

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: P589661

Luminaire Tested: **FMR-24-2-LD4-4LO-35-UNV-81-84-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589661  
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-81-84-EDD  
Description: 2X2 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

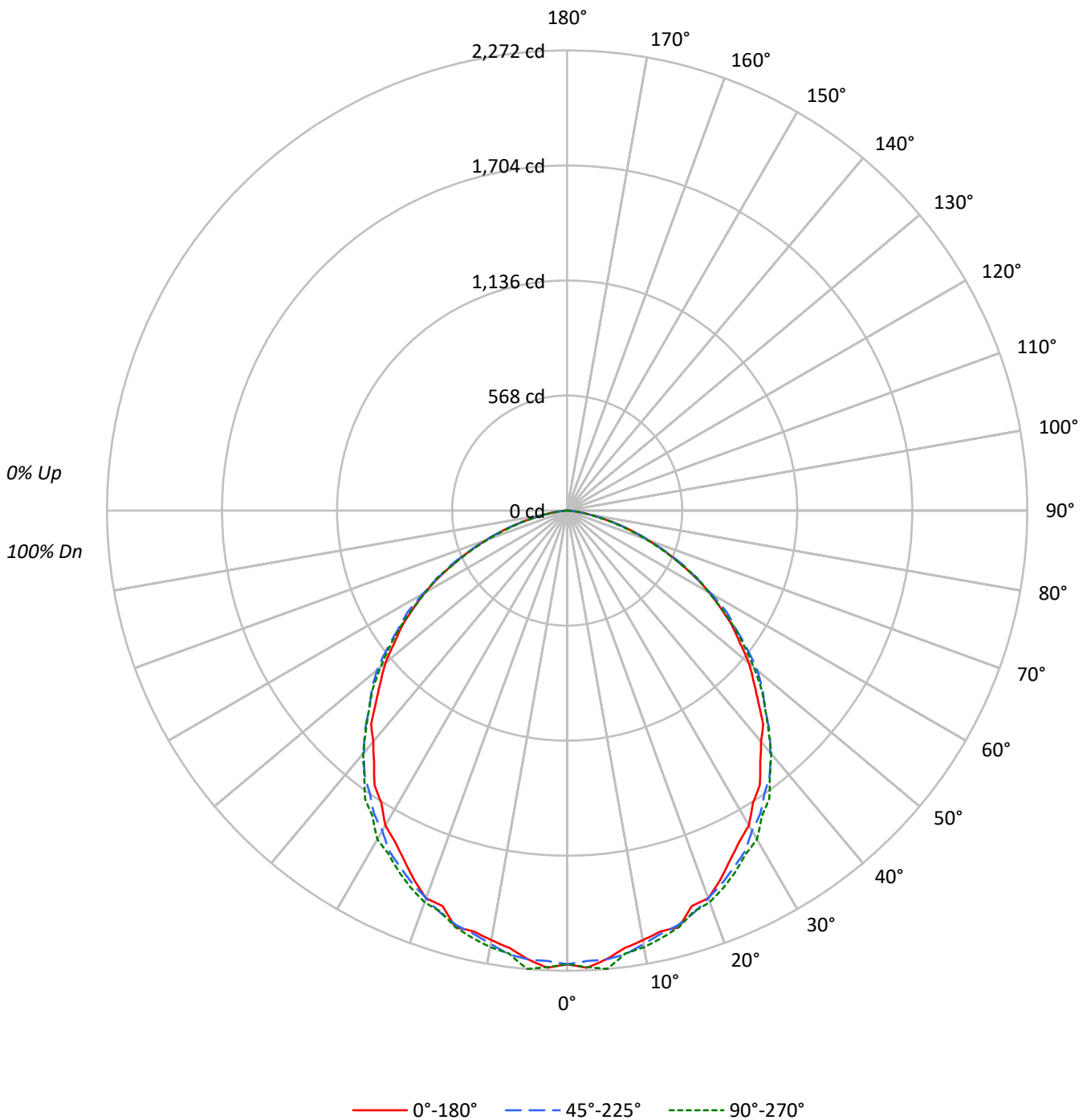
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5645.0 lumens  
Efficiency: N/A  
Efficacy: 120.6 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	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					100			
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86					86			
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73					73			
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62					62			
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53					53			
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46					46			
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41					41			
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36					36			
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32					32			
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29					29			
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26					26			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	6027	6027	6027
5°	6007	6010	6136
10°	5886	5937	5979
15°	5932	5900	5933
20°	5832	5832	5894
25°	5653	5776	5840
30°	5575	5673	5824
35°	5444	5586	5711
40°	5232	5484	5508
45°	5074	5254	5262
50°	4907	5128	5030
55°	4676	4766	4732
60°	4372	4415	4336
65°	3898	3997	3871
70°	3345	3356	3263
75°	2649	2643	2541
80°	1774	1725	1658
85°	963	954	892



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	210.7	3.7
10°-20°	597.1	10.6
20°-30°	894.6	15.8
30°-40°	1060.3	18.8
40°-50°	1062.2	18.8
50°-60°	901.7	16.0
60°-70°	607.9	10.8
70°-80°	267.1	4.7
80°-90°	43.4	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°	1702.4	30.2
0°-40°	2762.7	48.9
0°-60°	4726.6	83.7
0°-90°	5645.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5645.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2240	2240	2240	2240	2240	
5°	2224	2219	2225	2218	2272	210
15°	2129	2105	2118	2129	2130	593
25°	1904	1914	1945	1971	1967	880
35°	1657	1662	1700	1740	1739	1029
45°	1333	1358	1381	1416	1383	1031
55°	997	990	1016	1009	1009	886
65°	612	604	628	604	608	609
75°	255	250	254	236	244	273
85°	31	30	31	30	29	45
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2239.8	2239.8	2239.8	2239.8	2239.8
2.5°	2259.2	2242.1	2226.2	2244.7	2256.0
5°	2223.9	2218.7	2224.8	2218.1	2271.6
7.5°	2178.2	2198.1	2209.7	2202.5	2205.7
10°	2153.9	2147.0	2172.7	2190.6	2188.0
12.5°	2127.9	2138.3	2139.7	2159.1	2160.8
15°	2129.3	2104.7	2117.8	2128.7	2129.6
17.5°	2046.6	2073.2	2082.2	2107.3	2076.1
20°	2036.5	2017.1	2036.5	2062.2	2058.2
22.5°	1974.3	1952.6	1994.3	2017.1	2015.7
25°	1903.8	1914.2	1945.4	1970.8	1966.8
27.5°	1841.9	1854.0	1898.5	1933.5	1911.0
30°	1794.1	1788.1	1825.7	1856.9	1874.3
32.5°	1708.8	1730.8	1774.8	1805.7	1789.2
35°	1657.1	1662.0	1700.5	1739.8	1738.6
37.5°	1566.6	1589.4	1643.5	1654.5	1644.3
40°	1489.3	1512.2	1561.1	1572.9	1568.0
42.5°	1432.4	1436.4	1478.4	1491.9	1470.3
45°	1333.2	1358.0	1380.6	1416.2	1382.6
47.5°	1248.7	1260.3	1308.9	1318.4	1300.8
50°	1172.1	1176.1	1225.0	1213.2	1201.6
52.5°	1075.8	1092.9	1120.3	1118.0	1104.4
55°	996.6	989.9	1015.9	1009.0	1008.7
57.5°	901.4	913.0	934.4	923.4	905.7
60°	812.3	812.6	820.4	808.0	805.7
62.5°	713.1	716.6	718.4	703.0	727.9
65°	612.2	604.1	627.8	603.8	607.9
67.5°	519.4	523.4	521.1	506.1	511.9
70°	425.1	430.3	426.6	409.5	414.7
72.5°	338.9	332.6	336.6	315.2	325.1
75°	254.8	249.6	254.2	236.3	244.4
77.5°	173.5	177.6	174.7	165.1	170.6
80°	114.5	111.3	111.3	105.8	107.0
82.5°	66.8	63.6	62.8	61.0	63.6
85°	31.2	30.4	30.9	30.1	28.9
87.5°	11.3	11.6	11.6	11.0	10.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)