

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: P546088

Luminaire Tested: **FMR-12-4-LD4-1STD-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: P546088  
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-82-85-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**

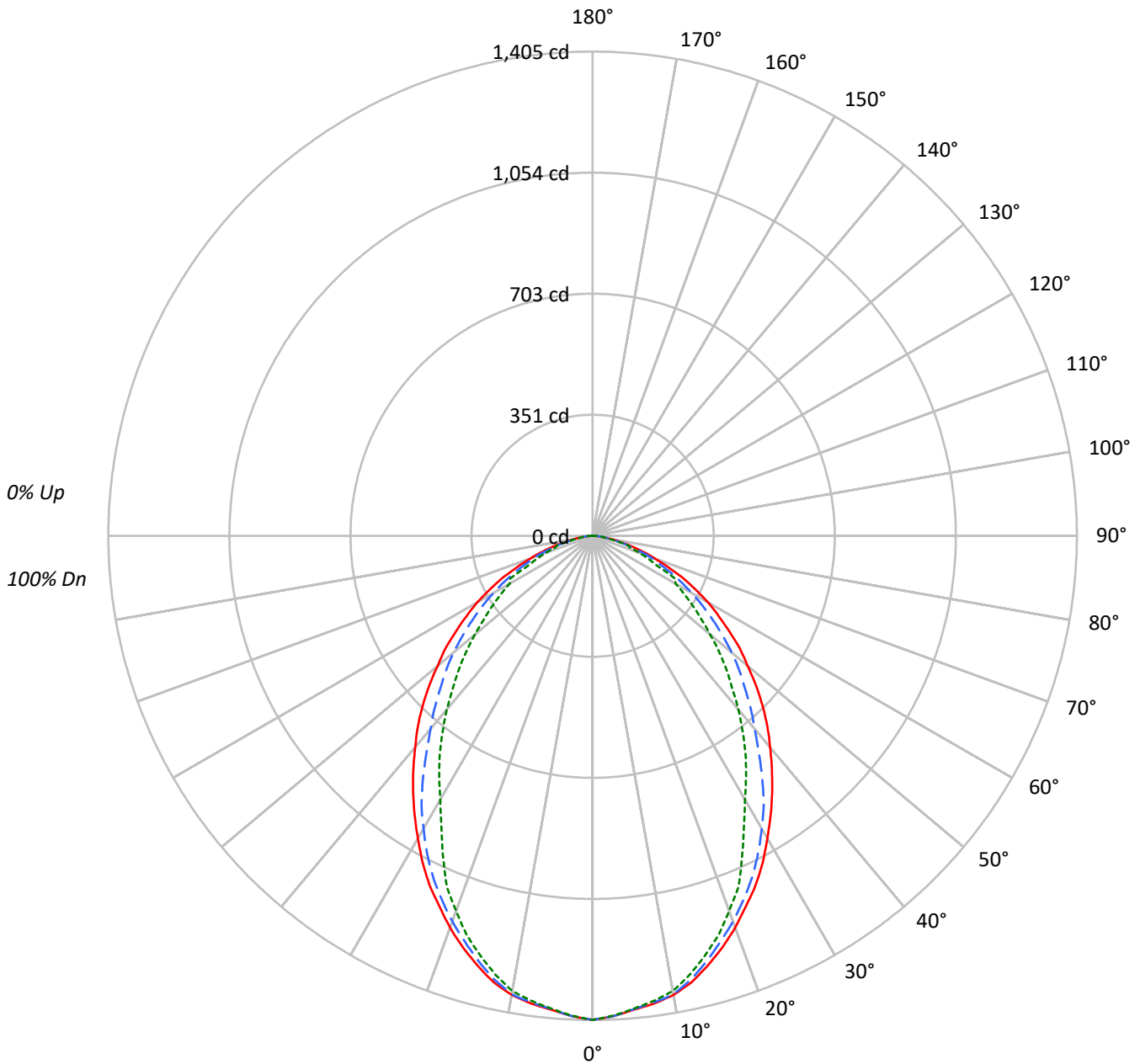
Lumens per Lamp: N/A  
Luminaire Lumens: 2758.0 lumens  
Efficiency: N/A  
Efficacy: 82.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 33.3  
Input Voltage (V): NR  
Input Current (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: P546088

CATALOG NUMBER: FMR-12-4-LD4-1STD-50-UNV-82-85-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P546088

CATALOG NUMBER: FMR-12-4-LD4-1STD-50-UNV-82-85-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°	3781	3781	3781
5°	3729	3725	3720
10°	3697	3692	3666
15°	3597	3561	3511
20°	3465	3409	3316
25°	3322	3250	3048
30°	3149	3048	2745
35°	2983	2817	2540
40°	2813	2568	2311
45°	2652	2374	2089
50°	2454	2203	1863
55°	2271	1996	1669
60°	2080	1783	1495
65°	1831	1561	1324
70°	1507	1367	1124
75°	1199	1047	1098
80°	806	755	705
85°	500	602	701



TEST NUMBER: P546088

CATALOG NUMBER: FMR-12-4-LD4-1STD-50-UNV-82-85-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	130.8	4.7
10°-20°	358.9	13.0
20°-30°	496.9	18.0
30°-40°	529.8	19.2
40°-50°	483.4	17.5
50°-60°	378.7	13.7
60°-70°	246.8	8.9
70°-80°	109.3	4.0
80°-90°	23.5	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°	986.6	35.8
0°-40°	1516.4	55.0
0°-60°	2378.4	86.2
0°-90°	2758.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2758.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1405	1405	1405	1405	1405	
5°	1380	1379	1379	1377	1377	131
15°	1291	1291	1278	1265	1260	363
25°	1119	1112	1095	1056	1026	514
35°	908	901	858	793	773	568
45°	697	682	624	572	549	537
55°	484	469	426	375	356	434
65°	288	271	245	250	208	283
75°	115	107	101	96	106	124
85°	16	18	20	21	23	23
90°	0	0	0	0	0	



TEST NUMBER: P546088

CATALOG NUMBER: FMR-12-4-LD4-1STD-50-UNV-82-85-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1404.9	1404.9	1404.9	1404.9	1404.9
2.5°	1395.1	1395.1	1395.1	1393.5	1393.5
5°	1380.5	1378.9	1378.9	1377.3	1377.3
7.5°	1369.2	1367.5	1365.9	1364.3	1361.0
10°	1352.9	1352.9	1351.3	1343.2	1341.5
12.5°	1326.9	1325.3	1318.8	1307.4	1304.2
15°	1291.2	1291.2	1278.2	1265.2	1260.3
17.5°	1252.2	1250.6	1234.4	1221.4	1214.9
20°	1210.0	1206.7	1190.5	1169.4	1158.0
22.5°	1162.9	1162.9	1143.4	1115.8	1104.4
25°	1119.0	1112.5	1094.7	1055.7	1026.5
27.5°	1068.7	1058.9	1039.5	984.2	950.1
30°	1013.5	1008.6	981.0	909.5	883.5
32.5°	961.5	953.4	924.1	849.4	828.3
35°	907.9	901.4	857.6	792.6	773.1
37.5°	854.3	846.2	791.0	739.0	714.6
40°	800.7	791.0	730.9	683.8	657.8
42.5°	750.4	737.4	678.9	628.5	599.3
45°	696.8	682.1	623.7	571.7	549.0
47.5°	643.2	630.2	576.6	523.0	497.0
50°	586.3	574.9	526.2	472.6	445.0
52.5°	539.2	521.4	474.3	420.7	397.9
55°	484.0	469.4	425.5	375.2	355.7
57.5°	433.6	419.0	378.4	331.3	315.1
60°	386.5	365.4	331.3	290.7	277.7
62.5°	334.6	318.3	289.1	255.0	271.2
65°	287.5	271.2	245.2	250.1	207.9
67.5°	235.5	227.4	204.6	181.9	175.4
70°	191.6	181.9	173.8	149.4	142.9
72.5°	152.7	142.9	131.6	118.6	113.7
75°	115.3	107.2	100.7	95.8	105.6
77.5°	79.6	76.3	71.5	66.6	65.0
80°	52.0	50.3	48.7	47.1	45.5
82.5°	30.9	30.9	30.9	30.9	30.9
85°	16.2	17.9	19.5	21.1	22.7
87.5°	9.7	9.7	11.4	13.0	14.6
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)