

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: P546289

Luminaire Tested: **FMR-12-4-LD4-2LO-50-UNV-93-86-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: P546289  
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-LD4-2LO-50-UNV-93-86-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

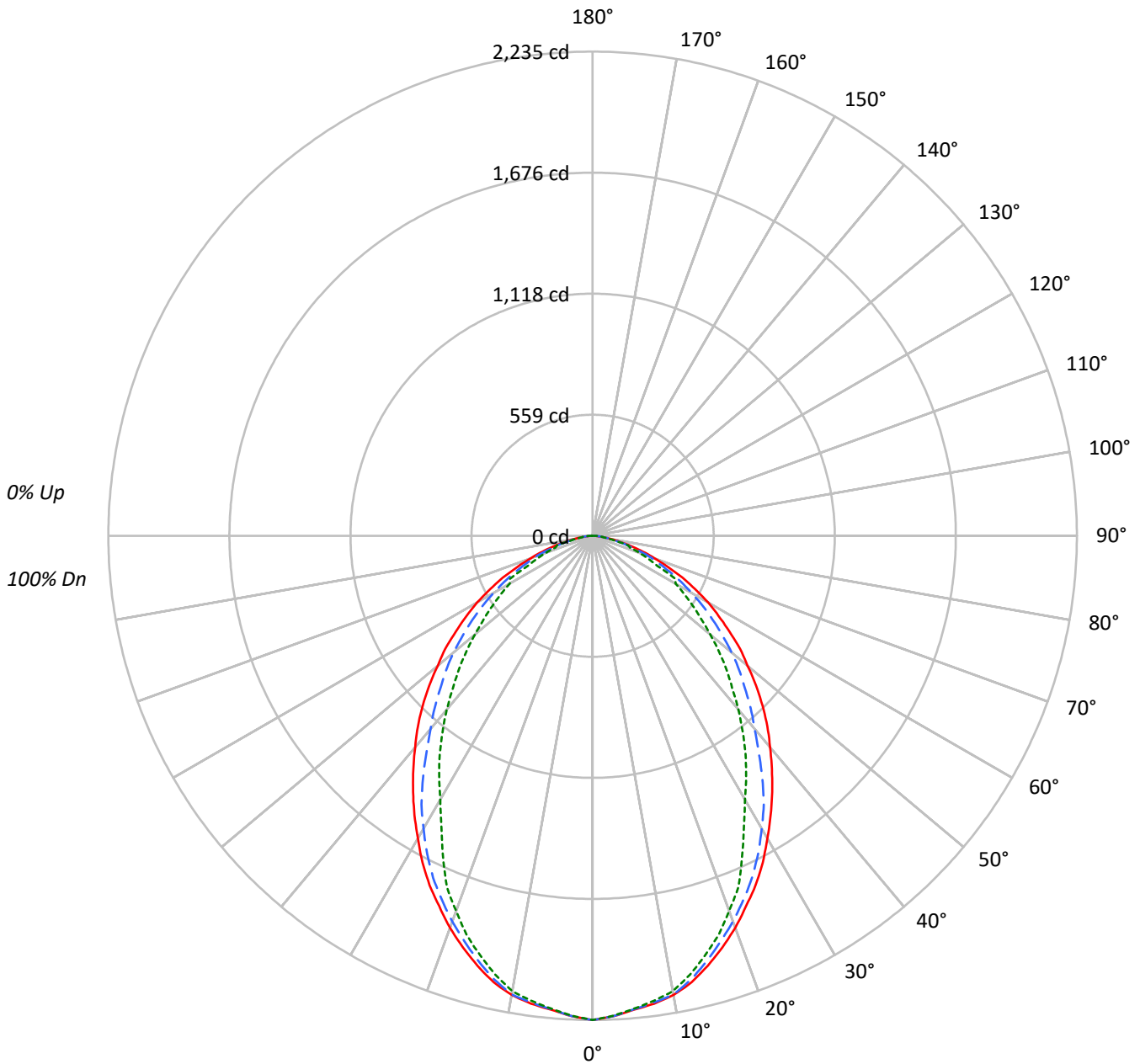
Lumens per Lamp: N/A  
Luminaire Lumens: 4388.0 lumens  
Efficiency: N/A  
Efficacy: 93.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 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°	6015	6015	6015
5°	5933	5926	5919
10°	5882	5875	5832
15°	5723	5665	5586
20°	5513	5424	5276
25°	5286	5171	4849
30°	5010	4850	4368
35°	4745	4482	4041
40°	4475	4085	3676
45°	4219	3776	3324
50°	3905	3505	2964
55°	3613	3176	2655
60°	3310	2837	2378
65°	2912	2485	2106
70°	2399	2175	1789
75°	1908	1666	1747
80°	1282	1201	1122
85°	797	957	1118



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	208.1	4.7
10°-20°	571.0	13.0
20°-30°	790.5	18.0
30°-40°	842.9	19.2
40°-50°	769.0	17.5
50°-60°	602.5	13.7
60°-70°	392.7	8.9
70°-80°	174.0	4.0
80°-90°	37.4	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°	1569.6	35.8
0°-40°	2412.6	55.0
0°-60°	3784.0	86.2
0°-90°	4388.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4388.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2235	2235	2235	2235	2235	
5°	2196	2194	2194	2191	2191	208
15°	2054	2054	2034	2013	2005	578
25°	1780	1770	1742	1680	1633	817
35°	1444	1434	1364	1261	1230	903
45°	1109	1085	992	910	873	854
55°	770	747	677	597	566	691
65°	457	432	390	398	331	451
75°	184	170	160	152	168	197
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°	2235.2	2235.2	2235.2	2235.2	2235.2
2.5°	2219.7	2219.7	2219.7	2217.1	2217.1
5°	2196.4	2193.8	2193.8	2191.3	2191.3
7.5°	2178.3	2175.8	2173.2	2170.6	2165.4
10°	2152.5	2152.5	2149.9	2137.0	2134.4
12.5°	2111.2	2108.6	2098.2	2080.1	2075.0
15°	2054.3	2054.3	2033.6	2013.0	2005.2
17.5°	1992.3	1989.7	1963.9	1943.2	1932.9
20°	1925.1	1919.9	1894.1	1860.5	1842.4
22.5°	1850.2	1850.2	1819.2	1775.2	1757.1
25°	1780.4	1770.1	1741.6	1679.6	1633.1
27.5°	1700.3	1684.8	1653.8	1565.9	1511.7
30°	1612.4	1604.7	1560.8	1447.1	1405.7
32.5°	1529.7	1516.8	1470.3	1351.4	1317.9
35°	1444.5	1434.1	1364.4	1261.0	1230.0
37.5°	1359.2	1346.3	1258.4	1175.7	1137.0
40°	1273.9	1258.4	1162.8	1087.9	1046.5
42.5°	1193.8	1173.2	1080.1	1000.0	953.5
45°	1108.6	1085.3	992.3	909.6	873.4
47.5°	1023.3	1002.6	917.3	832.1	790.7
50°	932.8	914.7	837.2	752.0	708.0
52.5°	857.9	829.5	754.5	669.3	633.1
55°	770.0	746.8	677.0	596.9	565.9
57.5°	689.9	666.7	602.1	527.1	501.3
60°	615.0	581.4	527.1	462.5	441.9
62.5°	532.3	506.5	460.0	405.7	431.5
65°	457.4	431.5	390.2	397.9	330.8
67.5°	374.7	361.8	325.6	289.4	279.1
70°	304.9	289.4	276.5	237.7	227.4
72.5°	242.9	227.4	209.3	188.6	180.9
75°	183.5	170.5	160.2	152.5	168.0
77.5°	126.6	121.4	113.7	105.9	103.4
80°	82.7	80.1	77.5	74.9	72.4
82.5°	49.1	49.1	49.1	49.1	49.1
85°	25.8	28.4	31.0	33.6	36.2
87.5°	15.5	15.5	18.1	20.7	23.3
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)