

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: P589104

Luminaire Tested: **FMR-24-2-LD4-2LO-35-UNV-93-87-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589104  
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-35-UNV-93-87-EDD  
Description: 2X2 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

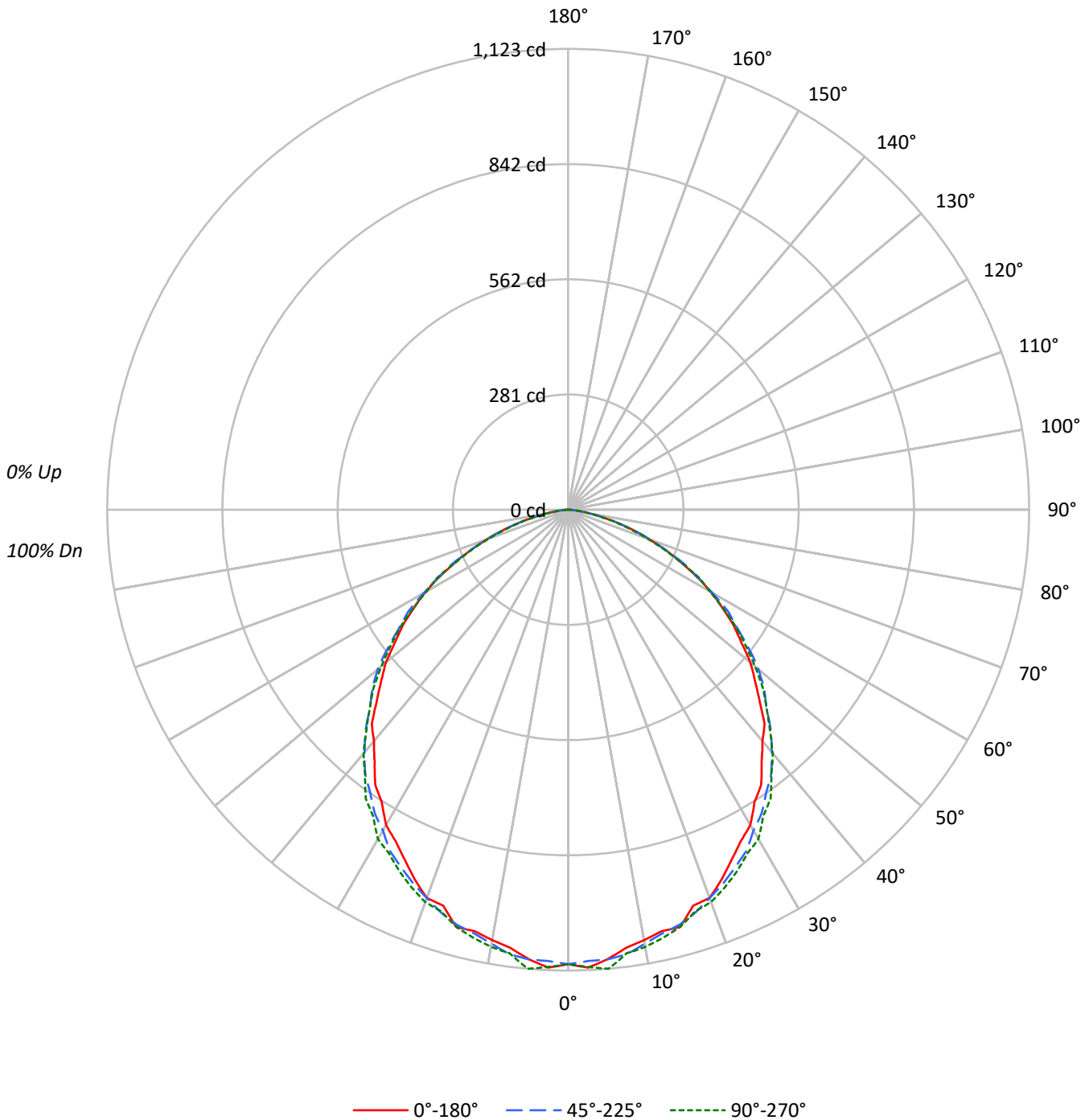
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2791.0 lumens  
Efficiency: N/A  
Efficacy: 119.3 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°	2980	2980	2980
5°	2970	2971	3034
10°	2910	2935	2956
15°	2933	2917	2933
20°	2883	2883	2914
25°	2795	2856	2887
30°	2756	2805	2880
35°	2691	2762	2824
40°	2587	2711	2723
45°	2508	2598	2602
50°	2426	2536	2487
55°	2312	2357	2340
60°	2161	2183	2144
65°	1927	1976	1913
70°	1654	1659	1613
75°	1310	1307	1256
80°	877	852	820
85°	475	472	442



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	104.2	3.7
10°-20°	295.2	10.6
20°-30°	442.3	15.8
30°-40°	524.2	18.8
40°-50°	525.2	18.8
50°-60°	445.8	16.0
60°-70°	300.6	10.8
70°-80°	132.1	4.7
80°-90°	21.5	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°	841.7	30.2
0°-40°	1365.9	48.9
0°-60°	2336.9	83.7
0°-90°	2791.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2791.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1107	1107	1107	1107	1107	
5°	1100	1097	1100	1097	1123	104
15°	1053	1041	1047	1052	1053	293
25°	941	946	962	974	972	435
35°	819	822	841	860	860	509
45°	659	671	683	700	684	510
55°	493	489	502	499	499	438
65°	303	299	310	298	300	301
75°	126	123	126	117	121	135
85°	15	15	15	15	14	22
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1107.4	1107.4	1107.4	1107.4	1107.4
2.5°	1117.0	1108.5	1100.7	1109.8	1115.4
5°	1099.5	1097.0	1100.0	1096.7	1123.1
7.5°	1076.9	1086.8	1092.5	1089.0	1090.5
10°	1064.9	1061.5	1074.2	1083.1	1081.8
12.5°	1052.1	1057.2	1057.9	1067.5	1068.4
15°	1052.8	1040.6	1047.1	1052.5	1052.9
17.5°	1011.9	1025.0	1029.5	1041.9	1026.5
20°	1006.9	997.3	1006.9	1019.6	1017.6
22.5°	976.1	965.4	986.0	997.3	996.6
25°	941.3	946.4	961.8	974.4	972.4
27.5°	910.7	916.7	938.7	956.0	944.8
30°	887.1	884.1	902.6	918.1	926.7
32.5°	844.9	855.7	877.5	892.8	884.6
35°	819.3	821.7	840.7	860.2	859.6
37.5°	774.5	785.8	812.6	818.0	813.0
40°	736.4	747.7	771.8	777.7	775.3
42.5°	708.2	710.2	730.9	737.6	726.9
45°	659.1	671.4	682.6	700.2	683.6
47.5°	617.4	623.1	647.1	651.9	643.1
50°	579.5	581.5	605.7	599.8	594.1
52.5°	531.9	540.3	553.9	552.8	546.0
55°	492.7	489.4	502.3	498.9	498.7
57.5°	445.7	451.4	462.0	456.5	447.8
60°	401.6	401.8	405.6	399.5	398.3
62.5°	352.6	354.3	355.2	347.6	359.9
65°	302.7	298.7	310.4	298.5	300.5
67.5°	256.8	258.8	257.7	250.2	253.1
70°	210.2	212.8	210.9	202.5	205.0
72.5°	167.6	164.4	166.4	155.9	160.7
75°	126.0	123.4	125.7	116.8	120.8
77.5°	85.8	87.8	86.4	81.6	84.4
80°	56.6	55.0	55.0	52.3	52.9
82.5°	33.0	31.5	31.0	30.2	31.5
85°	15.4	15.0	15.3	14.9	14.3
87.5°	5.6	5.7	5.7	5.4	5.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)