

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: P546514

Luminaire Tested: **FMR-24-4-LD4-1HI-50-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: P546514  
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-93-87-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

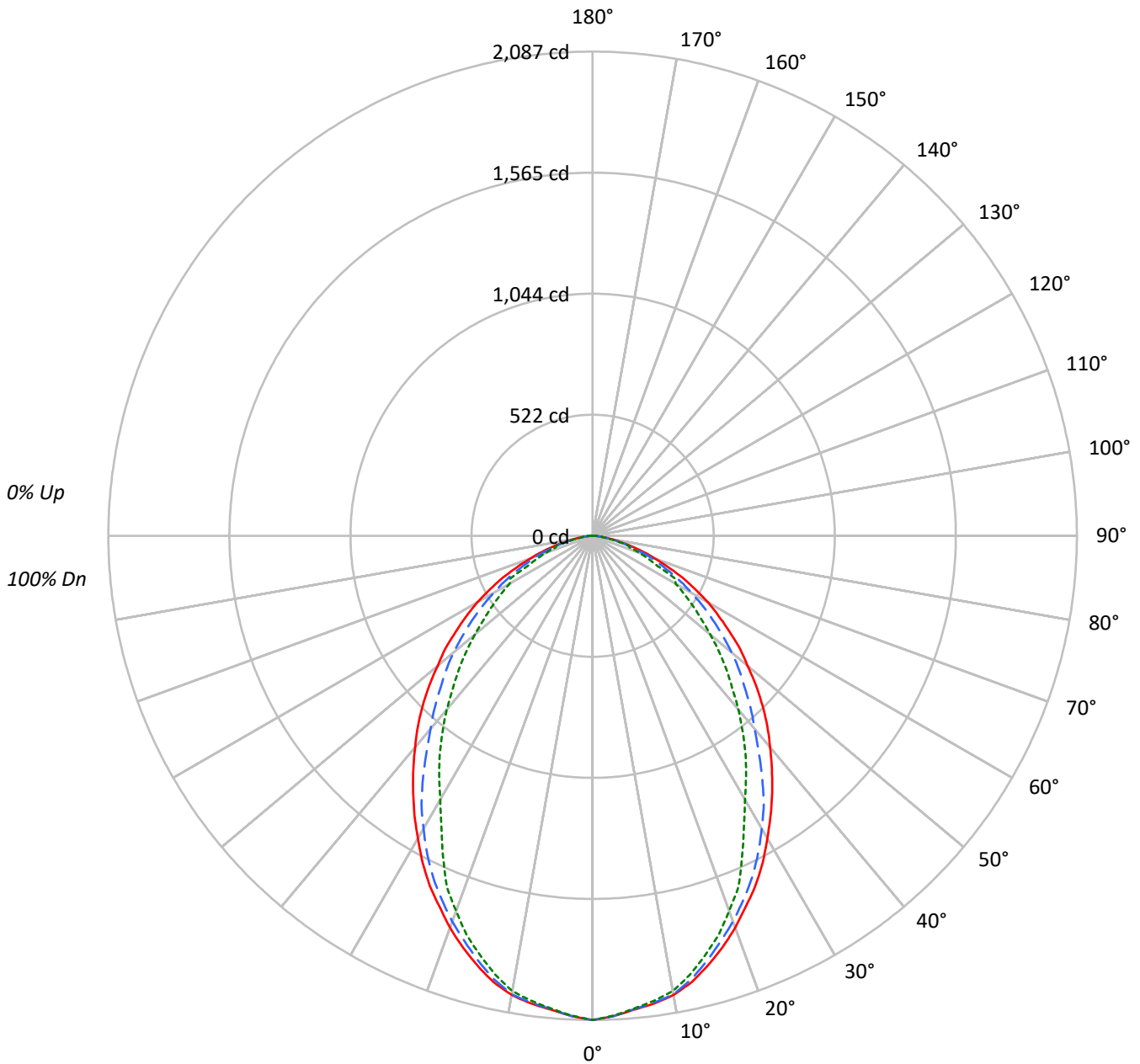
Lumens per Lamp: N/A  
Luminaire Lumens: 4097.0 lumens  
Efficiency: N/A  
Efficacy: 94.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 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°	2808	2808	2808
5°	2770	2767	2763
10°	2746	2742	2723
15°	2672	2645	2608
20°	2574	2532	2463
25°	2468	2414	2264
30°	2339	2264	2039
35°	2215	2092	1886
40°	2089	1907	1716
45°	1969	1763	1552
50°	1823	1636	1384
55°	1687	1483	1240
60°	1545	1324	1110
65°	1359	1160	983
70°	1120	1016	835
75°	891	778	815
80°	598	561	524
85°	372	448	522



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	194.3	4.7
10°-20°	533.2	13.0
20°-30°	738.1	18.0
30°-40°	787.0	19.2
40°-50°	718.0	17.5
50°-60°	562.5	13.7
60°-70°	366.6	8.9
70°-80°	162.4	4.0
80°-90°	34.9	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°	1465.5	35.8
0°-40°	2252.6	55.0
0°-60°	3533.1	86.2
0°-90°	4097.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4097.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2087	2087	2087	2087	2087	
5°	2051	2048	2048	2046	2046	195
15°	1918	1918	1899	1880	1872	539
25°	1662	1653	1626	1568	1525	763
35°	1349	1339	1274	1177	1148	843
45°	1035	1013	926	849	816	797
55°	719	697	632	557	528	645
65°	427	403	364	372	309	421
75°	171	159	150	142	157	184
85°	24	26	29	31	34	33
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2087.0	2087.0	2087.0	2087.0	2087.0
2.5°	2072.5	2072.5	2072.5	2070.1	2070.1
5°	2050.8	2048.4	2048.4	2045.9	2045.9
7.5°	2033.9	2031.5	2029.1	2026.6	2021.8
10°	2009.8	2009.8	2007.3	1995.3	1992.9
12.5°	1971.1	1968.7	1959.1	1942.2	1937.4
15°	1918.1	1918.1	1898.8	1879.5	1872.2
17.5°	1860.2	1857.8	1833.6	1814.3	1804.7
20°	1797.4	1792.6	1768.5	1737.1	1720.2
22.5°	1727.5	1727.5	1698.5	1657.5	1640.6
25°	1662.3	1652.7	1626.1	1568.2	1524.8
27.5°	1587.5	1573.1	1544.1	1462.1	1411.4
30°	1505.5	1498.3	1457.3	1351.1	1312.5
32.5°	1428.3	1416.2	1372.8	1261.8	1230.5
35°	1348.7	1339.0	1273.9	1177.4	1148.4
37.5°	1269.1	1257.0	1175.0	1097.8	1061.6
40°	1189.4	1175.0	1085.7	1015.7	977.1
42.5°	1114.7	1095.4	1008.5	933.7	890.3
45°	1035.0	1013.3	926.5	849.3	815.5
47.5°	955.4	936.1	856.5	776.9	738.3
50°	871.0	854.1	781.7	702.1	661.1
52.5°	801.0	774.5	704.5	624.9	591.1
55°	719.0	697.3	632.1	557.3	528.4
57.5°	644.2	622.5	562.2	492.2	468.1
60°	574.2	542.9	492.2	431.9	412.6
62.5°	497.0	472.9	429.5	378.8	402.9
65°	427.0	402.9	364.3	371.6	308.8
67.5°	349.8	337.8	304.0	270.2	260.6
70°	284.7	270.2	258.2	222.0	212.3
72.5°	226.8	212.3	195.4	176.1	168.9
75°	171.3	159.2	149.6	142.3	156.8
77.5°	118.2	113.4	106.2	98.9	96.5
80°	77.2	74.8	72.4	70.0	67.6
82.5°	45.8	45.8	45.8	45.8	45.8
85°	24.1	26.5	29.0	31.4	33.8
87.5°	14.5	14.5	16.9	19.3	21.7
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)