

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: P589169

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

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589169  
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-LD4-2LO-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: -

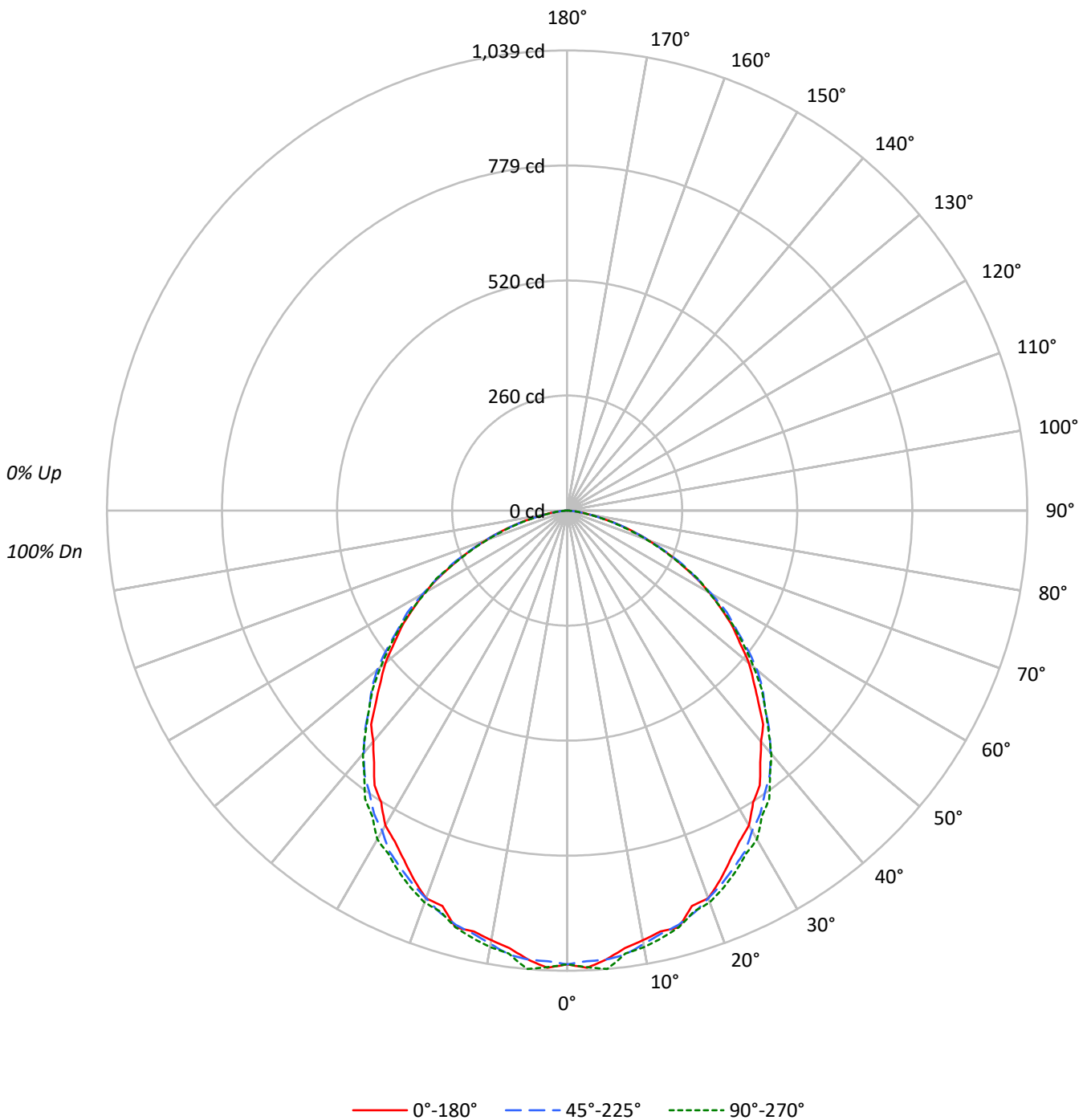
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2582.0 lumens  
Efficiency: N/A  
Efficacy: 110.3 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): 23.4  
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°	2757	2757	2757
5°	2748	2749	2807
10°	2692	2716	2735
15°	2713	2699	2714
20°	2668	2668	2696
25°	2586	2642	2671
30°	2550	2595	2664
35°	2490	2555	2612
40°	2393	2508	2519
45°	2321	2403	2407
50°	2244	2346	2301
55°	2138	2180	2165
60°	2000	2020	1983
65°	1783	1829	1770
70°	1530	1535	1493
75°	1211	1209	1162
80°	812	789	758
85°	442	438	408



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	96.4	3.7
10°-20°	273.1	10.6
20°-30°	409.2	15.8
30°-40°	485.0	18.8
40°-50°	485.9	18.8
50°-60°	412.4	16.0
60°-70°	278.1	10.8
70°-80°	122.2	4.7
80°-90°	19.9	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°	778.7	30.2
0°-40°	1263.6	48.9
0°-60°	2161.9	83.7
0°-90°	2582.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2582.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1024	1024	1024	1024	1024	
5°	1017	1015	1018	1015	1039	96
15°	974	963	969	974	974	271
25°	871	876	890	902	900	403
35°	758	760	778	796	795	471
45°	610	621	632	648	632	472
55°	456	453	465	462	461	405
65°	280	276	287	276	278	279
75°	116	114	116	108	112	125
85°	14	14	14	14	13	21
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1024.5	1024.5	1024.5	1024.5	1024.5
2.5°	1033.3	1025.5	1018.3	1026.7	1031.9
5°	1017.2	1014.8	1017.6	1014.6	1039.0
7.5°	996.3	1005.4	1010.7	1007.4	1008.9
10°	985.2	982.0	993.8	1002.0	1000.8
12.5°	973.3	978.0	978.7	987.6	988.4
15°	973.9	962.7	968.7	973.7	974.1
17.5°	936.1	948.3	952.4	963.9	949.6
20°	931.5	922.6	931.5	943.3	941.4
22.5°	903.0	893.1	912.2	922.6	922.0
25°	870.8	875.5	889.8	901.5	899.6
27.5°	842.5	848.0	868.4	884.4	874.1
30°	820.6	817.9	835.1	849.3	857.3
32.5°	781.6	791.7	811.8	825.9	818.4
35°	757.9	760.2	777.8	795.8	795.2
37.5°	716.5	727.0	751.7	756.7	752.1
40°	681.2	691.7	714.0	719.4	717.2
42.5°	655.2	657.0	676.2	682.4	672.5
45°	609.8	621.2	631.5	647.8	632.4
47.5°	571.2	576.5	598.7	603.0	595.0
50°	536.1	538.0	560.3	554.9	549.6
52.5°	492.1	499.9	512.4	511.4	505.2
55°	455.8	452.8	464.7	461.5	461.4
57.5°	412.3	417.6	427.4	422.4	414.3
60°	371.6	371.7	375.3	369.6	368.5
62.5°	326.2	327.8	328.6	321.6	332.9
65°	280.0	276.3	287.2	276.2	278.0
67.5°	237.6	239.4	238.4	231.5	234.1
70°	194.4	196.8	195.1	187.3	189.7
72.5°	155.0	152.1	154.0	144.2	148.7
75°	116.5	114.2	116.3	108.1	111.8
77.5°	79.4	81.2	79.9	75.5	78.0
80°	52.4	50.9	50.9	48.4	48.9
82.5°	30.6	29.1	28.7	27.9	29.1
85°	14.3	13.9	14.2	13.8	13.2
87.5°	5.2	5.3	5.3	5.0	4.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)