

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: P546256

Luminaire Tested: **FMR-12-4-LD4-2LO-40-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: P546256  
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-40-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 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

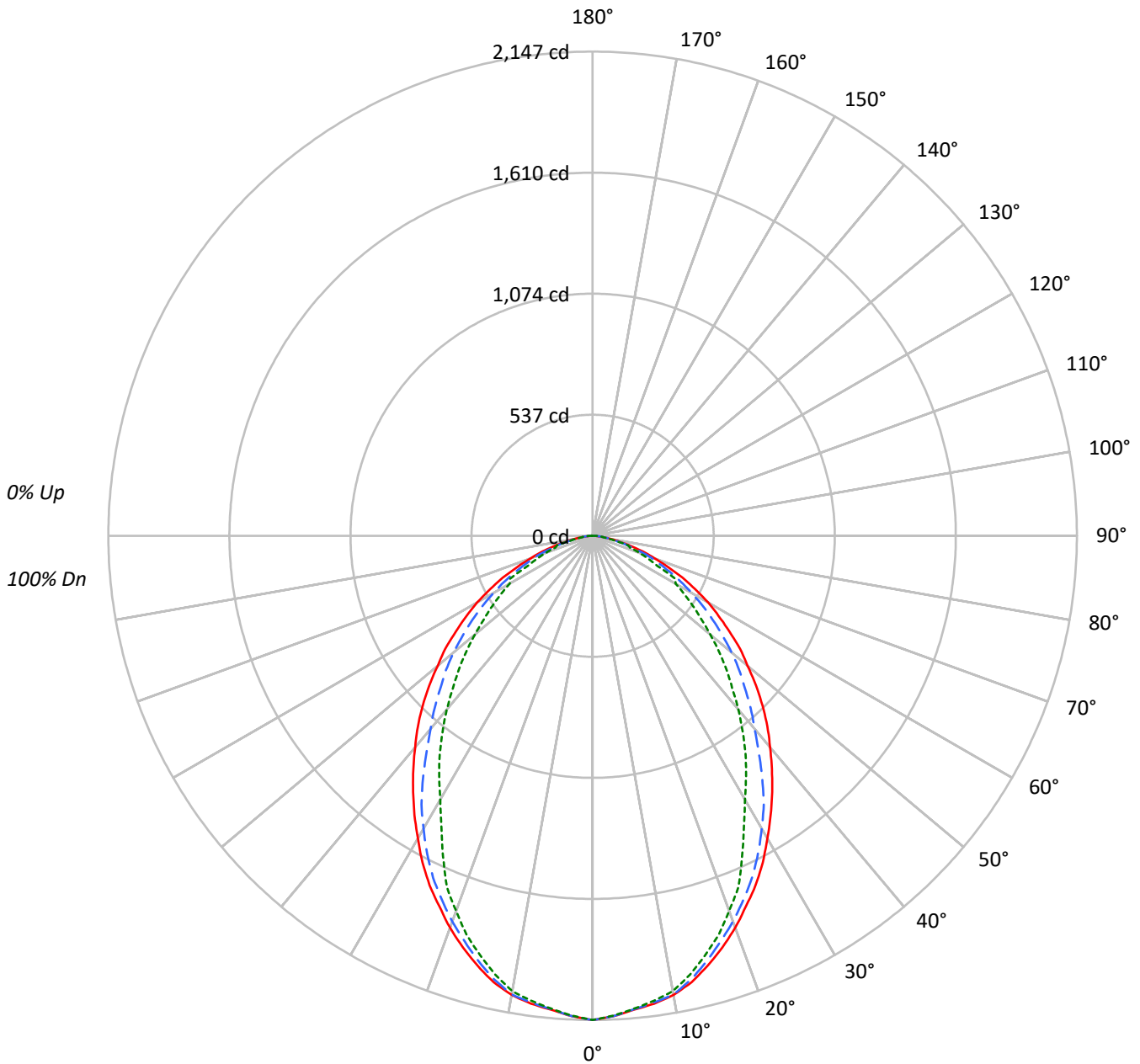
Lumens per Lamp: N/A  
Luminaire Lumens: 4215.0 lumens  
Efficiency: N/A  
Efficacy: 90.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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: P546256

CATALOG NUMBER: FMR-12-4-LD4-2LO-40-UNV-93-85-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P546256

CATALOG NUMBER: FMR-12-4-LD4-2LO-40-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°	5778	5778	5778
5°	5699	5693	5686
10°	5650	5643	5602
15°	5497	5442	5366
20°	5296	5210	5068
25°	5078	4967	4658
30°	4813	4658	4196
35°	4558	4305	3881
40°	4299	3924	3531
45°	4052	3627	3193
50°	3751	3367	2847
55°	3470	3051	2550
60°	3180	2725	2284
65°	2797	2387	2023
70°	2305	2090	1718
75°	1832	1600	1677
80°	1230	1155	1077
85°	766	920	1074



TEST NUMBER: P546256

CATALOG NUMBER: FMR-12-4-LD4-2LO-40-UNV-93-85-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	199.9	4.7
10°-20°	548.5	13.0
20°-30°	759.4	18.0
30°-40°	809.7	19.2
40°-50°	738.7	17.5
50°-60°	578.7	13.7
60°-70°	377.2	8.9
70°-80°	167.1	4.0
80°-90°	35.9	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°	1507.7	35.8
0°-40°	2317.5	55.0
0°-60°	3634.8	86.2
0°-90°	4215.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4215.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2147	2147	2147	2147	2147	
5°	2110	2107	2107	2105	2105	200
15°	1973	1973	1954	1934	1926	555
25°	1710	1700	1673	1613	1569	785
35°	1388	1378	1311	1211	1182	867
45°	1065	1042	953	874	839	820
55°	740	717	650	573	544	663
65°	439	414	375	382	318	433
75°	176	164	154	146	161	189
85°	25	27	30	32	35	34
90°	0	0	0	0	0	



TEST NUMBER: P546256

CATALOG NUMBER: FMR-12-4-LD4-2LO-40-UNV-93-85-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2147.1	2147.1	2147.1	2147.1	2147.1
2.5°	2132.2	2132.2	2132.2	2129.7	2129.7
5°	2109.8	2107.4	2107.4	2104.9	2104.9
7.5°	2092.5	2090.0	2087.5	2085.0	2080.0
10°	2067.6	2067.6	2065.2	2052.7	2050.3
12.5°	2027.9	2025.4	2015.5	1998.1	1993.2
15°	1973.3	1973.3	1953.5	1933.6	1926.2
17.5°	1913.7	1911.3	1886.4	1866.6	1856.7
20°	1849.2	1844.2	1819.4	1787.2	1769.8
22.5°	1777.2	1777.2	1747.4	1705.2	1687.9
25°	1710.2	1700.3	1673.0	1613.4	1568.7
27.5°	1633.3	1618.4	1588.6	1504.2	1452.1
30°	1548.9	1541.4	1499.2	1390.0	1350.3
32.5°	1469.4	1457.0	1412.3	1298.2	1265.9
35°	1387.5	1377.6	1310.6	1211.3	1181.5
37.5°	1305.6	1293.2	1208.8	1129.4	1092.1
40°	1223.7	1208.8	1117.0	1045.0	1005.3
42.5°	1146.8	1126.9	1037.5	960.6	915.9
45°	1064.8	1042.5	953.1	873.7	839.0
47.5°	982.9	963.1	881.2	799.3	759.5
50°	896.1	878.7	804.2	722.3	680.1
52.5°	824.1	796.8	724.8	642.9	608.1
55°	739.7	717.3	650.3	573.4	543.6
57.5°	662.7	640.4	578.3	506.4	481.5
60°	590.8	558.5	506.4	444.3	424.4
62.5°	511.3	486.5	441.8	389.7	414.5
65°	439.3	414.5	374.8	382.3	317.7
67.5°	359.9	347.5	312.8	278.0	268.1
70°	292.9	278.0	265.6	228.4	218.4
72.5°	233.3	218.4	201.1	181.2	173.8
75°	176.2	163.8	153.9	146.4	161.3
77.5°	121.6	116.7	109.2	101.8	99.3
80°	79.4	76.9	74.5	72.0	69.5
82.5°	47.2	47.2	47.2	47.2	47.2
85°	24.8	27.3	29.8	32.3	34.8
87.5°	14.9	14.9	17.4	19.9	22.3
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)