

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: P589608

Luminaire Tested: **FMR-24-2-LD4-4HI-40-UNV-82-87-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589608  
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-82-87-EDD  
Description: 2X2 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

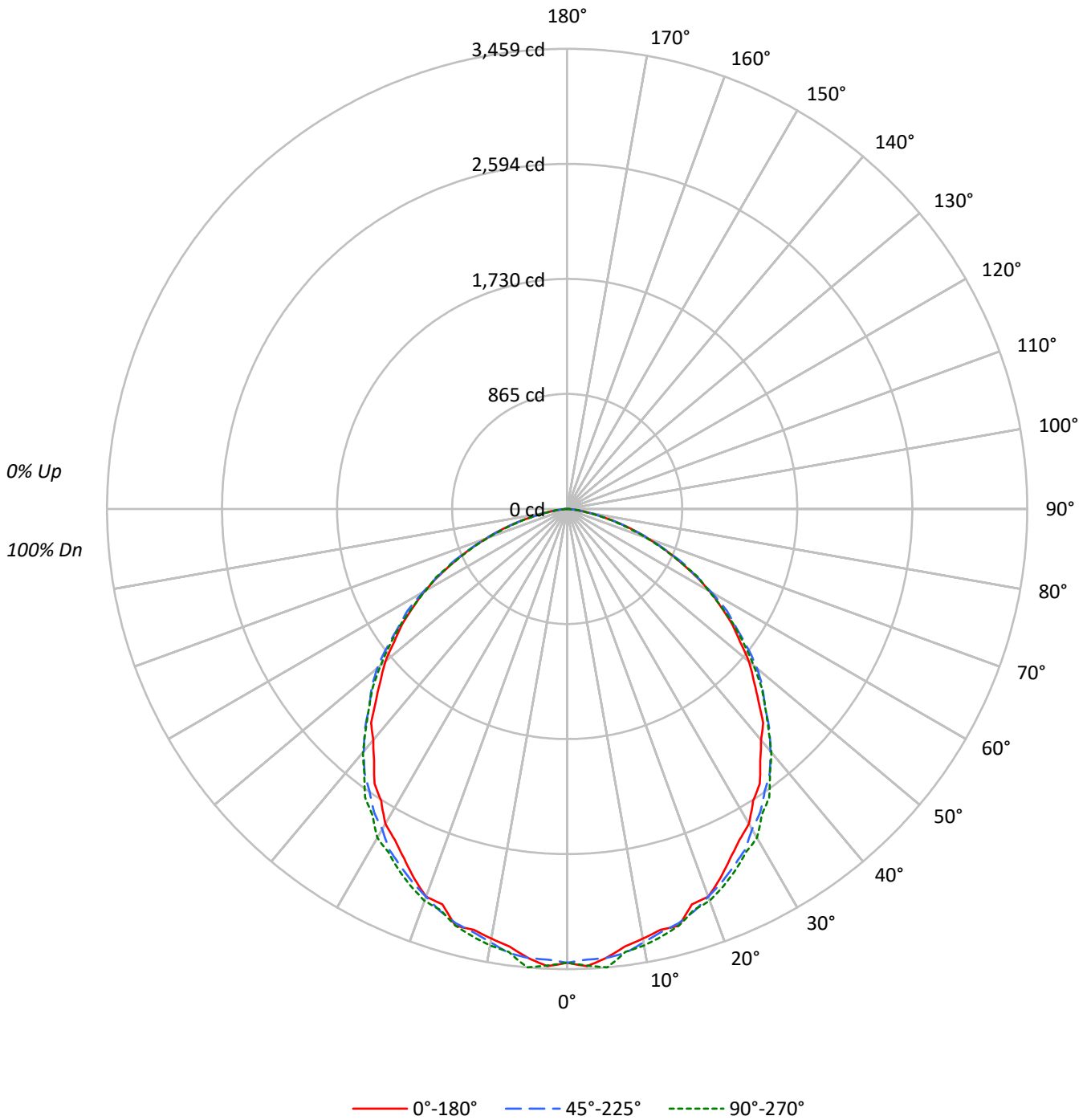
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8596.0 lumens  
Efficiency: N/A  
Efficacy: 99.5 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

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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°	9178	9178	9178
5°	9148	9151	9344
10°	8962	9040	9104
15°	9033	8984	9034
20°	8881	8881	8975
25°	8608	8796	8893
30°	8489	8639	8868
35°	8289	8506	8697
40°	7967	8350	8388
45°	7726	8001	8012
50°	7472	7809	7660
55°	7119	7258	7206
60°	6657	6724	6603
65°	5936	6087	5894
70°	5093	5110	4969
75°	4034	4025	3869
80°	2703	2627	2524
85°	1470	1454	1359



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	320.8	3.7
10°-20°	909.3	10.6
20°-30°	1362.3	15.8
30°-40°	1614.6	18.8
40°-50°	1617.5	18.8
50°-60°	1373.0	16.0
60°-70°	925.7	10.8
70°-80°	406.8	4.7
80°-90°	66.1	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°	2592.3	30.2
0°-40°	4206.9	48.9
0°-60°	7197.5	83.7
0°-90°	8596.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8596.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3411	3411	3411	3411	3411	
5°	3386	3378	3388	3378	3459	319
15°	3242	3205	3225	3242	3243	903
25°	2899	2915	2962	3001	2995	1340
35°	2523	2531	2589	2649	2648	1567
45°	2030	2068	2102	2156	2105	1570
55°	1518	1507	1547	1536	1536	1350
65°	932	920	956	920	926	927
75°	388	380	387	360	372	416
85°	48	46	47	46	44	69
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3410.7	3410.7	3410.7	3410.7	3410.7
2.5°	3440.2	3414.2	3390.0	3418.2	3435.3
5°	3386.5	3378.5	3387.8	3377.6	3459.1
7.5°	3316.9	3347.3	3364.9	3353.9	3358.7
10°	3279.9	3269.3	3308.5	3335.8	3331.8
12.5°	3240.3	3256.1	3258.3	3287.8	3290.5
15°	3242.5	3205.0	3224.8	3241.6	3242.9
17.5°	3116.5	3157.0	3170.7	3209.0	3161.4
20°	3101.1	3071.6	3101.1	3140.3	3134.1
22.5°	3006.4	2973.4	3036.8	3071.6	3069.4
25°	2899.0	2914.8	2962.4	3001.1	2995.0
27.5°	2804.7	2823.2	2891.0	2944.3	2910.0
30°	2732.1	2722.8	2780.1	2827.6	2854.0
32.5°	2602.2	2635.6	2702.6	2749.7	2724.6
35°	2523.3	2530.8	2589.4	2649.3	2647.5
37.5°	2385.5	2420.3	2502.6	2519.4	2504.0
40°	2267.9	2302.7	2377.1	2395.2	2387.7
42.5°	2181.2	2187.3	2251.2	2271.9	2238.8
45°	2030.1	2068.0	2102.3	2156.5	2105.4
47.5°	1901.5	1919.1	1993.1	2007.7	1980.8
50°	1784.8	1791.0	1865.4	1847.4	1829.7
52.5°	1638.2	1664.2	1706.0	1702.5	1681.8
55°	1517.5	1507.4	1547.0	1536.5	1536.0
57.5°	1372.6	1390.3	1422.8	1406.1	1379.2
60°	1237.0	1237.4	1249.3	1230.4	1226.9
62.5°	1086.0	1091.2	1093.9	1070.5	1108.4
65°	932.3	919.9	956.0	919.5	925.7
67.5°	790.9	797.1	793.5	770.6	779.5
70°	647.3	655.3	649.5	623.6	631.5
72.5°	516.1	506.4	512.6	480.0	495.0
75°	388.0	380.0	387.1	359.8	372.1
77.5°	264.2	270.4	266.0	251.5	259.8
80°	174.4	169.5	169.5	161.2	162.9
82.5°	101.7	96.9	95.6	92.9	96.9
85°	47.6	46.2	47.1	45.8	44.0
87.5°	17.2	17.6	17.6	16.7	15.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)