

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: SURE-LITES

Report Number: H27020

Luminaire Tested: **029-45**

Issue Date: 03/03/2020

**Test Information**

Test Method: LM-79-08  
Report Number: H27020  
Test Lab:  
Issue Date: 03/03/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: SURE-LITES  
Catalog Number: 029-45  
Description: SURE-LITES 4" DIA EMERGENCY HEAD SPECULAR REFLECTOR  
WITH GLASS LENS EFFICIENCY 86.5  
Light Source: T 2 1/4 12 WATTS 277 LUMENS Quartz Halogen (Low Voltage)  
12V BI-PIN HALOGEN  
ANSI# 783  
Ballast/Driver: -

**Summary**

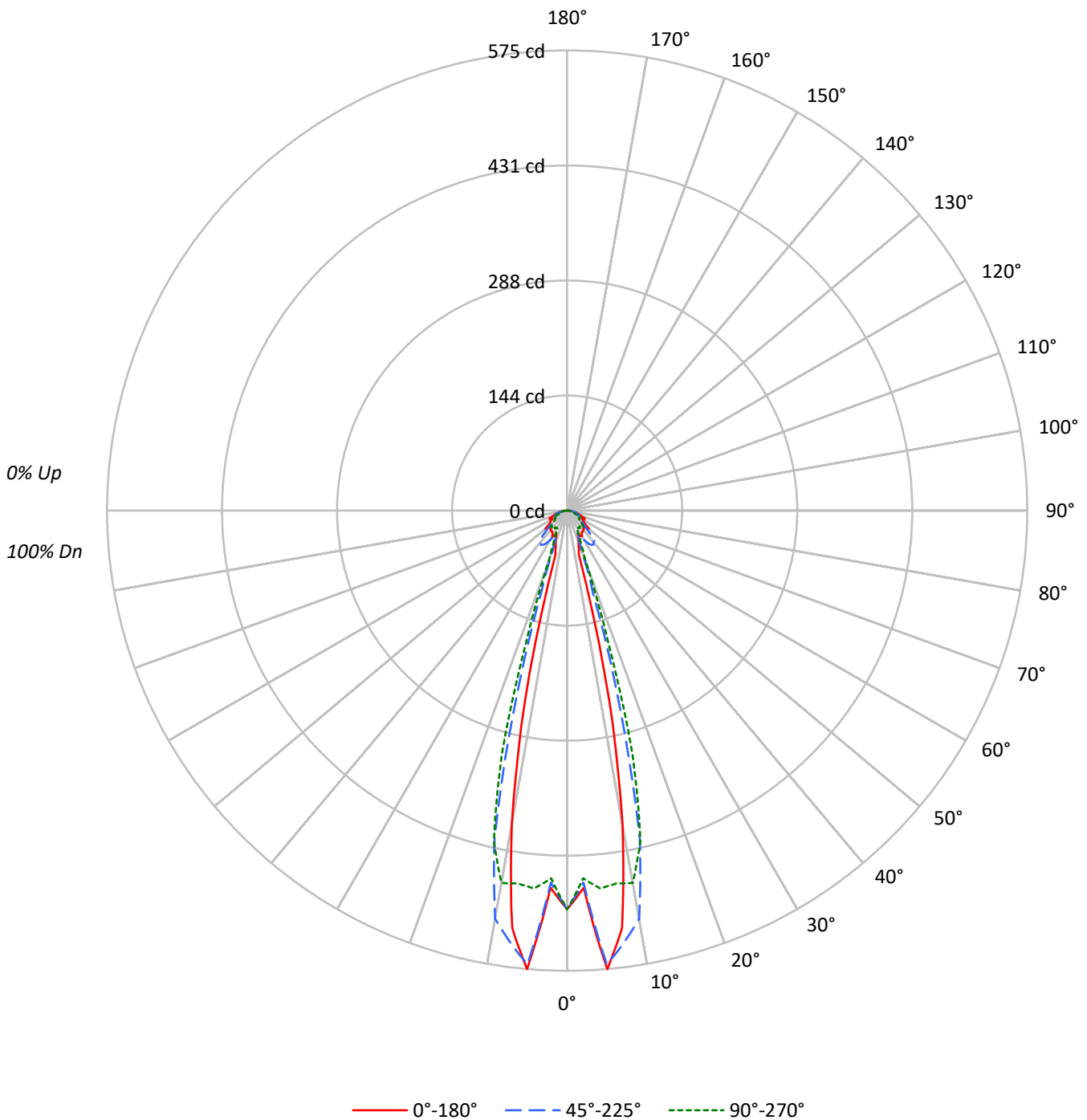
Lumens per Lamp: 277 (1 lamp)  
Luminaire Lumens: 240.3 lumens  
Efficiency: 86.8%  
Efficacy: 20.0 lumens/watt  
Spacing Criteria (0/90/45): 0.43 / 0.56 / 0.43  
Luminous Opening: (L: 0' x W: -0.33' x H: 0'  
CIE Type: Direct

Input Watts (W): 12  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20			
RC	80				70				50				30				10	0		
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50	30	10	0
RCR																				
0	103	103	103	103	101	101	101	101	96	96	96		92	92	92		88	88	88	87
1	96	93	90	87	94	91	88	86	87	85	83		84	82	80		81	79	78	76
2	90	84	79	75	88	82	78	74	80	76	73		77	74	71		74	72	70	68
3	84	77	71	67	82	76	70	66	73	69	65		71	67	64		69	66	63	61
4	79	71	65	60	77	70	64	60	68	63	59		66	62	59		64	61	58	56
5	75	66	60	56	73	65	60	55	64	59	55		62	58	54		61	57	54	52
6	71	62	56	52	70	61	56	51	60	55	51		59	54	51		57	53	50	49
7	68	59	53	48	66	58	52	48	57	52	48		56	51	48		55	51	47	46
8	65	55	50	46	64	55	50	46	54	49	45		53	49	45		52	48	45	44
9	62	53	47	44	61	52	47	43	52	47	43		51	46	43		50	46	43	42
10	60	51	45	42	59	50	45	42	49	45	41		49	44	41		48	44	41	40

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	Luminous shape not found,		
5°	reference photometric report, or contact		
10°	the photometric lab for calculations.		
15°			
20°			
25°			
30°			
35°			
40°			
45°			
50°			
55°			
60°			
65°			
70°			
75°			
80°			
85°			



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	49.2	20.5	17.7	0°	498	498	498	498	498	
10°-20°	62.6	26.0	22.6	5°	575	578	569	507	474	48
20°-30°	18.2	7.6	6.6	15°	57	100	254	335	316	35
30°-40°	24.3	10.1	8.8	25°	32	43	33	30	37	17
40°-50°	26.4	11.0	9.5	35°	32	47	52	30	27	21
50°-60°	23.0	9.6	8.3	45°	30	26	40	41	29	24
60°-70°	19.2	8.0	6.9	55°	26	26	18	34	19	24
70°-80°	12.7	5.3	4.6	65°	25	19	17	25	18	22
80°-90°	4.5	1.9	1.6	75°	14	14	13	11	9	14
90°-100°	0.1	0.1	0.1	85°	2	3	5	5	4	4
100°-110°	0.0	0.0	0.0	90°	0	1	2	1	1	0
110°-120°	0.0	0.0	0.0	95°	0	0	0	0	0	0
120°-130°	0.0	0.0	0.0	105°	0	0	0	0	0	0
130°-140°	0.0	0.0	0.0	115°	0	0	0	0	0	0
140°-150°	0.0	0.0	0.0	125°	0	0	0	0	0	0
150°-160°	0.0	0.0	0.0	135°	0	0	0	0	0	0
160°-170°	0.0	0.0	0.0	145°	0	0	0	0	0	0
170°-180°	0.0	0.0	0.0	155°	0	0	0	0	0	0
0°-30°	129.9	54.1	46.9	165°	0	0	0	0	0	0
0°-40°	154.2	64.2	55.7	175°	0	0	0	0	0	0
0°-60°	203.7	84.8	73.5	180°	0	0	0	0	0	0
0°-90°	240.2	99.9	86.7							
90°-120°	0.1	0.1	0.1							
90°-150°	0.1	0.1	0.1							
90°-180°	0.0	0.0	0.0							
0°-180°	240.3	100.0	86.8							



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	498.2	498.2	498.2	498.2	498.2
2.5°	471.9	470.0	465.2	462.4	460.0
5°	575.3	578.4	569.2	507.1	474.0
7.5°	526.2	529.5	544.5	549.8	470.0
10°	397.7	441.4	517.9	544.9	472.5
12.5°	244.5	326.0	419.2	472.7	422.9
15°	56.8	100.5	253.5	334.6	315.6
17.5°	47.8	50.7	106.8	155.9	162.5
20°	42.0	44.7	52.4	73.1	67.1
22.5°	35.7	45.1	36.3	42.0	44.5
25°	31.7	42.9	33.3	29.7	36.7
27.5°	36.3	48.2	36.2	29.7	25.6
30°	37.1	49.8	42.1	27.3	25.3
32.5°	34.6	47.5	48.3	28.8	25.0
35°	32.3	47.4	52.3	29.6	27.1
37.5°	32.5	42.0	53.8	31.7	25.2
40°	31.4	31.9	51.0	35.4	25.6
42.5°	30.9	28.0	50.9	37.2	27.5
45°	29.5	26.0	40.3	41.0	29.1
47.5°	28.2	24.9	31.6	44.6	25.2
50°	35.4	25.5	27.4	47.3	22.1
52.5°	29.2	26.9	21.5	43.1	19.6
55°	25.7	26.3	17.6	34.3	18.6
57.5°	25.0	23.2	18.7	27.2	17.3
60°	21.8	21.3	17.6	24.4	18.0
62.5°	21.5	19.7	17.2	24.2	18.9
65°	24.7	19.0	17.0	24.9	17.5
67.5°	21.7	19.6	15.3	22.6	11.4
70°	16.5	18.6	14.9	17.0	9.5
72.5°	15.3	15.3	14.1	12.4	9.5
75°	14.1	14.2	12.6	10.8	8.8
77.5°	11.6	11.3	10.3	10.6	7.7
80°	8.6	8.2	8.8	8.2	5.1
82.5°	6.1	5.9	6.0	6.3	4.0
85°	2.1	3.0	4.9	5.0	3.8
87.5°	1.1	1.4	3.1	2.7	2.6
90°	0.5	0.6	1.9	0.9	0.9
92.5°	0.0	0.0	0.0	0.0	0.0
95°	0.0	0.0	0.0	0.0	0.0
97.5°	0.0	0.0	0.0	0.0	0.0
100°	0.0	0.0	0.0	0.0	0.0
102.5°	0.0	0.0	0.0	0.0	0.0
105°	0.0	0.0	0.0	0.0	0.0
107.5°	0.0	0.0	0.0	0.0	0.0
110°	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	0.0	0.0	0.0	0.0	0.0
115°	0.0	0.0	0.0	0.0	0.0
117.5°	0.0	0.0	0.0	0.0	0.0
120°	0.0	0.0	0.0	0.0	0.0
122.5°	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0
127.5°	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0
132.5°	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0
137.5°	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)