

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: P589709

Luminaire Tested: **FMR-24-2-LD4-4LO-40-UNV-93-84-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589709  
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-93-84-EDD  
Description: 2X2 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

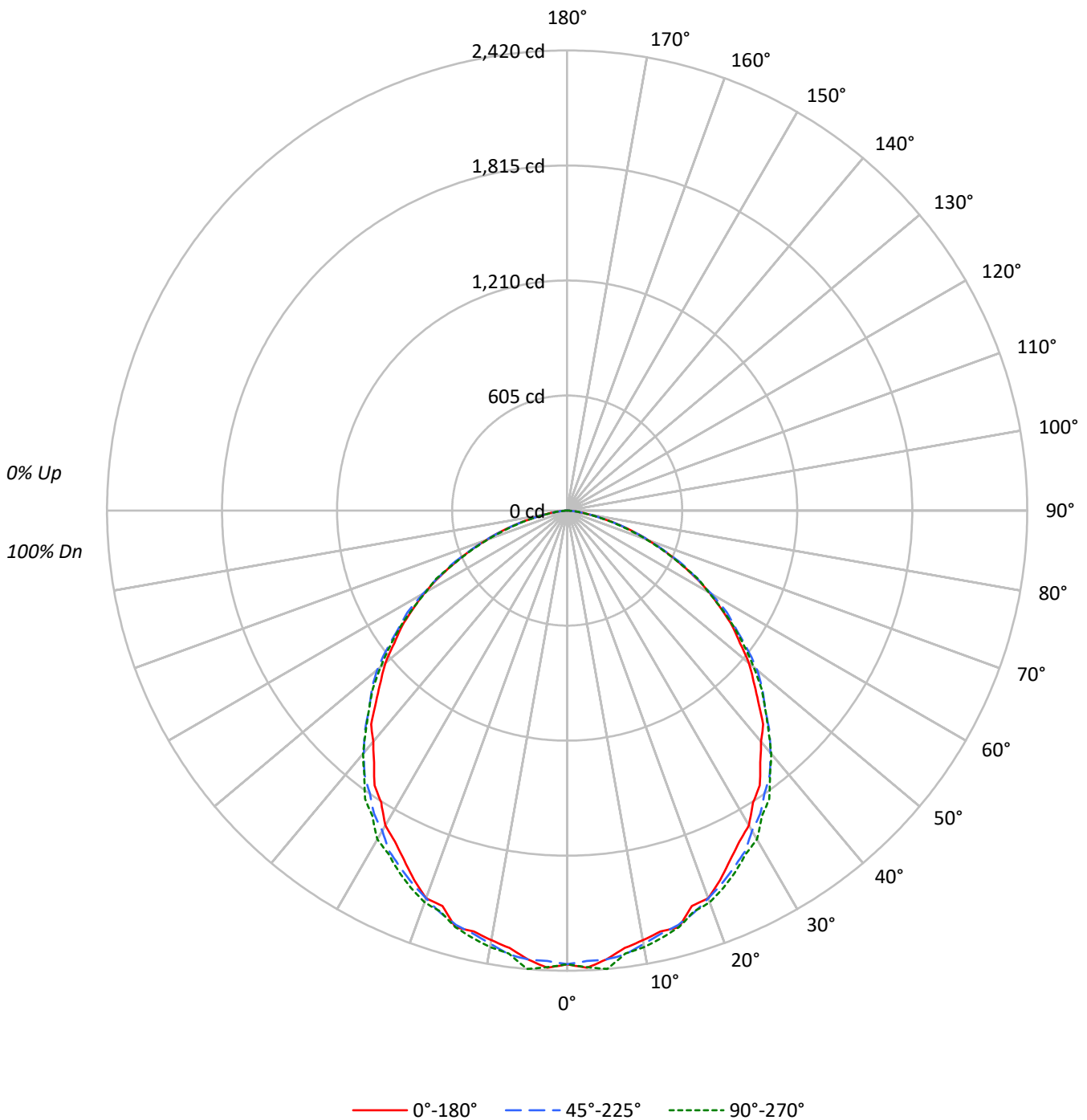
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6013.0 lumens  
Efficiency: N/A  
Efficacy: 128.5 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°	6420	6420	6420
5°	6399	6401	6536
10°	6269	6324	6369
15°	6319	6284	6320
20°	6212	6212	6278
25°	6021	6153	6220
30°	5938	6043	6203
35°	5798	5950	6084
40°	5573	5841	5867
45°	5404	5597	5605
50°	5227	5463	5358
55°	4980	5077	5041
60°	4657	4703	4619
65°	4152	4259	4123
70°	3563	3575	3475
75°	2822	2816	2706
80°	1891	1838	1767
85°	1028	1019	951



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	224.4	3.7
10°-20°	636.0	10.6
20°-30°	952.9	15.8
30°-40°	1129.4	18.8
40°-50°	1131.5	18.8
50°-60°	960.4	16.0
60°-70°	647.5	10.8
70°-80°	284.5	4.7
80°-90°	46.2	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°	1813.4	30.2
0°-40°	2942.8	48.9
0°-60°	5034.7	83.7
0°-90°	6013.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6013.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2386	2386	2386	2386	2386	
5°	2369	2363	2370	2363	2420	223
15°	2268	2242	2256	2268	2268	632
25°	2028	2039	2072	2099	2095	937
35°	1765	1770	1811	1853	1852	1096
45°	1420	1447	1471	1508	1473	1099
55°	1062	1054	1082	1075	1074	944
65°	652	644	669	643	648	649
75°	271	266	271	252	260	291
85°	33	32	33	32	31	48
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2385.8	2385.8	2385.8	2385.8	2385.8
2.5°	2406.4	2388.3	2371.3	2391.0	2403.1
5°	2368.9	2363.3	2369.8	2362.7	2419.7
7.5°	2320.2	2341.4	2353.8	2346.1	2349.5
10°	2294.3	2286.9	2314.3	2333.4	2330.7
12.5°	2266.6	2277.7	2279.2	2299.9	2301.7
15°	2268.1	2241.9	2255.8	2267.5	2268.4
17.5°	2180.0	2208.4	2217.9	2244.7	2211.5
20°	2169.3	2148.6	2169.3	2196.7	2192.4
22.5°	2103.0	2079.9	2124.3	2148.6	2147.1
25°	2027.9	2038.9	2072.2	2099.3	2095.0
27.5°	1961.9	1974.9	2022.3	2059.6	2035.6
30°	1911.1	1904.6	1944.7	1978.0	1996.4
32.5°	1820.2	1843.6	1890.5	1923.4	1905.9
35°	1765.1	1770.3	1811.3	1853.2	1852.0
37.5°	1668.7	1693.0	1750.6	1762.3	1751.5
40°	1586.4	1610.8	1662.8	1675.5	1670.2
42.5°	1525.7	1530.1	1574.7	1589.2	1566.1
45°	1420.1	1446.6	1470.6	1508.5	1472.8
47.5°	1330.1	1342.5	1394.2	1404.4	1385.6
50°	1248.5	1252.8	1304.9	1292.2	1279.9
52.5°	1145.9	1164.1	1193.4	1190.9	1176.4
55°	1061.5	1054.4	1082.2	1074.8	1074.5
57.5°	960.2	972.5	995.3	983.6	964.8
60°	865.3	865.6	873.9	860.7	858.2
62.5°	759.6	763.3	765.2	748.9	775.3
65°	652.1	643.5	668.8	643.2	647.5
67.5°	553.2	557.6	555.1	539.1	545.2
70°	452.8	458.4	454.4	436.2	441.7
72.5°	361.0	354.3	358.6	335.8	346.2
75°	271.4	265.8	270.8	251.7	260.3
77.5°	184.8	189.1	186.1	175.9	181.7
80°	122.0	118.6	118.6	112.7	114.0
82.5°	71.2	67.8	66.8	65.0	67.8
85°	33.3	32.3	33.0	32.0	30.8
87.5°	12.0	12.3	12.3	11.7	11.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)