

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: P546832

Luminaire Tested: **FMR-24-4-LD4-2LO-40-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: P546832  
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-LD4-2LO-40-UNV-93-85-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

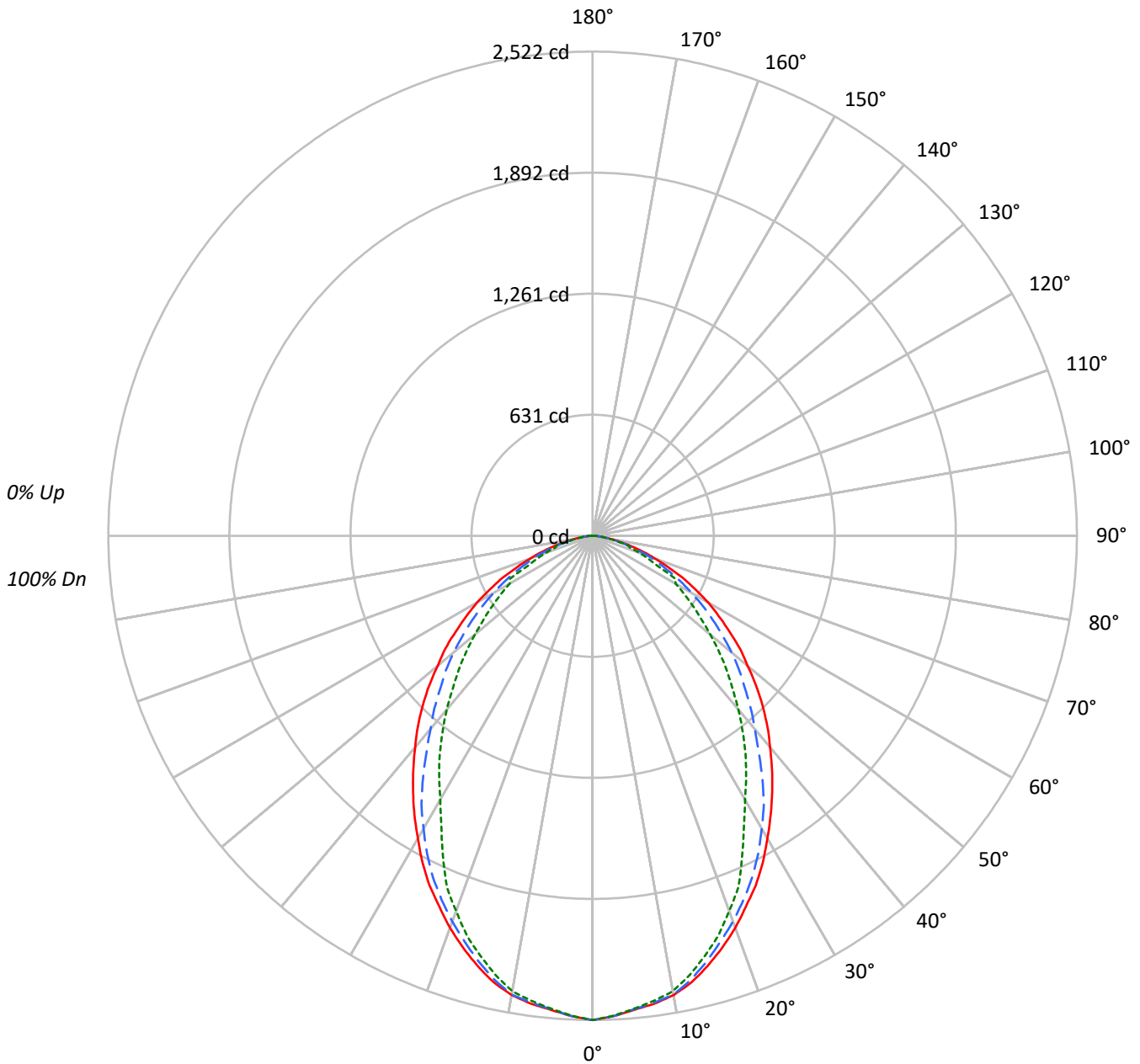
Lumens per Lamp: N/A  
Luminaire Lumens: 4952.0 lumens  
Efficiency: N/A  
Efficacy: 105.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 46.8  
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°	3394	3394	3394
5°	3348	3344	3340
10°	3319	3315	3291
15°	3229	3197	3152
20°	3111	3061	2977
25°	2983	2918	2736
30°	2827	2737	2465
35°	2678	2529	2280
40°	2525	2305	2074
45°	2380	2131	1876
50°	2204	1978	1672
55°	2038	1792	1498
60°	1868	1601	1342
65°	1643	1402	1188
70°	1354	1227	1009
75°	1076	940	986
80°	723	678	633
85°	451	540	630



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	234.8	4.7
10°-20°	644.4	13.0
20°-30°	892.1	18.0
30°-40°	951.3	19.2
40°-50°	867.9	17.5
50°-60°	679.9	13.7
60°-70°	443.1	8.9
70°-80°	196.3	4.0
80°-90°	42.1	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°	1771.4	35.8
0°-40°	2722.7	55.0
0°-60°	4270.4	86.2
0°-90°	4952.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4952.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2522	2522	2522	2522	2522	
5°	2479	2476	2476	2473	2473	235
15°	2318	2318	2295	2272	2263	652
25°	2009	1998	1966	1896	1843	922
35°	1630	1618	1540	1423	1388	1019
45°	1251	1225	1120	1026	986	964
55°	869	843	764	674	639	779
65°	516	487	440	449	373	509
75°	207	192	181	172	190	222
85°	29	32	35	38	41	40
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2522.5	2522.5	2522.5	2522.5	2522.5
2.5°	2505.0	2505.0	2505.0	2502.1	2502.1
5°	2478.7	2475.8	2475.8	2472.9	2472.9
7.5°	2458.3	2455.4	2452.5	2449.6	2443.7
10°	2429.2	2429.2	2426.2	2411.7	2408.8
12.5°	2382.5	2379.6	2367.9	2347.5	2341.7
15°	2318.4	2318.4	2295.0	2271.7	2262.9
17.5°	2248.4	2245.4	2216.3	2193.0	2181.3
20°	2172.5	2166.7	2137.5	2099.6	2079.2
22.5°	2088.0	2088.0	2053.0	2003.4	1983.0
25°	2009.2	1997.6	1965.5	1895.5	1843.0
27.5°	1918.8	1901.3	1866.3	1767.2	1706.0
30°	1819.7	1810.9	1761.4	1633.1	1586.4
32.5°	1726.4	1711.8	1659.3	1525.2	1487.2
35°	1630.1	1618.5	1539.7	1423.1	1388.1
37.5°	1533.9	1519.3	1420.2	1326.9	1283.1
40°	1437.7	1420.2	1312.3	1227.7	1181.0
42.5°	1347.3	1323.9	1219.0	1128.6	1076.1
45°	1251.0	1224.8	1119.8	1026.5	985.7
47.5°	1154.8	1131.5	1035.2	939.0	892.3
50°	1052.7	1032.3	944.8	848.6	799.0
52.5°	968.2	936.1	851.5	755.3	714.5
55°	869.0	842.8	764.0	673.6	638.6
57.5°	778.6	752.4	679.5	594.9	565.7
60°	694.0	656.1	594.9	522.0	498.7
62.5°	600.7	571.6	519.1	457.8	487.0
65°	516.2	487.0	440.3	449.1	373.3
67.5°	422.8	408.3	367.4	326.6	314.9
70°	344.1	326.6	312.0	268.3	256.6
72.5°	274.1	256.6	236.2	212.9	204.1
75°	207.0	192.5	180.8	172.1	189.6
77.5°	142.9	137.1	128.3	119.6	116.6
80°	93.3	90.4	87.5	84.6	81.7
82.5°	55.4	55.4	55.4	55.4	55.4
85°	29.2	32.1	35.0	37.9	40.8
87.5°	17.5	17.5	20.4	23.3	26.2
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)