

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: P545820

Luminaire Tested: **FMR-12-4-LD4-1HI-35-UNV-80-94-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: P545820  
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-LD4-1HI-35-UNV-80-94-EDD  
Description: 1X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

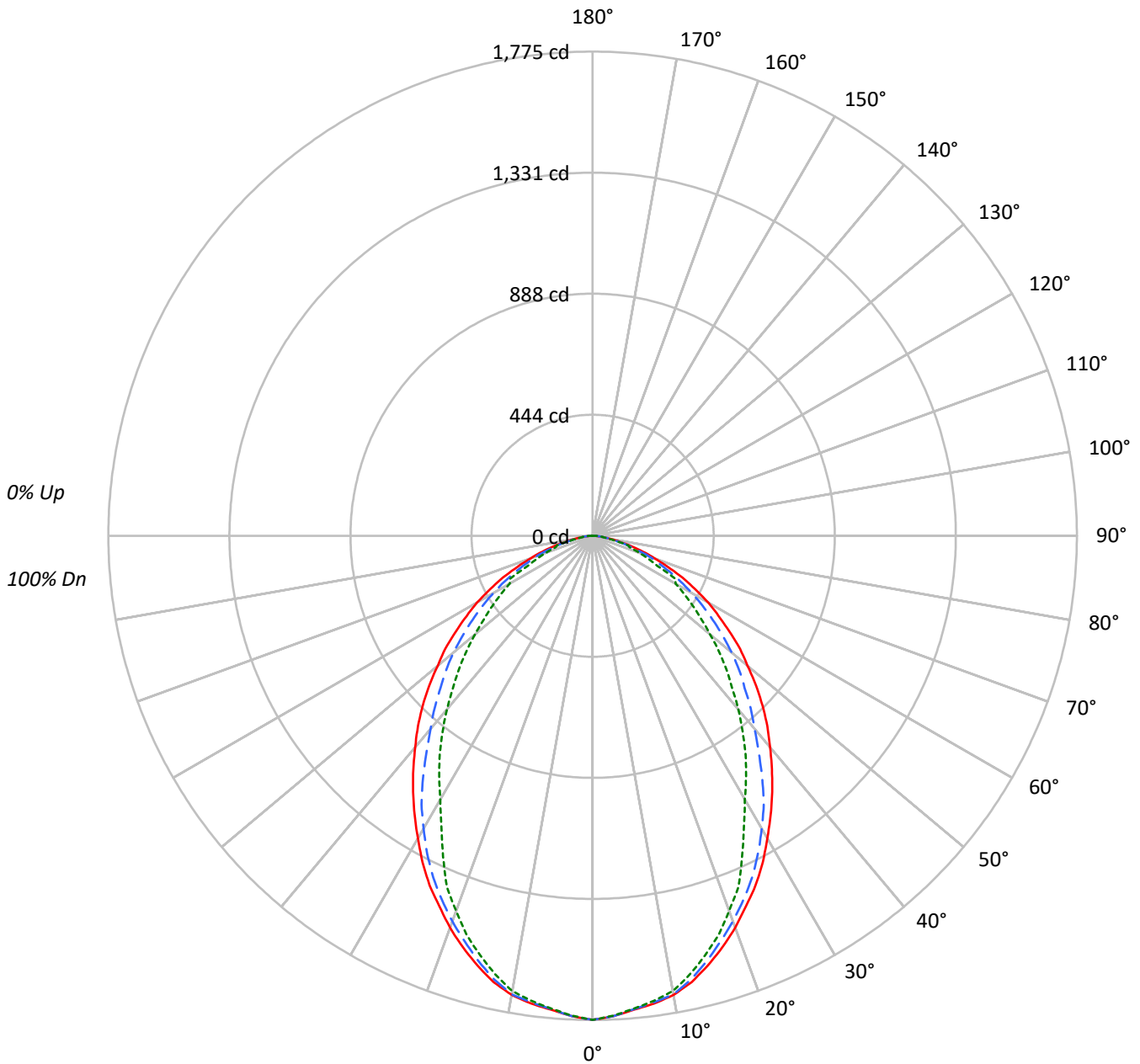
Lumens per Lamp: N/A  
Luminaire Lumens: 3484.0 lumens  
Efficiency: N/A  
Efficacy: 80.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 43.2  
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°	4776	4776	4776
5°	4711	4705	4700
10°	4670	4664	4631
15°	4544	4498	4435
20°	4377	4307	4189
25°	4197	4106	3850
30°	3978	3851	3468
35°	3768	3559	3208
40°	3553	3243	2919
45°	3350	2998	2639
50°	3101	2783	2354
55°	2868	2522	2108
60°	2628	2252	1888
65°	2312	1973	1672
70°	1905	1727	1420
75°	1515	1323	1387
80°	1018	955	890
85°	633	760	886



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	165.2	4.7
10°-20°	453.4	13.0
20°-30°	627.7	18.0
30°-40°	669.3	19.2
40°-50°	610.6	17.5
50°-60°	478.3	13.7
60°-70°	311.8	8.9
70°-80°	138.1	4.0
80°-90°	29.7	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°	1246.3	35.8
0°-40°	1915.5	55.0
0°-60°	3004.5	86.2
0°-90°	3484.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3484.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1775	1775	1775	1775	1775	
5°	1744	1742	1742	1740	1740	166
15°	1631	1631	1615	1598	1592	459
25°	1414	1405	1383	1334	1297	649
35°	1147	1139	1083	1001	977	717
45°	880	862	788	722	694	678
55°	611	593	538	474	449	548
65°	363	343	310	316	263	358
75°	146	135	127	121	133	156
85°	20	23	25	27	29	28
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1774.7	1774.7	1774.7	1774.7	1774.7
2.5°	1762.4	1762.4	1762.4	1760.3	1760.3
5°	1743.9	1741.9	1741.9	1739.8	1739.8
7.5°	1729.6	1727.5	1725.5	1723.4	1719.3
10°	1709.0	1709.0	1707.0	1696.7	1694.7
12.5°	1676.2	1674.2	1666.0	1651.6	1647.5
15°	1631.1	1631.1	1614.7	1598.3	1592.1
17.5°	1581.8	1579.8	1559.3	1542.9	1534.7
20°	1528.5	1524.4	1503.9	1477.2	1462.8
22.5°	1469.0	1469.0	1444.4	1409.5	1395.1
25°	1413.6	1405.4	1382.8	1333.6	1296.7
27.5°	1350.0	1337.7	1313.1	1243.3	1200.2
30°	1280.2	1274.1	1239.2	1148.9	1116.1
32.5°	1214.6	1204.3	1167.4	1073.0	1046.4
35°	1146.9	1138.7	1083.3	1001.2	976.6
37.5°	1079.2	1068.9	999.2	933.5	902.7
40°	1011.5	999.2	923.3	863.8	830.9
42.5°	947.9	931.5	857.6	794.0	757.1
45°	880.2	861.7	787.8	722.2	693.5
47.5°	812.5	796.1	728.3	660.6	627.8
50°	740.7	726.3	664.7	597.0	562.2
52.5°	681.2	658.6	599.1	531.4	502.7
55°	611.4	592.9	537.5	473.9	449.3
57.5°	547.8	529.3	478.0	418.5	398.0
60°	488.3	461.6	418.5	367.3	350.8
62.5°	422.6	402.1	365.2	322.1	342.6
65°	363.1	342.6	309.8	316.0	262.6
67.5°	297.5	287.2	258.5	229.8	221.6
70°	242.1	229.8	219.5	188.8	180.5
72.5°	192.9	180.5	166.2	149.8	143.6
75°	145.7	135.4	127.2	121.0	133.4
77.5°	100.5	96.4	90.3	84.1	82.1
80°	65.7	63.6	61.6	59.5	57.4
82.5°	39.0	39.0	39.0	39.0	39.0
85°	20.5	22.6	24.6	26.7	28.7
87.5°	12.3	12.3	14.4	16.4	18.5
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)