

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: P546449

Luminaire Tested: **FMR-24-4-LD4-1HI-35-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: P546449  
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-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 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

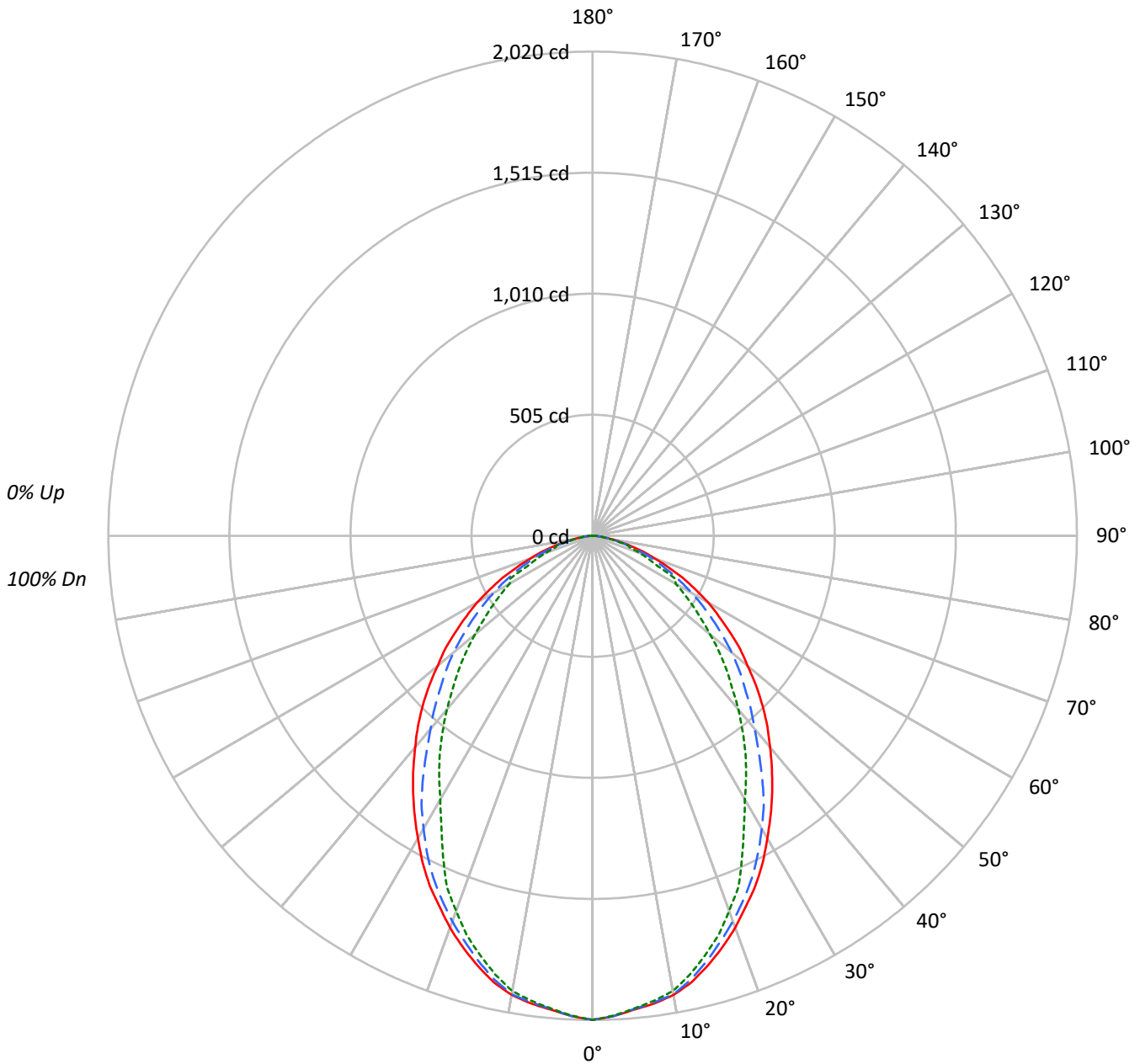
Lumens per Lamp: N/A  
Luminaire Lumens: 3965.0 lumens  
Efficiency: N/A  
Efficacy: 91.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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: P546449

CATALOG NUMBER: FMR-24-4-LD4-1HI-35-UNV-93-86-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P546449

CATALOG NUMBER: FMR-24-4-LD4-1HI-35-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°	2717	2717	2717
5°	2681	2677	2674
10°	2657	2654	2635
15°	2586	2560	2524
20°	2491	2451	2384
25°	2388	2336	2191
30°	2264	2191	1973
35°	2144	2025	1826
40°	2022	1845	1661
45°	1906	1706	1502
50°	1764	1584	1339
55°	1632	1435	1200
60°	1495	1282	1075
65°	1316	1123	952
70°	1084	983	808
75°	862	753	789
80°	579	542	507
85°	360	432	505



TEST NUMBER: P546449

CATALOG NUMBER: FMR-24-4-LD4-1HI-35-UNV-93-86-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	188.0	4.7
10°-20°	516.0	13.0
20°-30°	714.3	18.0
30°-40°	761.7	19.2
40°-50°	694.9	17.5
50°-60°	544.4	13.7
60°-70°	354.8	8.9
70°-80°	157.2	4.0
80°-90°	33.8	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°	1418.3	35.8
0°-40°	2180.0	55.0
0°-60°	3419.3	86.2
0°-90°	3965.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3965.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2020	2020	2020	2020	2020	
5°	1985	1982	1982	1980	1980	188
15°	1856	1856	1838	1819	1812	522
25°	1609	1599	1574	1518	1476	739
35°	1305	1296	1233	1139	1111	816
45°	1002	981	897	822	789	772
55°	696	675	612	539	511	624
65°	413	390	353	360	299	407
75°	166	154	145	138	152	178
85°	23	26	28	30	33	32
90°	0	0	0	0	0	



TEST NUMBER: P546449

CATALOG NUMBER: FMR-24-4-LD4-1HI-35-UNV-93-86-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2019.7	2019.7	2019.7	2019.7	2019.7
2.5°	2005.7	2005.7	2005.7	2003.4	2003.4
5°	1984.7	1982.4	1982.4	1980.0	1980.0
7.5°	1968.3	1966.0	1963.7	1961.3	1956.7
10°	1945.0	1945.0	1942.7	1931.0	1928.7
12.5°	1907.6	1905.3	1896.0	1879.6	1875.0
15°	1856.3	1856.3	1837.6	1818.9	1811.9
17.5°	1800.2	1797.9	1774.5	1755.9	1746.5
20°	1739.5	1734.9	1711.5	1681.2	1664.8
22.5°	1671.8	1671.8	1643.8	1604.1	1587.8
25°	1608.8	1599.4	1573.7	1517.7	1475.7
27.5°	1536.4	1522.4	1494.4	1415.0	1365.9
30°	1457.0	1450.0	1410.3	1307.6	1270.2
32.5°	1382.3	1370.6	1328.6	1221.2	1190.8
35°	1305.2	1295.9	1232.8	1139.4	1111.4
37.5°	1228.2	1216.5	1137.1	1062.4	1027.4
40°	1151.1	1137.1	1050.7	983.0	945.6
42.5°	1078.7	1060.1	976.0	903.6	861.6
45°	1001.7	980.7	896.6	821.9	789.2
47.5°	924.6	906.0	828.9	751.8	714.5
50°	842.9	826.6	756.5	679.5	639.8
52.5°	775.2	749.5	681.8	604.7	572.1
55°	695.8	674.8	611.8	539.4	511.4
57.5°	623.4	602.4	544.0	476.3	453.0
60°	555.7	525.4	476.3	418.0	399.3
62.5°	481.0	457.6	415.6	366.6	389.9
65°	413.3	389.9	352.6	359.6	298.9
67.5°	338.6	326.9	294.2	261.5	252.2
70°	275.5	261.5	249.8	214.8	205.5
72.5°	219.5	205.5	189.1	170.5	163.4
75°	165.8	154.1	144.8	137.8	151.8
77.5°	114.4	109.7	102.7	95.7	93.4
80°	74.7	72.4	70.0	67.7	65.4
82.5°	44.4	44.4	44.4	44.4	44.4
85°	23.3	25.7	28.0	30.4	32.7
87.5°	14.0	14.0	16.3	18.7	21.0
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)