

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: P589647

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

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589647  
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-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: -

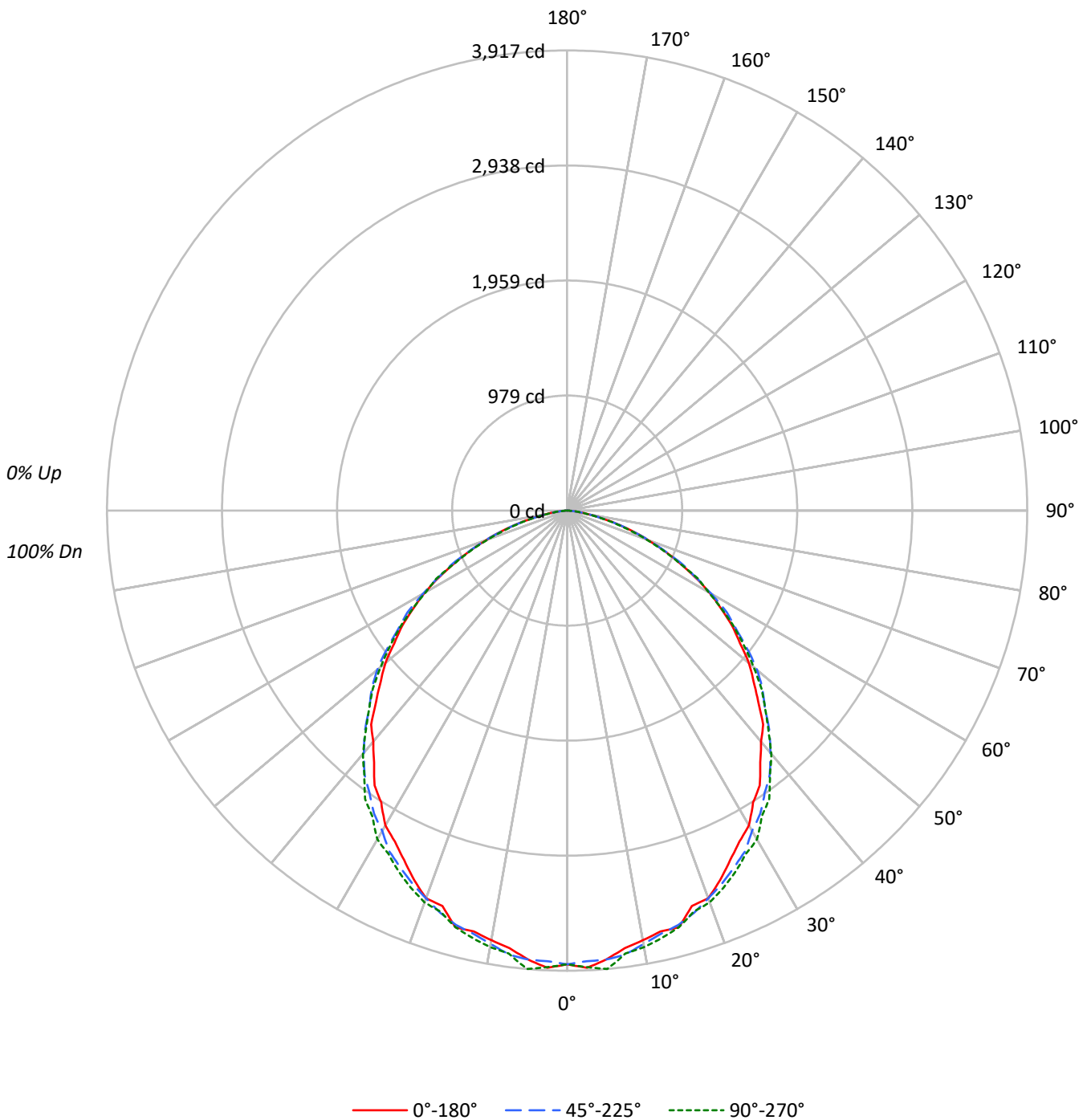
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9734.0 lumens  
Efficiency: N/A  
Efficacy: 112.7 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	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					86			
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73					73			
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62					62			
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53					53			
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46					46			
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41					41			
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36					36			
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32					32			
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29					29			
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26					26			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	10393	10393	10393
5°	10359	10363	10581
10°	10149	10237	10309
15°	10229	10174	10230
20°	10056	10056	10163
25°	9747	9960	10070
30°	9613	9782	10042
35°	9387	9633	9849
40°	9022	9456	9498
45°	8749	9060	9073
50°	8461	8843	8674
55°	8062	8219	8161
60°	7539	7614	7477
65°	6722	6893	6674
70°	5767	5787	5626
75°	4567	4557	4381
80°	3061	2975	2859
85°	1664	1649	1541



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	363.3	3.7
10°-20°	1029.6	10.6
20°-30°	1542.6	15.8
30°-40°	1828.3	18.8
40°-50°	1831.7	18.8
50°-60°	1554.8	16.0
60°-70°	1048.2	10.8
70°-80°	460.6	4.7
80°-90°	74.8	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°	2935.5	30.2
0°-40°	4763.8	48.9
0°-60°	8150.3	83.7
0°-90°	9734.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9734.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3862	3862	3862	3862	3862	
5°	3835	3826	3836	3825	3917	362
15°	3672	3629	3652	3671	3672	1023
25°	3283	3301	3355	3398	3392	1518
35°	2857	2866	2932	3000	2998	1774
45°	2299	2342	2381	2442	2384	1778
55°	1718	1707	1752	1740	1739	1529
65°	1056	1042	1083	1041	1048	1050
75°	439	430	438	407	421	471
85°	54	52	53	52	50	78
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3862.2	3862.2	3862.2	3862.2	3862.2
2.5°	3895.6	3866.2	3838.8	3870.7	3890.1
5°	3834.8	3825.8	3836.3	3824.8	3917.1
7.5°	3756.0	3790.4	3810.3	3797.9	3803.4
10°	3714.1	3702.1	3746.5	3777.4	3772.9
12.5°	3669.2	3687.2	3689.7	3723.1	3726.1
15°	3671.7	3629.3	3651.8	3670.7	3672.2
17.5°	3529.1	3575.0	3590.4	3633.8	3580.0
20°	3511.6	3478.2	3511.6	3556.0	3549.0
22.5°	3404.4	3367.0	3438.8	3478.2	3475.7
25°	3282.7	3300.7	3354.6	3398.4	3391.5
27.5°	3176.0	3197.0	3273.8	3334.1	3295.2
30°	3093.8	3083.3	3148.1	3202.0	3231.9
32.5°	2946.6	2984.5	3060.3	3113.7	3085.3
35°	2857.4	2865.9	2932.2	3000.0	2998.0
37.5°	2701.3	2740.7	2833.9	2852.9	2835.4
40°	2568.2	2607.5	2691.8	2712.3	2703.8
42.5°	2469.9	2476.9	2549.2	2572.6	2535.2
45°	2298.9	2341.8	2380.7	2442.0	2384.1
47.5°	2153.3	2173.2	2257.0	2273.4	2243.0
50°	2021.1	2028.1	2112.4	2091.9	2072.0
52.5°	1855.1	1884.5	1931.9	1927.9	1904.4
55°	1718.4	1707.0	1751.8	1739.9	1739.4
57.5°	1554.4	1574.3	1611.2	1592.3	1561.8
60°	1400.8	1401.3	1414.7	1393.3	1389.3
62.5°	1229.7	1235.7	1238.7	1212.3	1255.2
65°	1055.7	1041.7	1082.6	1041.2	1048.2
67.5°	895.6	902.6	898.6	872.7	882.6
70°	733.0	742.0	735.5	706.1	715.1
72.5°	584.4	573.5	580.5	543.6	560.5
75°	439.3	430.4	438.3	407.4	421.4
77.5°	299.2	306.2	301.2	284.7	294.2
80°	197.5	192.0	192.0	182.5	184.5
82.5°	115.2	109.7	108.2	105.2	109.7
85°	53.9	52.4	53.4	51.9	49.9
87.5°	19.4	19.9	19.9	18.9	18.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)