

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: P546469

Luminaire Tested: **FMR-24-4-LD4-1HI-40-UNV-81-96-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: P546469  
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-40-UNV-81-96-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

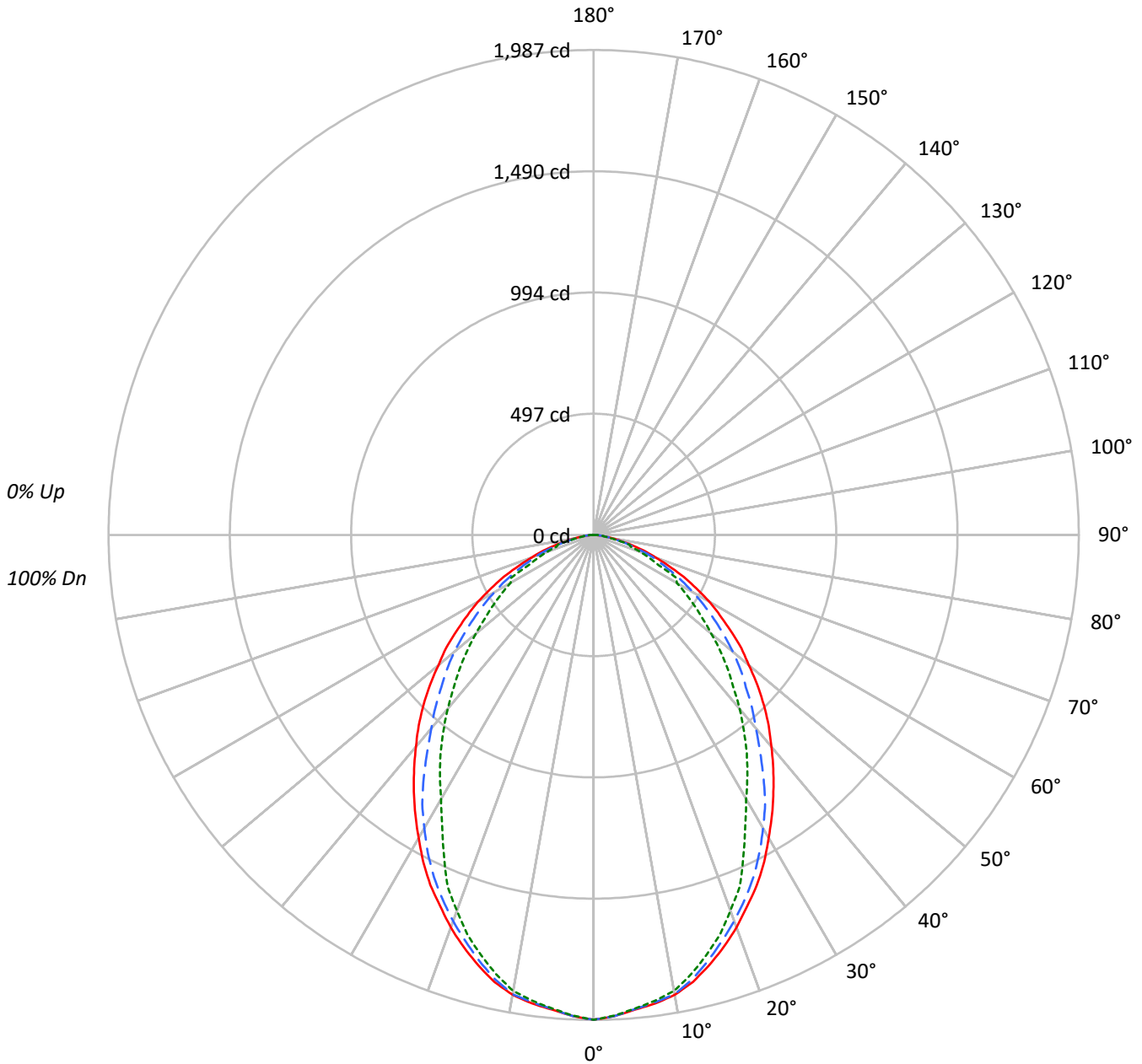
Lumens per Lamp: N/A  
Luminaire Lumens: 3900.0 lumens  
Efficiency: N/A  
Efficacy: 90.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	2673	2673	2673
5°	2637	2634	2630
10°	2614	2611	2592
15°	2543	2518	2483
20°	2450	2410	2345
25°	2349	2298	2155
30°	2227	2155	1941
35°	2109	1992	1796
40°	1989	1815	1634
45°	1875	1678	1477
50°	1735	1558	1317
55°	1605	1411	1180
60°	1471	1261	1057
65°	1294	1104	936
70°	1066	967	795
75°	848	740	776
80°	570	534	498
85°	355	426	497



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	184.9	4.7
10°-20°	507.5	13.0
20°-30°	702.6	18.0
30°-40°	749.2	19.2
40°-50°	683.5	17.5
50°-60°	535.4	13.7
60°-70°	349.0	8.9
70°-80°	154.6	4.0
80°-90°	33.2	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°	1395.1	35.8
0°-40°	2144.3	55.0
0°-60°	3363.2	86.2
0°-90°	3900.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3900.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1987	1987	1987	1987	1987	
5°	1952	1950	1950	1948	1948	185
15°	1826	1826	1808	1789	1782	513
25°	1582	1573	1548	1493	1452	726
35°	1284	1275	1213	1121	1093	803
45°	985	965	882	808	776	759
55°	684	664	602	530	503	614
65°	406	384	347	354	294	401
75°	163	152	142	136	149	175
85°	23	25	28	30	32	32
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1986.6	1986.6	1986.6	1986.6	1986.6
2.5°	1972.8	1972.8	1972.8	1970.5	1970.5
5°	1952.2	1949.9	1949.9	1947.6	1947.6
7.5°	1936.1	1933.8	1931.5	1929.2	1924.6
10°	1913.1	1913.1	1910.8	1899.3	1897.0
12.5°	1876.4	1874.1	1864.9	1848.8	1844.2
15°	1825.8	1825.8	1807.5	1789.1	1782.2
17.5°	1770.7	1768.4	1745.5	1727.1	1717.9
20°	1711.0	1706.4	1683.4	1653.6	1637.5
22.5°	1644.4	1644.4	1616.8	1577.8	1561.7
25°	1582.4	1573.2	1547.9	1492.8	1451.5
27.5°	1511.2	1497.4	1469.9	1391.8	1343.5
30°	1433.1	1426.2	1387.2	1286.1	1249.4
32.5°	1359.6	1348.1	1306.8	1201.2	1171.3
35°	1283.8	1274.6	1212.6	1120.8	1093.2
37.5°	1208.0	1196.6	1118.5	1045.0	1010.5
40°	1132.3	1118.5	1033.5	966.9	930.1
42.5°	1061.1	1042.7	960.0	888.8	847.5
45°	985.3	964.6	881.9	808.4	776.3
47.5°	909.5	891.1	815.3	739.5	702.8
50°	829.1	813.0	744.1	668.3	629.3
52.5°	762.5	737.2	670.6	594.8	562.7
55°	684.4	663.7	601.7	530.5	503.0
57.5°	613.2	592.5	535.1	468.5	445.6
60°	546.6	516.7	468.5	411.1	392.7
62.5°	473.1	450.1	408.8	360.6	383.5
65°	406.5	383.5	346.8	353.7	294.0
67.5°	333.0	321.5	289.4	257.2	248.0
70°	271.0	257.2	245.7	211.3	202.1
72.5°	215.9	202.1	186.0	167.7	160.8
75°	163.1	151.6	142.4	135.5	149.3
77.5°	112.5	107.9	101.1	94.2	91.9
80°	73.5	71.2	68.9	66.6	64.3
82.5°	43.6	43.6	43.6	43.6	43.6
85°	23.0	25.3	27.6	29.9	32.2
87.5°	13.8	13.8	16.1	18.4	20.7
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)