

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: P546321

Luminaire Tested: **FMR-12-4-LD4-2STD-35-UNV-93-86-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: P546321
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-LD4-2STD-35-UNV-93-86-EDD
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

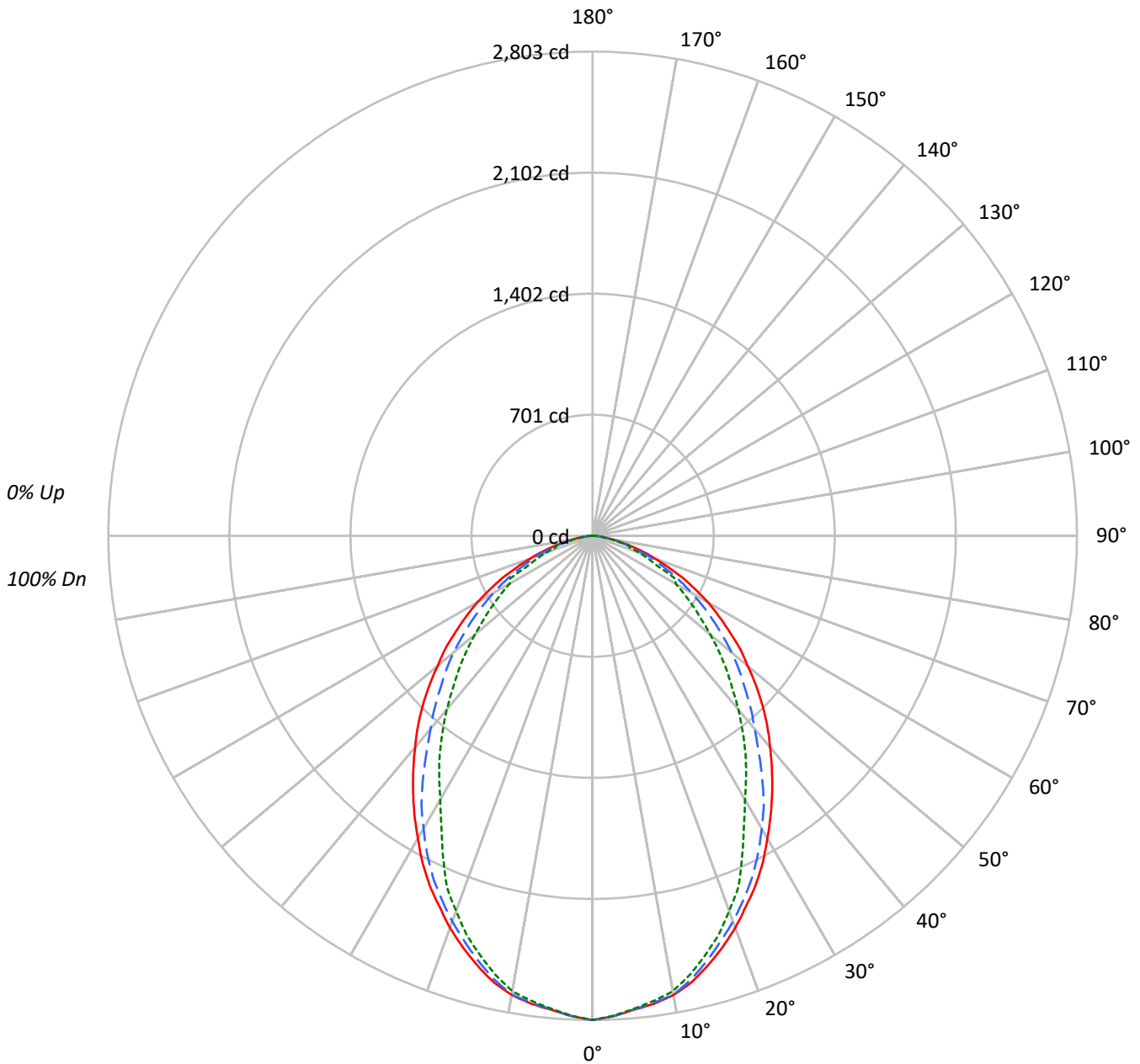
Lumens per Lamp: N/A
Luminaire Lumens: 5503.0 lumens
Efficiency: N/A
Efficacy: 82.6 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 66.6
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: P546321

CATALOG NUMBER: FMR-12-4-LD4-2STD-35-UNV-93-86-EDD

Luminous Intensity Polar Plot





TEST NUMBER: P546321

CATALOG NUMBER: FMR-12-4-LD4-2STD-35-UNV-93-86-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°	7543	7543	7543
5°	7441	7432	7423
10°	7376	7367	7314
15°	7177	7105	7006
20°	6914	6802	6617
25°	6630	6485	6081
30°	6284	6082	5478
35°	5951	5621	5067
40°	5612	5123	4611
45°	5291	4736	4168
50°	4898	4396	3717
55°	4531	3983	3330
60°	4151	3558	2982
65°	3652	3116	2641
70°	3009	2728	2244
75°	2392	2089	2190
80°	1607	1506	1406
85°	1000	1201	1402



TEST NUMBER: P546321

CATALOG NUMBER: FMR-12-4-LD4-2STD-35-UNV-93-86-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	260.9	4.7
10°-20°	716.1	13.0
20°-30°	991.4	18.0
30°-40°	1057.1	19.2
40°-50°	964.4	17.5
50°-60°	755.5	13.7
60°-70°	492.4	8.9
70°-80°	218.2	4.0
80°-90°	46.8	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°	1968.5	35.8
0°-40°	3025.6	55.0
0°-60°	4745.6	86.2
0°-90°	5503.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5503.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2803	2803	2803	2803	2803	
5°	2754	2751	2751	2748	2748	261
15°	2576	2576	2550	2524	2515	724
25°	2233	2220	2184	2106	2048	1025
35°	1812	1799	1711	1581	1542	1133
45°	1390	1361	1244	1141	1095	1071
55°	966	936	849	749	710	866
65°	574	541	489	499	415	565
75°	230	214	201	191	211	247
85°	32	36	39	42	45	45
90°	0	0	0	0	0	



TEST NUMBER: P546321

CATALOG NUMBER: FMR-12-4-LD4-2STD-35-UNV-93-86-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2803.2	2803.2	2803.2	2803.2	2803.2
2.5°	2783.7	2783.7	2783.7	2780.5	2780.5
5°	2754.5	2751.3	2751.3	2748.1	2748.1
7.5°	2731.9	2728.6	2725.4	2722.1	2715.7
10°	2699.5	2699.5	2696.2	2680.0	2676.8
12.5°	2647.6	2644.4	2631.4	2608.7	2602.2
15°	2576.3	2576.3	2550.4	2524.5	2514.7
17.5°	2498.5	2495.3	2462.9	2437.0	2424.0
20°	2414.3	2407.8	2375.4	2333.3	2310.6
22.5°	2320.3	2320.3	2281.4	2226.3	2203.6
25°	2232.8	2219.8	2184.2	2106.4	2048.1
27.5°	2132.3	2112.9	2074.0	1963.8	1895.8
30°	2022.2	2012.4	1957.3	1814.8	1762.9
32.5°	1918.5	1902.3	1843.9	1694.9	1652.7
35°	1811.5	1798.6	1711.1	1581.4	1542.5
37.5°	1704.6	1688.4	1578.2	1474.5	1425.9
40°	1597.6	1578.2	1458.3	1364.3	1312.5
42.5°	1497.2	1471.3	1354.6	1254.1	1195.8
45°	1390.2	1361.1	1244.4	1140.7	1095.3
47.5°	1283.3	1257.4	1150.4	1043.5	991.6
50°	1169.9	1147.2	1050.0	943.0	887.9
52.5°	1075.9	1040.2	946.3	839.3	794.0
55°	965.7	936.5	849.0	748.6	709.7
57.5°	865.3	836.1	755.1	661.1	628.7
60°	771.3	729.1	661.1	580.1	554.1
62.5°	667.6	635.2	576.8	508.8	541.2
65°	573.6	541.2	489.3	499.1	414.8
67.5°	469.9	453.7	408.3	363.0	350.0
70°	382.4	363.0	346.7	298.1	285.2
72.5°	304.6	285.2	262.5	236.6	226.8
75°	230.1	213.9	200.9	191.2	210.6
77.5°	158.8	152.3	142.6	132.9	129.6
80°	103.7	100.5	97.2	94.0	90.7
82.5°	61.6	61.6	61.6	61.6	61.6
85°	32.4	35.6	38.9	42.1	45.4
87.5°	19.4	19.4	22.7	25.9	29.2
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)