

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: P546518

Luminaire Tested: **FMR-24-4-LD4-1HI-50-UNV-93-97-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: P546518  
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-50-UNV-93-97-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

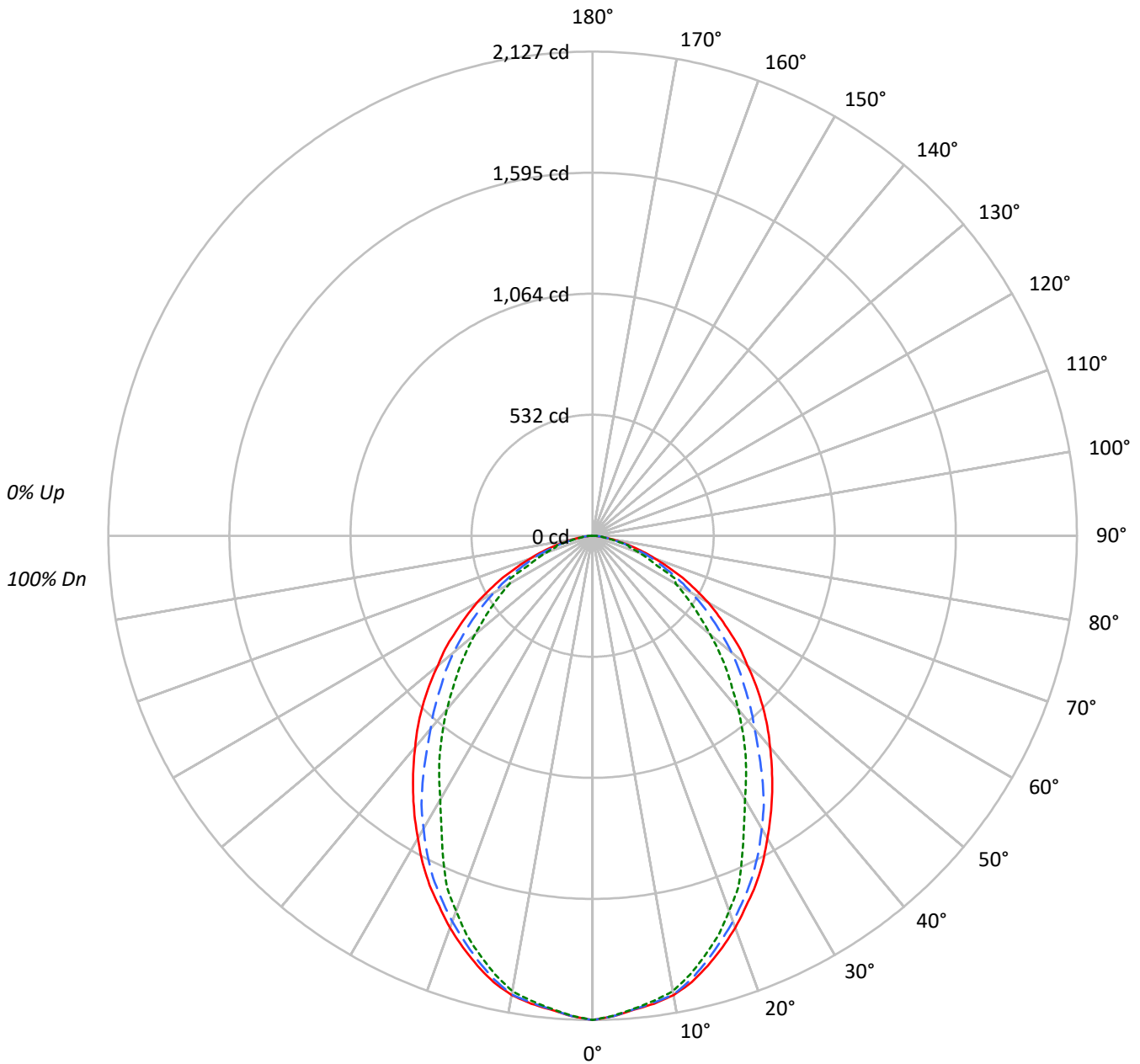
Lumens per Lamp: N/A  
Luminaire Lumens: 4176.0 lumens  
Efficiency: N/A  
Efficacy: 96.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 43.2  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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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CATALOG NUMBER: FMR-24-4-LD4-1HI-50-UNV-93-97-EDD

### 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°	2862	2862	2862
5°	2823	2820	2817
10°	2799	2795	2775
15°	2723	2696	2658
20°	2623	2581	2511
25°	2515	2461	2307
30°	2384	2308	2078
35°	2258	2133	1923
40°	2129	1944	1749
45°	2007	1797	1582
50°	1858	1668	1410
55°	1719	1511	1263
60°	1575	1350	1132
65°	1386	1182	1002
70°	1142	1035	851
75°	908	793	831
80°	610	572	534
85°	380	455	531



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	198.0	4.7
10°-20°	543.4	13.0
20°-30°	752.3	18.0
30°-40°	802.2	19.2
40°-50°	731.9	17.5
50°-60°	573.4	13.7
60°-70°	373.7	8.9
70°-80°	165.6	4.0
80°-90°	35.5	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°	1493.8	35.8
0°-40°	2296.0	55.0
0°-60°	3601.2	86.2
0°-90°	4176.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4176.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2127	2127	2127	2127	2127	
5°	2090	2088	2088	2085	2085	198
15°	1955	1955	1935	1916	1908	550
25°	1694	1684	1658	1598	1554	778
35°	1375	1365	1298	1200	1171	859
45°	1055	1033	944	866	831	813
55°	733	711	644	568	539	657
65°	435	411	371	379	315	429
75°	175	162	152	145	160	187
85°	25	27	30	32	34	34
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2127.2	2127.2	2127.2	2127.2	2127.2
2.5°	2112.4	2112.4	2112.4	2110.0	2110.0
5°	2090.3	2087.9	2087.9	2085.4	2085.4
7.5°	2073.1	2070.6	2068.2	2065.7	2060.8
10°	2048.5	2048.5	2046.0	2033.7	2031.3
12.5°	2009.2	2006.7	1996.9	1979.6	1974.7
15°	1955.1	1955.1	1935.4	1915.7	1908.3
17.5°	1896.0	1893.6	1869.0	1849.3	1839.5
20°	1832.1	1827.2	1802.6	1770.6	1753.4
22.5°	1760.8	1760.8	1731.3	1689.5	1672.2
25°	1694.4	1684.5	1657.5	1598.5	1554.2
27.5°	1618.1	1603.4	1573.9	1490.3	1438.6
30°	1534.5	1527.2	1485.4	1377.1	1337.8
32.5°	1455.8	1443.5	1399.3	1286.2	1254.2
35°	1374.7	1364.8	1298.5	1200.1	1170.6
37.5°	1293.5	1281.2	1197.6	1118.9	1082.0
40°	1212.4	1197.6	1106.6	1035.3	996.0
42.5°	1136.1	1116.5	1027.9	951.7	907.4
45°	1055.0	1032.9	944.3	865.6	831.2
47.5°	973.8	954.2	873.0	791.9	752.5
50°	887.8	870.6	796.8	715.6	673.8
52.5°	816.5	789.4	718.1	636.9	602.5
55°	732.8	710.7	644.3	568.1	538.6
57.5°	656.6	634.5	573.0	501.7	477.1
60°	585.3	553.3	501.7	440.2	420.5
62.5°	506.6	482.0	437.7	386.1	410.7
65°	435.3	410.7	371.3	378.7	314.8
67.5°	356.6	344.3	309.9	275.4	265.6
70°	290.2	275.4	263.1	226.2	216.4
72.5°	231.2	216.4	199.2	179.5	172.1
75°	174.6	162.3	152.5	145.1	159.8
77.5°	120.5	115.6	108.2	100.8	98.4
80°	78.7	76.2	73.8	71.3	68.9
82.5°	46.7	46.7	46.7	46.7	46.7
85°	24.6	27.1	29.5	32.0	34.4
87.5°	14.8	14.8	17.2	19.7	22.1
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)