

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: P546963

Luminaire Tested: **FMR-24-4-LD4-2STD-50-UNV-93-88-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: P546963  
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-50-UNV-93-88-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

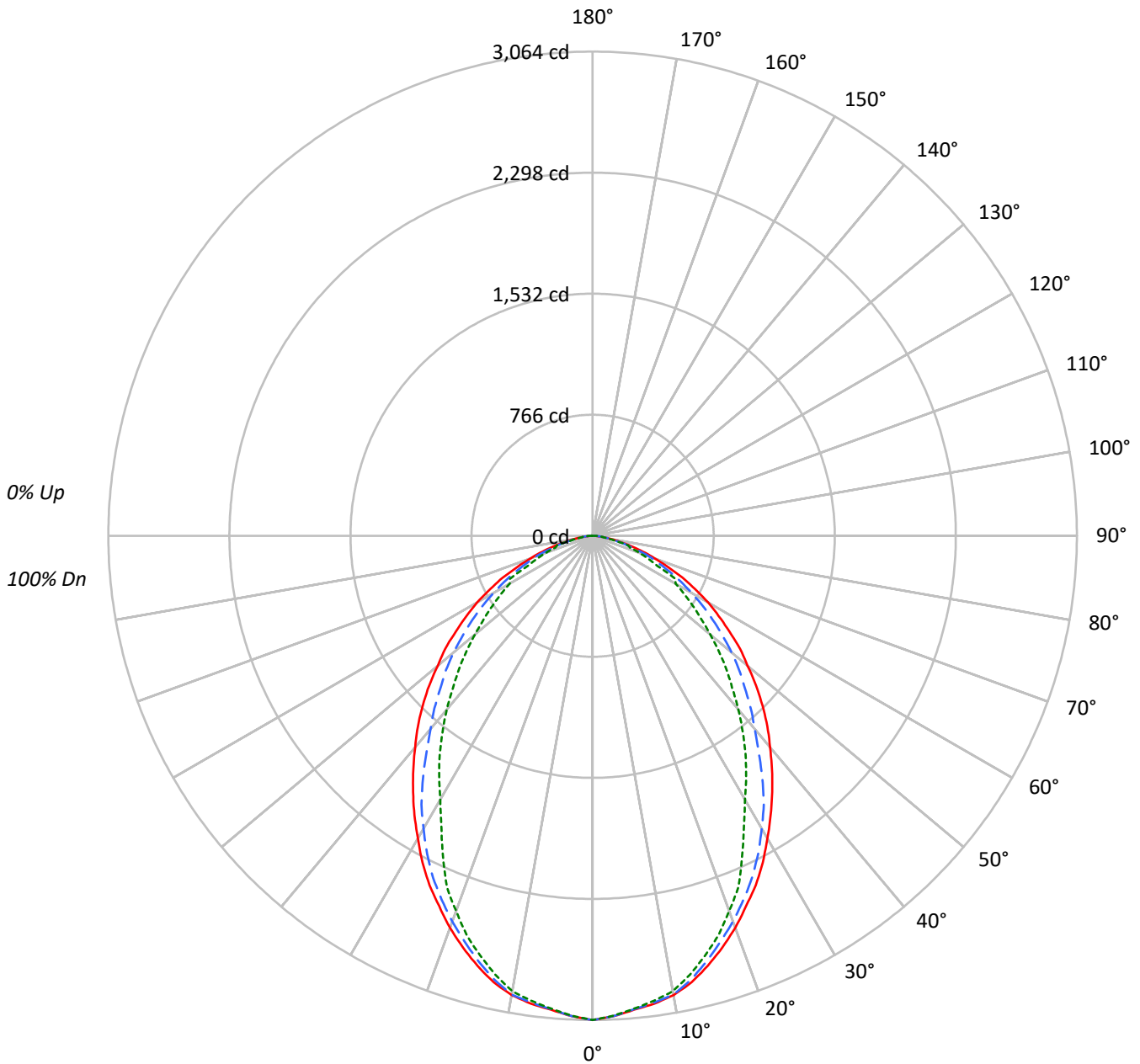
Lumens per Lamp: N/A  
Luminaire Lumens: 6016.0 lumens  
Efficiency: N/A  
Efficacy: 90.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	4123	4123	4123
5°	4067	4062	4058
10°	4032	4027	3998
15°	3923	3884	3830
20°	3779	3718	3617
25°	3624	3545	3324
30°	3435	3324	2994
35°	3253	3073	2770
40°	3068	2800	2520
45°	2892	2589	2278
50°	2677	2403	2032
55°	2476	2177	1820
60°	2269	1945	1630
65°	1996	1703	1444
70°	1644	1491	1227
75°	1307	1142	1197
80°	879	824	769
85°	546	656	766



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	285.3	4.7
10°-20°	782.9	13.0
20°-30°	1083.8	18.0
30°-40°	1155.7	19.2
40°-50°	1054.3	17.5
50°-60°	826.0	13.7
60°-70°	538.3	8.9
70°-80°	238.5	4.0
80°-90°	51.2	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°	2152.0	35.8
0°-40°	3307.7	55.0
0°-60°	5188.0	86.2
0°-90°	6016.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6016.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3064	3064	3064	3064	3064	
5°	3011	3008	3008	3004	3004	286
15°	2816	2816	2788	2760	2749	792
25°	2441	2427	2388	2303	2239	1121
35°	1980	1966	1871	1729	1686	1238
45°	1520	1488	1360	1247	1197	1171
55°	1056	1024	928	818	776	947
65°	627	592	535	546	454	618
75°	252	234	220	209	230	270
85°	35	39	42	46	50	49
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3064.5	3064.5	3064.5	3064.5	3064.5
2.5°	3043.2	3043.2	3043.2	3039.7	3039.7
5°	3011.3	3007.8	3007.8	3004.2	3004.2
7.5°	2986.5	2983.0	2979.4	2975.9	2968.8
10°	2951.1	2951.1	2947.6	2929.8	2926.3
12.5°	2894.4	2890.9	2876.7	2851.9	2844.8
15°	2816.5	2816.5	2788.1	2759.8	2749.2
17.5°	2731.5	2727.9	2692.5	2664.1	2650.0
20°	2639.3	2632.3	2596.8	2550.8	2526.0
22.5°	2536.6	2536.6	2494.1	2433.9	2409.1
25°	2440.9	2426.8	2387.8	2302.8	2239.0
27.5°	2331.1	2309.9	2267.4	2146.9	2072.5
30°	2210.7	2200.0	2139.8	1983.9	1927.3
32.5°	2097.3	2079.6	2015.8	1852.9	1806.8
35°	1980.4	1966.2	1870.6	1728.9	1686.3
37.5°	1863.5	1845.8	1725.3	1611.9	1558.8
40°	1746.6	1725.3	1594.2	1491.5	1434.8
42.5°	1636.7	1608.4	1480.9	1371.0	1307.3
45°	1519.8	1488.0	1360.4	1247.0	1197.4
47.5°	1402.9	1374.6	1257.7	1140.8	1084.1
50°	1278.9	1254.1	1147.8	1030.9	970.7
52.5°	1176.2	1137.2	1034.5	917.6	868.0
55°	1055.7	1023.9	928.2	818.4	775.9
57.5°	945.9	914.0	825.5	722.7	687.3
60°	843.2	797.1	722.7	634.2	605.8
62.5°	729.8	694.4	630.6	556.2	591.6
65°	627.1	591.6	535.0	545.6	453.5
67.5°	513.7	496.0	446.4	396.8	382.6
70°	418.0	396.8	379.1	325.9	311.8
72.5°	333.0	311.8	287.0	258.6	248.0
75°	251.5	233.8	219.6	209.0	230.3
77.5°	173.6	166.5	155.9	145.3	141.7
80°	113.4	109.8	106.3	102.7	99.2
82.5°	67.3	67.3	67.3	67.3	67.3
85°	35.4	39.0	42.5	46.1	49.6
87.5°	21.3	21.3	24.8	28.3	31.9
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)