

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: P546290

Luminaire Tested: **FMR-12-4-LD4-2LO-50-UNV-93-87-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: P546290  
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-LD4-2LO-50-UNV-93-87-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS 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**

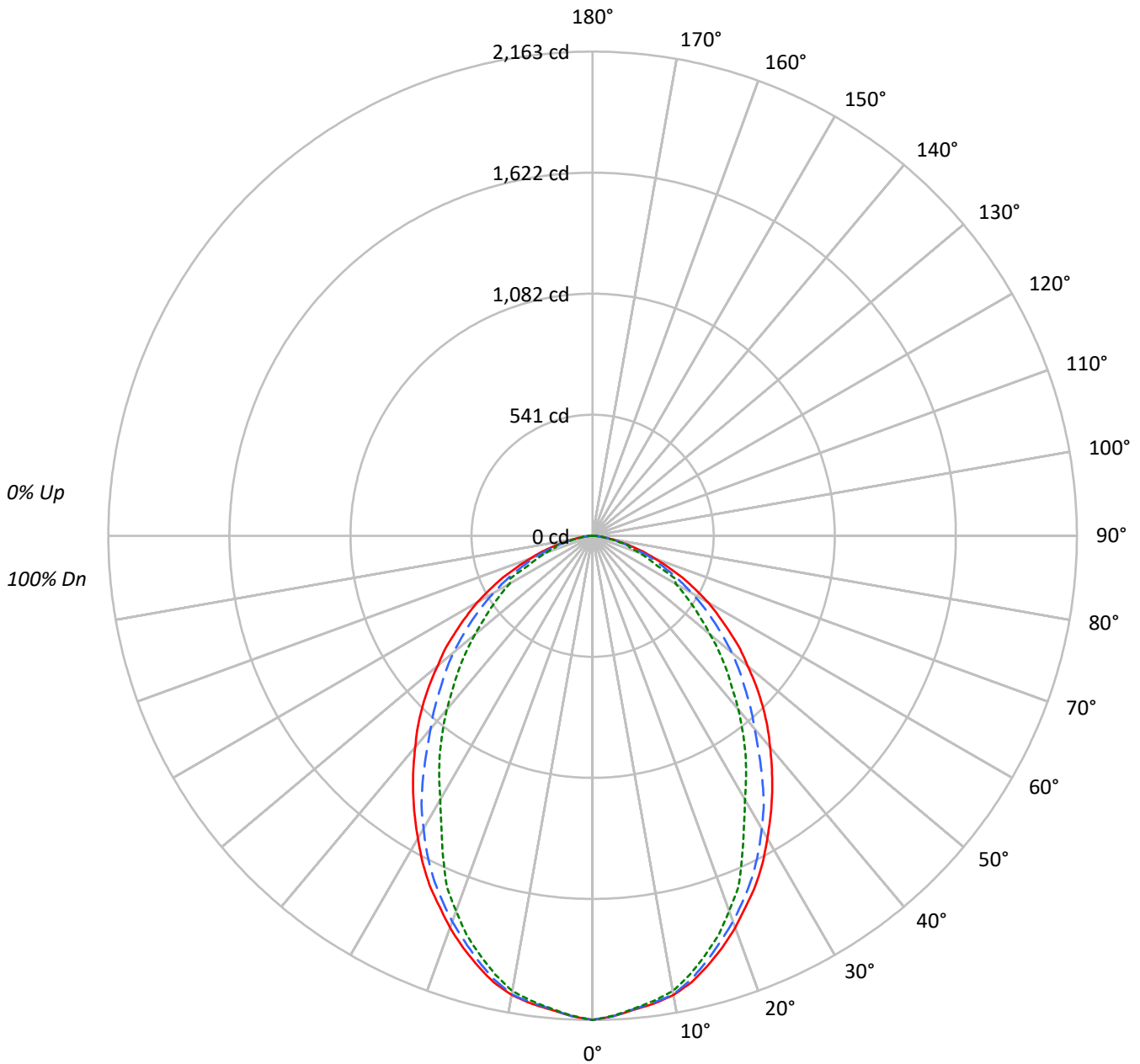
Lumens per Lamp: N/A  
Luminaire Lumens: 4246.0 lumens  
Efficiency: N/A  
Efficacy: 90.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 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°	5820	5820	5820
5°	5741	5734	5727
10°	5691	5684	5643
15°	5538	5482	5405
20°	5334	5249	5105
25°	5115	5004	4692
30°	4848	4693	4227
35°	4592	4337	3910
40°	4330	3953	3557
45°	4082	3654	3216
50°	3779	3391	2868
55°	3496	3073	2569
60°	3203	2745	2301
65°	2818	2404	2038
70°	2321	2105	1731
75°	1845	1612	1690
80°	1240	1162	1085
85°	772	926	1081



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	201.3	4.7
10°-20°	552.5	13.0
20°-30°	765.0	18.0
30°-40°	815.7	19.2
40°-50°	744.1	17.5
50°-60°	583.0	13.7
60°-70°	380.0	8.9
70°-80°	168.3	4.0
80°-90°	36.1	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°	1518.8	35.8
0°-40°	2334.5	55.0
0°-60°	3661.6	86.2
0°-90°	4246.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4246.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2163	2163	2163	2163	2163	
5°	2125	2123	2123	2120	2120	202
15°	1988	1988	1968	1948	1940	559
25°	1723	1713	1685	1625	1580	791
35°	1398	1388	1320	1220	1190	874
45°	1073	1050	960	880	845	826
55°	745	723	655	578	548	668
65°	443	418	378	385	320	436
75°	178	165	155	148	162	190
85°	25	28	30	32	35	35
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2162.9	2162.9	2162.9	2162.9	2162.9
2.5°	2147.9	2147.9	2147.9	2145.4	2145.4
5°	2125.3	2122.8	2122.8	2120.3	2120.3
7.5°	2107.8	2105.3	2102.8	2100.3	2095.3
10°	2082.8	2082.8	2080.3	2067.8	2065.3
12.5°	2042.8	2040.3	2030.3	2012.8	2007.8
15°	1987.8	1987.8	1967.8	1947.8	1940.3
17.5°	1927.8	1925.3	1900.3	1880.3	1870.3
20°	1862.8	1857.8	1832.8	1800.3	1782.8
22.5°	1790.3	1790.3	1760.3	1717.8	1700.3
25°	1722.8	1712.8	1685.3	1625.3	1580.3
27.5°	1645.3	1630.3	1600.3	1515.2	1462.7
30°	1560.3	1552.8	1510.2	1400.2	1360.2
32.5°	1480.2	1467.7	1422.7	1307.7	1275.2
35°	1397.7	1387.7	1320.2	1220.2	1190.2
37.5°	1315.2	1302.7	1217.7	1137.7	1100.2
40°	1232.7	1217.7	1125.2	1052.7	1012.7
42.5°	1155.2	1135.2	1045.2	967.7	922.7
45°	1072.7	1050.2	960.2	880.1	845.1
47.5°	990.2	970.2	887.6	805.1	765.1
50°	902.6	885.1	810.1	727.6	685.1
52.5°	830.1	802.6	730.1	647.6	612.6
55°	745.1	722.6	655.1	577.6	547.6
57.5°	667.6	645.1	582.6	510.1	485.1
60°	595.1	562.6	510.1	447.6	427.6
62.5°	515.1	490.1	445.1	392.6	417.6
65°	442.6	417.6	377.6	385.1	320.1
67.5°	362.6	350.1	315.1	280.0	270.0
70°	295.0	280.0	267.5	230.0	220.0
72.5°	235.0	220.0	202.5	182.5	175.0
75°	177.5	165.0	155.0	147.5	162.5
77.5°	122.5	117.5	110.0	102.5	100.0
80°	80.0	77.5	75.0	72.5	70.0
82.5°	47.5	47.5	47.5	47.5	47.5
85°	25.0	27.5	30.0	32.5	35.0
87.5°	15.0	15.0	17.5	20.0	22.5
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)