

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: P589140

Luminaire Tested: **FMR-24-2-LD4-2LO-40-UNV-93-97-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589140  
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-40-UNV-93-97-EDD  
Description: 2X2 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375  
CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT  
LEDS  
Light Source: -  
Ballast/Driver: -

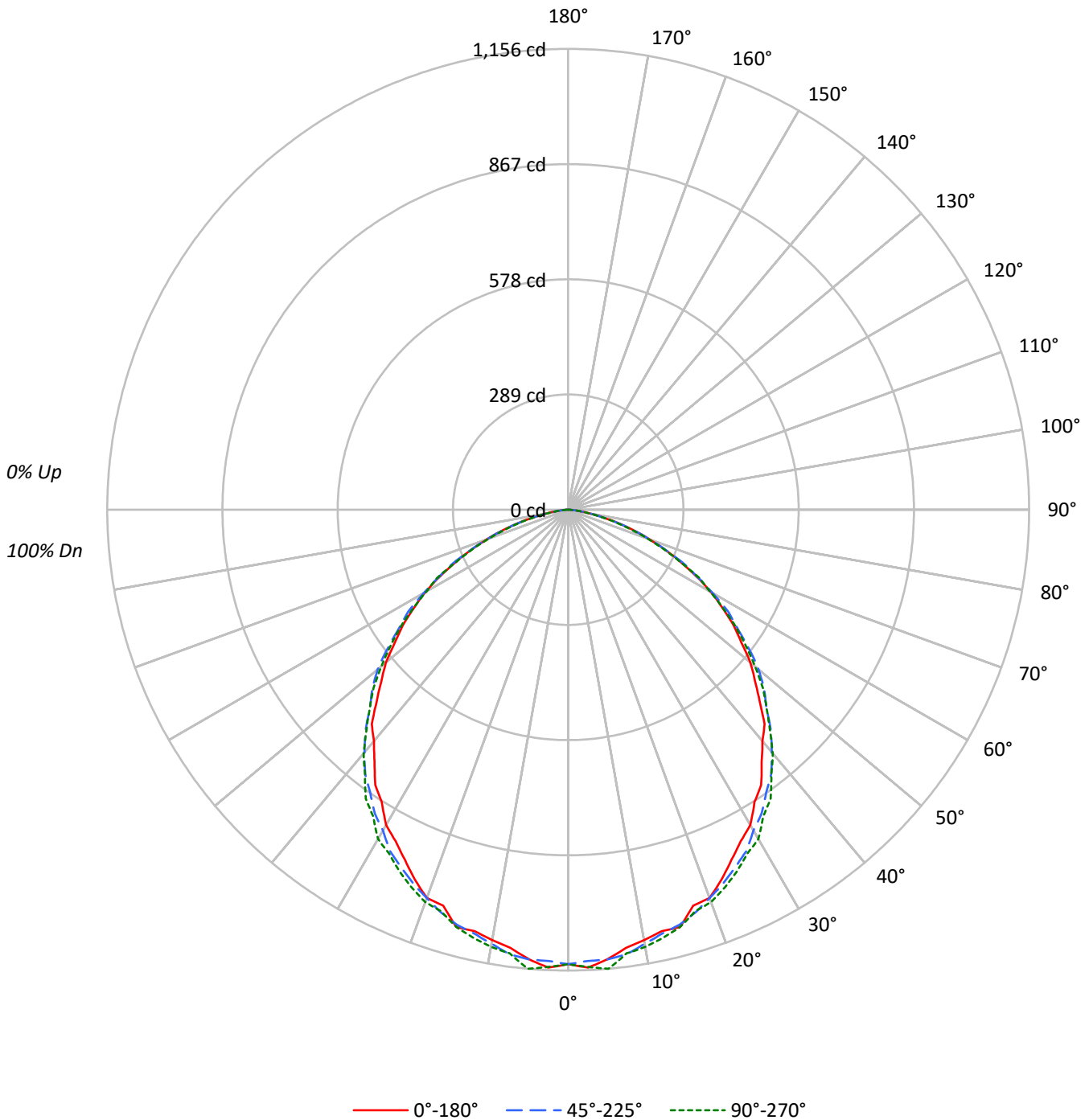
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2873.0 lumens  
Efficiency: N/A  
Efficacy: 122.8 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): 23.4  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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	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					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°	3067	3067	3067
5°	3057	3059	3123
10°	2995	3022	3043
15°	3019	3003	3020
20°	2968	2968	3000
25°	2877	2940	2972
30°	2837	2887	2964
35°	2771	2843	2907
40°	2663	2791	2803
45°	2582	2674	2678
50°	2497	2610	2560
55°	2380	2426	2409
60°	2225	2248	2207
65°	1984	2034	1970
70°	1703	1708	1661
75°	1349	1345	1293
80°	903	879	845
85°	491	485	454



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	107.2	3.7
10°-20°	303.9	10.6
20°-30°	455.3	15.8
30°-40°	539.6	18.8
40°-50°	540.6	18.8
50°-60°	458.9	16.0
60°-70°	309.4	10.8
70°-80°	135.9	4.7
80°-90°	22.1	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°	866.4	30.2
0°-40°	1406.1	48.9
0°-60°	2405.6	83.7
0°-90°	2873.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2873.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1140	1140	1140	1140	1140	
5°	1132	1129	1132	1129	1156	107
15°	1084	1071	1078	1083	1084	302
25°	969	974	990	1003	1001	448
35°	843	846	865	886	885	524
45°	678	691	703	721	704	525
55°	507	504	517	514	513	451
65°	312	308	320	307	309	310
75°	130	127	129	120	124	139
85°	16	16	16	15	15	23
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1139.9	1139.9	1139.9	1139.9	1139.9
2.5°	1149.8	1141.1	1133.0	1142.4	1148.2
5°	1131.8	1129.2	1132.3	1128.9	1156.1
7.5°	1108.6	1118.7	1124.6	1120.9	1122.6
10°	1096.2	1092.7	1105.8	1114.9	1113.6
12.5°	1083.0	1088.3	1089.0	1098.9	1099.8
15°	1083.7	1071.2	1077.8	1083.4	1083.9
17.5°	1041.6	1055.2	1059.7	1072.5	1056.6
20°	1036.5	1026.6	1036.5	1049.6	1047.5
22.5°	1004.8	993.8	1015.0	1026.6	1025.9
25°	968.9	974.2	990.1	1003.1	1001.0
27.5°	937.4	943.6	966.3	984.1	972.6
30°	913.1	910.0	929.2	945.1	953.9
32.5°	869.7	880.9	903.3	919.0	910.6
35°	843.4	845.9	865.4	885.5	884.9
37.5°	797.3	808.9	836.4	842.0	836.9
40°	758.0	769.6	794.5	800.5	798.0
42.5°	729.0	731.1	752.4	759.3	748.3
45°	678.5	691.2	702.7	720.8	703.7
47.5°	635.5	641.4	666.2	671.0	662.0
50°	596.5	598.6	623.5	617.4	611.5
52.5°	547.5	556.2	570.2	569.0	562.1
55°	507.2	503.8	517.1	513.5	513.4
57.5°	458.8	464.7	475.5	470.0	461.0
60°	413.4	413.6	417.6	411.2	410.1
62.5°	363.0	364.7	365.6	357.8	370.5
65°	311.6	307.5	319.5	307.3	309.4
67.5°	264.3	266.4	265.2	257.6	260.5
70°	216.4	219.0	217.1	208.4	211.1
72.5°	172.5	169.3	171.3	160.4	165.4
75°	129.7	127.0	129.4	120.2	124.4
77.5°	88.3	90.4	88.9	84.0	86.8
80°	58.3	56.7	56.7	53.9	54.5
82.5°	34.0	32.4	31.9	31.1	32.4
85°	15.9	15.5	15.7	15.3	14.7
87.5°	5.7	5.9	5.9	5.6	5.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)