

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: P589309

Luminaire Tested: **FMR-24-2-LD4-3HI-40-UNV-81-84-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589309  
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-81-84-EDD  
Description: 2X2 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

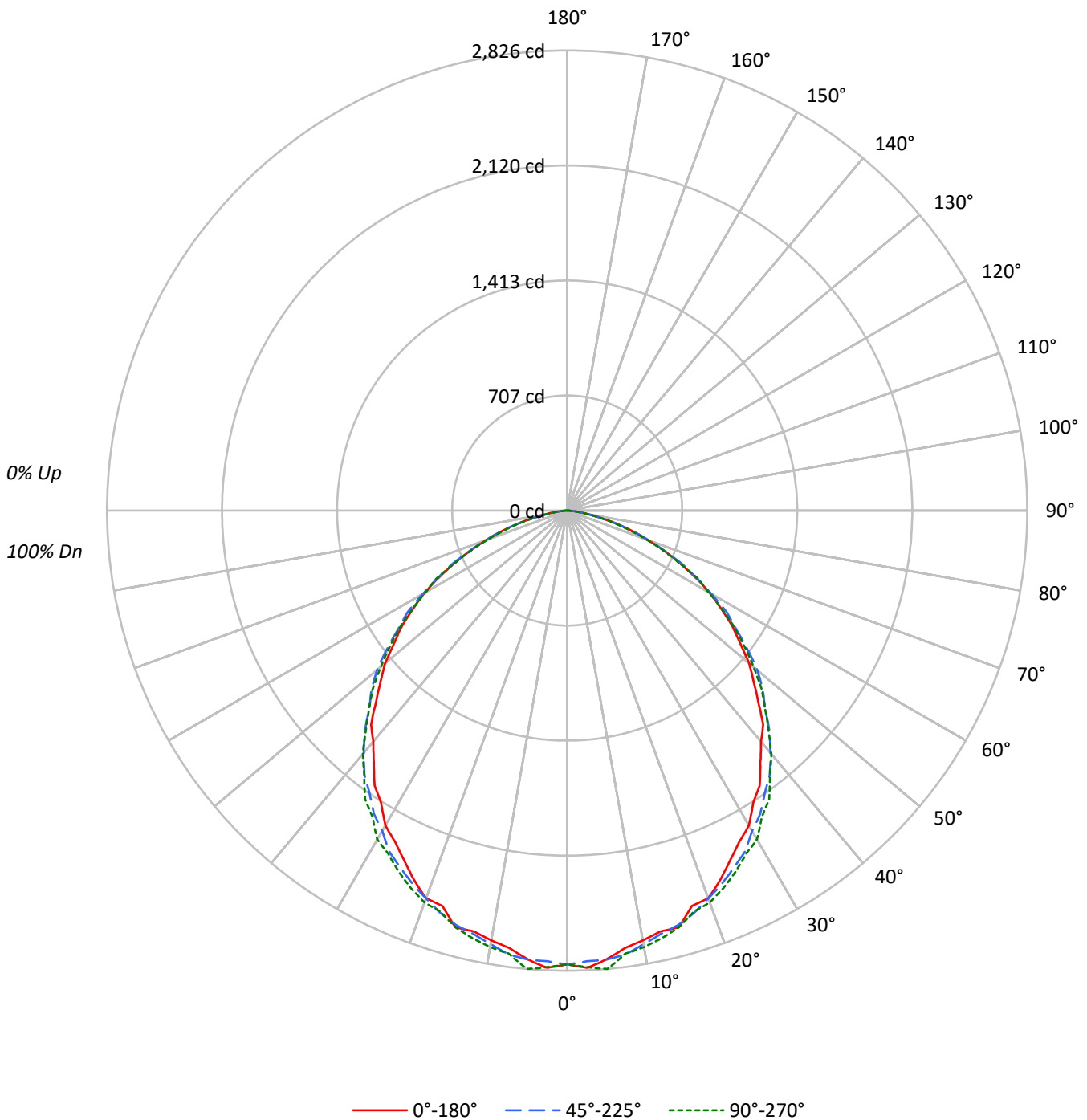
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7024.0 lumens  
Efficiency: N/A  
Efficacy: 108.4 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°	7499	7499	7499
5°	7475	7478	7635
10°	7323	7387	7439
15°	7381	7341	7382
20°	7257	7257	7334
25°	7033	7187	7266
30°	6937	7059	7246
35°	6774	6951	7107
40°	6510	6823	6854
45°	6313	6538	6547
50°	6105	6381	6259
55°	5818	5931	5888
60°	5440	5494	5395
65°	4851	4974	4816
70°	4162	4176	4060
75°	3296	3289	3162
80°	2208	2146	2063
85°	1201	1189	1112



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	262.2	3.7
10°-20°	743.0	10.6
20°-30°	1113.1	15.8
30°-40°	1319.3	18.8
40°-50°	1321.7	18.8
50°-60°	1121.9	16.0
60°-70°	756.4	10.8
70°-80°	332.4	4.7
80°-90°	54.0	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°	2118.3	30.2
0°-40°	3437.6	48.9
0°-60°	5881.2	83.7
0°-90°	7024.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7024.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2787	2787	2787	2787	2787	
5°	2767	2761	2768	2760	2826	261
15°	2650	2619	2635	2649	2650	738
25°	2369	2382	2421	2452	2447	1095
35°	2062	2068	2116	2165	2163	1280
45°	1659	1690	1718	1762	1720	1283
55°	1240	1232	1264	1256	1255	1103
65°	762	752	781	751	756	758
75°	317	310	316	294	304	340
85°	39	38	38	37	36	56
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2786.9	2786.9	2786.9	2786.9	2786.9
2.5°	2811.1	2789.8	2770.0	2793.1	2807.1
5°	2767.2	2760.7	2768.2	2760.0	2826.5
7.5°	2710.3	2735.1	2749.5	2740.5	2744.5
10°	2680.1	2671.4	2703.5	2725.8	2722.5
12.5°	2647.7	2660.6	2662.4	2686.6	2688.7
15°	2649.5	2618.9	2635.1	2648.8	2649.8
17.5°	2546.6	2579.7	2590.8	2622.1	2583.3
20°	2534.0	2509.9	2534.0	2566.0	2561.0
22.5°	2456.6	2429.6	2481.4	2509.9	2508.1
25°	2368.8	2381.8	2420.6	2452.3	2447.3
27.5°	2291.8	2306.9	2362.3	2405.9	2377.8
30°	2232.4	2224.9	2271.7	2310.5	2332.1
32.5°	2126.3	2153.6	2208.3	2246.8	2226.3
35°	2061.9	2068.0	2115.8	2164.8	2163.3
37.5°	1949.2	1977.7	2045.0	2058.6	2046.0
40°	1853.2	1881.6	1942.4	1957.2	1951.0
42.5°	1782.3	1787.3	1839.5	1856.4	1829.4
45°	1658.9	1689.8	1717.9	1762.1	1720.4
47.5°	1553.8	1568.2	1628.6	1640.5	1618.6
50°	1458.4	1463.5	1524.3	1509.5	1495.1
52.5°	1338.6	1359.8	1394.0	1391.1	1374.2
55°	1240.0	1231.7	1264.1	1255.5	1255.1
57.5°	1121.6	1136.0	1162.6	1149.0	1127.0
60°	1010.8	1011.1	1020.9	1005.4	1002.5
62.5°	887.4	891.7	893.8	874.8	905.7
65°	761.8	751.7	781.2	751.3	756.4
67.5°	646.3	651.3	648.4	629.7	636.9
70°	529.0	535.4	530.8	509.5	516.0
72.5°	421.7	413.8	418.9	392.2	404.5
75°	317.0	310.5	316.3	294.0	304.1
77.5°	215.9	220.9	217.3	205.5	212.3
80°	142.5	138.5	138.5	131.7	133.1
82.5°	83.1	79.2	78.1	75.9	79.2
85°	38.9	37.8	38.5	37.4	36.0
87.5°	14.0	14.4	14.4	13.7	13.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)