

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: P546547

Luminaire Tested: **FMR-24-4-LD4-1LO-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: P546547
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-24-4-LD4-1LO-40-UNV-93-88-EDD
Description: 2X4 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

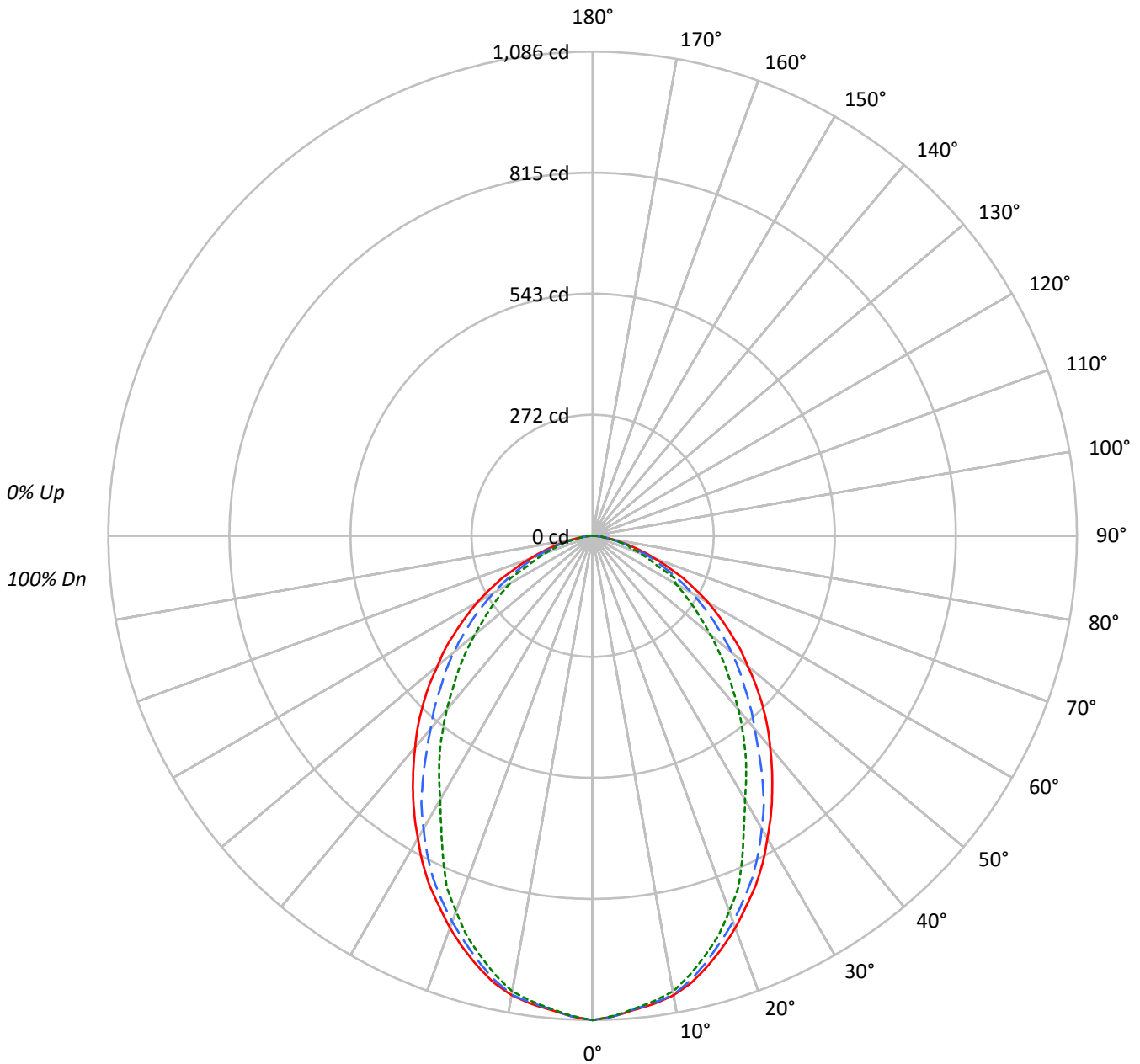
Lumens per Lamp: N/A
Luminaire Lumens: 2133.0 lumens
Efficiency: N/A
Efficacy: 91.2 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 23.4
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: P546547

CATALOG NUMBER: FMR-24-4-LD4-1LO-40-UNV-93-88-EDD

Luminous Intensity Polar Plot





TEST NUMBER: P546547

CATALOG NUMBER: FMR-24-4-LD4-1LO-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°	1462	1462	1462
5°	1442	1440	1439
10°	1430	1428	1417
15°	1391	1377	1358
20°	1340	1318	1282
25°	1285	1257	1179
30°	1218	1179	1062
35°	1153	1089	982
40°	1088	993	893
45°	1025	918	808
50°	949	852	720
55°	878	772	645
60°	805	689	578
65°	708	604	512
70°	583	529	435
75°	464	405	424
80°	311	292	273
85°	195	233	272



TEST NUMBER: P546547

CATALOG NUMBER: FMR-24-4-LD4-1LO-40-UNV-93-88-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	101.1	4.7
10°-20°	277.6	13.0
20°-30°	384.3	18.0
30°-40°	409.7	19.2
40°-50°	373.8	17.5
50°-60°	292.9	13.7
60°-70°	190.9	8.9
70°-80°	84.6	4.0
80°-90°	18.2	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°	763.0	35.8
0°-40°	1172.7	55.0
0°-60°	1839.4	86.2
0°-90°	2133.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2133.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1086	1086	1086	1086	1086	
5°	1068	1066	1066	1065	1065	101
15°	999	999	988	978	975	281
25°	865	860	847	816	794	397
35°	702	697	663	613	598	439
45°	539	528	482	442	425	415
55°	374	363	329	290	275	336
65°	222	210	190	193	161	219
75°	89	83	78	74	82	96
85°	13	14	15	16	18	17
90°	0	0	0	0	0	



TEST NUMBER: P546547

CATALOG NUMBER: FMR-24-4-LD4-1LO-40-UNV-93-88-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1086.5	1086.5	1086.5	1086.5	1086.5
2.5°	1079.0	1079.0	1079.0	1077.7	1077.7
5°	1067.7	1066.4	1066.4	1065.2	1065.2
7.5°	1058.9	1057.6	1056.4	1055.1	1052.6
10°	1046.3	1046.3	1045.1	1038.8	1037.5
12.5°	1026.2	1025.0	1019.9	1011.2	1008.6
15°	998.6	998.6	988.5	978.5	974.7
17.5°	968.4	967.2	954.6	944.6	939.6
20°	935.8	933.3	920.7	904.4	895.6
22.5°	899.4	899.4	884.3	862.9	854.1
25°	865.4	860.4	846.6	816.5	793.9
27.5°	826.5	819.0	803.9	761.2	734.8
30°	783.8	780.0	758.7	703.4	683.3
32.5°	743.6	737.3	714.7	656.9	640.6
35°	702.2	697.1	663.2	613.0	597.9
37.5°	660.7	654.4	611.7	571.5	552.7
40°	619.3	611.7	565.2	528.8	508.7
42.5°	580.3	570.3	525.0	486.1	463.5
45°	538.9	527.6	482.3	442.1	424.6
47.5°	497.4	487.4	445.9	404.5	384.4
50°	453.5	444.7	407.0	365.5	344.2
52.5°	417.0	403.2	366.8	325.3	307.7
55°	374.3	363.0	329.1	290.2	275.1
57.5°	335.4	324.1	292.7	256.2	243.7
60°	299.0	282.6	256.2	224.8	214.8
62.5°	258.8	246.2	223.6	197.2	209.8
65°	222.3	209.8	189.7	193.4	160.8
67.5°	182.1	175.9	158.3	140.7	135.7
70°	148.2	140.7	134.4	115.6	110.5
72.5°	118.1	110.5	101.7	91.7	87.9
75°	89.2	82.9	77.9	74.1	81.6
77.5°	61.5	59.0	55.3	51.5	50.2
80°	40.2	38.9	37.7	36.4	35.2
82.5°	23.9	23.9	23.9	23.9	23.9
85°	12.6	13.8	15.1	16.3	17.6
87.5°	7.5	7.5	8.8	10.0	11.3
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)