

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: P589613

Luminaire Tested: **FMR-24-2-LD4-4HI-40-UNV-93-84-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589613  
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-LD4-4HI-40-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 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

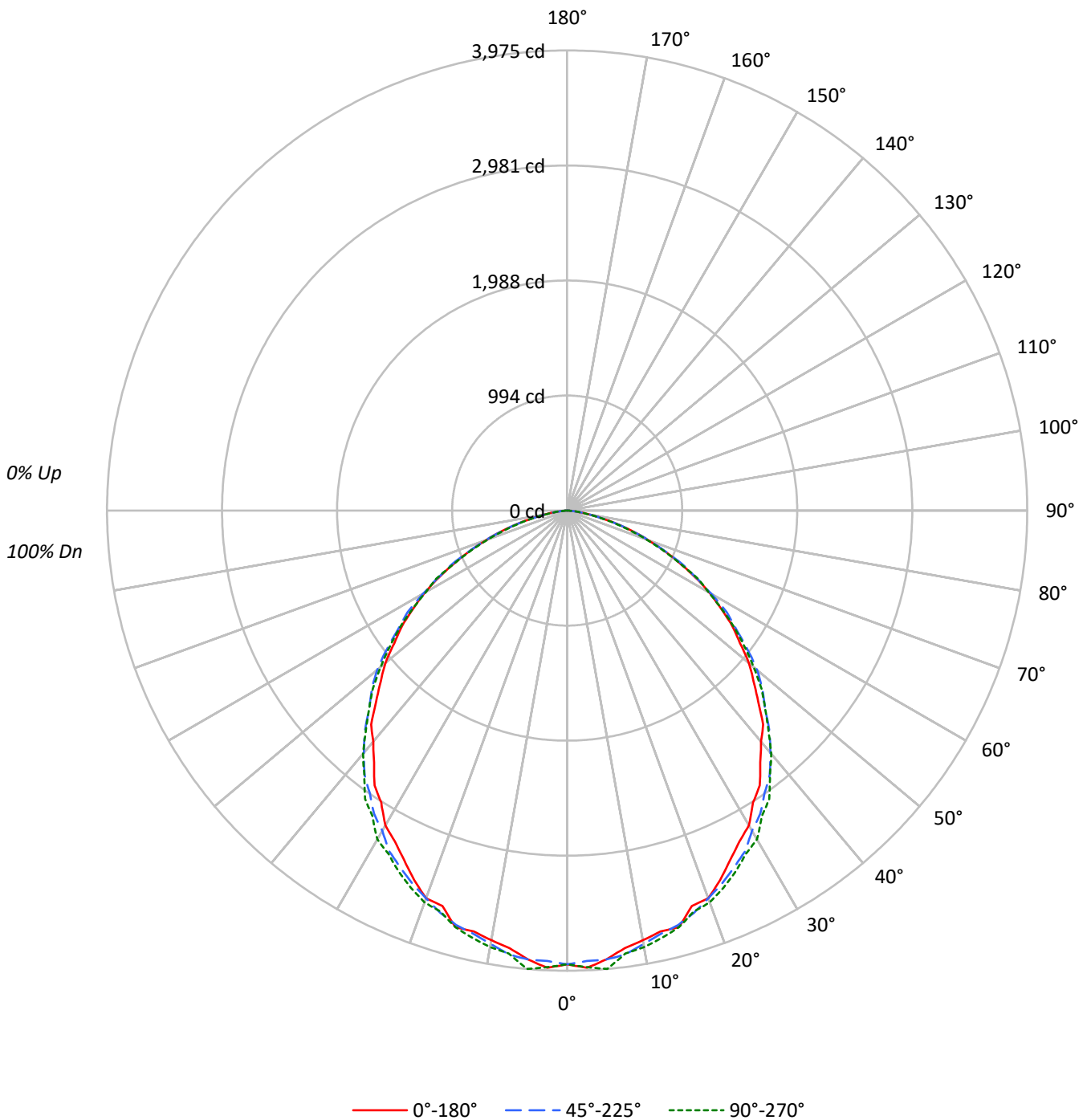
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9877.0 lumens  
Efficiency: N/A  
Efficacy: 114.3 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): 86.4  
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°	10546	10546	10546
5°	10511	10515	10736
10°	10298	10388	10461
15°	10379	10323	10381
20°	10204	10204	10313
25°	9890	10106	10218
30°	9754	9926	10190
35°	9525	9774	9994
40°	9154	9595	9637
45°	8877	9193	9207
50°	8586	8973	8802
55°	8181	8340	8280
60°	7649	7726	7587
65°	6821	6995	6772
70°	5852	5872	5709
75°	4635	4625	4446
80°	3106	3019	2901
85°	1686	1670	1562



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	368.6	3.7
10°-20°	1044.8	10.6
20°-30°	1565.3	15.8
30°-40°	1855.2	18.8
40°-50°	1858.6	18.8
50°-60°	1577.6	16.0
60°-70°	1063.6	10.8
70°-80°	467.4	4.7
80°-90°	75.9	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°	2978.7	30.2
0°-40°	4833.8	48.9
0°-60°	8270.1	83.7
0°-90°	9877.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9877.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3919	3919	3919	3919	3919	
5°	3891	3882	3893	3881	3975	367
15°	3726	3683	3705	3725	3726	1038
25°	3331	3349	3404	3448	3441	1540
35°	2899	2908	2975	3044	3042	1800
45°	2333	2376	2416	2478	2419	1804
55°	1744	1732	1778	1765	1765	1551
65°	1071	1057	1098	1056	1064	1065
75°	446	437	445	413	428	478
85°	55	53	54	53	51	79
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3918.9	3918.9	3918.9	3918.9	3918.9
2.5°	3952.8	3923.0	3895.2	3927.5	3947.3
5°	3891.1	3882.0	3892.6	3881.0	3974.6
7.5°	3811.2	3846.1	3866.3	3853.7	3859.2
10°	3768.7	3756.5	3801.6	3832.9	3828.4
12.5°	3723.1	3741.3	3743.9	3777.8	3780.8
15°	3725.7	3682.6	3705.4	3724.6	3726.2
17.5°	3580.9	3627.5	3643.2	3687.2	3632.6
20°	3563.2	3529.3	3563.2	3608.3	3601.2
22.5°	3454.4	3416.5	3489.4	3529.3	3526.8
25°	3331.0	3349.2	3403.8	3448.4	3441.3
27.5°	3222.7	3243.9	3321.9	3383.1	3343.6
30°	3139.2	3128.6	3194.4	3249.0	3279.4
32.5°	2989.9	3028.4	3105.3	3159.4	3130.6
35°	2899.4	2908.0	2975.3	3044.1	3042.1
37.5°	2741.0	2781.0	2875.6	2894.8	2877.1
40°	2605.9	2645.9	2731.4	2752.1	2743.5
42.5°	2506.2	2513.3	2586.7	2610.4	2572.5
45°	2332.6	2376.2	2415.6	2477.9	2419.2
47.5°	2184.9	2205.1	2290.1	2306.8	2276.0
50°	2050.8	2057.9	2143.4	2122.7	2102.4
52.5°	1882.3	1912.2	1960.2	1956.2	1932.4
55°	1743.7	1732.0	1777.6	1765.4	1764.9
57.5°	1577.2	1597.4	1634.9	1615.6	1584.8
60°	1421.3	1421.9	1435.5	1413.8	1409.7
62.5°	1247.8	1253.9	1256.9	1230.1	1273.6
65°	1071.2	1057.0	1098.5	1056.5	1063.6
67.5°	908.8	915.9	911.8	885.5	895.6
70°	743.8	752.9	746.3	716.5	725.6
72.5°	593.0	581.9	589.0	551.5	568.7
75°	445.8	436.7	444.8	413.4	427.6
77.5°	303.6	310.7	305.6	288.9	298.5
80°	200.4	194.8	194.8	185.2	187.2
82.5°	116.9	111.3	109.8	106.8	111.3
85°	54.6	53.1	54.1	52.6	50.6
87.5°	19.7	20.2	20.2	19.2	18.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)