

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: P545908

Luminaire Tested: **FMR-12-4-LD4-1HI-50-UNV-93-94-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: P545908  
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-50-UNV-93-94-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187  
CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT  
LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

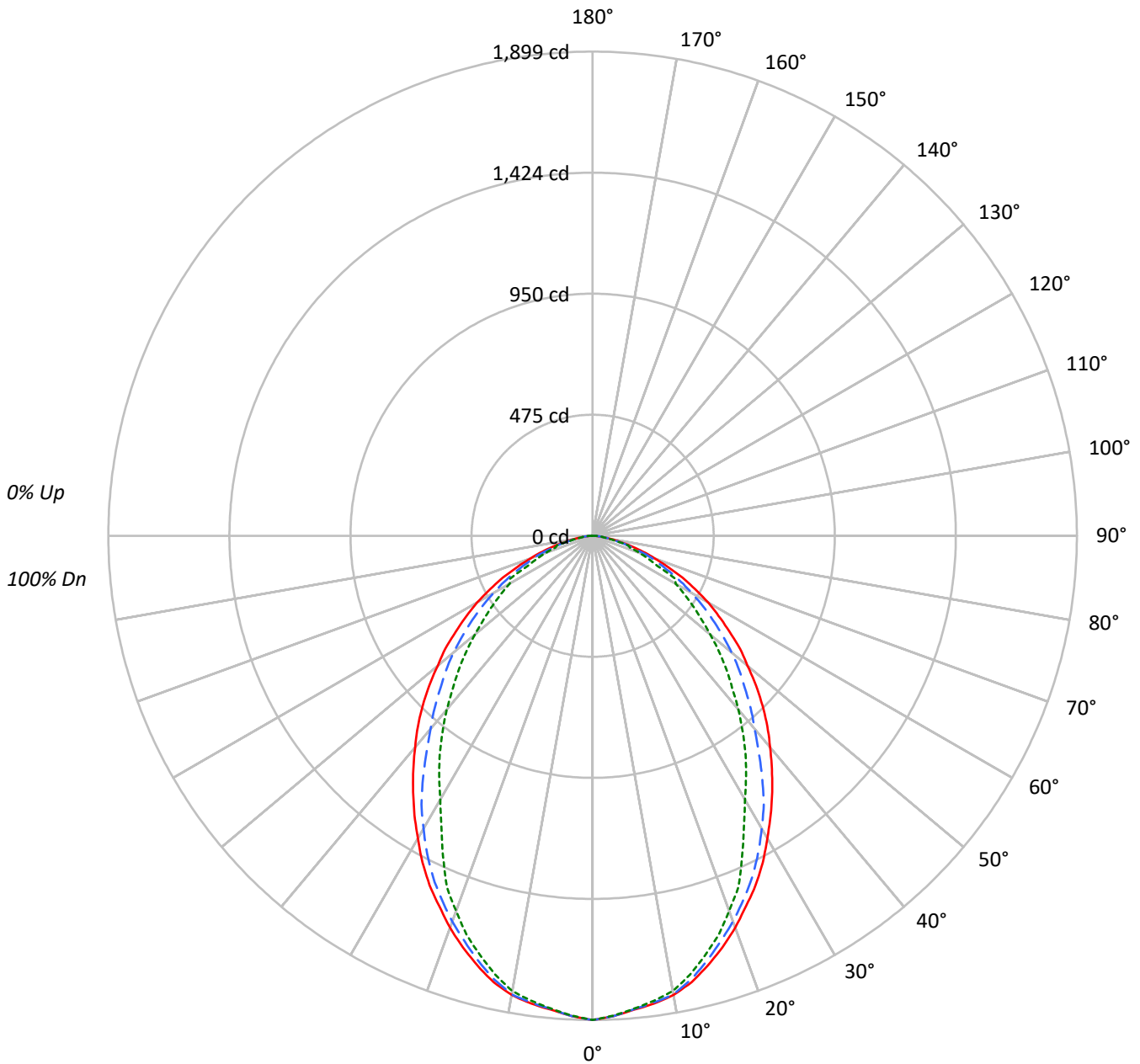
Lumens per Lamp: N/A  
Luminaire Lumens: 3728.0 lumens  
Efficiency: N/A  
Efficacy: 86.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 43.2  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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°	5110	5110	5110
5°	5041	5035	5029
10°	4997	4991	4955
15°	4862	4813	4746
20°	4684	4608	4483
25°	4491	4393	4120
30°	4257	4120	3711
35°	4031	3808	3433
40°	3802	3470	3123
45°	3584	3208	2824
50°	3318	2978	2518
55°	3069	2699	2256
60°	2812	2411	2020
65°	2474	2111	1789
70°	2039	1848	1520
75°	1621	1415	1484
80°	1089	1021	953
85°	679	812	948



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	176.8	4.7
10°-20°	485.1	13.0
20°-30°	671.6	18.0
30°-40°	716.2	19.2
40°-50°	653.3	17.5
50°-60°	511.8	13.7
60°-70°	333.6	8.9
70°-80°	147.8	4.0
80°-90°	31.7	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°	1333.5	35.8
0°-40°	2049.7	55.0
0°-60°	3214.9	86.2
0°-90°	3728.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3728.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1899	1899	1899	1899	1899	
5°	1866	1864	1864	1862	1862	177
15°	1745	1745	1728	1710	1704	491
25°	1513	1504	1480	1427	1388	694
35°	1227	1218	1159	1071	1045	767
45°	942	922	843	773	742	725
55°	654	634	575	507	481	587
65°	389	367	332	338	281	383
75°	156	145	136	130	143	167
85°	22	24	26	28	31	30
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1899.0	1899.0	1899.0	1899.0	1899.0
2.5°	1885.8	1885.8	1885.8	1883.6	1883.6
5°	1866.1	1863.9	1863.9	1861.7	1861.7
7.5°	1850.7	1848.5	1846.3	1844.1	1839.7
10°	1828.7	1828.7	1826.5	1815.6	1813.4
12.5°	1793.6	1791.4	1782.6	1767.3	1762.9
15°	1745.3	1745.3	1727.8	1710.2	1703.6
17.5°	1692.6	1690.4	1668.5	1650.9	1642.1
20°	1635.5	1631.2	1609.2	1580.7	1565.3
22.5°	1571.9	1571.9	1545.5	1508.2	1492.9
25°	1512.6	1503.8	1479.7	1427.0	1387.5
27.5°	1444.6	1431.4	1405.0	1330.4	1284.3
30°	1369.9	1363.3	1326.0	1229.4	1194.3
32.5°	1299.7	1288.7	1249.2	1148.2	1119.6
35°	1227.2	1218.4	1159.2	1071.3	1045.0
37.5°	1154.8	1143.8	1069.1	998.9	966.0
40°	1082.3	1069.1	987.9	924.2	889.1
42.5°	1014.3	996.7	917.7	849.6	810.1
45°	941.8	922.1	843.0	772.8	742.0
47.5°	869.4	851.8	779.4	706.9	671.8
50°	792.5	777.2	711.3	638.9	601.5
52.5°	728.9	704.7	641.0	568.6	537.9
55°	654.2	634.5	575.2	507.1	480.8
57.5°	586.2	566.4	511.5	447.9	425.9
60°	522.5	494.0	447.9	393.0	375.4
62.5°	452.2	430.3	390.8	344.7	366.6
65°	388.6	366.6	331.5	338.1	281.0
67.5°	318.3	307.4	276.6	245.9	237.1
70°	259.1	245.9	234.9	202.0	193.2
72.5°	206.4	193.2	177.8	160.3	153.7
75°	155.9	144.9	136.1	129.5	142.7
77.5°	107.6	103.2	96.6	90.0	87.8
80°	70.3	68.1	65.9	63.7	61.5
82.5°	41.7	41.7	41.7	41.7	41.7
85°	22.0	24.1	26.3	28.5	30.7
87.5°	13.2	13.2	15.4	17.6	19.8
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)