

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: P547443

Luminaire Tested: **FMR-24-4-LD4-4LO-50-UNV-93-88-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: P547443  
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-24-4-LD4-4LO-50-UNV-93-88-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

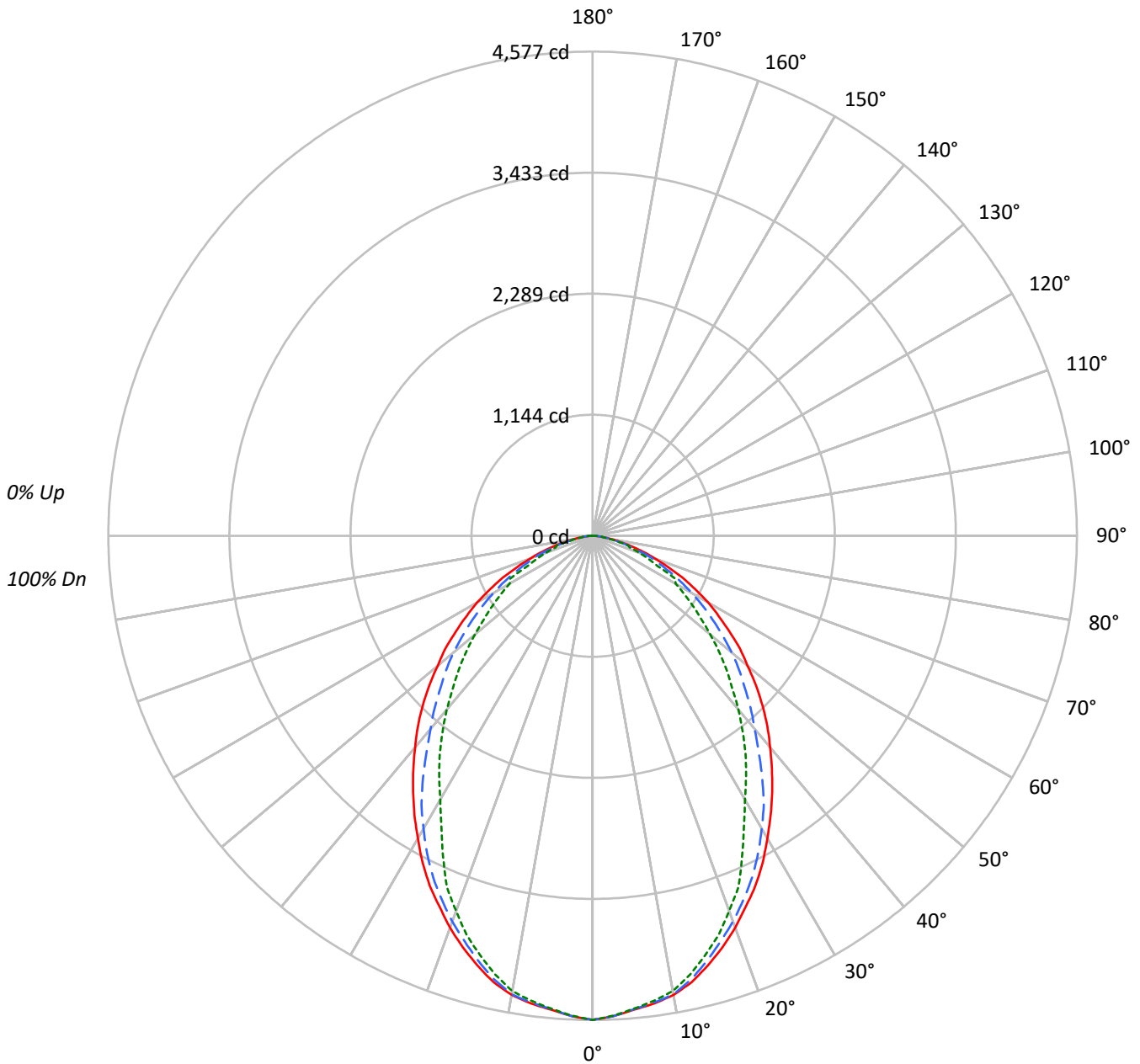
Lumens per Lamp: N/A  
Luminaire Lumens: 8985.0 lumens  
Efficiency: N/A  
Efficacy: 96.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 93.6  
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°	6158	6158	6158
5°	6074	6067	6060
10°	6022	6014	5971
15°	5859	5800	5719
20°	5644	5553	5402
25°	5412	5294	4964
30°	5130	4965	4472
35°	4858	4589	4137
40°	4582	4182	3764
45°	4319	3866	3403
50°	3998	3588	3035
55°	3699	3252	2718
60°	3389	2905	2435
65°	2982	2544	2156
70°	2456	2227	1832
75°	1953	1706	1788
80°	1312	1230	1148
85°	817	980	1144



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	426.0	4.7
10°-20°	1169.2	13.0
20°-30°	1618.7	18.0
30°-40°	1726.0	19.2
40°-50°	1574.7	17.5
50°-60°	1233.6	13.7
60°-70°	804.0	8.9
70°-80°	356.2	4.0
80°-90°	76.5	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°	3214.0	35.8
0°-40°	4940.0	55.0
0°-60°	7748.3	86.2
0°-90°	8985.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8985.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4577	4577	4577	4577	4577	
5°	4498	4492	4492	4487	4487	427
15°	4206	4206	4164	4122	4106	1183
25°	3646	3624	3566	3439	3344	1674
35°	2958	2937	2794	2582	2519	1849
45°	2270	2222	2032	1862	1788	1748
55°	1577	1529	1386	1222	1159	1414
65°	936	884	799	815	677	923
75°	376	349	328	312	344	403
85°	53	58	64	69	74	73
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4576.8	4576.8	4576.8	4576.8	4576.8
2.5°	4545.1	4545.1	4545.1	4539.8	4539.8
5°	4497.5	4492.2	4492.2	4486.9	4486.9
7.5°	4460.4	4455.1	4449.9	4444.6	4434.0
10°	4407.5	4407.5	4402.2	4375.8	4370.5
12.5°	4322.9	4317.6	4296.4	4259.4	4248.8
15°	4206.5	4206.5	4164.1	4121.8	4105.9
17.5°	4079.5	4074.2	4021.3	3978.9	3957.8
20°	3941.9	3931.3	3878.4	3809.6	3772.6
22.5°	3788.5	3788.5	3725.0	3635.0	3598.0
25°	3645.6	3624.4	3566.2	3439.2	3344.0
27.5°	3481.6	3449.8	3386.3	3206.4	3095.3
30°	3301.7	3285.8	3195.9	2963.0	2878.4
32.5°	3132.4	3105.9	3010.7	2767.3	2698.5
35°	2957.7	2936.6	2793.7	2582.1	2518.6
37.5°	2783.1	2756.7	2576.8	2407.5	2328.1
40°	2608.5	2576.8	2381.0	2227.6	2142.9
42.5°	2444.5	2402.2	2211.7	2047.7	1952.4
45°	2269.9	2222.3	2031.8	1862.5	1788.4
47.5°	2095.3	2053.0	1878.4	1703.7	1619.1
50°	1910.1	1873.1	1714.3	1539.7	1449.8
52.5°	1756.7	1698.5	1545.0	1370.4	1296.3
55°	1576.8	1529.1	1386.3	1222.3	1158.8
57.5°	1412.7	1365.1	1232.8	1079.4	1026.5
60°	1259.3	1190.5	1079.4	947.1	904.8
62.5°	1090.0	1037.1	941.8	830.7	883.6
65°	936.5	883.6	799.0	814.8	677.3
67.5°	767.2	740.8	666.7	592.6	571.4
70°	624.4	592.6	566.2	486.8	465.6
72.5°	497.4	465.6	428.6	386.3	370.4
75°	375.7	349.2	328.1	312.2	343.9
77.5°	259.3	248.7	232.8	216.9	211.6
80°	169.3	164.0	158.7	153.4	148.2
82.5°	100.5	100.5	100.5	100.5	100.5
85°	52.9	58.2	63.5	68.8	74.1
87.5°	31.7	31.7	37.0	42.3	47.6
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)