

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: P545846

Luminaire Tested: **FMR-12-4-LD4-1HI-35-UNV-93-97-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: P545846  
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-LD4-1HI-35-UNV-93-97-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

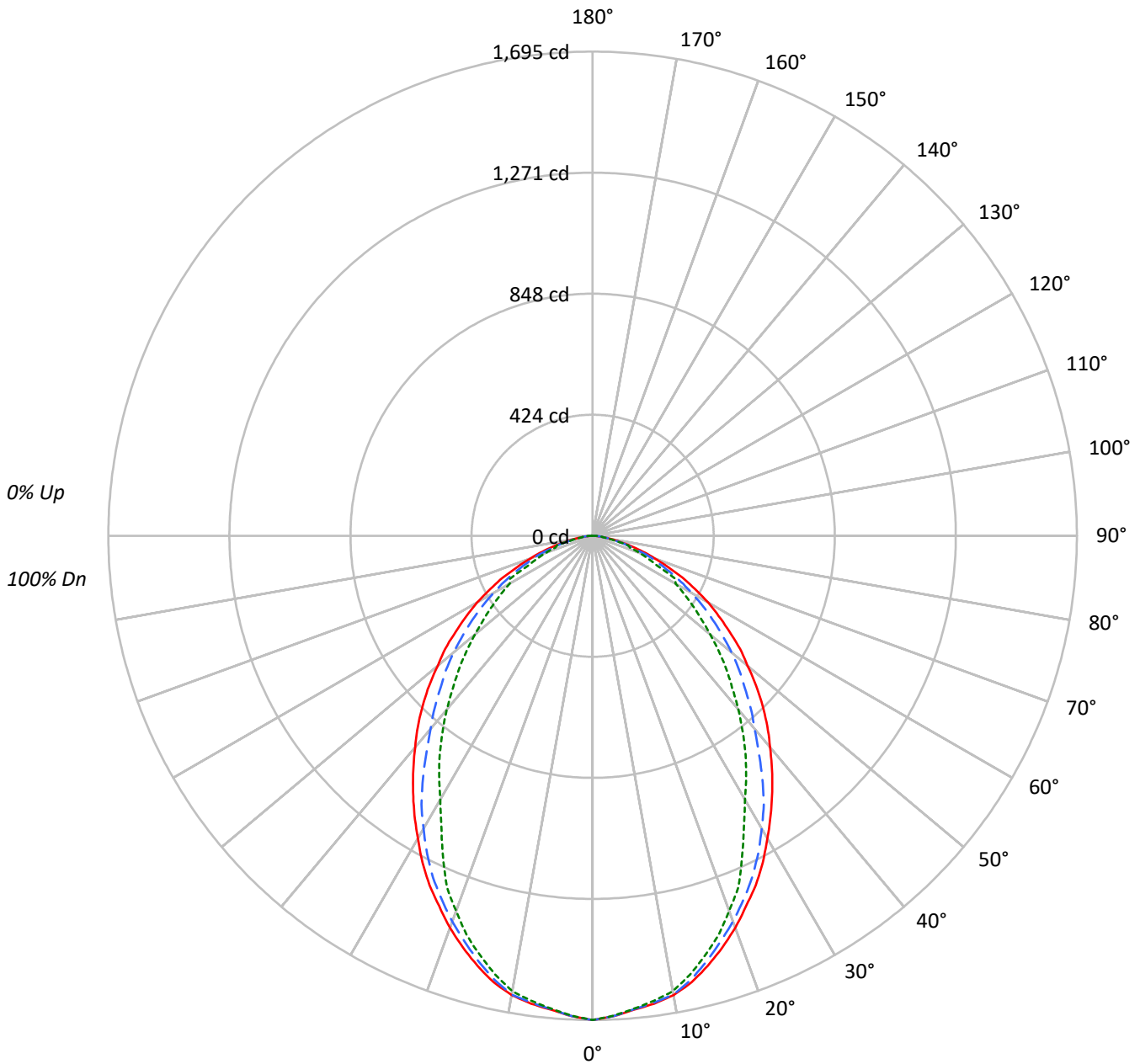
Lumens per Lamp: N/A  
Luminaire Lumens: 3328.0 lumens  
Efficiency: N/A  
Efficacy: 77.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 43.2  
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: P545846

CATALOG NUMBER: FMR-12-4-LD4-1HI-35-UNV-93-97-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P545846

CATALOG NUMBER: FMR-12-4-LD4-1HI-35-UNV-93-97-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°	4562	4562	4562
5°	4500	4495	4489
10°	4461	4456	4423
15°	4341	4297	4237
20°	4181	4114	4001
25°	4009	3922	3678
30°	3800	3678	3313
35°	3599	3399	3065
40°	3394	3098	2788
45°	3200	2864	2521
50°	2962	2658	2248
55°	2740	2409	2014
60°	2510	2152	1803
65°	2209	1884	1598
70°	1820	1650	1357
75°	1446	1263	1325
80°	972	911	851
85°	605	726	846



TEST NUMBER: P545846

CATALOG NUMBER: FMR-12-4-LD4-1HI-35-UNV-93-97-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	157.8	4.7
10°-20°	433.1	13.0
20°-30°	599.6	18.0
30°-40°	639.3	19.2
40°-50°	583.2	17.5
50°-60°	456.9	13.7
60°-70°	297.8	8.9
70°-80°	131.9	4.0
80°-90°	28.3	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°	1190.5	35.8
0°-40°	1829.8	55.0
0°-60°	2869.9	86.2
0°-90°	3328.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3328.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1695	1695	1695	1695	1695	
5°	1666	1664	1664	1662	1662	158
15°	1558	1558	1542	1527	1521	438
25°	1350	1342	1321	1274	1239	620
35°	1096	1088	1035	956	933	685
45°	841	823	753	690	662	648
55°	584	566	514	453	429	524
65°	347	327	296	302	251	342
75°	139	129	122	116	127	149
85°	20	22	24	26	27	27
90°	0	0	0	0	0	



TEST NUMBER: P545846

CATALOG NUMBER: FMR-12-4-LD4-1HI-35-UNV-93-97-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1695.2	1695.2	1695.2	1695.2	1695.2
2.5°	1683.5	1683.5	1683.5	1681.5	1681.5
5°	1665.8	1663.9	1663.9	1661.9	1661.9
7.5°	1652.1	1650.2	1648.2	1646.2	1642.3
10°	1632.5	1632.5	1630.6	1620.8	1618.8
12.5°	1601.2	1599.2	1591.4	1577.6	1573.7
15°	1558.1	1558.1	1542.4	1526.7	1520.8
17.5°	1511.0	1509.1	1489.5	1473.8	1465.9
20°	1460.1	1456.1	1436.5	1411.1	1397.3
22.5°	1403.2	1403.2	1379.7	1346.4	1332.7
25°	1350.3	1342.5	1320.9	1273.9	1238.6
27.5°	1289.6	1277.8	1254.3	1187.6	1146.5
30°	1222.9	1217.0	1183.7	1097.5	1066.1
32.5°	1160.2	1150.4	1115.1	1025.0	999.5
35°	1095.5	1087.7	1034.8	956.4	932.9
37.5°	1030.9	1021.1	954.4	891.7	862.3
40°	966.2	954.4	881.9	825.1	793.7
42.5°	905.4	889.8	819.2	758.4	723.2
45°	840.8	823.1	752.6	689.9	662.4
47.5°	776.1	760.4	695.7	631.1	599.7
50°	707.5	693.8	635.0	570.3	537.0
52.5°	650.7	629.1	572.3	507.6	480.2
55°	584.0	566.4	513.5	452.7	429.2
57.5°	523.3	505.6	456.6	399.8	380.2
60°	466.4	441.0	399.8	350.8	335.1
62.5°	403.7	384.1	348.8	307.7	327.3
65°	346.9	327.3	295.9	301.8	250.9
67.5°	284.2	274.4	246.9	219.5	211.7
70°	231.3	219.5	209.7	180.3	172.5
72.5°	184.2	172.5	158.7	143.1	137.2
75°	139.1	129.3	121.5	115.6	127.4
77.5°	96.0	92.1	86.2	80.4	78.4
80°	62.7	60.8	58.8	56.8	54.9
82.5°	37.2	37.2	37.2	37.2	37.2
85°	19.6	21.6	23.5	25.5	27.4
87.5°	11.8	11.8	13.7	15.7	17.6
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)