

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: P589136

Luminaire Tested: **FMR-24-2-LD4-2LO-40-UNV-93-87-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589136  
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-93-87-EDD  
Description: 2X2 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

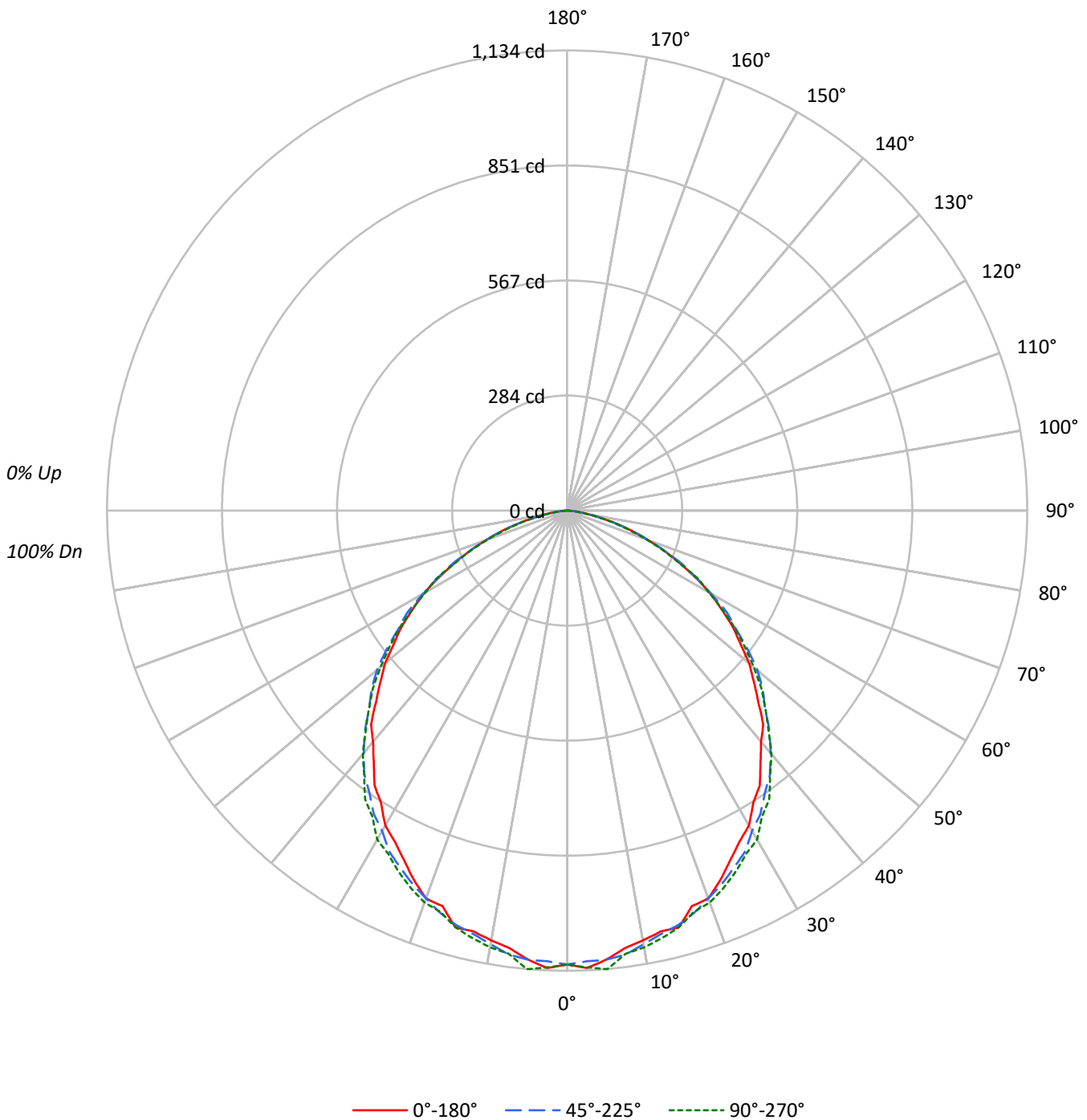
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2819.0 lumens  
Efficiency: N/A  
Efficacy: 120.5 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°	3010	3010	3010
5°	3000	3001	3064
10°	2939	2965	2986
15°	2962	2946	2963
20°	2912	2912	2943
25°	2823	2885	2916
30°	2784	2833	2908
35°	2718	2790	2852
40°	2612	2739	2751
45°	2534	2624	2628
50°	2450	2561	2512
55°	2335	2380	2363
60°	2183	2205	2165
65°	1947	1996	1933
70°	1670	1676	1629
75°	1323	1319	1268
80°	886	862	828
85°	482	479	445



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	105.2	3.7
10°-20°	298.2	10.6
20°-30°	446.7	15.8
30°-40°	529.5	18.8
40°-50°	530.5	18.8
50°-60°	450.3	16.0
60°-70°	303.6	10.8
70°-80°	133.4	4.7
80°-90°	21.7	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°	850.1	30.2
0°-40°	1379.6	48.9
0°-60°	2360.4	83.7
0°-90°	2819.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2819.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1118	1118	1118	1118	1118	
5°	1111	1108	1111	1108	1134	105
15°	1063	1051	1058	1063	1064	296
25°	951	956	972	984	982	440
35°	828	830	849	869	868	514
45°	666	678	689	707	690	515
55°	498	494	507	504	504	443
65°	306	302	314	302	304	304
75°	127	125	127	118	122	136
85°	16	15	16	15	14	23
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1118.5	1118.5	1118.5	1118.5	1118.5
2.5°	1128.2	1119.7	1111.7	1121.0	1126.6
5°	1110.6	1108.0	1111.0	1107.7	1134.4
7.5°	1087.7	1097.7	1103.5	1099.9	1101.5
10°	1075.6	1072.2	1085.0	1094.0	1092.7
12.5°	1062.6	1067.8	1068.5	1078.2	1079.1
15°	1063.3	1051.1	1057.6	1063.1	1063.5
17.5°	1022.0	1035.3	1039.8	1052.4	1036.8
20°	1017.0	1007.3	1017.0	1029.8	1027.8
22.5°	985.9	975.1	995.9	1007.3	1006.6
25°	950.7	955.9	971.5	984.2	982.2
27.5°	919.8	925.9	948.1	965.6	954.3
30°	896.0	892.9	911.7	927.3	936.0
32.5°	853.4	864.3	886.3	901.7	893.5
35°	827.5	830.0	849.2	868.8	868.2
37.5°	782.3	793.7	820.7	826.2	821.2
40°	743.7	755.2	779.6	785.5	783.0
42.5°	715.3	717.3	738.3	745.0	734.2
45°	665.8	678.2	689.4	707.2	690.5
47.5°	623.6	629.4	653.6	658.4	649.6
50°	585.3	587.3	611.7	605.8	600.1
52.5°	537.2	545.8	559.5	558.3	551.5
55°	497.7	494.3	507.3	503.9	503.7
57.5°	450.1	455.9	466.6	461.1	452.3
60°	405.7	405.8	409.7	403.5	402.3
62.5°	356.1	357.9	358.7	351.1	363.5
65°	305.7	301.7	313.5	301.5	303.6
67.5°	259.4	261.4	260.2	252.7	255.6
70°	212.3	214.9	213.0	204.5	207.1
72.5°	169.3	166.1	168.1	157.4	162.3
75°	127.2	124.6	126.9	118.0	122.0
77.5°	86.7	88.7	87.2	82.5	85.2
80°	57.2	55.6	55.6	52.9	53.4
82.5°	33.4	31.8	31.3	30.5	31.8
85°	15.6	15.2	15.5	15.0	14.4
87.5°	5.6	5.8	5.8	5.5	5.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)