

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: P546262

Luminaire Tested: **FMR-12-4-LD4-2LO-40-UNV-93-97-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: P546262  
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-40-UNV-93-97-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375  
CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT  
LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

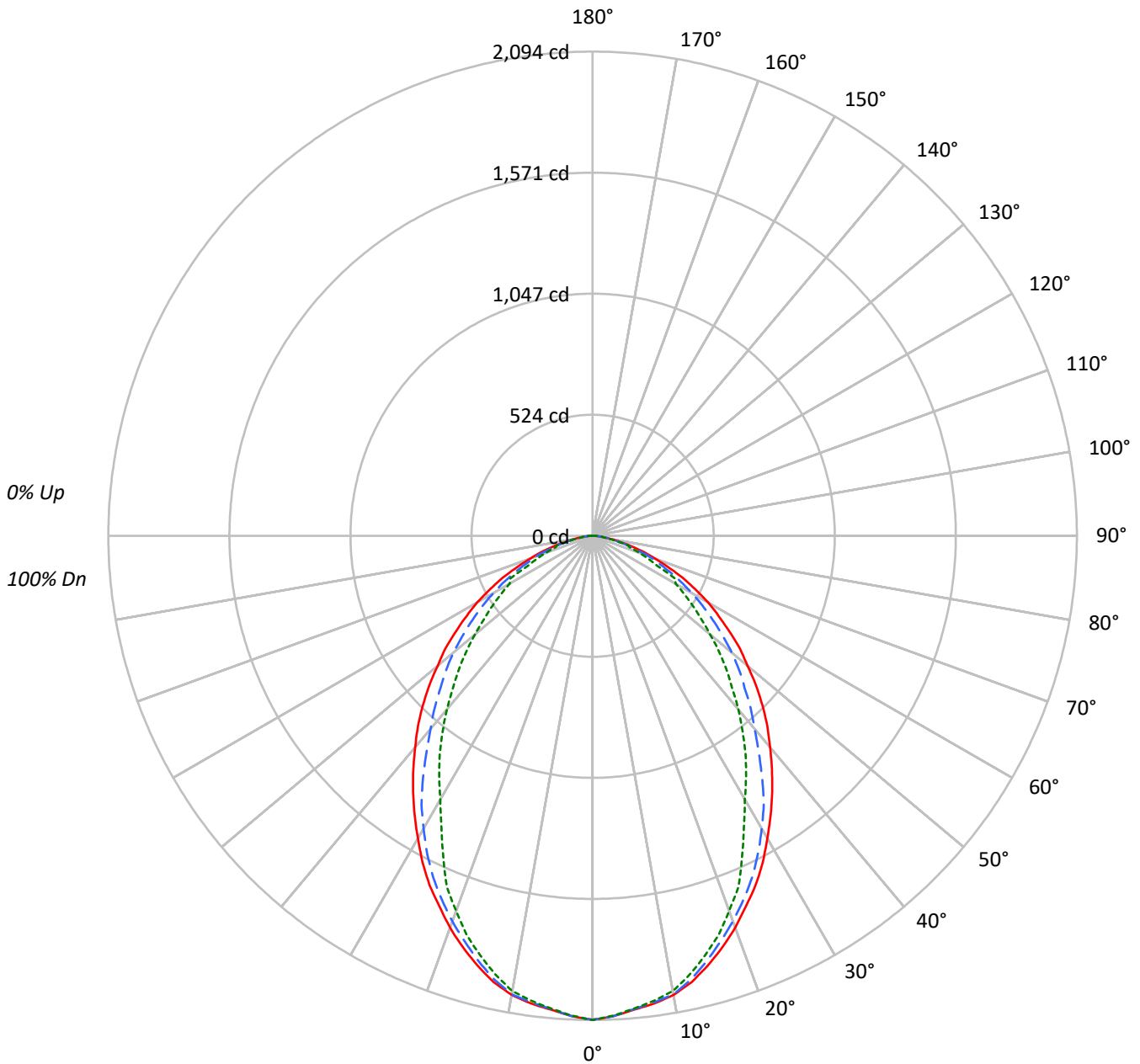
Lumens per Lamp: N/A  
Luminaire Lumens: 4110.0 lumens  
Efficiency: N/A  
Efficacy: 87.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 46.8  
Input Voltage (V): NR  
Input Current (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°	5634	5634	5634
5°	5557	5551	5544
10°	5509	5502	5463
15°	5361	5307	5232
20°	5164	5080	4942
25°	4951	4844	4542
30°	4693	4543	4091
35°	4445	4198	3785
40°	4192	3826	3443
45°	3951	3537	3113
50°	3658	3283	2776
55°	3384	2975	2487
60°	3100	2657	2228
65°	2728	2327	1973
70°	2247	2038	1676
75°	1786	1561	1635
80°	1201	1125	1051
85°	747	895	1047



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	194.9	4.7
10°-20°	534.8	13.0
20°-30°	740.5	18.0
30°-40°	789.5	19.2
40°-50°	720.3	17.5
50°-60°	564.3	13.7
60°-70°	367.8	8.9
70°-80°	162.9	4.0
80°-90°	35.0	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°	1470.2	35.8
0°-40°	2259.7	55.0
0°-60°	3544.3	86.2
0°-90°	4110.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4110.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2094	2094	2094	2094	2094	
5°	2057	2055	2055	2052	2052	195
15°	1924	1924	1905	1885	1878	541
25°	1668	1658	1631	1573	1530	766
35°	1353	1343	1278	1181	1152	846
45°	1038	1016	929	852	818	800
55°	721	700	634	559	530	647
65°	428	404	366	373	310	422
75°	172	160	150	143	157	184
85°	24	27	29	32	34	34
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2093.6	2093.6	2093.6	2093.6	2093.6
2.5°	2079.1	2079.1	2079.1	2076.6	2076.6
5°	2057.3	2054.9	2054.9	2052.4	2052.4
7.5°	2040.3	2037.9	2035.5	2033.1	2028.2
10°	2016.1	2016.1	2013.7	2001.6	1999.2
12.5°	1977.4	1975.0	1965.3	1948.4	1943.5
15°	1924.2	1924.2	1904.8	1885.4	1878.2
17.5°	1866.1	1863.6	1839.4	1820.1	1810.4
20°	1803.1	1798.3	1774.1	1742.6	1725.7
22.5°	1733.0	1733.0	1703.9	1662.8	1645.8
25°	1667.6	1657.9	1631.3	1573.2	1529.6
27.5°	1592.6	1578.1	1549.0	1466.7	1415.9
30°	1510.3	1503.0	1461.9	1355.4	1316.7
32.5°	1432.8	1420.7	1377.2	1265.8	1234.4
35°	1353.0	1343.3	1277.9	1181.1	1152.1
37.5°	1273.1	1261.0	1178.7	1101.2	1064.9
40°	1193.2	1178.7	1089.1	1019.0	980.2
42.5°	1118.2	1098.8	1011.7	936.7	893.1
45°	1038.3	1016.5	929.4	852.0	818.1
47.5°	958.4	939.1	859.2	779.3	740.6
50°	873.7	856.8	784.2	704.3	663.2
52.5°	803.5	776.9	706.7	626.9	593.0
55°	721.3	699.5	634.1	559.1	530.1
57.5°	646.2	624.4	563.9	493.7	469.5
60°	576.0	544.6	493.7	433.2	413.9
62.5°	498.6	474.4	430.8	380.0	404.2
65°	428.4	404.2	365.5	372.7	309.8
67.5°	350.9	338.8	305.0	271.1	261.4
70°	285.6	271.1	259.0	222.7	213.0
72.5°	227.5	213.0	196.0	176.7	169.4
75°	171.8	159.7	150.1	142.8	157.3
77.5°	118.6	113.8	106.5	99.2	96.8
80°	77.5	75.0	72.6	70.2	67.8
82.5°	46.0	46.0	46.0	46.0	46.0
85°	24.2	26.6	29.0	31.5	33.9
87.5°	14.5	14.5	16.9	19.4	21.8
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)