

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: P546677

Luminaire Tested: **FMR-24-4-LD4-1STD-50-UNV-93-96-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: P546677  
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-LD4-1STD-50-UNV-93-96-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

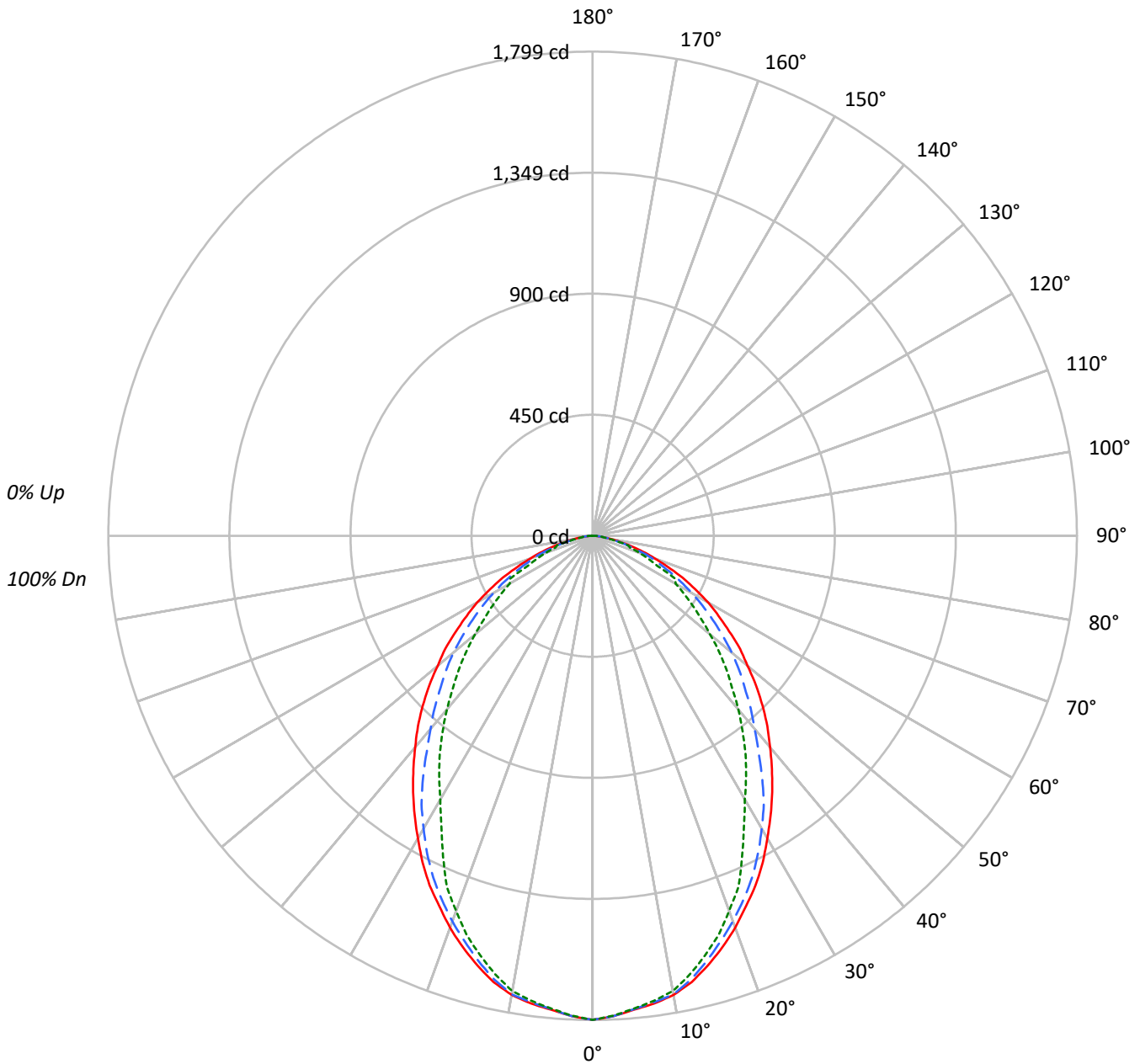
Lumens per Lamp: N/A  
Luminaire Lumens: 3531.0 lumens  
Efficiency: N/A  
Efficacy: 106.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 33.3  
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°	2420	2420	2420
5°	2387	2384	2382
10°	2366	2364	2347
15°	2303	2280	2248
20°	2218	2182	2123
25°	2127	2081	1951
30°	2016	1951	1757
35°	1909	1803	1626
40°	1800	1643	1479
45°	1697	1519	1337
50°	1571	1410	1193
55°	1453	1278	1068
60°	1332	1142	957
65°	1172	1000	848
70°	965	875	720
75°	767	670	703
80°	515	483	451
85°	321	386	449



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	167.4	4.7
10°-20°	459.5	13.0
20°-30°	636.1	18.0
30°-40°	678.3	19.2
40°-50°	618.8	17.5
50°-60°	484.8	13.7
60°-70°	316.0	8.9
70°-80°	140.0	4.0
80°-90°	30.1	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°	1263.1	35.8
0°-40°	1941.4	55.0
0°-60°	3045.0	86.2
0°-90°	3531.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3531.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1799	1799	1799	1799	1799	
5°	1768	1765	1765	1763	1763	168
15°	1653	1653	1636	1620	1614	465
25°	1433	1424	1402	1352	1314	658
35°	1162	1154	1098	1015	990	727
45°	892	873	798	732	703	687
55°	620	601	545	480	455	556
65°	368	347	314	320	266	363
75°	148	137	129	123	135	158
85°	21	23	25	27	29	29
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1798.6	1798.6	1798.6	1798.6	1798.6
2.5°	1786.2	1786.2	1786.2	1784.1	1784.1
5°	1767.5	1765.4	1765.4	1763.3	1763.3
7.5°	1752.9	1750.8	1748.7	1746.7	1742.5
10°	1732.1	1732.1	1730.0	1719.6	1717.5
12.5°	1698.8	1696.8	1688.4	1673.9	1669.7
15°	1653.1	1653.1	1636.5	1619.8	1613.6
17.5°	1603.2	1601.1	1580.3	1563.7	1555.4
20°	1549.1	1545.0	1524.2	1497.1	1482.6
22.5°	1488.8	1488.8	1463.9	1428.5	1414.0
25°	1432.7	1424.4	1401.5	1351.6	1314.2
27.5°	1368.2	1355.7	1330.8	1260.1	1216.4
30°	1297.5	1291.3	1255.9	1164.4	1131.2
32.5°	1231.0	1220.6	1183.2	1087.5	1060.5
35°	1162.4	1154.0	1097.9	1014.7	989.8
37.5°	1093.7	1083.3	1012.6	946.1	914.9
40°	1025.1	1012.6	935.7	875.4	842.1
42.5°	960.7	944.0	869.2	804.7	767.3
45°	892.0	873.3	798.5	731.9	702.8
47.5°	823.4	806.8	738.2	669.6	636.3
50°	750.6	736.1	673.7	605.1	569.7
52.5°	690.3	667.5	607.2	538.6	509.4
55°	619.6	600.9	544.8	480.3	455.4
57.5°	555.2	536.5	484.5	424.2	403.4
60°	494.9	467.9	424.2	372.2	355.6
62.5°	428.3	407.6	370.1	326.5	347.3
65°	368.0	347.3	314.0	320.2	266.2
67.5°	301.5	291.1	262.0	232.9	224.6
70°	245.4	232.9	222.5	191.3	183.0
72.5°	195.5	183.0	168.4	151.8	145.6
75°	147.6	137.2	128.9	122.7	135.2
77.5°	101.9	97.7	91.5	85.3	83.2
80°	66.5	64.5	62.4	60.3	58.2
82.5°	39.5	39.5	39.5	39.5	39.5
85°	20.8	22.9	25.0	27.0	29.1
87.5°	12.5	12.5	14.6	16.6	18.7
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)