

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: P545893

Luminaire Tested: **FMR-12-4-LD4-1HI-50-UNV-81-96-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: P545893  
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-81-96-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

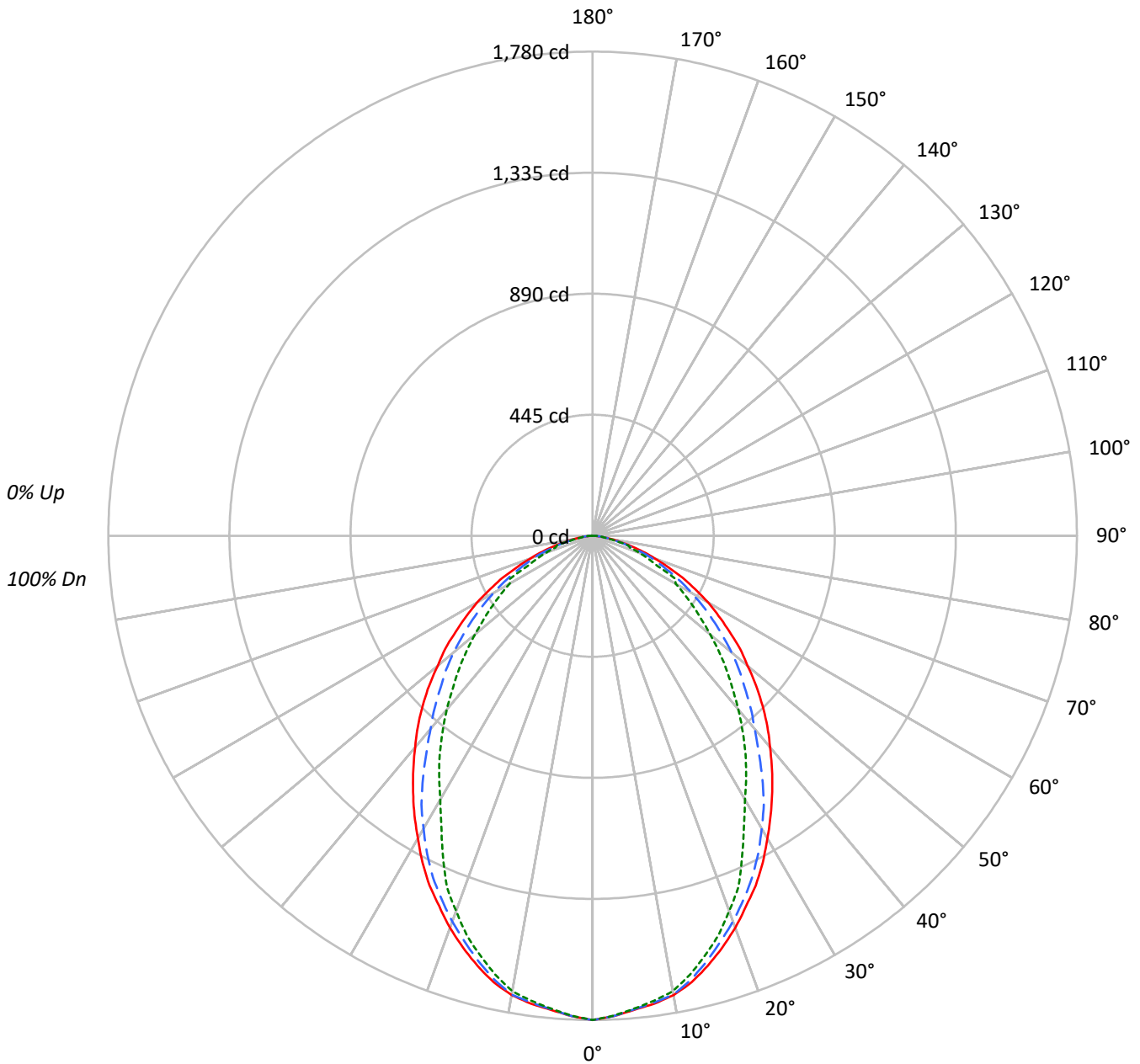
Lumens per Lamp: N/A  
Luminaire Lumens: 3495.0 lumens  
Efficiency: N/A  
Efficacy: 80.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	4791	4791	4791
5°	4726	4720	4715
10°	4685	4679	4645
15°	4558	4513	4449
20°	4391	4320	4202
25°	4211	4119	3862
30°	3991	3863	3479
35°	3779	3570	3218
40°	3564	3254	2928
45°	3360	3008	2648
50°	3111	2792	2361
55°	2877	2530	2114
60°	2636	2260	1894
65°	2320	1979	1677
70°	1911	1733	1425
75°	1519	1327	1391
80°	1021	956	893
85°	636	763	889



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	165.7	4.7
10°-20°	454.8	13.0
20°-30°	629.7	18.0
30°-40°	671.4	19.2
40°-50°	612.5	17.5
50°-60°	479.9	13.7
60°-70°	312.7	8.9
70°-80°	138.5	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°	1250.2	35.8
0°-40°	1921.6	55.0
0°-60°	3013.9	86.2
0°-90°	3495.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3495.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1780	1780	1780	1780	1780	
5°	1749	1747	1747	1745	1745	166
15°	1636	1636	1620	1603	1597	460
25°	1418	1410	1387	1338	1301	651
35°	1150	1142	1087	1004	980	719
45°	883	864	790	724	696	680
55°	613	595	539	475	451	550
65°	364	344	311	317	263	359
75°	146	136	128	121	134	157
85°	21	23	25	27	29	29
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1780.3	1780.3	1780.3	1780.3	1780.3
2.5°	1768.0	1768.0	1768.0	1765.9	1765.9
5°	1749.4	1747.4	1747.4	1745.3	1745.3
7.5°	1735.0	1733.0	1730.9	1728.9	1724.7
10°	1714.4	1714.4	1712.4	1702.1	1700.0
12.5°	1681.5	1679.5	1671.2	1656.8	1652.7
15°	1636.2	1636.2	1619.8	1603.3	1597.1
17.5°	1586.8	1584.8	1564.2	1547.7	1539.5
20°	1533.3	1529.2	1508.6	1481.9	1467.5
22.5°	1473.6	1473.6	1448.9	1414.0	1399.5
25°	1418.1	1409.8	1387.2	1337.8	1300.8
27.5°	1354.3	1341.9	1317.2	1247.2	1204.0
30°	1284.3	1278.1	1243.1	1152.6	1119.6
32.5°	1218.4	1208.1	1171.1	1076.4	1049.7
35°	1150.5	1142.3	1086.7	1004.4	979.7
37.5°	1082.6	1072.3	1002.3	936.5	905.6
40°	1014.7	1002.3	926.2	866.5	833.6
42.5°	950.9	934.4	860.3	796.5	759.5
45°	882.9	864.4	790.3	724.5	695.7
47.5°	815.0	798.6	730.6	662.7	629.8
50°	743.0	728.6	666.8	598.9	563.9
52.5°	683.3	660.7	601.0	533.1	504.2
55°	613.3	594.8	539.2	475.4	450.7
57.5°	549.5	531.0	479.6	419.9	399.3
60°	489.8	463.1	419.9	368.4	351.9
62.5°	424.0	403.4	366.4	323.1	343.7
65°	364.3	343.7	310.8	317.0	263.4
67.5°	298.4	288.1	259.3	230.5	222.3
70°	242.9	230.5	220.2	189.4	181.1
72.5°	193.5	181.1	166.7	150.2	144.1
75°	146.1	135.8	127.6	121.4	133.8
77.5°	100.8	96.7	90.6	84.4	82.3
80°	65.9	63.8	61.7	59.7	57.6
82.5°	39.1	39.1	39.1	39.1	39.1
85°	20.6	22.6	24.7	26.8	28.8
87.5°	12.3	12.3	14.4	16.5	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)