

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: P546112

Luminaire Tested: **FMR-12-4-LD4-2HI-35-UNV-81-85-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: P546112  
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-81-85-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

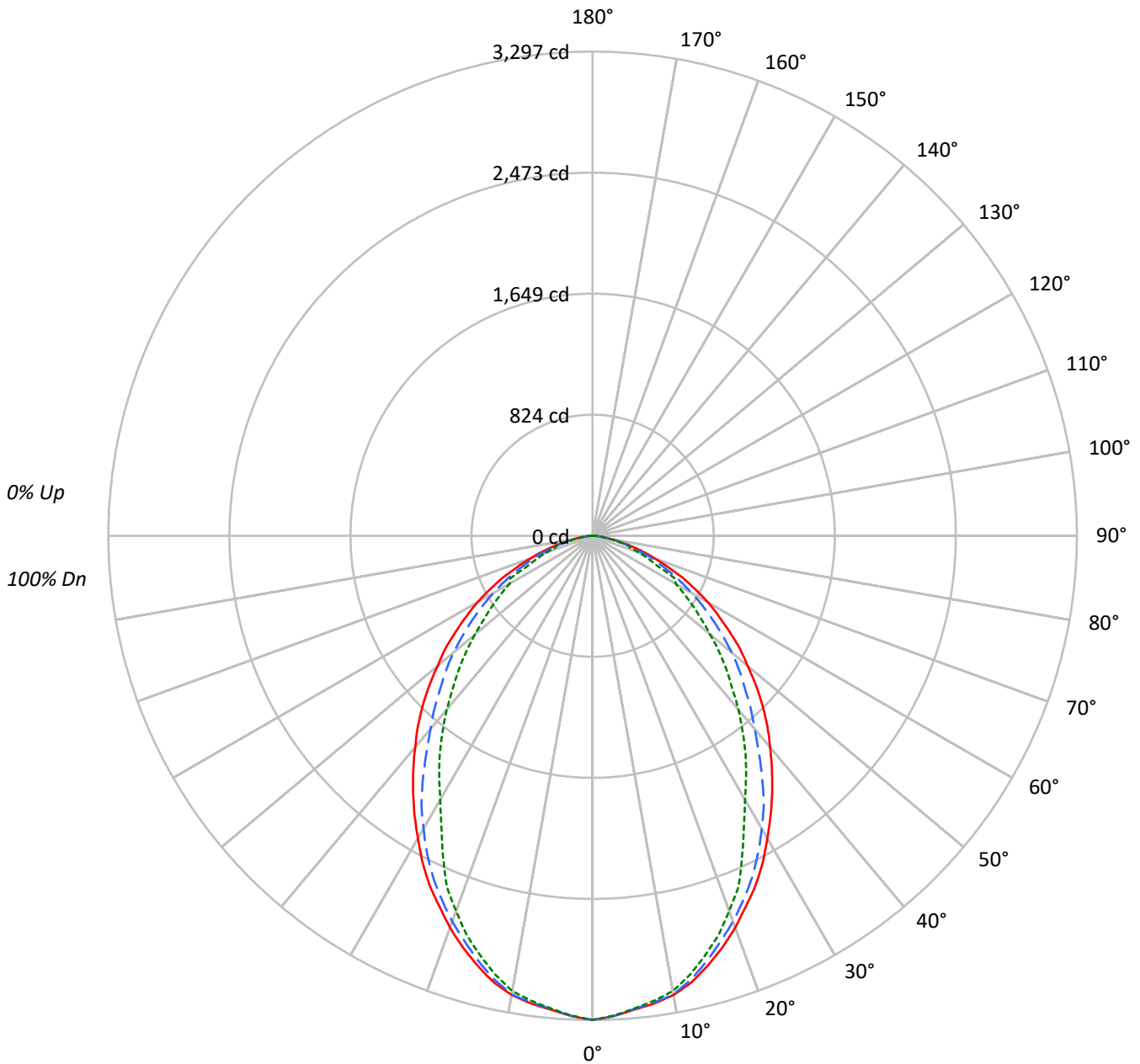
Lumens per Lamp: N/A  
Luminaire Lumens: 6472.0 lumens  
Efficiency: N/A  
Efficacy: 74.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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: P546112

CATALOG NUMBER: FMR-12-4-LD4-2HI-35-UNV-81-85-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P546112

CATALOG NUMBER: FMR-12-4-LD4-2HI-35-UNV-81-85-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°	8872	8872	8872
5°	8751	8741	8730
10°	8675	8665	8602
15°	8441	8356	8239
20°	8131	8000	7782
25°	7797	7627	7152
30°	7390	7153	6442
35°	6999	6611	5960
40°	6601	6025	5422
45°	6222	5570	4902
50°	5760	5170	4372
55°	5329	4685	3916
60°	4882	4184	3507
65°	4295	3664	3106
70°	3538	3209	2639
75°	2813	2457	2575
80°	1891	1771	1654
85°	1176	1411	1649



TEST NUMBER: P546112

CATALOG NUMBER: FMR-12-4-LD4-2HI-35-UNV-81-85-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	306.9	4.7
10°-20°	842.2	13.0
20°-30°	1166.0	18.0
30°-40°	1243.3	19.2
40°-50°	1134.2	17.5
50°-60°	888.6	13.7
60°-70°	579.1	8.9
70°-80°	256.6	4.0
80°-90°	55.1	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°	2315.1	35.8
0°-40°	3558.4	55.0
0°-60°	5581.2	86.2
0°-90°	6472.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6472.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3297	3297	3297	3297	3297	
5°	3240	3236	3236	3232	3232	308
15°	3030	3030	3000	2969	2958	852
25°	2626	2611	2569	2477	2409	1206
35°	2130	2115	2012	1860	1814	1332
45°	1635	1601	1464	1342	1288	1259
55°	1136	1102	999	880	835	1019
65°	675	636	576	587	488	665
75°	271	252	236	225	248	290
85°	38	42	46	50	53	53
90°	0	0	0	0	0	



TEST NUMBER: P546112

CATALOG NUMBER: FMR-12-4-LD4-2HI-35-UNV-81-85-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3296.8	3296.8	3296.8	3296.8	3296.8
2.5°	3273.9	3273.9	3273.9	3270.1	3270.1
5°	3239.6	3235.8	3235.8	3232.0	3232.0
7.5°	3212.9	3209.1	3205.3	3201.5	3193.8
10°	3174.8	3174.8	3171.0	3151.9	3148.1
12.5°	3113.8	3110.0	3094.8	3068.1	3060.5
15°	3030.0	3030.0	2999.5	2969.0	2957.5
17.5°	2938.5	2934.7	2896.6	2866.1	2850.8
20°	2839.4	2831.8	2793.7	2744.1	2717.4
22.5°	2728.9	2728.9	2683.1	2618.3	2591.7
25°	2626.0	2610.7	2568.8	2477.3	2408.7
27.5°	2507.8	2484.9	2439.2	2309.6	2229.6
30°	2378.2	2366.8	2302.0	2134.3	2073.3
32.5°	2256.3	2237.2	2168.6	1993.3	1943.7
35°	2130.5	2115.3	2012.4	1859.9	1814.2
37.5°	2004.7	1985.7	1856.1	1734.1	1677.0
40°	1879.0	1856.1	1715.1	1604.5	1543.6
42.5°	1760.8	1730.3	1593.1	1475.0	1406.4
45°	1635.0	1600.7	1463.5	1341.6	1288.2
47.5°	1509.3	1478.8	1353.0	1227.2	1166.2
50°	1375.9	1349.2	1234.9	1109.1	1044.3
52.5°	1265.3	1223.4	1112.9	987.1	933.8
55°	1135.8	1101.5	998.6	880.4	834.7
57.5°	1017.6	983.3	888.0	777.5	739.4
60°	907.1	857.5	777.5	682.2	651.7
62.5°	785.1	747.0	678.4	598.4	636.5
65°	674.6	636.5	575.5	586.9	487.8
67.5°	552.6	533.6	480.2	426.9	411.6
70°	449.7	426.9	407.8	350.6	335.4
72.5°	358.3	335.4	308.7	278.2	266.8
75°	270.6	251.5	236.3	224.9	247.7
77.5°	186.8	179.1	167.7	156.3	152.5
80°	122.0	118.1	114.3	110.5	106.7
82.5°	72.4	72.4	72.4	72.4	72.4
85°	38.1	41.9	45.7	49.5	53.4
87.5°	22.9	22.9	26.7	30.5	34.3
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)