

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: P547539

Luminaire Tested: **FMR-24-4-LD4-4STD-50-UNV-93-88-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: P547539  
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-50-UNV-93-88-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

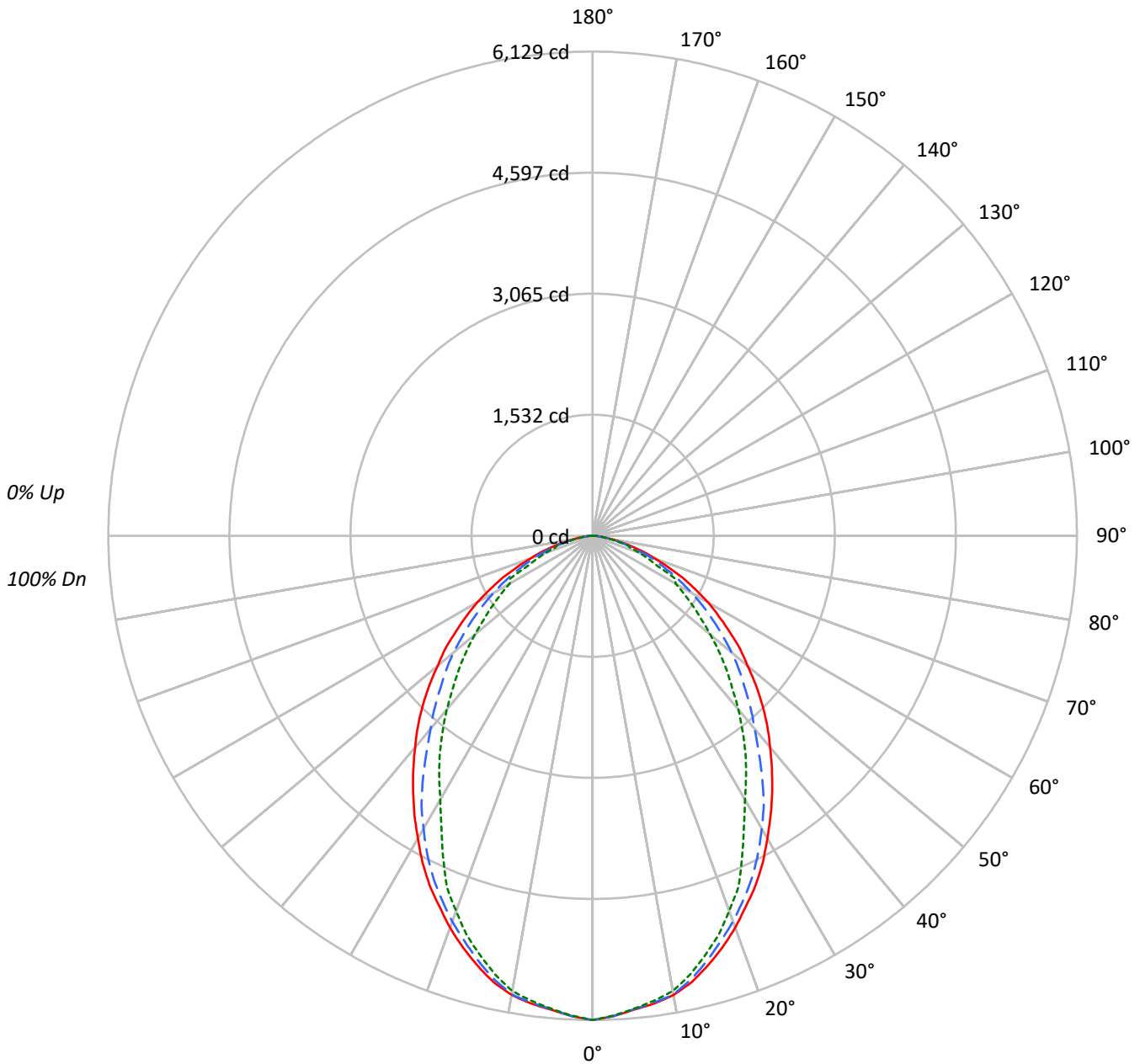
Lumens per Lamp: N/A  
Luminaire Lumens: 12032.0 lumens  
Efficiency: N/A  
Efficacy: 90.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 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°	8246	8246	8246
5°	8134	8125	8115
10°	8064	8054	7996
15°	7847	7768	7659
20°	7558	7437	7234
25°	7248	7090	6648
30°	6869	6649	5988
35°	6506	6145	5540
40°	6135	5600	5040
45°	5784	5177	4557
50°	5354	4805	4064
55°	4953	4355	3640
60°	4538	3890	3260
65°	3993	3406	2887
70°	3289	2982	2453
75°	2615	2284	2394
80°	1757	1647	1537
85°	1095	1312	1531



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	570.5	4.7
10°-20°	1565.7	13.0
20°-30°	2167.7	18.0
30°-40°	2311.4	19.2
40°-50°	2108.6	17.5
50°-60°	1651.9	13.7
60°-70°	1076.7	8.9
70°-80°	477.0	4.0
80°-90°	102.4	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°	4303.9	35.8
0°-40°	6615.3	55.0
0°-60°	10375.9	86.2
0°-90°	12032.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12032.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6129	6129	6129	6129	6129	
5°	6023	6016	6016	6008	6008	572
15°	5633	5633	5576	5520	5498	1584
25°	4882	4854	4776	4606	4478	2241
35°	3961	3932	3741	3458	3373	2476
45°	3040	2976	2721	2494	2395	2341
55°	2112	2048	1856	1637	1552	1894
65°	1254	1183	1070	1091	907	1236
75°	503	468	439	418	461	539
85°	71	78	85	92	99	98
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6128.9	6128.9	6128.9	6128.9	6128.9
2.5°	6086.4	6086.4	6086.4	6079.3	6079.3
5°	6022.7	6015.6	6015.6	6008.5	6008.5
7.5°	5973.1	5966.0	5958.9	5951.8	5937.6
10°	5902.2	5902.2	5895.1	5859.7	5852.6
12.5°	5788.8	5781.8	5753.4	5703.8	5689.6
15°	5633.0	5633.0	5576.3	5519.6	5498.3
17.5°	5462.9	5455.8	5385.0	5328.3	5299.9
20°	5278.7	5264.5	5193.7	5101.5	5051.9
22.5°	5073.2	5073.2	4988.2	4867.7	4818.1
25°	4881.9	4853.6	4775.6	4605.6	4478.0
27.5°	4662.2	4619.7	4534.7	4293.8	4145.0
30°	4421.3	4400.1	4279.6	3967.9	3854.5
32.5°	4194.6	4159.2	4031.6	3705.7	3613.6
35°	3960.8	3932.4	3741.1	3457.7	3372.7
37.5°	3727.0	3691.5	3450.6	3223.9	3117.6
40°	3493.1	3450.6	3188.5	2983.0	2869.6
42.5°	3273.5	3216.8	2961.7	2742.1	2614.5
45°	3039.7	2975.9	2720.8	2494.1	2394.9
47.5°	2805.9	2749.2	2515.3	2281.5	2168.2
50°	2557.9	2508.3	2295.7	2061.9	1941.4
52.5°	2352.4	2274.4	2069.0	1835.1	1735.9
55°	2111.5	2047.7	1856.4	1636.7	1551.7
57.5°	1891.8	1828.1	1650.9	1445.4	1374.6
60°	1686.3	1594.2	1445.4	1268.3	1211.6
62.5°	1459.6	1388.8	1261.2	1112.4	1183.3
65°	1254.1	1183.3	1069.9	1091.2	906.9
67.5°	1027.4	992.0	892.8	793.6	765.2
70°	836.1	793.6	758.1	651.9	623.5
72.5°	666.0	623.5	573.9	517.2	496.0
75°	503.1	467.6	439.3	418.0	460.6
77.5°	347.2	333.0	311.8	290.5	283.4
80°	226.7	219.6	212.6	205.5	198.4
82.5°	134.6	134.6	134.6	134.6	134.6
85°	70.9	77.9	85.0	92.1	99.2
87.5°	42.5	42.5	49.6	56.7	63.8
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)