

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: P546227

Luminaire Tested: **FMR-12-4-LD4-2LO-35-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: P546227  
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-35-UNV-93-88-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

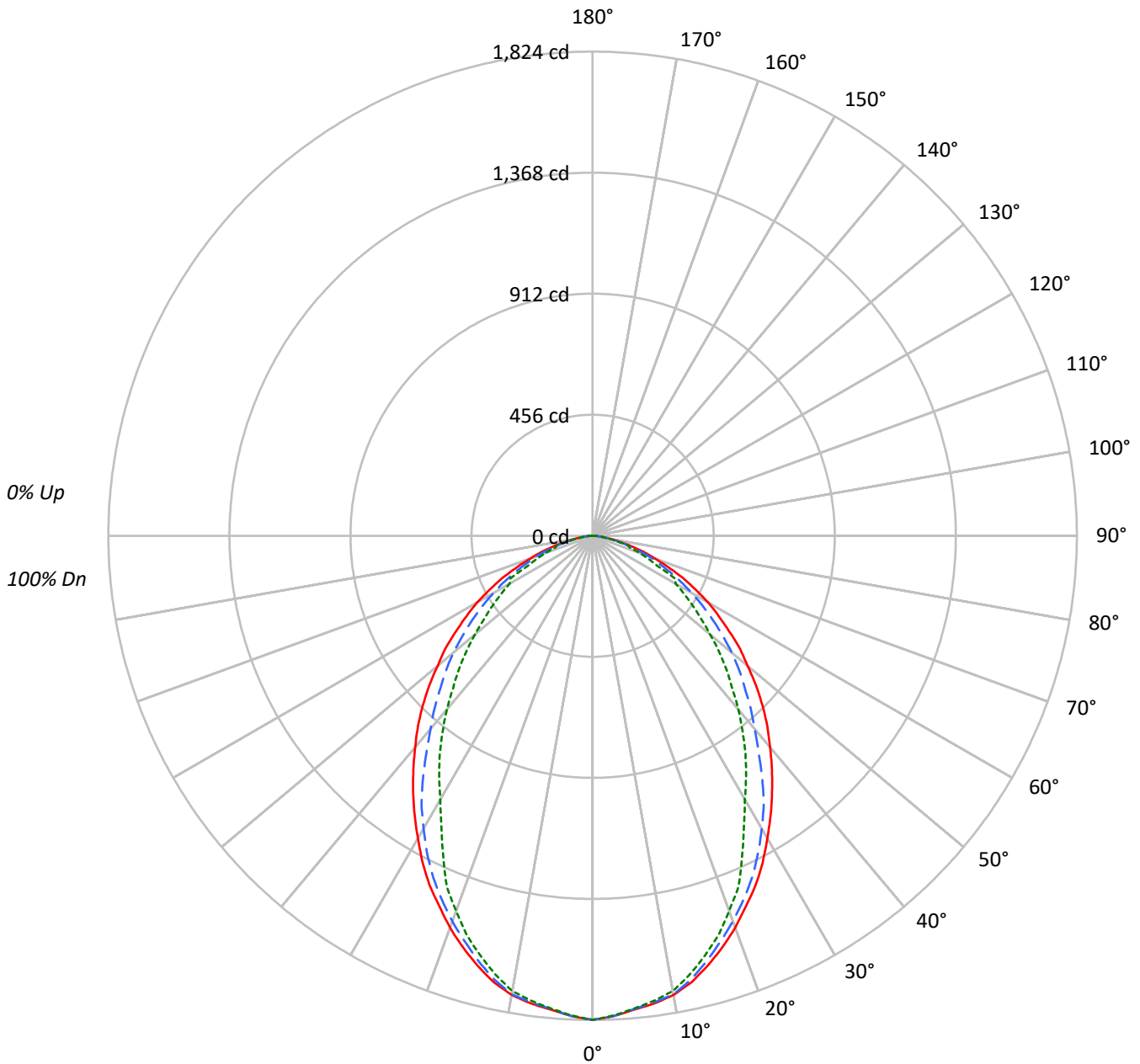
Lumens per Lamp: N/A  
Luminaire Lumens: 3580.0 lumens  
Efficiency: N/A  
Efficacy: 76.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	4907	4907	4907
5°	4841	4835	4829
10°	4799	4793	4758
15°	4669	4622	4558
20°	4498	4425	4305
25°	4313	4219	3956
30°	4088	3957	3564
35°	3871	3657	3297
40°	3651	3333	2999
45°	3442	3081	2712
50°	3186	2860	2418
55°	2947	2592	2166
60°	2701	2315	1940
65°	2376	2027	1719
70°	1958	1775	1459
75°	1556	1359	1424
80°	1046	979	914
85°	651	781	911



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	169.8	4.7
10°-20°	465.9	13.0
20°-30°	645.0	18.0
30°-40°	687.7	19.2
40°-50°	627.4	17.5
50°-60°	491.5	13.7
60°-70°	320.4	8.9
70°-80°	141.9	4.0
80°-90°	30.5	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°	1280.6	35.8
0°-40°	1968.3	55.0
0°-60°	3087.2	86.2
0°-90°	3580.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3580.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1824	1824	1824	1824	1824	
5°	1792	1790	1790	1788	1788	170
15°	1676	1676	1659	1642	1636	471
25°	1453	1444	1421	1370	1332	667
35°	1178	1170	1113	1029	1004	737
45°	904	885	810	742	713	697
55°	628	609	552	487	462	563
65°	373	352	318	325	270	368
75°	150	139	131	124	137	160
85°	21	23	25	27	30	29
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1823.6	1823.6	1823.6	1823.6	1823.6
2.5°	1811.0	1811.0	1811.0	1808.8	1808.8
5°	1792.0	1789.9	1789.9	1787.8	1787.8
7.5°	1777.2	1775.1	1773.0	1770.9	1766.7
10°	1756.1	1756.1	1754.0	1743.5	1741.4
12.5°	1722.4	1720.3	1711.9	1697.1	1692.9
15°	1676.0	1676.0	1659.2	1642.3	1636.0
17.5°	1625.4	1623.3	1602.2	1585.4	1576.9
20°	1570.6	1566.4	1545.3	1517.9	1503.2
22.5°	1509.5	1509.5	1484.2	1448.3	1433.6
25°	1452.6	1444.1	1420.9	1370.3	1332.4
27.5°	1387.2	1374.6	1349.3	1277.6	1233.3
30°	1315.5	1309.2	1273.4	1180.6	1146.9
32.5°	1248.1	1237.5	1199.6	1102.6	1075.2
35°	1178.5	1170.1	1113.1	1028.8	1003.5
37.5°	1108.9	1098.4	1026.7	959.2	927.6
40°	1039.3	1026.7	948.7	887.6	853.8
42.5°	974.0	957.1	881.2	815.9	777.9
45°	904.4	885.4	809.6	742.1	712.6
47.5°	834.9	818.0	748.4	678.8	645.1
50°	761.1	746.3	683.1	613.5	577.7
52.5°	699.9	676.7	615.6	546.0	516.5
55°	628.2	609.3	552.4	487.0	461.7
57.5°	562.9	543.9	491.2	430.1	409.0
60°	501.8	474.3	430.1	377.4	360.5
62.5°	434.3	413.2	375.3	331.0	352.1
65°	373.2	352.1	318.3	324.7	269.9
67.5°	305.7	295.1	265.6	236.1	227.7
70°	248.8	236.1	225.6	194.0	185.5
72.5°	198.2	185.5	170.8	153.9	147.6
75°	149.7	139.1	130.7	124.4	137.0
77.5°	103.3	99.1	92.8	86.4	84.3
80°	67.5	65.4	63.2	61.1	59.0
82.5°	40.1	40.1	40.1	40.1	40.1
85°	21.1	23.2	25.3	27.4	29.5
87.5°	12.6	12.6	14.8	16.9	19.0
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)