

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: P546960

Luminaire Tested: **FMR-24-4-LD4-2STD-50-UNV-93-85-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: P546960  
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-50-UNV-93-85-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

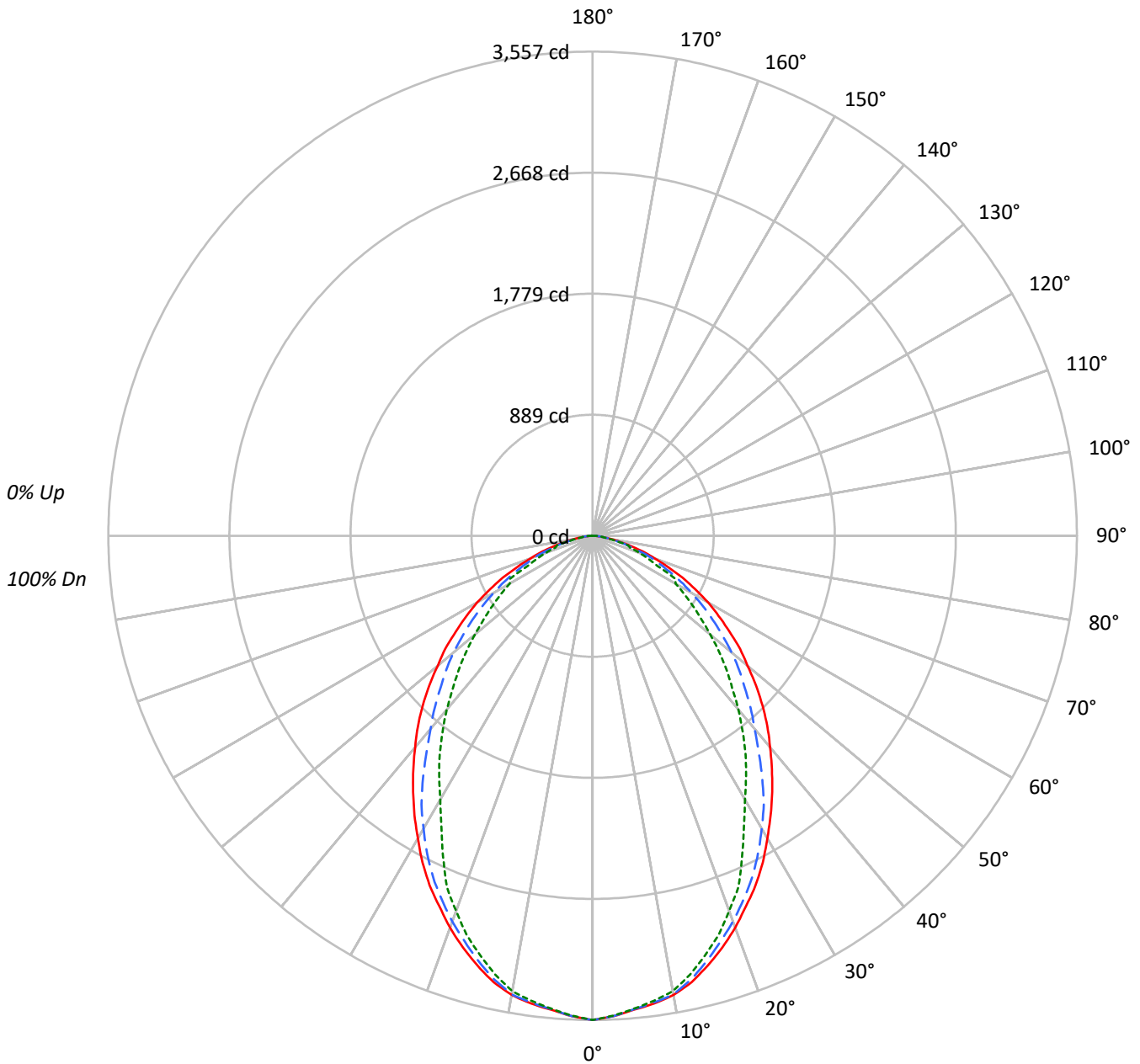
Lumens per Lamp: N/A  
Luminaire Lumens: 6983.0 lumens  
Efficiency: N/A  
Efficacy: 104.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 66.6  
Input Voltage (V): NR  
Input Current (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°	4786	4786	4786
5°	4721	4715	4710
10°	4680	4674	4641
15°	4554	4508	4445
20°	4387	4316	4198
25°	4206	4115	3858
30°	3987	3859	3475
35°	3776	3566	3215
40°	3561	3250	2925
45°	3357	3005	2645
50°	3107	2789	2358
55°	2875	2527	2113
60°	2634	2257	1892
65°	2317	1977	1676
70°	1909	1731	1424
75°	1518	1326	1390
80°	1020	956	892
85°	634	761	889



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	331.1	4.7
10°-20°	908.7	13.0
20°-30°	1258.0	18.0
30°-40°	1341.4	19.2
40°-50°	1223.8	17.5
50°-60°	958.7	13.7
60°-70°	624.9	8.9
70°-80°	276.8	4.0
80°-90°	59.4	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°	2497.9	35.8
0°-40°	3839.3	55.0
0°-60°	6021.8	86.2
0°-90°	6983.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6983.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3557	3557	3557	3557	3557	
5°	3495	3491	3491	3487	3487	332
15°	3269	3269	3236	3203	3191	919
25°	2833	2817	2772	2673	2599	1301
35°	2299	2282	2171	2007	1957	1437
45°	1764	1727	1579	1448	1390	1359
55°	1225	1188	1077	950	901	1099
65°	728	687	621	633	526	717
75°	292	271	255	243	267	313
85°	41	45	49	54	58	57
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3557.0	3557.0	3557.0	3557.0	3557.0
2.5°	3532.4	3532.4	3532.4	3528.3	3528.3
5°	3495.4	3491.3	3491.3	3487.1	3487.1
7.5°	3466.6	3462.5	3458.4	3454.2	3446.0
10°	3425.5	3425.5	3421.3	3400.8	3396.7
12.5°	3359.7	3355.5	3339.1	3310.3	3302.1
15°	3269.2	3269.2	3236.3	3203.4	3191.1
17.5°	3170.5	3166.4	3125.3	3092.4	3075.9
20°	3063.6	3055.4	3014.2	2960.8	2932.0
22.5°	2944.3	2944.3	2895.0	2825.1	2796.3
25°	2833.3	2816.9	2771.6	2672.9	2598.9
27.5°	2705.8	2681.1	2631.8	2492.0	2405.6
30°	2566.0	2553.7	2483.8	2302.8	2237.0
32.5°	2434.4	2413.9	2339.8	2150.7	2097.2
35°	2298.7	2282.3	2171.2	2006.8	1957.4
37.5°	2163.0	2142.5	2002.6	1871.0	1809.4
40°	2027.3	2002.6	1850.5	1731.2	1665.4
42.5°	1899.8	1866.9	1718.9	1591.4	1517.4
45°	1764.1	1727.1	1579.1	1447.5	1389.9
47.5°	1628.4	1595.5	1459.8	1324.1	1258.3
50°	1484.5	1455.7	1332.4	1196.6	1126.7
52.5°	1365.2	1320.0	1200.8	1065.1	1007.5
55°	1225.4	1188.4	1077.4	949.9	900.6
57.5°	1098.0	1060.9	958.1	838.9	797.8
60°	978.7	925.2	838.9	736.1	703.2
62.5°	847.1	806.0	732.0	645.6	686.7
65°	727.9	686.7	620.9	633.3	526.4
67.5°	596.3	575.7	518.1	460.6	444.1
70°	485.2	460.6	440.0	378.3	361.9
72.5°	386.5	361.9	333.1	300.2	287.9
75°	292.0	271.4	255.0	242.6	267.3
77.5°	201.5	193.3	180.9	168.6	164.5
80°	131.6	127.5	123.4	119.3	115.1
82.5°	78.1	78.1	78.1	78.1	78.1
85°	41.1	45.2	49.3	53.5	57.6
87.5°	24.7	24.7	28.8	32.9	37.0
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)