

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: P547472

Luminaire Tested: **FMR-24-4-LD4-4STD-35-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: P547472  
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-LD4-4STD-35-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 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

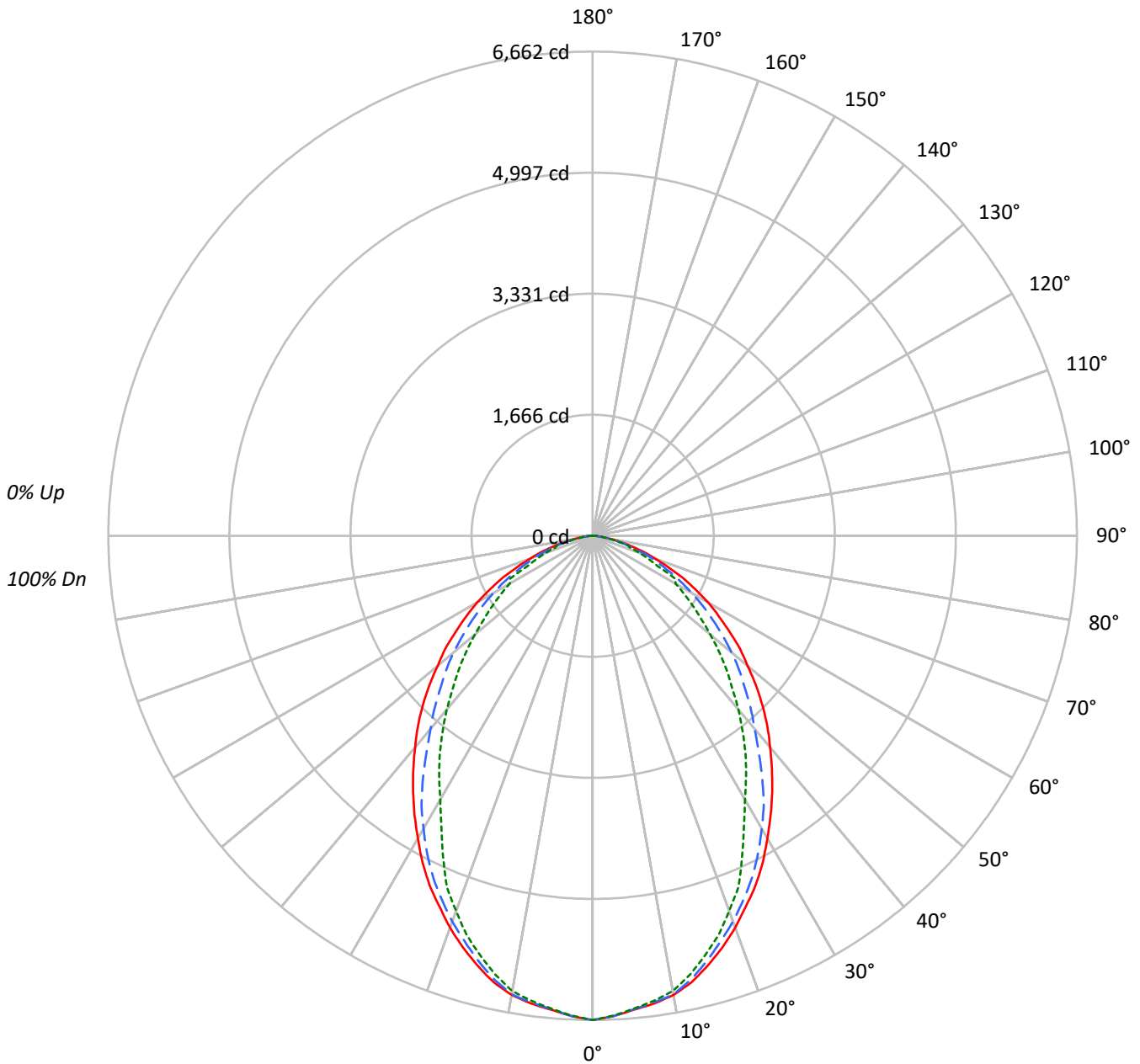
Lumens per Lamp: N/A  
Luminaire Lumens: 13078.0 lumens  
Efficiency: N/A  
Efficacy: 98.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 133.2  
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°	8963	8963	8963
5°	8841	8831	8821
10°	8765	8754	8691
15°	8529	8443	8325
20°	8215	8083	7862
25°	7878	7706	7226
30°	7466	7227	6509
35°	7071	6679	6021
40°	6669	6087	5478
45°	6287	5627	4953
50°	5820	5223	4417
55°	5384	4733	3956
60°	4932	4228	3544
65°	4340	3702	3138
70°	3575	3242	2666
75°	2843	2482	2602
80°	1909	1790	1671
85°	1189	1426	1664



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	620.1	4.7
10°-20°	1701.9	13.0
20°-30°	2356.1	18.0
30°-40°	2512.3	19.2
40°-50°	2292.0	17.5
50°-60°	1795.6	13.7
60°-70°	1170.3	8.9
70°-80°	518.5	4.0
80°-90°	111.3	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°	4678.1	35.8
0°-40°	7190.4	55.0
0°-60°	11277.9	86.2
0°-90°	13078.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13078.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6662	6662	6662	6662	6662	
5°	6546	6538	6538	6531	6531	621
15°	6123	6123	6061	5999	5976	1721
25°	5306	5276	5191	5006	4867	2436
35°	4305	4274	4066	3758	3666	2691
45°	3304	3235	2957	2711	2603	2545
55°	2295	2226	2018	1779	1687	2058
65°	1363	1286	1163	1186	986	1343
75°	547	508	478	454	501	586
85°	77	85	92	100	108	107
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6661.8	6661.8	6661.8	6661.8	6661.8
2.5°	6615.5	6615.5	6615.5	6607.8	6607.8
5°	6546.2	6538.5	6538.5	6530.8	6530.8
7.5°	6492.3	6484.6	6476.9	6469.2	6453.8
10°	6415.3	6415.3	6407.6	6369.1	6361.4
12.5°	6292.1	6284.4	6253.6	6199.7	6184.3
15°	6122.7	6122.7	6061.0	5999.4	5976.3
17.5°	5937.8	5930.1	5853.1	5791.5	5760.7
20°	5737.6	5722.2	5645.2	5545.0	5491.1
22.5°	5514.2	5514.2	5421.8	5290.9	5237.0
25°	5306.3	5275.5	5190.8	5005.9	4867.3
27.5°	5067.6	5021.3	4928.9	4667.1	4505.4
30°	4805.7	4782.6	4651.7	4312.8	4189.6
32.5°	4559.3	4520.8	4382.1	4027.9	3927.7
35°	4305.1	4274.3	4066.4	3758.3	3665.9
37.5°	4051.0	4012.5	3750.6	3504.2	3388.6
40°	3796.8	3750.6	3465.7	3242.3	3119.1
42.5°	3558.1	3496.5	3219.2	2980.5	2841.8
45°	3303.9	3234.6	2957.4	2710.9	2603.1
47.5°	3049.8	2988.2	2734.0	2479.9	2356.6
50°	2780.2	2726.3	2495.3	2241.1	2110.2
52.5°	2556.9	2472.2	2248.8	1994.7	1886.9
55°	2295.0	2225.7	2017.8	1779.0	1686.6
57.5°	2056.3	1987.0	1794.4	1571.1	1494.1
60°	1832.9	1732.8	1571.1	1378.6	1316.9
62.5°	1586.5	1509.5	1370.9	1209.1	1286.1
65°	1363.2	1286.1	1162.9	1186.0	985.8
67.5°	1116.7	1078.2	970.4	862.6	831.8
70°	908.8	862.6	824.1	708.5	677.7
72.5°	723.9	677.7	623.8	562.2	539.1
75°	546.8	508.3	477.5	454.4	500.6
77.5°	377.4	362.0	338.9	315.8	308.1
80°	246.4	238.7	231.0	223.3	215.6
82.5°	146.3	146.3	146.3	146.3	146.3
85°	77.0	84.7	92.4	100.1	107.8
87.5°	46.2	46.2	53.9	61.6	69.3
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)