

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: P545852

Luminaire Tested: **FMR-12-4-LD4-1HI-40-UNV-80-94-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: P545852  
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-80-94-EDD  
Description: 1X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC 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**

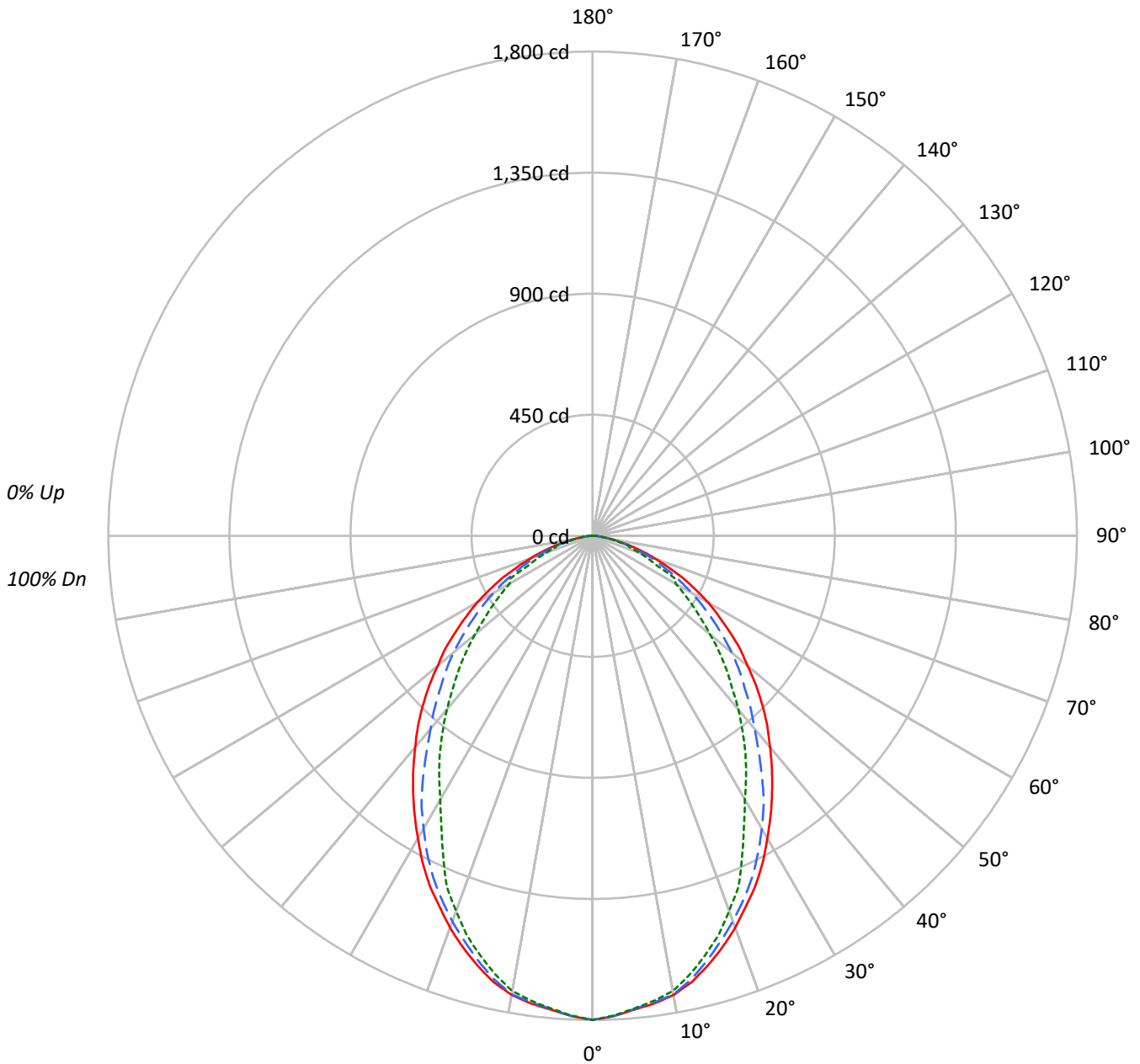
Lumens per Lamp: N/A  
Luminaire Lumens: 3533.0 lumens  
Efficiency: N/A  
Efficacy: 81.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	4843	4843	4843
5°	4777	4772	4766
10°	4736	4730	4696
15°	4608	4562	4498
20°	4439	4367	4248
25°	4256	4164	3904
30°	4034	3905	3517
35°	3821	3609	3253
40°	3603	3289	2960
45°	3397	3040	2676
50°	3144	2822	2387
55°	2909	2557	2137
60°	2665	2284	1915
65°	2345	2001	1696
70°	1932	1751	1441
75°	1536	1341	1406
80°	1032	967	903
85°	642	772	898



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	167.5	4.7
10°-20°	459.8	13.0
20°-30°	636.5	18.0
30°-40°	678.7	19.2
40°-50°	619.2	17.5
50°-60°	485.1	13.7
60°-70°	316.1	8.9
70°-80°	140.1	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°	1263.8	35.8
0°-40°	1942.5	55.0
0°-60°	3046.7	86.2
0°-90°	3533.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3533.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1800	1800	1800	1800	1800	
5°	1768	1766	1766	1764	1764	168
15°	1654	1654	1637	1621	1614	465
25°	1434	1425	1402	1352	1315	658
35°	1163	1155	1098	1015	990	727
45°	892	874	799	732	703	688
55°	620	601	545	481	456	556
65°	368	347	314	320	266	363
75°	148	137	129	123	135	158
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°	1799.7	1799.7	1799.7	1799.7	1799.7
2.5°	1787.2	1787.2	1787.2	1785.1	1785.1
5°	1768.5	1766.4	1766.4	1764.3	1764.3
7.5°	1753.9	1751.8	1749.7	1747.6	1743.5
10°	1733.1	1733.1	1731.0	1720.6	1718.5
12.5°	1699.8	1697.7	1689.4	1674.8	1670.7
15°	1654.0	1654.0	1637.4	1620.7	1614.5
17.5°	1604.1	1602.0	1581.2	1564.6	1556.2
20°	1550.0	1545.8	1525.0	1498.0	1483.4
22.5°	1489.7	1489.7	1464.7	1429.3	1414.8
25°	1433.5	1425.2	1402.3	1352.3	1314.9
27.5°	1369.0	1356.5	1331.5	1260.8	1217.1
30°	1298.3	1292.0	1256.6	1165.1	1131.8
32.5°	1231.7	1221.3	1183.8	1088.1	1061.1
35°	1163.0	1154.7	1098.5	1015.3	990.3
37.5°	1094.4	1084.0	1013.2	946.6	915.4
40°	1025.7	1013.2	936.2	875.9	842.6
42.5°	961.2	944.6	869.7	805.2	767.7
45°	892.5	873.8	798.9	732.3	703.2
47.5°	823.9	807.2	738.6	669.9	636.6
50°	751.1	736.5	674.1	605.4	570.1
52.5°	690.7	667.9	607.5	538.9	509.7
55°	620.0	601.3	545.1	480.6	455.6
57.5°	555.5	536.8	484.8	424.4	403.6
60°	495.2	468.1	424.4	372.4	355.8
62.5°	428.6	407.8	370.3	326.6	347.4
65°	368.3	347.4	314.2	320.4	266.3
67.5°	301.7	291.3	262.1	233.0	224.7
70°	245.5	233.0	222.6	191.4	183.1
72.5°	195.6	183.1	168.5	151.9	145.6
75°	147.7	137.3	129.0	122.8	135.2
77.5°	101.9	97.8	91.5	85.3	83.2
80°	66.6	64.5	62.4	60.3	58.3
82.5°	39.5	39.5	39.5	39.5	39.5
85°	20.8	22.9	25.0	27.0	29.1
87.5°	12.5	12.5	14.6	16.6	18.7
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)