

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: 01257

Luminaire Tested: **TTBC9**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: 01257  
Test Lab:  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: TTBC9  
Description: FAIL-SAFE CAST ALUMINUM HOUSING  
FORMED WHITE ENAMEL REFLECTOR  
CLEAR VERTICAL PLASTIC ENCLOSURE  
Light Source: 9 WATT F9TT/35K RATED 900 LUMENS  
Ballast/Driver: -

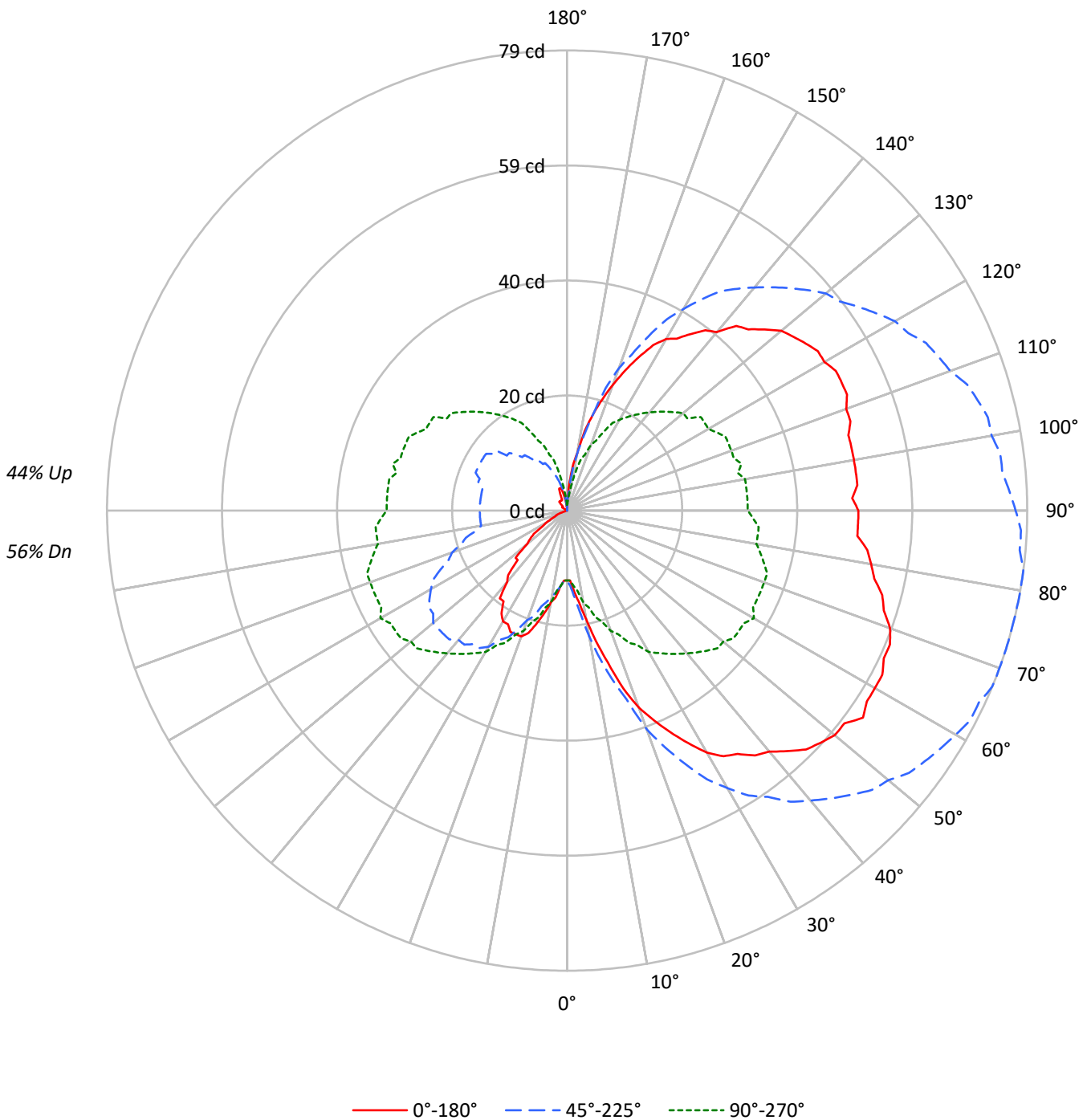
**Summary**

Lumens per Lamp: 600 (1 lamp)  
Luminaire Lumens: 440.2 lumens  
Efficiency: 73.4%  
Efficacy: 31.4 lumens/watt  
Spacing Criteria (0/90/45): 2.95 / 3.03 / 3.39  
Luminous Opening: Rectangular w/ Sides (W: 0.44' x L: 0.35' x H: 0.77')  
CIE Type: General Diffuse

Input Watts (W): 14  
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	80	80	80	80	74	74	74	74	64	64	64	54	54	54	45	45	45	41
1	69	64	60	56	64	60	56	52	50	48	45	42	40	38	34	33	31	27
2	61	54	48	43	56	50	45	40	42	38	34	35	32	29	28	26	23	20
3	55	46	40	34	51	43	37	32	36	31	27	30	26	23	24	21	18	15
4	50	40	33	28	46	37	31	26	31	26	22	26	22	18	20	17	15	12
5	45	35	28	23	42	33	26	21	27	22	18	23	18	15	18	15	12	10
6	42	31	24	19	38	29	23	18	24	19	15	20	16	13	16	13	10	8
7	38	28	21	17	35	26	20	15	22	17	13	18	14	11	14	11	9	7
8	35	25	19	14	32	23	17	13	20	15	11	16	12	9	13	10	7	6
9	33	23	17	12	30	21	15	12	18	13	10	15	11	8	12	9	7	5
10	31	21	15	11	28	19	14	10	16	12	9	14	10	7	11	8	6	4

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

	0°	90°	180°
0°	839	839	839
5°	824	791	765
10°	972	868	818
15°	1229	936	910
20°	1487	1000	950
25°	1599	1062	876
30°	1706	1124	782
35°	1713	1150	638
40°	1731	1183	513
45°	1792	1222	371
50°	1801	1233	270
55°	1824	1254	206
60°	1773	1283	116
65°	1735	1253	58
70°	1712	1267	29
75°	1642	1255	0
80°	1583	1216	0
85°	1534	1260	0



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	45°	90°	135°	180°	Flux
0°-10°	1.4	0.3	0.2	0°	12	12	12	12	12	
10°-20°	6.6	1.5	1.1	5°	14	15	13	13	13	1
20°-30°	15.0	3.4	2.5	15°	27	30	19	17	20	8
30°-40°	24.4	5.5	4.1	25°	42	48	25	24	23	20
40°-50°	32.8	7.4	5.5	35°	51	60	30	28	19	32
50°-60°	39.2	8.9	6.5	45°	58	69	34	30	12	45
60°-70°	42.7	9.7	7.1	55°	62	75	36	29	7	55
70°-80°	43.2	9.8	7.2	65°	60	78	36	24	2	60
80°-90°	42.2	9.6	7.0	75°	56	79	35	18	0	59
90°-100°	40.7	9.3	6.8	85°	50	78	33	15	0	42
100°-110°	38.6	8.8	6.4	90°	50	77	31	15	0	27
110°-120°	34.9	7.9	5.8	95°	50	75	31	15	0	41
120°-130°	29.3	6.7	4.9	105°	50	73	31	15	0	53
130°-140°	22.3	5.1	3.7	115°	52	68	30	17	0	51
140°-150°	15.2	3.4	2.5	125°	50	61	28	17	1	45
150°-160°	8.4	1.9	1.4	135°	44	54	24	14	1	34
160°-170°	3.0	0.7	0.5	145°	37	46	20	11	2	23
170°-180°	0.3	0.1	0.1	155°	29	33	15	9	2	14
0°-30°	23.0	5.2	3.8	165°	17	17	9	5	4	5
0°-40°	47.4	10.8	7.9	175°	5	3	2	1	0	1
0°-60°	119.4	27.1	19.9	180°	1	1	1	1	1	
0°-90°	247.5	56.2	41.3							
90°-120°	114.2	25.9	19.0							
90°-150°	181.0	41.1	30.2							
90°-180°	193.0	43.8	32.2							
0°-180°	440.2	100.0	73.4							



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	12	12	12	12	12	12	12	12	12
2.5°	12	13	13	13	12	12	12	12	12
5°	14	15	15	14	13	12	13	13	13
7.5°	16	18	18	16	14	14	14	14	15
10°	19	22	22	19	16	15	15	15	16
12.5°	23	26	26	21	17	16	16	17	18
15°	27	31	30	24	19	18	17	18	20
17.5°	32	35	34	28	20	19	19	20	22
20°	36	38	40	31	22	20	20	21	23
22.5°	39	43	44	34	23	22	22	23	23
25°	42	47	48	37	25	23	24	23	23
27.5°	45	50	52	40	26	25	25	23	22
30°	48	53	55	43	28	26	27	23	22
32.5°	50	55	58	45	29	28	28	22	21
35°	51	57	60	48	30	30	28	22	19
37.5°	53	59	63	50	31	32	29	21	19
40°	54	61	65	52	32	33	29	19	16
42.5°	56	62	67	53	33	35	30	18	15
45°	58	64	69	55	34	36	30	16	12
47.5°	59	64	71	56	35	38	30	15	12
50°	60	65	72	57	35	39	30	13	9
52.5°	60	66	74	59	36	40	29	11	8
55°	62	66	75	60	36	41	29	10	7
57.5°	61	67	76	60	36	41	28	9	5
60°	61	67	77	61	37	41	27	7	4
62.5°	61	67	78	62	36	41	26	6	3
65°	60	67	78	62	36	41	24	4	2
67.5°	60	67	79	62	36	41	22	3	2
70°	59	67	79	63	36	40	21	3	1
72.5°	57	66	79	62	36	39	19	2	0
75°	56	65	79	62	35	38	18	2	0
77.5°	54	65	79	62	34	38	16	1	0
80°	53	64	79	61	33	36	15	1	0
82.5°	52	64	79	60	33	35	15	1	0
85°	50	64	78	59	33	34	15	1	0
87.5°	50	63	78	59	32	34	15	1	0
90°	50	63	77	58	31	34	15	1	0
92.5°	49	62	76	58	31	33	15	1	0
95°	50	61	75	57	31	33	15	1	0
97.5°	50	60	75	57	31	33	15	1	0
100°	50	60	74	56	31	33	15	1	0
102.5°	50	60	74	56	30	33	15	1	0
105°	50	59	73	55	31	32	15	1	0
107.5°	51	59	72	55	30	33	16	1	0
110°	51	58	70	54	30	33	16	1	0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	52	57	69	53	30	32	17	1	0
115°	52	57	68	52	30	32	17	1	0
117.5°	52	56	66	50	29	31	17	1	0
120°	51	55	65	49	28	31	17	1	0
122.5°	51	55	63	48	28	29	17	1	1
125°	50	53	61	47	28	29	17	2	1
127.5°	49	53	59	45	26	28	16	2	1
130°	48	52	58	45	26	27	16	2	1
132.5°	46	50	56	43	25	25	14	2	1
135°	44	48	54	41	24	23	14	2	1
137.5°	43	47	52	40	23	22	13	2	2
140°	40	45	50	38	22	21	12	3	2
142.5°	39	44	48	36	21	19	12	3	2
145°	37	42	46	34	20	17	11	3	2
147.5°	35	40	43	32	19	16	10	3	2
150°	34	37	40	29	18	15	10	4	2
152.5°	32	34	37	27	17	13	9	4	2
155°	29	31	33	24	15	12	9	4	2
157.5°	26	28	29	21	13	10	8	5	3
160°	23	24	26	19	12	9	7	5	4
162.5°	20	21	22	16	10	8	6	4	4
165°	17	17	17	13	9	6	5	4	4
167.5°	14	13	13	10	7	5	4	3	3
170°	10	10	10	7	5	4	3	2	2
172.5°	8	7	7	5	3	2	2	1	1
175°	5	4	3	3	2	1	1	1	0
177.5°	2	2	2	2	1	1	0	0	0
180°	1	1	1	1	1	1	1	1	1

(END OF REPORT)