

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: P546512

Luminaire Tested: **FMR-24-4-LD4-1HI-50-UNV-93-85-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: P546512  
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-LD4-1HI-50-UNV-93-85-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

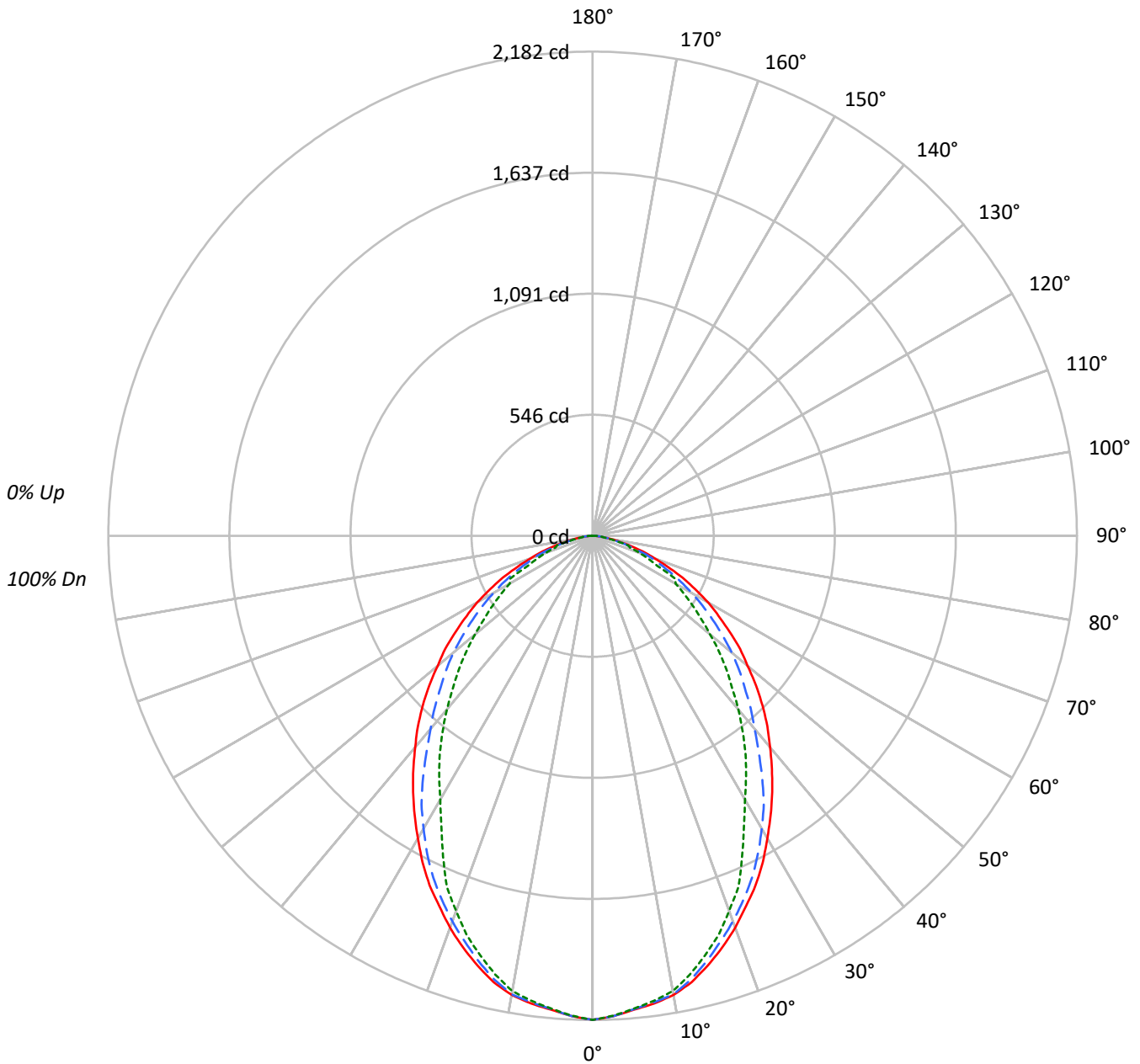
Lumens per Lamp: N/A  
Luminaire Lumens: 4283.0 lumens  
Efficiency: N/A  
Efficacy: 99.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 43.2  
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°	2935	2935	2935
5°	2896	2892	2889
10°	2870	2867	2846
15°	2793	2765	2726
20°	2690	2647	2575
25°	2580	2524	2366
30°	2445	2367	2132
35°	2316	2187	1972
40°	2184	1994	1794
45°	2059	1843	1622
50°	1906	1711	1447
55°	1763	1550	1296
60°	1615	1385	1161
65°	1421	1213	1028
70°	1171	1062	873
75°	931	813	852
80°	625	587	547
85°	389	468	545



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	203.1	4.7
10°-20°	557.4	13.0
20°-30°	771.6	18.0
30°-40°	822.8	19.2
40°-50°	750.6	17.5
50°-60°	588.0	13.7
60°-70°	383.3	8.9
70°-80°	169.8	4.0
80°-90°	36.4	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°	1532.1	35.8
0°-40°	2354.8	55.0
0°-60°	3693.5	86.2
0°-90°	4283.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4283.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2182	2182	2182	2182	2182	
5°	2144	2141	2141	2139	2139	204
15°	2005	2005	1985	1965	1957	564
25°	1738	1728	1700	1639	1594	798
35°	1410	1400	1332	1231	1201	881
45°	1082	1059	968	888	852	833
55°	752	729	661	583	552	674
65°	446	421	381	388	323	440
75°	179	166	156	149	164	192
85°	25	28	30	33	35	35
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2181.7	2181.7	2181.7	2181.7	2181.7
2.5°	2166.6	2166.6	2166.6	2164.0	2164.0
5°	2143.9	2141.3	2141.3	2138.8	2138.8
7.5°	2126.2	2123.7	2121.2	2118.6	2113.6
10°	2101.0	2101.0	2098.5	2085.9	2083.3
12.5°	2060.6	2058.1	2048.0	2030.4	2025.3
15°	2005.1	2005.1	1985.0	1964.8	1957.2
17.5°	1944.6	1942.1	1916.9	1896.7	1886.6
20°	1879.0	1874.0	1848.8	1816.0	1798.3
22.5°	1805.9	1805.9	1775.6	1732.8	1715.1
25°	1737.8	1727.7	1700.0	1639.4	1594.0
27.5°	1659.6	1644.5	1614.2	1528.5	1475.5
30°	1573.9	1566.3	1523.4	1412.4	1372.1
32.5°	1493.1	1480.5	1435.1	1319.1	1286.3
35°	1409.9	1399.8	1331.7	1230.8	1200.6
37.5°	1326.7	1314.1	1228.3	1147.6	1109.8
40°	1243.4	1228.3	1135.0	1061.8	1021.5
42.5°	1165.3	1145.1	1054.3	976.1	930.7
45°	1082.0	1059.3	968.5	887.8	852.5
47.5°	998.8	978.6	895.4	812.1	771.8
50°	910.5	892.9	817.2	734.0	691.1
52.5°	837.4	809.6	736.5	653.2	617.9
55°	751.6	728.9	660.8	582.6	552.4
57.5°	673.4	650.7	587.7	514.5	489.3
60°	600.3	567.5	514.5	451.5	431.3
62.5°	519.6	494.4	449.0	396.0	421.2
65°	446.4	421.2	380.9	388.4	322.8
67.5°	365.7	353.1	317.8	282.5	272.4
70°	297.6	282.5	269.9	232.0	222.0
72.5°	237.1	222.0	204.3	184.1	176.6
75°	179.1	166.5	156.4	148.8	163.9
77.5°	123.6	118.5	111.0	103.4	100.9
80°	80.7	78.2	75.7	73.1	70.6
82.5°	47.9	47.9	47.9	47.9	47.9
85°	25.2	27.7	30.3	32.8	35.3
87.5°	15.1	15.1	17.7	20.2	22.7
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)