

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: P546648

Luminaire Tested: **FMR-24-4-LD4-1STD-50-UNV-80-85-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: P546648  
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-24-4-LD4-1STD-50-UNV-80-85-EDD  
Description: 2X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

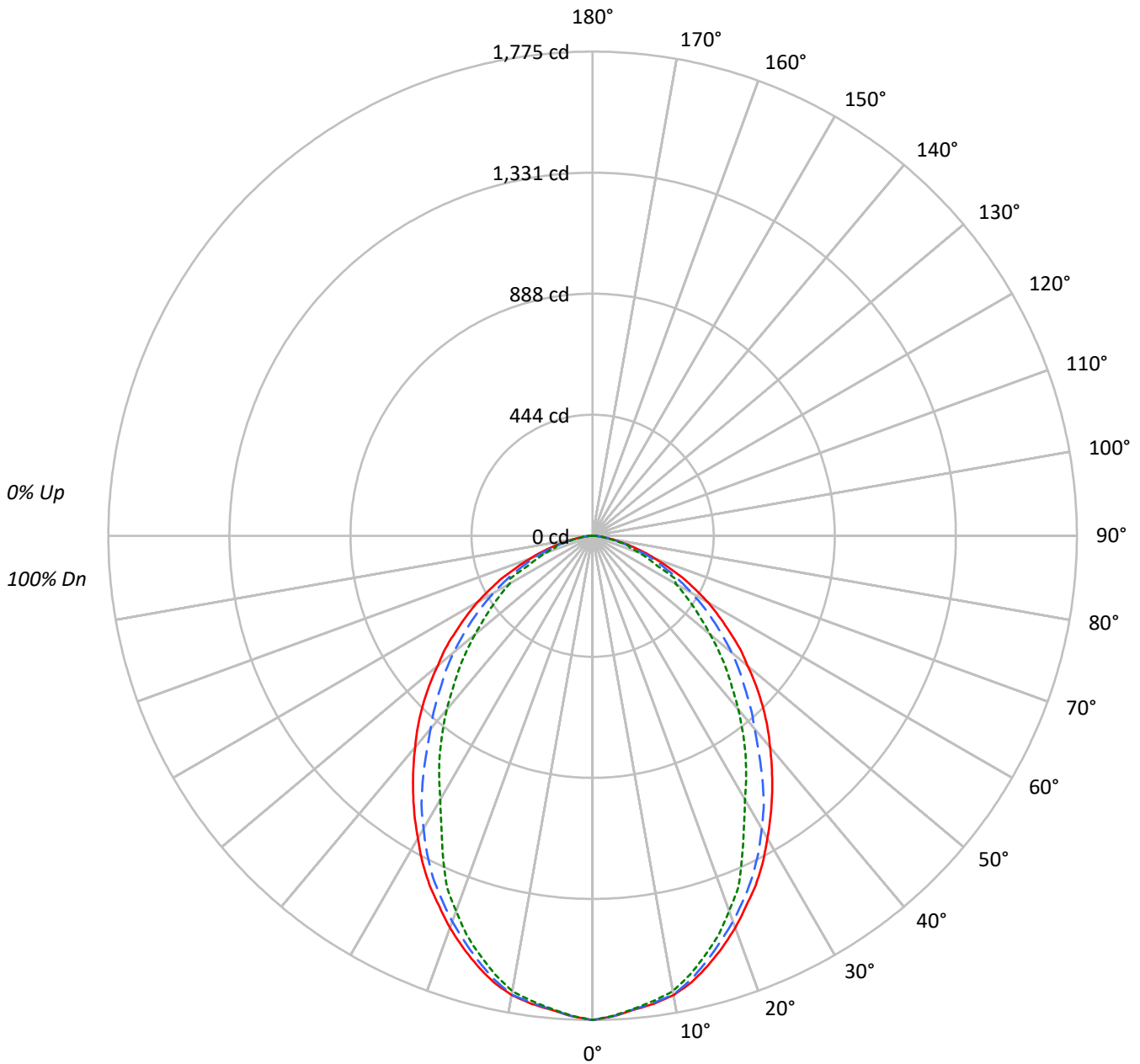
Lumens per Lamp: N/A  
Luminaire Lumens: 3485.0 lumens  
Efficiency: N/A  
Efficacy: 104.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 33.3  
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°	2389	2389	2389
5°	2356	2353	2350
10°	2336	2333	2316
15°	2273	2250	2218
20°	2189	2154	2095
25°	2099	2053	1926
30°	1990	1926	1734
35°	1884	1780	1605
40°	1777	1622	1460
45°	1675	1500	1320
50°	1551	1392	1177
55°	1435	1261	1054
60°	1314	1127	944
65°	1157	987	836
70°	953	864	710
75°	757	661	693
80°	509	477	446
85°	316	380	443



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	165.2	4.7
10°-20°	453.5	13.0
20°-30°	627.9	18.0
30°-40°	669.5	19.2
40°-50°	610.8	17.5
50°-60°	478.5	13.7
60°-70°	311.8	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°	1246.6	35.8
0°-40°	1916.1	55.0
0°-60°	3005.3	86.2
0°-90°	3485.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3485.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1775	1775	1775	1775	1775	
5°	1744	1742	1742	1740	1740	166
15°	1632	1632	1615	1599	1593	459
25°	1414	1406	1383	1334	1297	649
35°	1147	1139	1084	1002	977	717
45°	880	862	788	722	694	678
55°	612	593	538	474	449	549
65°	363	343	310	316	263	358
75°	146	135	127	121	133	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°	1775.2	1775.2	1775.2	1775.2	1775.2
2.5°	1762.9	1762.9	1762.9	1760.8	1760.8
5°	1744.4	1742.4	1742.4	1740.3	1740.3
7.5°	1730.1	1728.0	1726.0	1723.9	1719.8
10°	1709.5	1709.5	1707.5	1697.2	1695.2
12.5°	1676.7	1674.7	1666.4	1652.1	1648.0
15°	1631.6	1631.6	1615.1	1598.7	1592.6
17.5°	1582.3	1580.2	1559.7	1543.3	1535.1
20°	1528.9	1524.8	1504.3	1477.6	1463.3
22.5°	1469.4	1469.4	1444.8	1409.9	1395.5
25°	1414.0	1405.8	1383.2	1334.0	1297.0
27.5°	1350.4	1338.1	1313.5	1243.7	1200.6
30°	1280.6	1274.5	1239.6	1149.3	1116.4
32.5°	1214.9	1204.7	1167.7	1073.3	1046.7
35°	1147.2	1139.0	1083.6	1001.5	976.9
37.5°	1079.5	1069.2	999.5	933.8	903.0
40°	1011.8	999.5	923.5	864.0	831.2
42.5°	948.1	931.7	857.8	794.2	757.3
45°	880.4	862.0	788.1	722.4	693.7
47.5°	812.7	796.3	728.6	660.8	628.0
50°	740.9	726.5	664.9	597.2	562.3
52.5°	681.4	658.8	599.3	531.5	502.8
55°	611.6	593.1	537.7	474.1	449.4
57.5°	548.0	529.5	478.2	418.7	398.1
60°	488.4	461.8	418.7	367.4	350.9
62.5°	422.8	402.2	365.3	322.2	342.7
65°	363.3	342.7	309.9	316.0	262.7
67.5°	297.6	287.3	258.6	229.9	221.6
70°	242.2	229.9	219.6	188.8	180.6
72.5°	192.9	180.6	166.2	149.8	143.7
75°	145.7	135.4	127.2	121.1	133.4
77.5°	100.6	96.5	90.3	84.1	82.1
80°	65.7	63.6	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)