

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: P589310

Luminaire Tested: **FMR-24-2-LD4-3HI-40-UNV-81-85-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589310  
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-81-85-EDD  
Description: 2X2 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

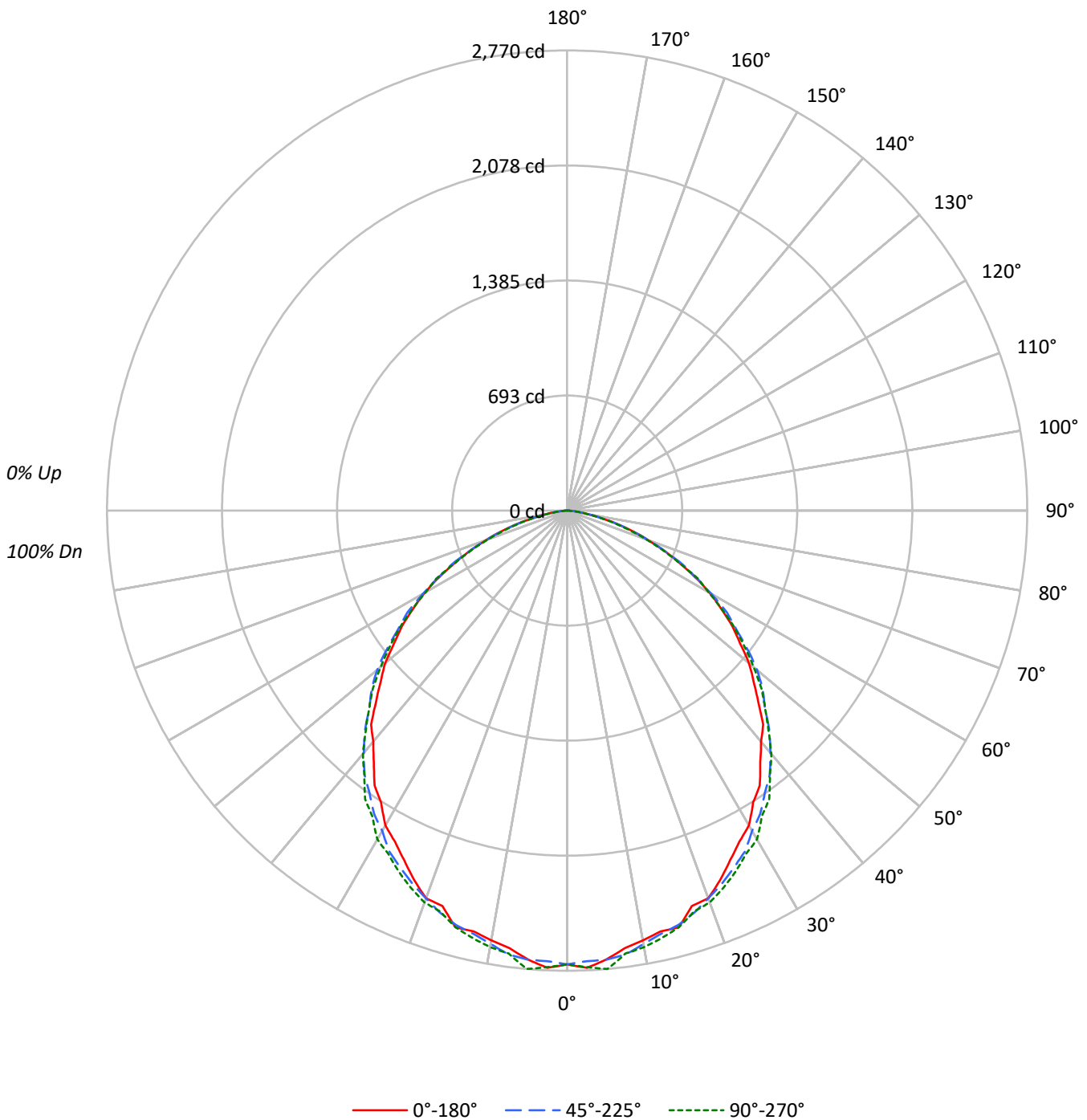
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6884.0 lumens  
Efficiency: N/A  
Efficacy: 106.2 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	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°	7350	7350	7350
5°	7326	7329	7483
10°	7177	7240	7291
15°	7234	7195	7235
20°	7112	7112	7188
25°	6893	7044	7122
30°	6798	6918	7102
35°	6638	6812	6965
40°	6380	6687	6717
45°	6187	6407	6417
50°	5984	6254	6134
55°	5702	5812	5771
60°	5331	5385	5288
65°	4754	4875	4720
70°	4079	4093	3979
75°	3230	3223	3098
80°	2165	2104	2022
85°	1176	1164	1090



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	256.9	3.7
10°-20°	728.2	10.6
20°-30°	1090.9	15.8
30°-40°	1293.0	18.8
40°-50°	1295.4	18.8
50°-60°	1099.6	16.0
60°-70°	741.3	10.8
70°-80°	325.8	4.7
80°-90°	52.9	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°	2076.0	30.2
0°-40°	3369.0	48.9
0°-60°	5764.0	83.7
0°-90°	6884.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6884.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2731	2731	2731	2731	2731	
5°	2712	2706	2713	2705	2770	256
15°	2597	2567	2583	2596	2597	723
25°	2322	2334	2372	2403	2398	1073
35°	2021	2027	2074	2122	2120	1255
45°	1626	1656	1684	1727	1686	1258
55°	1215	1207	1239	1230	1230	1081
65°	747	737	766	736	741	743
75°	311	304	310	288	298	333
85°	38	37	38	37	35	55
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2731.4	2731.4	2731.4	2731.4	2731.4
2.5°	2755.0	2734.2	2714.8	2737.4	2751.1
5°	2712.0	2705.7	2713.1	2704.9	2770.2
7.5°	2656.3	2680.6	2694.7	2685.9	2689.8
10°	2626.7	2618.2	2649.6	2671.4	2668.3
12.5°	2594.9	2607.6	2609.4	2633.0	2635.1
15°	2596.7	2566.7	2582.6	2596.0	2597.0
17.5°	2495.8	2528.3	2539.2	2569.9	2531.8
20°	2483.5	2459.8	2483.5	2514.9	2509.9
22.5°	2407.7	2381.2	2432.0	2459.8	2458.1
25°	2321.6	2334.3	2372.4	2403.4	2398.5
27.5°	2246.1	2260.9	2315.3	2357.9	2330.4
30°	2187.9	2180.5	2226.4	2264.5	2285.6
32.5°	2083.9	2110.7	2164.3	2202.0	2181.9
35°	2020.8	2026.8	2073.7	2121.6	2120.2
37.5°	1910.4	1938.3	2004.2	2017.6	2005.3
40°	1816.2	1844.1	1903.7	1918.1	1912.2
42.5°	1746.8	1751.7	1802.8	1819.4	1793.0
45°	1625.8	1656.1	1683.6	1727.0	1686.1
47.5°	1522.8	1536.9	1596.2	1607.8	1586.3
50°	1429.4	1434.3	1493.9	1479.4	1465.3
52.5°	1311.9	1332.7	1366.2	1363.4	1346.8
55°	1215.3	1207.2	1238.9	1230.5	1230.1
57.5°	1099.3	1113.4	1139.5	1126.1	1104.5
60°	990.6	991.0	1000.5	985.3	982.5
62.5°	869.7	873.9	876.0	857.3	887.7
65°	746.6	736.7	765.6	736.4	741.3
67.5°	633.4	638.3	635.5	617.2	624.2
70°	518.4	524.8	520.2	499.4	505.7
72.5°	413.3	405.6	410.5	384.4	396.4
75°	310.7	304.4	310.0	288.1	298.0
77.5°	211.6	216.5	213.0	201.4	208.1
80°	139.7	135.8	135.8	129.1	130.5
82.5°	81.5	77.6	76.5	74.4	77.6
85°	38.1	37.0	37.7	36.7	35.3
87.5°	13.8	14.1	14.1	13.4	12.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)