

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: P546503

Luminaire Tested: **FMR-24-4-LD4-1HI-50-UNV-82-84-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: P546503  
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-82-84-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

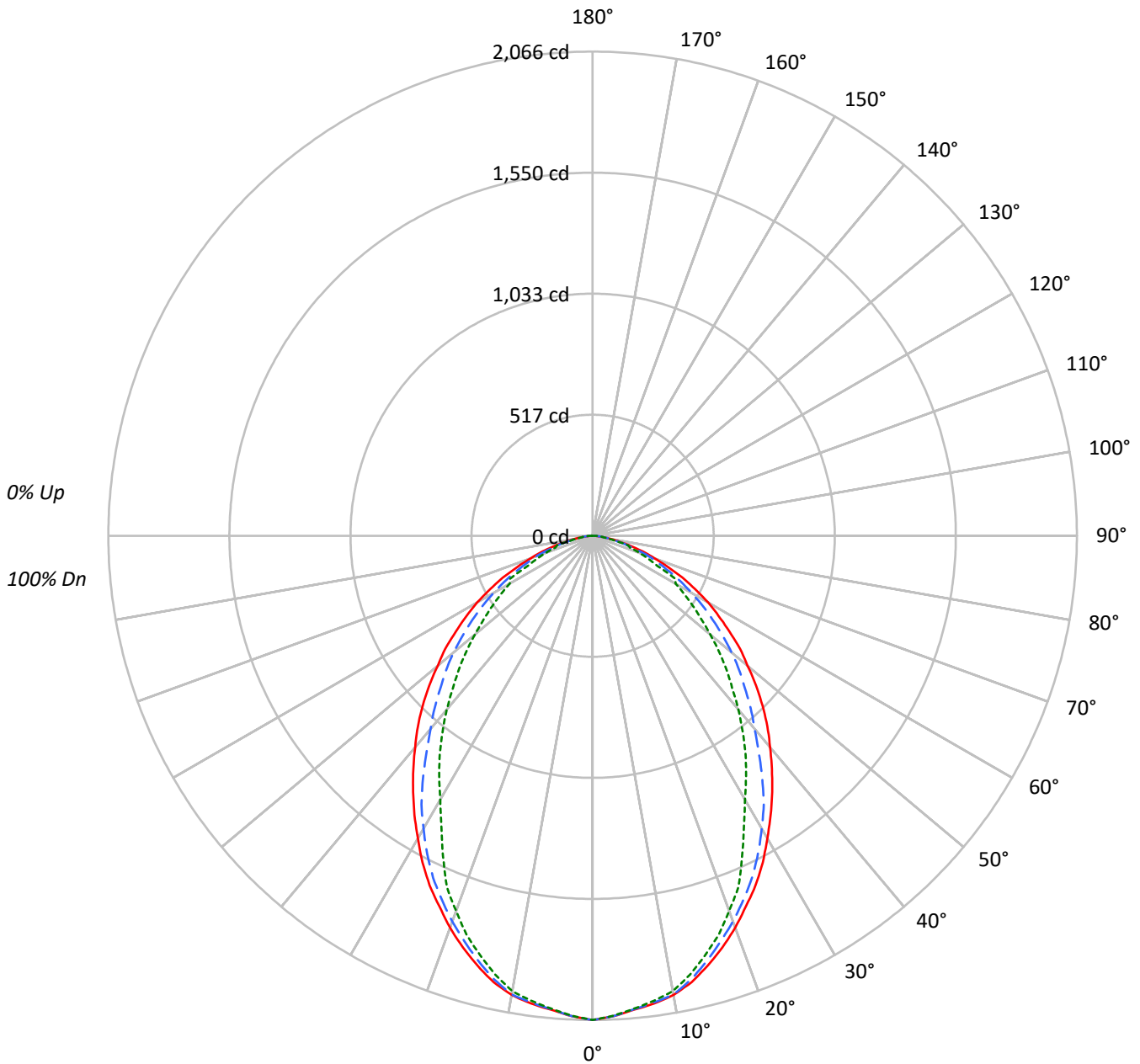
Lumens per Lamp: N/A  
Luminaire Lumens: 4056.0 lumens  
Efficiency: N/A  
Efficacy: 93.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	2780	2780	2780
5°	2742	2739	2736
10°	2718	2715	2695
15°	2645	2618	2582
20°	2548	2507	2438
25°	2443	2390	2241
30°	2316	2241	2019
35°	2193	2071	1867
40°	2068	1888	1699
45°	1950	1745	1536
50°	1805	1620	1370
55°	1670	1468	1227
60°	1530	1311	1099
65°	1346	1148	973
70°	1109	1006	827
75°	882	770	807
80°	592	556	518
85°	369	443	516



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	192.3	4.7
10°-20°	527.8	13.0
20°-30°	730.7	18.0
30°-40°	779.2	19.2
40°-50°	710.8	17.5
50°-60°	556.9	13.7
60°-70°	363.0	8.9
70°-80°	160.8	4.0
80°-90°	34.5	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°	1450.9	35.8
0°-40°	2230.0	55.0
0°-60°	3497.7	86.2
0°-90°	4056.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4056.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2066	2066	2066	2066	2066	
5°	2030	2028	2028	2026	2026	193
15°	1899	1899	1880	1861	1854	534
25°	1646	1636	1610	1552	1510	756
35°	1335	1326	1261	1166	1137	835
45°	1025	1003	917	841	807	789
55°	712	690	626	552	523	638
65°	423	399	361	368	306	417
75°	170	158	148	141	155	182
85°	24	26	29	31	33	33
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2066.1	2066.1	2066.1	2066.1	2066.1
2.5°	2051.7	2051.7	2051.7	2049.4	2049.4
5°	2030.2	2027.9	2027.9	2025.5	2025.5
7.5°	2013.5	2011.1	2008.7	2006.4	2001.6
10°	1989.6	1989.6	1987.3	1975.3	1972.9
12.5°	1951.4	1949.0	1939.5	1922.8	1918.0
15°	1898.9	1898.9	1879.8	1860.7	1853.5
17.5°	1841.6	1839.2	1815.3	1796.2	1786.6
20°	1779.4	1774.7	1750.8	1719.7	1703.0
22.5°	1710.2	1710.2	1681.5	1640.9	1624.2
25°	1645.7	1636.1	1609.9	1552.5	1509.5
27.5°	1571.6	1557.3	1528.7	1447.4	1397.3
30°	1490.4	1483.3	1442.7	1337.6	1299.4
32.5°	1414.0	1402.1	1359.1	1249.2	1218.1
35°	1335.2	1325.6	1261.1	1165.6	1136.9
37.5°	1256.4	1244.4	1163.2	1086.8	1051.0
40°	1177.5	1163.2	1074.8	1005.6	967.4
42.5°	1103.5	1084.4	998.4	924.4	881.4
45°	1024.7	1003.2	917.2	840.8	807.3
47.5°	945.9	926.7	847.9	769.1	730.9
50°	862.3	845.5	773.9	695.1	654.5
52.5°	793.0	766.7	697.4	618.6	585.2
55°	711.8	690.3	625.8	551.7	523.1
57.5°	637.7	616.2	556.5	487.3	463.4
60°	568.5	537.4	487.3	427.5	408.4
62.5°	492.0	468.2	425.2	375.0	398.9
65°	422.8	398.9	360.7	367.8	305.7
67.5°	346.3	334.4	301.0	267.5	258.0
70°	281.8	267.5	255.6	219.7	210.2
72.5°	224.5	210.2	193.5	174.4	167.2
75°	169.6	157.6	148.1	140.9	155.3
77.5°	117.0	112.3	105.1	97.9	95.5
80°	76.4	74.0	71.7	69.3	66.9
82.5°	45.4	45.4	45.4	45.4	45.4
85°	23.9	26.3	28.7	31.1	33.4
87.5°	14.3	14.3	16.7	19.1	21.5
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)