

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: P546128

Luminaire Tested: **FMR-12-4-LD4-2HI-35-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: P546128  
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-LD4-2HI-35-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 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

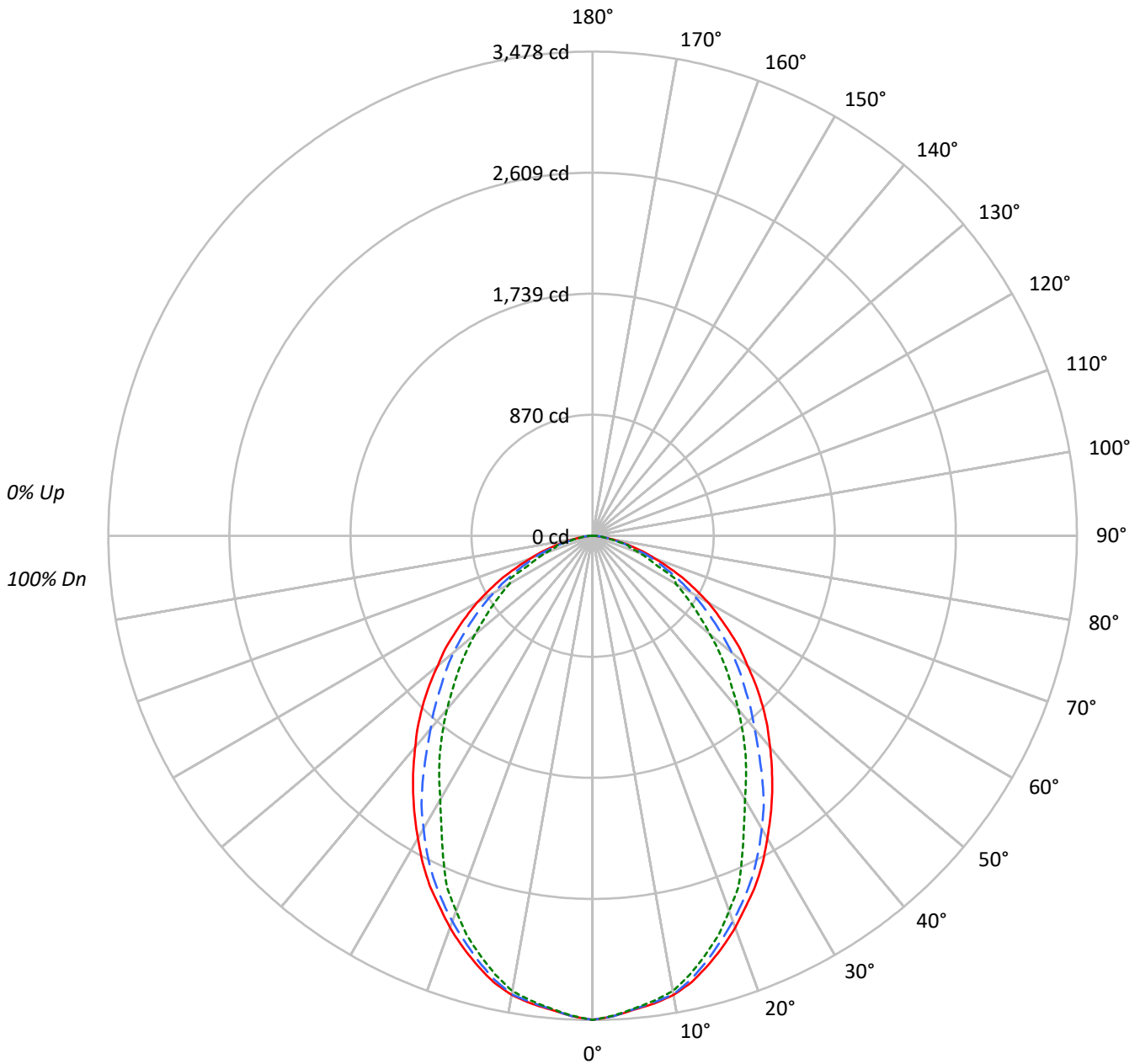
Lumens per Lamp: N/A  
Luminaire Lumens: 6827.0 lumens  
Efficiency: N/A  
Efficacy: 79.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 86.4  
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°	9358	9358	9358
5°	9231	9220	9209
10°	9151	9140	9074
15°	8904	8815	8691
20°	8577	8439	8209
25°	8225	8046	7544
30°	7795	7545	6796
35°	7383	6973	6287
40°	6962	6355	5720
45°	6564	5875	5171
50°	6076	5453	4612
55°	5621	4942	4131
60°	5149	4414	3700
65°	4531	3866	3277
70°	3733	3385	2784
75°	2967	2592	2717
80°	1994	1869	1745
85°	1241	1488	1738



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	323.7	4.7
10°-20°	888.4	13.0
20°-30°	1229.9	18.0
30°-40°	1311.5	19.2
40°-50°	1196.4	17.5
50°-60°	937.3	13.7
60°-70°	610.9	8.9
70°-80°	270.7	4.0
80°-90°	58.1	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°	2442.1	35.8
0°-40°	3753.6	55.0
0°-60°	5887.3	86.2
0°-90°	6827.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6827.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3478	3478	3478	3478	3478	
5°	3417	3413	3413	3409	3409	324
15°	3196	3196	3164	3132	3120	899
25°	2770	2754	2710	2613	2541	1272
35°	2247	2231	2123	1962	1914	1405
45°	1725	1688	1544	1415	1359	1329
55°	1198	1162	1053	929	880	1075
65°	712	671	607	619	515	701
75°	285	265	249	237	261	306
85°	40	44	48	52	56	56
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3477.6	3477.6	3477.6	3477.6	3477.6
2.5°	3453.5	3453.5	3453.5	3449.4	3449.4
5°	3417.3	3413.3	3413.3	3409.2	3409.2
7.5°	3389.1	3385.1	3381.1	3377.1	3369.0
10°	3348.9	3348.9	3344.9	3324.8	3320.8
12.5°	3284.6	3280.6	3264.5	3236.4	3228.3
15°	3196.2	3196.2	3164.0	3131.8	3119.8
17.5°	3099.7	3095.7	3055.4	3023.3	3007.2
20°	2995.1	2987.1	2946.9	2894.6	2866.5
22.5°	2878.6	2878.6	2830.3	2762.0	2733.8
25°	2770.0	2753.9	2709.7	2613.2	2540.8
27.5°	2645.4	2621.3	2573.0	2436.3	2351.9
30°	2508.7	2496.6	2428.3	2251.4	2187.1
32.5°	2380.0	2359.9	2287.6	2102.6	2050.4
35°	2247.4	2231.3	2122.7	1961.9	1913.7
37.5°	2114.7	2094.6	1957.9	1829.2	1768.9
40°	1982.0	1957.9	1809.1	1692.6	1628.2
42.5°	1857.4	1825.2	1680.5	1555.9	1483.5
45°	1724.7	1688.5	1543.8	1415.2	1358.9
47.5°	1592.0	1559.9	1427.2	1294.5	1230.2
50°	1451.3	1423.2	1302.6	1169.9	1101.6
52.5°	1334.7	1290.5	1173.9	1041.3	985.0
55°	1198.1	1161.9	1053.3	928.7	880.5
57.5°	1073.4	1037.2	936.7	820.1	779.9
60°	956.8	904.6	820.1	719.6	687.5
62.5°	828.2	788.0	715.6	631.2	671.4
65°	711.6	671.4	607.1	619.1	514.6
67.5°	582.9	562.8	506.6	450.3	434.2
70°	474.4	450.3	430.2	369.9	353.8
72.5°	377.9	353.8	325.6	293.5	281.4
75°	285.4	265.3	249.3	237.2	261.3
77.5°	197.0	189.0	176.9	164.8	160.8
80°	128.7	124.6	120.6	116.6	112.6
82.5°	76.4	76.4	76.4	76.4	76.4
85°	40.2	44.2	48.2	52.3	56.3
87.5°	24.1	24.1	28.1	32.2	36.2
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)