

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: P546322

Luminaire Tested: **FMR-12-4-LD4-2STD-35-UNV-93-87-EDD**

Issue Date: 6/15/2021

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.



**Test Information**

Test Method: LM-79-08  
Report Number: P546322  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 6/15/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: FMR-12-4-LD4-2STD-35-UNV-93-87-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

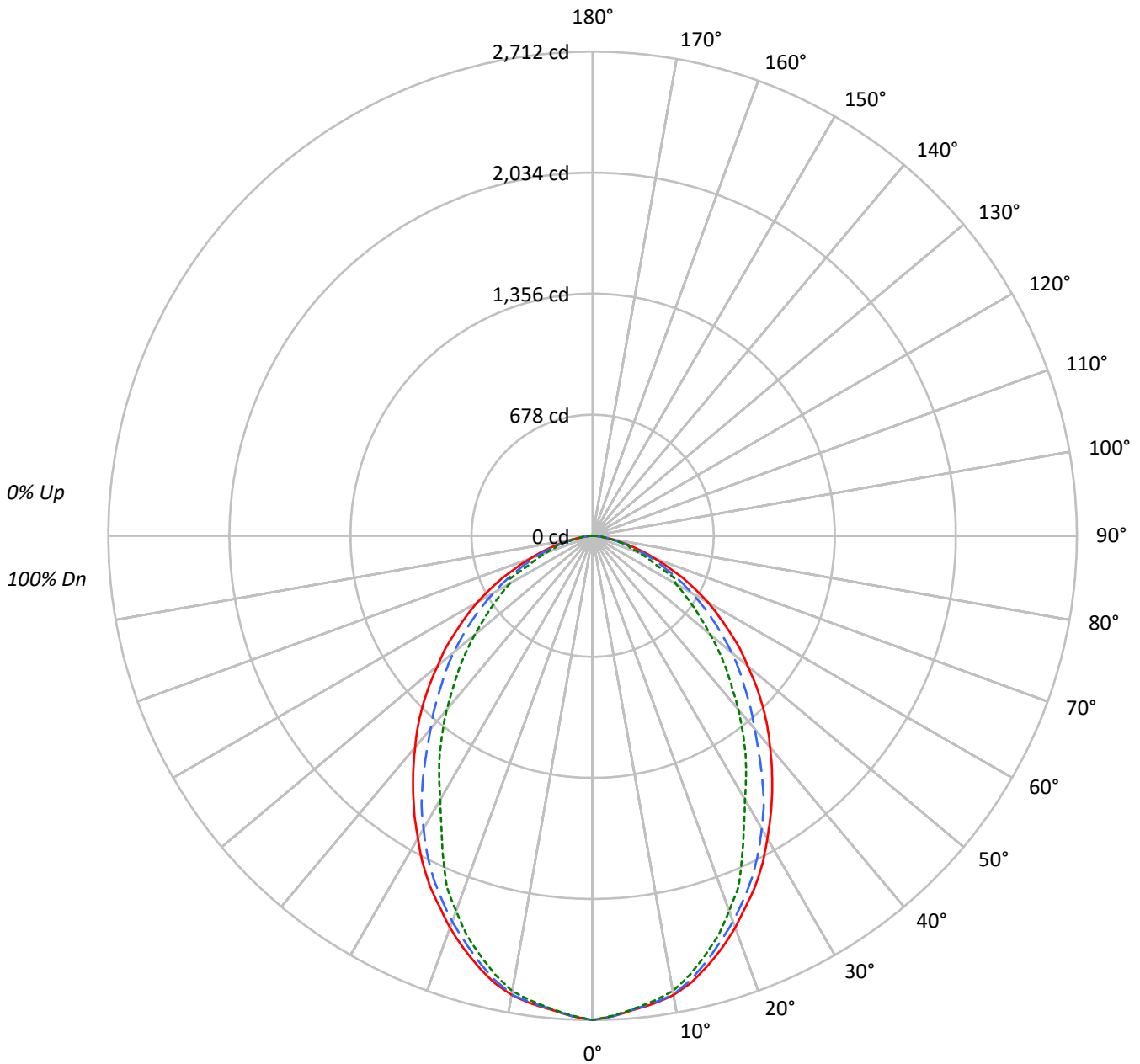
Lumens per Lamp: N/A  
Luminaire Lumens: 5324.0 lumens  
Efficiency: N/A  
Efficacy: 79.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 66.6  
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	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100	100
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87	87	87	87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75	75	75	75
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65	65	65	65
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56	56	56	56
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50	50	50	50
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44	44	44	44
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40	40	40	40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36	36	36	36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33	33	33	33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30	30	30	30

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

	0°	45°	90°
0°	7298	7298	7298
5°	7199	7190	7182
10°	7136	7128	7076
15°	6944	6874	6778
20°	6689	6581	6401
25°	6414	6274	5883
30°	6079	5884	5300
35°	5757	5438	4903
40°	5430	4956	4461
45°	5119	4582	4033
50°	4738	4253	3597
55°	4383	3854	3221
60°	4016	3442	2885
65°	3533	3014	2555
70°	2911	2640	2171
75°	2314	2021	2119
80°	1554	1458	1361
85°	969	1161	1355



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	252.4	4.7
10°-20°	692.8	13.0
20°-30°	959.2	18.0
30°-40°	1022.8	19.2
40°-50°	933.0	17.5
50°-60°	731.0	13.7
60°-70°	476.4	8.9
70°-80°	211.1	4.0
80°-90°	45.3	0.9
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°	1904.4	35.8
0°-40°	2927.2	55.0
0°-60°	4591.2	86.2
0°-90°	5324.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5324.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2712	2712	2712	2712	2712	
5°	2665	2662	2662	2659	2659	253
15°	2492	2492	2467	2442	2433	701
25°	2160	2148	2113	2038	1982	992
35°	1753	1740	1655	1530	1492	1096
45°	1345	1317	1204	1104	1060	1036
55°	934	906	821	724	687	838
65°	555	524	473	483	401	547
75°	223	207	194	185	204	239
85°	31	34	38	41	44	44
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2712.0	2712.0	2712.0	2712.0	2712.0
2.5°	2693.2	2693.2	2693.2	2690.0	2690.0
5°	2664.9	2661.8	2661.8	2658.7	2658.7
7.5°	2643.0	2639.9	2636.7	2633.6	2627.3
10°	2611.6	2611.6	2608.5	2592.8	2589.7
12.5°	2561.5	2558.3	2545.8	2523.9	2517.6
15°	2492.5	2492.5	2467.4	2442.3	2432.9
17.5°	2417.3	2414.1	2382.8	2357.7	2345.2
20°	2335.7	2329.5	2298.1	2257.4	2235.4
22.5°	2244.8	2244.8	2207.2	2153.9	2132.0
25°	2160.2	2147.6	2113.1	2037.9	1981.5
27.5°	2063.0	2044.2	2006.5	1899.9	1834.1
30°	1956.4	1947.0	1893.7	1755.7	1705.6
32.5°	1856.1	1840.4	1783.9	1639.7	1599.0
35°	1752.6	1740.1	1655.4	1530.0	1492.4
37.5°	1649.1	1633.5	1526.9	1426.5	1379.5
40°	1545.7	1526.9	1410.9	1319.9	1269.8
42.5°	1448.5	1423.4	1310.5	1213.3	1156.9
45°	1345.0	1316.8	1203.9	1103.6	1059.7
47.5°	1241.6	1216.5	1113.0	1009.5	959.4
50°	1131.8	1109.9	1015.8	912.4	859.1
52.5°	1040.9	1006.4	915.5	812.0	768.1
55°	934.3	906.1	821.4	724.2	686.6
57.5°	837.1	808.9	730.5	639.6	608.2
60°	746.2	705.4	639.6	561.2	536.1
62.5°	645.9	614.5	558.1	492.2	523.6
65°	554.9	523.6	473.4	482.8	401.3
67.5°	454.6	438.9	395.0	351.1	338.6
70°	370.0	351.1	335.5	288.4	275.9
72.5°	294.7	275.9	254.0	228.9	219.5
75°	222.6	206.9	194.4	185.0	203.8
77.5°	153.6	147.4	138.0	128.5	125.4
80°	100.3	97.2	94.1	90.9	87.8
82.5°	59.6	59.6	59.6	59.6	59.6
85°	31.4	34.5	37.6	40.8	43.9
87.5°	18.8	18.8	21.9	25.1	28.2
90°	0.0	0.0	0.0	0.0	0.0



Report Generated By 670246072 / DESKTOP-MV3F9LC







— 0°-180°    - - 45°-225°    - - - - 90°-270°







(END OF REPORT)