

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: P546326

Luminaire Tested: **FMR-12-4-LD4-2STD-35-UNV-93-97-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: P546326  
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-93-97-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

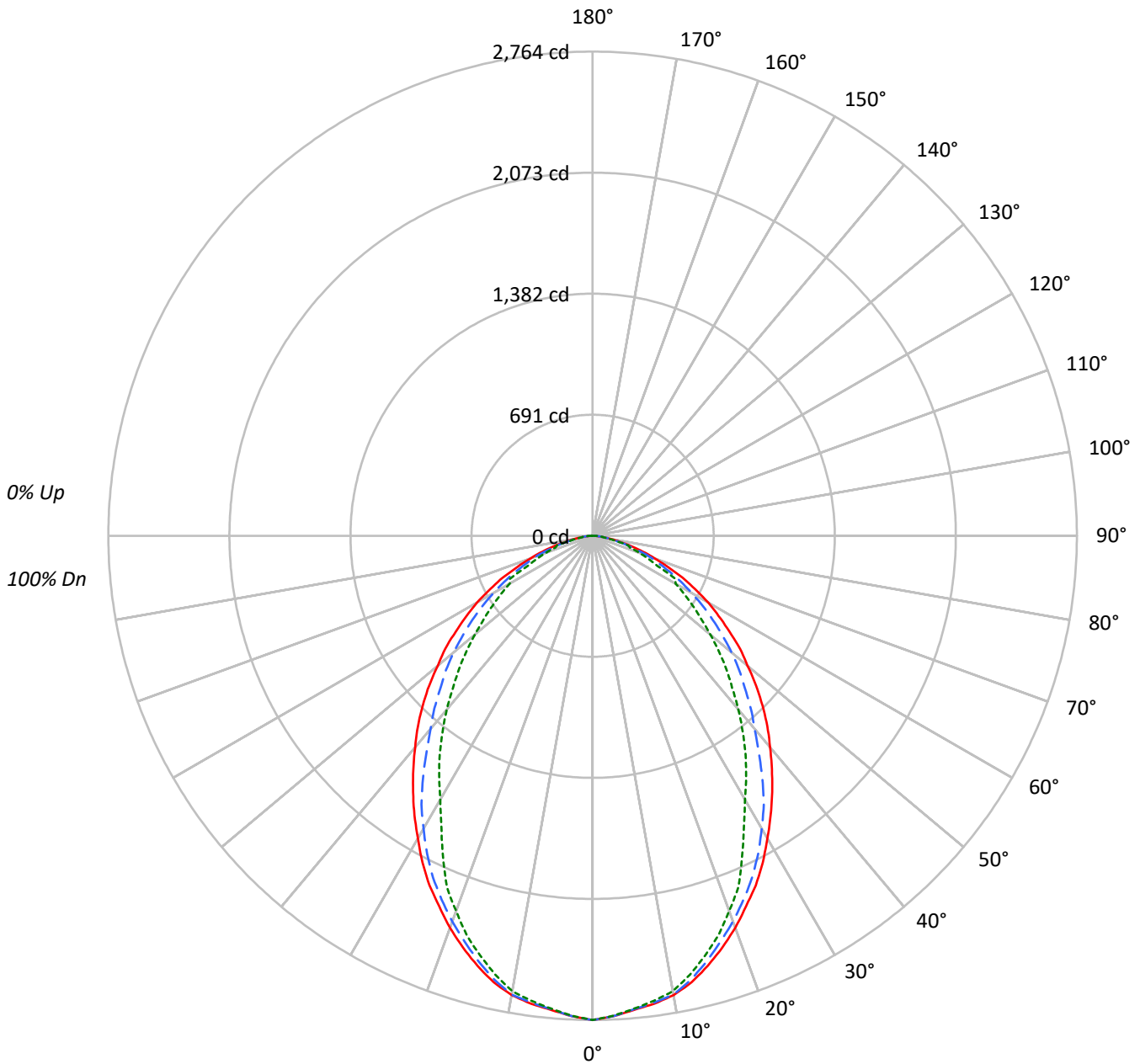
Lumens per Lamp: N/A  
Luminaire Lumens: 5427.0 lumens  
Efficiency: N/A  
Efficacy: 81.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	7439	7439	7439
5°	7338	7329	7321
10°	7274	7266	7213
15°	7078	7007	6909
20°	6818	6708	6525
25°	6538	6396	5997
30°	6197	5998	5402
35°	5869	5543	4997
40°	5535	5052	4547
45°	5218	4670	4111
50°	4830	4335	3666
55°	4468	3928	3284
60°	4094	3509	2941
65°	3602	3073	2605
70°	2967	2691	2212
75°	2359	2060	2159
80°	1585	1486	1387
85°	988	1186	1380



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	257.3	4.7
10°-20°	706.2	13.0
20°-30°	977.7	18.0
30°-40°	1042.5	19.2
40°-50°	951.1	17.5
50°-60°	745.1	13.7
60°-70°	485.6	8.9
70°-80°	215.1	4.0
80°-90°	46.2	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°	1941.3	35.8
0°-40°	2983.8	55.0
0°-60°	4680.0	86.2
0°-90°	5427.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5427.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2764	2764	2764	2764	2764	
5°	2716	2713	2713	2710	2710	258
15°	2541	2541	2515	2490	2480	714
25°	2202	2189	2154	2077	2020	1011
35°	1786	1774	1687	1560	1521	1117
45°	1371	1342	1227	1125	1080	1056
55°	952	924	837	738	700	854
65°	566	534	483	492	409	557
75°	227	211	198	189	208	243
85°	32	35	38	42	45	44
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2764.4	2764.4	2764.4	2764.4	2764.4
2.5°	2745.3	2745.3	2745.3	2742.1	2742.1
5°	2716.5	2713.3	2713.3	2710.1	2710.1
7.5°	2694.1	2690.9	2687.7	2684.5	2678.2
10°	2662.2	2662.2	2659.0	2643.0	2639.8
12.5°	2611.0	2607.8	2595.1	2572.7	2566.3
15°	2540.7	2540.7	2515.2	2489.6	2480.0
17.5°	2464.0	2460.8	2428.9	2403.3	2390.5
20°	2380.9	2374.5	2342.6	2301.0	2278.7
22.5°	2288.3	2288.3	2249.9	2195.6	2173.2
25°	2202.0	2189.2	2154.0	2077.3	2019.8
27.5°	2102.9	2083.7	2045.4	1936.7	1869.6
30°	1994.2	1984.6	1930.3	1789.7	1738.6
32.5°	1892.0	1876.0	1818.5	1671.4	1629.9
35°	1786.5	1773.7	1687.4	1559.6	1521.2
37.5°	1681.0	1665.1	1556.4	1454.1	1406.2
40°	1575.6	1556.4	1438.1	1345.5	1294.3
42.5°	1476.5	1450.9	1335.9	1236.8	1179.3
45°	1371.0	1342.3	1227.2	1125.0	1080.2
47.5°	1265.6	1240.0	1134.5	1029.1	977.9
50°	1153.7	1131.3	1035.5	930.0	875.7
52.5°	1061.0	1025.9	933.2	827.7	783.0
55°	952.4	923.6	837.3	738.2	699.9
57.5°	853.3	824.5	744.6	652.0	620.0
60°	760.6	719.1	652.0	572.1	546.5
62.5°	658.4	626.4	568.9	501.8	533.7
65°	565.7	533.7	482.6	492.2	409.1
67.5°	463.4	447.4	402.7	357.9	345.2
70°	377.1	357.9	342.0	294.0	281.2
72.5°	300.4	281.2	258.9	233.3	223.7
75°	226.9	210.9	198.1	188.6	207.7
77.5°	156.6	150.2	140.6	131.0	127.8
80°	102.3	99.1	95.9	92.7	89.5
82.5°	60.7	60.7	60.7	60.7	60.7
85°	32.0	35.2	38.4	41.5	44.7
87.5°	19.2	19.2	22.4	25.6	28.8
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)