

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: P546132

Luminaire Tested: **FMR-12-4-LD4-2HI-35-UNV-93-94-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: P546132  
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-93-94-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187  
CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT  
LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

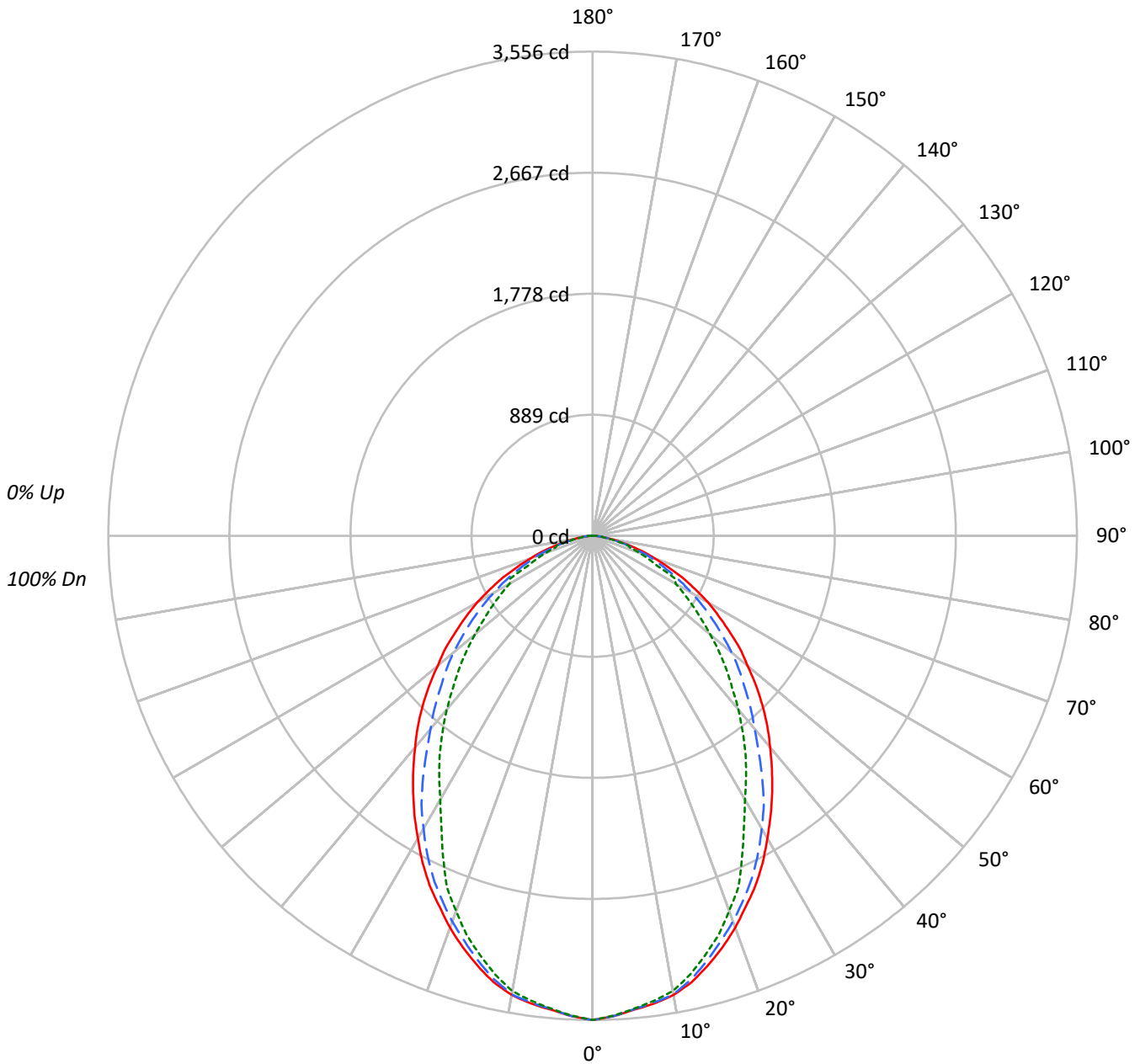
Lumens per Lamp: N/A  
Luminaire Lumens: 6981.0 lumens  
Efficiency: N/A  
Efficacy: 80.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 86.4  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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°	9569	9569	9569
5°	9439	9428	9417
10°	9357	9346	9279
15°	9105	9014	8887
20°	8771	8629	8394
25°	8410	8227	7714
30°	7971	7716	6949
35°	7549	7131	6428
40°	7119	6499	5849
45°	6712	6008	5288
50°	6213	5576	4716
55°	5748	5053	4224
60°	5266	4513	3784
65°	4633	3953	3351
70°	3817	3461	2847
75°	3035	2650	2778
80°	2039	1911	1784
85°	1269	1522	1778



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	331.0	4.7
10°-20°	908.5	13.0
20°-30°	1257.7	18.0
30°-40°	1341.1	19.2
40°-50°	1223.4	17.5
50°-60°	958.5	13.7
60°-70°	624.7	8.9
70°-80°	276.8	4.0
80°-90°	59.4	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°	2497.2	35.8
0°-40°	3838.2	55.0
0°-60°	6020.1	86.2
0°-90°	6981.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6981.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3556	3556	3556	3556	3556	
5°	3494	3490	3490	3486	3486	332
15°	3268	3268	3235	3202	3190	919
25°	2832	2816	2771	2672	2598	1300
35°	2298	2282	2171	2006	1957	1437
45°	1764	1727	1579	1447	1390	1359
55°	1225	1188	1077	950	900	1099
65°	728	686	621	633	526	717
75°	292	271	255	242	267	313
85°	41	45	49	53	58	57
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3556.0	3556.0	3556.0	3556.0	3556.0
2.5°	3531.4	3531.4	3531.4	3527.3	3527.3
5°	3494.4	3490.3	3490.3	3486.1	3486.1
7.5°	3465.6	3461.5	3457.4	3453.3	3445.0
10°	3424.5	3424.5	3420.4	3399.8	3395.7
12.5°	3358.7	3354.6	3338.1	3309.4	3301.1
15°	3268.3	3268.3	3235.4	3202.5	3190.1
17.5°	3169.6	3165.5	3124.4	3091.5	3075.0
20°	3062.7	3054.5	3013.4	2959.9	2931.2
22.5°	2943.5	2943.5	2894.2	2824.3	2795.5
25°	2832.5	2816.0	2770.8	2672.2	2598.2
27.5°	2705.0	2680.4	2631.0	2491.3	2404.9
30°	2565.3	2552.9	2483.1	2302.2	2236.4
32.5°	2433.7	2413.2	2339.2	2150.1	2096.6
35°	2298.1	2281.6	2170.6	2006.2	1956.8
37.5°	2162.4	2141.8	2002.1	1870.5	1808.8
40°	2026.7	2002.1	1850.0	1730.7	1665.0
42.5°	1899.3	1866.4	1718.4	1591.0	1517.0
45°	1763.6	1726.6	1578.6	1447.1	1389.5
47.5°	1628.0	1595.1	1459.4	1323.7	1258.0
50°	1484.1	1455.3	1332.0	1196.3	1126.4
52.5°	1364.9	1319.6	1200.4	1064.8	1007.2
55°	1225.1	1188.1	1077.1	949.6	900.3
57.5°	1097.6	1060.6	957.9	838.6	797.5
60°	978.4	925.0	838.6	735.9	703.0
62.5°	846.9	805.8	731.8	645.4	686.5
65°	727.6	686.5	620.8	633.1	526.2
67.5°	596.1	575.5	518.0	460.4	444.0
70°	485.1	460.4	439.9	378.2	361.8
72.5°	386.4	361.8	333.0	300.1	287.8
75°	291.9	271.3	254.9	242.5	267.2
77.5°	201.4	193.2	180.9	168.6	164.4
80°	131.6	127.4	123.3	119.2	115.1
82.5°	78.1	78.1	78.1	78.1	78.1
85°	41.1	45.2	49.3	53.4	57.6
87.5°	24.7	24.7	28.8	32.9	37.0
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)