

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: P546377

Luminaire Tested: **FMR-12-4-LD4-2STD-50-UNV-82-86-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: P546377  
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-82-86-EDD  
Description: 1X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

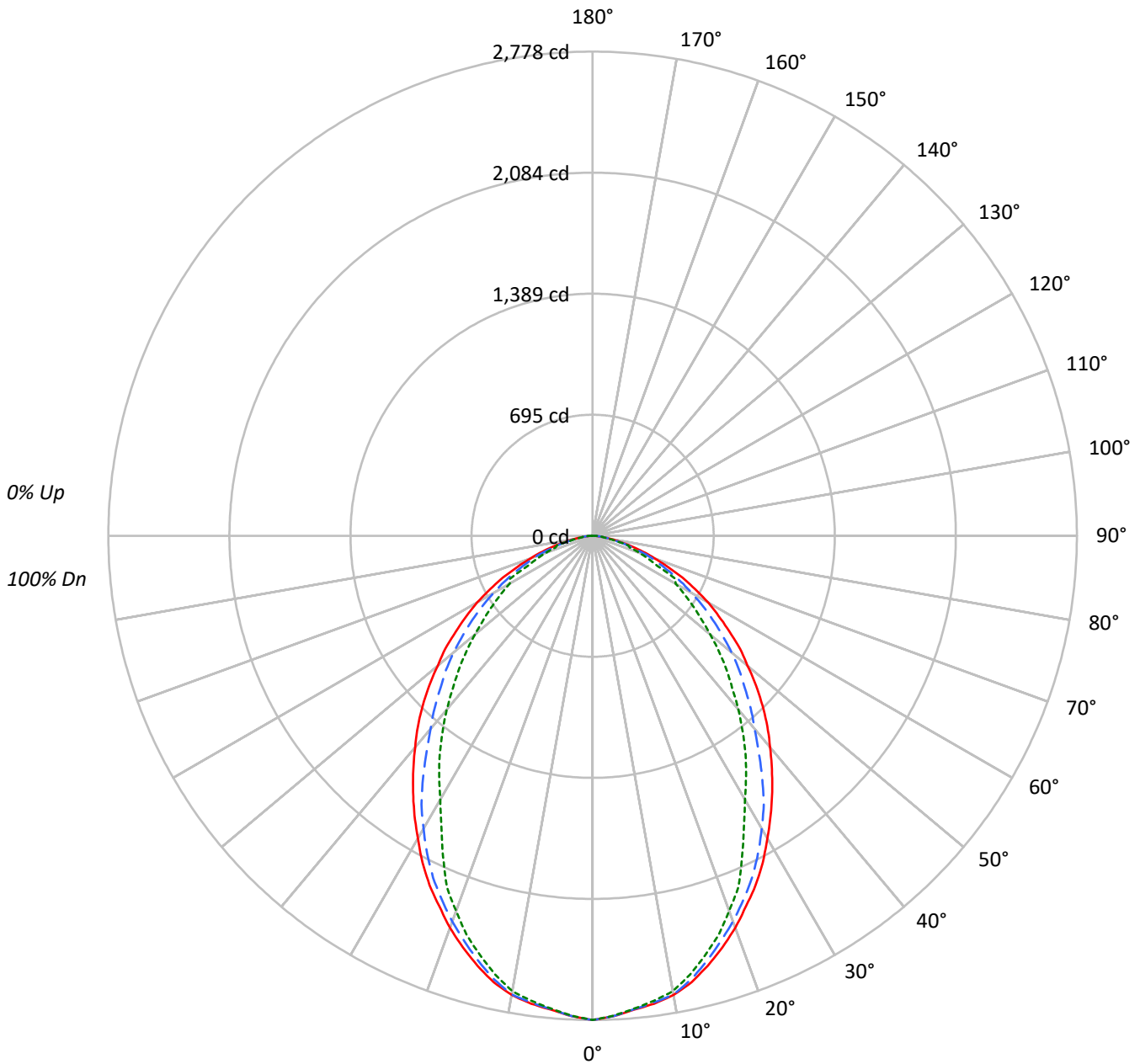
Lumens per Lamp: N/A  
Luminaire Lumens: 5454.0 lumens  
Efficiency: N/A  
Efficacy: 81.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	7476	7476	7476
5°	7374	7366	7357
10°	7311	7302	7249
15°	7114	7042	6943
20°	6852	6742	6558
25°	6570	6427	6027
30°	6228	6028	5429
35°	5898	5571	5022
40°	5562	5077	4569
45°	5244	4693	4131
50°	4854	4356	3684
55°	4490	3948	3300
60°	4114	3526	2956
65°	3620	3088	2618
70°	2982	2704	2223
75°	2371	2070	2171
80°	1593	1494	1393
85°	991	1189	1389



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	258.6	4.7
10°-20°	709.7	13.0
20°-30°	982.6	18.0
30°-40°	1047.7	19.2
40°-50°	955.8	17.5
50°-60°	748.8	13.7
60°-70°	488.1	8.9
70°-80°	216.2	4.0
80°-90°	46.4	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°	1950.9	35.8
0°-40°	2998.7	55.0
0°-60°	4703.3	86.2
0°-90°	5454.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5454.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2778	2778	2778	2778	2778	
5°	2730	2727	2727	2724	2724	259
15°	2553	2553	2528	2502	2492	718
25°	2213	2200	2165	2088	2030	1016
35°	1795	1782	1696	1567	1529	1122
45°	1378	1349	1233	1130	1086	1061
55°	957	928	842	742	703	858
65°	568	536	485	495	411	560
75°	228	212	199	190	209	244
85°	32	35	38	42	45	45
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2778.2	2778.2	2778.2	2778.2	2778.2
2.5°	2758.9	2758.9	2758.9	2755.7	2755.7
5°	2730.0	2726.8	2726.8	2723.6	2723.6
7.5°	2707.5	2704.3	2701.1	2697.9	2691.5
10°	2675.4	2675.4	2672.2	2656.1	2652.9
12.5°	2624.0	2620.8	2608.0	2585.5	2579.1
15°	2553.4	2553.4	2527.7	2502.0	2492.3
17.5°	2476.3	2473.1	2441.0	2415.3	2402.4
20°	2392.8	2386.4	2354.2	2312.5	2290.0
22.5°	2299.6	2299.6	2261.1	2206.5	2184.0
25°	2212.9	2200.1	2164.7	2087.7	2029.8
27.5°	2113.4	2094.1	2055.5	1946.3	1878.9
30°	2004.2	1994.5	1939.9	1798.6	1747.2
32.5°	1901.4	1885.3	1827.5	1679.8	1638.0
35°	1795.4	1782.5	1695.8	1567.4	1528.8
37.5°	1689.4	1673.3	1564.1	1461.4	1413.2
40°	1583.4	1564.1	1445.3	1352.2	1300.8
42.5°	1483.8	1458.2	1342.5	1243.0	1185.1
45°	1377.9	1349.0	1233.3	1130.5	1085.6
47.5°	1271.9	1246.2	1140.2	1034.2	982.8
50°	1159.5	1137.0	1040.6	934.6	880.0
52.5°	1066.3	1031.0	937.8	831.9	786.9
55°	957.1	928.2	841.5	741.9	703.4
57.5°	857.5	828.6	748.3	655.2	623.1
60°	764.4	722.7	655.2	574.9	549.2
62.5°	661.6	629.5	571.7	504.3	536.4
65°	568.5	536.4	485.0	494.6	411.1
67.5°	465.7	449.7	404.7	359.7	346.9
70°	379.0	359.7	343.7	295.5	282.6
72.5°	301.9	282.6	260.2	234.5	224.8
75°	228.0	212.0	199.1	189.5	208.8
77.5°	157.4	151.0	141.3	131.7	128.5
80°	102.8	99.6	96.4	93.1	89.9
82.5°	61.0	61.0	61.0	61.0	61.0
85°	32.1	35.3	38.5	41.8	45.0
87.5°	19.3	19.3	22.5	25.7	28.9
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)