

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: P589828

Luminaire Tested: **FMR-24-2-LD4-4STD-50-UNV-81-97-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589828  
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-81-97-EDD  
Description: 2X2 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

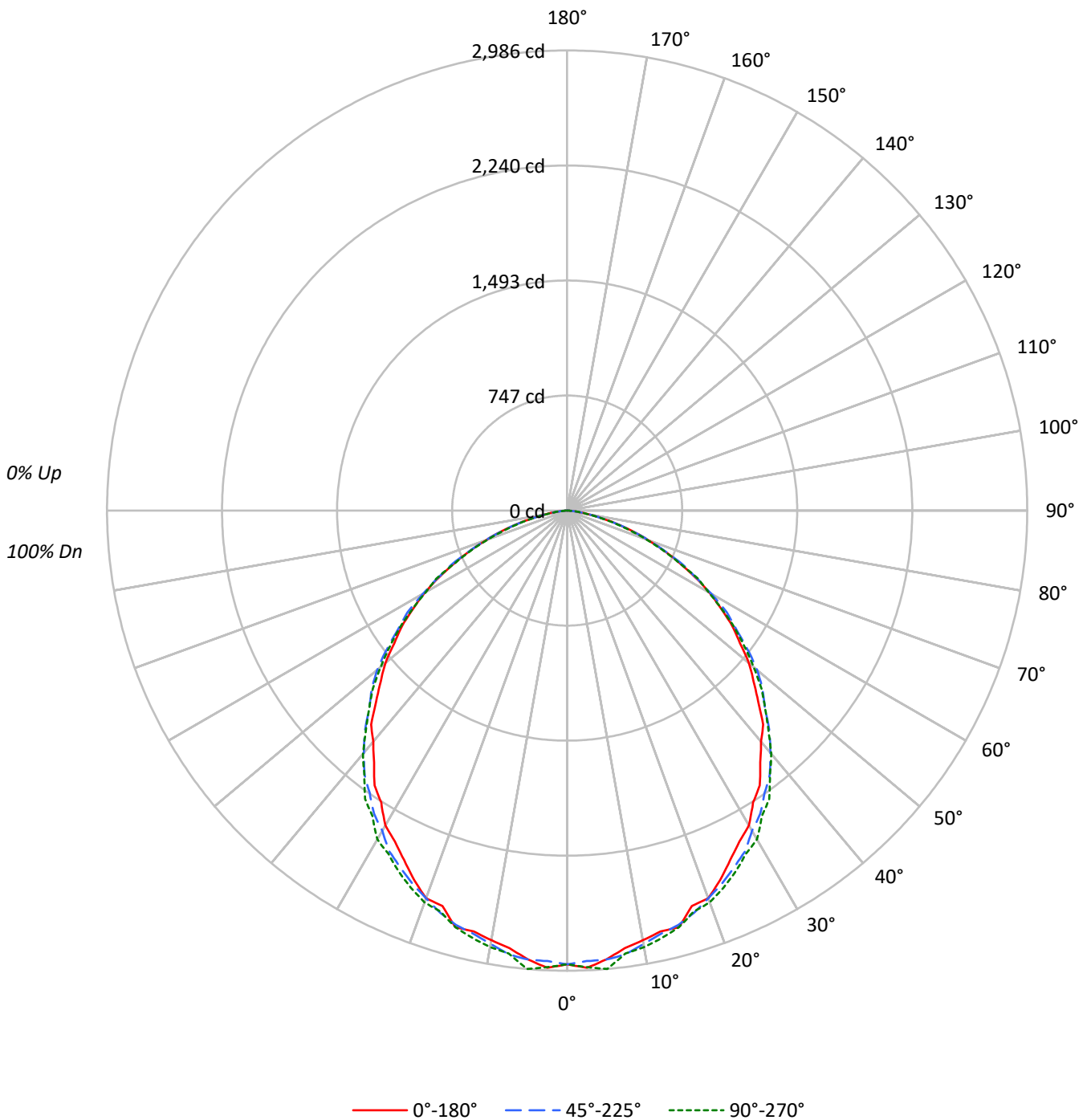
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7420.0 lumens  
Efficiency: N/A  
Efficacy: 111.4 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): 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°	7923	7923	7923
5°	7896	7899	8066
10°	7736	7804	7859
15°	7797	7755	7798
20°	7665	7665	7747
25°	7430	7592	7676
30°	7328	7457	7655
35°	7155	7342	7507
40°	6877	7208	7240
45°	6669	6906	6916
50°	6450	6741	6612
55°	6145	6265	6221
60°	5747	5804	5699
65°	5124	5255	5088
70°	4397	4412	4289
75°	3482	3474	3340
80°	2332	2267	2179
85°	1269	1257	1173



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	276.9	3.7
10°-20°	784.9	10.6
20°-30°	1175.9	15.8
30°-40°	1393.7	18.8
40°-50°	1396.3	18.8
50°-60°	1185.2	16.0
60°-70°	799.1	10.8
70°-80°	351.1	4.7
80°-90°	57.0	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°	2237.7	30.2
0°-40°	3631.4	48.9
0°-60°	6212.8	83.7
0°-90°	7420.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7420.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2944	2944	2944	2944	2944	
5°	2923	2916	2924	2916	2986	276
15°	2799	2767	2784	2798	2799	780
25°	2502	2516	2557	2591	2585	1157
35°	2178	2185	2235	2287	2285	1352
45°	1752	1785	1815	1862	1817	1356
55°	1310	1301	1335	1326	1326	1165
65°	805	794	825	794	799	800
75°	335	328	334	311	321	359
85°	41	40	41	40	38	60
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2944.1	2944.1	2944.1	2944.1	2944.1
2.5°	2969.5	2947.1	2926.2	2950.5	2965.4
5°	2923.2	2916.3	2924.3	2915.6	2985.9
7.5°	2863.1	2889.3	2904.5	2895.0	2899.2
10°	2831.2	2822.0	2855.9	2879.4	2876.0
12.5°	2797.0	2810.6	2812.5	2838.0	2840.3
15°	2798.9	2766.6	2783.7	2798.1	2799.2
17.5°	2690.1	2725.1	2736.9	2770.0	2728.9
20°	2676.8	2651.4	2676.8	2710.7	2705.4
22.5°	2595.1	2566.6	2621.3	2651.4	2649.5
25°	2502.4	2516.0	2557.1	2590.6	2585.2
27.5°	2421.0	2437.0	2495.5	2541.5	2511.9
30°	2358.3	2350.3	2399.7	2440.8	2463.6
32.5°	2246.2	2275.0	2332.8	2373.5	2351.8
35°	2178.1	2184.6	2235.1	2286.8	2285.3
37.5°	2059.1	2089.2	2160.3	2174.7	2161.4
40°	1957.6	1987.7	2051.9	2067.5	2061.0
42.5°	1882.8	1888.1	1943.2	1961.1	1932.6
45°	1752.4	1785.1	1814.7	1861.5	1817.4
47.5°	1641.4	1656.6	1720.4	1733.0	1709.8
50°	1540.6	1546.0	1610.2	1594.6	1579.4
52.5°	1414.1	1436.5	1472.6	1469.6	1451.7
55°	1309.9	1301.2	1335.4	1326.3	1325.9
57.5°	1184.8	1200.1	1228.2	1213.7	1190.6
60°	1067.8	1068.2	1078.4	1062.1	1059.0
62.5°	937.4	941.9	944.2	924.1	956.8
65°	804.7	794.1	825.3	793.7	799.0
67.5°	682.7	688.0	685.0	665.2	672.8
70°	558.8	565.6	560.7	538.3	545.1
72.5°	445.5	437.1	442.5	414.3	427.3
75°	334.9	328.0	334.1	310.6	321.2
77.5°	228.1	233.4	229.6	217.1	224.3
80°	150.5	146.3	146.3	139.1	140.6
82.5°	87.8	83.6	82.5	80.2	83.6
85°	41.1	39.9	40.7	39.5	38.0
87.5°	14.8	15.2	15.2	14.4	13.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)