

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: P546226

Luminaire Tested: **FMR-12-4-LD4-2LO-35-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: P546226  
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-93-87-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

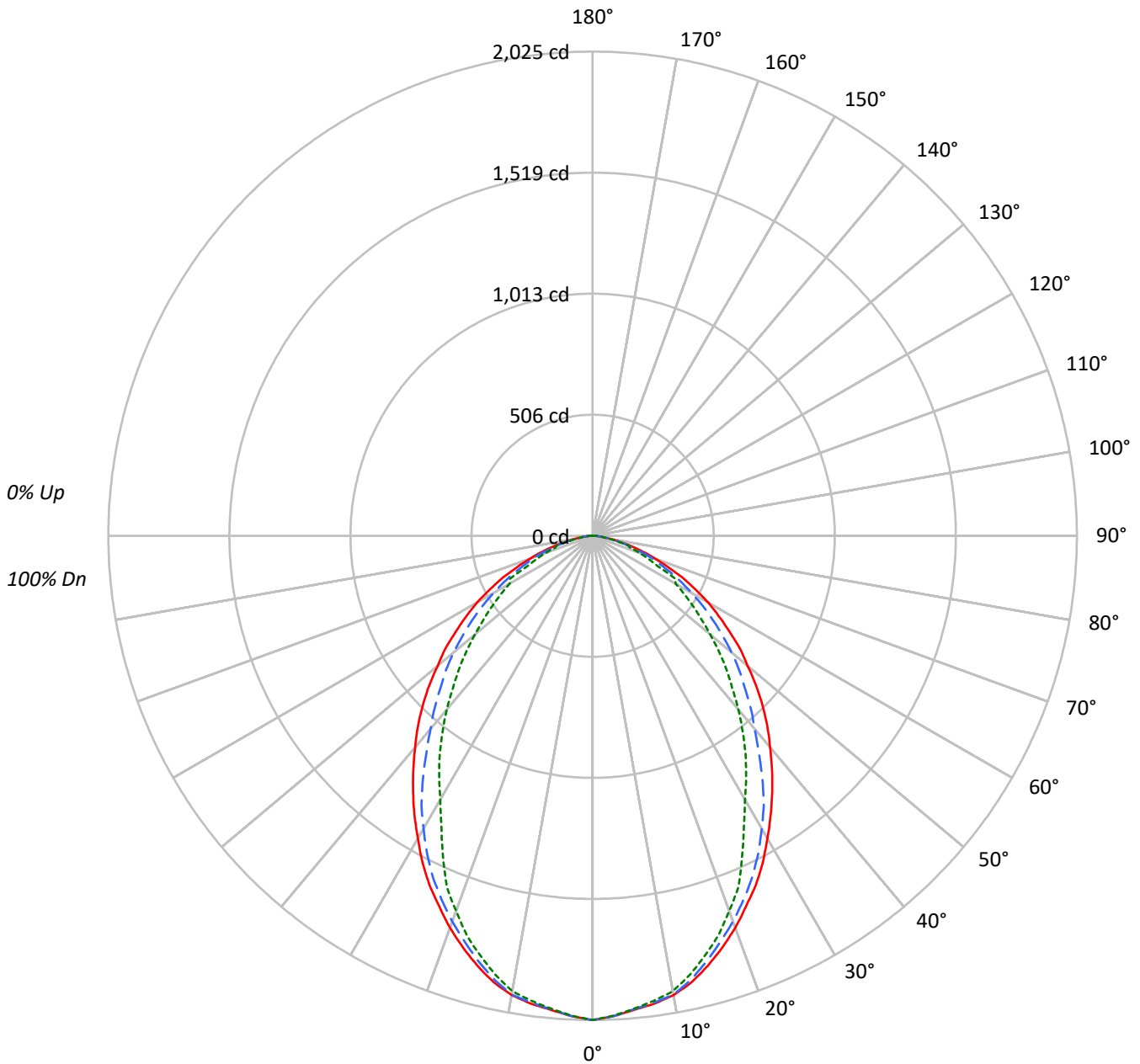
Lumens per Lamp: N/A  
Luminaire Lumens: 3976.0 lumens  
Efficiency: N/A  
Efficacy: 85.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	5450	5450	5450
5°	5376	5370	5363
10°	5329	5323	5285
15°	5186	5134	5062
20°	4995	4915	4781
25°	4790	4686	4394
30°	4540	4394	3958
35°	4300	4061	3661
40°	4055	3701	3331
45°	3823	3422	3012
50°	3538	3176	2686
55°	3273	2878	2406
60°	2999	2570	2155
65°	2639	2252	1908
70°	2174	1971	1621
75°	1728	1510	1582
80°	1161	1088	1017
85°	722	868	1013



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	188.5	4.7
10°-20°	517.4	13.0
20°-30°	716.3	18.0
30°-40°	763.8	19.2
40°-50°	696.8	17.5
50°-60°	545.9	13.7
60°-70°	355.8	8.9
70°-80°	157.6	4.0
80°-90°	33.8	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°	1422.2	35.8
0°-40°	2186.0	55.0
0°-60°	3428.7	86.2
0°-90°	3976.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3976.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2025	2025	2025	2025	2025	
5°	1990	1988	1988	1986	1986	189
15°	1861	1861	1843	1824	1817	523
25°	1613	1604	1578	1522	1480	741
35°	1309	1300	1236	1143	1114	818
45°	1004	983	899	824	791	774
55°	698	677	613	541	513	626
65°	414	391	354	361	300	408
75°	166	154	145	138	152	178
85°	23	26	28	30	33	32
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2025.3	2025.3	2025.3	2025.3	2025.3
2.5°	2011.3	2011.3	2011.3	2008.9	2008.9
5°	1990.2	1987.9	1987.9	1985.5	1985.5
7.5°	1973.8	1971.5	1969.1	1966.8	1962.1
10°	1950.4	1950.4	1948.1	1936.3	1934.0
12.5°	1912.9	1910.6	1901.2	1884.8	1880.2
15°	1861.4	1861.4	1842.7	1824.0	1816.9
17.5°	1805.2	1802.9	1779.5	1760.7	1751.4
20°	1744.4	1739.7	1716.3	1685.8	1669.4
22.5°	1676.5	1676.5	1648.4	1608.5	1592.2
25°	1613.2	1603.9	1578.1	1521.9	1479.8
27.5°	1540.6	1526.6	1498.5	1418.9	1369.7
30°	1461.0	1454.0	1414.2	1311.2	1273.7
32.5°	1386.1	1374.4	1332.3	1224.6	1194.1
35°	1308.8	1299.5	1236.3	1142.6	1114.5
37.5°	1231.6	1219.9	1140.3	1065.3	1030.2
40°	1154.3	1140.3	1053.6	985.7	948.3
42.5°	1081.7	1063.0	978.7	906.1	864.0
45°	1004.5	983.4	899.1	824.2	791.4
47.5°	927.2	908.5	831.2	753.9	716.5
50°	845.2	828.9	758.6	681.4	641.5
52.5°	777.3	751.6	683.7	606.4	573.6
55°	697.7	676.7	613.4	540.9	512.8
57.5°	625.2	604.1	545.5	477.6	454.2
60°	557.3	526.8	477.6	419.1	400.4
62.5°	482.3	458.9	416.8	367.6	391.0
65°	414.4	391.0	353.6	360.6	299.7
67.5°	339.5	327.8	295.0	262.2	252.9
70°	276.3	262.2	250.5	215.4	206.0
72.5°	220.1	206.0	189.7	170.9	163.9
75°	166.2	154.5	145.2	138.1	152.2
77.5°	114.7	110.0	103.0	96.0	93.7
80°	74.9	72.6	70.2	67.9	65.6
82.5°	44.5	44.5	44.5	44.5	44.5
85°	23.4	25.8	28.1	30.4	32.8
87.5°	14.0	14.0	16.4	18.7	21.1
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)