

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: P589696

Luminaire Tested: **FMR-24-2-LD4-4LO-40-UNV-81-87-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589696  
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-LD4-4LO-40-UNV-81-87-EDD  
Description: 2X2 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

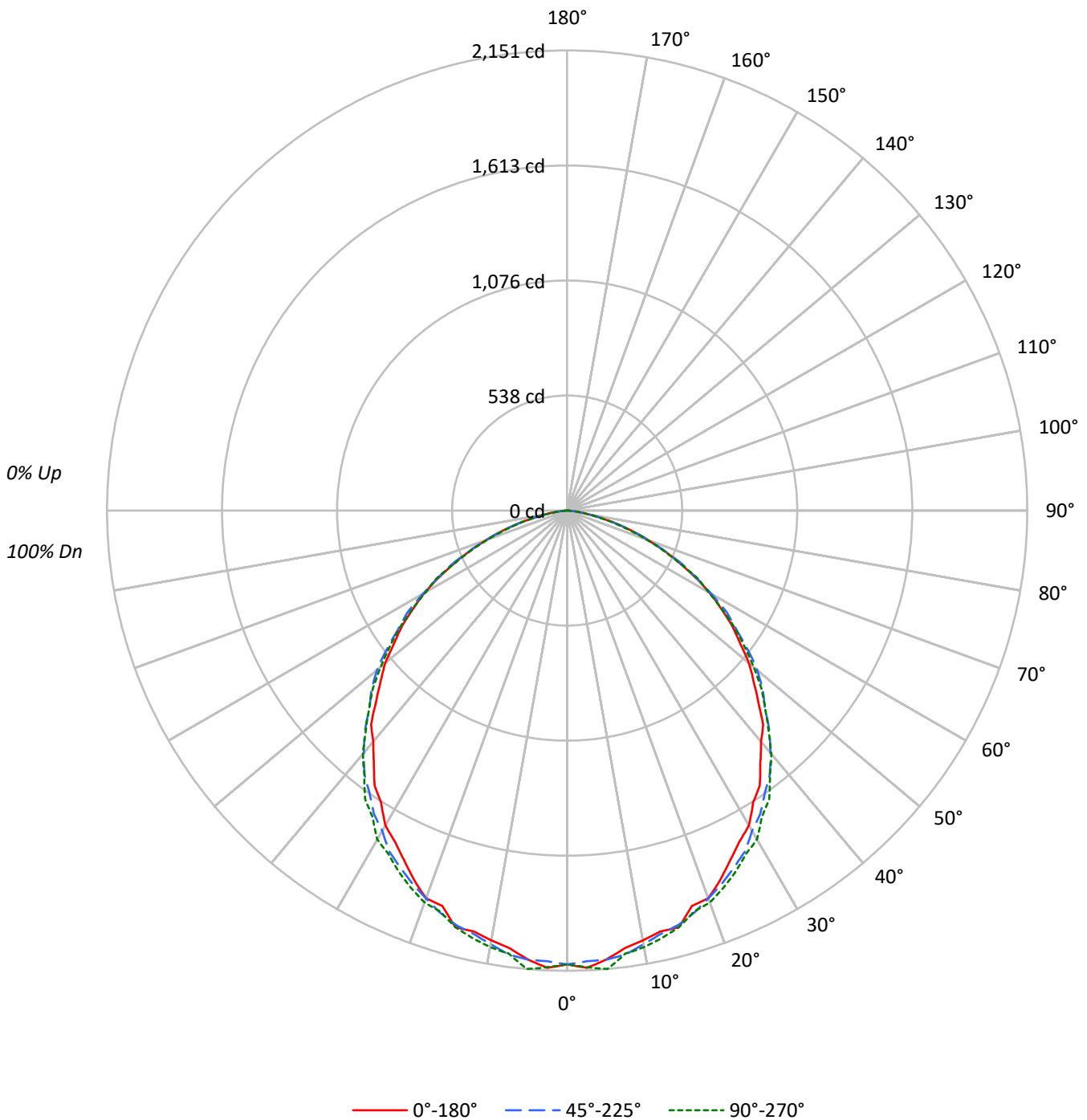
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5346.0 lumens  
Efficiency: N/A  
Efficacy: 114.2 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): 46.8  
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°	5708	5708	5708
5°	5689	5691	5811
10°	5574	5622	5662
15°	5618	5587	5619
20°	5523	5523	5582
25°	5353	5470	5530
30°	5280	5372	5515
35°	5155	5290	5409
40°	4955	5193	5216
45°	4805	4976	4983
50°	4647	4857	4764
55°	4428	4514	4482
60°	4140	4182	4106
65°	3692	3786	3666
70°	3168	3179	3090
75°	2509	2503	2406
80°	1681	1633	1570
85°	914	905	846



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	199.5	3.7
10°-20°	565.5	10.6
20°-30°	847.2	15.8
30°-40°	1004.1	18.8
40°-50°	1006.0	18.8
50°-60°	853.9	16.0
60°-70°	575.7	10.8
70°-80°	253.0	4.7
80°-90°	41.1	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°	1612.2	30.2
0°-40°	2616.3	48.9
0°-60°	4476.2	83.7
0°-90°	5346.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5346.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2121	2121	2121	2121	2121	
5°	2106	2101	2107	2101	2151	199
15°	2016	1993	2006	2016	2017	562
25°	1803	1813	1842	1866	1863	833
35°	1569	1574	1610	1648	1646	974
45°	1263	1286	1308	1341	1309	977
55°	944	938	962	956	955	840
65°	580	572	595	572	576	577
75°	241	236	241	224	231	259
85°	30	29	29	28	27	43
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2121.2	2121.2	2121.2	2121.2	2121.2
2.5°	2139.5	2123.3	2108.3	2125.8	2136.5
5°	2106.1	2101.2	2106.9	2100.6	2151.3
7.5°	2062.8	2081.7	2092.7	2085.8	2088.8
10°	2039.8	2033.2	2057.6	2074.6	2072.1
12.5°	2015.2	2025.0	2026.4	2044.7	2046.4
15°	2016.5	1993.3	2005.6	2016.0	2016.8
17.5°	1938.2	1963.4	1971.9	1995.7	1966.1
20°	1928.6	1910.3	1928.6	1953.0	1949.2
22.5°	1869.7	1849.2	1888.6	1910.3	1908.9
25°	1802.9	1812.8	1842.4	1866.5	1862.6
27.5°	1744.3	1755.8	1798.0	1831.1	1809.8
30°	1699.1	1693.4	1729.0	1758.5	1775.0
32.5°	1618.3	1639.1	1680.8	1710.1	1694.5
35°	1569.3	1574.0	1610.4	1647.6	1646.5
37.5°	1483.6	1505.2	1556.4	1566.8	1557.3
40°	1410.5	1432.1	1478.4	1489.6	1484.9
42.5°	1356.5	1360.3	1400.0	1412.9	1392.4
45°	1262.6	1286.1	1307.5	1341.2	1309.4
47.5°	1182.6	1193.5	1239.6	1248.6	1231.9
50°	1110.0	1113.8	1160.1	1148.9	1137.9
52.5°	1018.8	1035.0	1061.0	1058.8	1045.9
55°	943.8	937.5	962.1	955.5	955.3
57.5°	853.7	864.6	884.9	874.5	857.8
60°	769.3	769.6	777.0	765.2	763.0
62.5°	675.4	678.7	680.3	665.8	689.3
65°	579.8	572.1	594.6	571.8	575.7
67.5°	491.9	495.7	493.5	479.3	484.8
70°	402.6	407.5	404.0	387.8	392.7
72.5°	321.0	315.0	318.8	298.5	307.8
75°	241.3	236.4	240.7	223.8	231.4
77.5°	164.3	168.2	165.4	156.4	161.6
80°	108.5	105.4	105.4	100.2	101.3
82.5°	63.3	60.3	59.4	57.8	60.3
85°	29.6	28.8	29.3	28.5	27.4
87.5°	10.7	11.0	11.0	10.4	9.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)