

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: P546654

Luminaire Tested: **FMR-24-4-LD4-1STD-50-UNV-80-97-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: P546654  
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-80-97-EDD  
Description: 2X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .375  
CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT  
LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

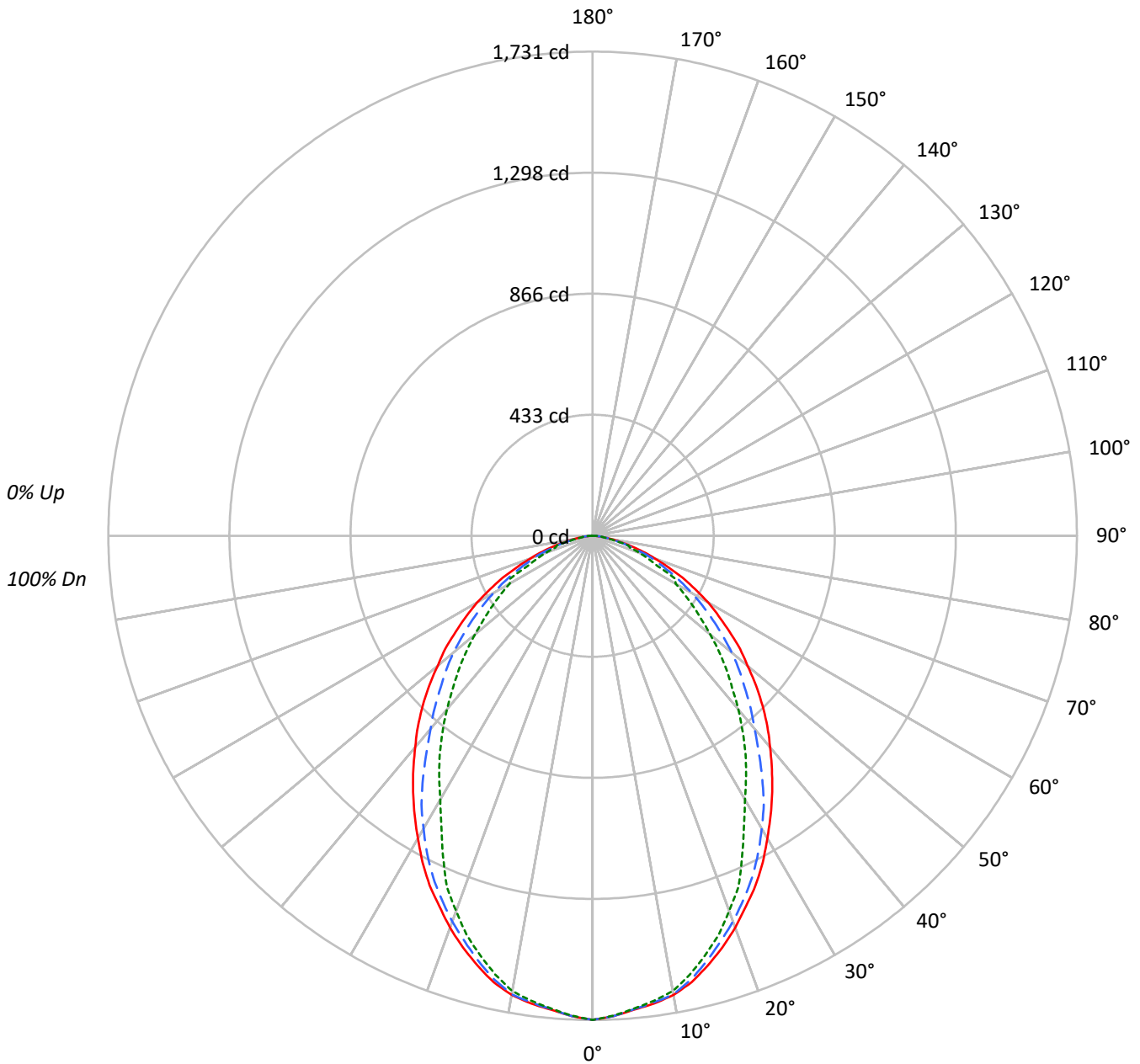
Lumens per Lamp: N/A  
Luminaire Lumens: 3398.0 lumens  
Efficiency: N/A  
Efficacy: 102.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 33.3  
Input Voltage (V): NR  
Input Current (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

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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°	2329	2329	2329
5°	2297	2295	2292
10°	2277	2275	2258
15°	2216	2194	2163
20°	2135	2100	2043
25°	2047	2002	1878
30°	1940	1878	1691
35°	1837	1735	1565
40°	1733	1582	1423
45°	1633	1462	1287
50°	1512	1357	1148
55°	1399	1230	1028
60°	1281	1098	921
65°	1128	962	815
70°	929	842	693
75°	739	645	676
80°	496	465	434
85°	309	371	432



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	161.1	4.7
10°-20°	442.2	13.0
20°-30°	612.2	18.0
30°-40°	652.8	19.2
40°-50°	595.5	17.5
50°-60°	466.5	13.7
60°-70°	304.1	8.9
70°-80°	134.7	4.0
80°-90°	28.9	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°	1215.5	35.8
0°-40°	1868.3	55.0
0°-60°	2930.3	86.2
0°-90°	3398.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3398.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1731	1731	1731	1731	1731	
5°	1701	1699	1699	1697	1697	161
15°	1591	1591	1575	1559	1553	447
25°	1379	1371	1349	1301	1265	633
35°	1119	1111	1056	976	952	699
45°	858	840	768	704	676	661
55°	596	578	524	462	438	535
65°	354	334	302	308	256	349
75°	142	132	124	118	130	152
85°	20	22	24	26	28	28
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1730.9	1730.9	1730.9	1730.9	1730.9
2.5°	1718.9	1718.9	1718.9	1716.9	1716.9
5°	1700.9	1698.9	1698.9	1696.9	1696.9
7.5°	1686.9	1684.9	1682.9	1680.9	1676.9
10°	1666.9	1666.9	1664.9	1654.9	1652.9
12.5°	1634.8	1632.8	1624.8	1610.8	1606.8
15°	1590.8	1590.8	1574.8	1558.8	1552.8
17.5°	1542.8	1540.8	1520.8	1504.8	1496.8
20°	1490.8	1486.8	1466.8	1440.7	1426.7
22.5°	1432.7	1432.7	1408.7	1374.7	1360.7
25°	1378.7	1370.7	1348.7	1300.7	1264.7
27.5°	1316.7	1304.7	1280.7	1212.6	1170.6
30°	1248.6	1242.6	1208.6	1120.6	1088.6
32.5°	1184.6	1174.6	1138.6	1046.5	1020.5
35°	1118.6	1110.6	1056.5	976.5	952.5
37.5°	1052.5	1042.5	974.5	910.5	880.5
40°	986.5	974.5	900.5	842.4	810.4
42.5°	924.5	908.5	836.4	774.4	738.4
45°	858.4	840.4	768.4	704.4	676.4
47.5°	792.4	776.4	710.4	644.3	612.3
50°	722.4	708.4	648.3	582.3	548.3
52.5°	664.3	642.3	584.3	518.3	490.3
55°	596.3	578.3	524.3	462.2	438.2
57.5°	534.3	516.3	466.2	408.2	388.2
60°	476.2	450.2	408.2	358.2	342.2
62.5°	412.2	392.2	356.2	314.2	334.2
65°	354.2	334.2	302.2	308.2	256.1
67.5°	290.2	280.1	252.1	224.1	216.1
70°	236.1	224.1	214.1	184.1	176.1
72.5°	188.1	176.1	162.1	146.1	140.1
75°	142.1	132.1	124.1	118.1	130.1
77.5°	98.1	94.0	88.0	82.0	80.0
80°	64.0	62.0	60.0	58.0	56.0
82.5°	38.0	38.0	38.0	38.0	38.0
85°	20.0	22.0	24.0	26.0	28.0
87.5°	12.0	12.0	14.0	16.0	18.0
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)