

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: P589139

Luminaire Tested: **FMR-24-2-LD4-2LO-40-UNV-93-96-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589139  
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-93-96-EDD  
Description: 2X2 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

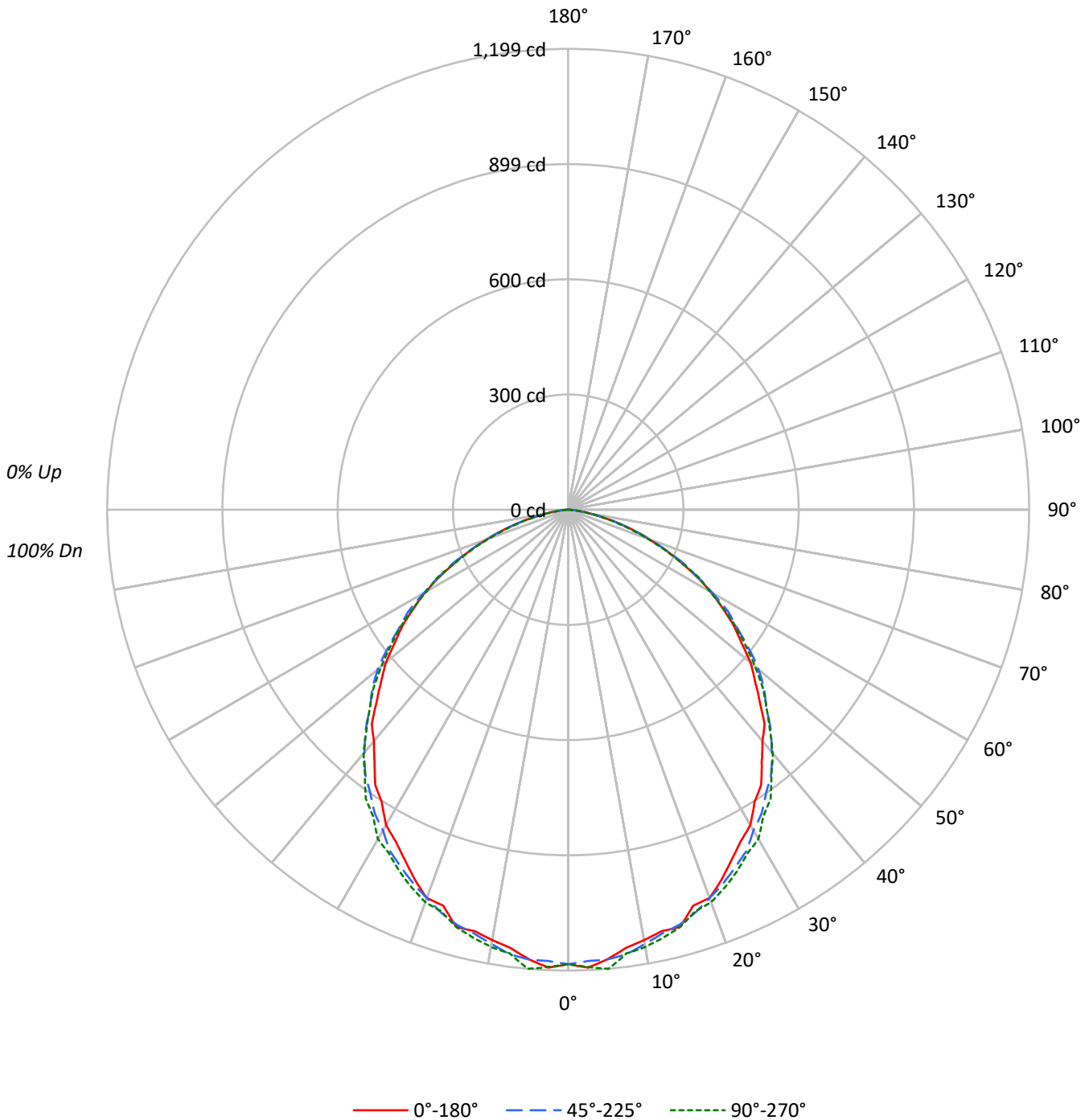
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2980.0 lumens  
Efficiency: N/A  
Efficacy: 127.4 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°	3182	3182	3182
5°	3171	3173	3239
10°	3107	3134	3156
15°	3132	3115	3132
20°	3079	3079	3111
25°	2984	3049	3083
30°	2943	2995	3074
35°	2874	2949	3015
40°	2762	2895	2908
45°	2678	2774	2778
50°	2591	2707	2655
55°	2468	2516	2498
60°	2308	2331	2289
65°	2058	2110	2043
70°	1766	1772	1722
75°	1398	1395	1341
80°	938	911	876
85°	509	503	472



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	111.2	3.7
10°-20°	315.2	10.6
20°-30°	472.3	15.8
30°-40°	559.7	18.8
40°-50°	560.8	18.8
50°-60°	476.0	16.0
60°-70°	320.9	10.8
70°-80°	141.0	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°	898.7	30.2
0°-40°	1458.4	48.9
0°-60°	2495.2	83.7
0°-90°	2980.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2980.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1182	1182	1182	1182	1182	
5°	1174	1171	1174	1171	1199	111
15°	1124	1111	1118	1124	1124	313
25°	1005	1010	1027	1040	1038	465
35°	875	877	898	918	918	543
45°	704	717	729	748	730	544
55°	526	523	536	533	532	468
65°	323	319	331	319	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°	1182.4	1182.4	1182.4	1182.4	1182.4
2.5°	1192.6	1183.6	1175.2	1185.0	1190.9
5°	1174.0	1171.2	1174.5	1170.9	1199.2
7.5°	1149.9	1160.4	1166.5	1162.7	1164.4
10°	1137.0	1133.4	1147.0	1156.4	1155.1
12.5°	1123.3	1128.8	1129.6	1139.8	1140.7
15°	1124.1	1111.1	1118.0	1123.8	1124.2
17.5°	1080.4	1094.5	1099.2	1112.5	1096.0
20°	1075.1	1064.8	1075.1	1088.7	1086.5
22.5°	1042.2	1030.8	1052.8	1064.8	1064.1
25°	1005.0	1010.5	1027.0	1040.4	1038.3
27.5°	972.3	978.7	1002.2	1020.7	1008.8
30°	947.1	943.9	963.8	980.3	989.4
32.5°	902.1	913.7	936.9	953.2	944.5
35°	874.8	877.4	897.7	918.4	917.8
37.5°	827.0	839.0	867.6	873.4	868.1
40°	786.2	798.3	824.1	830.3	827.7
42.5°	756.1	758.3	780.4	787.6	776.1
45°	703.8	716.9	728.8	747.6	729.9
47.5°	659.2	665.3	691.0	696.0	686.7
50°	618.8	620.9	646.7	640.4	634.3
52.5°	567.9	576.9	591.4	590.2	583.0
55°	526.1	522.6	536.3	532.6	532.5
57.5°	475.9	482.0	493.3	487.5	478.1
60°	428.8	429.0	433.1	426.5	425.3
62.5°	376.5	378.3	379.2	371.1	384.3
65°	323.2	318.9	331.4	318.8	320.9
67.5°	274.2	276.3	275.1	267.2	270.2
70°	224.4	227.2	225.2	216.2	218.9
72.5°	178.9	175.6	177.7	166.4	171.6
75°	134.5	131.7	134.2	124.7	129.0
77.5°	91.6	93.7	92.2	87.2	90.1
80°	60.5	58.8	58.8	55.9	56.5
82.5°	35.3	33.6	33.1	32.2	33.6
85°	16.5	16.0	16.3	15.9	15.3
87.5°	6.0	6.1	6.1	5.8	5.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)