

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: P545874

Luminaire Tested: **FMR-12-4-LD4-1HI-40-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: P545874  
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-40-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 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

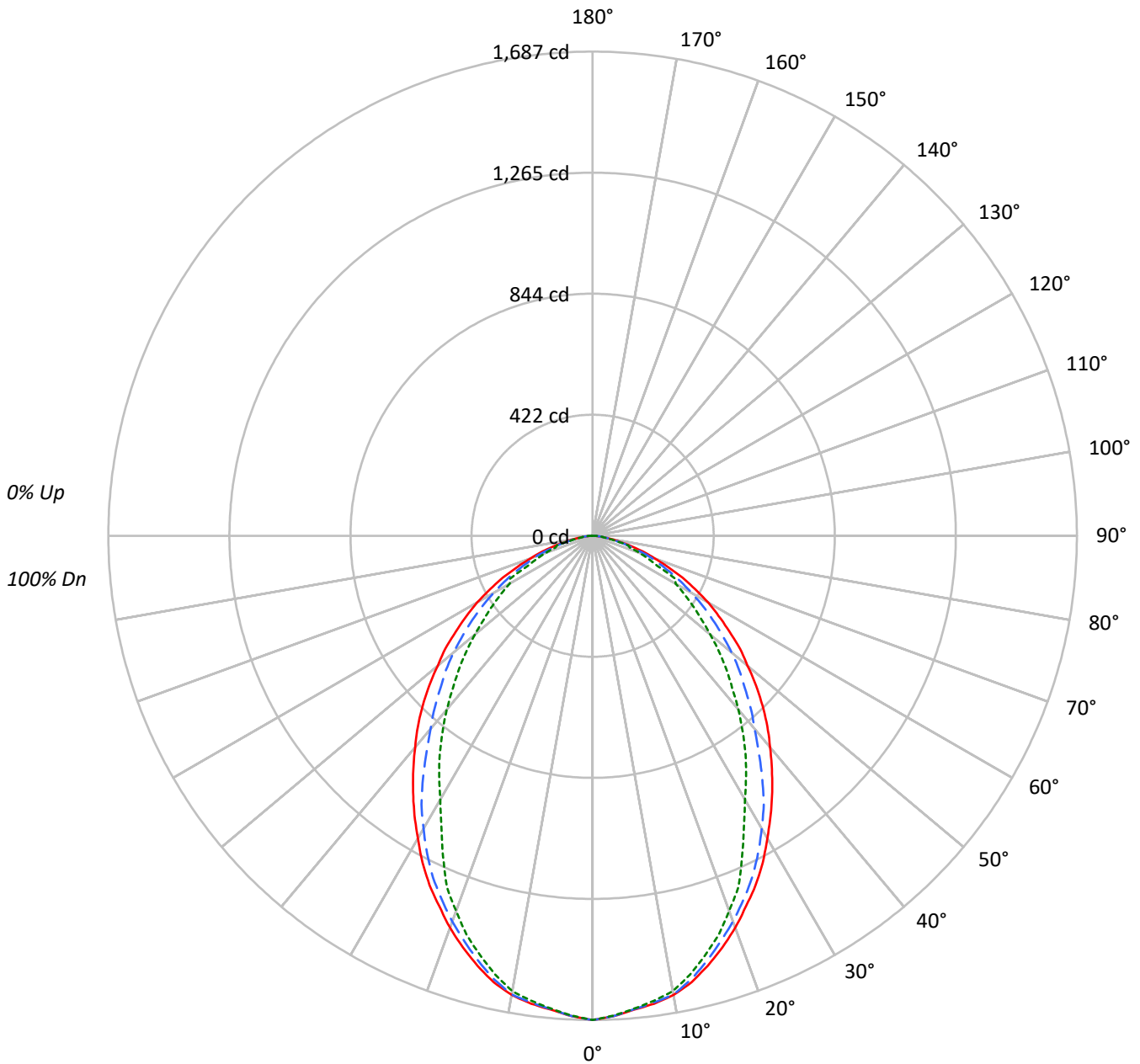
Lumens per Lamp: N/A  
Luminaire Lumens: 3312.0 lumens  
Efficiency: N/A  
Efficacy: 76.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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									
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°	4540	4540	4540
5°	4478	4473	4468
10°	4439	4434	4402
15°	4320	4276	4216
20°	4161	4094	3982
25°	3990	3903	3660
30°	3782	3660	3297
35°	3582	3383	3050
40°	3378	3083	2775
45°	3184	2850	2509
50°	2948	2645	2237
55°	2727	2397	2004
60°	2498	2141	1795
65°	2198	1875	1590
70°	1810	1642	1350
75°	1440	1257	1318
80°	967	907	846
85°	602	722	843



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	157.0	4.7
10°-20°	431.0	13.0
20°-30°	596.7	18.0
30°-40°	636.2	19.2
40°-50°	580.4	17.5
50°-60°	454.7	13.7
60°-70°	296.4	8.9
70°-80°	131.3	4.0
80°-90°	28.2	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°	1184.7	35.8
0°-40°	1821.0	55.0
0°-60°	2856.1	86.2
0°-90°	3312.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3312.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1687	1687	1687	1687	1687	
5°	1658	1656	1656	1654	1654	157
15°	1551	1551	1535	1519	1514	436
25°	1344	1336	1315	1268	1233	617
35°	1090	1082	1030	952	928	682
45°	837	819	749	686	659	645
55°	581	564	511	450	427	521
65°	345	326	294	300	250	340
75°	138	129	121	115	127	148
85°	20	22	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°	1687.1	1687.1	1687.1	1687.1	1687.1
2.5°	1675.4	1675.4	1675.4	1673.4	1673.4
5°	1657.8	1655.9	1655.9	1653.9	1653.9
7.5°	1644.2	1642.2	1640.3	1638.3	1634.4
10°	1624.7	1624.7	1622.7	1613.0	1611.0
12.5°	1593.5	1591.5	1583.7	1570.1	1566.2
15°	1550.6	1550.6	1535.0	1519.4	1513.5
17.5°	1503.8	1501.8	1482.3	1466.7	1458.9
20°	1453.0	1449.1	1429.6	1404.3	1390.6
22.5°	1396.5	1396.5	1373.1	1339.9	1326.3
25°	1343.8	1336.0	1314.6	1267.8	1232.6
27.5°	1283.4	1271.7	1248.3	1181.9	1141.0
30°	1217.0	1211.2	1178.0	1092.2	1061.0
32.5°	1154.6	1144.9	1109.8	1020.1	994.7
35°	1090.3	1082.5	1029.8	951.8	928.4
37.5°	1025.9	1016.2	949.8	887.4	858.2
40°	961.5	949.8	877.7	821.1	789.9
42.5°	901.1	885.5	815.3	754.8	719.7
45°	836.7	819.2	749.0	686.5	659.2
47.5°	772.4	756.8	692.4	628.0	596.8
50°	704.1	690.4	631.9	567.6	534.4
52.5°	647.5	626.1	569.5	505.2	477.8
55°	581.2	563.7	511.0	450.5	427.1
57.5°	520.8	503.2	454.4	397.9	378.4
60°	464.2	438.8	397.9	349.1	333.5
62.5°	401.8	382.3	347.2	306.2	325.7
65°	345.2	325.7	294.5	300.4	249.7
67.5°	282.8	273.1	245.7	218.4	210.6
70°	230.1	218.4	208.7	179.4	171.6
72.5°	183.3	171.6	158.0	142.4	136.5
75°	138.5	128.7	120.9	115.1	126.8
77.5°	95.6	91.7	85.8	80.0	78.0
80°	62.4	60.5	58.5	56.6	54.6
82.5°	37.1	37.1	37.1	37.1	37.1
85°	19.5	21.5	23.4	25.4	27.3
87.5°	11.7	11.7	13.7	15.6	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)