

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: P546480

Luminaire Tested: **FMR-24-4-LD4-1HI-40-UNV-93-85-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: P546480  
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-LD4-1HI-40-UNV-93-85-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

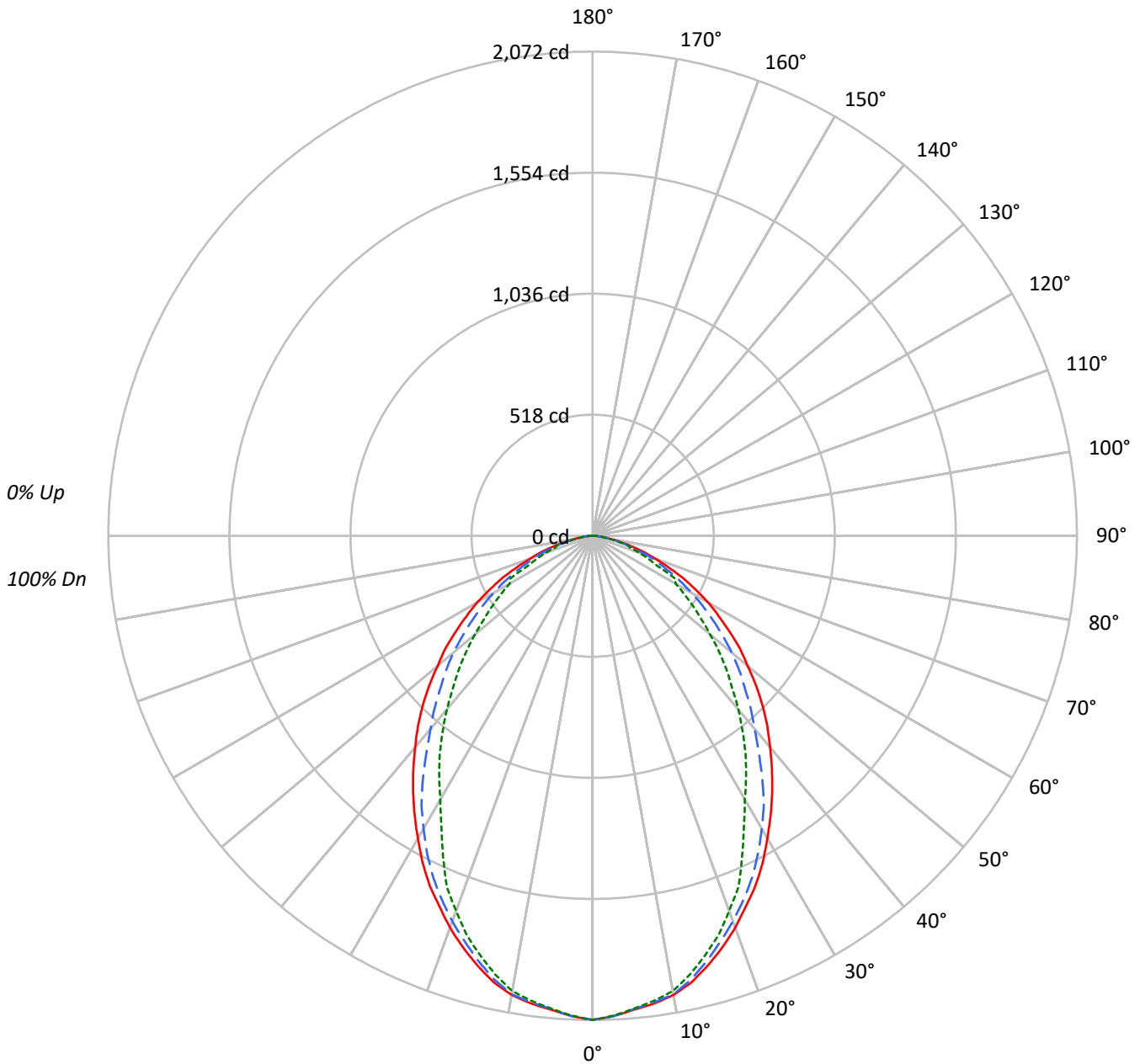
Lumens per Lamp: N/A  
Luminaire Lumens: 4067.0 lumens  
Efficiency: N/A  
Efficacy: 94.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 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

TEST NUMBER: P546480

CATALOG NUMBER: FMR-24-4-LD4-1HI-40-UNV-93-85-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P546480

CATALOG NUMBER: FMR-24-4-LD4-1HI-40-UNV-93-85-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°	2787	2787	2787
5°	2750	2746	2743
10°	2726	2722	2703
15°	2652	2626	2589
20°	2555	2514	2445
25°	2450	2396	2247
30°	2322	2247	2024
35°	2199	2077	1872
40°	2074	1893	1704
45°	1955	1750	1540
50°	1810	1624	1374
55°	1674	1472	1230
60°	1534	1315	1102
65°	1350	1151	976
70°	1112	1008	829
75°	884	772	809
80°	594	557	520
85°	371	443	517



TEST NUMBER: P546480

CATALOG NUMBER: FMR-24-4-LD4-1HI-40-UNV-93-85-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	192.8	4.7
10°-20°	529.2	13.0
20°-30°	732.7	18.0
30°-40°	781.3	19.2
40°-50°	712.8	17.5
50°-60°	558.4	13.7
60°-70°	363.9	8.9
70°-80°	161.2	4.0
80°-90°	34.6	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°	1454.8	35.8
0°-40°	2236.1	55.0
0°-60°	3507.2	86.2
0°-90°	4067.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4067.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2072	2072	2072	2072	2072	
5°	2036	2033	2033	2031	2031	193
15°	1904	1904	1885	1866	1858	535
25°	1650	1641	1614	1557	1514	758
35°	1339	1329	1265	1169	1140	837
45°	1028	1006	920	843	810	791
55°	714	692	628	553	524	640
65°	424	400	362	369	307	418
75°	170	158	148	141	156	182
85°	24	26	29	31	34	33
90°	0	0	0	0	0	



TEST NUMBER: P546480

CATALOG NUMBER: FMR-24-4-LD4-1HI-40-UNV-93-85-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2071.7	2071.7	2071.7	2071.7	2071.7
2.5°	2057.3	2057.3	2057.3	2054.9	2054.9
5°	2035.8	2033.4	2033.4	2031.0	2031.0
7.5°	2019.0	2016.6	2014.2	2011.8	2007.0
10°	1995.0	1995.0	1992.6	1980.7	1978.3
12.5°	1956.7	1954.3	1944.7	1928.0	1923.2
15°	1904.0	1904.0	1884.9	1865.7	1858.5
17.5°	1846.5	1844.2	1820.2	1801.0	1791.5
20°	1784.3	1779.5	1755.5	1724.4	1707.6
22.5°	1714.8	1714.8	1686.1	1645.4	1628.6
25°	1650.2	1640.6	1614.2	1556.8	1513.6
27.5°	1575.9	1561.5	1532.8	1451.4	1401.1
30°	1494.5	1487.3	1446.6	1341.2	1302.9
32.5°	1417.8	1405.9	1362.8	1252.6	1221.5
35°	1338.8	1329.2	1264.6	1168.8	1140.0
37.5°	1259.8	1247.8	1166.4	1089.7	1053.8
40°	1180.7	1166.4	1077.8	1008.3	970.0
42.5°	1106.5	1087.3	1001.1	926.9	883.8
45°	1027.5	1005.9	919.7	843.0	809.5
47.5°	948.4	929.3	850.2	771.2	732.9
50°	864.6	847.8	776.0	696.9	656.2
52.5°	795.1	768.8	699.3	620.3	586.8
55°	713.7	692.2	627.5	553.2	524.5
57.5°	639.5	617.9	558.0	488.6	464.6
60°	570.0	538.9	488.6	428.7	409.5
62.5°	493.4	469.4	426.3	376.0	400.0
65°	423.9	400.0	361.6	368.8	306.6
67.5°	347.3	335.3	301.8	268.2	258.7
70°	282.6	268.2	256.3	220.3	210.8
72.5°	225.1	210.8	194.0	174.8	167.7
75°	170.0	158.1	148.5	141.3	155.7
77.5°	117.4	112.6	105.4	98.2	95.8
80°	76.6	74.2	71.9	69.5	67.1
82.5°	45.5	45.5	45.5	45.5	45.5
85°	24.0	26.3	28.7	31.1	33.5
87.5°	14.4	14.4	16.8	19.2	21.6
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)