

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: P545839

Luminaire Tested: **FMR-12-4-LD4-1HI-35-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: P545839  
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-LD4-1HI-35-UNV-93-84-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

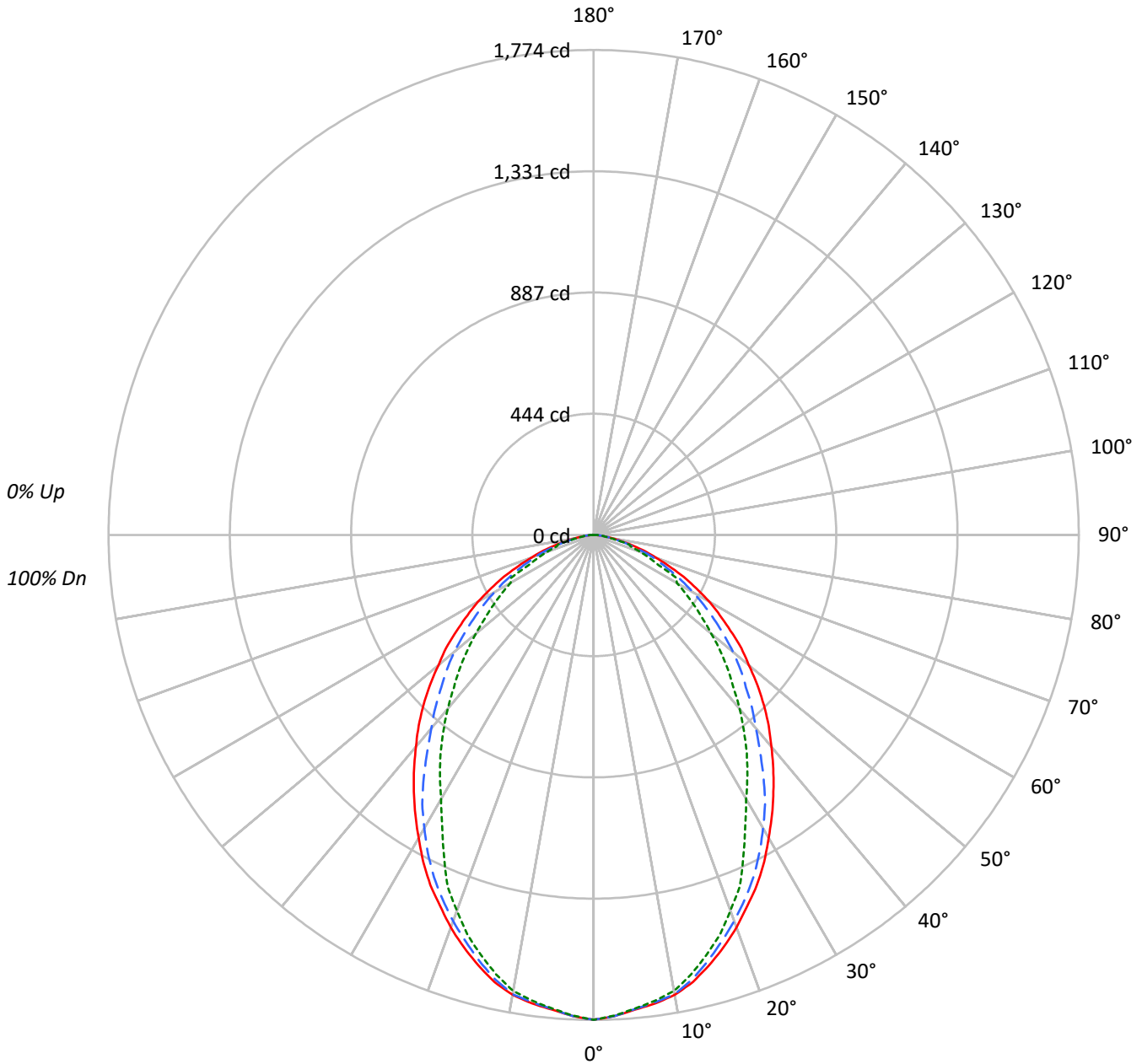
Lumens per Lamp: N/A  
Luminaire Lumens: 3482.0 lumens  
Efficiency: N/A  
Efficacy: 80.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 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°	4773	4773	4773
5°	4708	4703	4697
10°	4667	4662	4628
15°	4541	4496	4433
20°	4375	4304	4187
25°	4195	4103	3848
30°	3976	3848	3466
35°	3765	3557	3206
40°	3551	3241	2917
45°	3348	2997	2638
50°	3099	2781	2352
55°	2867	2520	2107
60°	2626	2251	1887
65°	2311	1971	1671
70°	1904	1726	1419
75°	1514	1321	1386
80°	1017	953	890
85°	633	760	886



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	165.1	4.7
10°-20°	453.1	13.0
20°-30°	627.3	18.0
30°-40°	668.9	19.2
40°-50°	610.2	17.5
50°-60°	478.1	13.7
60°-70°	311.6	8.9
70°-80°	138.0	4.0
80°-90°	29.7	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°	1245.5	35.8
0°-40°	1914.4	55.0
0°-60°	3002.7	86.2
0°-90°	3482.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3482.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1774	1774	1774	1774	1774	
5°	1743	1741	1741	1739	1739	165
15°	1630	1630	1614	1597	1591	458
25°	1413	1405	1382	1333	1296	649
35°	1146	1138	1083	1001	976	717
45°	880	861	787	722	693	678
55°	611	593	537	474	449	548
65°	363	342	310	316	262	358
75°	146	135	127	121	133	156
85°	20	23	25	27	29	28
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1773.7	1773.7	1773.7	1773.7	1773.7
2.5°	1761.4	1761.4	1761.4	1759.3	1759.3
5°	1742.9	1740.9	1740.9	1738.8	1738.8
7.5°	1728.6	1726.5	1724.5	1722.4	1718.3
10°	1708.1	1708.1	1706.0	1695.8	1693.7
12.5°	1675.3	1673.2	1665.0	1650.7	1646.6
15°	1630.1	1630.1	1613.7	1597.3	1591.2
17.5°	1580.9	1578.9	1558.4	1542.0	1533.8
20°	1527.6	1523.5	1503.0	1476.4	1462.0
22.5°	1468.2	1468.2	1443.6	1408.7	1394.3
25°	1412.8	1404.6	1382.0	1332.8	1295.9
27.5°	1349.2	1336.9	1312.3	1242.6	1199.5
30°	1279.5	1273.4	1238.5	1148.3	1115.5
32.5°	1213.9	1203.6	1166.7	1072.4	1045.8
35°	1146.2	1138.0	1082.7	1000.6	976.0
37.5°	1078.6	1068.3	998.6	933.0	902.2
40°	1010.9	998.6	922.7	863.3	830.5
42.5°	947.3	930.9	857.1	793.5	756.6
45°	879.7	861.2	787.4	721.8	693.1
47.5°	812.0	795.6	727.9	660.3	627.5
50°	740.2	725.9	664.4	596.7	561.8
52.5°	680.8	658.2	598.7	531.1	502.4
55°	611.0	592.6	537.2	473.7	449.1
57.5°	547.5	529.0	477.8	418.3	397.8
60°	488.0	461.4	418.3	367.0	350.6
62.5°	422.4	401.9	365.0	321.9	342.4
65°	362.9	342.4	309.6	315.8	262.5
67.5°	297.3	287.1	258.4	229.7	221.5
70°	242.0	229.7	219.4	188.6	180.4
72.5°	192.7	180.4	166.1	149.7	143.5
75°	145.6	135.3	127.1	121.0	133.3
77.5°	100.5	96.4	90.2	84.1	82.0
80°	65.6	63.6	61.5	59.5	57.4
82.5°	39.0	39.0	39.0	39.0	39.0
85°	20.5	22.6	24.6	26.7	28.7
87.5°	12.3	12.3	14.4	16.4	18.5
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)