

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: P546869

Luminaire Tested: **FMR-24-4-LD4-2LO-50-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: P546869  
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-50-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 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

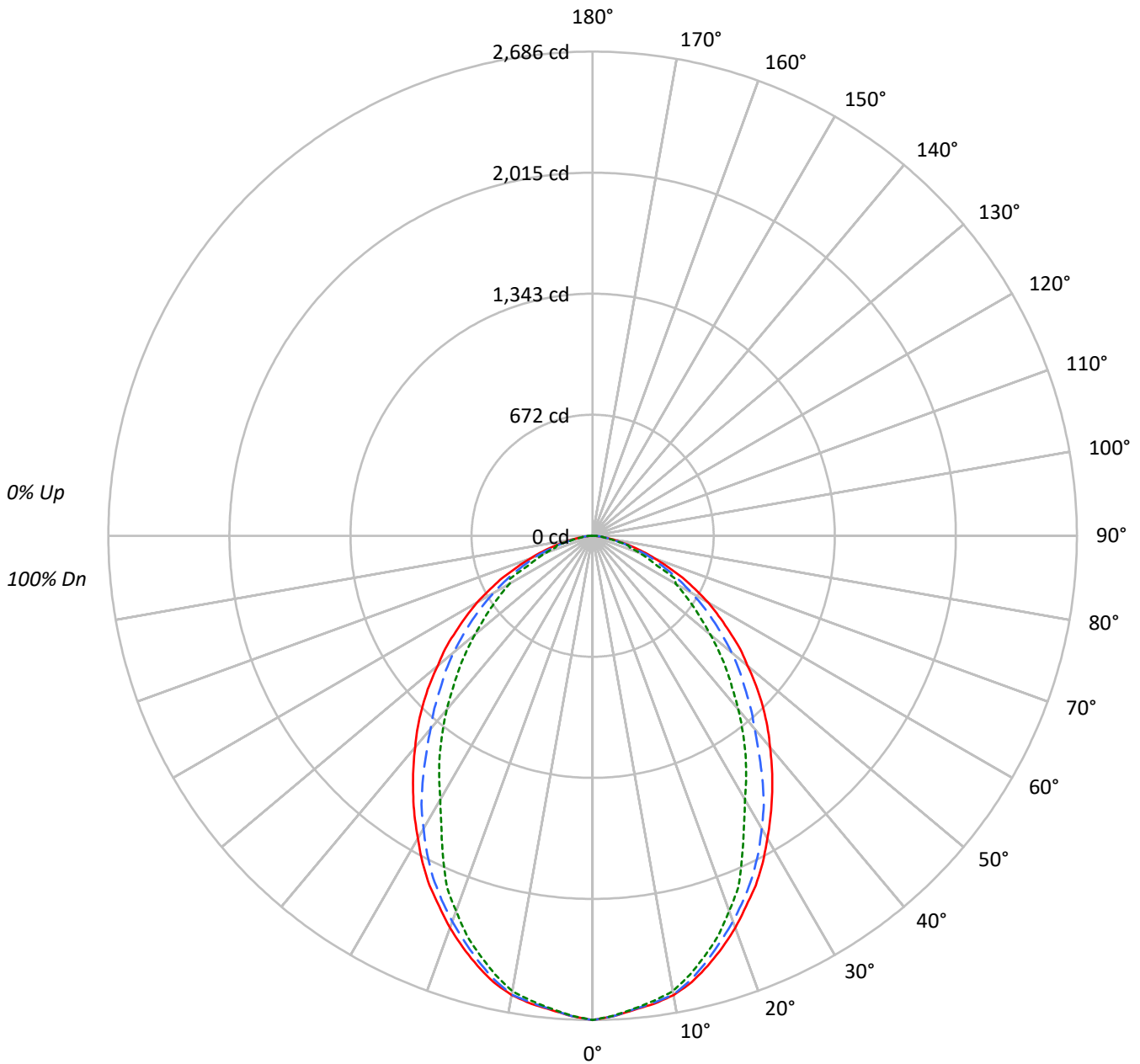
Lumens per Lamp: N/A  
Luminaire Lumens: 5274.0 lumens  
Efficiency: N/A  
Efficacy: 112.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 46.8  
Input Voltage (V): NR  
Input Current (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°	3615	3615	3615
5°	3566	3561	3557
10°	3535	3530	3505
15°	3439	3405	3357
20°	3313	3260	3171
25°	3177	3108	2914
30°	3011	2914	2625
35°	2852	2694	2428
40°	2689	2455	2209
45°	2535	2269	1998
50°	2347	2106	1781
55°	2171	1909	1596
60°	1989	1705	1429
65°	1750	1493	1266
70°	1442	1307	1075
75°	1146	1001	1050
80°	770	722	674
85°	480	576	672



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	250.1	4.7
10°-20°	686.3	13.0
20°-30°	950.2	18.0
30°-40°	1013.1	19.2
40°-50°	924.3	17.5
50°-60°	724.1	13.7
60°-70°	471.9	8.9
70°-80°	209.1	4.0
80°-90°	44.9	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°	1886.6	35.8
0°-40°	2899.7	55.0
0°-60°	4548.1	86.2
0°-90°	5274.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5274.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2686	2686	2686	2686	2686	
5°	2640	2637	2637	2634	2634	251
15°	2469	2469	2444	2419	2410	694
25°	2140	2128	2093	2019	1963	982
35°	1736	1724	1640	1516	1478	1085
45°	1332	1304	1193	1093	1050	1026
55°	926	898	814	717	680	830
65°	550	519	469	478	398	542
75°	220	205	193	183	202	236
85°	31	34	37	40	44	43
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2686.5	2686.5	2686.5	2686.5	2686.5
2.5°	2667.9	2667.9	2667.9	2664.8	2664.8
5°	2639.9	2636.8	2636.8	2633.7	2633.7
7.5°	2618.2	2615.1	2612.0	2608.9	2602.6
10°	2587.1	2587.1	2584.0	2568.5	2565.4
12.5°	2537.4	2534.3	2521.9	2500.2	2493.9
15°	2469.1	2469.1	2444.3	2419.4	2410.1
17.5°	2394.6	2391.5	2360.4	2335.6	2323.1
20°	2313.8	2307.6	2276.5	2236.2	2214.4
22.5°	2223.7	2223.7	2186.5	2133.7	2111.9
25°	2139.9	2127.5	2093.3	2018.8	1962.9
27.5°	2043.6	2025.0	1987.7	1882.1	1816.9
30°	1938.0	1928.7	1875.9	1739.2	1689.5
32.5°	1838.6	1823.1	1767.2	1624.3	1584.0
35°	1736.1	1723.7	1639.9	1515.6	1478.4
37.5°	1633.6	1618.1	1512.5	1413.1	1366.5
40°	1531.2	1512.5	1397.6	1307.5	1257.8
42.5°	1434.9	1410.0	1298.2	1201.9	1146.0
45°	1332.4	1304.4	1192.6	1093.2	1049.8
47.5°	1229.9	1205.0	1102.6	1000.1	950.4
50°	1121.2	1099.4	1006.3	903.8	851.0
52.5°	1031.1	997.0	906.9	804.4	760.9
55°	925.5	897.6	813.7	717.4	680.2
57.5°	829.2	801.3	723.6	633.6	602.5
60°	739.2	698.8	633.6	555.9	531.1
62.5°	639.8	608.7	552.8	487.6	518.7
65°	549.7	518.7	469.0	478.3	397.5
67.5°	450.3	434.8	391.3	347.8	335.4
70°	366.5	347.8	332.3	285.7	273.3
72.5°	291.9	273.3	251.6	226.7	217.4
75°	220.5	205.0	192.6	183.2	201.9
77.5°	152.2	146.0	136.7	127.3	124.2
80°	99.4	96.3	93.2	90.1	87.0
82.5°	59.0	59.0	59.0	59.0	59.0
85°	31.1	34.2	37.3	40.4	43.5
87.5°	18.6	18.6	21.7	24.8	28.0
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)