

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: P545906

Luminaire Tested: **FMR-12-4-LD4-1HI-50-UNV-93-87-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: P545906  
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-93-87-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

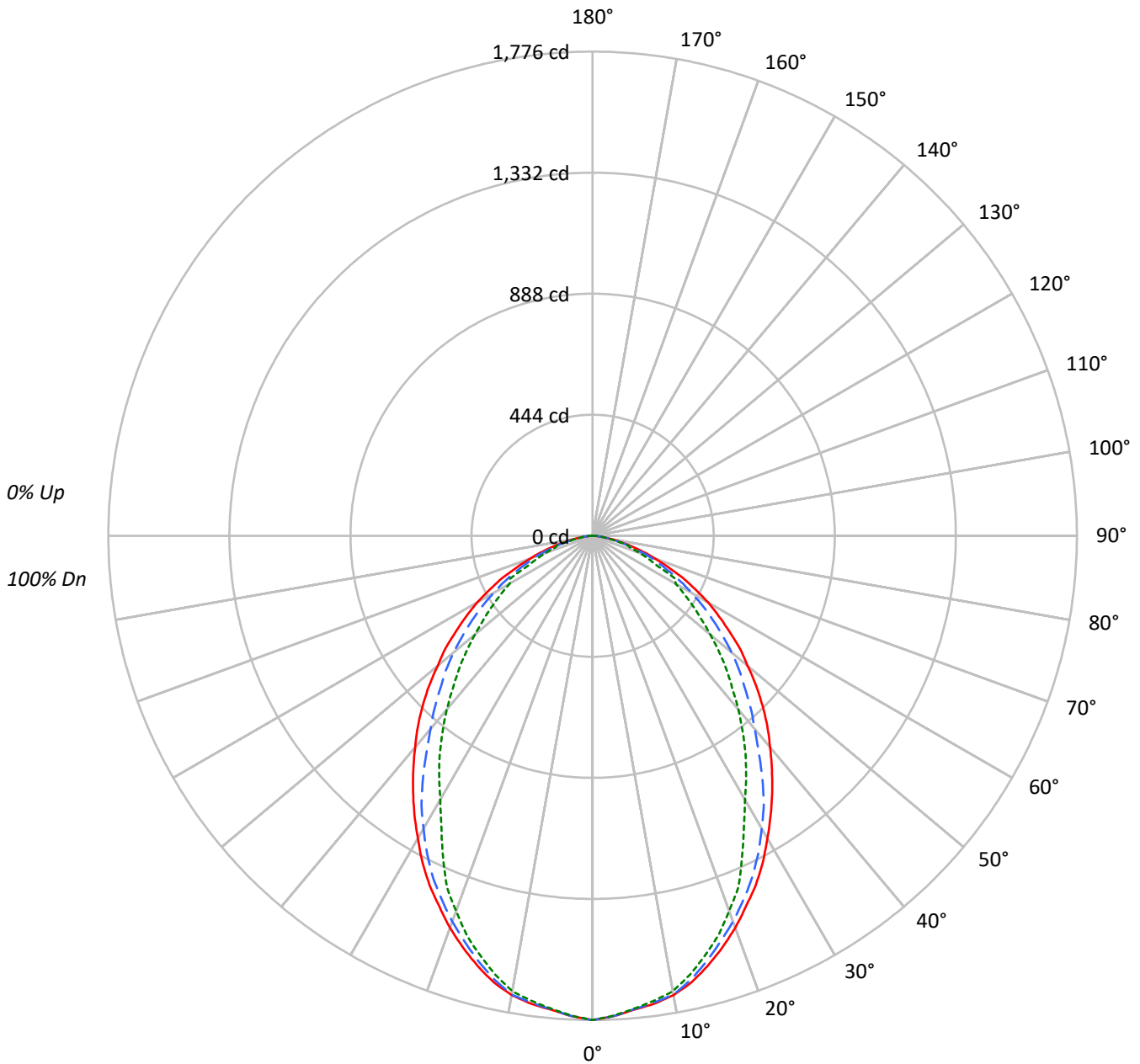
Lumens per Lamp: N/A  
Luminaire Lumens: 3487.0 lumens  
Efficiency: N/A  
Efficacy: 80.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	4780	4780	4780
5°	4715	4709	4704
10°	4674	4668	4635
15°	4548	4502	4439
20°	4381	4310	4193
25°	4201	4109	3853
30°	3982	3854	3471
35°	3771	3562	3211
40°	3556	3246	2921
45°	3352	3001	2641
50°	3103	2785	2355
55°	2871	2524	2110
60°	2630	2255	1890
65°	2315	1975	1673
70°	1906	1729	1422
75°	1516	1324	1388
80°	1018	955	891
85°	633	760	886



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	165.3	4.7
10°-20°	453.8	13.0
20°-30°	628.2	18.0
30°-40°	669.9	19.2
40°-50°	611.1	17.5
50°-60°	478.7	13.7
60°-70°	312.0	8.9
70°-80°	138.2	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°	1247.3	35.8
0°-40°	1917.2	55.0
0°-60°	3007.0	86.2
0°-90°	3487.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3487.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1776	1776	1776	1776	1776	
5°	1745	1743	1743	1741	1741	166
15°	1632	1632	1616	1600	1594	459
25°	1415	1407	1384	1335	1298	650
35°	1148	1140	1084	1002	977	718
45°	881	862	788	723	694	679
55°	612	593	538	474	450	549
65°	364	343	310	316	263	358
75°	146	136	127	121	134	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°	1776.2	1776.2	1776.2	1776.2	1776.2
2.5°	1763.9	1763.9	1763.9	1761.9	1761.9
5°	1745.4	1743.4	1743.4	1741.3	1741.3
7.5°	1731.1	1729.0	1726.9	1724.9	1720.8
10°	1710.5	1710.5	1708.5	1698.2	1696.1
12.5°	1677.7	1675.6	1667.4	1653.0	1648.9
15°	1632.5	1632.5	1616.1	1599.6	1593.5
17.5°	1583.2	1581.2	1560.6	1544.2	1536.0
20°	1529.8	1525.7	1505.2	1478.5	1464.1
22.5°	1470.3	1470.3	1445.6	1410.7	1396.3
25°	1414.8	1406.6	1384.0	1334.7	1297.8
27.5°	1351.2	1338.8	1314.2	1244.4	1201.3
30°	1281.4	1275.2	1240.3	1149.9	1117.1
32.5°	1215.6	1205.4	1168.4	1074.0	1047.3
35°	1147.9	1139.7	1084.2	1002.1	977.4
37.5°	1080.1	1069.8	1000.0	934.3	903.5
40°	1012.3	1000.0	924.1	864.5	831.6
42.5°	948.7	932.3	858.3	794.7	757.7
45°	880.9	862.4	788.5	722.8	694.1
47.5°	813.2	796.7	729.0	661.2	628.4
50°	741.3	726.9	665.3	597.6	562.6
52.5°	681.7	659.2	599.6	531.8	503.1
55°	611.9	593.4	538.0	474.3	449.7
57.5°	548.3	529.8	478.5	418.9	398.4
60°	488.7	462.0	418.9	367.6	351.1
62.5°	423.0	402.5	365.5	322.4	342.9
65°	363.5	342.9	310.1	316.2	262.8
67.5°	297.7	287.5	258.7	230.0	221.8
70°	242.3	230.0	219.7	188.9	180.7
72.5°	193.0	180.7	166.3	149.9	143.7
75°	145.8	135.5	127.3	121.2	133.5
77.5°	100.6	96.5	90.4	84.2	82.1
80°	65.7	63.7	61.6	59.5	57.5
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)