

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: P546032

Luminaire Tested: **FMR-12-4-LD4-1STD-35-UNV-93-85-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: P546032
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-35-UNV-93-85-EDD
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

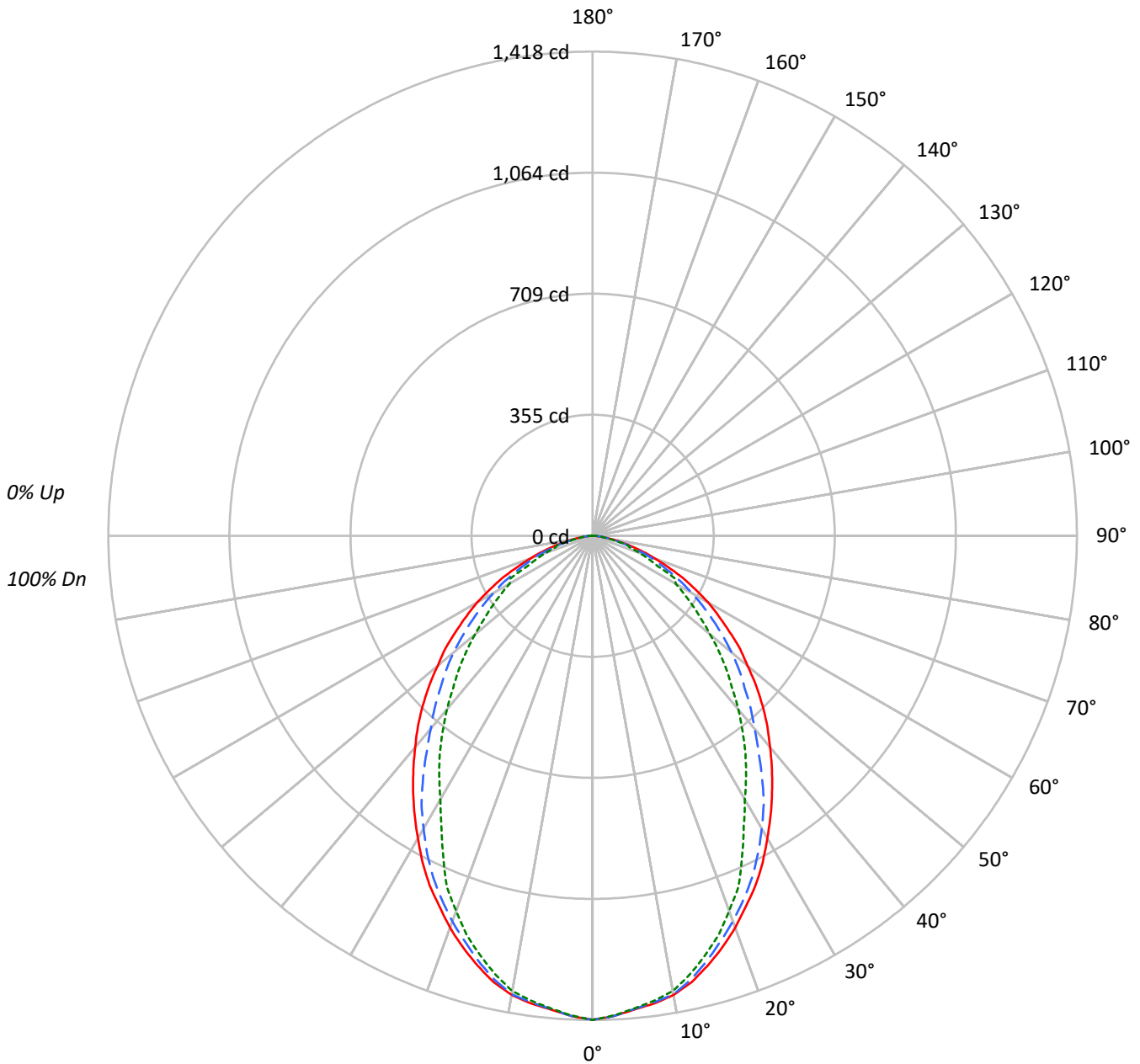
Lumens per Lamp: N/A
Luminaire Lumens: 2783.0 lumens
Efficiency: N/A
Efficacy: 83.6 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 33.3
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: P546032

CATALOG NUMBER: FMR-12-4-LD4-1STD-35-UNV-93-85-EDD

Luminous Intensity Polar Plot





TEST NUMBER: P546032

CATALOG NUMBER: FMR-12-4-LD4-1STD-35-UNV-93-85-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°	3815	3815	3815
5°	3763	3759	3754
10°	3730	3726	3699
15°	3630	3593	3543
20°	3497	3440	3346
25°	3353	3280	3075
30°	3178	3076	2770
35°	3009	2843	2563
40°	2838	2591	2331
45°	2676	2395	2108
50°	2477	2223	1880
55°	2291	2015	1684
60°	2100	1799	1508
65°	1847	1576	1336
70°	1522	1380	1135
75°	1210	1056	1107
80°	812	762	711
85°	506	608	707



TEST NUMBER: P546032

CATALOG NUMBER: FMR-12-4-LD4-1STD-35-UNV-93-85-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	132.0	4.7
10°-20°	362.2	13.0
20°-30°	501.4	18.0
30°-40°	534.6	19.2
40°-50°	487.7	17.5
50°-60°	382.1	13.7
60°-70°	249.0	8.9
70°-80°	110.3	4.0
80°-90°	23.7	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°	995.5	35.8
0°-40°	1530.1	55.0
0°-60°	2399.9	86.2
0°-90°	2783.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2783.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1418	1418	1418	1418	1418	
5°	1393	1391	1391	1390	1390	132
15°	1303	1303	1290	1277	1272	366
25°	1129	1123	1105	1065	1036	518
35°	916	910	865	800	780	573
45°	703	688	629	577	554	542
55°	488	474	429	379	359	438
65°	290	274	248	252	210	286
75°	116	108	102	97	106	125
85°	16	18	20	21	23	23
90°	0	0	0	0	0	



TEST NUMBER: P546032

CATALOG NUMBER: FMR-12-4-LD4-1STD-35-UNV-93-85-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1417.6	1417.6	1417.6	1417.6	1417.6
2.5°	1407.8	1407.8	1407.8	1406.2	1406.2
5°	1393.0	1391.4	1391.4	1389.8	1389.8
7.5°	1381.6	1379.9	1378.3	1376.7	1373.4
10°	1365.2	1365.2	1363.5	1355.3	1353.7
12.5°	1339.0	1337.3	1330.8	1319.3	1316.0
15°	1302.9	1302.9	1289.8	1276.7	1271.8
17.5°	1263.6	1261.9	1245.5	1232.4	1225.9
20°	1221.0	1217.7	1201.3	1180.0	1168.5
22.5°	1173.4	1173.4	1153.8	1125.9	1114.4
25°	1129.2	1122.6	1104.6	1065.3	1035.8
27.5°	1078.4	1068.5	1048.9	993.2	958.7
30°	1022.7	1017.7	989.9	917.8	891.5
32.5°	970.2	962.0	932.5	857.1	835.8
35°	916.1	909.6	865.3	799.8	780.1
37.5°	862.0	853.9	798.1	745.7	721.1
40°	808.0	798.1	737.5	690.0	663.7
42.5°	757.2	744.0	685.0	634.2	604.7
45°	703.1	688.3	629.3	576.9	553.9
47.5°	649.0	635.9	581.8	527.7	501.5
50°	591.6	580.2	531.0	476.9	449.1
52.5°	544.1	526.1	478.6	424.5	401.5
55°	488.4	473.6	429.4	378.6	358.9
57.5°	437.6	422.8	381.9	334.3	317.9
60°	390.1	368.7	334.3	293.4	280.2
62.5°	337.6	321.2	291.7	257.3	273.7
65°	290.1	273.7	247.5	252.4	209.8
67.5°	237.6	229.4	206.5	183.6	177.0
70°	193.4	183.6	175.4	150.8	144.2
72.5°	154.1	144.2	132.7	119.6	114.7
75°	116.4	108.2	101.6	96.7	106.5
77.5°	80.3	77.0	72.1	67.2	65.6
80°	52.4	50.8	49.2	47.5	45.9
82.5°	31.1	31.1	31.1	31.1	31.1
85°	16.4	18.0	19.7	21.3	22.9
87.5°	9.8	9.8	11.5	13.1	14.7
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)