

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: P546370

Luminaire Tested: **FMR-12-4-LD4-2STD-50-UNV-81-87-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: P546370  
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-81-87-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

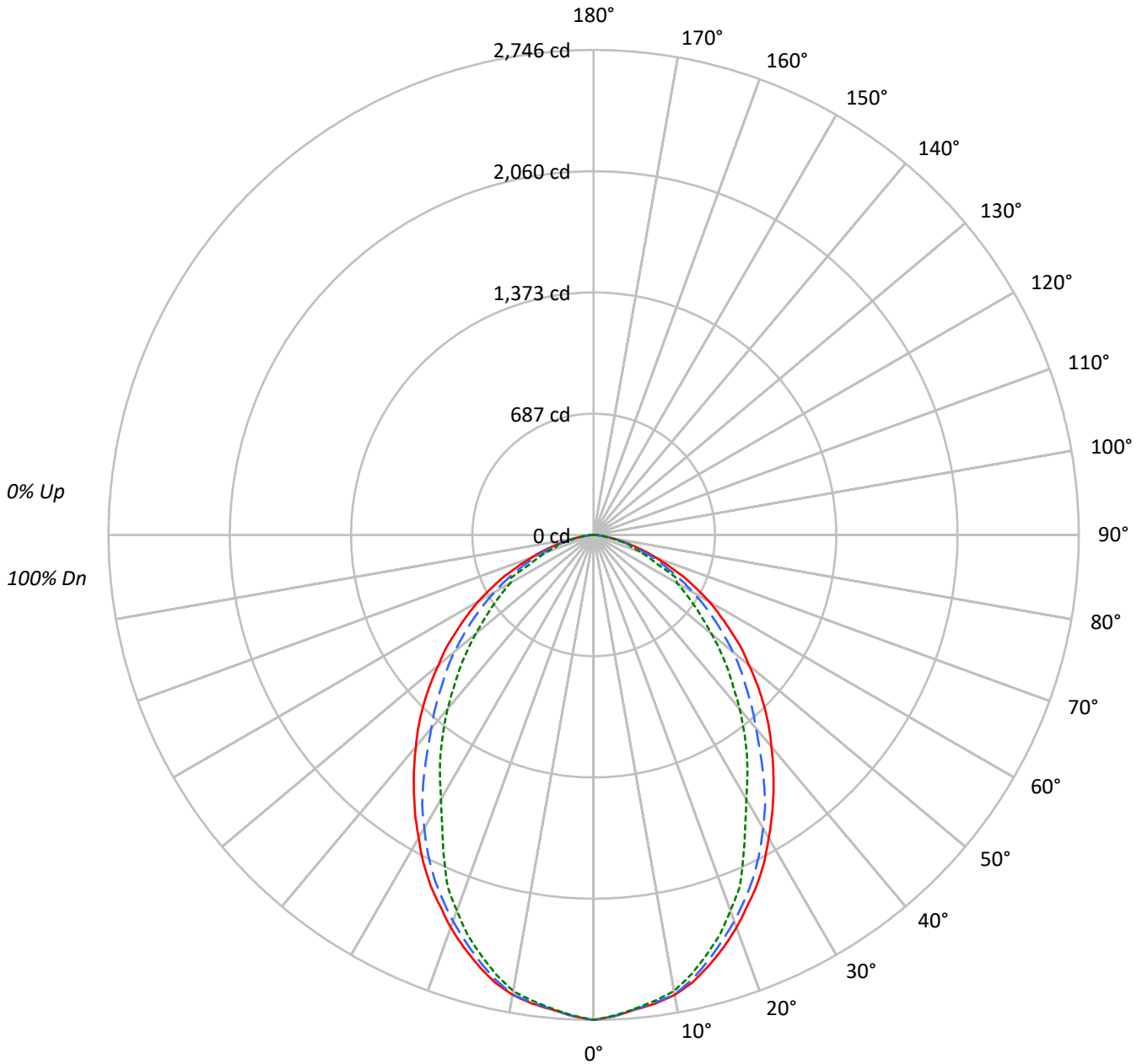
Lumens per Lamp: N/A  
Luminaire Lumens: 5391.0 lumens  
Efficiency: N/A  
Efficacy: 80.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	7390	7390	7390
5°	7289	7281	7272
10°	7226	7217	7165
15°	7031	6961	6863
20°	6773	6664	6482
25°	6495	6353	5957
30°	6156	5958	5366
35°	5830	5506	4964
40°	5498	5018	4516
45°	5183	4639	4083
50°	4798	4306	3642
55°	4439	3902	3262
60°	4067	3485	2922
65°	3578	3053	2588
70°	2947	2673	2198
75°	2344	2046	2146
80°	1574	1475	1378
85°	979	1176	1371



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	255.6	4.7
10°-20°	701.5	13.0
20°-30°	971.2	18.0
30°-40°	1035.6	19.2
40°-50°	944.8	17.5
50°-60°	740.2	13.7
60°-70°	482.4	8.9
70°-80°	213.7	4.0
80°-90°	45.9	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°	1928.4	35.8
0°-40°	2964.0	55.0
0°-60°	4649.0	86.2
0°-90°	5391.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5391.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2746	2746	2746	2746	2746	
5°	2698	2695	2695	2692	2692	256
15°	2524	2524	2498	2473	2464	710
25°	2187	2175	2140	2064	2006	1004
35°	1775	1762	1676	1549	1511	1109
45°	1362	1333	1219	1118	1073	1049
55°	946	918	832	733	695	849
65°	562	530	479	489	406	554
75°	225	210	197	187	206	242
85°	32	35	38	41	44	44
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2746.1	2746.1	2746.1	2746.1	2746.1
2.5°	2727.1	2727.1	2727.1	2723.9	2723.9
5°	2698.5	2695.3	2695.3	2692.1	2692.1
7.5°	2676.3	2673.1	2669.9	2666.7	2660.4
10°	2644.5	2644.5	2641.3	2625.5	2622.3
12.5°	2593.7	2590.5	2577.8	2555.6	2549.3
15°	2523.9	2523.9	2498.5	2473.1	2463.6
17.5°	2447.7	2444.5	2412.8	2387.4	2374.7
20°	2365.1	2358.8	2327.0	2285.8	2263.6
22.5°	2273.1	2273.1	2235.0	2181.0	2158.8
25°	2187.4	2174.7	2139.7	2063.5	2006.4
27.5°	2088.9	2069.9	2031.8	1923.9	1857.2
30°	1981.0	1971.5	1917.5	1777.8	1727.0
32.5°	1879.4	1863.5	1806.4	1660.4	1619.1
35°	1774.6	1762.0	1676.2	1549.2	1511.2
37.5°	1669.9	1654.0	1546.1	1444.5	1396.9
40°	1565.1	1546.1	1428.6	1336.5	1285.7
42.5°	1466.7	1441.3	1327.0	1228.6	1171.5
45°	1361.9	1333.4	1219.1	1117.5	1073.0
47.5°	1257.2	1231.8	1127.0	1022.2	971.5
50°	1146.1	1123.8	1028.6	923.8	869.9
52.5°	1054.0	1019.1	927.0	822.2	777.8
55°	946.1	917.5	831.8	733.4	695.3
57.5°	847.6	819.1	739.7	647.6	615.9
60°	755.6	714.3	647.6	568.3	542.9
62.5°	654.0	622.2	565.1	498.4	530.2
65°	561.9	530.2	479.4	488.9	406.4
67.5°	460.3	444.5	400.0	355.6	342.9
70°	374.6	355.6	339.7	292.1	279.4
72.5°	298.4	279.4	257.1	231.8	222.2
75°	225.4	209.5	196.8	187.3	206.4
77.5°	155.6	149.2	139.7	130.2	127.0
80°	101.6	98.4	95.2	92.1	88.9
82.5°	60.3	60.3	60.3	60.3	60.3
85°	31.7	34.9	38.1	41.3	44.4
87.5°	19.0	19.0	22.2	25.4	28.6
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)