

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: P546917

Luminaire Tested: **FMR-24-4-LD4-2STD-40-UNV-81-96-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: P546917  
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-LD4-2STD-40-UNV-81-96-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

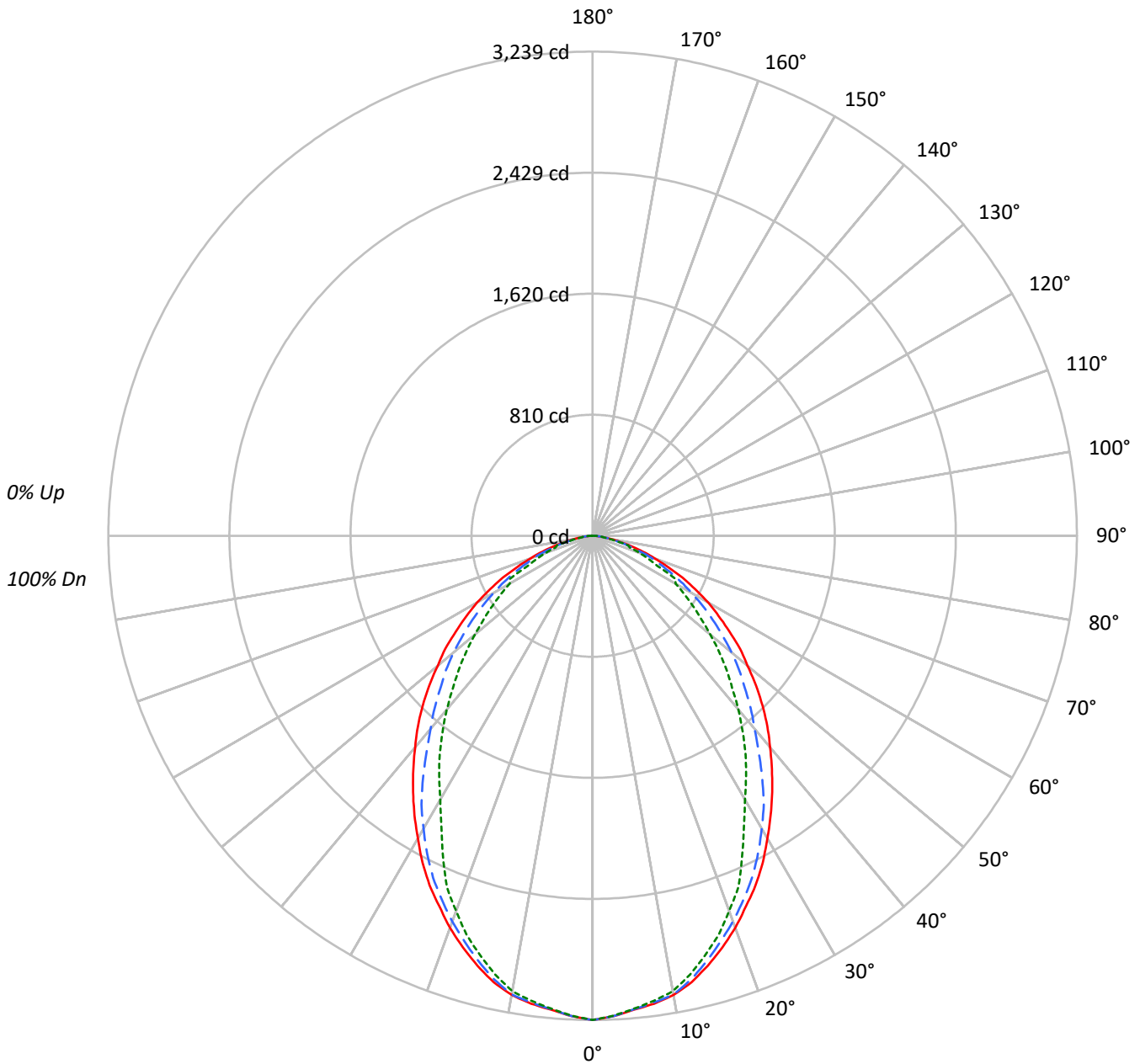
Lumens per Lamp: N/A  
Luminaire Lumens: 6359.0 lumens  
Efficiency: N/A  
Efficacy: 95.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 66.6  
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°	4358	4358	4358
5°	4299	4294	4289
10°	4262	4257	4226
15°	4147	4105	4048
20°	3995	3930	3823
25°	3830	3747	3514
30°	3630	3514	3165
35°	3438	3248	2928
40°	3243	2960	2664
45°	3057	2736	2408
50°	2830	2540	2148
55°	2618	2301	1924
60°	2398	2056	1723
65°	2110	1800	1526
70°	1738	1576	1296
75°	1382	1207	1265
80°	928	870	813
85°	577	693	809



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	301.5	4.7
10°-20°	827.5	13.0
20°-30°	1145.6	18.0
30°-40°	1221.6	19.2
40°-50°	1114.4	17.5
50°-60°	873.1	13.7
60°-70°	569.0	8.9
70°-80°	252.1	4.0
80°-90°	54.1	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°	2274.7	35.8
0°-40°	3496.2	55.0
0°-60°	5483.7	86.2
0°-90°	6359.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6359.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3239	3239	3239	3239	3239	
5°	3183	3179	3179	3176	3176	302
15°	2977	2977	2947	2917	2906	837
25°	2580	2565	2524	2434	2367	1185
35°	2093	2078	1977	1827	1782	1309
45°	1606	1573	1438	1318	1266	1237
55°	1116	1082	981	865	820	1001
65°	663	625	566	577	479	653
75°	266	247	232	221	243	285
85°	37	41	45	49	52	52
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3239.2	3239.2	3239.2	3239.2	3239.2
2.5°	3216.7	3216.7	3216.7	3213.0	3213.0
5°	3183.0	3179.3	3179.3	3175.5	3175.5
7.5°	3156.8	3153.1	3149.3	3145.6	3138.1
10°	3119.4	3119.4	3115.6	3096.9	3093.1
12.5°	3059.4	3055.7	3040.7	3014.5	3007.0
15°	2977.1	2977.1	2947.1	2917.1	2905.9
17.5°	2887.2	2883.4	2846.0	2816.0	2801.1
20°	2789.8	2782.3	2744.9	2696.2	2670.0
22.5°	2681.2	2681.2	2636.3	2572.6	2546.4
25°	2580.1	2565.1	2523.9	2434.1	2366.7
27.5°	2464.0	2441.6	2396.6	2269.3	2190.7
30°	2336.7	2325.5	2261.8	2097.0	2037.1
32.5°	2216.9	2198.2	2130.8	1958.5	1909.8
35°	2093.3	2078.3	1977.2	1827.4	1782.5
37.5°	1969.7	1951.0	1823.7	1703.9	1647.7
40°	1846.2	1823.7	1685.1	1576.5	1516.6
42.5°	1730.1	1700.1	1565.3	1449.2	1381.8
45°	1606.5	1572.8	1438.0	1318.1	1265.7
47.5°	1482.9	1453.0	1329.4	1205.8	1145.9
50°	1351.8	1325.6	1213.3	1089.7	1026.1
52.5°	1243.2	1202.1	1093.5	969.9	917.5
55°	1115.9	1082.2	981.1	865.0	820.1
57.5°	999.8	966.1	872.5	763.9	726.5
60°	891.2	842.6	763.9	670.3	640.3
62.5°	771.4	734.0	666.6	587.9	625.4
65°	662.8	625.4	565.5	576.7	479.3
67.5°	543.0	524.3	471.8	419.4	404.4
70°	441.9	419.4	400.7	344.5	329.5
72.5°	352.0	329.5	303.3	273.4	262.1
75°	265.9	247.2	232.2	220.9	243.4
77.5°	183.5	176.0	164.8	153.5	149.8
80°	119.8	116.1	112.3	108.6	104.9
82.5°	71.1	71.1	71.1	71.1	71.1
85°	37.4	41.2	44.9	48.7	52.4
87.5°	22.5	22.5	26.2	30.0	33.7
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)