

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: P589617

Luminaire Tested: **FMR-24-2-LD4-4HI-40-UNV-93-88-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589617  
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-93-88-EDD  
Description: 2X2 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

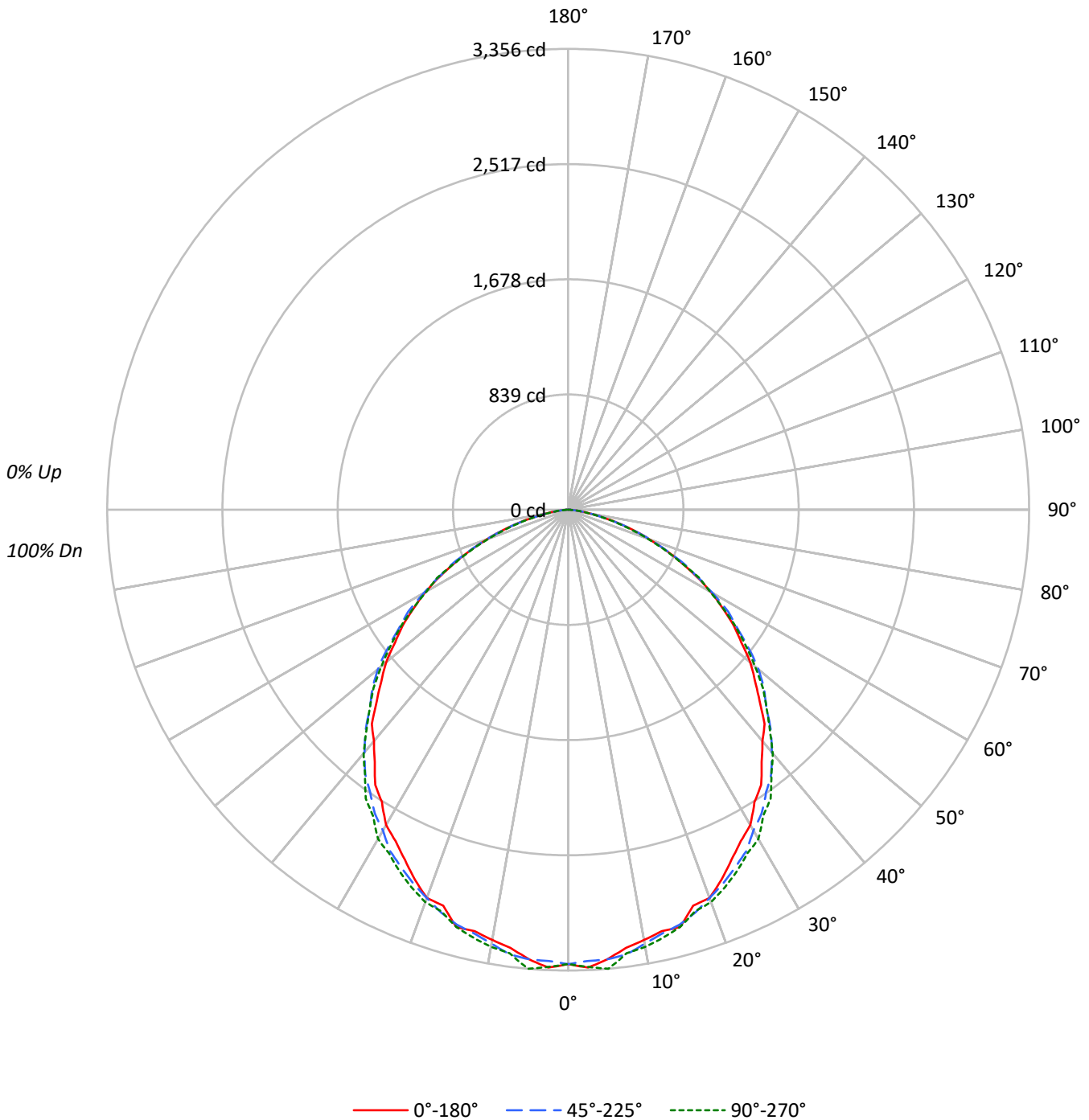
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8340.0 lumens  
Efficiency: N/A  
Efficacy: 96.5 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): 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

TEST NUMBER: P589617

CATALOG NUMBER: FMR-24-2-LD4-4HI-40-UNV-93-88-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P589617

CATALOG NUMBER: FMR-24-2-LD4-4HI-40-UNV-93-88-EDD

**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°	8905	8905	8905
5°	8875	8879	9066
10°	8695	8771	8833
15°	8764	8717	8765
20°	8616	8616	8708
25°	8351	8534	8628
30°	8236	8381	8604
35°	8043	8253	8438
40°	7730	8102	8138
45°	7496	7762	7774
50°	7250	7577	7432
55°	6907	7042	6992
60°	6459	6523	6406
65°	5759	5906	5719
70°	4942	4958	4821
75°	3913	3905	3753
80°	2622	2549	2450
85°	1423	1411	1318



TEST NUMBER: P589617

CATALOG NUMBER: FMR-24-2-LD4-4HI-40-UNV-93-88-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	311.3	3.7
10°-20°	882.2	10.6
20°-30°	1321.7	15.8
30°-40°	1566.5	18.8
40°-50°	1569.4	18.8
50°-60°	1332.1	16.0
60°-70°	898.1	10.8
70°-80°	394.6	4.7
80°-90°	64.1	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°	2515.1	30.2
0°-40°	4081.6	48.9
0°-60°	6983.1	83.7
0°-90°	8340.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8340.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3309	3309	3309	3309	3309	
5°	3286	3278	3287	3277	3356	310
15°	3146	3110	3129	3145	3146	876
25°	2813	2828	2874	2912	2906	1300
35°	2448	2455	2512	2570	2569	1520
45°	1970	2006	2040	2092	2043	1524
55°	1472	1462	1501	1491	1490	1310
65°	904	892	928	892	898	900
75°	376	369	376	349	361	403
85°	46	45	46	44	43	67
90°	0	0	0	0	0	



TEST NUMBER: P589617

CATALOG NUMBER: FMR-24-2-LD4-4HI-40-UNV-93-88-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3309.1	3309.1	3309.1	3309.1	3309.1
2.5°	3337.7	3312.5	3289.0	3316.4	3333.0
5°	3285.6	3277.9	3286.9	3277.1	3356.1
7.5°	3218.1	3247.6	3264.7	3254.0	3258.7
10°	3182.2	3172.0	3210.0	3236.5	3232.6
12.5°	3143.8	3159.1	3161.3	3189.9	3192.5
15°	3145.9	3109.6	3128.8	3145.0	3146.3
17.5°	3023.7	3063.0	3076.2	3113.4	3067.3
20°	3008.7	2980.1	3008.7	3046.8	3040.8
22.5°	2916.9	2884.8	2946.4	2980.1	2978.0
25°	2812.6	2828.0	2874.2	2911.8	2905.8
27.5°	2721.2	2739.1	2804.9	2856.6	2823.3
30°	2650.7	2641.7	2697.3	2743.4	2769.0
32.5°	2524.7	2557.1	2622.1	2667.8	2643.4
35°	2448.2	2455.4	2512.3	2570.4	2568.7
37.5°	2314.4	2348.2	2428.1	2444.3	2429.4
40°	2200.4	2234.1	2306.3	2323.8	2316.6
42.5°	2116.2	2122.2	2184.1	2204.2	2172.2
45°	1969.7	2006.4	2039.7	2092.3	2042.7
47.5°	1844.9	1862.0	1933.8	1947.9	1921.8
50°	1731.7	1737.7	1809.9	1792.3	1775.3
52.5°	1589.4	1614.6	1655.2	1651.8	1631.7
55°	1472.3	1462.5	1501.0	1490.7	1490.3
57.5°	1331.8	1348.8	1380.5	1364.2	1338.2
60°	1200.2	1200.6	1212.1	1193.8	1190.3
62.5°	1053.6	1058.7	1061.3	1038.7	1075.4
65°	904.5	892.5	927.6	892.1	898.1
67.5°	767.4	773.3	769.9	747.7	756.2
70°	628.1	635.8	630.2	605.0	612.7
72.5°	500.7	491.3	497.3	465.7	480.2
75°	376.4	368.7	375.6	349.1	361.0
77.5°	256.4	262.3	258.1	244.0	252.1
80°	169.2	164.5	164.5	156.4	158.1
82.5°	98.7	94.0	92.7	90.2	94.0
85°	46.1	44.9	45.7	44.4	42.7
87.5°	16.7	17.1	17.1	16.2	15.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)