

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: P546901

Luminaire Tested: **FMR-24-4-LD4-2STD-35-UNV-93-96-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: P546901  
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-LD4-2STD-35-UNV-93-96-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

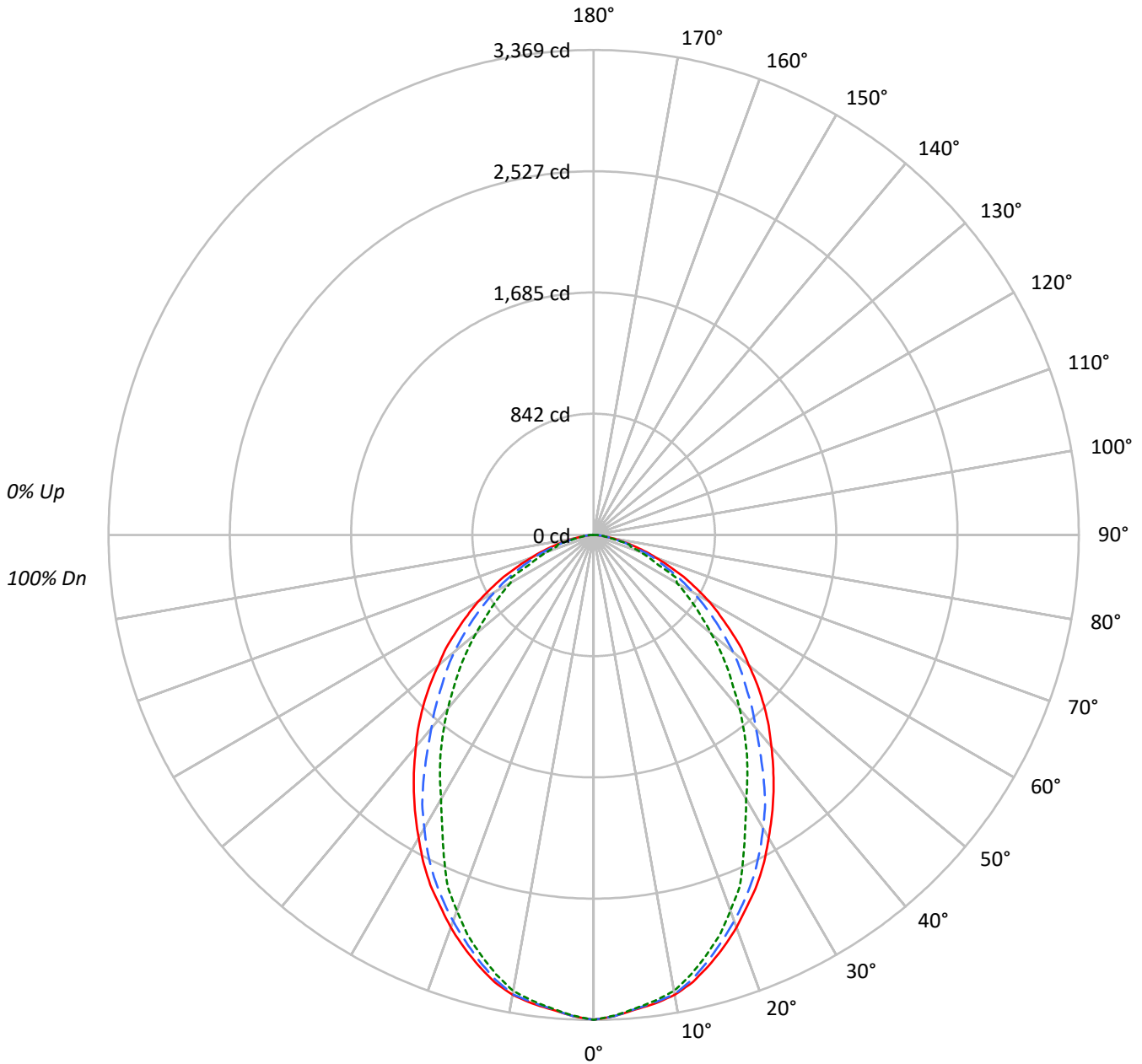
Lumens per Lamp: N/A  
Luminaire Lumens: 6613.0 lumens  
Efficiency: N/A  
Efficacy: 99.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 66.6  
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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### 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°	4532	4532	4532
5°	4471	4466	4460
10°	4432	4427	4395
15°	4313	4269	4210
20°	4154	4087	3976
25°	3983	3897	3654
30°	3775	3654	3291
35°	3576	3377	3045
40°	3372	3078	2770
45°	3179	2845	2505
50°	2943	2641	2233
55°	2722	2393	2001
60°	2494	2138	1792
65°	2195	1872	1587
70°	1808	1639	1348
75°	1437	1255	1316
80°	965	905	845
85°	601	721	841



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	313.6	4.7
10°-20°	860.6	13.0
20°-30°	1191.4	18.0
30°-40°	1270.4	19.2
40°-50°	1158.9	17.5
50°-60°	907.9	13.7
60°-70°	591.8	8.9
70°-80°	262.2	4.0
80°-90°	56.3	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°	2365.5	35.8
0°-40°	3635.9	55.0
0°-60°	5702.8	86.2
0°-90°	6613.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6613.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3369	3369	3369	3369	3369	
5°	3310	3306	3306	3302	3302	314
15°	3096	3096	3065	3034	3022	870
25°	2683	2668	2625	2531	2461	1232
35°	2177	2161	2056	1900	1854	1361
45°	1671	1636	1495	1371	1316	1287
55°	1160	1126	1020	900	853	1041
65°	689	650	588	600	498	679
75°	276	257	241	230	253	296
85°	39	43	47	51	54	54
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3368.6	3368.6	3368.6	3368.6	3368.6
2.5°	3345.2	3345.2	3345.2	3341.3	3341.3
5°	3310.2	3306.3	3306.3	3302.4	3302.4
7.5°	3282.9	3279.0	3275.1	3271.2	3263.4
10°	3244.0	3244.0	3240.1	3220.6	3216.7
12.5°	3181.6	3177.8	3162.2	3134.9	3127.1
15°	3096.0	3096.0	3064.8	3033.7	3022.0
17.5°	3002.5	2998.6	2959.7	2928.5	2912.9
20°	2901.3	2893.5	2854.5	2803.9	2776.6
22.5°	2788.3	2788.3	2741.6	2675.4	2648.1
25°	2683.2	2667.6	2624.8	2531.3	2461.2
27.5°	2562.5	2539.1	2492.4	2359.9	2278.2
30°	2430.0	2418.4	2352.2	2180.8	2118.5
32.5°	2305.4	2286.0	2215.9	2036.7	1986.1
35°	2176.9	2161.3	2056.2	1900.4	1853.7
37.5°	2048.4	2028.9	1896.5	1771.9	1713.5
40°	1919.9	1896.5	1752.4	1639.5	1577.2
42.5°	1799.2	1768.0	1627.8	1507.1	1437.0
45°	1670.7	1635.6	1495.4	1370.8	1316.3
47.5°	1542.1	1511.0	1382.5	1254.0	1191.7
50°	1405.8	1378.6	1261.8	1133.2	1067.0
52.5°	1292.9	1250.1	1137.1	1008.6	954.1
55°	1160.5	1125.5	1020.3	899.6	852.9
57.5°	1039.8	1004.7	907.4	794.4	755.5
60°	926.8	876.2	794.4	697.1	665.9
62.5°	802.2	763.3	693.2	611.4	650.3
65°	689.3	650.3	588.0	599.7	498.5
67.5°	564.7	545.2	490.7	436.2	420.6
70°	459.5	436.2	416.7	358.3	342.7
72.5°	366.1	342.7	315.4	284.3	272.6
75°	276.5	257.0	241.4	229.8	253.1
77.5°	190.8	183.0	171.3	159.7	155.8
80°	124.6	120.7	116.8	112.9	109.0
82.5°	74.0	74.0	74.0	74.0	74.0
85°	38.9	42.8	46.7	50.6	54.5
87.5°	23.4	23.4	27.3	31.2	35.0
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)