

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: P589728

Luminaire Tested: **FMR-24-2-LD4-4LO-50-UNV-81-87-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589728  
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-50-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 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

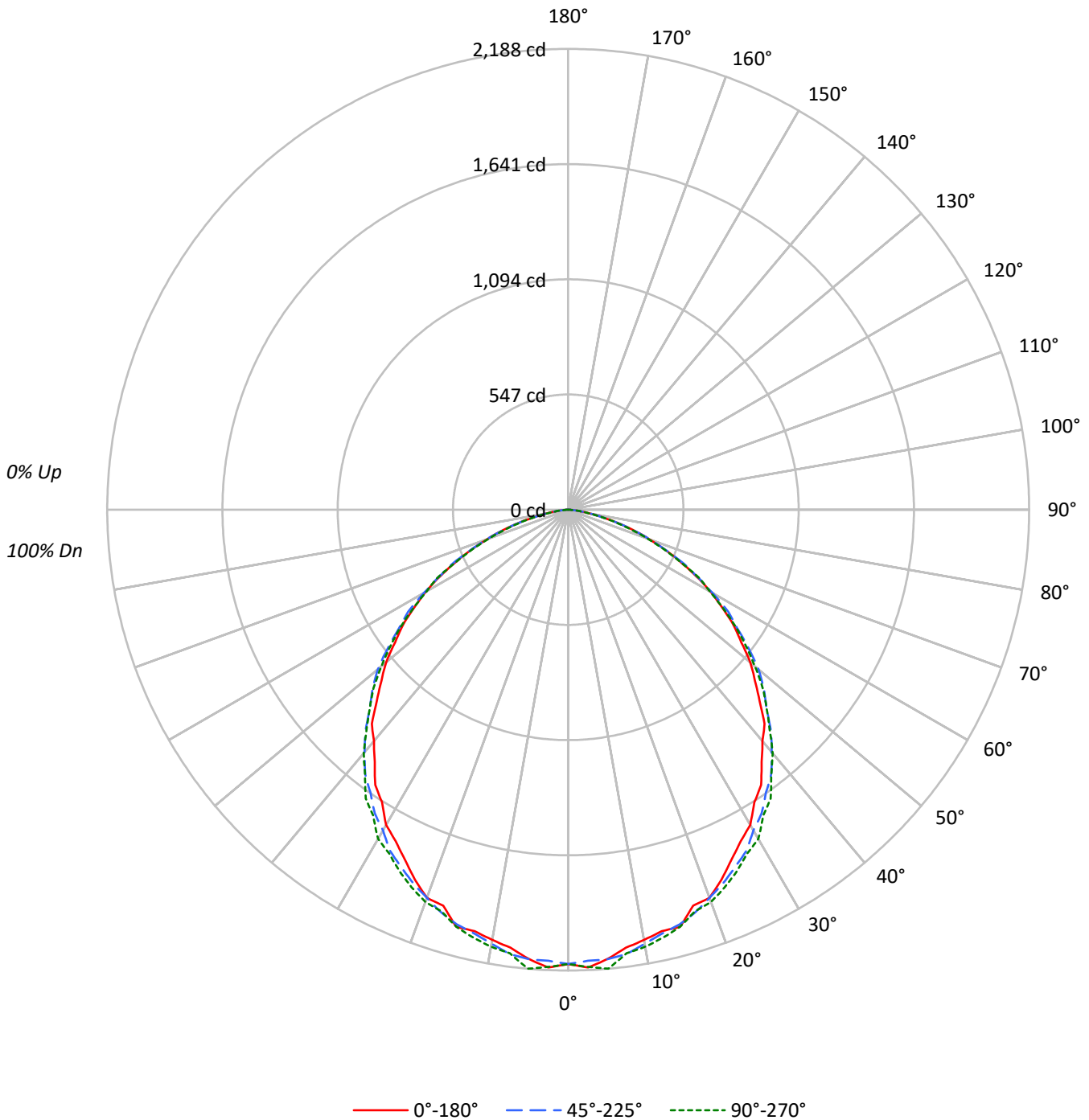
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5436.0 lumens  
Efficiency: N/A  
Efficacy: 116.2 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°	5804	5804	5804
5°	5785	5787	5909
10°	5668	5717	5757
15°	5713	5681	5713
20°	5616	5616	5676
25°	5443	5562	5624
30°	5368	5463	5608
35°	5242	5379	5500
40°	5038	5281	5304
45°	4886	5060	5067
50°	4725	4939	4844
55°	4503	4590	4557
60°	4210	4252	4176
65°	3754	3850	3727
70°	3221	3232	3142
75°	2550	2545	2446
80°	1709	1661	1596
85°	929	920	858



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	202.9	3.7
10°-20°	575.0	10.6
20°-30°	861.5	15.8
30°-40°	1021.0	18.8
40°-50°	1022.9	18.8
50°-60°	868.3	16.0
60°-70°	585.4	10.8
70°-80°	257.2	4.7
80°-90°	41.8	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°	1639.4	30.2
0°-40°	2660.4	48.9
0°-60°	4551.6	83.7
0°-90°	5436.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5436.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2157	2157	2157	2157	2157	
5°	2142	2136	2142	2136	2188	202
15°	2050	2027	2039	2050	2051	571
25°	1833	1843	1873	1898	1894	848
35°	1596	1600	1638	1675	1674	991
45°	1284	1308	1330	1364	1331	993
55°	960	953	978	972	971	854
65°	590	582	605	582	585	586
75°	245	240	245	228	235	263
85°	30	29	30	29	28	44
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2156.9	2156.9	2156.9	2156.9	2156.9
2.5°	2175.5	2159.1	2143.8	2161.6	2172.5
5°	2141.6	2136.5	2142.4	2136.0	2187.5
7.5°	2097.6	2116.8	2127.9	2120.9	2124.0
10°	2074.2	2067.5	2092.3	2109.5	2107.0
12.5°	2049.1	2059.1	2060.5	2079.2	2080.8
15°	2050.5	2026.8	2039.3	2049.9	2050.8
17.5°	1970.8	1996.5	2005.1	2029.3	1999.2
20°	1961.1	1942.4	1961.1	1985.9	1982.0
22.5°	1901.2	1880.3	1920.4	1942.4	1941.0
25°	1833.3	1843.3	1873.4	1897.9	1894.0
27.5°	1773.7	1785.4	1828.3	1862.0	1840.2
30°	1727.7	1721.9	1758.1	1788.2	1804.9
32.5°	1645.6	1666.7	1709.1	1738.9	1723.0
35°	1595.7	1600.5	1637.5	1675.4	1674.3
37.5°	1508.6	1530.6	1582.6	1593.2	1583.5
40°	1434.2	1456.2	1503.3	1514.7	1509.9
42.5°	1379.3	1383.2	1423.6	1436.7	1415.8
45°	1283.8	1307.8	1329.5	1363.7	1331.4
47.5°	1202.5	1213.6	1260.4	1269.6	1252.6
50°	1128.7	1132.6	1179.7	1168.2	1157.1
52.5°	1036.0	1052.4	1078.9	1076.6	1063.5
55°	959.7	953.3	978.3	971.6	971.4
57.5°	868.0	879.2	899.8	889.2	872.2
60°	782.3	782.5	790.1	778.1	775.9
62.5°	686.7	690.1	691.8	677.0	700.9
65°	589.6	581.8	604.6	581.5	585.4
67.5°	500.2	504.1	501.8	487.3	492.9
70°	409.4	414.4	410.8	394.3	399.3
72.5°	326.4	320.3	324.2	303.5	313.0
75°	245.3	240.3	244.8	227.5	235.3
77.5°	167.1	171.0	168.2	159.0	164.3
80°	110.3	107.2	107.2	101.9	103.0
82.5°	64.3	61.3	60.4	58.8	61.3
85°	30.1	29.2	29.8	29.0	27.8
87.5°	10.9	11.1	11.1	10.6	10.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)