

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: P546090

Luminaire Tested: **FMR-12-4-LD4-1STD-50-UNV-82-87-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: P546090  
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-LD4-1STD-50-UNV-82-87-EDD  
Description: 1X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

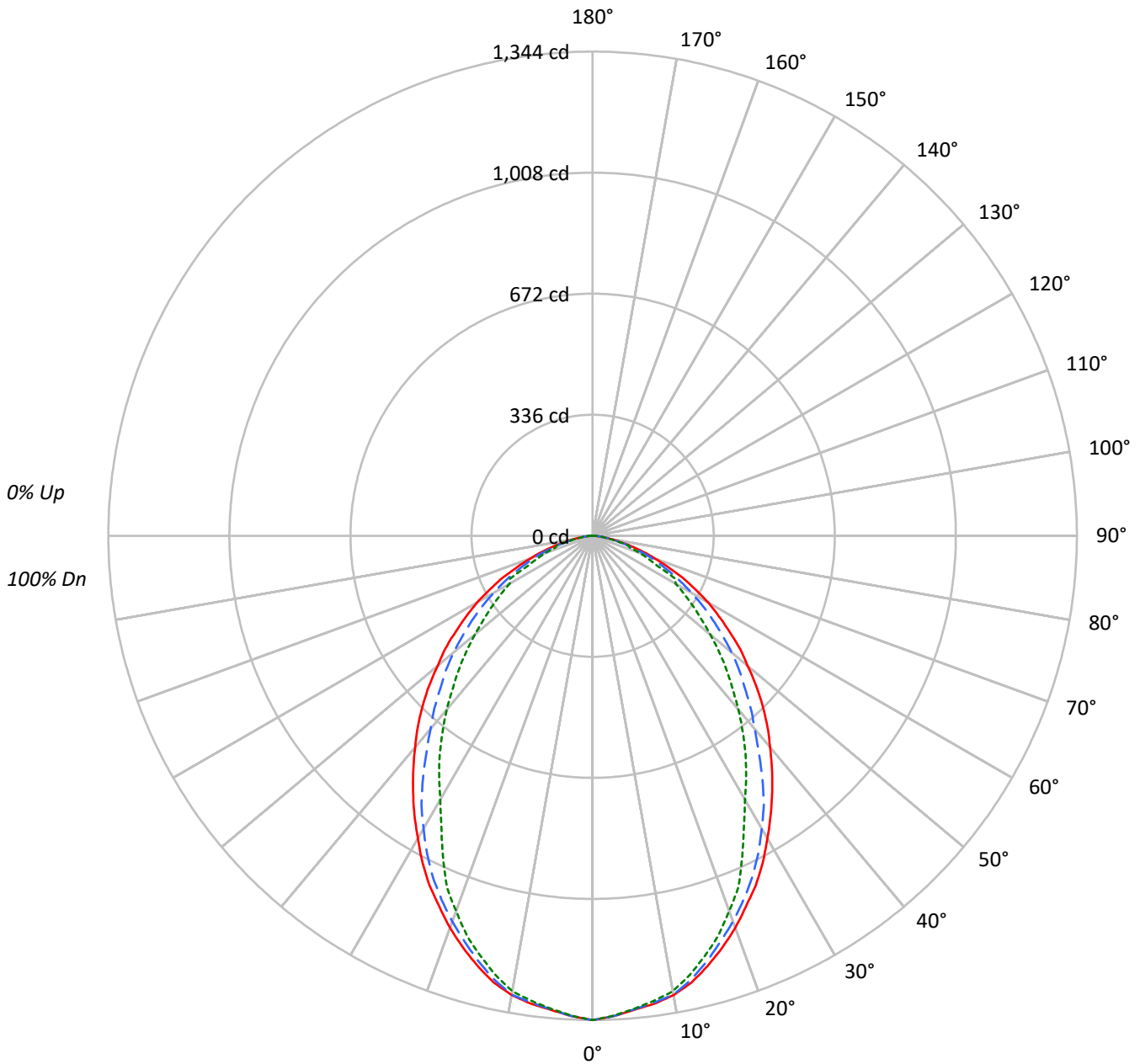
Lumens per Lamp: N/A  
Luminaire Lumens: 2639.0 lumens  
Efficiency: N/A  
Efficacy: 79.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 33.3  
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: P546090

CATALOG NUMBER: FMR-12-4-LD4-1STD-50-UNV-82-87-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P546090

CATALOG NUMBER: FMR-12-4-LD4-1STD-50-UNV-82-87-EDD

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

RF	20				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				100
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87				87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75				75
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65				65
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56				56
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50				50
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44				44
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40				40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36				36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33				33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30				30

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	3617	3617	3617
5°	3568	3564	3560
10°	3537	3533	3508
15°	3442	3407	3360
20°	3316	3262	3173
25°	3179	3110	2916
30°	3013	2917	2627
35°	2854	2695	2430
40°	2692	2457	2211
45°	2537	2271	1999
50°	2349	2108	1783
55°	2173	1910	1597
60°	1991	1706	1430
65°	1752	1494	1266
70°	1443	1308	1076
75°	1147	1002	1050
80°	770	722	674
85°	479	574	673



TEST NUMBER: P546090

CATALOG NUMBER: FMR-12-4-LD4-1STD-50-UNV-82-87-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	125.1	4.7
10°-20°	343.4	13.0
20°-30°	475.4	18.0
30°-40°	507.0	19.2
40°-50°	462.5	17.5
50°-60°	362.3	13.7
60°-70°	236.1	8.9
70°-80°	104.6	4.0
80°-90°	22.4	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°	944.0	35.8
0°-40°	1450.9	55.0
0°-60°	2275.8	86.2
0°-90°	2639.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2639.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1344	1344	1344	1344	1344	
5°	1321	1319	1319	1318	1318	125
15°	1236	1236	1223	1211	1206	347
25°	1071	1064	1047	1010	982	492
35°	869	862	820	758	740	543
45°	667	653	597	547	525	514
55°	463	449	407	359	340	415
65°	275	260	235	239	199	271
75°	110	103	96	92	101	118
85°	16	17	19	20	22	22
90°	0	0	0	0	0	



TEST NUMBER: P546090

CATALOG NUMBER: FMR-12-4-LD4-1STD-50-UNV-82-87-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1344.3	1344.3	1344.3	1344.3	1344.3
2.5°	1334.9	1334.9	1334.9	1333.4	1333.4
5°	1321.0	1319.4	1319.4	1317.9	1317.9
7.5°	1310.1	1308.5	1307.0	1305.4	1302.3
10°	1294.5	1294.5	1293.0	1285.2	1283.7
12.5°	1269.7	1268.1	1261.9	1251.0	1247.9
15°	1235.5	1235.5	1223.1	1210.6	1206.0
17.5°	1198.2	1196.6	1181.1	1168.7	1162.4
20°	1157.8	1154.7	1139.1	1118.9	1108.1
22.5°	1112.7	1112.7	1094.1	1067.6	1056.8
25°	1070.8	1064.5	1047.4	1010.1	982.2
27.5°	1022.6	1013.3	994.6	941.8	909.1
30°	969.7	965.1	938.7	870.3	845.4
32.5°	920.0	912.2	884.3	812.8	792.6
35°	868.7	862.5	820.5	758.4	739.7
37.5°	817.4	809.7	756.8	707.1	683.8
40°	766.2	756.8	699.3	654.3	629.4
42.5°	718.0	705.5	649.6	601.4	573.5
45°	666.7	652.7	596.8	547.0	525.3
47.5°	615.4	603.0	551.7	500.4	475.5
50°	561.0	550.1	503.5	452.2	425.8
52.5°	516.0	498.9	453.8	402.5	380.7
55°	463.1	449.1	407.2	359.0	340.3
57.5°	414.9	401.0	362.1	317.0	301.5
60°	369.9	349.7	317.0	278.2	265.7
62.5°	320.1	304.6	276.6	244.0	259.5
65°	275.1	259.5	234.7	239.3	198.9
67.5°	225.3	217.6	195.8	174.1	167.8
70°	183.4	174.1	166.3	143.0	136.8
72.5°	146.1	136.8	125.9	113.4	108.8
75°	110.3	102.6	96.4	91.7	101.0
77.5°	76.1	73.0	68.4	63.7	62.2
80°	49.7	48.2	46.6	45.1	43.5
82.5°	29.5	29.5	29.5	29.5	29.5
85°	15.5	17.1	18.6	20.2	21.8
87.5°	9.3	9.3	10.9	12.4	14.0
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)