

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: P546163

Luminaire Tested: **FMR-12-4-LD4-2HI-40-UNV-93-88-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: P546163
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-93-88-EDD
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

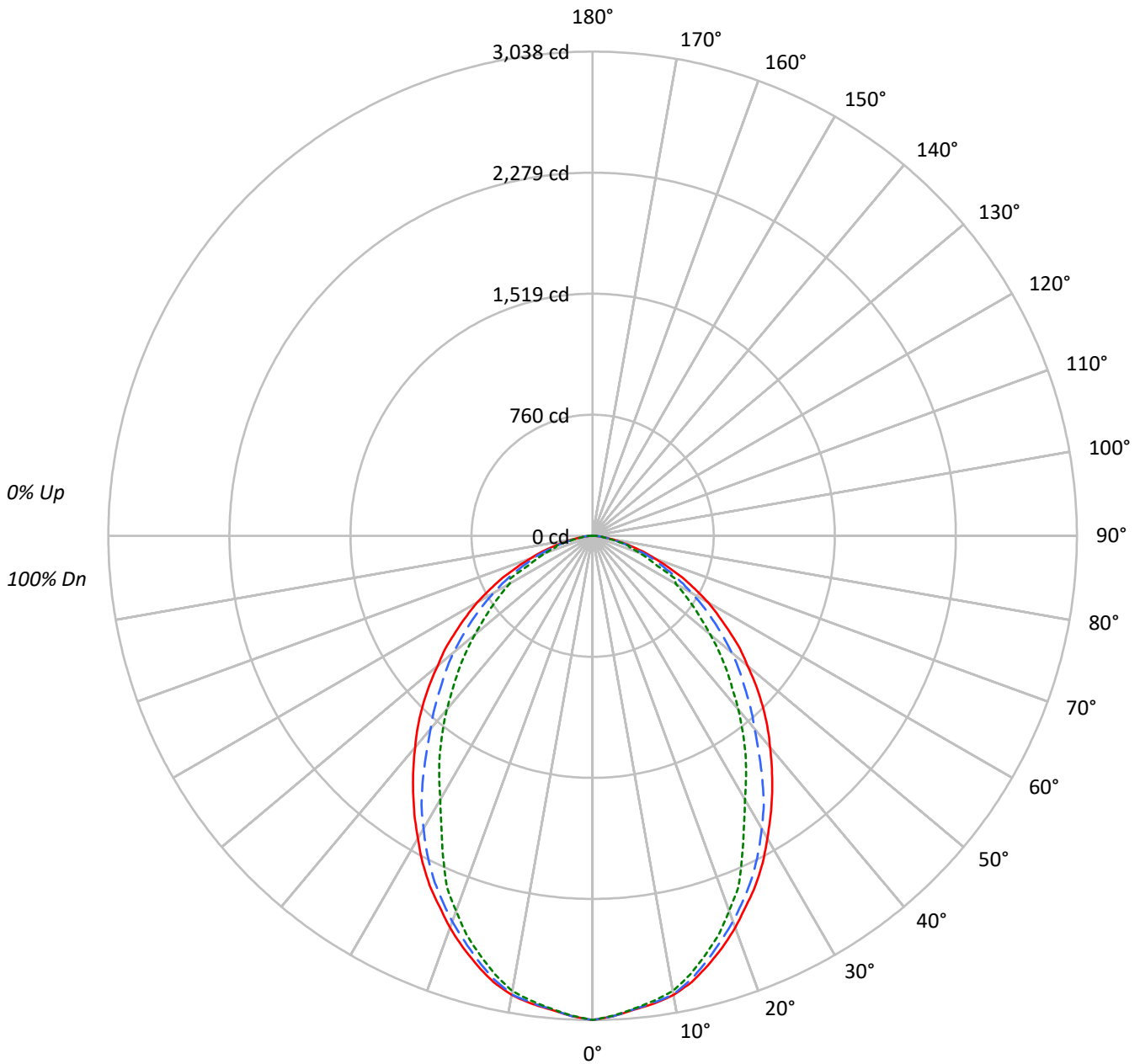
Lumens per Lamp: N/A
Luminaire Lumens: 5964.0 lumens
Efficiency: N/A
Efficacy: 69.0 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

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: P546163

CATALOG NUMBER: FMR-12-4-LD4-2HI-40-UNV-93-88-EDD

Luminous Intensity Polar Plot





TEST NUMBER: P546163

CATALOG NUMBER: FMR-12-4-LD4-2HI-40-UNV-93-88-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°	8175	8175	8175
5°	8064	8055	8045
10°	7994	7985	7927
15°	7779	7700	7593
20°	7493	7372	7171
25°	7185	7029	6591
30°	6810	6591	5937
35°	6450	6092	5492
40°	6082	5552	4997
45°	5734	5133	4518
50°	5308	4764	4029
55°	4910	4317	3609
60°	4499	3856	3232
65°	3958	3377	2863
70°	3260	2957	2432
75°	2593	2264	2374
80°	1742	1633	1523
85°	1084	1300	1519



TEST NUMBER: P546163

CATALOG NUMBER: FMR-12-4-LD4-2HI-40-UNV-93-88-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	282.8	4.7
10°-20°	776.1	13.0
20°-30°	1074.5	18.0
30°-40°	1145.7	19.2
40°-50°	1045.2	17.5
50°-60°	818.8	13.7
60°-70°	533.7	8.9
70°-80°	236.5	4.0
80°-90°	50.8	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°	2133.4	35.8
0°-40°	3279.1	55.0
0°-60°	5143.1	86.2
0°-90°	5964.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5964.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3038	3038	3038	3038	3038	
5°	2985	2982	2982	2978	2978	283
15°	2792	2792	2764	2736	2725	785
25°	2420	2406	2367	2283	2220	1111
35°	1963	1949	1854	1714	1672	1227
45°	1507	1475	1349	1236	1187	1161
55°	1047	1015	920	811	769	939
65°	622	586	530	541	450	613
75°	249	232	218	207	228	267
85°	35	39	42	46	49	49
90°	0	0	0	0	0	



TEST NUMBER: P546163

CATALOG NUMBER: FMR-12-4-LD4-2HI-40-UNV-93-88-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3038.0	3038.0	3038.0	3038.0	3038.0
2.5°	3016.9	3016.9	3016.9	3013.4	3013.4
5°	2985.3	2981.8	2981.8	2978.3	2978.3
7.5°	2960.7	2957.2	2953.7	2950.2	2943.2
10°	2925.6	2925.6	2922.1	2904.5	2901.0
12.5°	2869.4	2865.9	2851.8	2827.3	2820.2
15°	2792.1	2792.1	2764.0	2735.9	2725.4
17.5°	2707.8	2704.3	2669.2	2641.1	2627.1
20°	2616.5	2609.5	2574.4	2528.7	2504.1
22.5°	2514.7	2514.7	2472.5	2412.8	2388.2
25°	2419.8	2405.8	2367.2	2282.9	2219.7
27.5°	2311.0	2289.9	2247.8	2128.3	2054.6
30°	2191.6	2181.0	2121.3	1966.8	1910.6
32.5°	2079.2	2061.6	1998.4	1836.8	1791.2
35°	1963.3	1949.2	1854.4	1713.9	1671.8
37.5°	1847.4	1829.8	1710.4	1598.0	1545.3
40°	1731.5	1710.4	1580.5	1478.6	1422.4
42.5°	1622.6	1594.5	1468.1	1359.2	1296.0
45°	1506.7	1475.1	1348.7	1236.3	1187.1
47.5°	1390.8	1362.7	1246.8	1130.9	1074.7
50°	1267.9	1243.3	1137.9	1022.0	962.3
52.5°	1166.0	1127.4	1025.5	909.6	860.5
55°	1046.6	1015.0	920.2	811.3	769.2
57.5°	937.7	906.1	818.3	716.5	681.4
60°	835.9	790.2	716.5	628.7	600.6
62.5°	723.5	688.4	625.2	551.4	586.5
65°	621.6	586.5	530.3	540.9	449.6
67.5°	509.3	491.7	442.5	393.4	379.3
70°	414.4	393.4	375.8	323.1	309.1
72.5°	330.1	309.1	284.5	256.4	245.8
75°	249.4	231.8	217.8	207.2	228.3
77.5°	172.1	165.1	154.5	144.0	140.5
80°	112.4	108.9	105.4	101.9	98.3
82.5°	66.7	66.7	66.7	66.7	66.7
85°	35.1	38.6	42.1	45.7	49.2
87.5°	21.1	21.1	24.6	28.1	31.6
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)