

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: P546159

Luminaire Tested: **FMR-12-4-LD4-2HI-40-UNV-93-84-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: P546159
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-40-UNV-93-84-EDD
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

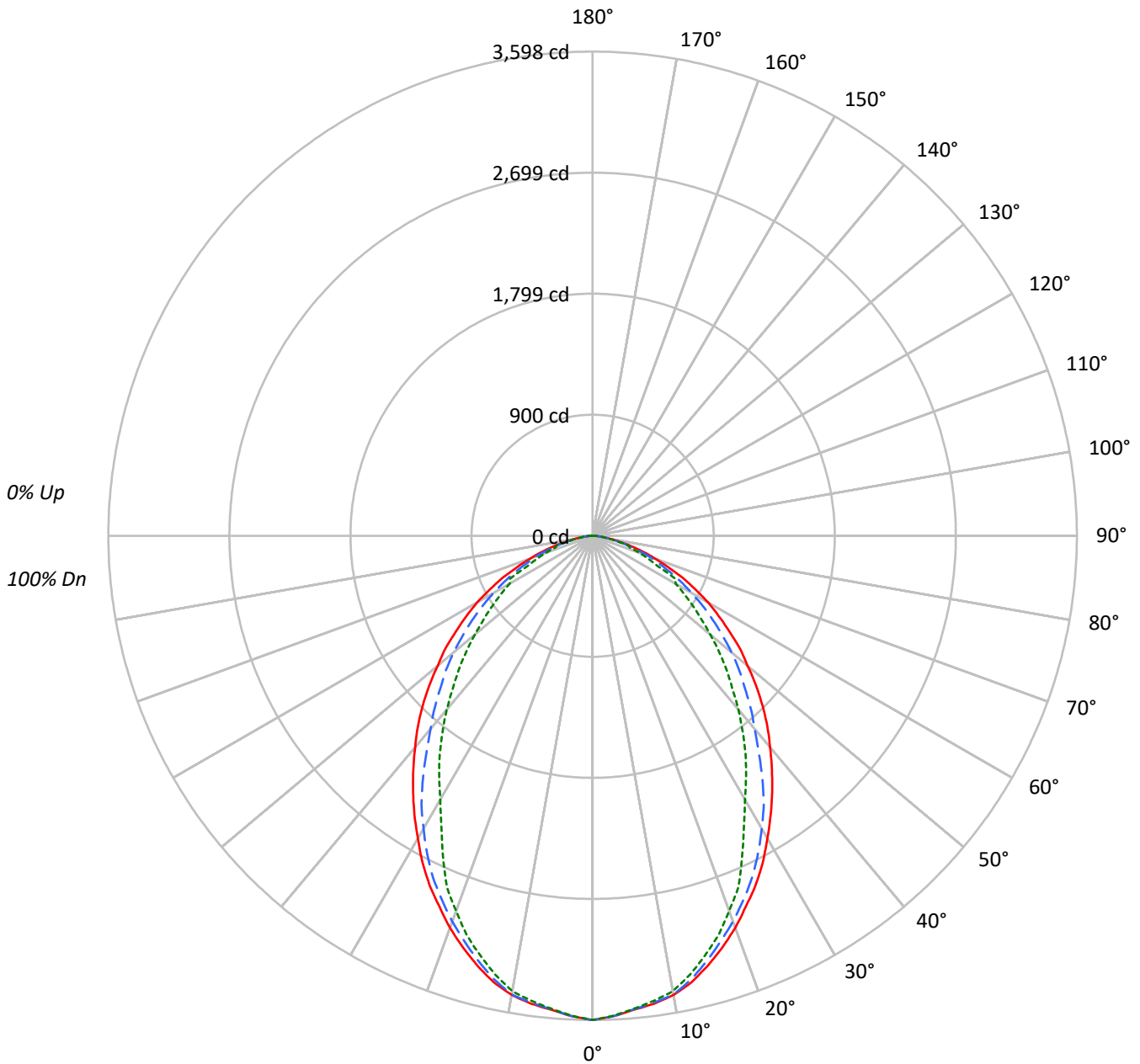
Lumens per Lamp: N/A
Luminaire Lumens: 7064.0 lumens
Efficiency: N/A
Efficacy: 81.8 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 86.4
Input Voltage (V): NR
Input Current (A_{in}): 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: P546159

CATALOG NUMBER: FMR-12-4-LD4-2HI-40-UNV-93-84-EDD

Luminous Intensity Polar Plot





TEST NUMBER: P546159

CATALOG NUMBER: FMR-12-4-LD4-2HI-40-UNV-93-84-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°	9683	9683	9683
5°	9551	9540	9529
10°	9469	9457	9389
15°	9213	9120	8993
20°	8875	8732	8494
25°	8510	8325	7806
30°	8066	7807	7032
35°	7639	7215	6505
40°	7204	6576	5918
45°	6792	6079	5351
50°	6287	5642	4772
55°	5816	5113	4274
60°	5329	4567	3828
65°	4688	3999	3391
70°	3862	3502	2880
75°	3071	2681	2811
80°	2063	1934	1805
85°	1284	1541	1797



TEST NUMBER: P546159

CATALOG NUMBER: FMR-12-4-LD4-2HI-40-UNV-93-84-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	335.0	4.7
10°-20°	919.3	13.0
20°-30°	1272.6	18.0
30°-40°	1357.0	19.2
40°-50°	1238.0	17.5
50°-60°	969.9	13.7
60°-70°	632.1	8.9
70°-80°	280.1	4.0
80°-90°	60.1	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°	2526.8	35.8
0°-40°	3883.9	55.0
0°-60°	6091.7	86.2
0°-90°	7064.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7064.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3598	3598	3598	3598	3598	
5°	3536	3532	3532	3528	3528	336
15°	3307	3307	3274	3241	3228	930
25°	2866	2850	2804	2704	2629	1316
35°	2325	2309	2196	2030	1980	1454
45°	1785	1747	1597	1464	1406	1375
55°	1240	1202	1090	961	911	1112
65°	736	695	628	641	532	726
75°	295	275	258	245	270	317
85°	42	46	50	54	58	58
90°	0	0	0	0	0	



TEST NUMBER: P546159

CATALOG NUMBER: FMR-12-4-LD4-2HI-40-UNV-93-84-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3598.3	3598.3	3598.3	3598.3	3598.3
2.5°	3573.3	3573.3	3573.3	3569.2	3569.2
5°	3535.9	3531.7	3531.7	3527.6	3527.6
7.5°	3506.8	3502.6	3498.5	3494.3	3486.0
10°	3465.2	3465.2	3461.0	3440.2	3436.1
12.5°	3398.6	3394.5	3377.8	3348.7	3340.4
15°	3307.1	3307.1	3273.8	3240.6	3228.1
17.5°	3207.3	3203.1	3161.5	3128.2	3111.6
20°	3099.1	3090.8	3049.2	2995.1	2966.0
22.5°	2978.5	2978.5	2928.6	2857.8	2828.7
25°	2866.2	2849.5	2803.8	2703.9	2629.1
27.5°	2737.2	2712.3	2662.3	2520.9	2433.5
30°	2595.8	2583.3	2512.6	2329.5	2263.0
32.5°	2462.7	2441.9	2367.0	2175.6	2121.5
35°	2325.4	2308.7	2196.4	2030.0	1980.1
37.5°	2188.1	2167.3	2025.9	1892.8	1830.4
40°	2050.8	2025.9	1872.0	1751.3	1684.8
42.5°	1921.9	1888.6	1738.8	1609.9	1535.0
45°	1784.6	1747.2	1597.4	1464.3	1406.0
47.5°	1647.3	1614.0	1476.8	1339.5	1272.9
50°	1501.7	1472.6	1347.8	1210.5	1139.8
52.5°	1381.1	1335.3	1214.7	1077.4	1019.2
55°	1239.6	1202.2	1089.9	960.9	911.0
57.5°	1110.7	1073.3	969.3	848.6	807.0
60°	990.1	936.0	848.6	744.6	711.3
62.5°	856.9	815.3	740.5	653.1	694.7
65°	736.3	694.7	628.1	640.6	532.5
67.5°	603.2	582.4	524.1	465.9	449.3
70°	490.9	465.9	445.1	382.7	366.1
72.5°	391.0	366.1	337.0	303.7	291.2
75°	295.4	274.6	257.9	245.4	270.4
77.5°	203.8	195.5	183.0	170.6	166.4
80°	133.1	129.0	124.8	120.6	116.5
82.5°	79.0	79.0	79.0	79.0	79.0
85°	41.6	45.8	49.9	54.1	58.2
87.5°	25.0	25.0	29.1	33.3	37.4
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)