

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: P589022

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

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589022  
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-LD4-2HI-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: -

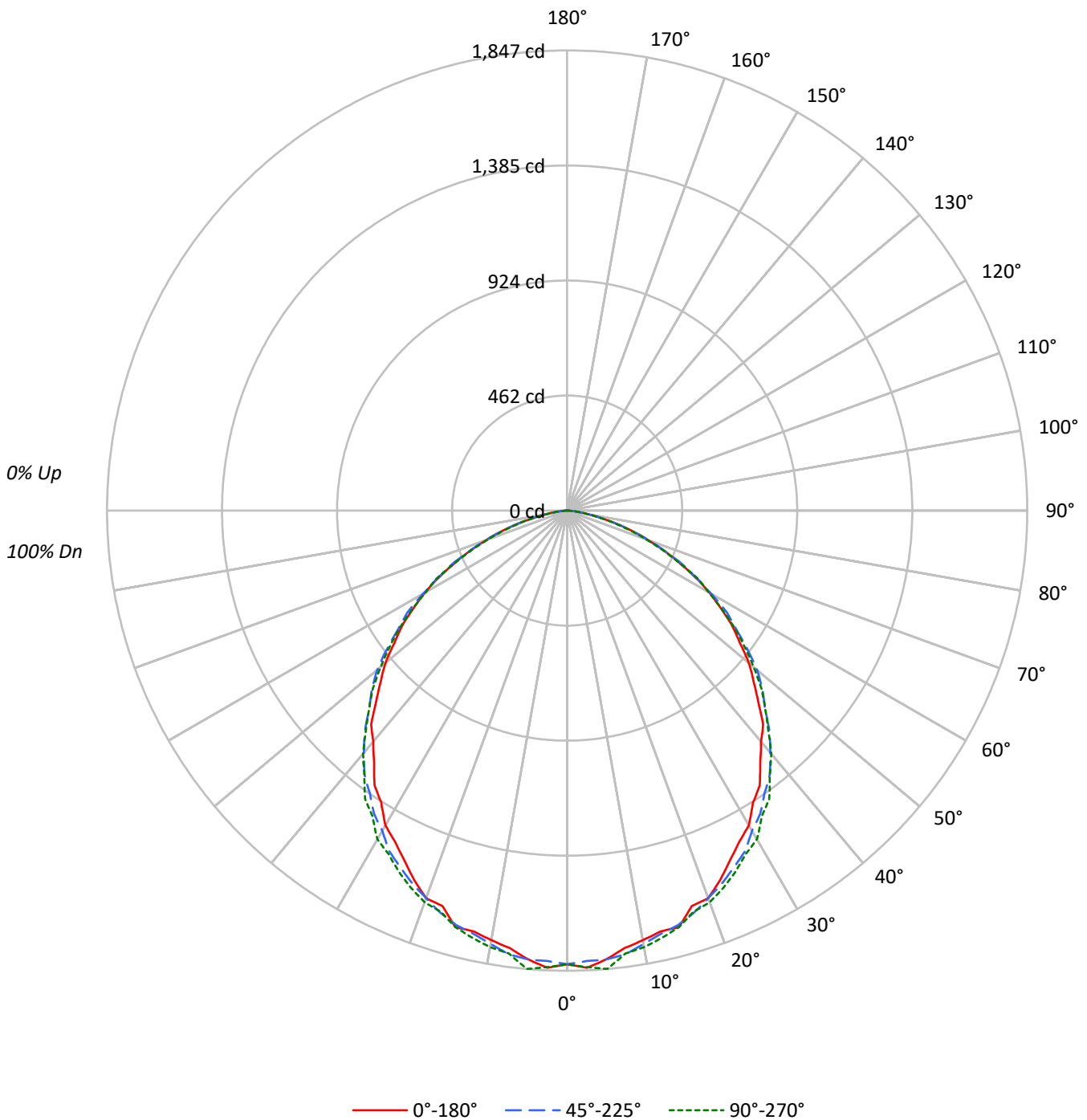
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4589.0 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): 43.2  
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°	4900	4900	4900
5°	4884	4885	4988
10°	4785	4826	4860
15°	4822	4796	4823
20°	4741	4741	4792
25°	4595	4696	4747
30°	4532	4612	4734
35°	4425	4541	4643
40°	4253	4458	4478
45°	4125	4271	4278
50°	3989	4169	4089
55°	3801	3875	3847
60°	3554	3590	3525
65°	3169	3250	3147
70°	2719	2729	2652
75°	2153	2148	2066
80°	1443	1402	1348
85°	784	778	726



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	171.3	3.7
10°-20°	485.4	10.6
20°-30°	727.2	15.8
30°-40°	861.9	18.8
40°-50°	863.5	18.8
50°-60°	733.0	16.0
60°-70°	494.2	10.8
70°-80°	217.1	4.7
80°-90°	35.3	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°	1383.9	30.2
0°-40°	2245.9	48.9
0°-60°	3842.4	83.7
0°-90°	4589.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4589.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1821	1821	1821	1821	1821	
5°	1808	1804	1809	1803	1847	170
15°	1731	1711	1722	1730	1731	482
25°	1548	1556	1582	1602	1599	715
35°	1347	1351	1382	1414	1413	836
45°	1084	1104	1122	1151	1124	838
55°	810	805	826	820	820	721
65°	498	491	510	491	494	495
75°	207	203	207	192	199	222
85°	25	25	25	24	24	37
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1820.8	1820.8	1820.8	1820.8	1820.8
2.5°	1836.6	1822.7	1809.7	1824.8	1834.0
5°	1807.9	1803.6	1808.6	1803.2	1846.7
7.5°	1770.7	1786.9	1796.3	1790.5	1793.1
10°	1751.0	1745.3	1766.3	1780.8	1778.7
12.5°	1729.8	1738.3	1739.5	1755.2	1756.6
15°	1731.0	1711.0	1721.6	1730.5	1731.2
17.5°	1663.8	1685.4	1692.7	1713.1	1687.7
20°	1655.5	1639.8	1655.5	1676.5	1673.2
22.5°	1605.0	1587.4	1621.2	1639.8	1638.6
25°	1547.6	1556.1	1581.5	1602.2	1598.9
27.5°	1497.3	1507.2	1543.4	1571.8	1553.5
30°	1458.5	1453.6	1484.1	1509.5	1523.6
32.5°	1389.2	1407.0	1442.8	1467.9	1454.5
35°	1347.1	1351.1	1382.3	1414.3	1413.4
37.5°	1273.5	1292.1	1336.0	1345.0	1336.7
40°	1210.7	1229.3	1269.0	1278.7	1274.7
42.5°	1164.4	1167.7	1201.8	1212.8	1195.2
45°	1083.8	1104.0	1122.3	1151.3	1124.0
47.5°	1015.1	1024.5	1064.0	1071.8	1057.5
50°	952.8	956.1	995.9	986.2	976.8
52.5°	874.5	888.4	910.8	908.9	897.8
55°	810.1	804.7	825.9	820.2	820.0
57.5°	732.8	742.2	759.6	750.7	736.3
60°	660.4	660.6	667.0	656.9	655.0
62.5°	579.7	582.6	584.0	571.5	591.7
65°	497.7	491.1	510.4	490.9	494.2
67.5°	422.2	425.5	423.6	411.4	416.1
70°	345.6	349.8	346.8	332.9	337.1
72.5°	275.5	270.4	273.6	256.3	264.2
75°	207.1	202.9	206.6	192.1	198.7
77.5°	141.1	144.3	142.0	134.2	138.7
80°	93.1	90.5	90.5	86.0	87.0
82.5°	54.3	51.7	51.0	49.6	51.7
85°	25.4	24.7	25.2	24.4	23.5
87.5°	9.2	9.4	9.4	8.9	8.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)