

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: P546184

Luminaire Tested: **FMR-12-4-LD4-2HI-50-UNV-82-85-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: P546184  
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-50-UNV-82-85-EDD  
Description: 1X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

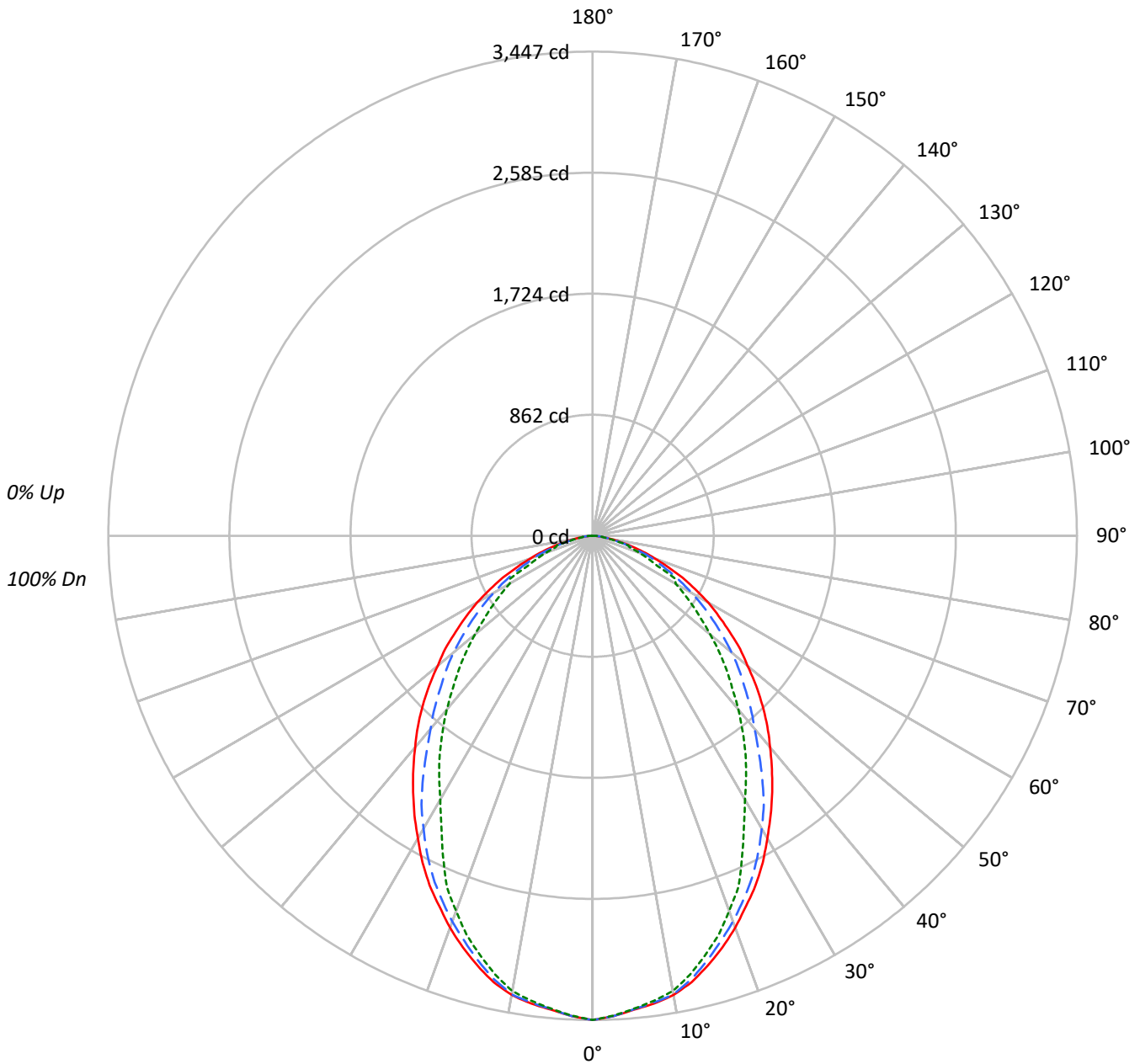
Lumens per Lamp: N/A  
Luminaire Lumens: 6767.0 lumens  
Efficiency: N/A  
Efficacy: 78.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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

TEST NUMBER: P546184

CATALOG NUMBER: FMR-12-4-LD4-2HI-50-UNV-82-85-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P546184

CATALOG NUMBER: FMR-12-4-LD4-2HI-50-UNV-82-85-EDD

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20					20					
RC	80					70					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°	9276	9276	9276
5°	9150	9139	9128
10°	9071	9060	8994
15°	8826	8737	8615
20°	8502	8365	8137
25°	8152	7975	7478
30°	7727	7479	6736
35°	7318	6912	6231
40°	6901	6299	5669
45°	6506	5823	5126
50°	6023	5405	4571
55°	5571	4898	4094
60°	5104	4375	3667
65°	4491	3831	3248
70°	3699	3355	2759
75°	2941	2569	2693
80°	1976	1852	1729
85°	1229	1476	1723



TEST NUMBER: P546184

CATALOG NUMBER: FMR-12-4-LD4-2HI-50-UNV-82-85-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	320.9	4.7
10°-20°	880.6	13.0
20°-30°	1219.1	18.0
30°-40°	1300.0	19.2
40°-50°	1185.9	17.5
50°-60°	929.1	13.7
60°-70°	605.5	8.9
70°-80°	268.3	4.0
80°-90°	57.6	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°	2420.6	35.8
0°-40°	3720.6	55.0
0°-60°	5835.6	86.2
0°-90°	6767.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6767.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3447	3447	3447	3447	3447	
5°	3387	3383	3383	3379	3379	322
15°	3168	3168	3136	3104	3092	891
25°	2746	2730	2686	2590	2518	1261
35°	2228	2212	2104	1945	1897	1393
45°	1710	1674	1530	1403	1347	1317
55°	1188	1152	1044	920	873	1065
65°	705	666	602	614	510	695
75°	283	263	247	235	259	303
85°	40	44	48	52	56	55
90°	0	0	0	0	0	



TEST NUMBER: P546184

CATALOG NUMBER: FMR-12-4-LD4-2HI-50-UNV-82-85-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3447.0	3447.0	3447.0	3447.0	3447.0
2.5°	3423.1	3423.1	3423.1	3419.1	3419.1
5°	3387.2	3383.3	3383.3	3379.3	3379.3
7.5°	3359.3	3355.4	3351.4	3347.4	3339.4
10°	3319.5	3319.5	3315.5	3295.6	3291.6
12.5°	3255.7	3251.8	3235.8	3207.9	3199.9
15°	3168.1	3168.1	3136.2	3104.3	3092.4
17.5°	3072.4	3068.4	3028.6	2996.7	2980.8
20°	2968.8	2960.9	2921.0	2869.2	2841.3
22.5°	2853.3	2853.3	2805.4	2737.7	2709.8
25°	2745.7	2729.7	2685.9	2590.2	2518.5
27.5°	2622.1	2598.2	2550.4	2414.9	2331.2
30°	2486.6	2474.7	2406.9	2231.6	2167.8
32.5°	2359.1	2339.2	2267.5	2084.2	2032.3
35°	2227.6	2211.7	2104.1	1944.7	1896.9
37.5°	2096.1	2076.2	1940.7	1813.2	1753.4
40°	1964.6	1940.7	1793.2	1677.7	1613.9
42.5°	1841.1	1809.2	1665.7	1542.2	1470.5
45°	1709.6	1673.7	1530.2	1402.7	1346.9
47.5°	1578.1	1546.2	1414.7	1283.2	1219.4
50°	1438.6	1410.7	1291.1	1159.6	1091.9
52.5°	1323.0	1279.2	1163.6	1032.1	976.3
55°	1187.5	1151.7	1044.1	920.5	872.7
57.5°	1064.0	1028.1	928.5	812.9	773.1
60°	948.4	896.6	812.9	713.3	681.4
62.5°	820.9	781.1	709.3	625.6	665.5
65°	705.3	665.5	601.7	613.7	510.1
67.5°	577.8	557.9	502.1	446.3	430.4
70°	470.2	446.3	426.4	366.6	350.7
72.5°	374.6	350.7	322.8	290.9	278.9
75°	282.9	263.0	247.1	235.1	259.0
77.5°	195.3	187.3	175.3	163.4	159.4
80°	127.5	123.5	119.5	115.6	111.6
82.5°	75.7	75.7	75.7	75.7	75.7
85°	39.8	43.8	47.8	51.8	55.8
87.5°	23.9	23.9	27.9	31.9	35.9
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)