

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: P546443

Luminaire Tested: **FMR-24-4-LD4-1HI-35-UNV-82-88-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: P546443  
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-35-UNV-82-88-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

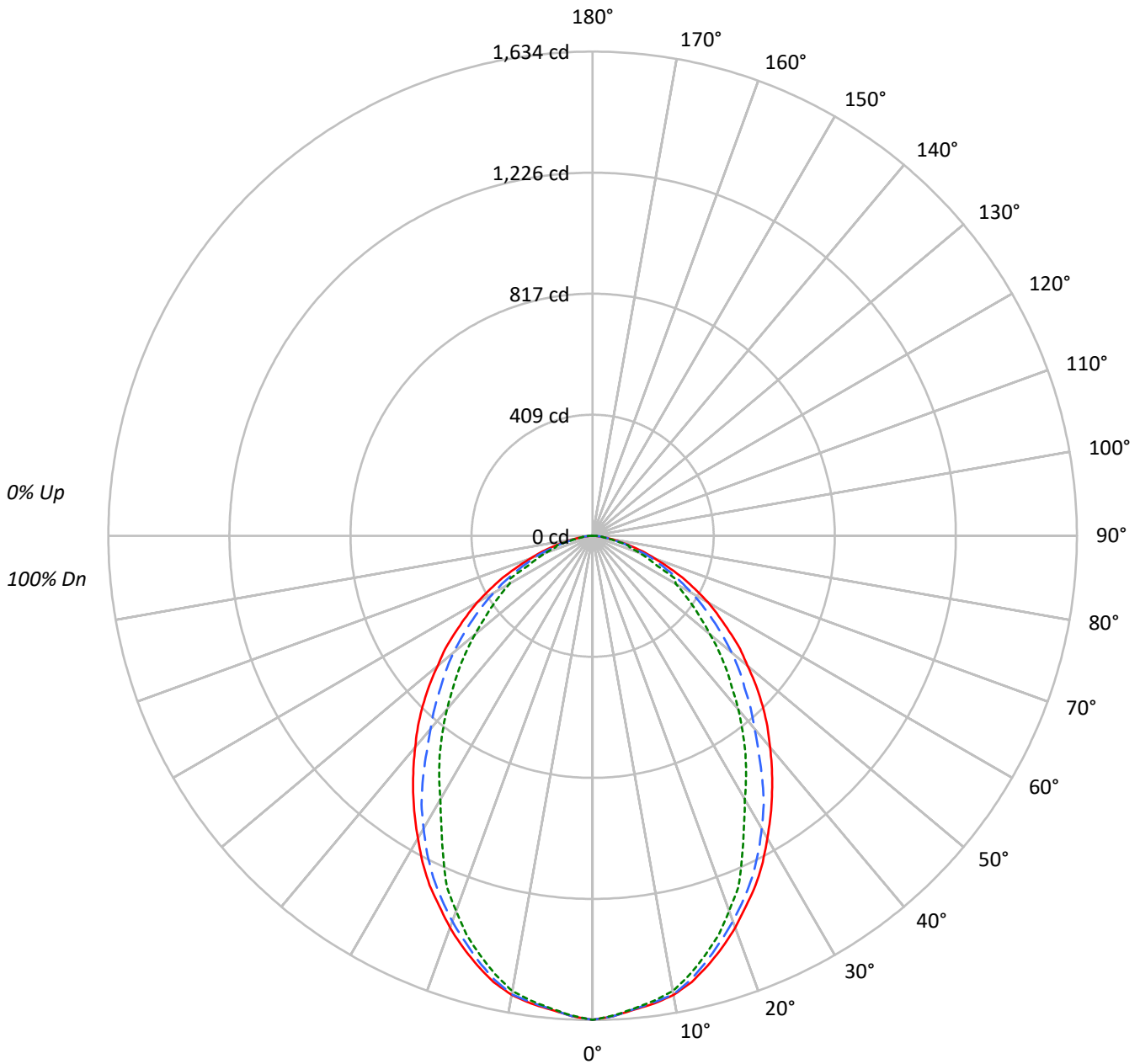
Lumens per Lamp: N/A  
Luminaire Lumens: 3207.0 lumens  
Efficiency: N/A  
Efficacy: 74.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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: P546443

CATALOG NUMBER: FMR-24-4-LD4-1HI-35-UNV-82-88-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P546443

CATALOG NUMBER: FMR-24-4-LD4-1HI-35-UNV-82-88-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°	2198	2198	2198
5°	2168	2166	2163
10°	2149	2147	2131
15°	2091	2070	2041
20°	2015	1982	1928
25°	1932	1890	1772
30°	1831	1772	1596
35°	1734	1638	1477
40°	1635	1493	1343
45°	1542	1380	1215
50°	1427	1281	1083
55°	1320	1161	970
60°	1210	1037	869
65°	1064	908	770
70°	876	795	654
75°	697	609	638
80°	468	439	410
85°	292	350	408



TEST NUMBER: P546443

CATALOG NUMBER: FMR-24-4-LD4-1HI-35-UNV-82-88-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	152.1	4.7
10°-20°	417.3	13.0
20°-30°	577.8	18.0
30°-40°	616.1	19.2
40°-50°	562.0	17.5
50°-60°	440.3	13.7
60°-70°	287.0	8.9
70°-80°	127.1	4.0
80°-90°	27.3	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°	1147.2	35.8
0°-40°	1763.2	55.0
0°-60°	2765.6	86.2
0°-90°	3207.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3207.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1634	1634	1634	1634	1634	
5°	1605	1603	1603	1602	1602	152
15°	1501	1501	1486	1471	1466	422
25°	1301	1294	1273	1228	1194	597
35°	1056	1048	997	922	899	660
45°	810	793	725	665	638	624
55°	563	546	495	436	414	505
65°	334	315	285	291	242	329
75°	134	125	117	111	123	144
85°	19	21	23	25	26	26
90°	0	0	0	0	0	



TEST NUMBER: P546443

CATALOG NUMBER: FMR-24-4-LD4-1HI-35-UNV-82-88-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1633.6	1633.6	1633.6	1633.6	1633.6
2.5°	1622.3	1622.3	1622.3	1620.4	1620.4
5°	1605.3	1603.4	1603.4	1601.5	1601.5
7.5°	1592.1	1590.2	1588.3	1586.4	1582.6
10°	1573.2	1573.2	1571.3	1561.8	1559.9
12.5°	1543.0	1541.1	1533.5	1520.3	1516.5
15°	1501.4	1501.4	1486.3	1471.2	1465.5
17.5°	1456.1	1454.2	1435.3	1420.2	1412.6
20°	1407.0	1403.2	1384.3	1359.8	1346.5
22.5°	1352.2	1352.2	1329.5	1297.4	1284.2
25°	1301.2	1293.7	1272.9	1227.6	1193.6
27.5°	1242.7	1231.3	1208.7	1144.5	1104.8
30°	1178.5	1172.8	1140.7	1057.6	1027.4
32.5°	1118.0	1108.6	1074.6	987.7	963.2
35°	1055.7	1048.1	997.2	921.6	899.0
37.5°	993.4	983.9	919.7	859.3	831.0
40°	931.1	919.7	849.9	795.1	764.9
42.5°	872.5	857.4	789.4	730.9	696.9
45°	810.2	793.2	725.2	664.8	638.3
47.5°	747.9	732.8	670.4	608.1	577.9
50°	681.8	668.5	611.9	549.6	517.5
52.5°	627.0	606.2	551.5	489.1	462.7
55°	562.8	545.8	494.8	436.3	413.6
57.5°	504.2	487.2	440.0	385.3	366.4
60°	449.5	424.9	385.3	338.1	322.9
62.5°	389.0	370.2	336.2	296.5	315.4
65°	334.3	315.4	285.2	290.8	241.7
67.5°	273.8	264.4	238.0	211.5	204.0
70°	222.8	211.5	202.1	173.7	166.2
72.5°	177.5	166.2	153.0	137.9	132.2
75°	134.1	124.6	117.1	111.4	122.8
77.5°	92.5	88.8	83.1	77.4	75.5
80°	60.4	58.5	56.7	54.8	52.9
82.5°	35.9	35.9	35.9	35.9	35.9
85°	18.9	20.8	22.7	24.6	26.4
87.5°	11.3	11.3	13.2	15.1	17.0
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)