

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: P546352

Luminaire Tested: **FMR-12-4-LD4-2STD-40-UNV-93-85-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: P546352  
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-40-UNV-93-85-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

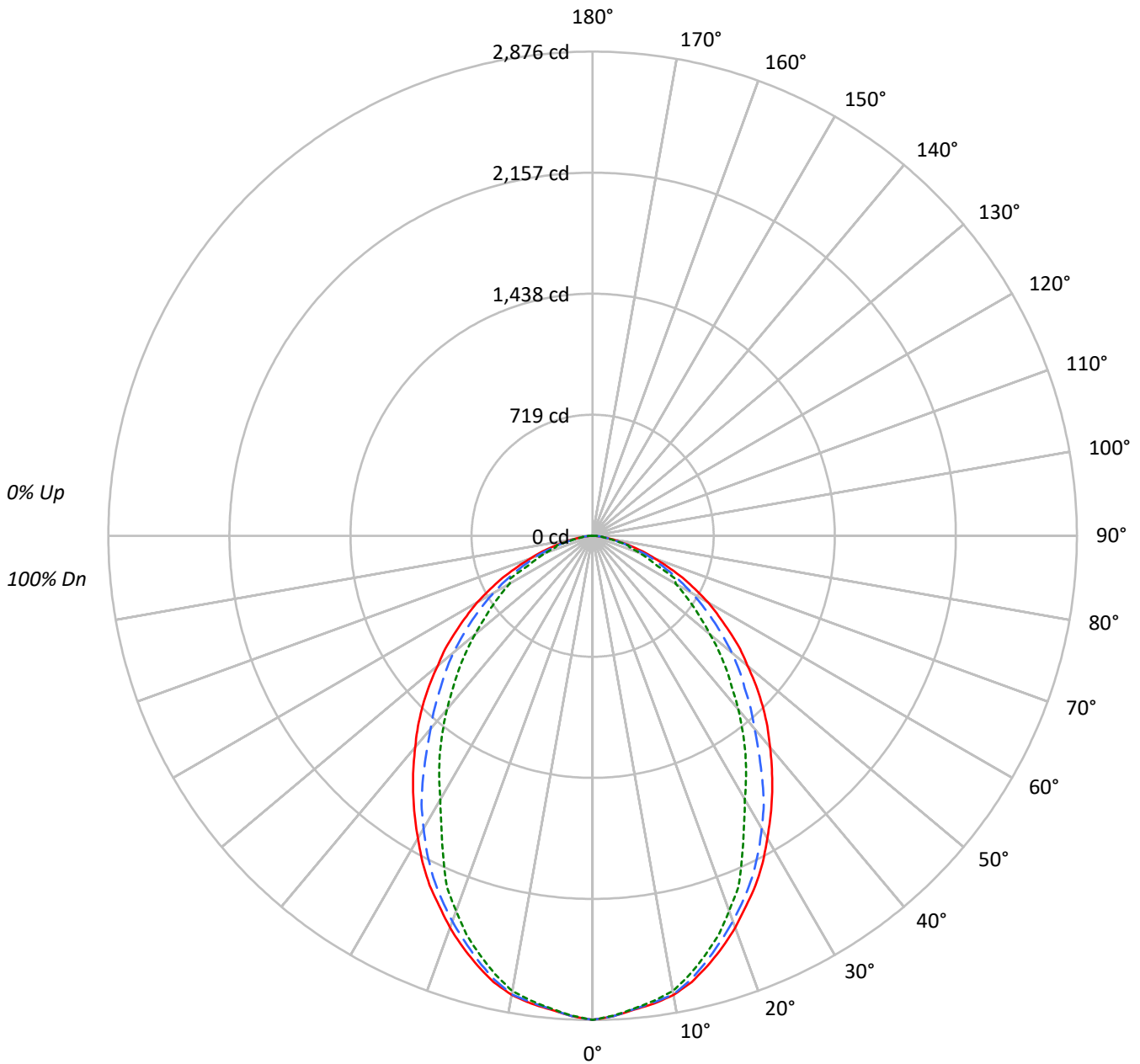
Lumens per Lamp: N/A  
Luminaire Lumens: 5645.0 lumens  
Efficiency: N/A  
Efficacy: 84.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	7738	7738	7738
5°	7633	7624	7615
10°	7567	7558	7503
15°	7363	7288	7187
20°	7092	6978	6787
25°	6801	6653	6238
30°	6445	6239	5619
35°	6105	5766	5198
40°	5757	5255	4729
45°	5427	4858	4276
50°	5024	4509	3813
55°	4647	4086	3415
60°	4258	3650	3059
65°	3747	3196	2709
70°	3087	2799	2301
75°	2454	2143	2247
80°	1649	1545	1443
85°	1025	1232	1436



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	267.7	4.7
10°-20°	734.6	13.0
20°-30°	1017.0	18.0
30°-40°	1084.4	19.2
40°-50°	989.3	17.5
50°-60°	775.0	13.7
60°-70°	505.1	8.9
70°-80°	223.8	4.0
80°-90°	48.1	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°	2019.3	35.8
0°-40°	3103.7	55.0
0°-60°	4868.0	86.2
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°	2876	2876	2876	2876	2876	
5°	2826	2822	2822	2819	2819	268
15°	2643	2643	2616	2590	2580	743
25°	2290	2277	2241	2161	2101	1052
35°	1858	1845	1755	1622	1582	1162
45°	1426	1396	1276	1170	1124	1099
55°	991	961	871	768	728	889
65°	588	555	502	512	426	580
75°	236	219	206	196	216	253
85°	33	37	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°	2875.5	2875.5	2875.5	2875.5	2875.5
2.5°	2855.5	2855.5	2855.5	2852.2	2852.2
5°	2825.6	2822.3	2822.3	2819.0	2819.0
7.5°	2802.4	2799.0	2795.7	2792.4	2785.7
10°	2769.1	2769.1	2765.8	2749.2	2745.8
12.5°	2715.9	2712.6	2699.3	2676.0	2669.4
15°	2642.8	2642.8	2616.2	2589.6	2579.6
17.5°	2563.0	2559.7	2526.4	2499.8	2486.5
20°	2476.6	2469.9	2436.7	2393.5	2370.2
22.5°	2380.2	2380.2	2340.3	2283.8	2260.5
25°	2290.4	2277.1	2240.6	2160.8	2100.9
27.5°	2187.4	2167.4	2127.5	2014.5	1944.7
30°	2074.3	2064.4	2007.9	1861.6	1808.4
32.5°	1968.0	1951.3	1891.5	1738.6	1695.4
35°	1858.3	1845.0	1755.2	1622.2	1582.3
37.5°	1748.6	1731.9	1618.9	1512.5	1462.7
40°	1638.9	1618.9	1495.9	1399.5	1346.3
42.5°	1535.8	1509.2	1389.5	1286.5	1226.7
45°	1426.1	1396.2	1276.5	1170.1	1123.6
47.5°	1316.4	1289.8	1180.1	1070.4	1017.2
50°	1200.1	1176.8	1077.1	967.4	910.8
52.5°	1103.7	1067.1	970.7	861.0	814.4
55°	990.6	960.7	871.0	767.9	728.0
57.5°	887.6	857.7	774.6	678.1	644.9
60°	791.2	748.0	678.1	595.0	568.4
62.5°	684.8	651.6	591.7	521.9	555.2
65°	588.4	555.2	502.0	511.9	425.5
67.5°	482.0	465.4	418.9	372.3	359.0
70°	392.3	372.3	355.7	305.8	292.5
72.5°	312.5	292.5	269.3	242.7	232.7
75°	236.0	219.4	206.1	196.1	216.1
77.5°	162.9	156.2	146.3	136.3	133.0
80°	106.4	103.1	99.7	96.4	93.1
82.5°	63.2	63.2	63.2	63.2	63.2
85°	33.2	36.6	39.9	43.2	46.5
87.5°	19.9	19.9	23.3	26.6	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)