

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: P589665

Luminaire Tested: **FMR-24-2-LD4-4LO-35-UNV-81-88-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589665  
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-35-UNV-81-88-EDD  
Description: 2X2 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

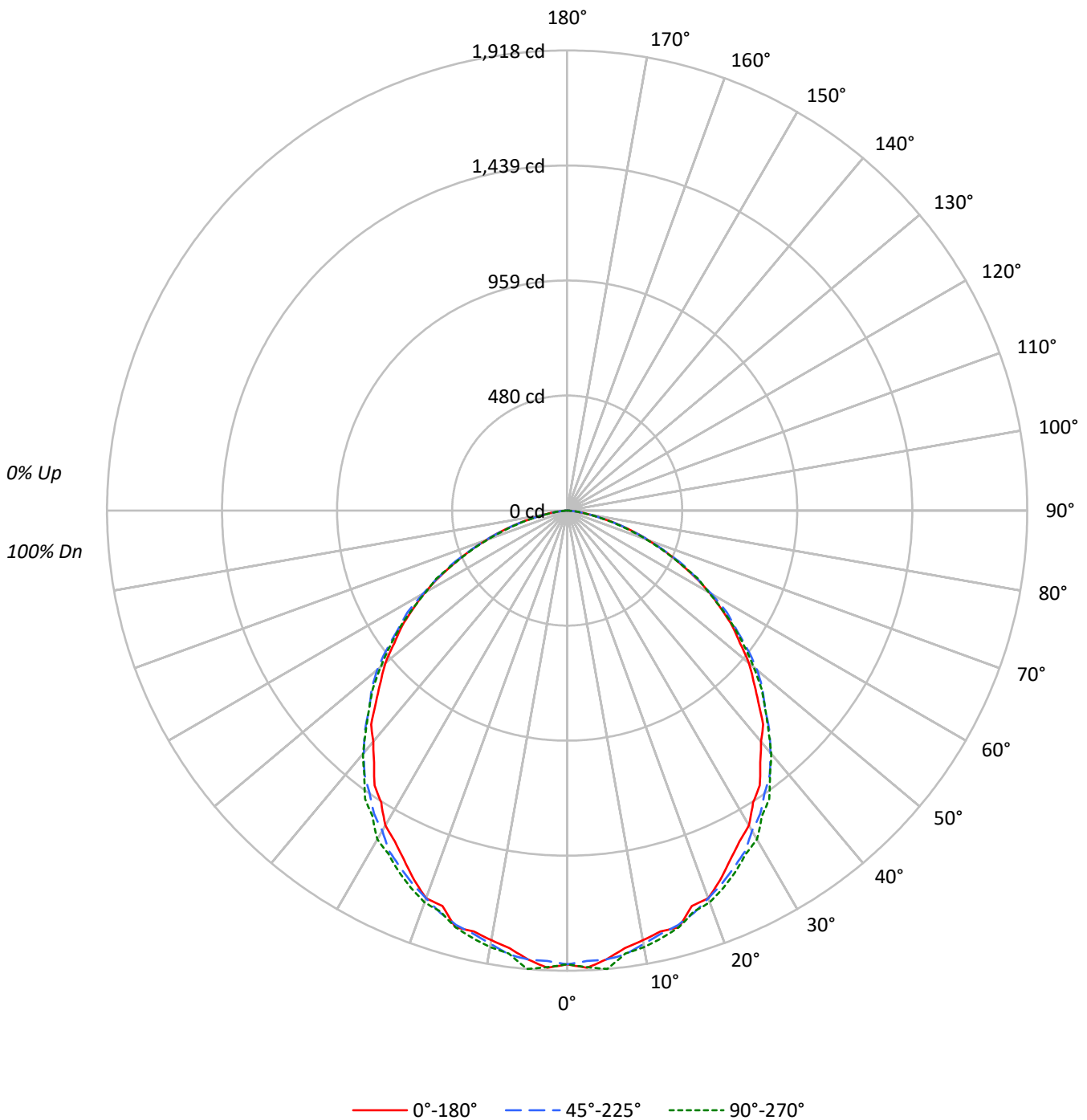
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4766.0 lumens  
Efficiency: N/A  
Efficacy: 101.8 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°	5089	5089	5089
5°	5072	5074	5181
10°	4969	5012	5048
15°	5009	4981	5009
20°	4924	4924	4976
25°	4772	4877	4930
30°	4707	4790	4917
35°	4596	4716	4822
40°	4417	4630	4650
45°	4284	4436	4442
50°	4143	4330	4247
55°	3947	4024	3995
60°	3691	3728	3661
65°	3291	3375	3268
70°	2824	2833	2755
75°	2236	2231	2145
80°	1499	1457	1399
85°	815	806	753



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	177.9	3.7
10°-20°	504.1	10.6
20°-30°	755.3	15.8
30°-40°	895.2	18.8
40°-50°	896.8	18.8
50°-60°	761.3	16.0
60°-70°	513.2	10.8
70°-80°	225.5	4.7
80°-90°	36.6	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°	1437.3	30.2
0°-40°	2332.5	48.9
0°-60°	3990.6	83.7
0°-90°	4766.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4766.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1891	1891	1891	1891	1891	
5°	1878	1873	1878	1873	1918	177
15°	1798	1777	1788	1797	1798	501
25°	1607	1616	1642	1664	1660	743
35°	1399	1403	1436	1469	1468	869
45°	1126	1147	1166	1196	1167	871
55°	841	836	858	852	852	748
65°	517	510	530	510	513	514
75°	215	211	215	200	206	231
85°	26	26	26	25	24	38
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1891.0	1891.0	1891.0	1891.0	1891.0
2.5°	1907.4	1893.0	1879.6	1895.2	1904.7
5°	1877.6	1873.2	1878.3	1872.7	1917.9
7.5°	1839.0	1855.9	1865.6	1859.5	1862.2
10°	1818.5	1812.7	1834.4	1849.5	1847.3
12.5°	1796.5	1805.3	1806.5	1822.9	1824.4
15°	1797.8	1777.0	1788.0	1797.3	1798.0
17.5°	1727.9	1750.4	1758.0	1779.2	1752.8
20°	1719.4	1703.0	1719.4	1741.1	1737.7
22.5°	1666.9	1648.6	1683.7	1703.0	1701.8
25°	1607.3	1616.1	1642.5	1664.0	1660.5
27.5°	1555.1	1565.3	1602.9	1632.5	1613.4
30°	1514.8	1509.6	1541.4	1567.8	1582.4
32.5°	1442.7	1461.3	1498.4	1524.5	1510.6
35°	1399.0	1403.2	1435.7	1468.9	1467.9
37.5°	1322.6	1341.9	1387.6	1396.8	1388.3
40°	1257.4	1276.7	1318.0	1328.0	1323.8
42.5°	1209.3	1212.7	1248.2	1259.6	1241.3
45°	1125.6	1146.6	1165.6	1195.7	1167.3
47.5°	1054.3	1064.1	1105.1	1113.1	1098.2
50°	989.6	993.0	1034.3	1024.3	1014.5
52.5°	908.3	922.7	945.9	943.9	932.5
55°	841.4	835.8	857.7	851.9	851.6
57.5°	761.1	770.8	788.9	779.6	764.7
60°	685.8	686.1	692.7	682.2	680.2
62.5°	602.1	605.0	606.5	593.6	614.6
65°	516.9	510.1	530.1	509.8	513.2
67.5°	438.5	441.9	440.0	427.3	432.2
70°	358.9	363.3	360.1	345.7	350.1
72.5°	286.2	280.8	284.2	266.1	274.4
75°	215.1	210.7	214.6	199.5	206.3
77.5°	146.5	149.9	147.5	139.4	144.1
80°	96.7	94.0	94.0	89.4	90.3
82.5°	56.4	53.7	53.0	51.5	53.7
85°	26.4	25.6	26.1	25.4	24.4
87.5°	9.5	9.8	9.8	9.3	8.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)