

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: P546578

Luminaire Tested: **FMR-24-4-LD4-1LO-50-UNV-93-87-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: P546578  
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-50-UNV-93-87-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

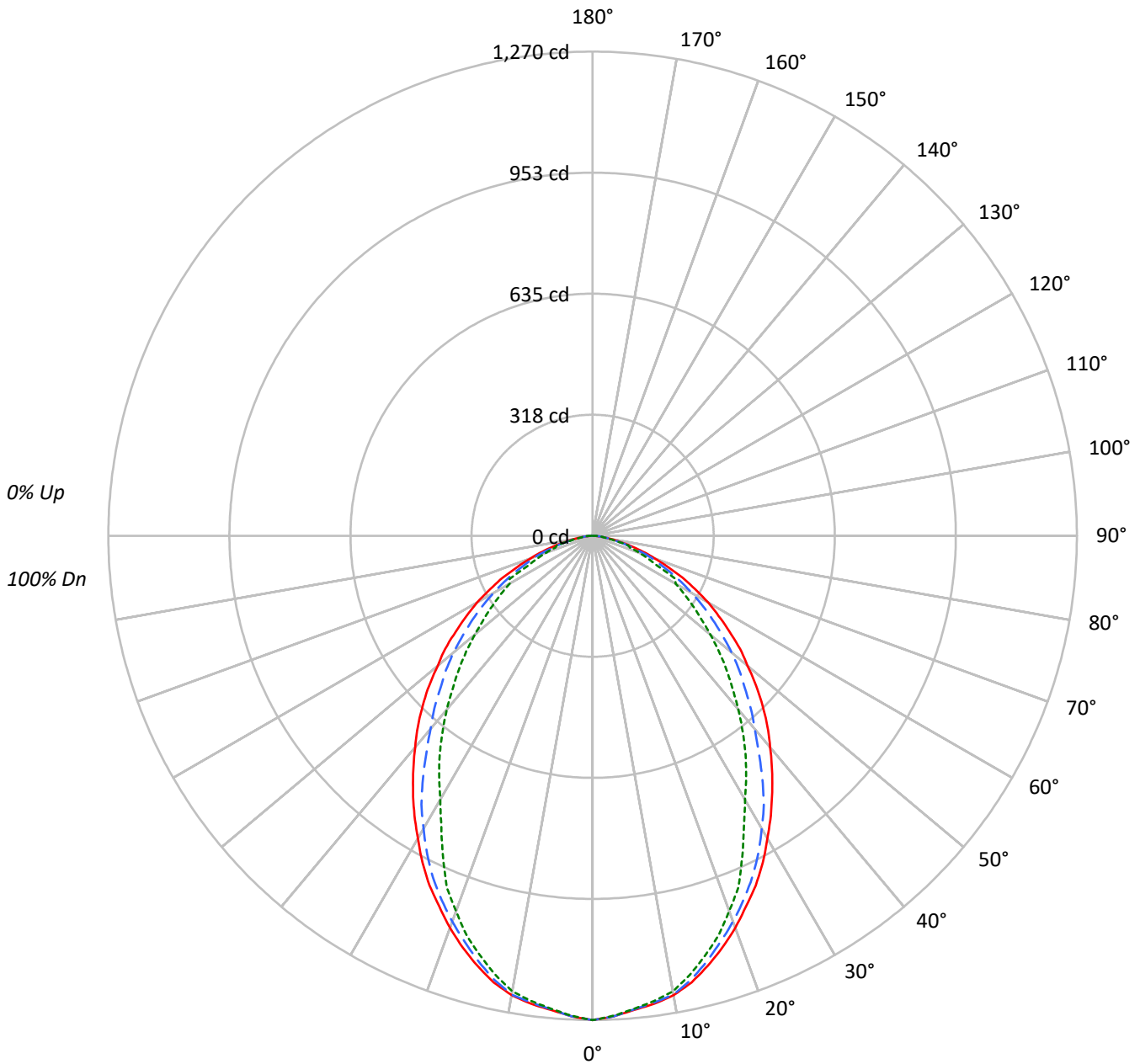
Lumens per Lamp: N/A  
Luminaire Lumens: 2494.0 lumens  
Efficiency: N/A  
Efficacy: 106.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 23.4  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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: P546578

CATALOG NUMBER: FMR-24-4-LD4-1LO-50-UNV-93-87-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P546578

CATALOG NUMBER: FMR-24-4-LD4-1LO-50-UNV-93-87-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°	1709	1709	1709
5°	1686	1684	1682
10°	1671	1669	1657
15°	1626	1610	1588
20°	1567	1541	1499
25°	1502	1470	1378
30°	1424	1378	1241
35°	1349	1274	1148
40°	1272	1161	1045
45°	1199	1073	945
50°	1110	996	842
55°	1027	903	754
60°	940	806	676
65°	828	706	599
70°	682	618	508
75°	542	474	496
80°	364	342	318
85°	227	272	318



TEST NUMBER: P546578

CATALOG NUMBER: FMR-24-4-LD4-1LO-50-UNV-93-87-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	118.3	4.7
10°-20°	324.5	13.0
20°-30°	449.3	18.0
30°-40°	479.1	19.2
40°-50°	437.1	17.5
50°-60°	342.4	13.7
60°-70°	223.2	8.9
70°-80°	98.9	4.0
80°-90°	21.2	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°	892.1	35.8
0°-40°	1371.2	55.0
0°-60°	2150.7	86.2
0°-90°	2494.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2494.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1270	1270	1270	1270	1270	
5°	1248	1247	1247	1245	1245	119
15°	1168	1168	1156	1144	1140	328
25°	1012	1006	990	955	928	465
35°	821	815	776	717	699	513
45°	630	617	564	517	496	485
55°	438	424	385	339	322	393
65°	260	245	222	226	188	256
75°	104	97	91	87	96	112
85°	15	16	18	19	21	20
90°	0	0	0	0	0	



TEST NUMBER: P546578

CATALOG NUMBER: FMR-24-4-LD4-1LO-50-UNV-93-87-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1270.4	1270.4	1270.4	1270.4	1270.4
2.5°	1261.6	1261.6	1261.6	1260.1	1260.1
5°	1248.4	1246.9	1246.9	1245.4	1245.4
7.5°	1238.1	1236.6	1235.2	1233.7	1230.8
10°	1223.4	1223.4	1221.9	1214.6	1213.1
12.5°	1199.9	1198.4	1192.6	1182.3	1179.4
15°	1167.6	1167.6	1155.9	1144.1	1139.7
17.5°	1132.4	1130.9	1116.2	1104.4	1098.6
20°	1094.2	1091.2	1076.5	1057.5	1047.2
22.5°	1051.6	1051.6	1034.0	1009.0	998.7
25°	1011.9	1006.0	989.9	954.6	928.2
27.5°	966.4	957.6	940.0	890.0	859.2
30°	916.5	912.1	887.1	822.5	799.0
32.5°	869.5	862.1	835.7	768.1	749.0
35°	821.0	815.1	775.5	716.7	699.1
37.5°	772.5	765.2	715.2	668.3	646.2
40°	724.1	715.2	660.9	618.3	594.8
42.5°	678.5	666.8	613.9	568.4	541.9
45°	630.1	616.8	564.0	517.0	496.4
47.5°	581.6	569.8	521.4	472.9	449.4
50°	530.2	519.9	475.9	427.4	402.4
52.5°	487.6	471.4	428.9	380.4	359.8
55°	437.7	424.4	384.8	339.3	321.6
57.5°	392.1	378.9	342.2	299.6	284.9
60°	349.5	330.5	299.6	262.9	251.1
62.5°	302.5	287.9	261.4	230.6	245.3
65°	260.0	245.3	221.8	226.2	188.0
67.5°	213.0	205.6	185.1	164.5	158.6
70°	173.3	164.5	157.1	135.1	129.2
72.5°	138.1	129.2	119.0	107.2	102.8
75°	104.3	96.9	91.1	86.7	95.5
77.5°	72.0	69.0	64.6	60.2	58.7
80°	47.0	45.5	44.1	42.6	41.1
82.5°	27.9	27.9	27.9	27.9	27.9
85°	14.7	16.2	17.6	19.1	20.6
87.5°	8.8	8.8	10.3	11.7	13.2
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)