

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: P546511

Luminaire Tested: **FMR-24-4-LD4-1HI-50-UNV-93-84-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: P546511  
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-93-84-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

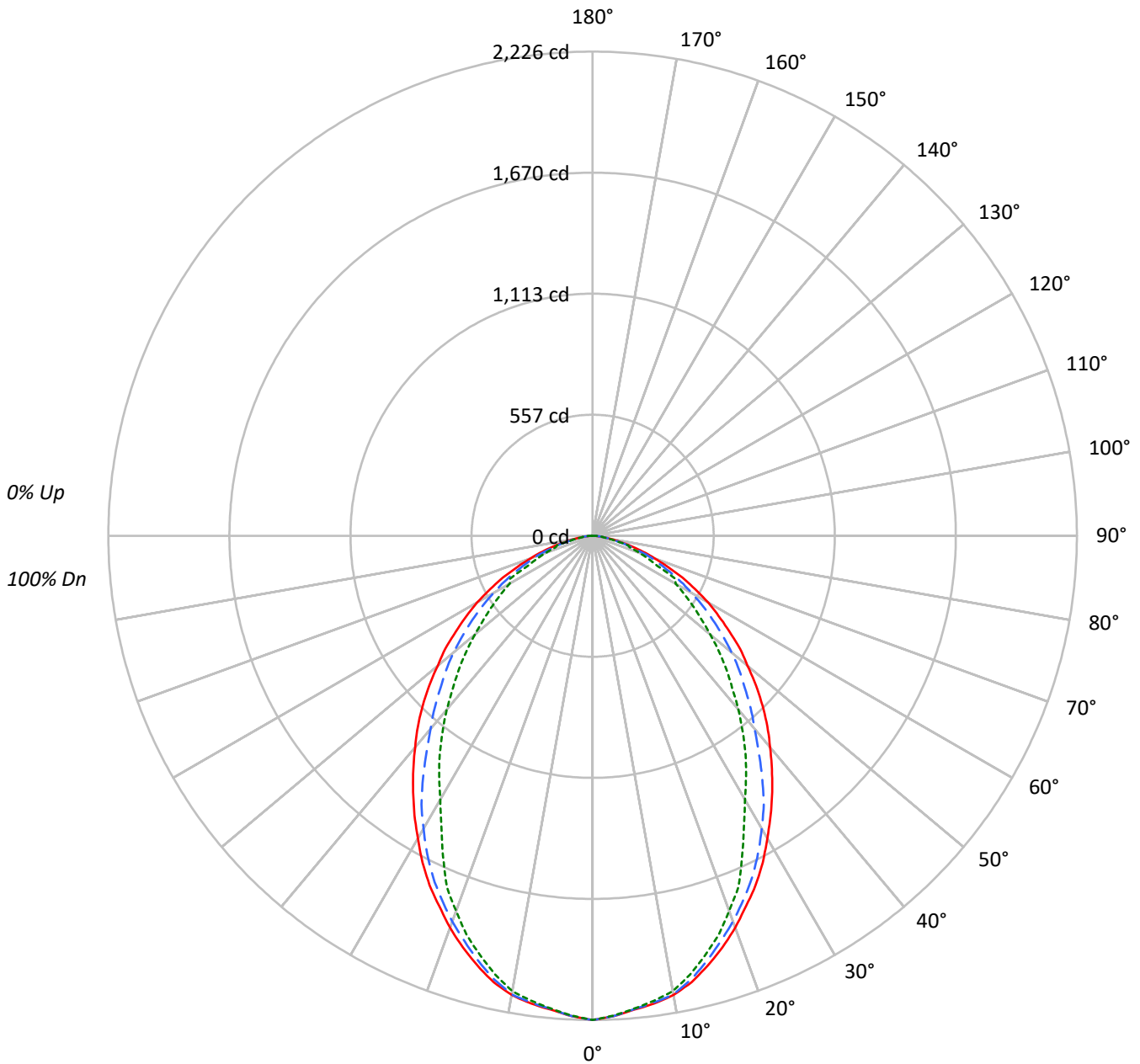
Lumens per Lamp: N/A  
Luminaire Lumens: 4370.0 lumens  
Efficiency: N/A  
Efficacy: 101.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	2995	2995	2995
5°	2954	2951	2947
10°	2929	2925	2904
15°	2850	2821	2782
20°	2745	2701	2627
25°	2632	2575	2415
30°	2495	2415	2175
35°	2363	2232	2012
40°	2228	2034	1831
45°	2101	1880	1655
50°	1945	1745	1476
55°	1799	1582	1322
60°	1648	1413	1184
65°	1450	1237	1049
70°	1195	1083	891
75°	950	830	870
80°	638	598	559
85°	397	477	556



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	207.2	4.7
10°-20°	568.7	13.0
20°-30°	787.3	18.0
30°-40°	839.5	19.2
40°-50°	765.8	17.5
50°-60°	600.0	13.7
60°-70°	391.0	8.9
70°-80°	173.2	4.0
80°-90°	37.2	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°	1563.2	35.8
0°-40°	2402.7	55.0
0°-60°	3768.5	86.2
0°-90°	4370.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4370.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2226	2226	2226	2226	2226	
5°	2187	2185	2185	2182	2182	208
15°	2046	2046	2025	2005	1997	575
25°	1773	1763	1734	1673	1626	814
35°	1438	1428	1359	1256	1225	899
45°	1104	1081	988	906	870	850
55°	767	744	674	594	564	688
65°	456	430	389	396	329	449
75°	183	170	160	152	167	196
85°	26	28	31	34	36	36
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2226.0	2226.0	2226.0	2226.0	2226.0
2.5°	2210.6	2210.6	2210.6	2208.0	2208.0
5°	2187.4	2184.8	2184.8	2182.3	2182.3
7.5°	2169.4	2166.8	2164.3	2161.7	2156.5
10°	2143.7	2143.7	2141.1	2128.2	2125.7
12.5°	2102.5	2099.9	2089.6	2071.6	2066.5
15°	2045.9	2045.9	2025.3	2004.7	1997.0
17.5°	1984.1	1981.5	1955.8	1935.2	1924.9
20°	1917.2	1912.1	1886.3	1852.9	1834.9
22.5°	1842.6	1842.6	1811.7	1767.9	1749.9
25°	1773.1	1762.8	1734.5	1672.7	1626.4
27.5°	1693.3	1677.9	1647.0	1559.5	1505.5
30°	1605.8	1598.1	1554.4	1441.1	1399.9
32.5°	1523.5	1510.6	1464.3	1345.9	1312.5
35°	1438.5	1428.3	1358.8	1255.8	1225.0
37.5°	1353.6	1340.8	1253.3	1170.9	1132.3
40°	1268.7	1253.3	1158.0	1083.4	1042.2
42.5°	1188.9	1168.3	1075.7	995.9	949.6
45°	1104.0	1080.8	988.2	905.8	869.8
47.5°	1019.1	998.5	913.6	828.6	787.5
50°	929.0	911.0	833.8	748.9	705.1
52.5°	854.4	826.1	751.4	666.5	630.5
55°	766.9	743.7	674.2	594.5	563.6
57.5°	687.1	663.9	599.6	525.0	499.2
60°	612.5	579.0	525.0	460.6	440.1
62.5°	530.1	504.4	458.1	404.0	429.8
65°	455.5	429.8	388.6	396.3	329.4
67.5°	373.1	360.3	324.3	288.2	277.9
70°	303.7	288.2	275.4	236.8	226.5
72.5°	241.9	226.5	208.4	187.9	180.1
75°	182.7	169.8	159.6	151.8	167.3
77.5°	126.1	121.0	113.2	105.5	102.9
80°	82.3	79.8	77.2	74.6	72.1
82.5°	48.9	48.9	48.9	48.9	48.9
85°	25.7	28.3	30.9	33.5	36.0
87.5°	15.4	15.4	18.0	20.6	23.2
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)