

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: P589680

Luminaire Tested: **FMR-24-2-LD4-4LO-35-UNV-93-87-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589680  
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-93-87-EDD  
Description: 2X2 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

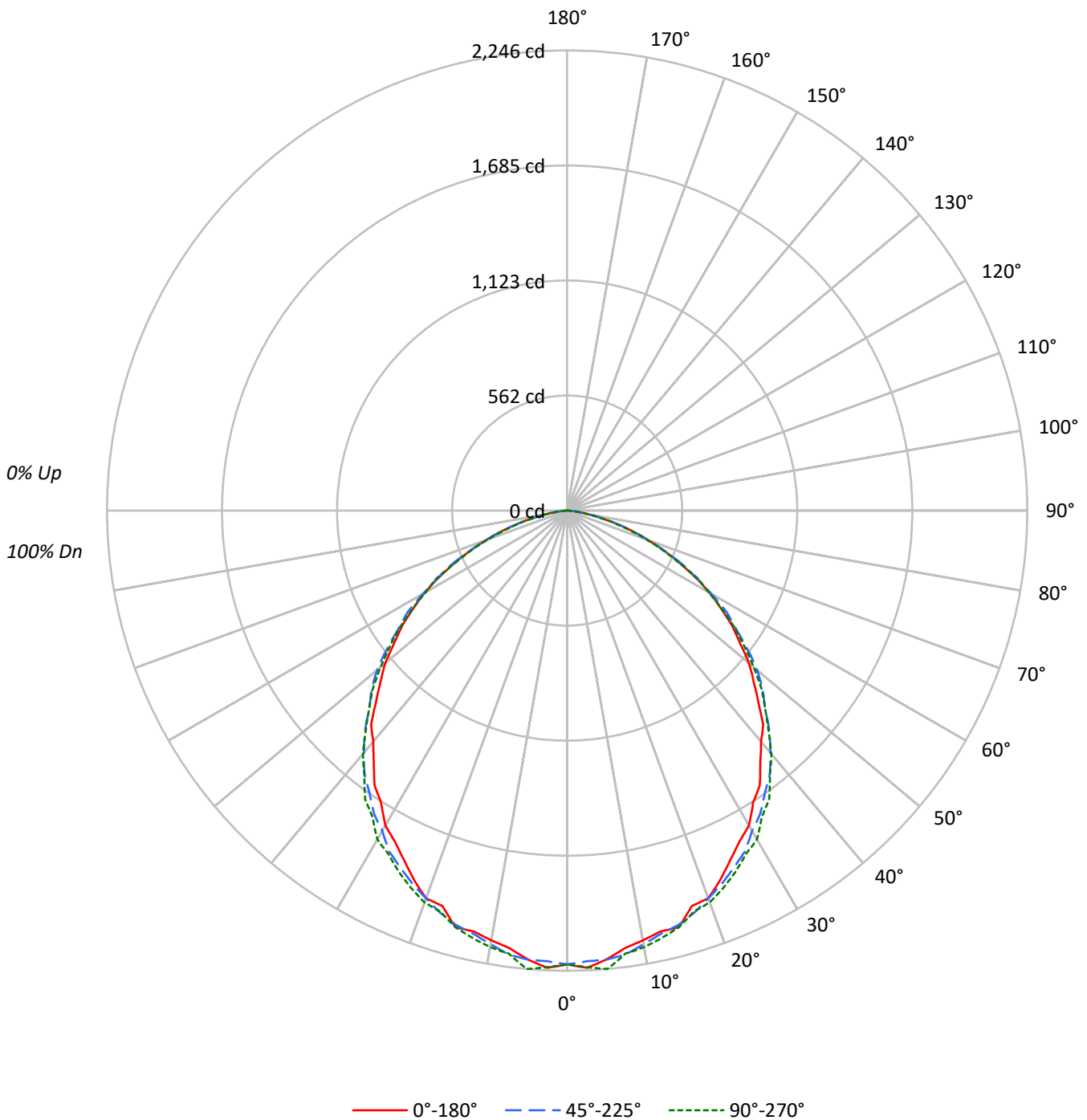
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5582.0 lumens  
Efficiency: N/A  
Efficacy: 119.3 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°	5960	5960	5960
5°	5940	5942	6068
10°	5820	5871	5912
15°	5866	5834	5867
20°	5767	5767	5828
25°	5589	5712	5774
30°	5513	5610	5759
35°	5383	5524	5648
40°	5173	5422	5447
45°	5017	5195	5203
50°	4852	5071	4974
55°	4623	4713	4679
60°	4323	4366	4288
65°	3855	3953	3827
70°	3308	3319	3227
75°	2619	2614	2512
80°	1754	1706	1640
85°	954	945	883



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	208.3	3.7
10°-20°	590.4	10.6
20°-30°	884.6	15.8
30°-40°	1048.4	18.8
40°-50°	1050.4	18.8
50°-60°	891.6	16.0
60°-70°	601.1	10.8
70°-80°	264.1	4.7
80°-90°	42.9	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°	1683.4	30.2
0°-40°	2731.8	48.9
0°-60°	4673.8	83.7
0°-90°	5582.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5582.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2215	2215	2215	2215	2215	
5°	2199	2194	2200	2193	2246	207
15°	2106	2081	2094	2105	2106	587
25°	1882	1893	1924	1949	1945	870
35°	1639	1643	1682	1720	1719	1017
45°	1318	1343	1365	1400	1367	1020
55°	985	979	1005	998	997	877
65°	605	597	621	597	601	602
75°	252	247	251	234	242	270
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°	2214.8	2214.8	2214.8	2214.8	2214.8
2.5°	2234.0	2217.1	2201.4	2219.7	2230.8
5°	2199.1	2193.9	2199.9	2193.3	2246.3
7.5°	2153.9	2173.6	2185.1	2177.9	2181.1
10°	2129.9	2123.0	2148.5	2166.2	2163.6
12.5°	2104.1	2114.4	2115.9	2135.0	2136.7
15°	2105.6	2081.3	2094.1	2105.0	2105.8
17.5°	2023.8	2050.1	2058.9	2083.8	2052.9
20°	2013.8	1994.6	2013.8	2039.2	2035.2
22.5°	1952.3	1930.8	1972.0	1994.6	1993.2
25°	1882.5	1892.8	1923.7	1948.8	1944.8
27.5°	1821.3	1833.3	1877.4	1912.0	1889.7
30°	1774.1	1768.1	1805.3	1836.2	1853.3
32.5°	1689.8	1711.5	1755.0	1785.6	1769.3
35°	1638.6	1643.4	1681.5	1720.4	1719.2
37.5°	1549.1	1571.7	1625.1	1636.0	1626.0
40°	1472.7	1495.3	1543.6	1555.4	1550.5
42.5°	1416.4	1420.4	1461.9	1475.3	1453.8
45°	1318.3	1342.9	1365.2	1400.4	1367.2
47.5°	1234.8	1246.2	1294.3	1303.7	1286.3
50°	1159.0	1163.0	1211.3	1199.6	1188.2
52.5°	1063.8	1080.7	1107.8	1105.5	1092.1
55°	985.4	978.9	1004.6	997.7	997.4
57.5°	891.4	902.8	924.0	913.1	895.6
60°	803.3	803.6	811.3	799.0	796.7
62.5°	705.2	708.6	710.3	695.2	719.8
65°	605.4	597.4	620.8	597.1	601.1
67.5°	513.6	517.6	515.3	500.4	506.2
70°	420.4	425.5	421.8	404.9	410.1
72.5°	335.2	328.9	332.9	311.7	321.4
75°	251.9	246.8	251.4	233.6	241.6
77.5°	171.6	175.6	172.7	163.3	168.7
80°	113.2	110.1	110.1	104.7	105.8
82.5°	66.1	62.9	62.1	60.3	62.9
85°	30.9	30.0	30.6	29.7	28.6
87.5°	11.2	11.4	11.4	10.9	10.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)