

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: P589841

Luminaire Tested: **FMR-24-2-LD4-4STD-50-UNV-93-88-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589841  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: FMR-24-2-LD4-4STD-50-UNV-93-88-EDD  
Description: 2X2 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

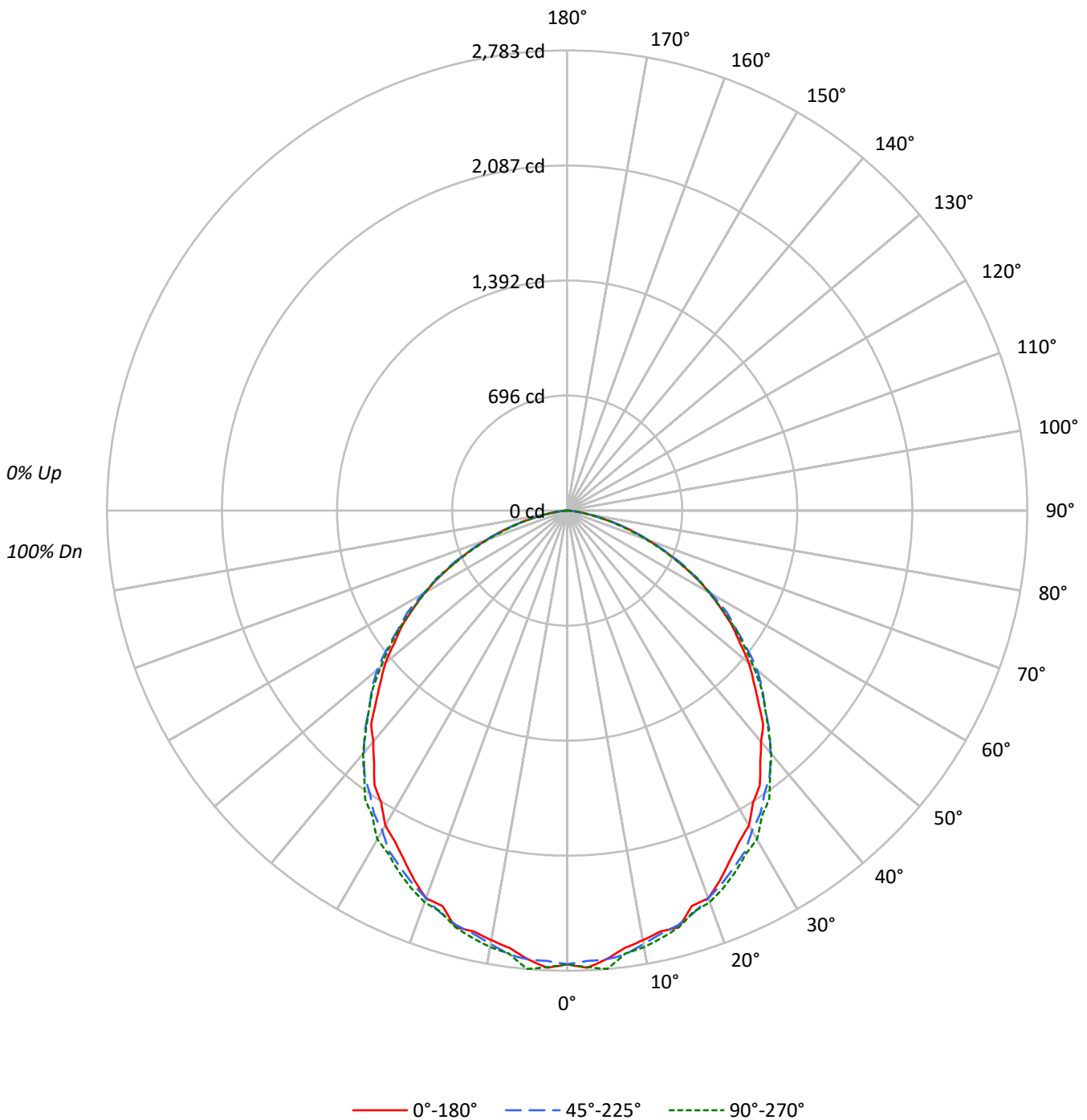
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6915.0 lumens  
Efficiency: N/A  
Efficacy: 103.8 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' 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				20	
RC	80				70				50				30				10	0
RW	70	50	30	10	70	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	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	7383	7383	7383
5°	7359	7362	7517
10°	7210	7273	7324
15°	7267	7227	7268
20°	7144	7144	7220
25°	6924	7076	7154
30°	6829	6949	7134
35°	6668	6843	6997
40°	6409	6718	6747
45°	6215	6436	6446
50°	6011	6282	6162
55°	5727	5839	5797
60°	5356	5409	5312
65°	4776	4897	4741
70°	4098	4111	3997
75°	3245	3238	3112
80°	2174	2114	2032
85°	1183	1170	1093



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	258.1	3.7
10°-20°	731.4	10.6
20°-30°	1095.9	15.8
30°-40°	1298.8	18.8
40°-50°	1301.2	18.8
50°-60°	1104.5	16.0
60°-70°	744.7	10.8
70°-80°	327.2	4.7
80°-90°	53.2	0.8
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°	2085.4	30.2
0°-40°	3384.2	48.9
0°-60°	5790.0	83.7
0°-90°	6915.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6915.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2744	2744	2744	2744	2744	
5°	2724	2718	2725	2717	2783	257
15°	2608	2578	2594	2608	2609	727
25°	2332	2345	2383	2414	2409	1078
35°	2030	2036	2083	2131	2130	1260
45°	1633	1664	1691	1735	1694	1263
55°	1221	1213	1244	1236	1236	1086
65°	750	740	769	740	745	746
75°	312	306	311	289	299	334
85°	38	37	38	37	35	55
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2743.7	2743.7	2743.7	2743.7	2743.7
2.5°	2767.4	2746.5	2727.0	2749.7	2763.5
5°	2724.2	2717.8	2725.3	2717.1	2782.7
7.5°	2668.2	2692.7	2706.9	2698.0	2701.9
10°	2638.5	2630.0	2661.5	2683.5	2680.3
12.5°	2606.6	2619.4	2621.1	2644.9	2647.0
15°	2608.4	2578.3	2594.2	2607.7	2608.7
17.5°	2507.1	2539.6	2550.6	2581.4	2543.2
20°	2494.7	2470.9	2494.7	2526.2	2521.2
22.5°	2418.5	2391.9	2442.9	2470.9	2469.2
25°	2332.1	2344.8	2383.1	2414.2	2409.3
27.5°	2256.2	2271.1	2325.7	2368.5	2340.9
30°	2197.8	2190.4	2236.4	2274.7	2295.9
32.5°	2093.3	2120.2	2174.1	2212.0	2191.8
35°	2029.9	2035.9	2083.0	2131.2	2129.8
37.5°	1919.0	1947.0	2013.2	2026.7	2014.3
40°	1824.4	1852.4	1912.3	1926.8	1920.8
42.5°	1754.6	1759.6	1810.9	1827.6	1801.0
45°	1633.1	1663.6	1691.2	1734.8	1693.7
47.5°	1529.7	1543.8	1603.4	1615.0	1593.4
50°	1435.8	1440.8	1500.6	1486.1	1471.9
52.5°	1317.8	1338.7	1372.4	1369.5	1352.9
55°	1220.8	1212.6	1244.5	1236.0	1235.6
57.5°	1104.2	1118.4	1144.6	1131.1	1109.5
60°	995.1	995.5	1005.0	989.8	987.0
62.5°	873.6	877.8	880.0	861.2	891.7
65°	750.0	740.0	769.1	739.7	744.6
67.5°	636.2	641.2	638.4	619.9	627.0
70°	520.8	527.1	522.5	501.6	508.0
72.5°	415.2	407.4	412.4	386.1	398.2
75°	312.1	305.7	311.4	289.4	299.3
77.5°	212.6	217.5	214.0	202.3	209.0
80°	140.3	136.4	136.4	129.7	131.1
82.5°	81.8	77.9	76.9	74.7	77.9
85°	38.3	37.2	37.9	36.8	35.4
87.5°	13.8	14.2	14.2	13.5	12.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)