

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: P546384

Luminaire Tested: **FMR-12-4-LD4-2STD-50-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: P546384  
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-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 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

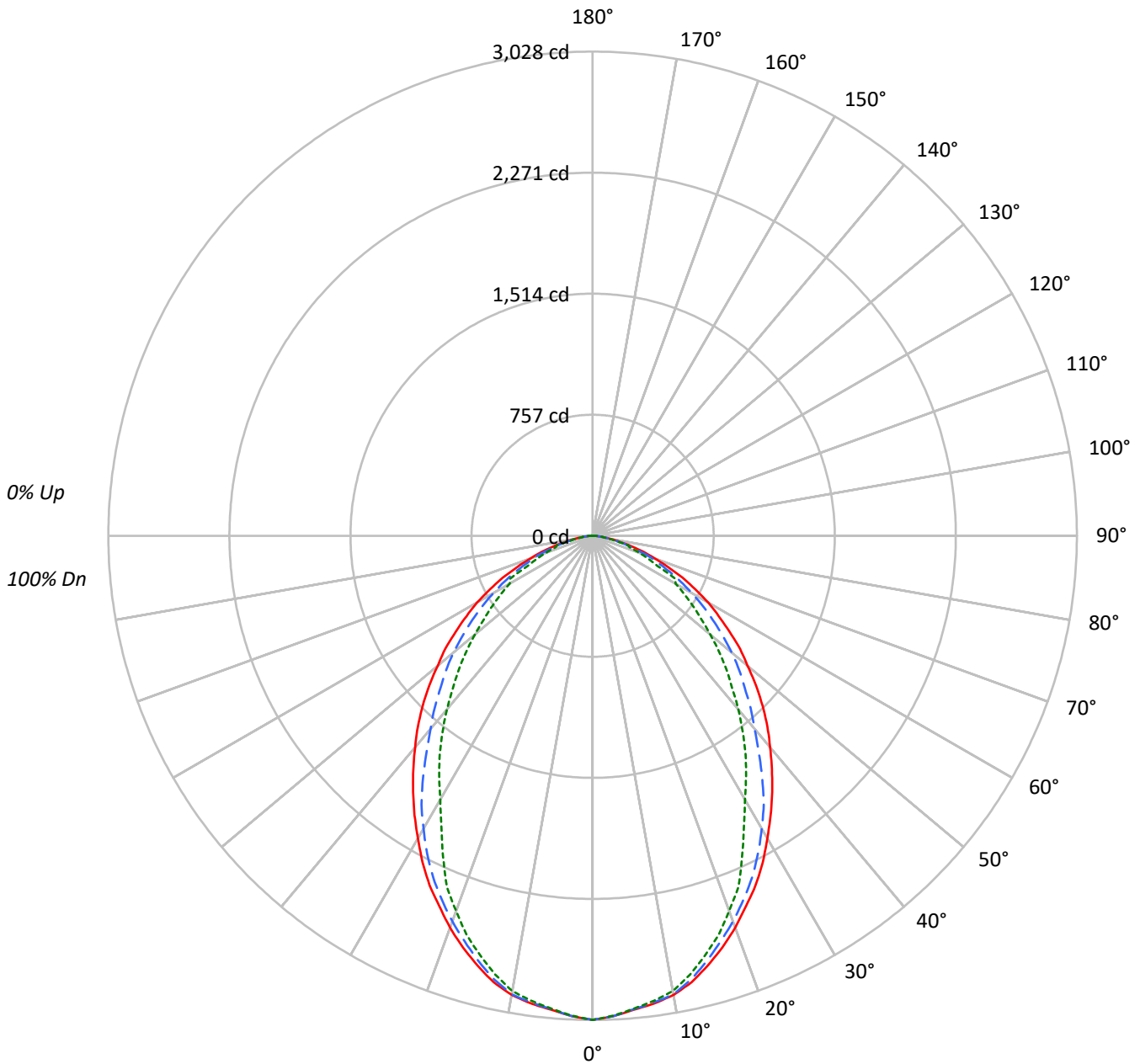
Lumens per Lamp: N/A  
Luminaire Lumens: 5944.0 lumens  
Efficiency: N/A  
Efficacy: 89.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	8148	8148	8148
5°	8037	8028	8018
10°	7967	7958	7900
15°	7753	7675	7567
20°	7468	7347	7147
25°	7161	7005	6568
30°	6787	6569	5917
35°	6428	6071	5474
40°	6062	5533	4980
45°	5715	5115	4502
50°	5290	4748	4015
55°	4894	4303	3597
60°	4484	3843	3222
65°	3945	3366	2853
70°	3249	2947	2423
75°	2584	2256	2365
80°	1736	1627	1519
85°	1081	1297	1513



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	281.8	4.7
10°-20°	773.5	13.0
20°-30°	1070.9	18.0
30°-40°	1141.9	19.2
40°-50°	1041.7	17.5
50°-60°	816.1	13.7
60°-70°	531.9	8.9
70°-80°	235.6	4.0
80°-90°	50.6	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°	2126.2	35.8
0°-40°	3268.1	55.0
0°-60°	5125.9	86.2
0°-90°	5944.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5944.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3028	3028	3028	3028	3028	
5°	2975	2972	2972	2968	2968	282
15°	2783	2783	2755	2727	2716	782
25°	2412	2398	2359	2275	2212	1107
35°	1957	1943	1848	1708	1666	1223
45°	1502	1470	1344	1232	1183	1157
55°	1043	1012	917	809	767	936
65°	620	585	529	539	448	611
75°	248	231	217	206	228	266
85°	35	38	42	46	49	49
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3027.8	3027.8	3027.8	3027.8	3027.8
2.5°	3006.8	3006.8	3006.8	3003.3	3003.3
5°	2975.3	2971.8	2971.8	2968.3	2968.3
7.5°	2950.8	2947.3	2943.8	2940.3	2933.3
10°	2915.8	2915.8	2912.3	2894.8	2891.3
12.5°	2859.8	2856.3	2842.3	2817.8	2810.8
15°	2782.8	2782.8	2754.8	2726.8	2716.3
17.5°	2698.8	2695.3	2660.3	2632.3	2618.3
20°	2607.8	2600.8	2565.7	2520.2	2495.7
22.5°	2506.2	2506.2	2464.2	2404.7	2380.2
25°	2411.7	2397.7	2359.2	2275.2	2212.2
27.5°	2303.2	2282.2	2240.2	2121.2	2047.7
30°	2184.2	2173.7	2114.2	1960.2	1904.2
32.5°	2072.2	2054.7	1991.7	1830.7	1785.2
35°	1956.7	1942.7	1848.2	1708.2	1666.2
37.5°	1841.2	1823.7	1704.7	1592.7	1540.1
40°	1725.7	1704.7	1575.2	1473.6	1417.6
42.5°	1617.2	1589.2	1463.1	1354.6	1291.6
45°	1501.6	1470.1	1344.1	1232.1	1183.1
47.5°	1386.1	1358.1	1242.6	1127.1	1071.1
50°	1263.6	1239.1	1134.1	1018.6	959.1
52.5°	1162.1	1123.6	1022.1	906.6	857.6
55°	1043.1	1011.6	917.1	808.6	766.6
57.5°	934.6	903.1	815.6	714.1	679.1
60°	833.1	787.6	714.1	626.6	598.6
62.5°	721.1	686.1	623.1	549.6	584.6
65°	619.6	584.6	528.6	539.1	448.0
67.5°	507.5	490.0	441.0	392.0	378.0
70°	413.0	392.0	374.5	322.0	308.0
72.5°	329.0	308.0	283.5	255.5	245.0
75°	248.5	231.0	217.0	206.5	227.5
77.5°	171.5	164.5	154.0	143.5	140.0
80°	112.0	108.5	105.0	101.5	98.0
82.5°	66.5	66.5	66.5	66.5	66.5
85°	35.0	38.5	42.0	45.5	49.0
87.5°	21.0	21.0	24.5	28.0	31.5
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)