

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: P21611

Luminaire Tested: **AEL231**

Issue Date: 03/03/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P21611  
Test Lab: INNOVATION CENTER P2  
Issue Date: 03/03/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: SURE-LITES  
Catalog Number: AEL231  
Description: SURE-LITES LED ARCHITECTURAL EMERGENCY LIGHT WITH SPECULAR REFLECTOR, CLEAR PRISMATIC LENS AND HIGH LIGHT OUTPUT.  
---ABSOLUTE PHOTOMETRY IS BASED ON CALIBRATION FACTORS CREATED USING A 500 WATT, NIST TRACEABLE, AND OMNI-DIRECTIONAL LAB LUMEN STANDARD IN THE GONIOPHOTOMETER WITH TEST DISTANCE OF 28.75 FEET---  
Light Source: (10) 3000K SMT LED  
3000K LED  
Ballast/Driver: (1) DIGITAL ELECTRONIC DRIVER  
051-1524

**Summary**

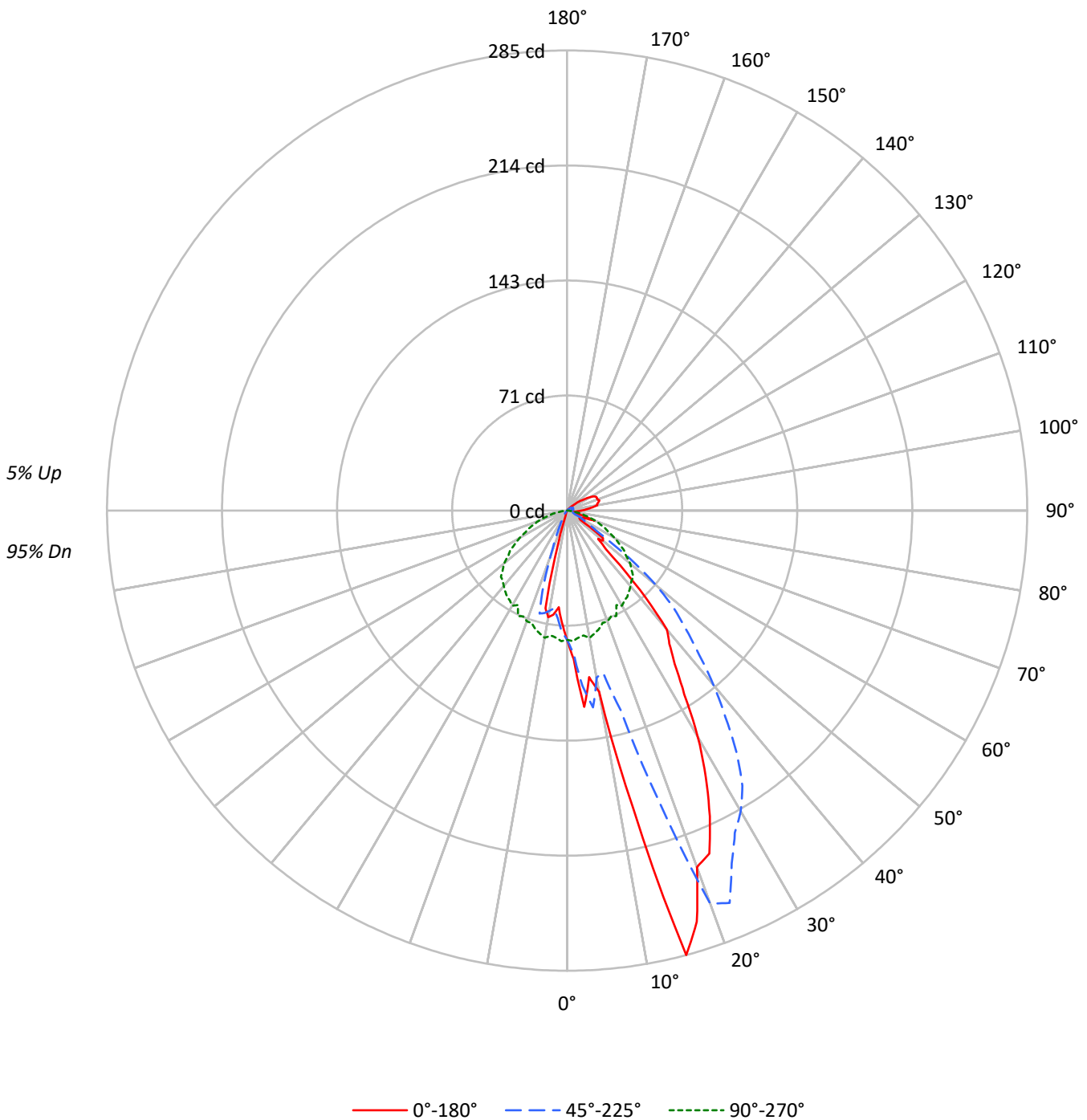
Lumens per Lamp: N/A  
Luminaire Lumens: 229.1 lumens  
Efficiency: N/A  
Efficacy: 46.8 lumens/watt  
Spacing Criteria (0/90/45): 1.28 / 1.26 / 1.4  
Luminous Opening: Rectangular (W 0.67' x L: 0.44' x H: 0')  
CIE Type: Direct

Input Watts (W): 4.9  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 0.0797  
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	118	118	118	118	114	114	114	114	108	108	108	102	102	102	97	97	97	95
1	110	106	103	100	107	103	100	97	98	96	93	93	92	90	89	88	86	84
2	102	95	90	85	99	93	88	84	89	84	81	85	81	78	81	78	76	74
3	94	86	79	73	92	84	77	72	80	75	71	77	72	69	74	70	67	65
4	87	77	70	64	85	76	69	63	73	67	62	70	65	61	67	63	59	57
5	81	70	62	57	79	69	61	56	66	60	55	64	58	54	61	57	53	51
6	75	64	56	50	73	63	55	50	60	54	49	58	53	48	56	51	47	46
7	70	58	50	45	68	57	50	45	55	49	44	54	48	43	52	47	43	41
8	66	54	46	41	64	53	45	40	51	44	40	49	44	39	48	43	39	37
9	62	49	42	37	60	49	41	37	47	41	36	46	40	36	44	39	35	34
10	58	46	38	34	56	45	38	33	44	37	33	42	37	33	41	36	32	31

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

	0°	90°	180°
0°	2952	2952	2952
5°	4520	2927	2223
10°	4272	2998	2511
15°	10889	2904	879
20°	9229	2867	79
25°	8510	2932	41
30°	6903	2898	43
35°	5226	2928	0
40°	4625	2939	0
45°	1775	3027	0
50°	1665	2928	0
55°	643	2767	0
60°	664	2510	0
65°	961	2270	0
70°	1942	2050	0
75°	713	1568	0
80°	850	1275	0
85°	2541	847	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	8.2	3.6
10°-20°	30.1	13.1
20°-30°	47.2	20.6
30°-40°	51.5	22.5
40°-50°	40.5	17.7
50°-60°	23.1	10.1
60°-70°	10.6	4.6
70°-80°	4.0	1.7
80°-90°	1.7	0.7
90°-100°	2.6	1.1
100°-110°	3.6	1.6
110°-120°	3.6	1.6
120°-130°	2.0	0.9
130°-140°	0.5	0.2
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	85.5	37.3
0°-40°	137.0	59.8
0°-60°	200.6	87.5
0°-90°	216.8	94.6
90°-120°	9.7	4.3
90°-150°	12.3	5.4
90°-180°	12.0	5.2
0°-180°	229.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	80	80	80	80	80	
5°	122	109	79	67	60	10
15°	285	128	76	66	23	67
25°	209	241	72	12	1	94
35°	116	183	65	3	0	75
45°	34	104	58	1	0	36
55°	10	24	43	0	0	15
65°	11	5	26	0	0	12
75°	5	3	11	0	0	7
85°	6	1	2	0	0	4
90°	9	2	1	0	0	5
95°	13	3	0	0	0	12
105°	20	3	0	0	0	21
115°	20	4	0	0	0	19
125°	11	3	0	0	0	10
135°	3	1	0	0	0	2
145°	0	0	0	0	0	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	80	80	80	80	80	80	80	80	80
2.5°	92	91	88	86	81	79	75	72	70
5°	122	126	109	89	79	73	67	63	60
7.5°	104	111	123	99	78	67	61	65	65
10°	114	104	105	118	80	65	63	67	67
12.5°	189	145	103	121	78	63	65	61	62
15°	285	246	128	119	76	63	66	38	23
17.5°	267	275	188	108	73	62	49	12	3
20°	235	241	259	105	73	61	30	5	2
22.5°	230	227	263	102	71	58	18	3	2
25°	209	221	241	116	72	52	12	2	1
27.5°	186	204	225	136	66	45	8	1	1
30°	162	188	215	159	68	37	5	1	1
32.5°	135	164	202	181	66	31	4	1	0
35°	116	137	183	183	65	27	3	1	0
37.5°	104	122	161	187	63	23	2	0	0
40°	96	110	141	176	61	20	1	0	0
42.5°	67	94	121	164	59	18	1	0	0
45°	34	61	104	158	58	15	1	0	0
47.5°	26	29	90	152	54	12	0	0	0
50°	29	24	72	137	51	9	0	0	0
52.5°	28	25	49	117	46	8	0	0	0
55°	10	22	24	103	43	5	0	0	0
57.5°	9	8	14	85	38	4	0	0	0
60°	9	7	12	68	34	3	0	0	0
62.5°	10	8	9	54	29	1	0	0	0
65°	11	8	5	38	26	1	0	0	0
67.5°	13	8	5	21	22	1	0	0	0
70°	18	11	4	11	19	1	0	0	0
72.5°	8	11	3	6	15	0	0	0	0
75°	5	5	3	4	11	0	0	0	0
77.5°	4	4	3	3	9	0	0	0	0
80°	4	4	2	2	6	0	0	0	0
82.5°	5	4	2	1	3	0	0	0	0
85°	6	4	1	1	2	0	0	0	0
87.5°	7	4	1	1	1	0	0	0	0
90°	9	5	2	1	1	0	0	0	0
92.5°	11	6	2	1	0	0	0	0	0
95°	13	8	3	1	0	0	0	0	0
97.5°	16	10	4	1	0	0	0	0	0
100°	19	11	4	1	0	0	0	0	0
102.5°	19	13	3	0	0	0	0	0	0
105°	20	14	3	1	0	0	0	0	0
107.5°	21	14	4	0	0	0	0	0	0
110°	20	15	4	0	0	0	0	0	0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	20	16	4	0	0	0	0	0	0
115°	20	16	4	0	0	0	0	0	0
117.5°	19	15	3	0	0	0	0	0	0
120°	17	14	3	0	0	0	0	0	0
122.5°	14	12	3	0	0	0	0	0	0
125°	11	9	3	0	0	0	0	0	0
127.5°	9	7	2	0	0	0	0	0	0
130°	6	5	2	0	0	0	0	0	0
132.5°	4	4	1	0	0	0	0	0	0
135°	3	2	1	0	0	0	0	0	0
137.5°	2	1	1	0	0	0	0	0	0
140°	1	1	0	0	0	0	0	0	0
142.5°	1	0	0	0	0	0	0	0	0
145°	0	0	0	0	0	0	0	0	0
147.5°	0	0	0	0	0	0	0	0	0
150°	0	0	0	0	0	0	0	0	0
152.5°	0	0	0	0	0	0	0	0	0
155°	0	0	0	0	0	0	0	0	0
157.5°	0	0	0	0	0	0	0	0	0
160°	0	0	0	0	0	0	0	0	0
162.5°	0	0	0	0	0	0	0	0	0
165°	0	0	0	0	0	0	0	0	0
167.5°	0	0	0	0	0	0	0	0	0
170°	0	0	0	0	0	0	0	0	0
172.5°	0	0	0	0	0	0	0	0	0
175°	0	0	0	0	0	0	0	0	0
177.5°	0	0	0	0	0	0	0	0	0
180°	0	0	0	0	0	0	0	0	0

(END OF REPORT)