

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: P546368

Luminaire Tested: **FMR-12-4-LD4-2STD-50-UNV-81-85-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: P546368  
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-50-UNV-81-85-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

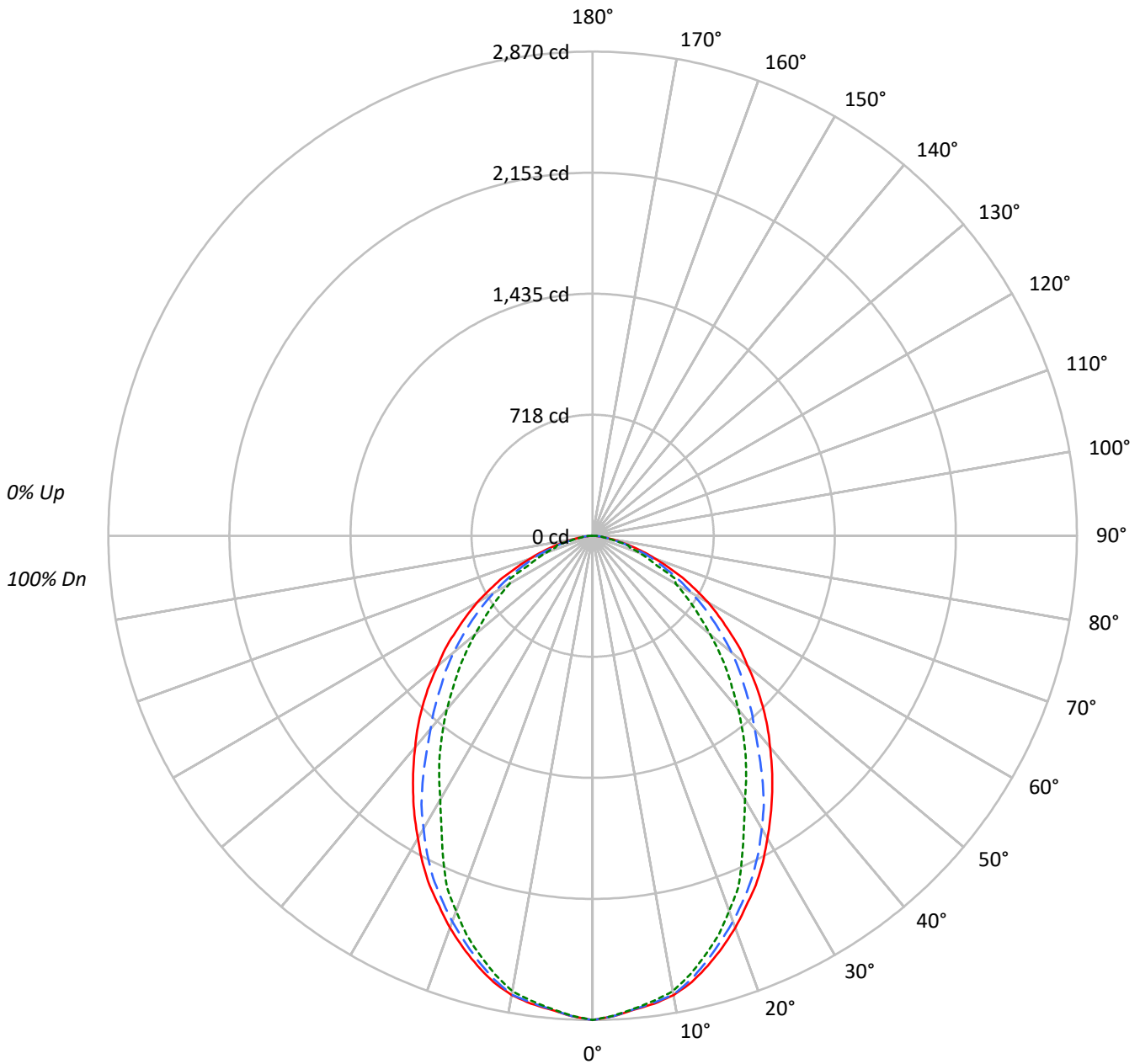
Lumens per Lamp: N/A  
Luminaire Lumens: 5635.0 lumens  
Efficiency: N/A  
Efficacy: 84.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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

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

	0°	45°	90°
0°	7724	7724	7724
5°	7619	7610	7601
10°	7553	7544	7490
15°	7349	7276	7174
20°	7080	6966	6775
25°	6789	6641	6227
30°	6434	6228	5609
35°	6094	5756	5189
40°	5747	5246	4721
45°	5418	4849	4268
50°	5015	4501	3806
55°	4640	4079	3409
60°	4251	3643	3054
65°	3740	3191	2705
70°	3081	2794	2297
75°	2450	2139	2243
80°	1646	1543	1440
85°	1025	1229	1436



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	267.2	4.7
10°-20°	733.3	13.0
20°-30°	1015.2	18.0
30°-40°	1082.5	19.2
40°-50°	987.5	17.5
50°-60°	773.7	13.7
60°-70°	504.3	8.9
70°-80°	223.4	4.0
80°-90°	47.9	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°	2015.7	35.8
0°-40°	3098.2	55.0
0°-60°	4859.4	86.2
0°-90°	5635.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5635.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2870	2870	2870	2870	2870	
5°	2821	2817	2817	2814	2814	268
15°	2638	2638	2612	2585	2575	742
25°	2286	2273	2237	2157	2097	1050
35°	1855	1842	1752	1619	1580	1160
45°	1424	1394	1274	1168	1122	1097
55°	989	959	869	766	727	887
65°	587	554	501	511	425	579
75°	236	219	206	196	216	253
85°	33	36	40	43	46	46
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2870.4	2870.4	2870.4	2870.4	2870.4
2.5°	2850.5	2850.5	2850.5	2847.2	2847.2
5°	2820.6	2817.3	2817.3	2814.0	2814.0
7.5°	2797.4	2794.1	2790.8	2787.4	2780.8
10°	2764.2	2764.2	2760.9	2744.3	2741.0
12.5°	2711.1	2707.8	2694.5	2671.3	2664.7
15°	2638.1	2638.1	2611.6	2585.0	2575.1
17.5°	2558.5	2555.1	2522.0	2495.4	2482.1
20°	2472.2	2465.6	2432.4	2389.2	2366.0
22.5°	2376.0	2376.0	2336.1	2279.7	2256.5
25°	2286.4	2273.1	2236.6	2156.9	2097.2
27.5°	2183.5	2163.6	2123.8	2010.9	1941.2
30°	2070.7	2060.7	2004.3	1858.3	1805.2
32.5°	1964.5	1947.9	1888.2	1735.5	1692.4
35°	1855.0	1841.7	1752.1	1619.4	1579.5
37.5°	1745.5	1728.9	1616.0	1509.9	1460.1
40°	1636.0	1616.0	1493.3	1397.0	1343.9
42.5°	1533.1	1506.5	1387.1	1284.2	1224.5
45°	1423.6	1393.7	1274.3	1168.1	1121.6
47.5°	1314.1	1287.5	1178.0	1068.5	1015.4
50°	1197.9	1174.7	1075.2	965.6	909.2
52.5°	1101.7	1065.2	969.0	859.5	813.0
55°	988.9	959.0	869.4	766.5	726.7
57.5°	886.0	856.1	773.2	676.9	643.8
60°	789.8	746.6	676.9	594.0	567.4
62.5°	683.6	650.4	590.7	521.0	554.2
65°	587.4	554.2	501.1	511.0	424.8
67.5°	481.2	464.6	418.1	371.7	358.4
70°	391.6	371.7	355.1	305.3	292.0
72.5°	311.9	292.0	268.8	242.2	232.3
75°	235.6	219.0	205.7	195.8	215.7
77.5°	162.6	156.0	146.0	136.1	132.7
80°	106.2	102.9	99.6	96.2	92.9
82.5°	63.0	63.0	63.0	63.0	63.0
85°	33.2	36.5	39.8	43.1	46.5
87.5°	19.9	19.9	23.2	26.5	29.9
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)