

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: P546787

Luminaire Tested: **FMR-24-4-LD4-2LO-35-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: P546787  
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-LD4-2LO-35-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 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

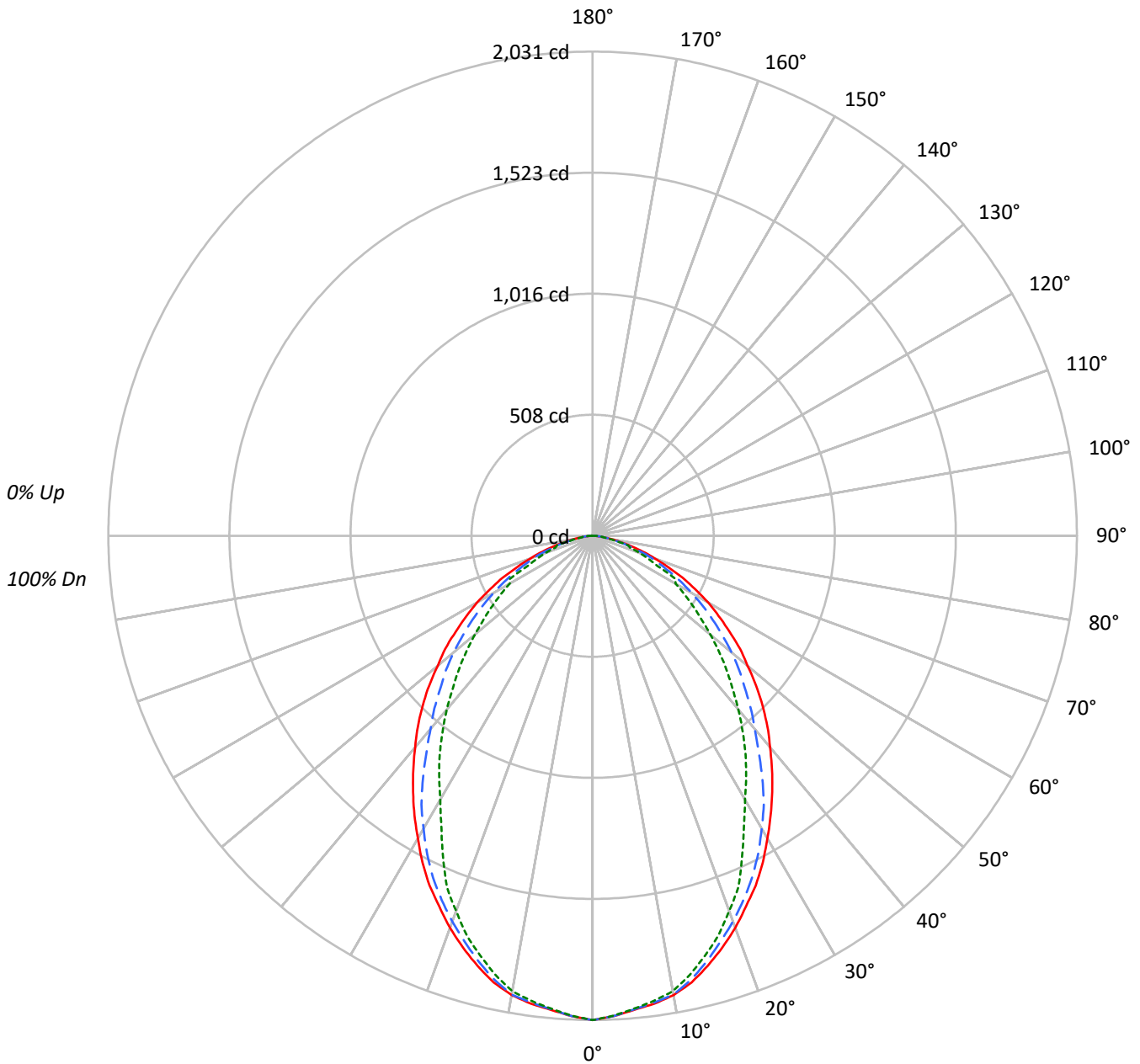
Lumens per Lamp: N/A  
Luminaire Lumens: 3988.0 lumens  
Efficiency: N/A  
Efficacy: 85.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 46.8  
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°	2733	2733	2733
5°	2696	2693	2690
10°	2673	2670	2650
15°	2601	2575	2539
20°	2505	2465	2398
25°	2402	2350	2203
30°	2277	2204	1985
35°	2156	2037	1836
40°	2034	1856	1671
45°	1917	1716	1510
50°	1775	1593	1347
55°	1642	1443	1206
60°	1504	1289	1081
65°	1323	1129	957
70°	1090	989	813
75°	867	757	794
80°	583	546	510
85°	363	435	508



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	189.1	4.7
10°-20°	519.0	13.0
20°-30°	718.5	18.0
30°-40°	766.1	19.2
40°-50°	698.9	17.5
50°-60°	547.5	13.7
60°-70°	356.9	8.9
70°-80°	158.1	4.0
80°-90°	33.9	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°	1426.5	35.8
0°-40°	2192.6	55.0
0°-60°	3439.1	86.2
0°-90°	3988.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3988.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2031	2031	2031	2031	2031	
5°	1996	1994	1994	1992	1992	189
15°	1867	1867	1848	1830	1822	525
25°	1618	1609	1583	1526	1484	743
35°	1313	1303	1240	1146	1118	821
45°	1008	986	902	827	794	776
55°	700	679	615	542	514	628
65°	416	392	355	362	301	410
75°	167	155	146	139	153	179
85°	24	26	28	30	33	33
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2031.4	2031.4	2031.4	2031.4	2031.4
2.5°	2017.3	2017.3	2017.3	2015.0	2015.0
5°	1996.2	1993.9	1993.9	1991.5	1991.5
7.5°	1979.8	1977.4	1975.1	1972.7	1968.0
10°	1956.3	1956.3	1953.9	1942.2	1939.8
12.5°	1918.7	1916.4	1907.0	1890.5	1885.8
15°	1867.0	1867.0	1848.3	1829.5	1822.4
17.5°	1810.7	1808.3	1784.8	1766.1	1756.7
20°	1749.6	1744.9	1721.4	1690.9	1674.5
22.5°	1681.5	1681.5	1653.3	1613.4	1597.0
25°	1618.1	1608.7	1582.9	1526.5	1484.2
27.5°	1545.3	1531.2	1503.0	1423.2	1373.9
30°	1465.5	1458.4	1418.5	1315.1	1277.6
32.5°	1390.3	1378.6	1336.3	1228.3	1197.7
35°	1312.8	1303.4	1240.0	1146.1	1117.9
37.5°	1235.3	1223.6	1143.7	1068.6	1033.3
40°	1157.8	1143.7	1056.8	988.7	951.1
42.5°	1085.0	1066.2	981.7	908.9	866.6
45°	1007.5	986.4	901.8	826.7	793.8
47.5°	930.0	911.2	833.7	756.2	718.6
50°	847.8	831.4	760.9	683.4	643.5
52.5°	779.7	753.9	685.8	608.3	575.4
55°	699.8	678.7	615.3	542.5	514.3
57.5°	627.0	605.9	547.2	479.1	455.6
60°	558.9	528.4	479.1	420.4	401.6
62.5°	483.8	460.3	418.0	368.7	392.2
65°	415.7	392.2	354.6	361.7	300.6
67.5°	340.5	328.8	295.9	263.0	253.6
70°	277.1	263.0	251.3	216.1	206.7
72.5°	220.8	206.7	190.2	171.4	164.4
75°	166.7	155.0	145.6	138.6	152.7
77.5°	115.1	110.4	103.3	96.3	93.9
80°	75.2	72.8	70.5	68.1	65.8
82.5°	44.6	44.6	44.6	44.6	44.6
85°	23.5	25.8	28.2	30.5	32.9
87.5°	14.1	14.1	16.4	18.8	21.1
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)