

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: P546113

Luminaire Tested: **FMR-12-4-LD4-2HI-35-UNV-81-86-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: P546113  
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-LD4-2HI-35-UNV-81-86-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

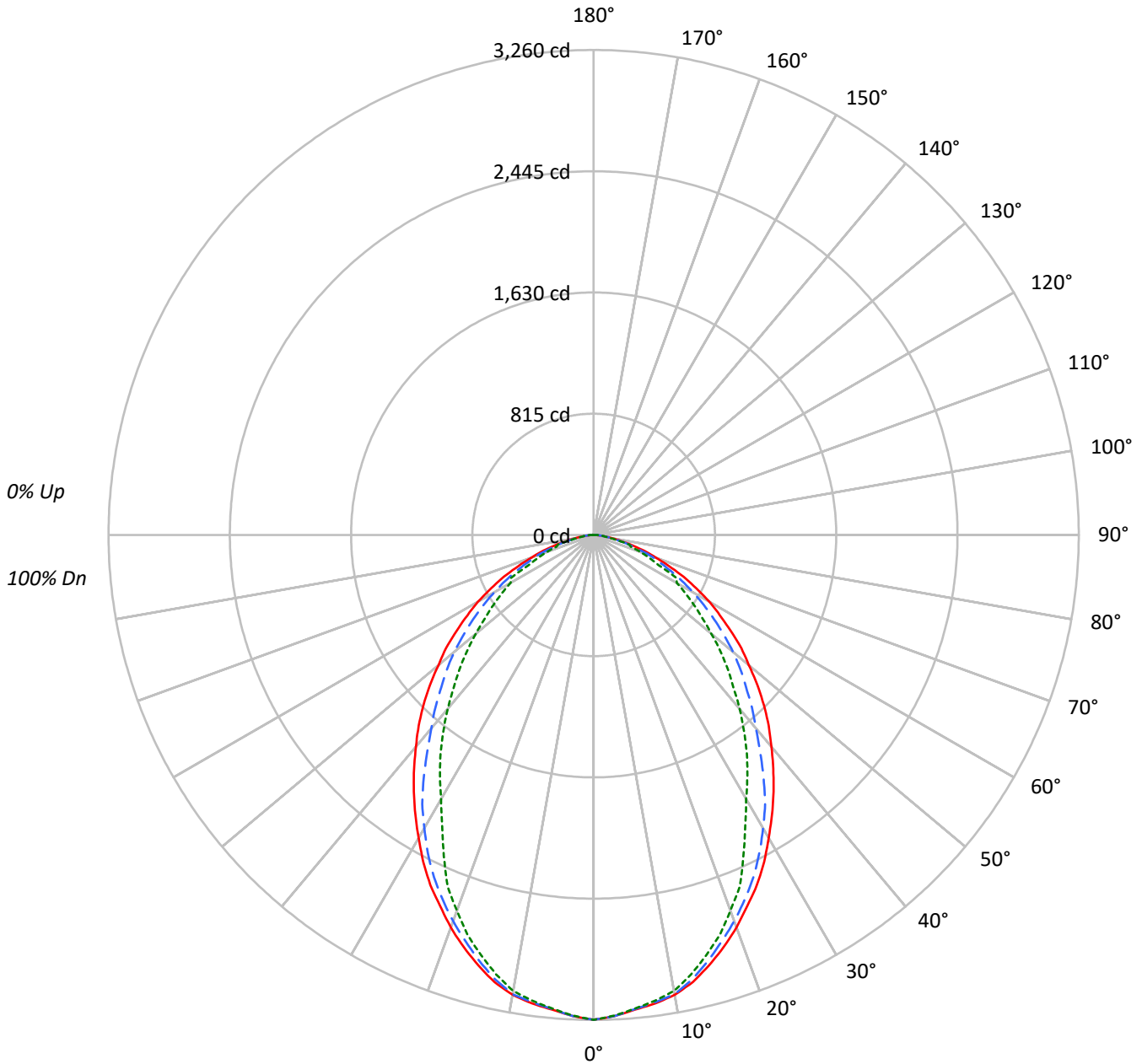
Lumens per Lamp: N/A  
Luminaire Lumens: 6399.0 lumens  
Efficiency: N/A  
Efficacy: 74.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 86.4  
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°	8772	8772	8772
5°	8652	8642	8632
10°	8577	8567	8505
15°	8346	8262	8147
20°	8039	7910	7694
25°	7709	7541	7071
30°	7306	7072	6370
35°	6920	6536	5892
40°	6526	5957	5361
45°	6152	5507	4847
50°	5695	5111	4322
55°	5268	4632	3872
60°	4827	4137	3468
65°	4247	3623	3071
70°	3499	3172	2609
75°	2781	2429	2546
80°	1869	1751	1635
85°	1164	1396	1630



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	303.4	4.7
10°-20°	832.7	13.0
20°-30°	1152.8	18.0
30°-40°	1229.3	19.2
40°-50°	1121.4	17.5
50°-60°	878.6	13.7
60°-70°	572.6	8.9
70°-80°	253.7	4.0
80°-90°	54.5	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°	2289.0	35.8
0°-40°	3518.2	55.0
0°-60°	5518.2	86.2
0°-90°	6399.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6399.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3260	3260	3260	3260	3260	
5°	3203	3199	3199	3196	3196	304
15°	2996	2996	2966	2936	2924	842
25°	2596	2581	2540	2449	2382	1192
35°	2106	2091	1990	1839	1794	1317
45°	1617	1583	1447	1326	1274	1245
55°	1123	1089	987	870	825	1007
65°	667	629	569	580	482	657
75°	268	249	234	222	245	287
85°	38	42	45	49	53	52
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3259.6	3259.6	3259.6	3259.6	3259.6
2.5°	3237.0	3237.0	3237.0	3233.2	3233.2
5°	3203.0	3199.3	3199.3	3195.5	3195.5
7.5°	3176.7	3172.9	3169.1	3165.4	3157.8
10°	3139.0	3139.0	3135.2	3116.4	3112.6
12.5°	3078.7	3074.9	3059.8	3033.5	3025.9
15°	2995.8	2995.8	2965.6	2935.5	2924.2
17.5°	2905.3	2901.6	2863.9	2833.7	2818.7
20°	2807.4	2799.8	2762.2	2713.2	2686.8
22.5°	2698.1	2698.1	2652.9	2588.8	2562.4
25°	2596.3	2581.3	2539.8	2449.4	2381.6
27.5°	2479.5	2456.9	2411.7	2283.6	2204.4
30°	2351.4	2340.1	2276.0	2110.2	2049.9
32.5°	2230.8	2212.0	2144.2	1970.8	1921.8
35°	2106.5	2091.4	1989.7	1838.9	1793.7
37.5°	1982.1	1963.3	1835.2	1714.6	1658.0
40°	1857.8	1835.2	1695.7	1586.4	1526.2
42.5°	1740.9	1710.8	1575.1	1458.3	1390.5
45°	1616.6	1582.7	1447.0	1326.4	1273.7
47.5°	1492.2	1462.1	1337.7	1213.4	1153.1
50°	1360.4	1334.0	1220.9	1096.6	1032.5
52.5°	1251.1	1209.6	1100.3	976.0	923.2
55°	1122.9	1089.0	987.3	870.5	825.3
57.5°	1006.1	972.2	878.0	768.7	731.0
60°	896.9	847.9	768.7	674.5	644.4
62.5°	776.3	738.6	670.8	591.6	629.3
65°	667.0	629.3	569.0	580.3	482.3
67.5°	546.4	527.6	474.8	422.0	407.0
70°	444.7	422.0	403.2	346.7	331.6
72.5°	354.2	331.6	305.2	275.1	263.8
75°	267.5	248.7	233.6	222.3	244.9
77.5°	184.6	177.1	165.8	154.5	150.7
80°	120.6	116.8	113.0	109.3	105.5
82.5°	71.6	71.6	71.6	71.6	71.6
85°	37.7	41.5	45.2	49.0	52.8
87.5°	22.6	22.6	26.4	30.1	33.9
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)