

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: P546456

Luminaire Tested: **FMR-24-4-LD4-1HI-40-UNV-80-85-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: P546456  
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-24-4-LD4-1HI-40-UNV-80-85-EDD  
Description: 2X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

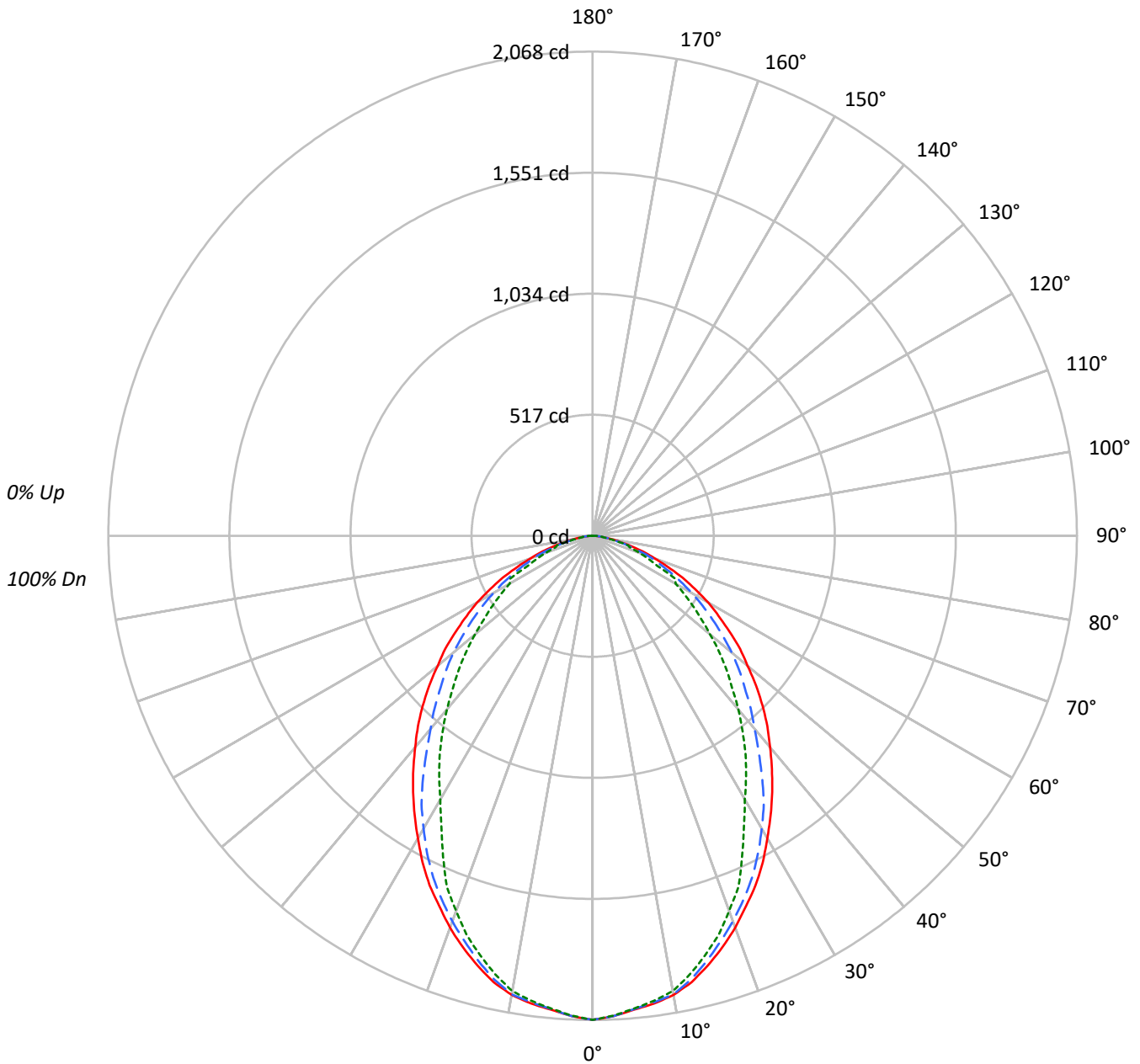
Lumens per Lamp: N/A  
Luminaire Lumens: 4059.0 lumens  
Efficiency: N/A  
Efficacy: 94.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	2782	2782	2782
5°	2744	2741	2738
10°	2720	2717	2698
15°	2647	2620	2584
20°	2550	2509	2440
25°	2445	2392	2243
30°	2317	2243	2020
35°	2195	2073	1869
40°	2070	1889	1700
45°	1951	1747	1537
50°	1806	1621	1371
55°	1671	1469	1228
60°	1531	1312	1100
65°	1347	1149	974
70°	1110	1006	827
75°	882	770	808
80°	593	556	518
85°	369	443	517



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	192.5	4.7
10°-20°	528.2	13.0
20°-30°	731.3	18.0
30°-40°	779.7	19.2
40°-50°	711.4	17.5
50°-60°	557.3	13.7
60°-70°	363.2	8.9
70°-80°	160.9	4.0
80°-90°	34.5	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°	1451.9	35.8
0°-40°	2231.7	55.0
0°-60°	3500.3	86.2
0°-90°	4059.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4059.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2068	2068	2068	2068	2068	
5°	2032	2029	2029	2027	2027	193
15°	1900	1900	1881	1862	1855	534
25°	1647	1637	1611	1554	1511	756
35°	1336	1327	1262	1166	1138	835
45°	1025	1004	918	841	808	790
55°	712	691	626	552	524	639
65°	423	399	361	368	306	417
75°	170	158	148	141	155	182
85°	24	26	29	31	34	33
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2067.6	2067.6	2067.6	2067.6	2067.6
2.5°	2053.3	2053.3	2053.3	2050.9	2050.9
5°	2031.7	2029.4	2029.4	2027.0	2027.0
7.5°	2015.0	2012.6	2010.2	2007.8	2003.1
10°	1991.1	1991.1	1988.7	1976.8	1974.4
12.5°	1952.9	1950.5	1940.9	1924.2	1919.4
15°	1900.3	1900.3	1881.2	1862.0	1854.9
17.5°	1842.9	1840.5	1816.6	1797.5	1787.9
20°	1780.8	1776.0	1752.1	1721.0	1704.3
22.5°	1711.4	1711.4	1682.8	1642.1	1625.4
25°	1646.9	1637.3	1611.1	1553.7	1510.7
27.5°	1572.8	1558.5	1529.8	1448.5	1398.3
30°	1491.5	1484.4	1443.7	1338.6	1300.3
32.5°	1415.1	1403.1	1360.1	1250.1	1219.0
35°	1336.2	1326.6	1262.1	1166.5	1137.8
37.5°	1257.3	1245.3	1164.1	1087.6	1051.7
40°	1178.4	1164.1	1075.6	1006.3	968.1
42.5°	1104.3	1085.2	999.1	925.0	882.0
45°	1025.4	1003.9	917.9	841.4	807.9
47.5°	946.6	927.4	848.6	769.7	731.4
50°	862.9	846.2	774.5	695.6	654.9
52.5°	793.6	767.3	698.0	619.1	585.6
55°	712.3	690.8	626.3	552.2	523.5
57.5°	638.2	616.7	556.9	487.6	463.7
60°	568.9	537.8	487.6	427.9	408.7
62.5°	492.4	468.5	425.5	375.3	399.2
65°	423.1	399.2	360.9	368.1	306.0
67.5°	346.6	334.6	301.2	267.7	258.2
70°	282.1	267.7	255.8	219.9	210.3
72.5°	224.7	210.3	193.6	174.5	167.3
75°	169.7	157.8	148.2	141.0	155.4
77.5°	117.1	112.3	105.2	98.0	95.6
80°	76.5	74.1	71.7	69.3	66.9
82.5°	45.4	45.4	45.4	45.4	45.4
85°	23.9	26.3	28.7	31.1	33.5
87.5°	14.3	14.3	16.7	19.1	21.5
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)