

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: P546802

Luminaire Tested: **FMR-24-4-LD4-2LO-35-UNV-93-87-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: P546802  
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-93-87-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

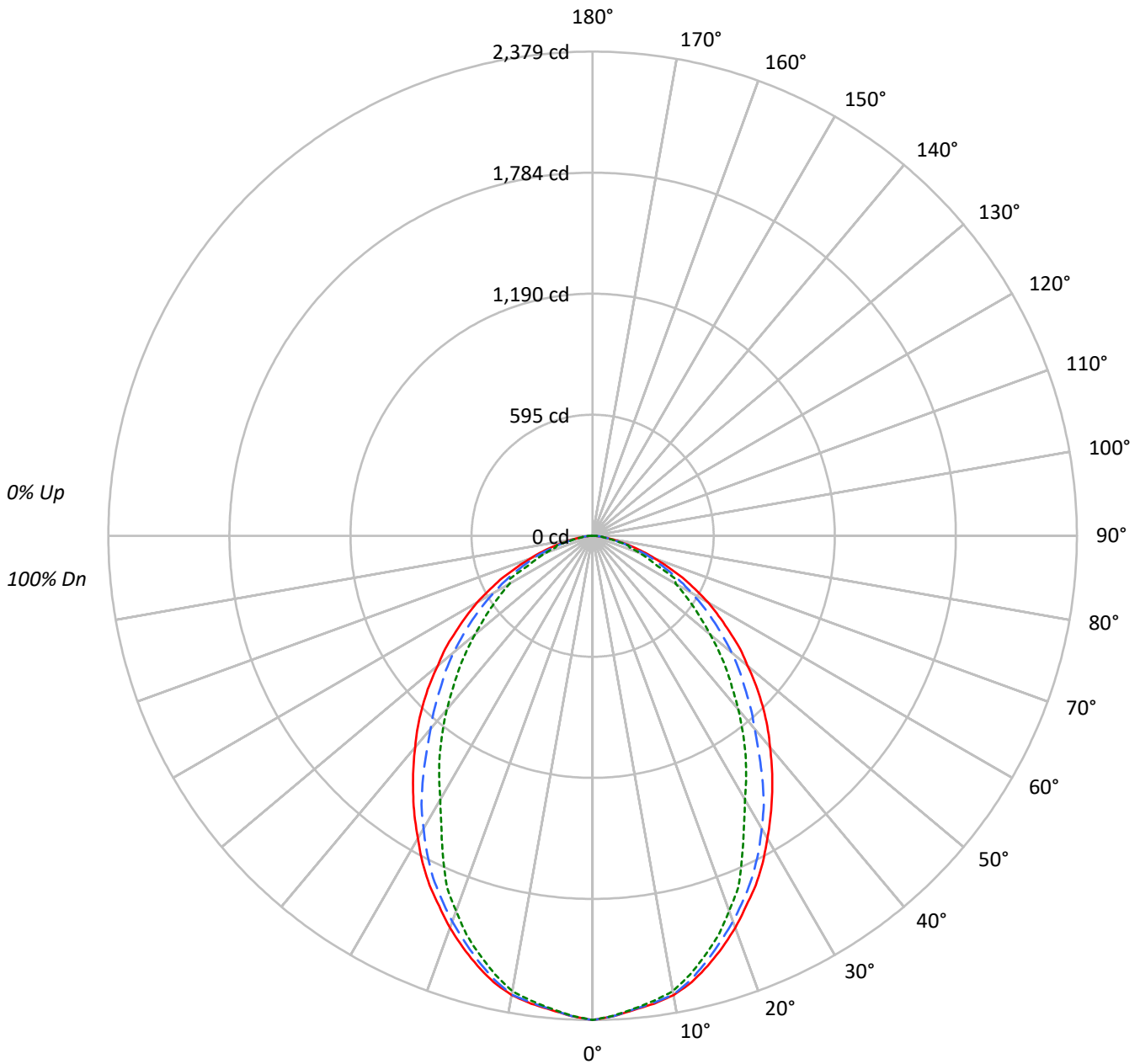
Lumens per Lamp: N/A  
Luminaire Lumens: 4671.0 lumens  
Efficiency: N/A  
Efficacy: 99.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	3201	3201	3201
5°	3158	3154	3150
10°	3130	3127	3104
15°	3046	3015	2973
20°	2934	2887	2808
25°	2814	2752	2581
30°	2667	2581	2325
35°	2526	2386	2151
40°	2382	2174	1957
45°	2245	2010	1769
50°	2079	1865	1578
55°	1923	1691	1413
60°	1762	1510	1266
65°	1550	1323	1121
70°	1277	1158	952
75°	1015	886	930
80°	682	639	597
85°	425	509	594



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	221.5	4.7
10°-20°	607.8	13.0
20°-30°	841.5	18.0
30°-40°	897.3	19.2
40°-50°	818.6	17.5
50°-60°	641.3	13.7
60°-70°	418.0	8.9
70°-80°	185.2	4.0
80°-90°	39.8	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°	1670.9	35.8
0°-40°	2568.2	55.0
0°-60°	4028.1	86.2
0°-90°	4671.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4671.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2379	2379	2379	2379	2379	
5°	2338	2335	2335	2333	2333	222
15°	2187	2187	2165	2143	2134	615
25°	1895	1884	1854	1788	1738	870
35°	1538	1527	1452	1342	1309	961
45°	1180	1155	1056	968	930	909
55°	820	795	721	635	602	735
65°	487	459	415	424	352	480
75°	195	182	170	162	179	209
85°	28	30	33	36	38	38
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2379.3	2379.3	2379.3	2379.3	2379.3
2.5°	2362.8	2362.8	2362.8	2360.1	2360.1
5°	2338.1	2335.3	2335.3	2332.6	2332.6
7.5°	2318.8	2316.1	2313.3	2310.6	2305.1
10°	2291.3	2291.3	2288.6	2274.8	2272.1
12.5°	2247.3	2244.6	2233.6	2214.3	2208.8
15°	2186.8	2186.8	2164.8	2142.8	2134.5
17.5°	2120.8	2118.0	2090.5	2068.5	2057.5
20°	2049.3	2043.8	2016.3	1980.5	1961.2
22.5°	1969.5	1969.5	1936.5	1889.7	1870.5
25°	1895.2	1884.2	1854.0	1787.9	1738.4
27.5°	1810.0	1793.4	1760.4	1666.9	1609.2
30°	1716.4	1708.2	1661.4	1540.4	1496.4
32.5°	1628.4	1614.7	1565.1	1438.6	1402.9
35°	1537.6	1526.6	1452.4	1342.3	1309.3
37.5°	1446.9	1433.1	1339.6	1251.6	1210.3
40°	1356.1	1339.6	1237.8	1158.0	1114.0
42.5°	1270.8	1248.8	1149.8	1064.5	1015.0
45°	1180.0	1155.3	1056.3	968.2	929.7
47.5°	1089.3	1067.3	976.5	885.7	841.7
50°	993.0	973.7	891.2	800.5	753.7
52.5°	913.2	883.0	803.2	712.4	673.9
55°	819.7	794.9	720.7	635.4	602.4
57.5°	734.4	709.7	640.9	561.1	533.6
60°	654.7	618.9	561.1	492.4	470.4
62.5°	566.6	539.1	489.6	431.9	459.4
65°	486.9	459.4	415.4	423.6	352.1
67.5°	398.8	385.1	346.6	308.1	297.1
70°	324.6	308.1	294.3	253.1	242.1
72.5°	258.6	242.1	222.8	200.8	192.5
75°	195.3	181.5	170.5	162.3	178.8
77.5°	134.8	129.3	121.0	112.8	110.0
80°	88.0	85.3	82.5	79.8	77.0
82.5°	52.3	52.3	52.3	52.3	52.3
85°	27.5	30.3	33.0	35.8	38.5
87.5°	16.5	16.5	19.3	22.0	24.8
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)