

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: P546197

Luminaire Tested: **FMR-12-4-LD4-2HI-50-UNV-93-96-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: P546197  
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-93-96-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

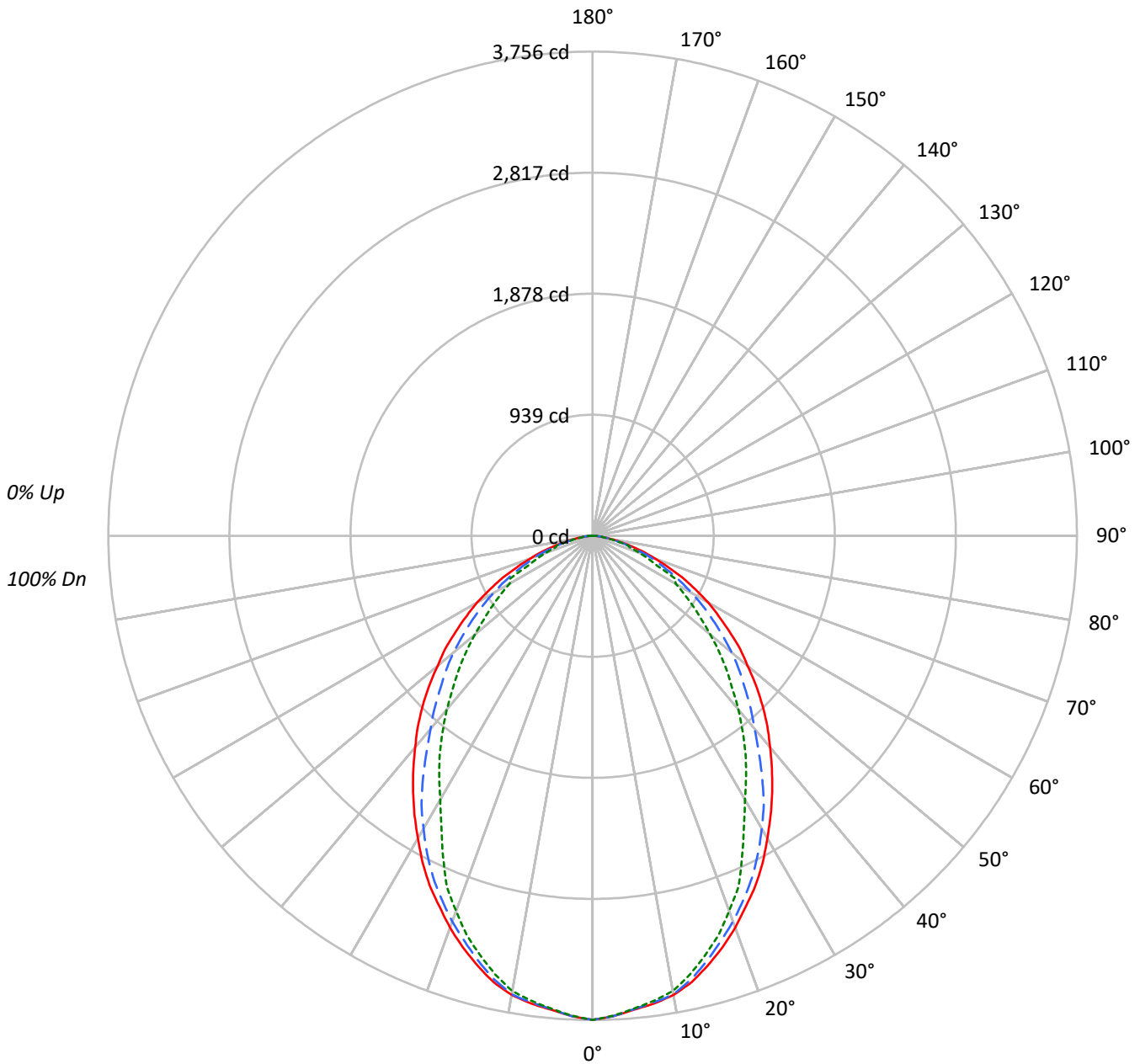
Lumens per Lamp: N/A  
Luminaire Lumens: 7373.0 lumens  
Efficiency: N/A  
Efficacy: 85.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 86.4  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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: P546197

CATALOG NUMBER: FMR-12-4-LD4-2HI-50-UNV-93-96-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P546197

CATALOG NUMBER: FMR-12-4-LD4-2HI-50-UNV-93-96-EDD

**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°	10107	10107	10107
5°	9969	9957	9946
10°	9883	9871	9800
15°	9616	9519	9387
20°	9263	9114	8865
25°	8882	8689	8148
30°	8419	8149	7339
35°	7973	7531	6789
40°	7519	6863	6177
45°	7089	6345	5585
50°	6562	5889	4981
55°	6070	5337	4461
60°	5562	4767	3996
65°	4893	4174	3539
70°	4031	3655	3006
75°	3205	2799	2934
80°	2152	2019	1884
85°	1340	1609	1877



TEST NUMBER: P546197

CATALOG NUMBER: FMR-12-4-LD4-2HI-50-UNV-93-96-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	349.6	4.7
10°-20°	959.5	13.0
20°-30°	1328.3	18.0
30°-40°	1416.4	19.2
40°-50°	1292.1	17.5
50°-60°	1012.3	13.7
60°-70°	659.8	8.9
70°-80°	292.3	4.0
80°-90°	62.8	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°	2637.4	35.8
0°-40°	4053.7	55.0
0°-60°	6358.2	86.2
0°-90°	7373.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7373.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3756	3756	3756	3756	3756	
5°	3691	3686	3686	3682	3682	350
15°	3452	3452	3417	3382	3369	970
25°	2992	2974	2926	2822	2744	1373
35°	2427	2410	2292	2119	2067	1517
45°	1863	1824	1667	1528	1468	1435
55°	1294	1255	1138	1003	951	1161
65°	768	725	656	669	556	757
75°	308	287	269	256	282	330
85°	43	48	52	56	61	60
90°	0	0	0	0	0	



TEST NUMBER: P546197

CATALOG NUMBER: FMR-12-4-LD4-2HI-50-UNV-93-96-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3755.7	3755.7	3755.7	3755.7	3755.7
2.5°	3729.7	3729.7	3729.7	3725.3	3725.3
5°	3690.6	3686.2	3686.2	3681.9	3681.9
7.5°	3660.2	3655.8	3651.5	3647.2	3638.5
10°	3616.8	3616.8	3612.4	3590.7	3586.4
12.5°	3547.3	3543.0	3525.6	3495.2	3486.5
15°	3451.8	3451.8	3417.0	3382.3	3369.3
17.5°	3347.6	3343.2	3299.8	3265.1	3247.7
20°	3234.7	3226.0	3182.6	3126.1	3095.7
22.5°	3108.8	3108.8	3056.7	2982.9	2952.5
25°	2991.5	2974.2	2926.4	2822.2	2744.1
27.5°	2856.9	2830.9	2778.8	2631.2	2540.0
30°	2709.3	2696.3	2622.5	2431.4	2362.0
32.5°	2570.4	2548.7	2470.5	2270.8	2214.3
35°	2427.1	2409.7	2292.5	2118.8	2066.7
37.5°	2283.8	2262.1	2114.5	1975.5	1910.4
40°	2140.5	2114.5	1953.8	1827.9	1758.5
42.5°	2005.9	1971.2	1814.9	1680.3	1602.1
45°	1862.7	1823.6	1667.3	1528.3	1467.5
47.5°	1719.4	1684.6	1541.4	1398.1	1328.6
50°	1567.4	1537.0	1406.8	1263.5	1189.7
52.5°	1441.5	1393.7	1267.8	1124.5	1063.8
55°	1293.9	1254.8	1137.6	1003.0	950.9
57.5°	1159.3	1120.2	1011.7	885.7	842.3
60°	1033.4	976.9	885.7	777.2	742.5
62.5°	894.4	851.0	772.9	681.7	725.1
65°	768.5	725.1	655.6	668.6	555.8
67.5°	629.6	607.9	547.1	486.3	468.9
70°	512.3	486.3	464.6	399.5	382.1
72.5°	408.1	382.1	351.7	317.0	303.9
75°	308.3	286.6	269.2	256.2	282.2
77.5°	212.8	204.1	191.0	178.0	173.7
80°	138.9	134.6	130.3	125.9	121.6
82.5°	82.5	82.5	82.5	82.5	82.5
85°	43.4	47.8	52.1	56.4	60.8
87.5°	26.1	26.1	30.4	34.7	39.1
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)