

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: P589101

Luminaire Tested: **FMR-24-2-LD4-2LO-35-UNV-93-84-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589101  
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-93-84-EDD  
Description: 2X2 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

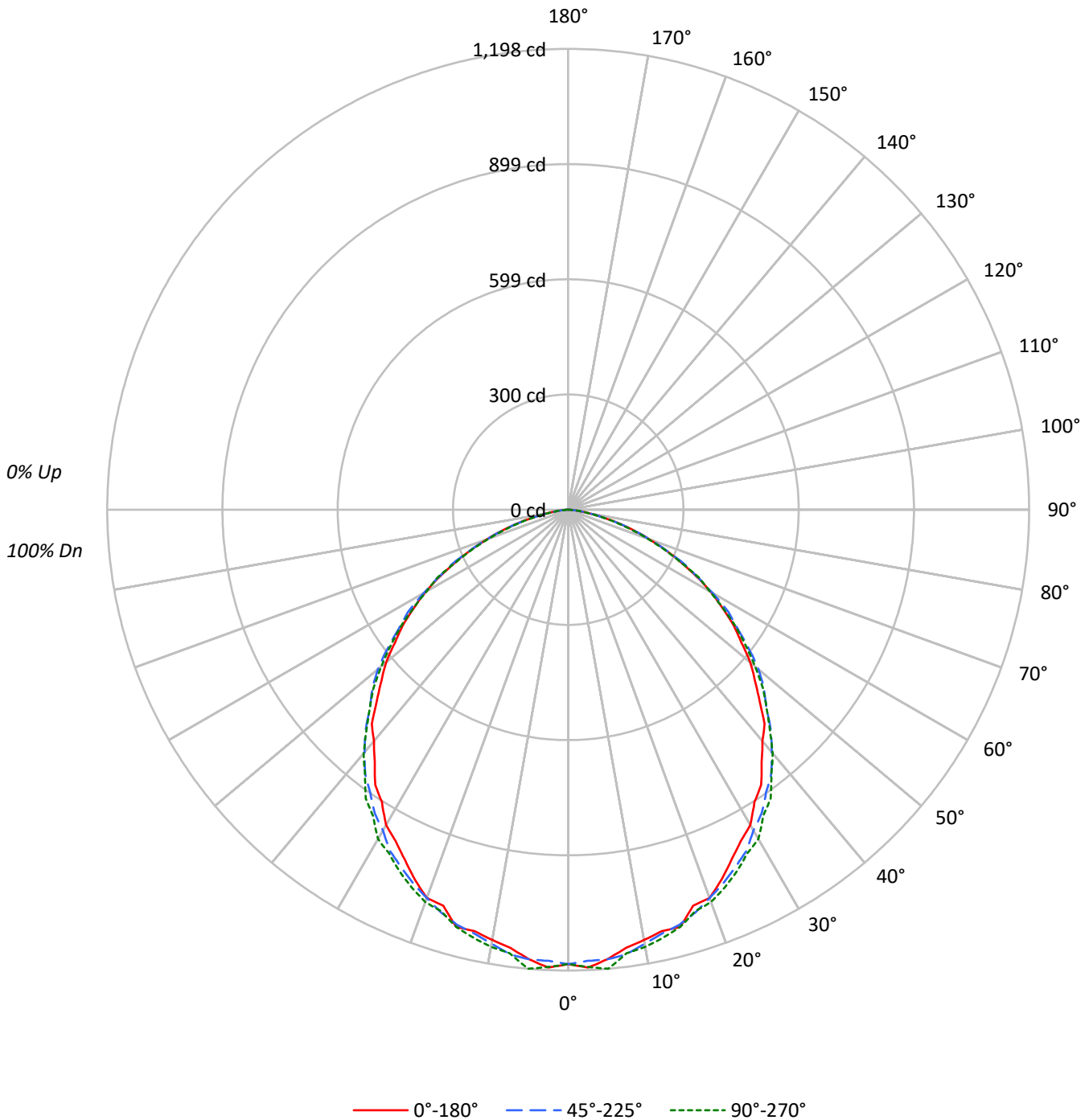
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2977.0 lumens  
Efficiency: N/A  
Efficacy: 127.2 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°	3179	3179	3179
5°	3168	3169	3236
10°	3104	3131	3153
15°	3128	3111	3129
20°	3076	3076	3108
25°	2981	3046	3080
30°	2940	2992	3071
35°	2871	2946	3012
40°	2759	2892	2905
45°	2676	2771	2775
50°	2588	2704	2653
55°	2466	2514	2496
60°	2306	2329	2287
65°	2056	2108	2041
70°	1764	1770	1721
75°	1397	1394	1340
80°	936	910	874
85°	509	503	472



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	111.1	3.7
10°-20°	314.9	10.6
20°-30°	471.8	15.8
30°-40°	559.2	18.8
40°-50°	560.2	18.8
50°-60°	475.5	16.0
60°-70°	320.6	10.8
70°-80°	140.9	4.7
80°-90°	22.9	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°	897.8	30.2
0°-40°	1457.0	48.9
0°-60°	2492.7	83.7
0°-90°	2977.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2977.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1181	1181	1181	1181	1181	
5°	1173	1170	1173	1170	1198	111
15°	1123	1110	1117	1123	1123	313
25°	1004	1010	1026	1039	1037	464
35°	874	876	897	918	917	543
45°	703	716	728	747	729	544
55°	526	522	536	532	532	468
65°	323	319	331	318	321	321
75°	134	132	134	125	129	144
85°	16	16	16	16	15	24
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1181.2	1181.2	1181.2	1181.2	1181.2
2.5°	1191.4	1182.4	1174.0	1183.8	1189.7
5°	1172.8	1170.1	1173.3	1169.8	1198.0
7.5°	1148.7	1159.2	1165.3	1161.5	1163.2
10°	1135.9	1132.2	1145.8	1155.3	1153.9
12.5°	1122.2	1127.7	1128.4	1138.6	1139.6
15°	1122.9	1110.0	1116.8	1122.6	1123.1
17.5°	1079.3	1093.4	1098.1	1111.3	1094.9
20°	1074.0	1063.8	1074.0	1087.6	1085.4
22.5°	1041.2	1029.8	1051.7	1063.8	1063.0
25°	1004.0	1009.5	1025.9	1039.4	1037.2
27.5°	971.3	977.7	1001.2	1019.7	1007.8
30°	946.2	943.0	962.8	979.3	988.4
32.5°	901.2	912.8	936.0	952.3	943.6
35°	873.9	876.5	896.8	917.5	916.9
37.5°	826.2	838.2	866.7	872.5	867.2
40°	785.4	797.5	823.3	829.5	826.9
42.5°	755.4	757.5	779.6	786.8	775.4
45°	703.1	716.2	728.1	746.8	729.2
47.5°	658.5	664.6	690.3	695.3	686.0
50°	618.1	620.3	646.0	639.8	633.7
52.5°	567.3	576.3	590.8	589.6	582.4
55°	525.6	522.0	535.8	532.1	532.0
57.5°	475.4	481.5	492.8	487.0	477.7
60°	428.4	428.6	432.7	426.1	424.9
62.5°	376.1	377.9	378.8	370.8	383.9
65°	322.9	318.6	331.1	318.4	320.6
67.5°	273.9	276.0	274.8	266.9	269.9
70°	224.2	226.9	225.0	216.0	218.7
72.5°	178.7	175.4	177.5	166.2	171.4
75°	134.4	131.6	134.1	124.6	128.9
77.5°	91.5	93.6	92.1	87.1	90.0
80°	60.4	58.7	58.7	55.8	56.4
82.5°	35.2	33.6	33.1	32.2	33.6
85°	16.5	16.0	16.3	15.9	15.3
87.5°	5.9	6.1	6.1	5.8	5.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)