

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: P546221

Luminaire Tested: **FMR-12-4-LD4-2LO-35-UNV-82-96-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: P546221
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-LD4-2LO-35-UNV-82-96-EDD
Description: 1X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

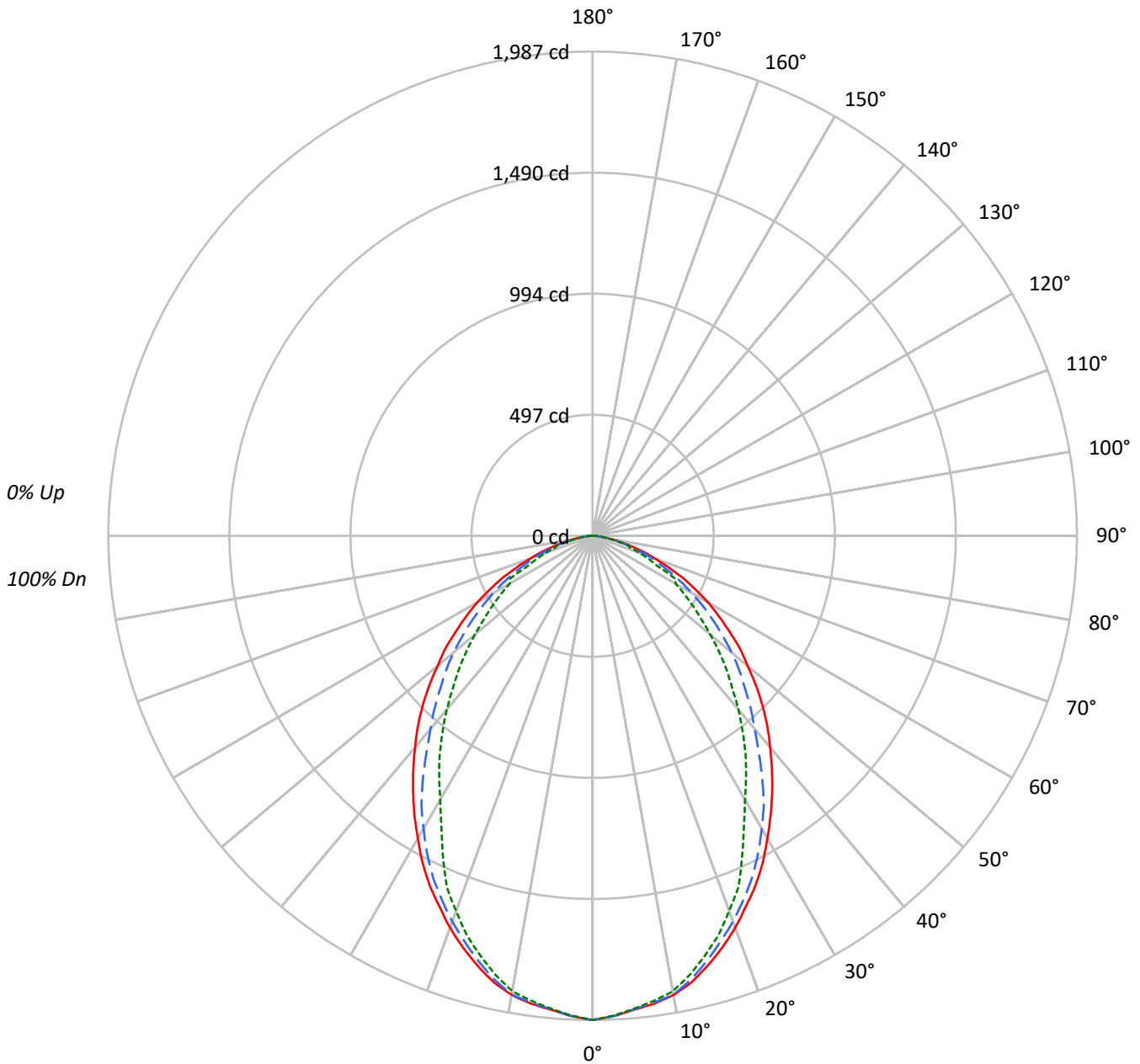
Lumens per Lamp: N/A
Luminaire Lumens: 3901.0 lumens
Efficiency: N/A
Efficacy: 83.4 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 46.8
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: P546221

CATALOG NUMBER: FMR-12-4-LD4-2LO-35-UNV-82-96-EDD

Luminous Intensity Polar Plot





TEST NUMBER: P546221

CATALOG NUMBER: FMR-12-4-LD4-2LO-35-UNV-82-96-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°	5347	5347	5347
5°	5275	5269	5262
10°	5229	5223	5185
15°	5088	5037	4966
20°	4901	4822	4690
25°	4700	4597	4311
30°	4454	4311	3883
35°	4219	3984	3592
40°	3978	3632	3268
45°	3750	3357	2955
50°	3472	3116	2635
55°	3212	2824	2360
60°	2942	2522	2114
65°	2589	2209	1872
70°	2133	1934	1591
75°	1696	1481	1552
80°	1139	1068	996
85°	710	852	994



TEST NUMBER: P546221

CATALOG NUMBER: FMR-12-4-LD4-2LO-35-UNV-82-96-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	185.0	4.7
10°-20°	507.6	13.0
20°-30°	702.8	18.0
30°-40°	749.4	19.2
40°-50°	683.6	17.5
50°-60°	535.6	13.7
60°-70°	349.1	8.9
70°-80°	154.7	4.0
80°-90°	33.2	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°	1395.4	35.8
0°-40°	2144.8	55.0
0°-60°	3364.1	86.2
0°-90°	3901.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3901.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1987	1987	1987	1987	1987	
5°	1953	1950	1950	1948	1948	185
15°	1826	1826	1808	1790	1783	513
25°	1583	1574	1548	1493	1452	727
35°	1284	1275	1213	1121	1094	803
45°	986	965	882	809	776	759
55°	685	664	602	531	503	614
65°	407	384	347	354	294	401
75°	163	152	142	136	149	175
85°	23	25	28	30	32	32
90°	0	0	0	0	0	



TEST NUMBER: P546221

CATALOG NUMBER: FMR-12-4-LD4-2LO-35-UNV-82-96-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1987.1	1987.1	1987.1	1987.1	1987.1
2.5°	1973.3	1973.3	1973.3	1971.0	1971.0
5°	1952.7	1950.4	1950.4	1948.1	1948.1
7.5°	1936.6	1934.3	1932.0	1929.7	1925.1
10°	1913.6	1913.6	1911.3	1899.8	1897.5
12.5°	1876.8	1874.6	1865.4	1849.3	1844.7
15°	1826.3	1826.3	1807.9	1789.6	1782.7
17.5°	1771.2	1768.9	1745.9	1727.5	1718.3
20°	1711.4	1706.9	1683.9	1654.0	1637.9
22.5°	1644.8	1644.8	1617.3	1578.2	1562.1
25°	1582.8	1573.6	1548.3	1493.2	1451.9
27.5°	1511.6	1497.8	1470.2	1392.1	1343.9
30°	1433.5	1426.6	1387.5	1286.5	1249.7
32.5°	1360.0	1348.5	1307.1	1201.5	1171.6
35°	1284.2	1275.0	1212.9	1121.1	1093.5
37.5°	1208.4	1196.9	1118.8	1045.2	1010.8
40°	1132.5	1118.8	1033.8	967.1	930.4
42.5°	1061.3	1042.9	960.2	889.0	847.7
45°	985.5	964.8	882.1	808.6	776.5
47.5°	909.7	891.3	815.5	739.7	703.0
50°	829.3	813.2	744.3	668.5	629.4
52.5°	762.7	737.4	670.8	595.0	562.8
55°	684.6	663.9	601.9	530.7	503.1
57.5°	613.4	592.7	535.3	468.6	445.7
60°	546.7	516.9	468.6	411.2	392.8
62.5°	473.2	450.3	408.9	360.7	383.6
65°	406.6	383.6	346.9	353.8	294.0
67.5°	333.1	321.6	289.5	257.3	248.1
70°	271.1	257.3	245.8	211.3	202.2
72.5°	215.9	202.2	186.1	167.7	160.8
75°	163.1	151.6	142.4	135.5	149.3
77.5°	112.6	108.0	101.1	94.2	91.9
80°	73.5	71.2	68.9	66.6	64.3
82.5°	43.6	43.6	43.6	43.6	43.6
85°	23.0	25.3	27.6	29.9	32.2
87.5°	13.8	13.8	16.1	18.4	20.7
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)