

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: P589708

Luminaire Tested: **FMR-24-2-LD4-4LO-40-UNV-82-97-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589708  
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-82-97-EDD  
Description: 2X2 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

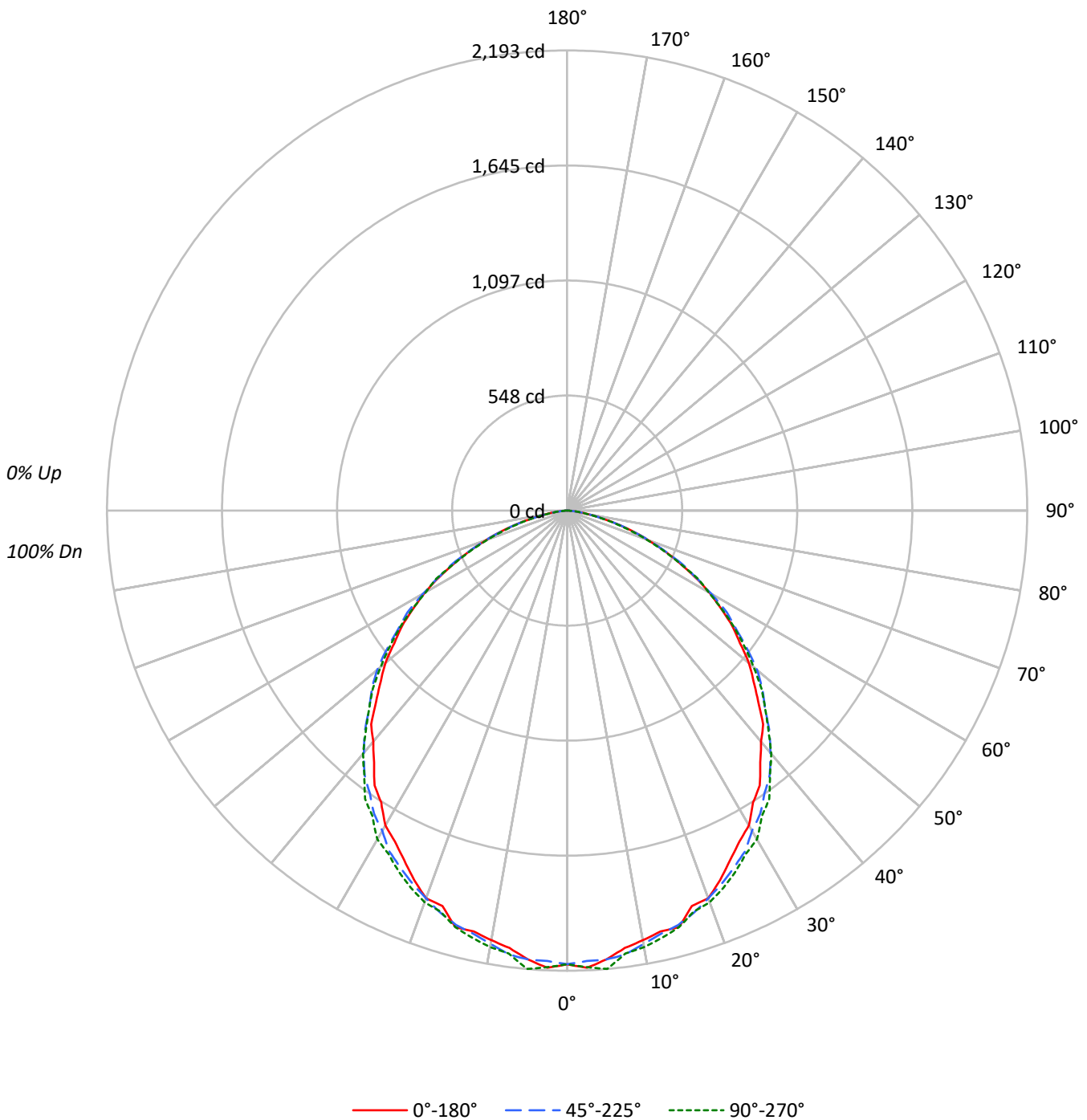
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5449.0 lumens  
Efficiency: N/A  
Efficacy: 116.4 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°	5818	5818	5818
5°	5799	5801	5923
10°	5681	5731	5771
15°	5726	5695	5727
20°	5629	5629	5689
25°	5456	5576	5637
30°	5381	5476	5622
35°	5254	5392	5513
40°	5050	5293	5317
45°	4897	5072	5079
50°	4737	4950	4856
55°	4513	4601	4568
60°	4220	4263	4186
65°	3763	3859	3736
70°	3229	3239	3150
75°	2557	2551	2453
80°	1712	1666	1601
85°	929	923	861



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	203.4	3.7
10°-20°	576.4	10.6
20°-30°	863.5	15.8
30°-40°	1023.5	18.8
40°-50°	1025.4	18.8
50°-60°	870.4	16.0
60°-70°	586.8	10.8
70°-80°	257.8	4.7
80°-90°	41.9	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°	1643.3	30.2
0°-40°	2666.7	48.9
0°-60°	4562.5	83.7
0°-90°	5449.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5449.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2162	2162	2162	2162	2162	
5°	2147	2142	2148	2141	2193	202
15°	2055	2032	2044	2055	2056	573
25°	1838	1848	1878	1902	1898	850
35°	1600	1604	1641	1679	1678	993
45°	1287	1311	1333	1367	1335	995
55°	962	956	981	974	974	856
65°	591	583	606	583	587	588
75°	246	241	245	228	236	264
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°	2162.0	2162.0	2162.0	2162.0	2162.0
2.5°	2180.7	2164.3	2148.9	2166.8	2177.7
5°	2146.7	2141.6	2147.5	2141.1	2192.7
7.5°	2102.6	2121.8	2133.0	2126.0	2129.1
10°	2079.1	2072.4	2097.3	2114.6	2112.1
12.5°	2054.0	2064.0	2065.4	2084.1	2085.8
15°	2055.4	2031.7	2044.2	2054.8	2055.7
17.5°	1975.6	2001.2	2009.9	2034.2	2004.0
20°	1965.8	1947.1	1965.8	1990.6	1986.7
22.5°	1905.8	1884.8	1925.0	1947.1	1945.7
25°	1837.7	1847.7	1877.8	1902.4	1898.5
27.5°	1777.9	1789.6	1832.6	1866.4	1844.6
30°	1731.9	1726.0	1762.3	1792.4	1809.2
32.5°	1649.5	1670.7	1713.2	1743.0	1727.1
35°	1599.5	1604.3	1641.4	1679.4	1678.3
37.5°	1512.2	1534.2	1586.4	1597.0	1587.3
40°	1437.6	1459.7	1506.9	1518.3	1513.6
42.5°	1382.6	1386.5	1427.0	1440.1	1419.2
45°	1286.9	1310.9	1332.7	1367.0	1334.6
47.5°	1205.4	1216.5	1263.4	1272.7	1255.6
50°	1131.4	1135.3	1182.5	1171.0	1159.9
52.5°	1038.4	1054.9	1081.4	1079.2	1066.1
55°	962.0	955.5	980.7	974.0	973.7
57.5°	870.1	881.3	901.9	891.3	874.3
60°	784.1	784.4	792.0	779.9	777.7
62.5°	688.4	691.7	693.4	678.6	702.6
65°	591.0	583.1	606.0	582.9	586.8
67.5°	501.4	505.3	503.0	488.5	494.1
70°	410.4	415.4	411.7	395.3	400.3
72.5°	327.2	321.0	324.9	304.3	313.8
75°	245.9	240.9	245.4	228.1	235.9
77.5°	167.5	171.4	168.6	159.4	164.7
80°	110.5	107.5	107.5	102.2	103.3
82.5°	64.5	61.4	60.6	58.9	61.4
85°	30.1	29.3	29.9	29.0	27.9
87.5°	10.9	11.2	11.2	10.6	10.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)