

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: FAIL-SAFE

Report Number: 17919-PRO

Luminaire Tested: **FLL-2L-56**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: 17919-PRO
Test Lab: CROUSE-HINDS, INC.
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: FLL-2L-56
Description: CAST ALUMINUM HEATSINK HOUSING, FORMED WHITE ENAMEL
ALUMINUM REFLECTOR, CLEAR PLASTIC ENCLOSURE.
Light Source: FOUR WHITE LED CLUSTERS

Ballast/Driver: LED POWER SUPPLY: ONE HIGH PERFECTION TECH LP1025-12-C2080

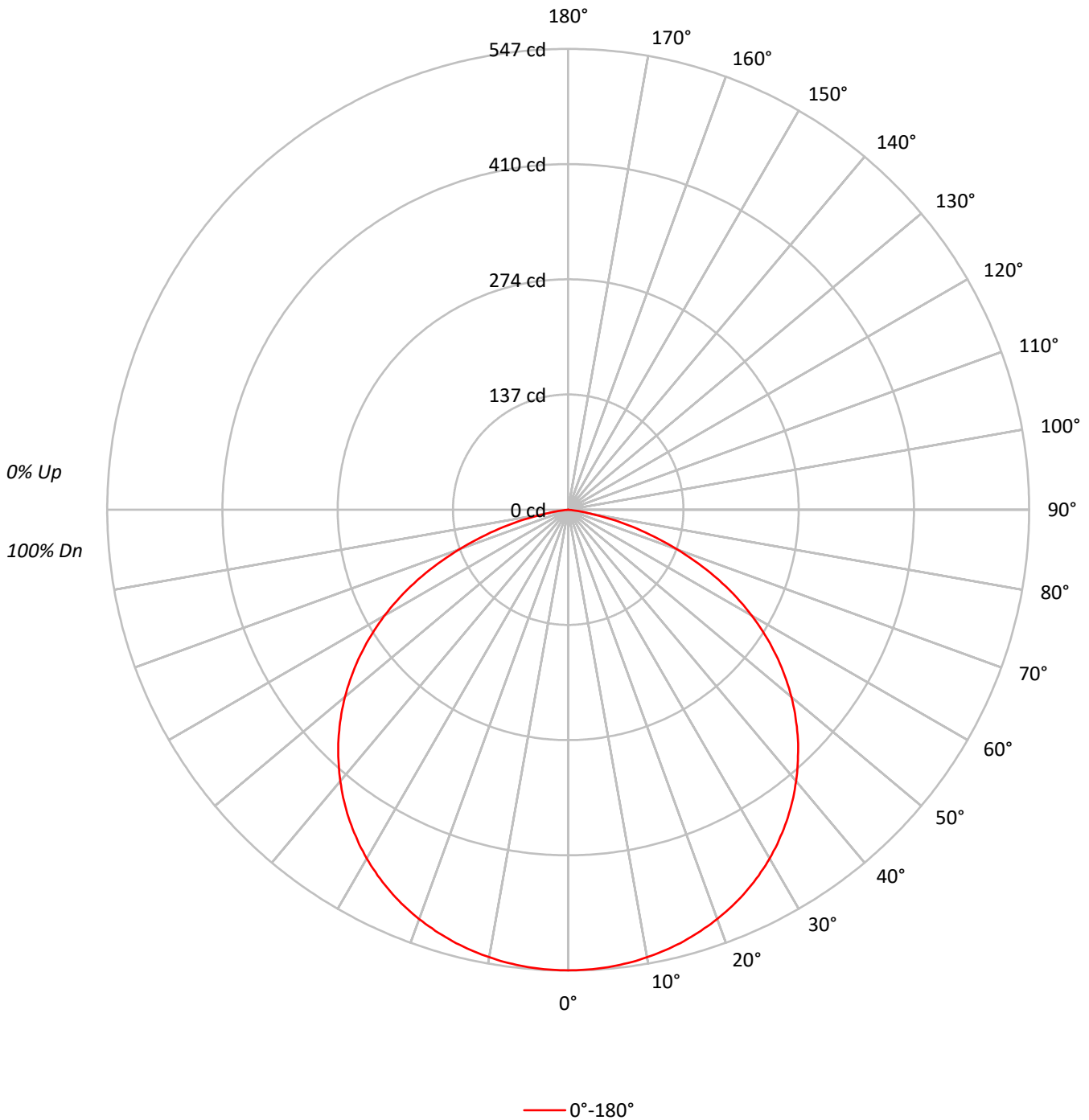
Summary

Lumens per Lamp: 1564 (1 lamp)
Luminaire Lumens: 1564.5 lumens
Efficiency: 100.0%
Efficacy: 69.5 lumens/watt
Spacing Criteria (0/90/45): 1.3 / 1.3 / 1.41
Luminous Opening: Circular (Dia: 0.57' x H: 0')
CIE Type: Direct

Input Watts (W): 22.5
Input Voltage (V): NR
Input Current (Ain): 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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	105	101	97	107	103	99	96	99	96	93	95	92	90	91	89	87	85
2	100	92	85	80	97	90	84	79	86	81	77	83	79	75	80	77	74	71
3	91	81	73	66	89	79	72	66	76	70	65	73	68	63	71	66	62	60
4	83	71	63	56	81	70	62	56	68	61	55	65	59	54	63	58	54	51
5	76	64	55	48	74	63	54	48	61	53	47	59	52	47	57	51	46	44
6	71	57	48	42	69	56	48	42	55	47	41	53	46	41	51	45	41	39
7	65	52	43	37	64	51	43	37	50	42	37	48	41	36	47	41	36	34
8	61	47	39	33	59	47	39	33	45	38	33	44	37	32	43	37	32	30
9	57	43	35	30	55	43	35	30	42	34	29	41	34	29	40	33	29	27
10	53	40	32	27	52	39	32	27	38	31	27	38	31	27	37	31	26	25

AVERAGE LUMINANCE (cd/sqm):

	0°
0°	22824
5°	22836
10°	22863
15°	22912
20°	22965
25°	23019
30°	23044
35°	23012
40°	22919
45°	22751
50°	22449
55°	21912
60°	21021
65°	19448
70°	16732
75°	12838
80°	6394
85°	287



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp	0°	Flux	
0°-10°	51.8	3.3	3.3	0°	547	
10°-20°	149.7	9.6	9.6	5°	545	52
20°-30°	230.4	14.7	14.7	15°	530	150
30°-40°	282.5	18.1	18.1	25°	500	230
40°-50°	297.0	19.0	19.0	35°	452	282
50°-60°	268.6	17.2	17.2	45°	385	297
60°-70°	193.8	12.4	12.4	55°	301	269
70°-80°	84.7	5.4	5.4	65°	197	194
80°-90°	5.9	0.4	0.4	75°	80	85
90°-100°	0.0	0.0	0.0	85°	1	6
100°-110°	0.0	0.0	0.0	90°	0	0
110°-120°	0.0	0.0	0.0	95°	0	0
120°-130°	0.0	0.0	0.0	105°	0	0
130°-140°	0.0	0.0	0.0	115°	0	0
140°-150°	0.0	0.0	0.0	125°	0	0
150°-160°	0.0	0.0	0.0	135°	0	0
160°-170°	0.0	0.0	0.0	145°	0	0
170°-180°	0.0	0.0	0.0	155°	0	0
0°-30°	432.0	27.6	27.6	165°	0	0
0°-40°	714.5	45.7	45.7	175°	0	0
0°-60°	1280.1	81.8	81.8	180°	0	0
0°-90°	1564.5	100.0	100.0			
90°-120°	0.0	0.0	0.0			
90°-150°	0.0	0.0	0.0			
90°-180°	0.0	0.0	0.0			
0°-180°	1564.5	100.0	100.0			



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CANDELA DISTRIBUTION (FULL):

	0°
0°	546.8
0.5°	546.7
1°	546.8
1.5°	546.6
2°	546.5
2.5°	546.2
3°	546.2
3.5°	545.9
4°	545.7
4.5°	545.4
5°	545.0
5.5°	544.5
6°	544.1
6.5°	543.8
7°	543.2
7.5°	542.7
8°	542.2
8.5°	541.5
9°	540.9
9.5°	540.2
10°	539.4
10.5°	538.5
11°	537.8
11.5°	537.1
12°	536.2
12.5°	535.3
13°	534.4
13.5°	533.3
14°	532.4
14.5°	531.4
15°	530.2
15.5°	529.0
16°	527.6
16.5°	526.6
17°	525.4
17.5°	524.1
18°	522.6
18.5°	521.3
19°	519.9
19.5°	518.5
20°	517.0
20.5°	515.4
21°	513.9
21.5°	512.4
22°	510.7



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CANDELA DISTRIBUTION (continued):

	0°
22.5°	509.1
23°	507.3
23.5°	505.4
24°	503.7
24.5°	501.7
25°	499.8
25.5°	497.9
26°	495.8
26.5°	493.7
27°	491.6
27.5°	489.6
28°	487.2
28.5°	485.1
29°	482.8
29.5°	480.4
30°	478.1
30.5°	475.6
31°	473.0
31.5°	470.6
32°	468.1
32.5°	465.3
33°	462.6
33.5°	460.0
34°	457.2
34.5°	454.2
35°	451.6
35.5°	448.7
36°	445.8
36.5°	442.8
37°	439.7
37.5°	436.7
38°	433.6
38.5°	430.4
39°	427.1
39.5°	423.9
40°	420.6
40.5°	417.3
41°	413.9
41.5°	410.5
42°	406.9
42.5°	403.6
43°	399.9
43.5°	396.4
44°	392.8
44.5°	389.2



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CANDELA DISTRIBUTION (continued):

	0°
45°	385.4
45.5°	381.6
46°	377.7
46.5°	373.9
47°	370.0
47.5°	366.0
48°	362.1
48.5°	358.1
49°	353.9
49.5°	349.9
50°	345.7
50.5°	341.4
51°	337.2
51.5°	332.8
52°	328.4
52.5°	324.0
53°	319.5
53.5°	315.1
54°	310.5
54.5°	305.8
55°	301.1
55.5°	296.4
56°	291.6
56.5°	286.8
57°	281.9
57.5°	277.0
58°	272.1
58.5°	267.0
59°	262.1
59.5°	256.9
60°	251.8
60.5°	246.6
61°	241.3
61.5°	236.0
62°	230.7
62.5°	225.1
63°	219.5
63.5°	214.0
64°	208.4
64.5°	202.6
65°	196.9
65.5°	190.9
66°	185.1
66.5°	179.3
67°	173.3



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CANDELA DISTRIBUTION (continued):

	0°
67.5°	167.2
68°	161.3
68.5°	155.2
69°	149.1
69.5°	143.4
70°	137.1
70.5°	131.1
71°	125.2
71.5°	119.3
72°	113.5
72.5°	107.7
73°	101.9
73.5°	96.2
74°	90.6
74.5°	85.1
75°	79.6
75.5°	74.4
76°	69.0
76.5°	63.8
77°	58.8
77.5°	53.5
78°	47.9
78.5°	42.4
79°	36.6
79.5°	31.3
80°	26.6
80.5°	22.4
81°	18.6
81.5°	14.9
82°	12.0
82.5°	9.7
83°	7.1
83.5°	5.1
84°	3.5
84.5°	1.8
85°	0.6
85.5°	0.0
86°	0.0
86.5°	0.0
87°	0.0
87.5°	0.0
88°	0.0
88.5°	0.0
89°	0.0
89.5°	0.0



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CANDELA DISTRIBUTION (continued):

	0°
90°	0.0
90.5°	0.0
91°	0.0
91.5°	0.0
92°	0.0
92.5°	0.0
93°	0.0
93.5°	0.0
94°	0.0
94.5°	0.0
95°	0.0
95.5°	0.0
96°	0.0
96.5°	0.0
97°	0.0
97.5°	0.0
98°	0.0
98.5°	0.0
99°	0.0
99.5°	0.0
100°	0.0
100.5°	0.0
101°	0.0
101.5°	0.0
102°	0.0
102.5°	0.0
103°	0.0
103.5°	0.0
104°	0.0
104.5°	0.0
105°	0.0
105.5°	0.0
106°	0.0
106.5°	0.0
107°	0.0
107.5°	0.0
108°	0.0
108.5°	0.0
109°	0.0
109.5°	0.0
110°	0.0
110.5°	0.0
111°	0.0
111.5°	0.0
112°	0.0



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CANDELA DISTRIBUTION (continued):

	0°
112.5°	0.0
113°	0.0
113.5°	0.0
114°	0.0
114.5°	0.0
115°	0.0
115.5°	0.0
116°	0.0
116.5°	0.0
117°	0.0
117.5°	0.0
118°	0.0
118.5°	0.0
119°	0.0
119.5°	0.0
120°	0.0
120.5°	0.0
121°	0.0
121.5°	0.0
122°	0.0
122.5°	0.0
123°	0.0
123.5°	0.0
124°	0.0
124.5°	0.0
125°	0.0
125.5°	0.0
126°	0.0
126.5°	0.0
127°	0.0
127.5°	0.0
128°	0.0
128.5°	0.0
129°	0.0
129.5°	0.0
130°	0.0
130.5°	0.0
131°	0.0
131.5°	0.0
132°	0.0
132.5°	0.0
133°	0.0
133.5°	0.0
134°	0.0
134.5°	0.0



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CANDELA DISTRIBUTION (continued):

	0°
135°	0.0
135.5°	0.0
136°	0.0
136.5°	0.0
137°	0.0
137.5°	0.0
138°	0.0
138.5°	0.0
139°	0.0
139.5°	0.0
140°	0.0
140.5°	0.0
141°	0.0
141.5°	0.0
142°	0.0
142.5°	0.0
143°	0.0
143.5°	0.0
144°	0.0
144.5°	0.0
145°	0.0
145.5°	0.0
146°	0.0
146.5°	0.0
147°	0.0
147.5°	0.0
148°	0.0
148.5°	0.0
149°	0.0
149.5°	0.0
150°	0.0
150.5°	0.0
151°	0.0
151.5°	0.0
152°	0.0
152.5°	0.0
153°	0.0
153.5°	0.0
154°	0.0
154.5°	0.0
155°	0.0
155.5°	0.0
156°	0.0
156.5°	0.0
157°	0.0



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CANDELA DISTRIBUTION (continued):

	0°
157.5°	0.0
158°	0.0
158.5°	0.0
159°	0.0
159.5°	0.0
160°	0.0
160.5°	0.0
161°	0.0
161.5°	0.0
162°	0.0
162.5°	0.0
163°	0.0
163.5°	0.0
164°	0.0
164.5°	0.0
165°	0.0
165.5°	0.0
166°	0.0
166.5°	0.0
167°	0.0
167.5°	0.0
168°	0.0
168.5°	0.0
169°	0.0
169.5°	0.0
170°	0.0
170.5°	0.0
171°	0.0
171.5°	0.0
172°	0.0
172.5°	0.0
173°	0.0
173.5°	0.0
174°	0.0
174.5°	0.0
175°	0.0
175.5°	0.0
176°	0.0
176.5°	0.0
177°	0.0
177.5°	0.0
178°	0.0
178.5°	0.0
179°	0.0
179.5°	0.0



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CANDELA DISTRIBUTION (continued):

180° | $\frac{0^\circ}{0.0}$

(END OF REPORT)