

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: P546499

Luminaire Tested: **FMR-24-4-LD4-1HI-50-UNV-81-88-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: P546499  
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-81-88-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

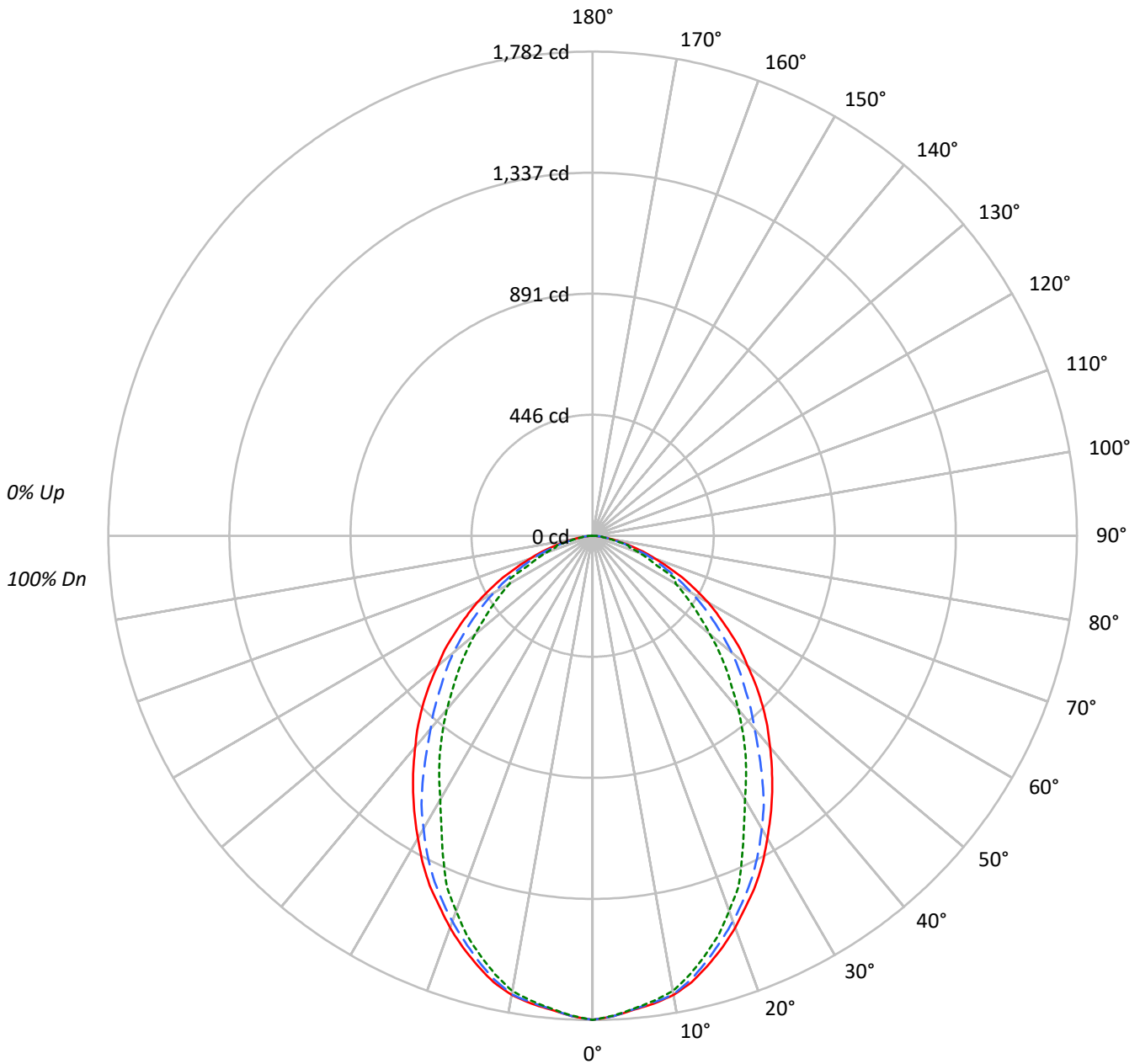
Lumens per Lamp: N/A  
Luminaire Lumens: 3498.0 lumens  
Efficiency: N/A  
Efficacy: 81.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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

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### 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°	2397	2397	2397
5°	2365	2362	2359
10°	2344	2342	2325
15°	2281	2258	2227
20°	2197	2162	2103
25°	2107	2061	1933
30°	1997	1933	1741
35°	1891	1786	1611
40°	1784	1628	1465
45°	1682	1505	1325
50°	1557	1397	1181
55°	1440	1266	1058
60°	1319	1131	948
65°	1161	990	840
70°	956	867	713
75°	761	664	696
80°	511	479	447
85°	318	381	445



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	165.9	4.7
10°-20°	455.2	13.0
20°-30°	630.2	18.0
30°-40°	672.0	19.2
40°-50°	613.0	17.5
50°-60°	480.3	13.7
60°-70°	313.0	8.9
70°-80°	138.7	4.0
80°-90°	29.8	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°	1251.3	35.8
0°-40°	1923.2	55.0
0°-60°	3016.5	86.2
0°-90°	3498.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3498.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1782	1782	1782	1782	1782	
5°	1751	1749	1749	1747	1747	166
15°	1638	1638	1621	1605	1598	460
25°	1419	1411	1388	1339	1302	652
35°	1152	1143	1088	1005	980	720
45°	884	865	791	725	696	681
55°	614	595	540	476	451	551
65°	365	344	311	317	264	359
75°	146	136	128	122	134	157
85°	21	23	25	27	29	29
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1781.8	1781.8	1781.8	1781.8	1781.8
2.5°	1769.5	1769.5	1769.5	1767.4	1767.4
5°	1750.9	1748.9	1748.9	1746.8	1746.8
7.5°	1736.5	1734.5	1732.4	1730.3	1726.2
10°	1715.9	1715.9	1713.9	1703.6	1701.5
12.5°	1683.0	1680.9	1672.7	1658.2	1654.1
15°	1637.6	1637.6	1621.2	1604.7	1598.5
17.5°	1588.2	1586.1	1565.5	1549.1	1540.8
20°	1534.6	1530.5	1509.9	1483.1	1468.7
22.5°	1474.9	1474.9	1450.2	1415.2	1400.7
25°	1419.3	1411.0	1388.4	1339.0	1301.9
27.5°	1355.4	1343.1	1318.4	1248.3	1205.1
30°	1285.4	1279.2	1244.2	1153.6	1120.6
32.5°	1219.5	1209.2	1172.1	1077.3	1050.6
35°	1151.5	1143.3	1087.6	1005.2	980.5
37.5°	1083.5	1073.2	1003.2	937.3	906.4
40°	1015.5	1003.2	927.0	867.2	834.3
42.5°	951.7	935.2	861.0	797.2	760.1
45°	883.7	865.2	791.0	725.1	696.3
47.5°	815.7	799.3	731.3	663.3	630.3
50°	743.6	729.2	667.4	599.4	564.4
52.5°	683.9	661.2	601.5	533.5	504.7
55°	613.9	595.3	539.7	475.8	451.1
57.5°	550.0	531.5	480.0	420.2	399.6
60°	490.3	463.5	420.2	368.7	352.2
62.5°	424.3	403.7	366.7	323.4	344.0
65°	364.6	344.0	311.0	317.2	263.7
67.5°	298.7	288.4	259.6	230.7	222.5
70°	243.1	230.7	220.4	189.5	181.3
72.5°	193.6	181.3	166.9	150.4	144.2
75°	146.3	136.0	127.7	121.5	133.9
77.5°	100.9	96.8	90.6	84.5	82.4
80°	65.9	63.9	61.8	59.7	57.7
82.5°	39.1	39.1	39.1	39.1	39.1
85°	20.6	22.7	24.7	26.8	28.8
87.5°	12.4	12.4	14.4	16.5	18.5
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)