

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: P545907

Luminaire Tested: **FMR-12-4-LD4-1HI-50-UNV-93-88-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: P545907  
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-50-UNV-93-88-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

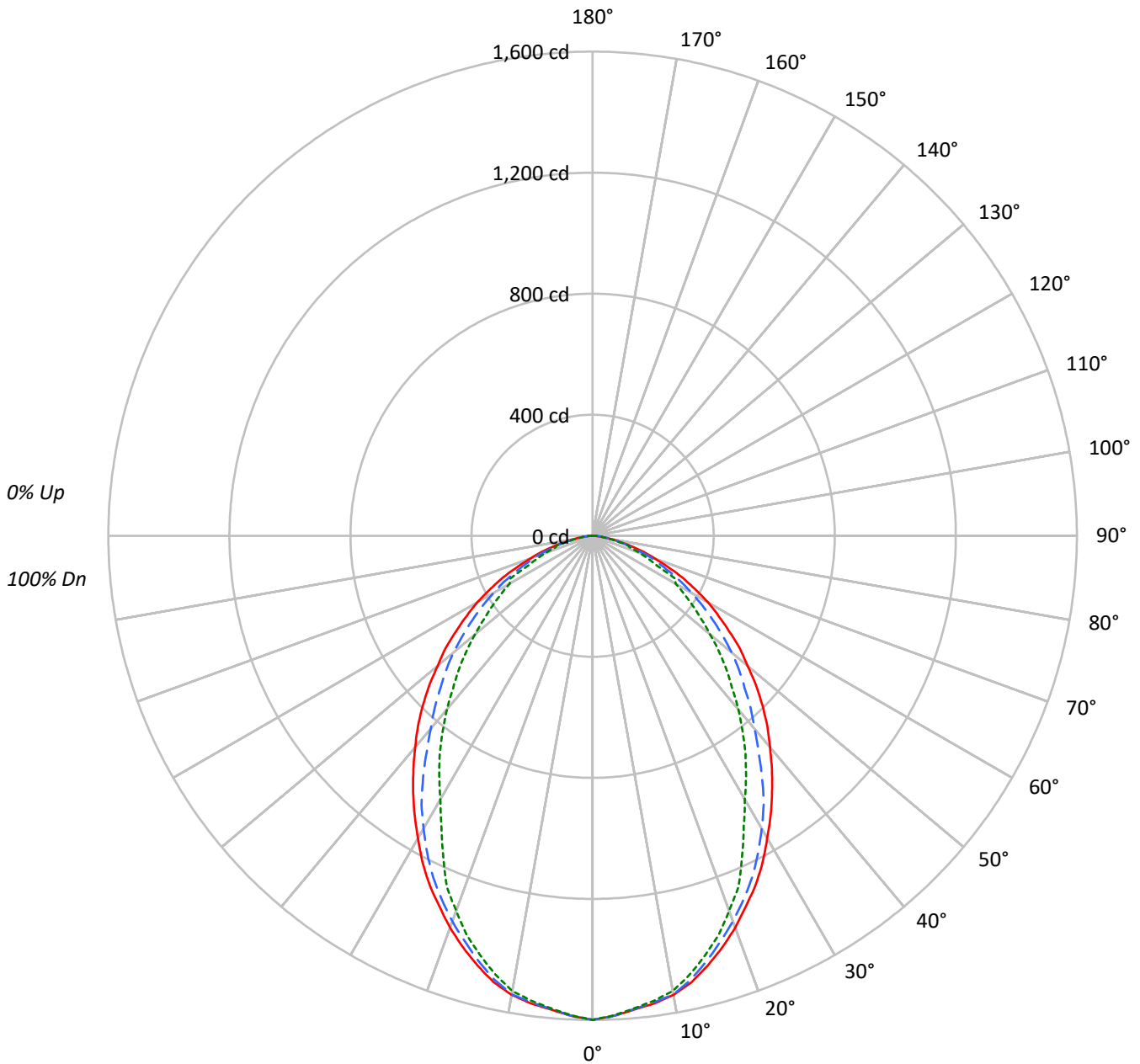
Lumens per Lamp: N/A  
Luminaire Lumens: 3140.0 lumens  
Efficiency: N/A  
Efficacy: 72.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	4304	4304	4304
5°	4246	4241	4236
10°	4209	4204	4174
15°	4095	4054	3997
20°	3945	3881	3775
25°	3783	3700	3470
30°	3585	3471	3126
35°	3395	3207	2892
40°	3202	2923	2631
45°	3019	2702	2379
50°	2794	2508	2121
55°	2585	2273	1900
60°	2369	2030	1702
65°	2084	1778	1507
70°	1717	1557	1280
75°	1365	1192	1250
80°	917	860	803
85°	571	685	800



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	148.9	4.7
10°-20°	408.6	13.0
20°-30°	565.7	18.0
30°-40°	603.2	19.2
40°-50°	550.3	17.5
50°-60°	431.1	13.7
60°-70°	281.0	8.9
70°-80°	124.5	4.0
80°-90°	26.7	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°	1123.2	35.8
0°-40°	1726.4	55.0
0°-60°	2707.8	86.2
0°-90°	3140.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3140.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1600	1600	1600	1600	1600	
5°	1572	1570	1570	1568	1568	149
15°	1470	1470	1455	1440	1435	413
25°	1274	1267	1246	1202	1169	585
35°	1034	1026	976	902	880	646
45°	793	777	710	651	625	611
55°	551	534	484	427	405	494
65°	327	309	279	285	237	323
75°	131	122	115	109	120	141
85°	18	20	22	24	26	26
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1599.5	1599.5	1599.5	1599.5	1599.5
2.5°	1588.4	1588.4	1588.4	1586.5	1586.5
5°	1571.7	1569.9	1569.9	1568.0	1568.0
7.5°	1558.8	1556.9	1555.1	1553.2	1549.5
10°	1540.3	1540.3	1538.5	1529.2	1527.4
12.5°	1510.7	1508.9	1501.5	1488.5	1484.8
15°	1470.0	1470.0	1455.2	1440.5	1434.9
17.5°	1425.7	1423.8	1405.3	1390.5	1383.1
20°	1377.6	1373.9	1355.4	1331.4	1318.4
22.5°	1324.0	1324.0	1301.8	1270.3	1257.4
25°	1274.0	1266.6	1246.3	1201.9	1168.6
27.5°	1216.7	1205.6	1183.4	1120.6	1081.7
30°	1153.8	1148.3	1116.9	1035.5	1005.9
32.5°	1094.7	1085.4	1052.1	967.1	943.0
35°	1033.6	1026.3	976.3	902.4	880.2
37.5°	972.6	963.4	900.5	841.3	813.6
40°	911.6	900.5	832.1	778.5	748.9
42.5°	854.3	839.5	772.9	715.6	682.3
45°	793.3	776.6	710.1	650.9	625.0
47.5°	732.2	717.5	656.4	595.4	565.8
50°	667.5	654.6	599.1	538.1	506.7
52.5°	613.9	593.6	539.9	478.9	453.0
55°	551.0	534.4	484.5	427.1	405.0
57.5°	493.7	477.1	430.8	377.2	358.7
60°	440.1	416.0	377.2	331.0	316.2
62.5°	380.9	362.4	329.1	290.3	308.8
65°	327.3	308.8	279.2	284.8	236.7
67.5°	268.1	258.9	233.0	207.1	199.7
70°	218.2	207.1	197.9	170.1	162.7
72.5°	173.8	162.7	149.8	135.0	129.4
75°	131.3	122.0	114.6	109.1	120.2
77.5°	90.6	86.9	81.4	75.8	74.0
80°	59.2	57.3	55.5	53.6	51.8
82.5°	35.1	35.1	35.1	35.1	35.1
85°	18.5	20.3	22.2	24.0	25.9
87.5°	11.1	11.1	12.9	14.8	16.6
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)