:**

**Produced: 02-Oct-2015**

# THE EDGE® ARE-EDG-3M-DA

Area Luminaire - Type III Medium - Direct Arm Mount

## Product Description

Slim, low profile design minimizes wind load requirements. Luminaire sides are rugged cast aluminum with integral, weather-tight LED driver compartments and high performance aluminum heat sinks. Convenient, interlocking mounting method. Mounting housing is rugged die cast aluminum and mounts to 3-6" (76-152mm) square or round pole. Luminaire is secured by two (2) 5/16-18 UNC bolts spaced on 2" (51mm) centers.

## Performance Summary

Utilizes BetaLED® Technology

Patented NanoOptic® Product Technology

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

CRI: Minimum 70 CRI

CCT: 5700K (+/- 500K) Standard, 4000K (+/- 300K)

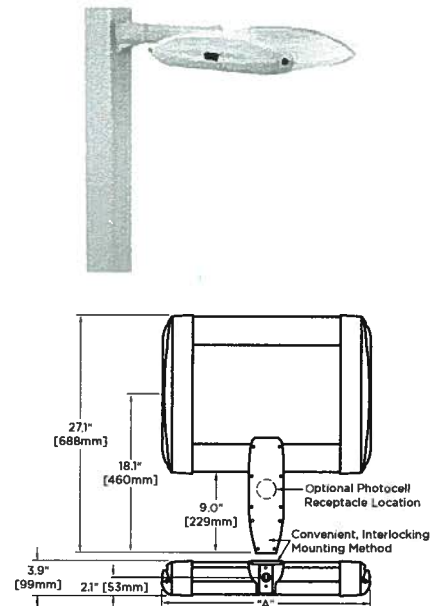
Warranty: 5 years on luminaire / 10 years on Colorfast DeltaGuard® finish

EPA and Weight: Reference EPA and Weight spec sheet

## Accessories

### Field Installed Accessories

XA-BRDSPK  
Bird Spikes



LED Count (x10)	Dim. "A"
02	12.1" [306mm]
04	12.1" [306mm]
06	14.1" [357mm]
08	16.1" [408mm]
10	18.1" [459mm]
12	20.1" [510mm]
14	22.1" [560mm]
16	24.1" [611mm]
20	28.1" [713mm]
24	32.1" [814mm]

## Ordering Information

Example: ARE-EDG-3M-DA-02-D-UL-SV-350-OPTIONS

ARE-EDG	3M	DA		D				
Product	Optic	Mounting	LED Count (x10)	Version	Voltage	Color Options	Drive Current	Options
ARE-EDG	3M Type III Medium	DA Direct Arm	02 04 06 08 10 12 14 16 20 24	D	UL Universal 120-277V UH Universal 347-480V 34 347V	SV Silver (Standard) BK Black BZ Bronze PB Platinum Bronze WH White	350 350mA 525* 525mA 700** 700mA	<b>40K 4000K Color Temperature</b> - Color temperature per luminaire <b>DIM 0-10V Dimming</b> - Control by others - Refer to dimming spec sheet for details - Can't exceed specified drive current <b>F Fuse</b> - When code dictates fusing, use time delay fuse - Not available with all ML options. Refer to ML spec sheet for availability with ML options <b>HL Hi / Low (175/350/525 Dual Circuit Input)</b> - Refer to ML spec sheet for details - Sensor not included <b>P Photocell</b> - Not available with all ML options. Refer to ML spec sheet for availability with ML options - Must specify voltage other than UH <b>R NEMA Photocell Receptacle</b> - Not available with all ML options. Refer to ML spec sheet for availability with ML options - Intended for horizontal mounting - Photocell by others <b>ML Multi-Level</b> - Refer to ML spec sheet for details

\* Available on luminaires with 20-160 LEDs

\*\* Available on luminaires with 20-60 LEDs



Rev. Date: 6/26/2012



# Area Luminaire - Type III Medium - Direct Arm Mount

## Product Specifications

### CONSTRUCTION & MATERIALS

- Slim, low profile, minimizing wind load requirements
- Luminaire sides are rugged die cast aluminum with integral, weather-tight LED driver compartments and high performance heat sinks
- Convenient interlocking mounting method. Mounting housing is rugged die cast aluminum mounting to 3-6" (76-152mm) square or round pole, secured by two (2) 5/16-18 UNC bolts spaced on 2" (51mm) centers
- Includes leaf / debris guard
- Exclusive Colorfast DeltaGuard® finish features an E-Coat epoxy primer with an ultradurable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Standard is silver. Bronze, black, white, and platinum bronze are also available

### ELECTRICAL SYSTEM

- **Input Voltage:** 120-277V or 347-480V, 50/60Hz, Class 1 drivers
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- Integral weather-tight electrical box with terminal strips (12Ga-20Ga) for easy power hookup
- Integral 10kV surge suppression protection standard
- To address inrush current, slow blow fuse or type C/D breaker should be used

### REGULATORY & VOLUNTARY QUALIFICATIONS

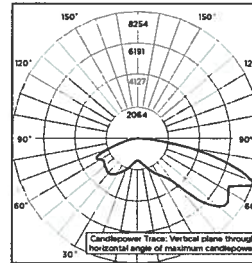
- cULus Listed
- Suitable for wet locations
- Enclosure rated IP66 per IEC 60529 when ordered without P or R options
- Consult factory for CE Certified products
- Certified to ANSI C136.31-2001, 3G bridge and overpass vibration standards
- 10kV surge suppression protection tested in accordance with IEEE/ANSI C62.412
- Luminaire and finish endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117
- Product qualified on the DesignLights Consortium ("DLC") Qualified Products List ("QPL") when ordered without the backlight control shield
- Dark Sky Friendly, IDA Approved
- RoHS Compliant
- Meets Buy American requirements within ARRA

### PATENTS

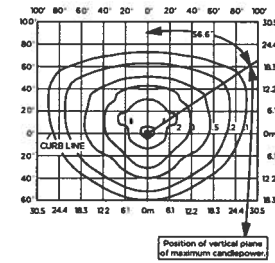
- Visit website for patents that cover these products:  
Patents <http://www.cree.com/patents>

## Photometry

All published luminaire photometric testing performed to IESNA LM-79-08 standards by Independent Testing Laboratories, a NVLAP certified laboratory.



ITL Test Report #: 67871  
ARE-EDG-3M-\*\*-16-D-UL-525-43K  
Initial Delivered Lumens: 18,862



ARE-EDG-3M-\*\*-12-D-UL-525-40K  
Mounting Height: 25' (7.6m) A.F.G  
Initial Delivered Lumens: 13,826  
Initial FC at grade

### IES Files

To obtain an IES file specific to your project consult:  
<http://www.cree.com/lighting/tools-and-support/exterior-ies-configuration-tool>

## Lumen Output, Electrical, and Lumen Maintenance Data

Type III Medium Distribution												
LED Count (x10)	5700K		4000K		System Watts 120-480V	TOTAL CURRENT						50K Hours Projected Lumen Maintenance Factor @ 15°C (59°F)**
	Initial Delivered Lumens	BUG Ratings* Per TM-15-11	Initial Delivered Lumens	BUG Ratings* Per TM-15-11		120V	208V	240V	277V	347V	480V	
350mA @ 25°C (77°F)												
02	1,814	B1 U0 G1	1,672	B1 U0 G1	26	0.20	0.13	0.11	0.10	0.09	0.07	93%
04	3,628	B1 U0 G1	3,343	B1 U0 G1	47	0.40	0.24	0.21	0.19	0.15	0.12	
06	5,371	B2 U0 G2	4,950	B2 U0 G2	68	0.58	0.34	0.30	0.26	0.20	0.16	
08	7,161	B2 U0 G2	6,600	B2 U0 G2	90	0.77	0.44	0.38	0.34	0.26	0.20	
10	8,929	B3 U0 G3	8,230	B2 U0 G2	111	0.95	0.55	0.47	0.42	0.32	0.24	
12	10,715	B3 U0 G3	9,876	B3 U0 G3	132	1.15	0.66	0.56	0.50	0.38	0.28	
14	12,444	B3 U0 G3	11,469	B3 U0 G3	157	1.34	0.78	0.67	0.61	0.47	0.35	
16	14,222	B3 U0 G3	13,108	B3 U0 G3	179	1.54	0.89	0.76	0.68	0.53	0.39	
20	17,778	B3 U0 G3	16,385	B3 U0 G3	221	1.92	1.10	0.95	0.84	0.65	0.48	
24	21,333	B4 U0 G4	19,662	B3 U0 G3	264	2.30	1.31	1.12	1.00	0.77	0.56	
525mA @ 25°C (77°F)												
02	2,539	B1 U0 G1	2,340	B1 U0 G1	37	0.31	0.19	0.17	0.16	0.12	0.10	92%
04	5,079	B2 U0 G2	4,681	B2 U0 G2	70	0.57	0.33	0.29	0.26	0.21	0.16	
06	7,520	B2 U0 G2	6,930	B2 U0 G2	102	0.87	0.50	0.44	0.39	0.30	0.22	
08	10,026	B3 U0 G3	9,240	B3 U0 G3	133	1.14	0.65	0.56	0.49	0.39	0.29	
10	12,501	B3 U0 G3	11,521	B3 U0 G3	172	1.47	0.85	0.75	0.67	0.51	0.38	
12	15,001	B3 U0 G3	13,826	B3 U0 G3	204	1.76	1.01	0.88	0.78	0.60	0.44	
14	17,422	B3 U0 G3	16,057	B3 U0 G3	233	2.01	1.14	0.99	0.87	0.69	0.51	
16	19,911	B3 U0 G3	18,351	B3 U0 G3	265	2.29	1.29	1.11	0.98	0.78	0.57	
700mA @ 25°C (77°F)												
02	3,102	B1 U0 G1	2,858	B1 U0 G1	50	0.42	0.25	0.22	0.20	0.15	0.12	90%
04	6,203	B2 U0 G2	5,717	B2 U0 G2	93	0.79	0.45	0.40	0.35	0.27	0.20	
06	9,185	B3 U0 G3	8,465	B3 U0 G3	137	1.18	0.67	0.59	0.51	0.39	0.29	

\* For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit [www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf](http://www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf)  
\*\* Projected L<sub>70</sub> (10K) Hours: >60,000. For recommended lumen maintenance factor data see TD-13

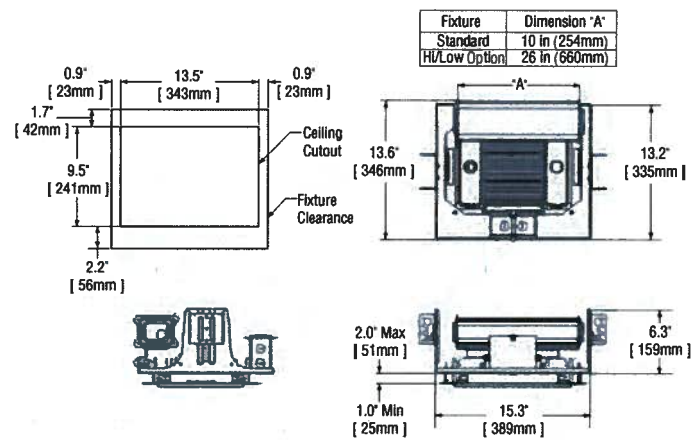
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[www.cree.com/lighting](http://www.cree.com/lighting)

T (800) 236-6800 F (262) 504-5415



BetaLED Catalog #: SFT - 227 - - RM - 03 - D - - - -



Notes:

Product	Family	Optic	Mounting	# of LEDs (x 10)	LED Series	Voltage	Color Options	Drive Current	Factory-Installed Options
SFT	227	<input checked="" type="checkbox"/> 3M <sup>1</sup> <input checked="" type="checkbox"/> 3MB <sup>2</sup>	RM <sup>3</sup>	03	D	<input checked="" type="checkbox"/> UL Universal 120–277V <input checked="" type="checkbox"/> UH Universal 347–480V <input checked="" type="checkbox"/> 12 120V <input checked="" type="checkbox"/> 20 208V <input checked="" type="checkbox"/> 24 240V <input checked="" type="checkbox"/> 27 277V <input checked="" type="checkbox"/> 34 347V <input checked="" type="checkbox"/> 48 480V	<input checked="" type="checkbox"/> WH White (Standard) <input checked="" type="checkbox"/> SV Silver <input checked="" type="checkbox"/> BK Black <input checked="" type="checkbox"/> BZ Bronze <input checked="" type="checkbox"/> PB Platinum Bronze	<input checked="" type="checkbox"/> 525 525mA (Standard) <input checked="" type="checkbox"/> 350 350mA	<input checked="" type="checkbox"/> 40K 4000K Color Temperature <sup>4</sup> <input checked="" type="checkbox"/> F Fuse <sup>5,6</sup>  For remodel option, see <a href="#">remodel spec sheet</a>

Footnotes

1. IESNA Type V Medium distribution
2. IESNA Type V Medium distribution with backlight control
3. Recessed soffit mount for new construction
4. Color temperature per fixture; 5700K standard; minimum 70 CRI
5. Must specify voltage other than UL, UH, or 34
6. When code dictates fusing use time delay fuse

LED PERFORMANCE SPECS																							
# of LEDs	Initial Delivered Lumens – Type III Medium @ 5700K	BUG Rating**		Initial Delivered Lumens – Type III Medium w/ Backlight control @ 5700K	BUG Rating**		Initial Delivered Lumens – Type III Medium @ 4000K	BUG Rating**		Initial Delivered Lumens – Type III Medium w/ Backlight control @ 4000K	BUG Rating**		System Watts 120–277V	Total Current @ 120V	Total Current @ 208V	Total Current @ 240V	Total Current @ 277V	L <sub>80</sub> Hours* @ 25° C (77° F)	50K Hours Lumen Maintenance Factor* @ 15° C (59° F)				
		B	U		G	B		U	G		B	U								G	B	U	G
350mA Fixture Operating at 25° C (77° F)																							
30	2,682 (03)	1	0	1	1,984 (03)	0	0	1	2,472 (03)	0	0	1	1,829 (03)	0	0	1	36	0.30	0.19	0.317	0.17	> 150,000	90%
525mA (Standard) Fixture Operating at 25° C (77° F)																							
30	3,755 (03)	1	0	1	2,778 (03)	1	0	1	3,461 (03)	1	0	1	2,560 (03)	0	0	1	52	0.44	0.26	0.24	0.21	> 128,000	88%

\* For recommended lumen maintenance factor data see TD-13

\*\* For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit [www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf](http://www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf)





**General Description**

High performance energy efficient LED down light, designed for use in drop ceilings or new construction applications with 16" (406mm) to 24" (610mm) on center building construction. Heavy gauge steel recessed mounting frame features 1-1/2" (38mm) deep aperture throat to accommodate most standard ceiling thicknesses, and a universal mounting brackets that accept 1/2" (13mm) EMT conduit, C-channel mounting bars or flat bar hangers with 5" (127mm) vertical adjustment from either above or below the ceiling. An oversized junction box is listed for eight #12 AWG feed through wires.

Luminaire sides are rugged cast aluminum with high performance extruded aluminum heat sink specifically designed for high power LED. It is factory assembled to the trim plate and wired to the driver.

Driver compartment is constructed of anodized extruded aluminum with stainless steel end panels for exceptional thermal performance. Driver is factory wired to the LED modules and features a quick connect power harness.

Five year limited warranty on luminaire.

**Electrical**

Modular design accommodates varied lighting output from high power, white, 5700K (+/- 500K per full fixture), minimum 70 CRI, long life LED sources. Optional 4000K (+/- 300K per full fixture) also available. 120–277V 50/60 Hz, Class 1 LED drivers are standard. 347–480VHz driver is optional. LED drivers have power factor >90% and THD <20% at full load. Units provided with integral 10kV surge suppression protection standard. Surge protection tested in accordance with IEEE/ANSI C62.41.2. Luminaire is Type IC in accordance with Article 410 of the NEC and UL 1598. It is suitable for direct contact with insulation. Luminaire is listed for eight #12 AWG, 90C rated through branch circuit wires. Meets FCC Title 47 CFR Part 18, Non-Consumer EMI and RFI emission levels.

**Testing & Compliance**

UL listed in the U.S. and Canada for wet locations under covered ceilings. Consult factory for CE certified product. RoHS compliant. International Dark-Sky Association approved.



**Finish**

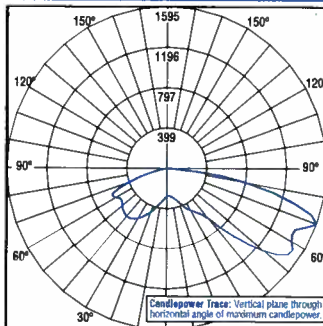
Exclusive Colorfast DeltaGuard® finish on all cast aluminum components features an E-Coat epoxy primer with an ultra-durable white powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Bronze, black, silver and platinum bronze powder topcoats are also available. Clear anodized finish on extruded aluminum heat sink. The finish is covered by our 10 year limited warranty.

Fixture and finish are endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117.

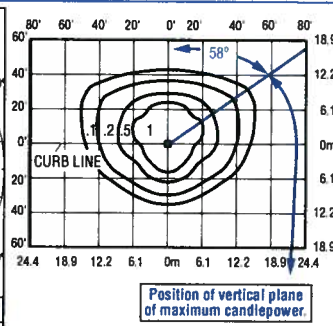
**Patents**

U.S. and international patents granted and pending. BetaLED is a division of Ruud Lighting, Inc. For a listing of Ruud Lighting, Inc. patents, visit [www.uspto.gov](http://www.uspto.gov).

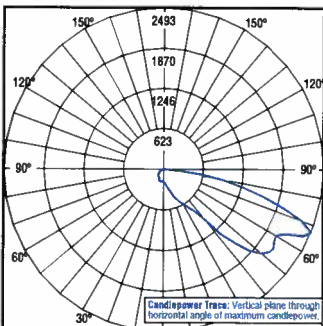
**Photometrics**



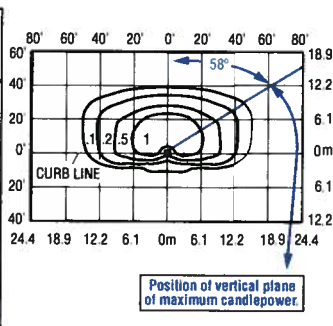
Candlepower trace of 6000K, 30 LED recessed soffit luminaire with IESNA Type III Medium distribution. Luminaire with 6,267 initial delivered lumens operating at 525mA. All published luminaire photometric testing performed to IESNA LM-79-08 standards.



Isofootcandle plot of 5700K, 30 LED recessed soffit luminaire with IESNA Type III Medium optic mounted at 15' (4.6m) A.F.G. Luminaire with 3,755 initial delivered lumens operating at 525mA. Initial FC at grade.



Candlepower trace of 6000K, 30 LED recessed soffit luminaire with IESNA Type III Medium distribution w/ BLS Luminaire with 5,084 initial delivered lumens operating at 525mA. All published luminaire photometric testing performed to IESNA LM-79-08 standards.

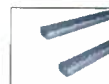


Isofootcandle plot of 5700K, 30 LED recessed soffit luminaire with IESNA Type III Medium optic mounted at 15' (4.6m) A.F.G. Luminaire with 2,778 initial delivered lumens operating at 525mA. Initial FC at grade.

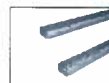
**Field-Installed Accessories**



**Mounting C Channel - 30" (762mm) Long**  
 XA-MC30



**Mounting C Channel - 14" (356mm) Long**  
 XA-MC14



**Mounting C Channel - 22" (559mm) Long**  
 XA-MC22

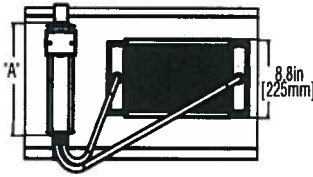
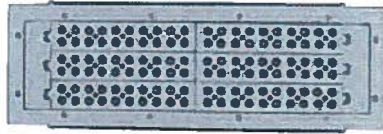


**Mounting Brackets (Kit contains 4)**  
 XA-MB4



**Remote Motion Sensor Kit**  
 Used to control a single or series of fixtures as On/Off controller or Hi/Low controller with HL option (rated for up to 800 watts @ 120V or 1200 watts @ 277V)  
 XA-OMS108-UWL  
 Up to 8' (2.4m) mounting height  
 XA-OMS120-UWL  
 Up to 20' (6.1m) mounting height  
 XA-OMS140-UWL  
 Up to 40' (12.2m) mounting height

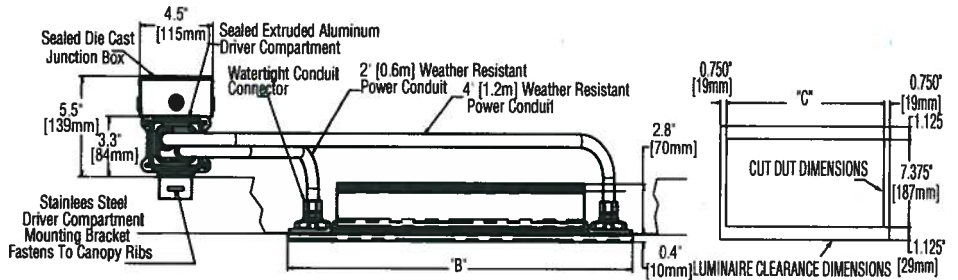




Driver Housing	DIM "A"
350 mA	12.8" [325mm]
HL option, 525mA, 700mA	23.8" [605mm]

Fixture	DIM "B"	DIM "C"
90 LED	21.6" [549mm]	20.6" [523mm]
120 LED	26.2" [665mm]	25.125" [638mm]

Notes:



Product	Family	Optic	Mounting	# of LEDs (x 10)	LED Series	Voltage	Color Options	Drive Current	Factory-Installed Options
CAN	227	PS <sup>1</sup>	RM <sup>2</sup>	09	D	UL Universal 120-277V	SV Silver	700 <sup>3</sup> (Standard)	40K 4000K Color temperature <sup>4</sup> F Fuse <sup>5,6,7</sup> HL Hi/Low (175/350/525, dual circuit input) <sup>8,9</sup> DIM 0-10V Dimming <sup>10,11,12</sup>
				12					
							BK Black	350	
							WH White (Standard)	350mA	
							PB Platinum Bronze		

Footnotes

- Petroleum Symmetric distribution
- Recessed canopy mount
- Requires marked spacings 48" (1219mm) x 48" (1219mm) x 12" (305mm) (48" [1219mm] luminaire center line to luminaire center line, 24" [610mm] luminaire to side wall, 12" [305mm] above luminaire)
- Color temperature per fixture; 5700K standard; minimum 70 CRI
- Not available when UH voltage is selected
- When code dictates fusing use time delay fuse
- Not available with all multi-level options. Refer to multi-level spec sheet for availability and additional information
- Sensor not included
- Refer to multi-level spec sheet for availability and additional information
- Refer to dimming spec sheet for availability and additional information
- Control by others
- Can't exceed specified drive current. Consult factory if exceeding drive current is necessary

LED PERFORMANCE SPECS																
# of LEDs	Initial Delivered Lumens - Petroleum Symmetric Optic @ 5700K			Initial Delivered Lumens - Petroleum Symmetric Optic @ 4000K			System Watts 120-480V	Total Current @ 120V	Total Current @ 208V	Total Current @ 240V	Total Current @ 277V	Total Current @ 347V	Total Current @ 480V	L <sub>70</sub> Hours @ 25° C (77° F)	50K Hours Lumen Maintenance Factor* @ 15° C (59° F)	
	B	U	G	B	U	G										
350mA Fixture Operating at 25° C (77° F)																
90	10,393 (09)	3	0	0	9,579 (09)	3	0	0	104	0.85	0.50	0.44	0.39	0.32	0.25	91%
120	13,780 (12)	3	0	0	12,700 (12)	3	0	0	139	1.16	0.70	0.63	0.56	0.41	0.31	
525mA Fixture Operating at 25° C (77° F)																
90	14,551 (09)	3	0	0	13,411 (09)	3	0	0	169	1.46	0.84	0.77	0.66	0.47	0.35	89%
120	19,292 (12)	4	0	0	17,780 (12)	4	0	0	240	2.03	1.17	1.07	0.89	0.60	0.44	
700mA (Standard) Fixture Operating at 25° C (77° F)																
90	17,669 (09)	4	0	0	16,284 (09)	4	0	0	212	1.78	1.03	0.94	0.79	0.63	0.46	87%
120	23,425 (12)	4	0	0	21,590 (12)	4	0	0	275	2.34	1.34	1.24	1.02	0.79	0.58	

\*For recommended lumen maintenance data see TD-13

\*\* For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit [www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf](http://www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf)



**General Description**

Slim, low profile, easy mounting from below or above the deck. Luminaire sides are rugged cast aluminum with high performance extruded aluminum heatsink specifically designed for LED. Luminaire mounts directly to the canopy deck and is secured in place with extruded aluminum trim frame. This product is not intended for installation in combustible structures. Luminaire housing is provided with factory applied foam gasket and provides for a watertight seal between luminaire housing and canopy deck. Suitable for use in single or double skin canopies with 12" (305mm) or 16" (406mm) wide panels. Designed for canopies of 19 – 22 gauge (maximum 0.040" [1 mm] thickness).

Watertight driver compartment is constructed of anodized extruded aluminum with stainless steel end panels for exceptional corrosion resistance and thermal performance. Driver is factory wired to the luminaire housing via weather resistant flexible power conduit. Driver compartment is secured to the canopy ribs of the canopy deck with #14 Tek-screws (by others).

Five year limited warranty on luminaire.

**Electrical**

Modular design accommodates varied lighting output from high power, white, 5700K (+/- 500k per full fixture), minimum 70 CRI, long life LED sources. Optional 4000K (+/- 300K per full fixture) also available. 120–277V 50/60 Hz, Class 1 LED drivers are standard. 347–480V 50/60 Hz driver is optional. LED drivers have power factor >90% and THD <20% at full load. Units provided with integral 10kV surge suppression protection standard. Surge protection tested in accordance with IEEE/ANSI C62.41.2

**Field-Installed Accessories**



**Retrofit Plate Kit**

Used when replacing recessed HID luminaires in existing open canopies with up to 12" (305mm) round or square, or 12" (305mm) x 16" (406mm) rectangular deck opening

- XA-CRRP90WH (for 90 LED fixtures)
- XA-CRRP120WH (for 120 LED fixtures)

NO PHOTO AVAILABLE

**Retrofit Plate Kit – Plastic**

24" (610mm) x 26" (660mm) plate used when replacing surface mounted HID luminaires. Factory cut to match luminaire opening.

- XA-CRS2P90 (for 90 LED fixtures)
- XA-CRS2P120 (for 120 LED fixtures)
  - For use on 12" (305mm) wide deck panels. Includes metal backer plate.
- XA-CRS6P90 (for 90 LED fixtures)
- XA-CRS6P120 (for 120 LED fixtures)
  - For use on 16" (406mm) wide deck panels. Includes metal backer plate.
- XA-CRSP90 (for 90 LED fixtures)
- XA-CRSP120 (for 120 LED fixtures)
  - For use on 12" (305mm) – 16" (406mm) deck panels. Does not include backer plate.

NO PHOTO AVAILABLE

**Retrofit Plate Kit – Metal**

Metal plate used when replacing surface mounted HID luminaires. Painted DeltaGuard white. Must be field cut to match luminaire opening.

- XA-CTP26X32WT
  - Spans two 16" deck panels.
- XA-CTP26X24WT
  - Spans two 12" deck panels.

**Testing & Compliance**

UL listed in the U.S. and Canada for wet locations and enclosure rated IP66 per IEC 60529. Dark Sky Friendly. IDA Approved. RoHs compliant.



Product with petroleum symmetric optic and 6000K CCT qualified on the DesignLights Consortium ("DLC") Qualified Products List ("QPL").

**Finish**

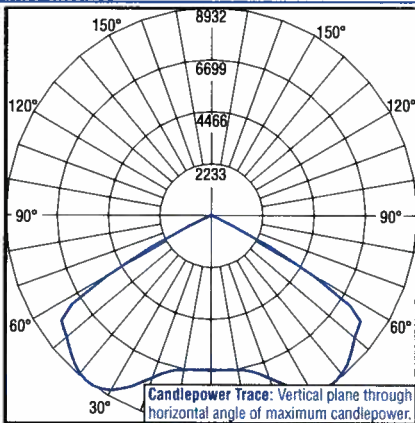
Exclusive ColorFast DeltaGuard® finish features an E-Coat epoxy primer with an ultra durable white powder topcoat, providing excellent resistance to corrosion ultraviolet degradation and abrasion. Bronze, black, silver, and platinum bronze powder topcoats are also available. Clear anodized finish on extruded aluminum heat sink with white powder finish on all cast aluminum components is standard. Bronze, black, silver and platinum bronze powder topcoats are also available. The finish is covered by our 10 year warranty.

Fixture and finish are endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117.

**Patents**

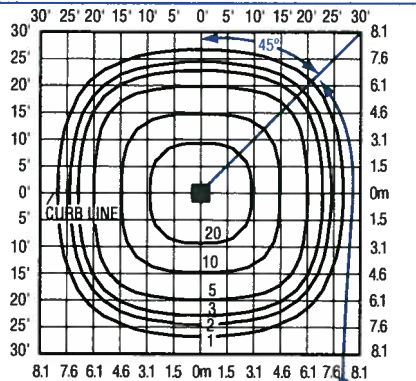
U.S. and international patents granted and pending. BetaLED is a division of Ruud Lighting, Inc. For a listing of Ruud Lighting, Inc. patents, visit [www.uspto.gov](http://www.uspto.gov).

**Photometrics**



Candlepower Trace: Vertical plane through horizontal angle of maximum candlepower.

Independent Testing Laboratories certified test. Report No. ITL66571. Candlepower trace of 6000K, 120 LED recessed canopy luminaire with petroleum symmetric optic. Luminaire with 23,793 initial delivered lumens operating at 700mA. All published luminaire photometric testing performed to IESNA LM-79-08 standards.



Position of vertical plane of maximum candlepower.

Isofootcandle plot of 5700K, 120 LED recessed canopy luminaire with petroleum symmetric optic mounted at 15' (4.6m) A.F.G. Luminaire with 23,425 initial delivered lumens operating at 700mA. Initial FC at grade.



# LR6-10L

6" LED Downlight

## Product Description

The LR6-10L LED downlight delivers 1000 lumens of exceptional 90+ CRI light while achieving 90 lumens per watt. This breakthrough performance is achieved by combining the high efficacy and high-quality light of Cree TrueWhite® Technology, with an integrated driver and thermal management design. The LR6-10L is available in warm or neutral color temperatures and has a variety of trim options. It easily installs into Cree six-inch GU24 housings or may be retrofitted with a GU24 whip adapter.

**Applications:** Commercial new construction and retrofit

## Performance Summary

Utilizes Cree TrueWhite® Technology

Active Color Management

**Delivered Light Output:** 1000 lumens

**Input Power:** 11 watts

**CRI:** 90

**CCT:** 2700K, 3000K, 3500K, 4000K

**Limited Warranty\*:** 10 years

**Lifetime:** Designed to last 50,000 hours

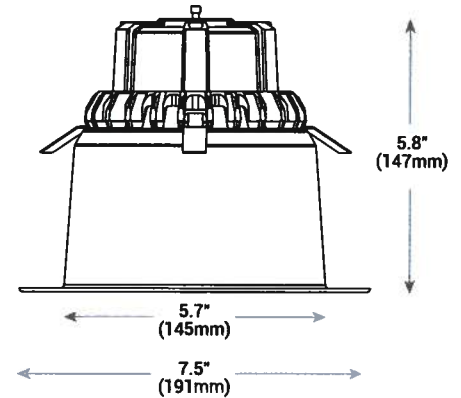
**Dimming:** Dimmable to 5%\*

## Housing & Accessories

Reference Housing & Accessory documents for more details.

Trims	
LT6A-DR Diffuse anodized finish	T6AB-DR Black anodized finish
LT6AW-DR Wheat diffuse anodized finish	LT6WH-DR Smooth white
LT6AP-DR Pewter diffuse anodized finish	LT6BB-DR Flat black finish trim and reflector

Housing (Edison or GU24)	
H6 Architectural	SC6 Cylindrical Surface Mount
RC6 New Construction	SC6-CM Cylindrical Cord Mount
RR6 Retrofit	SC6-WM Cylindrical Wall Mount



## Ordering Information

Example: LR6-10L-35K-120V-A-DR

**QUICKSHIP™**

Click below to select Quick Ship products

LR6-10L-35K-120V-A-DR

For full list of Cree Quick Ship products visit [www.cree.com/lighting/quickship](http://www.cree.com/lighting/quickship)

LR6	10L		120V	A	DR
Series	Lumen Output	Color Temperature	Voltage	Version	Options
LR6	10L 11W 1000 lumens - 90 LPW	27K 2700 Kelvin 30K 3000 Kelvin 35K 3500 Kelvin 40K 4000 Kelvin	120V 120 Volts - GU24 Base	A Version	DR Deep Recess - 20' Shield

\* Reference [www.cree.com/lighting](http://www.cree.com/lighting) for recommended dimmers

† See [www.cree.com/lighting/products/warranty](http://www.cree.com/lighting/products/warranty) for warranty terms



Rev. Date: V2 08/14/2014



US: [www.cree.com/lighting](http://www.cree.com/lighting) T (800) 236-6800 F (262) 504-5415

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

# LR6-10L

## Product Specifications

### CREE TRUEWHITE® TECHNOLOGY

A revolutionary way to generate high-quality white light, Cree TrueWhite® Technology is a patented approach that delivers an exclusive combination of 90+ CRI, beautiful light characteristics, and lifelong color consistency, all while maintaining high luminous efficacy - a true no compromise solution.

### CONSTRUCTION & MATERIALS

- Durable aluminum housing protects the light source. Adjustable flip clips provide robust retention for flush ceiling fit
- Thermal management system uses integral heat sink to conduct heat away from LEDs for optimal performance. LED junction temperatures stay below specified maximum even when installed in worst case installations
- Suitable for insulated and non-insulated ceilings
- One-piece aluminum lower reflector redirects light while also conducting heat away from LEDs. It creates a comfortable visual transition from the lens to the ceiling plane and easily accommodates LT6 snap-in trims

### OPTICAL SYSTEM

- Unique combination of reflective and refractive optical components achieves a uniform, comfortable appearance while eliminating pixelation, hot spots and minimizing glare
- Components work together to optimize distribution, balancing the delivery of high illuminance levels on horizontal surfaces with an ideal amount of light on walls and vertical surfaces. This increases the perception of spaciousness
- Deep set diffusing lens shields direct view of LEDs and provides greater visual cut-off

### ELECTRICAL SYSTEM

- Integral, high-efficiency driver and power supply
- **Power Factor:** > 0.9
- **Input Voltage:** 120V, 60Hz
- **Dimming:** Dimmable to 5% with certain incandescent dimmers\*

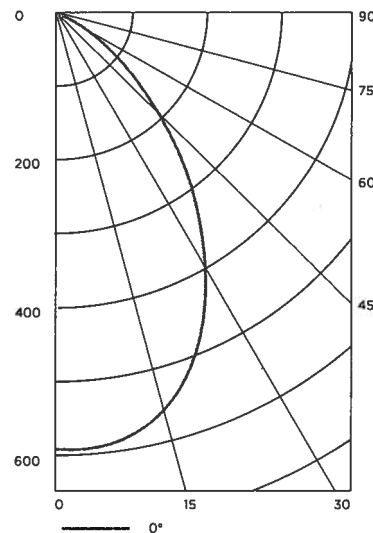
### REGULATORY & VOLUNTARY QUALIFICATIONS

- ENERGY STAR® qualified
- cULus Listed
- Exceeds California Title-24 high efficacy luminaire requirements
- Suitable for wet locations

\* Reference [www.cree.com/lighting](http://www.cree.com/lighting) for recommended dimmers

## Photometry

### LR6-10L



Intensity (Candlepower) Summary	
Angle	Mean CP
0°	597
5°	593
15°	559
25°	463
35°	329
45°	207
55°	120
65°	61
75°	32
85°	7
90°	0

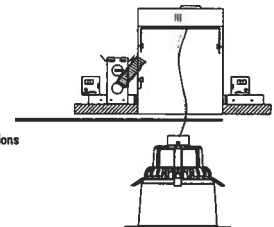
Zonal Lumen Summary			
Zone	Lumens	% Lamp	% Fix
0-30	424	42.42%	42.42%
0-40	629	62.89%	62.89%
0-60	897	89.71%	89.71%
0-90	1000	100%	100%

Reference [www.cree.com/lighting](http://www.cree.com/lighting) for detailed photometric data

## Installation

- Designed to easily install in standard 6" housings from Cree and other manufacturers\*
- Quick install system utilizes a unique retention feature. Simply attach socket to LR6-10L. Move light to ready position and slide into housing

NOTE: Reference [www.cree.com/lighting](http://www.cree.com/lighting) for detailed installation instructions  
\*Reference [www.cree.com/lighting](http://www.cree.com/lighting) for a list of compatible housings



## Application Reference

Open Space					
Spacing	Lumens	Wattage	LPW	w/ft <sup>2</sup>	Average FC
4 x 4	1000	11	90	0.64	59
6 x 6				0.30	28
8 x 8				0.16	15
10 x 10				0.11	10

10' Ceiling, 80/50/20 Reflectances, 2.5 workplane, LLF: 1.0 Initial. Open Space: 50' x 40' x 10

Corridor					
Spacing	Lumens	Wattage	LPW	w/ft <sup>2</sup>	Average FC
4' on Center	1000	11	90	0.42	21
6' on Center				0.28	14
8' on Center				0.21	10
10' on Center				0.18	9

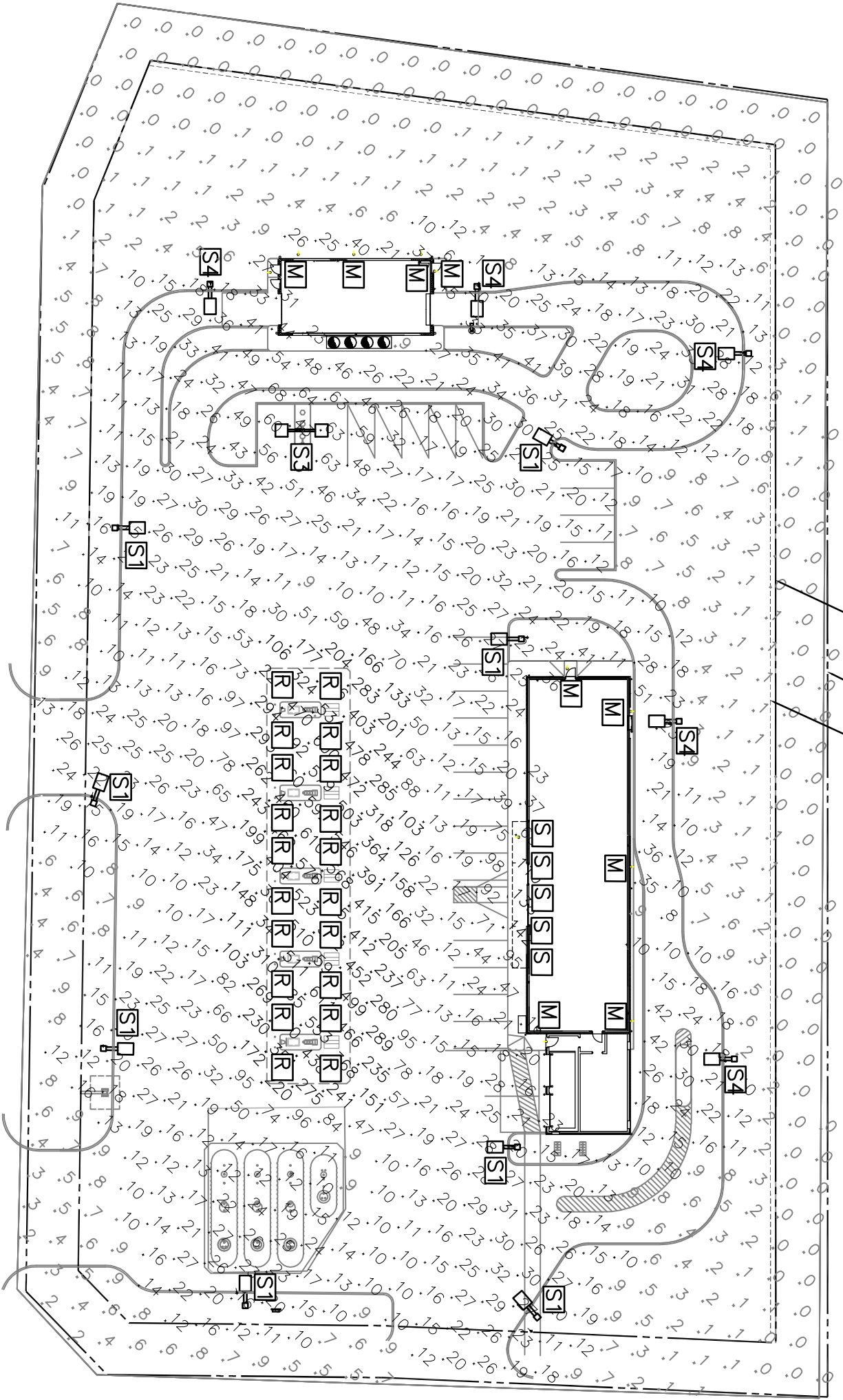
10' Ceiling, 80/20/50 Reflectances, Light levels on the ground, LLF: 1.0 Initial. Corridor: 6' Wide x 100' Long

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US: [www.cree.com/lighting](http://www.cree.com/lighting) T (800) 236-6800 F (262) 504-5415

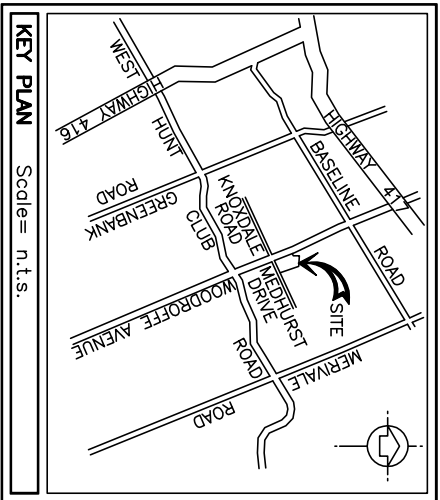
**CREE**   
Canada: [www.cree.com/canada](http://www.cree.com/canada) T (800) 473-1234 F (800) 890-7507

WOODROFFE AVENUE



MEDHURST DRIVE

PROPERTY LINE  
 CALCULATION GRID EXTENDS  
 5m BEYOND PROPERTY LINE  
 (CALCULATION VALUES ARE IN LUX)  
 1.8m HIGHBOARD—ON—BOARD WOOD  
 FENCE



LEGAL DESCRIPTION

LEGEND	
LIGHT #	DESCRIPTION
S1	S1' ASSEMBLY CONSISTS OF ONE CREE EDGE AREA LUMINAIRE WITH TYPE III MEDIUM OPTIC, INSTALLED ON ONE 6.1m POLE. CREE CAT. # ARE-EDG-3M-DA-08-D-UL-PB-525
S3	S3' ASSEMBLY CONSISTS OF TWO CREE EDGE AREA LUMINAIRES WITH TYPE III MEDIUM OPTIC, INSTALLED ON ONE 4.9m POLE. CREE CAT. # ARE-EDG-3M-DA-08-DA-UL-PB-525
S4	S4' ASSEMBLY CONSISTS OF ONE CREE EDGE AREA LUMINAIRE WITH TYPE III MEDIUM OPTIC W/ BACKLIGHT CONTROL, INSTALLED ON ONE 6.1m POLE. CREE CAT. # ARE-EDG-3MB-DA-08-D-UL-PB-525
R	RECESSED CANOPY FIXTURE CREE CAT. # CAN-228-P5-RM-09-D-UL-WH-525
S	RECESSED LED SOFFIT FIXTURE CREE CAT. # SFT-227-3M-RM-03-D-UL-WH-525
M	SIX-INCH DIAMETER LED DOWNLIGHT FIXTURE MOUNTED IN SOFFIT. CREE INC. CAT. # LR6-10L-40K-120V-LT6WH-DR-RC6

**Imperial Oil** **Impérial**

ASSET MANAGEMENT - ENGINEERING SERVICES  
 MARKETING DES CARBURANTS  
 GESTION DES ACTIFS - SERVICE D'INGÉNIERIE

90 WYNDHAM DRIVE  
 TORONTO, ONTARIO  
 M2C 1K3

Date	#	Revision	Issued For
15 02 10	0	ISSUED FOR PERMIT	

Project/Projet 1545 WOODROFFE AVE. & MEDHURST DR OTTAWA, ONTARIO	Title/Titre ELECTRICAL LIGHTING STUDY	Scale/Échelle (22"x34") 1:300	Scale/Échelle (11"x17") 1:600	Date 14 03 17	By/Par AMEC (176071)	P.M./G.P. D.G.	Rev.No./Rév. 00
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PBL No. PBL 0000302287-05P	SAP No. SAP 88001626-05P	Scheme Proposition: 00	Sheet/Feuille: E00
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