

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: P589839

Luminaire Tested: **FMR-24-2-LD4-4STD-50-UNV-93-86-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589839  
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-LD4-4STD-50-UNV-93-86-EDD  
Description: 2X2 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

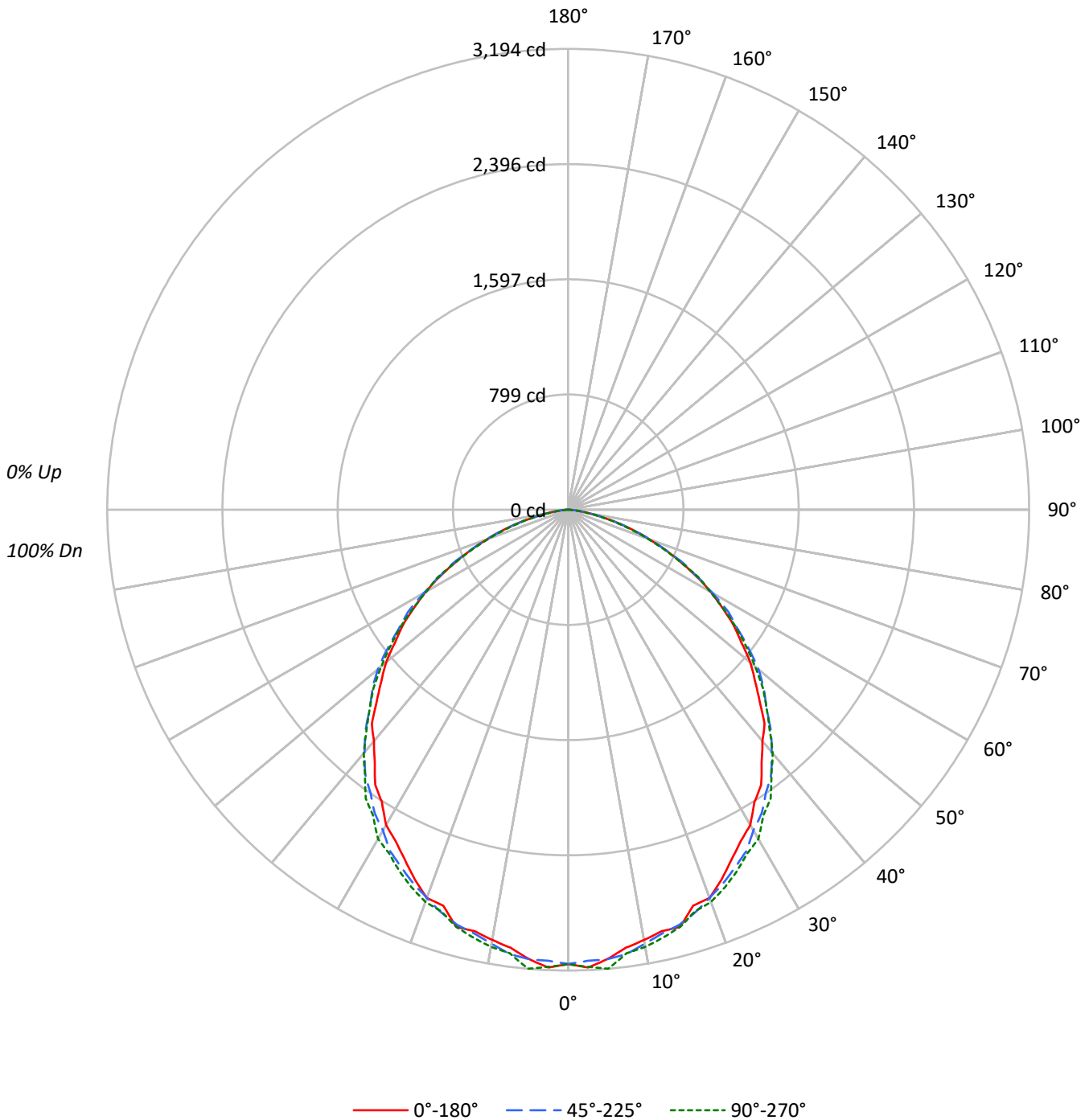
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7936.0 lumens  
Efficiency: N/A  
Efficacy: 119.2 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): 66.6  
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°	8473	8473	8473
5°	8445	8449	8626
10°	8274	8346	8405
15°	8340	8294	8341
20°	8199	8199	8286
25°	7947	8120	8210
30°	7837	7975	8187
35°	7653	7853	8029
40°	7355	7709	7744
45°	7132	7386	7397
50°	6898	7210	7072
55°	6573	6701	6653
60°	6146	6208	6096
65°	5480	5620	5442
70°	4702	4718	4587
75°	3724	3716	3571
80°	2495	2425	2331
85°	1355	1343	1257



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	296.2	3.7
10°-20°	839.4	10.6
20°-30°	1257.7	15.8
30°-40°	1490.6	18.8
40°-50°	1493.3	18.8
50°-60°	1267.6	16.0
60°-70°	854.6	10.8
70°-80°	375.5	4.7
80°-90°	61.0	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°	2393.3	30.2
0°-40°	3883.9	48.9
0°-60°	6644.8	83.7
0°-90°	7936.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7936.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3149	3149	3149	3149	3149	
5°	3126	3119	3128	3118	3194	295
15°	2994	2959	2977	2993	2994	834
25°	2676	2691	2735	2771	2765	1237
35°	2330	2336	2391	2446	2444	1446
45°	1874	1909	1941	1991	1944	1450
55°	1401	1392	1428	1418	1418	1246
65°	861	849	883	849	855	856
75°	358	351	357	332	344	384
85°	44	43	44	42	41	64
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3148.8	3148.8	3148.8	3148.8	3148.8
2.5°	3176.0	3152.1	3129.7	3155.7	3171.6
5°	3126.4	3119.1	3127.7	3118.3	3193.5
7.5°	3062.2	3090.3	3106.5	3096.4	3100.8
10°	3028.1	3018.3	3054.5	3079.7	3076.0
12.5°	2991.5	3006.1	3008.1	3035.4	3037.8
15°	2993.5	2958.9	2977.2	2992.7	2993.9
17.5°	2877.2	2914.6	2927.2	2962.6	2918.7
20°	2863.0	2835.8	2863.0	2899.2	2893.5
22.5°	2775.6	2745.1	2803.6	2835.8	2833.7
25°	2676.4	2691.0	2734.9	2770.7	2765.0
27.5°	2589.4	2606.5	2669.1	2718.3	2686.5
30°	2522.3	2513.8	2566.6	2610.5	2634.9
32.5°	2402.4	2433.3	2495.1	2538.6	2515.4
35°	2329.6	2336.5	2390.6	2445.9	2444.2
37.5°	2202.3	2234.5	2310.5	2325.9	2311.7
40°	2093.8	2125.9	2194.6	2211.3	2204.4
42.5°	2013.7	2019.4	2078.3	2097.4	2066.9
45°	1874.2	1909.2	1940.9	1990.9	1943.8
47.5°	1755.5	1771.8	1840.1	1853.5	1828.7
50°	1647.8	1653.5	1722.2	1705.5	1689.3
52.5°	1512.4	1536.4	1575.0	1571.8	1552.7
55°	1401.0	1391.7	1428.2	1418.5	1418.1
57.5°	1267.2	1283.5	1313.6	1298.1	1273.3
60°	1142.0	1142.4	1153.4	1135.9	1132.7
62.5°	1002.6	1007.5	1009.9	988.3	1023.3
65°	860.7	849.3	882.6	848.9	854.6
67.5°	730.2	735.9	732.6	711.5	719.6
70°	597.6	605.0	599.7	575.7	583.0
72.5°	476.5	467.5	473.2	443.1	457.0
75°	358.2	350.9	357.4	332.2	343.5
77.5°	243.9	249.6	245.6	232.1	239.9
80°	161.0	156.5	156.5	148.8	150.4
82.5°	93.9	89.4	88.2	85.8	89.4
85°	43.9	42.7	43.5	42.3	40.7
87.5°	15.9	16.3	16.3	15.4	14.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)