

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: P545847

Luminaire Tested: **FMR-12-4-LD4-1HI-40-UNV-80-84-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: P545847  
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-80-84-EDD  
Description: 1X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

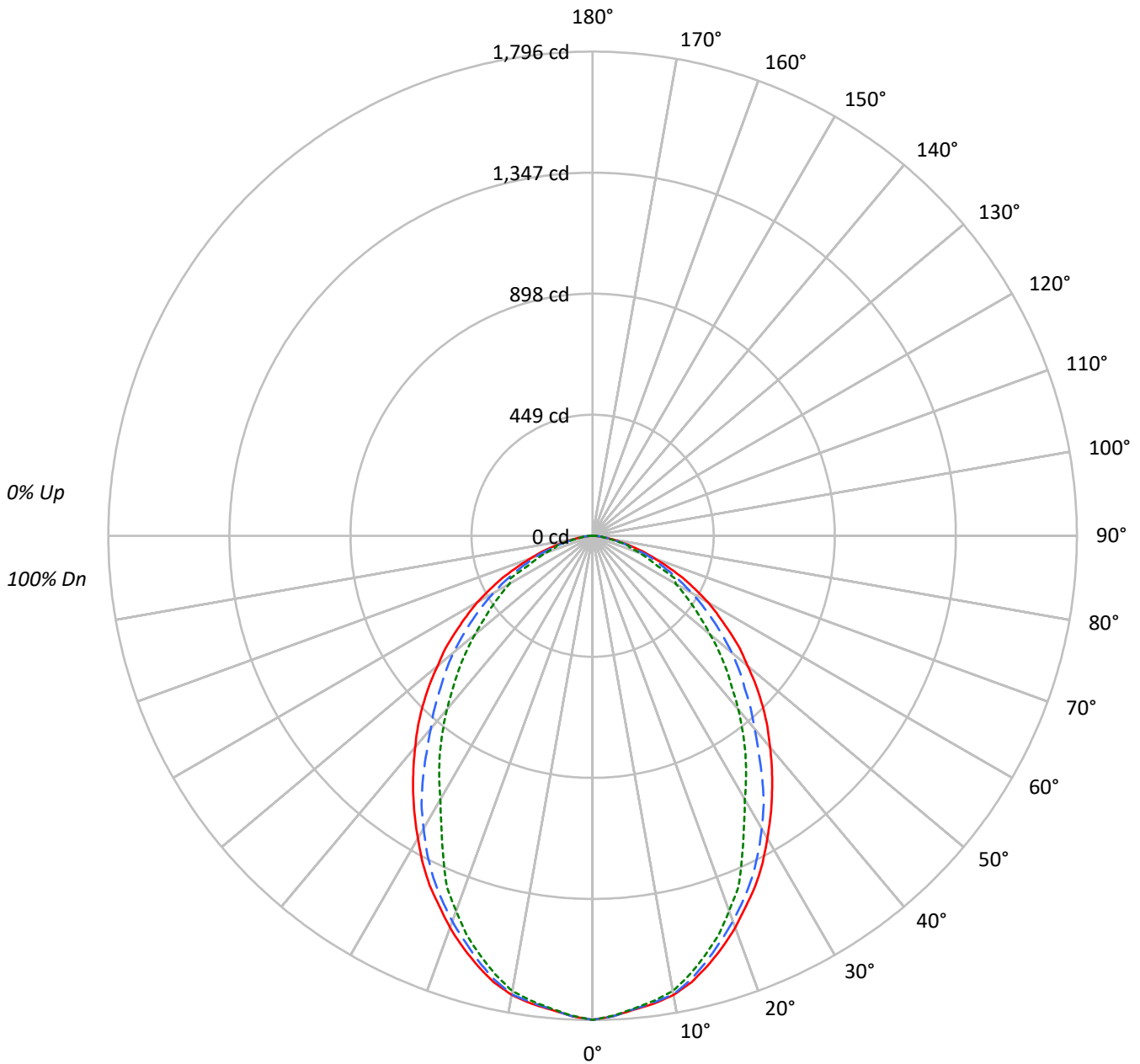
Lumens per Lamp: N/A  
Luminaire Lumens: 3525.0 lumens  
Efficiency: N/A  
Efficacy: 81.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	4832	4832	4832
5°	4766	4761	4755
10°	4725	4719	4685
15°	4598	4551	4488
20°	4429	4357	4239
25°	4247	4154	3895
30°	4025	3896	3509
35°	3812	3600	3246
40°	3595	3281	2953
45°	3389	3033	2670
50°	3137	2816	2381
55°	2902	2552	2133
60°	2659	2279	1911
65°	2339	1996	1692
70°	1927	1747	1437
75°	1533	1338	1403
80°	1029	965	900
85°	642	769	898



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	167.1	4.7
10°-20°	458.7	13.0
20°-30°	635.1	18.0
30°-40°	677.2	19.2
40°-50°	617.8	17.5
50°-60°	484.0	13.7
60°-70°	315.4	8.9
70°-80°	139.7	4.0
80°-90°	30.0	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°	1260.9	35.8
0°-40°	1938.1	55.0
0°-60°	3039.8	86.2
0°-90°	3525.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3525.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1796	1796	1796	1796	1796	
5°	1764	1762	1762	1760	1760	167
15°	1650	1650	1634	1617	1611	464
25°	1430	1422	1399	1349	1312	657
35°	1160	1152	1096	1013	988	725
45°	890	872	797	731	702	686
55°	619	600	544	480	455	555
65°	367	347	313	320	266	362
75°	147	137	129	122	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°	1795.6	1795.6	1795.6	1795.6	1795.6
2.5°	1783.1	1783.1	1783.1	1781.1	1781.1
5°	1764.5	1762.4	1762.4	1760.3	1760.3
7.5°	1749.9	1747.8	1745.8	1743.7	1739.5
10°	1729.2	1729.2	1727.1	1716.7	1714.6
12.5°	1695.9	1693.9	1685.6	1671.0	1666.9
15°	1650.3	1650.3	1633.7	1617.1	1610.8
17.5°	1600.5	1598.4	1577.6	1561.0	1552.7
20°	1546.5	1542.3	1521.6	1494.6	1480.1
22.5°	1486.3	1486.3	1461.4	1426.1	1411.6
25°	1430.2	1421.9	1399.1	1349.3	1311.9
27.5°	1365.9	1353.4	1328.5	1257.9	1214.4
30°	1295.3	1289.1	1253.8	1162.5	1129.2
32.5°	1228.9	1218.5	1181.1	1085.7	1058.7
35°	1160.4	1152.1	1096.0	1013.0	988.1
37.5°	1091.9	1081.5	1010.9	944.5	913.4
40°	1023.4	1010.9	934.1	873.9	840.7
42.5°	959.0	942.4	867.7	803.3	766.0
45°	890.5	871.8	797.1	730.7	701.6
47.5°	822.0	805.4	736.9	668.4	635.2
50°	749.4	734.8	672.6	604.1	568.8
52.5°	689.2	666.3	606.1	537.6	508.6
55°	618.6	599.9	543.9	479.5	454.6
57.5°	554.2	535.6	483.7	423.5	402.7
60°	494.0	467.1	423.5	371.6	355.0
62.5°	427.6	406.9	369.5	325.9	346.7
65°	367.4	346.7	313.4	319.7	265.7
67.5°	301.0	290.6	261.6	232.5	224.2
70°	244.9	232.5	222.1	191.0	182.7
72.5°	195.1	182.7	168.1	151.5	145.3
75°	147.4	137.0	128.7	122.5	134.9
77.5°	101.7	97.6	91.3	85.1	83.0
80°	66.4	64.4	62.3	60.2	58.1
82.5°	39.4	39.4	39.4	39.4	39.4
85°	20.8	22.8	24.9	27.0	29.1
87.5°	12.5	12.5	14.5	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)