

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: P546777

Luminaire Tested: **FMR-24-4-LD4-2LO-35-UNV-80-86-EDD**

Issue Date: 6/15/2021

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.



**Test Information**

Test Method: LM-79-08  
Report Number: P546777  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 6/15/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: FMR-24-4-LD4-2LO-35-UNV-80-86-EDD  
Description: 2X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

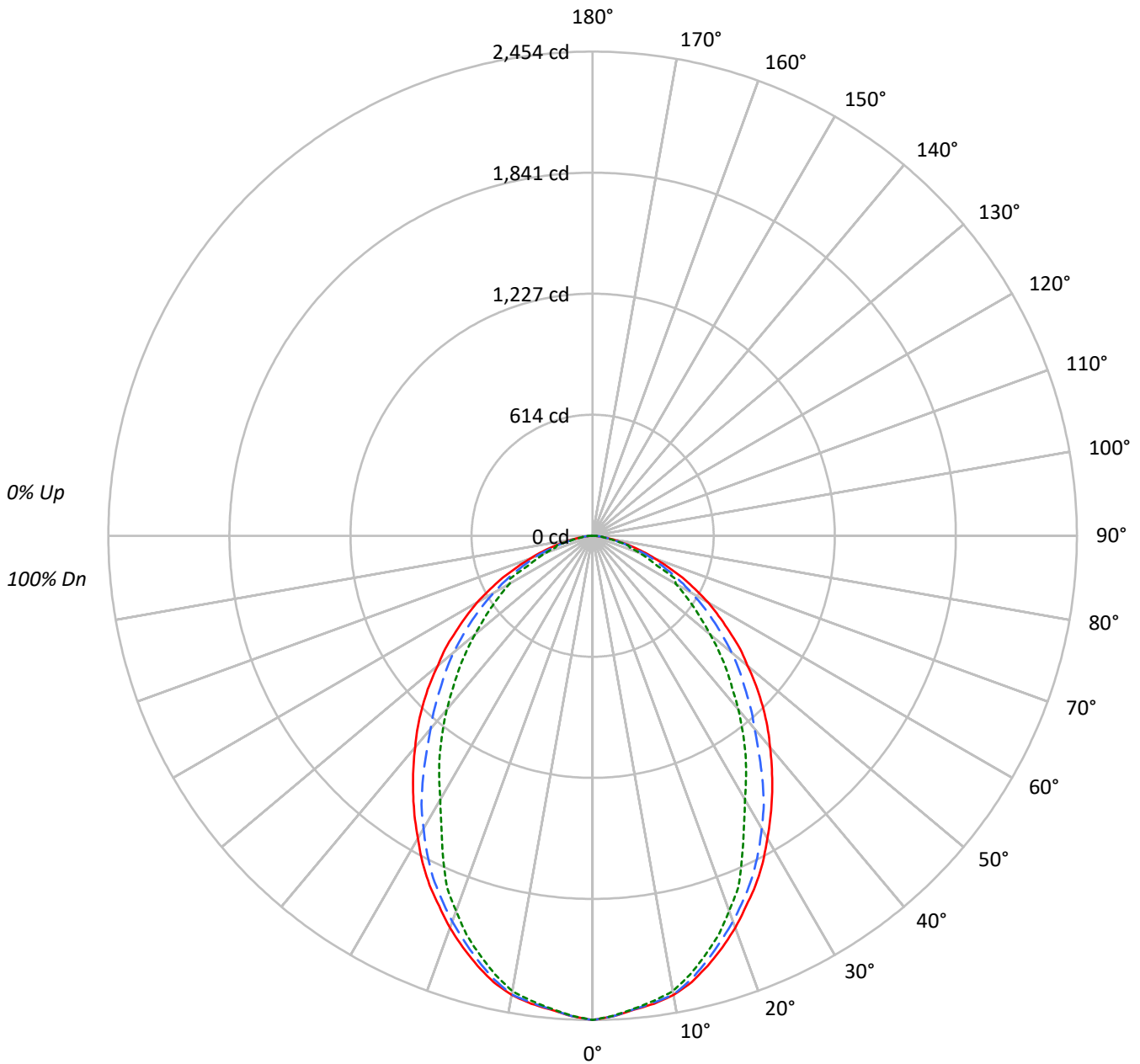
Lumens per Lamp: N/A  
Luminaire Lumens: 4818.0 lumens  
Efficiency: N/A  
Efficacy: 102.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 46.8  
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									
RC	80									50									30									10									0
RW	70	50	30	10	70	50	30	10	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	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87																			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75																			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65																			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56																			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50																			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44																			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40																			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36																			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33																			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																			

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

	0°	45°	90°
0°	3302	3302	3302
5°	3257	3253	3250
10°	3229	3225	3202
15°	3142	3110	3067
20°	3027	2978	2897
25°	2902	2839	2662
30°	2751	2662	2398
35°	2605	2461	2218
40°	2457	2243	2018
45°	2316	2073	1825
50°	2144	1924	1627
55°	1983	1744	1458
60°	1817	1558	1306
65°	1599	1364	1156
70°	1317	1194	982
75°	1047	914	959
80°	704	659	615
85°	438	525	613



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	228.5	4.7
10°-20°	627.0	13.0
20°-30°	868.0	18.0
30°-40°	925.6	19.2
40°-50°	844.4	17.5
50°-60°	661.5	13.7
60°-70°	431.1	8.9
70°-80°	191.0	4.0
80°-90°	41.0	0.9
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
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°	1723.4	35.8
0°-40°	2649.0	55.0
0°-60°	4154.9	86.2
0°-90°	4818.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4818.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2454	2454	2454	2454	2454	
5°	2412	2409	2409	2406	2406	229
15°	2256	2256	2233	2210	2202	634
25°	1955	1944	1912	1844	1793	897
35°	1586	1575	1498	1385	1350	992
45°	1217	1192	1090	999	959	938
55°	846	820	743	655	621	758
65°	502	474	428	437	363	495
75°	201	187	176	167	184	216
85°	28	31	34	37	40	39
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2454.2	2454.2	2454.2	2454.2	2454.2
2.5°	2437.2	2437.2	2437.2	2434.4	2434.4
5°	2411.7	2408.8	2408.8	2406.0	2406.0
7.5°	2391.8	2389.0	2386.1	2383.3	2377.6
10°	2363.4	2363.4	2360.6	2346.4	2343.6
12.5°	2318.0	2315.2	2303.9	2284.0	2278.3
15°	2255.6	2255.6	2232.9	2210.2	2201.7
17.5°	2187.5	2184.7	2156.3	2133.6	2122.3
20°	2113.8	2108.1	2079.7	2042.8	2023.0
22.5°	2031.5	2031.5	1997.4	1949.2	1929.3
25°	1954.9	1943.5	1912.3	1844.2	1793.1
27.5°	1866.9	1849.9	1815.8	1719.4	1659.8
30°	1770.4	1761.9	1713.7	1588.9	1543.5
32.5°	1679.7	1665.5	1614.4	1483.9	1447.0
35°	1586.0	1574.7	1498.1	1384.6	1350.5
37.5°	1492.4	1478.2	1381.7	1291.0	1248.4
40°	1398.8	1381.7	1276.8	1194.5	1149.1
42.5°	1310.8	1288.1	1186.0	1098.0	1046.9
45°	1217.2	1191.6	1089.5	998.7	959.0
47.5°	1123.6	1100.9	1007.2	913.6	868.2
50°	1024.2	1004.4	919.3	825.6	777.4
52.5°	942.0	910.8	828.5	734.8	695.1
55°	845.5	820.0	743.4	655.4	621.4
57.5°	757.5	732.0	661.1	578.8	550.4
60°	675.3	638.4	578.8	507.9	485.2
62.5°	584.5	556.1	505.0	445.4	473.8
65°	502.2	473.8	428.4	436.9	363.2
67.5°	411.4	397.2	357.5	317.8	306.4
70°	334.8	317.8	303.6	261.0	249.7
72.5°	266.7	249.7	229.8	207.1	198.6
75°	201.4	187.3	175.9	167.4	184.4
77.5°	139.0	133.4	124.8	116.3	113.5
80°	90.8	88.0	85.1	82.3	79.4
82.5°	53.9	53.9	53.9	53.9	53.9
85°	28.4	31.2	34.0	36.9	39.7
87.5°	17.0	17.0	19.9	22.7	25.5
90°	0.0	0.0	0.0	0.0	0.0



Report Generated By 670246072 / DESKTOP-MV3F9LC







— 0°-180°    - - 45°-225°    - - - - 90°-270°







(END OF REPORT)