

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: P545876

Luminaire Tested: **FMR-12-4-LD4-1HI-40-UNV-93-94-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: P545876  
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-40-UNV-93-94-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

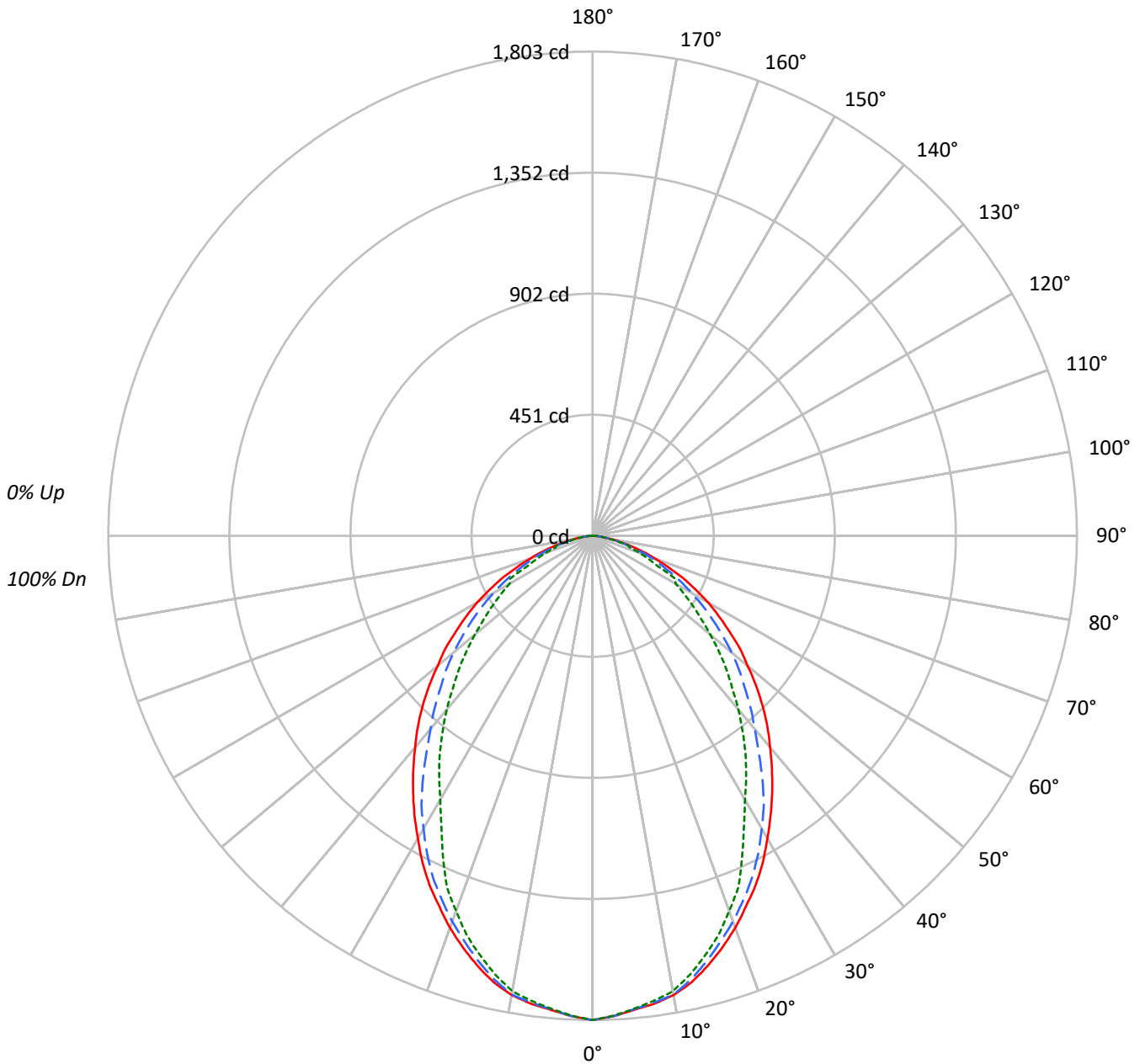
Lumens per Lamp: N/A  
Luminaire Lumens: 3540.0 lumens  
Efficiency: N/A  
Efficacy: 81.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 43.2  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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°	4852	4852	4852
5°	4787	4781	4775
10°	4745	4739	4705
15°	4617	4571	4507
20°	4448	4376	4257
25°	4265	4172	3912
30°	4042	3912	3524
35°	3828	3616	3260
40°	3610	3295	2966
45°	3403	3046	2681
50°	3151	2828	2391
55°	2914	2563	2142
60°	2670	2289	1919
65°	2350	2004	1699
70°	1936	1755	1443
75°	1539	1343	1409
80°	1034	969	905
85°	642	772	902



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	167.9	4.7
10°-20°	460.7	13.0
20°-30°	637.8	18.0
30°-40°	680.0	19.2
40°-50°	620.4	17.5
50°-60°	486.0	13.7
60°-70°	316.8	8.9
70°-80°	140.3	4.0
80°-90°	30.1	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°	1266.3	35.8
0°-40°	1946.3	55.0
0°-60°	3052.8	86.2
0°-90°	3540.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3540.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1803	1803	1803	1803	1803	
5°	1772	1770	1770	1768	1768	168
15°	1657	1657	1641	1624	1618	466
25°	1436	1428	1405	1355	1318	659
35°	1165	1157	1101	1017	992	729
45°	894	876	800	734	705	689
55°	621	602	546	482	456	557
65°	369	348	315	321	267	364
75°	148	138	129	123	136	159
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°	1803.2	1803.2	1803.2	1803.2	1803.2
2.5°	1790.7	1790.7	1790.7	1788.6	1788.6
5°	1772.0	1769.9	1769.9	1767.8	1767.8
7.5°	1757.4	1755.3	1753.2	1751.1	1746.9
10°	1736.5	1736.5	1734.4	1724.0	1721.9
12.5°	1703.2	1701.1	1692.7	1678.1	1674.0
15°	1657.3	1657.3	1640.6	1623.9	1617.7
17.5°	1607.3	1605.2	1584.3	1567.7	1559.3
20°	1553.1	1548.9	1528.1	1501.0	1486.4
22.5°	1492.6	1492.6	1467.6	1432.2	1417.6
25°	1436.3	1428.0	1405.1	1355.0	1317.5
27.5°	1371.7	1359.2	1334.2	1263.3	1219.5
30°	1300.8	1294.6	1259.1	1167.4	1134.1
32.5°	1234.1	1223.7	1186.2	1090.3	1063.2
35°	1165.3	1157.0	1100.7	1017.3	992.3
37.5°	1096.5	1086.1	1015.2	948.5	917.2
40°	1027.7	1015.2	938.1	877.6	844.3
42.5°	963.1	946.4	871.4	806.8	769.2
45°	894.3	875.6	800.5	733.8	704.6
47.5°	825.5	808.8	740.1	671.3	637.9
50°	752.6	738.0	675.4	606.6	571.2
52.5°	692.1	669.2	608.7	539.9	510.7
55°	621.2	602.5	546.2	481.6	456.5
57.5°	556.6	537.8	485.7	425.3	404.4
60°	496.1	469.0	425.3	373.2	356.5
62.5°	429.4	408.6	371.1	327.3	348.1
65°	369.0	348.1	314.8	321.0	266.8
67.5°	302.3	291.9	262.7	233.5	225.1
70°	246.0	233.5	223.1	191.8	183.4
72.5°	196.0	183.4	168.9	152.2	145.9
75°	148.0	137.6	129.2	123.0	135.5
77.5°	102.1	98.0	91.7	85.5	83.4
80°	66.7	64.6	62.5	60.5	58.4
82.5°	39.6	39.6	39.6	39.6	39.6
85°	20.8	22.9	25.0	27.1	29.2
87.5°	12.5	12.5	14.6	16.7	18.8
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)