

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: P589327

Luminaire Tested: **FMR-24-2-LD4-3HI-40-UNV-93-86-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589327  
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-LD4-3HI-40-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 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

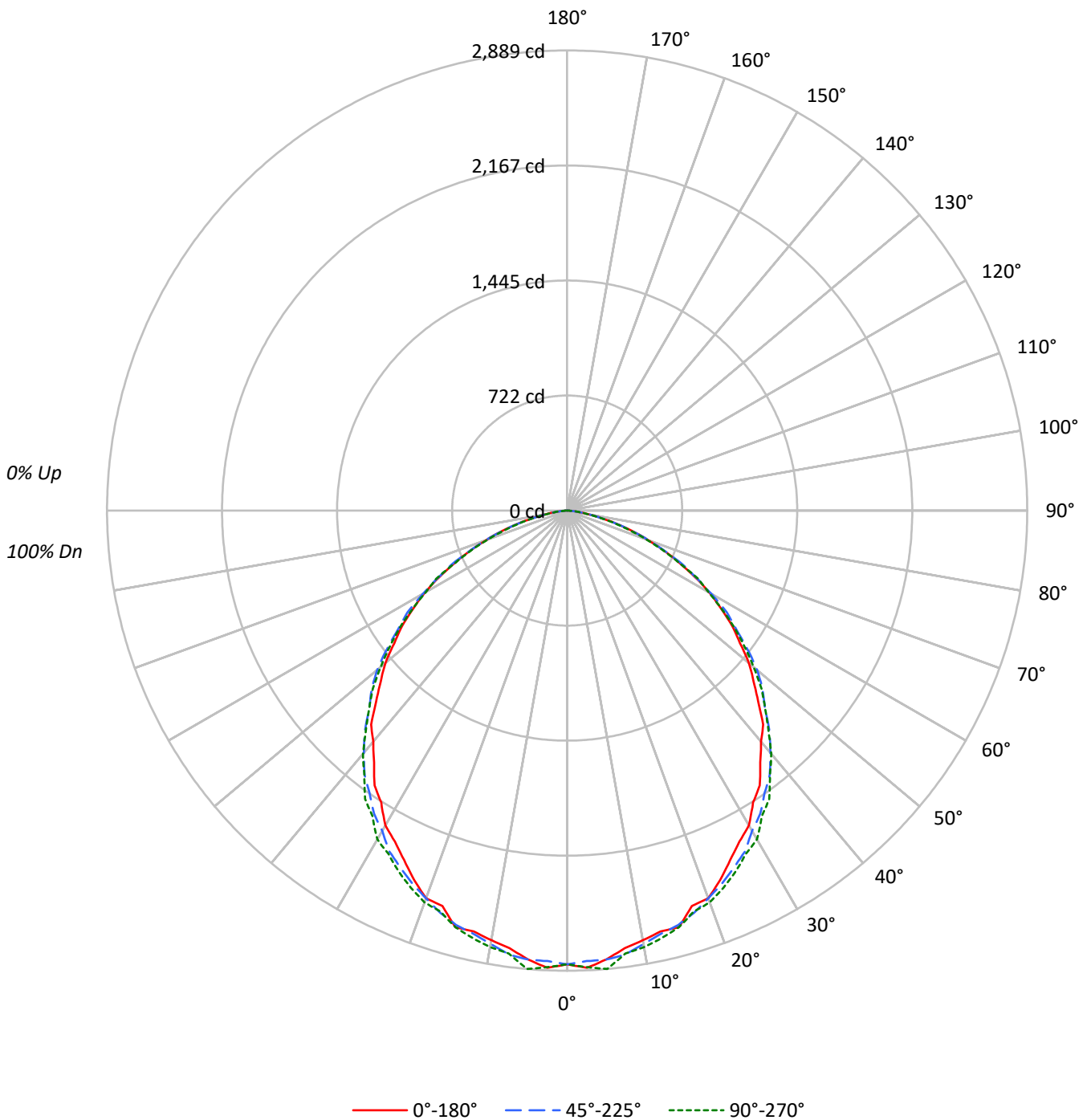
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7179.0 lumens  
Efficiency: N/A  
Efficacy: 110.8 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): 64.8  
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°	7665	7665	7665
5°	7640	7643	7804
10°	7485	7550	7603
15°	7544	7503	7545
20°	7417	7417	7496
25°	7189	7346	7427
30°	7090	7214	7406
35°	6923	7104	7264
40°	6654	6974	7005
45°	6452	6682	6691
50°	6240	6522	6397
55°	5946	6062	6018
60°	5560	5616	5514
65°	4958	5084	4923
70°	4253	4268	4150
75°	3369	3361	3231
80°	2256	2194	2109
85°	1226	1216	1136



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	267.9	3.7
10°-20°	759.4	10.6
20°-30°	1137.7	15.8
30°-40°	1348.4	18.8
40°-50°	1350.9	18.8
50°-60°	1146.7	16.0
60°-70°	773.1	10.8
70°-80°	339.7	4.7
80°-90°	55.2	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°	2165.0	30.2
0°-40°	3513.4	48.9
0°-60°	6011.0	83.7
0°-90°	7179.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7179.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2848	2848	2848	2848	2848	
5°	2828	2822	2829	2821	2889	267
15°	2708	2677	2693	2707	2708	754
25°	2421	2434	2474	2506	2501	1119
35°	2107	2114	2162	2213	2211	1308
45°	1696	1727	1756	1801	1758	1312
55°	1267	1259	1292	1283	1283	1127
65°	779	768	798	768	773	774
75°	324	317	323	300	311	347
85°	40	39	39	38	37	58
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2848.4	2848.4	2848.4	2848.4	2848.4
2.5°	2873.1	2851.4	2831.2	2854.7	2869.0
5°	2828.2	2821.6	2829.3	2820.9	2888.9
7.5°	2770.1	2795.5	2810.2	2801.0	2805.0
10°	2739.2	2730.4	2763.1	2785.9	2782.6
12.5°	2706.1	2719.4	2721.2	2745.8	2748.0
15°	2708.0	2676.7	2693.2	2707.2	2708.3
17.5°	2602.8	2636.6	2648.0	2680.0	2640.3
20°	2589.9	2565.3	2589.9	2622.6	2617.5
22.5°	2510.8	2483.2	2536.2	2565.3	2563.4
25°	2421.1	2434.3	2474.0	2506.4	2501.3
27.5°	2342.4	2357.8	2414.5	2459.0	2430.3
30°	2281.7	2274.0	2321.8	2361.5	2383.6
32.5°	2173.2	2201.2	2257.1	2296.4	2275.4
35°	2107.4	2113.6	2162.5	2212.6	2211.1
37.5°	1992.3	2021.3	2090.1	2104.1	2091.2
40°	1894.1	1923.1	1985.3	2000.3	1994.1
42.5°	1821.6	1826.8	1880.1	1897.4	1869.8
45°	1695.5	1727.1	1755.8	1801.0	1758.3
47.5°	1588.1	1602.8	1664.6	1676.7	1654.3
50°	1490.6	1495.8	1557.9	1542.8	1528.1
52.5°	1368.1	1389.8	1424.8	1421.8	1404.5
55°	1267.4	1258.9	1292.0	1283.2	1282.8
57.5°	1146.4	1161.1	1188.3	1174.3	1151.9
60°	1033.1	1033.5	1043.4	1027.6	1024.6
62.5°	906.9	911.4	913.6	894.1	925.7
65°	778.6	768.3	798.4	767.9	773.1
67.5°	660.5	665.7	662.7	643.6	651.0
70°	540.6	547.3	542.5	520.8	527.4
72.5°	431.0	422.9	428.1	400.9	413.4
75°	324.0	317.4	323.3	300.5	310.8
77.5°	220.7	225.8	222.1	210.0	217.0
80°	145.6	141.6	141.6	134.6	136.1
82.5°	85.0	80.9	79.8	77.6	80.9
85°	39.7	38.6	39.4	38.2	36.8
87.5°	14.3	14.7	14.7	14.0	13.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)