

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: P546673

Luminaire Tested: **FMR-24-4-LD4-1STD-50-UNV-93-86-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: P546673  
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-93-86-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

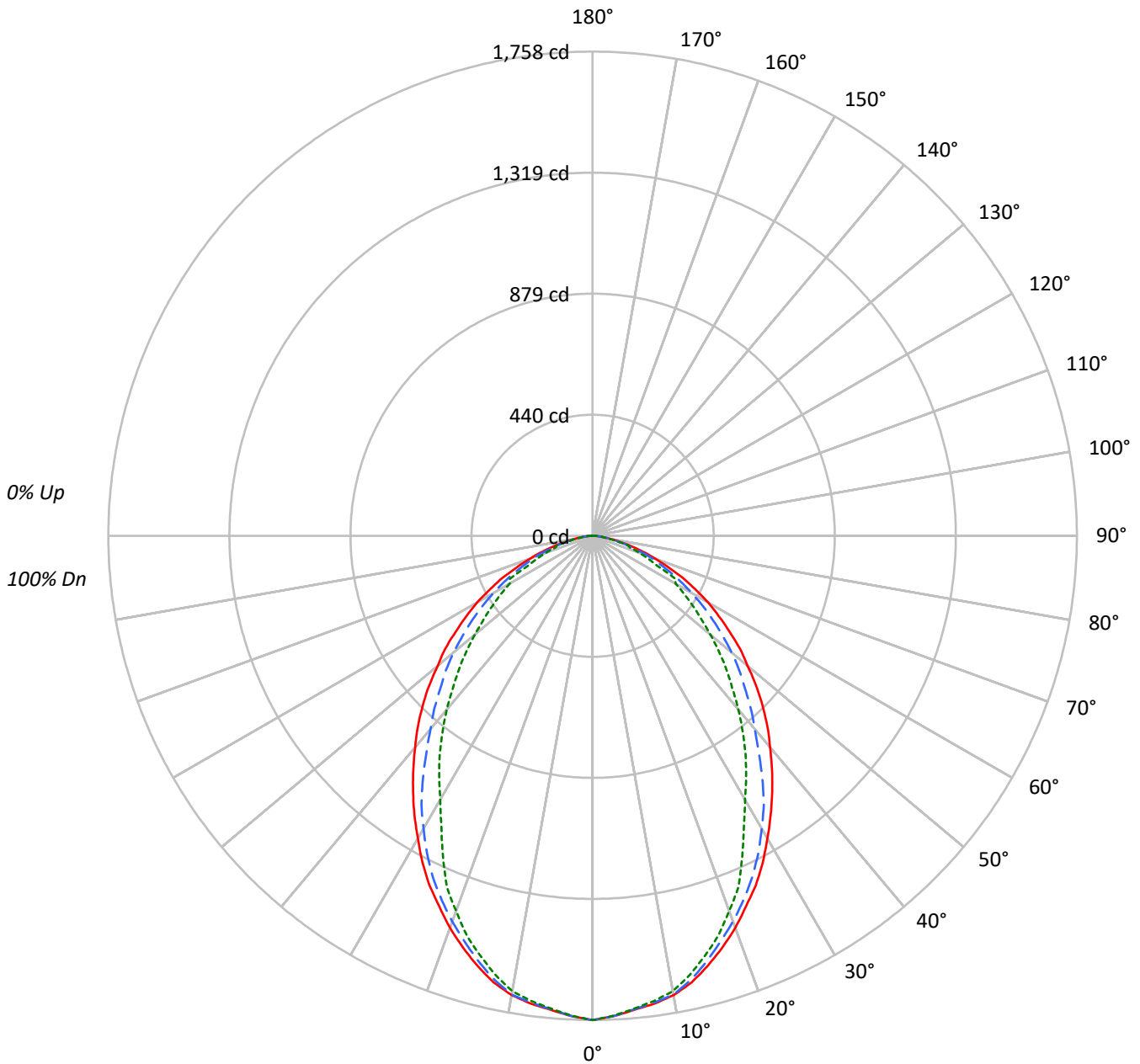
Lumens per Lamp: N/A  
Luminaire Lumens: 3452.0 lumens  
Efficiency: N/A  
Efficacy: 103.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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

TEST NUMBER: P546673

CATALOG NUMBER: FMR-24-4-LD4-1STD-50-UNV-93-86-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P546673

CATALOG NUMBER: FMR-24-4-LD4-1STD-50-UNV-93-86-EDD

**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°	2366	2366	2366
5°	2334	2331	2328
10°	2314	2311	2294
15°	2251	2228	2197
20°	2169	2134	2075
25°	2079	2034	1907
30°	1971	1908	1718
35°	1867	1763	1589
40°	1760	1607	1446
45°	1659	1485	1307
50°	1536	1379	1166
55°	1421	1249	1044
60°	1302	1116	935
65°	1145	977	828
70°	944	856	704
75°	750	655	687
80°	504	473	441
85°	313	377	440



TEST NUMBER: P546673

CATALOG NUMBER: FMR-24-4-LD4-1STD-50-UNV-93-86-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	163.7	4.7
10°-20°	449.2	13.0
20°-30°	621.9	18.0
30°-40°	663.1	19.2
40°-50°	605.0	17.5
50°-60°	474.0	13.7
60°-70°	308.9	8.9
70°-80°	136.8	4.0
80°-90°	29.4	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°	1234.8	35.8
0°-40°	1897.9	55.0
0°-60°	2976.9	86.2
0°-90°	3452.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3452.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1758	1758	1758	1758	1758	
5°	1728	1726	1726	1724	1724	164
15°	1616	1616	1600	1584	1578	454
25°	1401	1392	1370	1321	1285	643
35°	1136	1128	1073	992	968	710
45°	872	854	781	716	687	672
55°	606	588	533	470	445	543
65°	360	340	307	313	260	355
75°	144	134	126	120	132	155
85°	20	22	24	26	28	28
90°	0	0	0	0	0	



TEST NUMBER: P546673

CATALOG NUMBER: FMR-24-4-LD4-1STD-50-UNV-93-86-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1758.4	1758.4	1758.4	1758.4	1758.4
2.5°	1746.2	1746.2	1746.2	1744.2	1744.2
5°	1727.9	1725.9	1725.9	1723.8	1723.8
7.5°	1713.7	1711.6	1709.6	1707.6	1703.5
10°	1693.4	1693.4	1691.3	1681.2	1679.1
12.5°	1660.8	1658.8	1650.7	1636.4	1632.4
15°	1616.1	1616.1	1599.8	1583.6	1577.5
17.5°	1567.3	1565.3	1545.0	1528.7	1520.6
20°	1514.5	1510.4	1490.1	1463.6	1449.4
22.5°	1455.5	1455.5	1431.1	1396.6	1382.3
25°	1400.6	1392.5	1370.1	1321.3	1284.8
27.5°	1337.6	1325.4	1301.0	1231.9	1189.2
30°	1268.5	1262.4	1227.8	1138.4	1105.9
32.5°	1203.4	1193.3	1156.7	1063.2	1036.7
35°	1136.4	1128.2	1073.3	992.0	967.6
37.5°	1069.3	1059.1	990.0	924.9	894.4
40°	1002.2	990.0	914.8	855.8	823.3
42.5°	939.2	922.9	849.7	786.7	750.1
45°	872.1	853.8	780.6	715.6	687.1
47.5°	805.0	788.7	721.7	654.6	622.0
50°	733.9	719.6	658.6	591.6	557.0
52.5°	674.9	652.5	593.6	526.5	498.0
55°	605.8	587.5	532.6	469.6	445.2
57.5°	542.8	524.5	473.7	414.7	394.4
60°	483.8	457.4	414.7	363.9	347.6
62.5°	418.8	398.4	361.8	319.2	339.5
65°	359.8	339.5	307.0	313.1	260.2
67.5°	294.8	284.6	256.1	227.7	219.5
70°	239.9	227.7	217.5	187.0	178.9
72.5°	191.1	178.9	164.7	148.4	142.3
75°	144.3	134.2	126.0	119.9	132.1
77.5°	99.6	95.5	89.4	83.3	81.3
80°	65.1	63.0	61.0	59.0	56.9
82.5°	38.6	38.6	38.6	38.6	38.6
85°	20.3	22.4	24.4	26.4	28.5
87.5°	12.2	12.2	14.2	16.3	18.3
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)