

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: P546325

Luminaire Tested: **FMR-12-4-LD4-2STD-35-UNV-93-96-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: P546325  
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-12-4-LD4-2STD-35-UNV-93-96-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

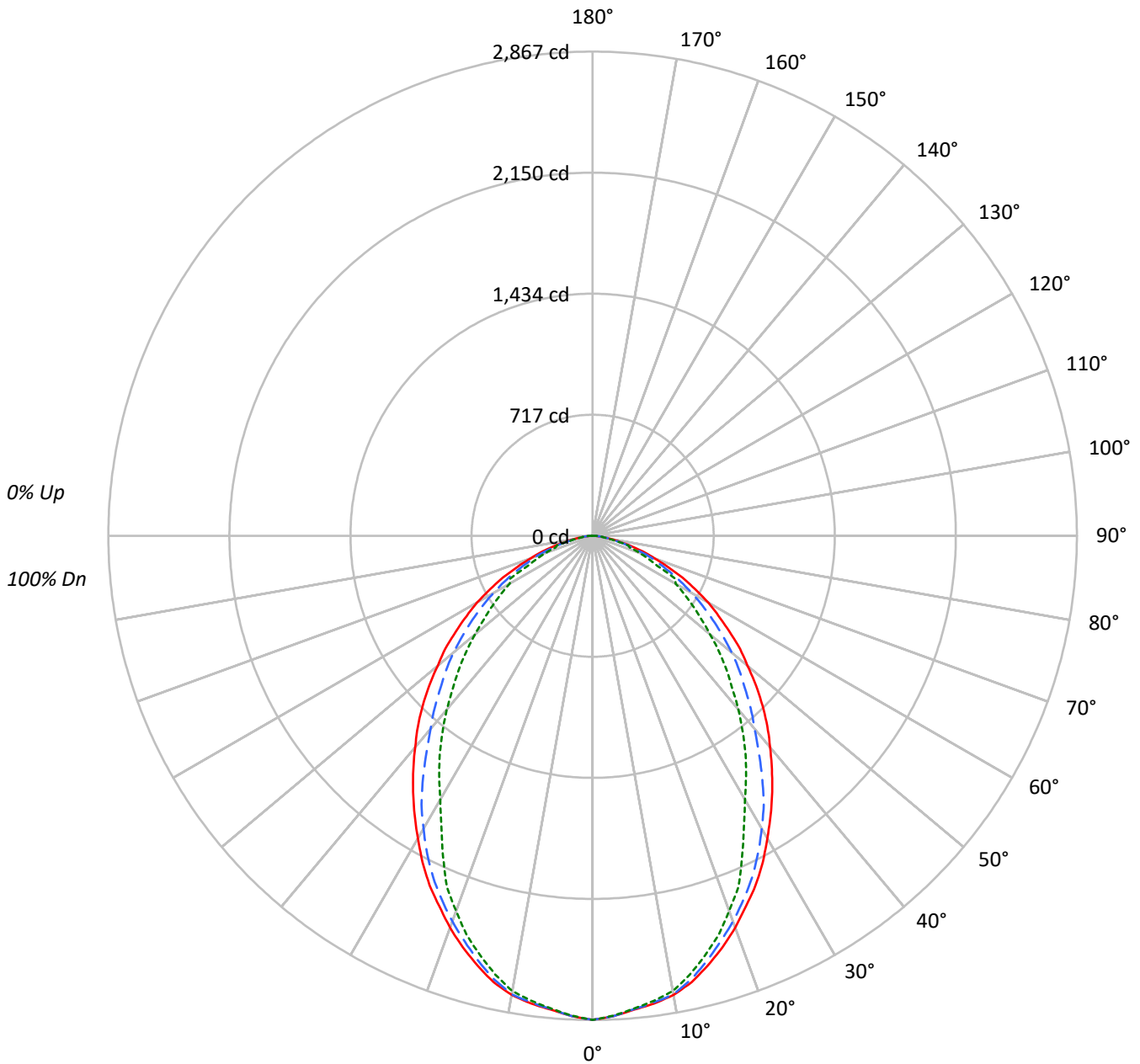
Lumens per Lamp: N/A  
Luminaire Lumens: 5628.0 lumens  
Efficiency: N/A  
Efficacy: 84.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 66.6  
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									
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°	7714	7714	7714
5°	7610	7601	7592
10°	7544	7535	7480
15°	7340	7266	7165
20°	7071	6957	6767
25°	6780	6633	6219
30°	6426	6220	5602
35°	6086	5749	5183
40°	5740	5239	4715
45°	5411	4843	4263
50°	5009	4495	3802
55°	4633	4074	3405
60°	4245	3639	3050
65°	3735	3187	2701
70°	3077	2790	2295
75°	2446	2137	2240
80°	1644	1540	1438
85°	1022	1229	1433



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	266.9	4.7
10°-20°	732.4	13.0
20°-30°	1013.9	18.0
30°-40°	1081.2	19.2
40°-50°	986.3	17.5
50°-60°	772.7	13.7
60°-70°	503.6	8.9
70°-80°	223.1	4.0
80°-90°	47.9	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°	2013.2	35.8
0°-40°	3094.3	55.0
0°-60°	4853.4	86.2
0°-90°	5628.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5628.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2867	2867	2867	2867	2867	
5°	2817	2814	2814	2810	2810	267
15°	2635	2635	2608	2582	2572	741
25°	2284	2270	2234	2154	2095	1048
35°	1853	1839	1750	1617	1578	1158
45°	1422	1392	1273	1167	1120	1095
55°	988	958	868	766	726	886
65°	587	554	500	510	424	578
75°	235	219	206	196	215	252
85°	33	36	40	43	46	46
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2866.8	2866.8	2866.8	2866.8	2866.8
2.5°	2846.9	2846.9	2846.9	2843.6	2843.6
5°	2817.1	2813.8	2813.8	2810.5	2810.5
7.5°	2793.9	2790.6	2787.3	2784.0	2777.3
10°	2760.8	2760.8	2757.5	2740.9	2737.6
12.5°	2707.7	2704.4	2691.2	2668.0	2661.3
15°	2634.8	2634.8	2608.3	2581.8	2571.9
17.5°	2555.3	2552.0	2518.8	2492.3	2479.1
20°	2469.1	2462.5	2429.3	2386.3	2363.1
22.5°	2373.0	2373.0	2333.2	2276.9	2253.7
25°	2283.5	2270.3	2233.8	2154.3	2094.6
27.5°	2180.8	2160.9	2121.1	2008.4	1938.8
30°	2068.1	2058.2	2001.8	1856.0	1803.0
32.5°	1962.0	1945.5	1885.8	1733.4	1690.3
35°	1852.7	1839.4	1749.9	1617.4	1577.6
37.5°	1743.3	1726.7	1614.0	1508.0	1458.3
40°	1633.9	1614.0	1491.4	1395.3	1342.3
42.5°	1531.2	1504.7	1385.4	1282.6	1223.0
45°	1421.8	1392.0	1272.7	1166.6	1120.2
47.5°	1312.4	1285.9	1176.6	1067.2	1014.2
50°	1196.4	1173.2	1073.8	964.4	908.1
52.5°	1100.3	1063.9	967.8	858.4	812.0
55°	987.6	957.8	868.3	765.6	725.8
57.5°	884.9	855.1	772.2	676.1	643.0
60°	788.8	745.7	676.1	593.3	566.7
62.5°	682.7	649.6	589.9	520.3	553.5
65°	586.6	553.5	500.5	510.4	424.2
67.5°	480.6	464.0	417.6	371.2	357.9
70°	391.1	371.2	354.6	304.9	291.7
72.5°	311.5	291.7	268.5	241.9	232.0
75°	235.3	218.7	205.5	195.5	215.4
77.5°	162.4	155.8	145.8	135.9	132.6
80°	106.1	102.7	99.4	96.1	92.8
82.5°	63.0	63.0	63.0	63.0	63.0
85°	33.1	36.5	39.8	43.1	46.4
87.5°	19.9	19.9	23.2	26.5	29.8
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)