

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: P545842

Luminaire Tested: **FMR-12-4-LD4-1HI-35-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: P545842  
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-93-87-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

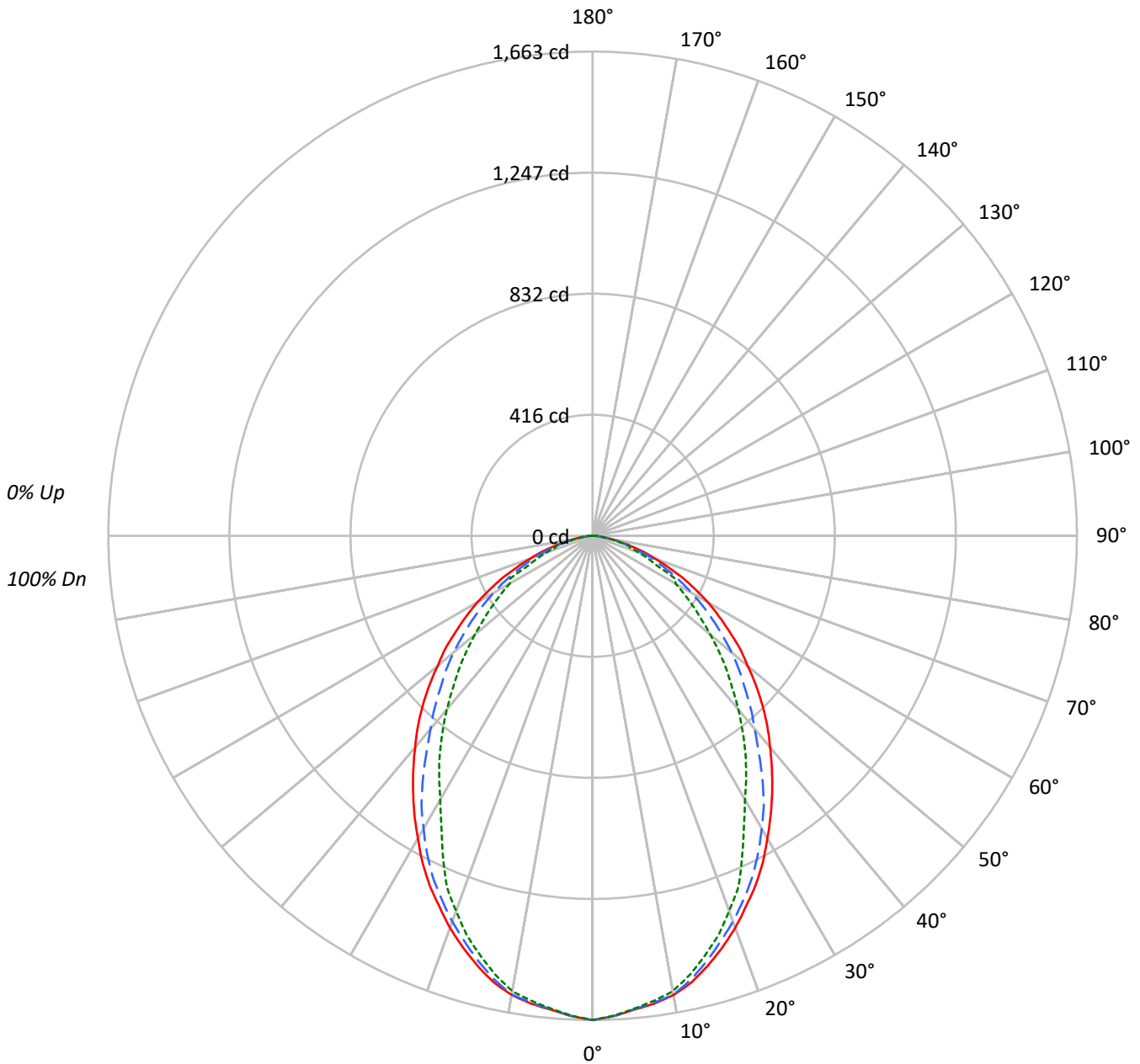
Lumens per Lamp: N/A  
Luminaire Lumens: 3265.0 lumens  
Efficiency: N/A  
Efficacy: 75.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 43.2  
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

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### Luminous Intensity Polar Plot





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**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°	4475	4475	4475
5°	4415	4410	4404
10°	4376	4371	4340
15°	4259	4216	4157
20°	4102	4036	3926
25°	3933	3848	3608
30°	3728	3608	3250
35°	3531	3335	3007
40°	3330	3039	2735
45°	3139	2810	2473
50°	2906	2608	2205
55°	2688	2364	1976
60°	2463	2111	1770
65°	2167	1848	1567
70°	1785	1618	1331
75°	1419	1239	1300
80°	953	894	834
85°	593	713	831



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	154.8	4.7
10°-20°	424.9	13.0
20°-30°	588.2	18.0
30°-40°	627.2	19.2
40°-50°	572.2	17.5
50°-60°	448.3	13.7
60°-70°	292.2	8.9
70°-80°	129.4	4.0
80°-90°	27.8	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°	1167.9	35.8
0°-40°	1795.1	55.0
0°-60°	2815.6	86.2
0°-90°	3265.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3265.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1663	1663	1663	1663	1663	
5°	1634	1632	1632	1630	1630	155
15°	1529	1529	1513	1498	1492	430
25°	1325	1317	1296	1250	1215	608
35°	1075	1067	1015	938	915	672
45°	825	808	738	677	650	635
55°	573	556	504	444	421	514
65°	340	321	290	296	246	335
75°	136	127	119	113	125	146
85°	19	21	23	25	27	27
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1663.1	1663.1	1663.1	1663.1	1663.1
2.5°	1651.6	1651.6	1651.6	1649.7	1649.7
5°	1634.3	1632.4	1632.4	1630.5	1630.5
7.5°	1620.8	1618.9	1617.0	1615.1	1611.2
10°	1601.6	1601.6	1599.7	1590.1	1588.2
12.5°	1570.9	1568.9	1561.2	1547.8	1543.9
15°	1528.6	1528.6	1513.2	1497.8	1492.0
17.5°	1482.4	1480.5	1461.3	1445.9	1438.2
20°	1432.4	1428.6	1409.3	1384.4	1370.9
22.5°	1376.7	1376.7	1353.6	1320.9	1307.4
25°	1324.7	1317.1	1295.9	1249.8	1215.2
27.5°	1265.1	1253.6	1230.5	1165.2	1124.8
30°	1199.8	1194.0	1161.3	1076.7	1046.0
32.5°	1138.2	1128.6	1094.0	1005.6	980.6
35°	1074.8	1067.1	1015.2	938.3	915.2
37.5°	1011.3	1001.7	936.4	874.8	846.0
40°	947.9	936.4	865.2	809.5	778.7
42.5°	888.3	872.9	803.7	744.1	709.5
45°	824.8	807.5	738.3	676.8	649.9
47.5°	761.4	746.0	682.6	619.1	588.4
50°	694.1	680.6	623.0	559.5	526.8
52.5°	638.3	617.2	561.4	498.0	471.1
55°	573.0	555.7	503.8	444.1	421.1
57.5°	513.4	496.1	448.0	392.2	373.0
60°	457.6	432.6	392.2	344.2	328.8
62.5°	396.1	376.9	342.2	301.9	321.1
65°	340.3	321.1	290.3	296.1	246.1
67.5°	278.8	269.2	242.3	215.3	207.7
70°	226.9	215.3	205.7	176.9	169.2
72.5°	180.7	169.2	155.7	140.4	134.6
75°	136.5	126.9	119.2	113.4	125.0
77.5°	94.2	90.4	84.6	78.8	76.9
80°	61.5	59.6	57.7	55.8	53.8
82.5°	36.5	36.5	36.5	36.5	36.5
85°	19.2	21.1	23.1	25.0	26.9
87.5°	11.5	11.5	13.5	15.4	17.3
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)