

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: P546590

Luminaire Tested: **FMR-24-4-LD4-1STD-35-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: P546590  
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-35-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 3500K CCT  
LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

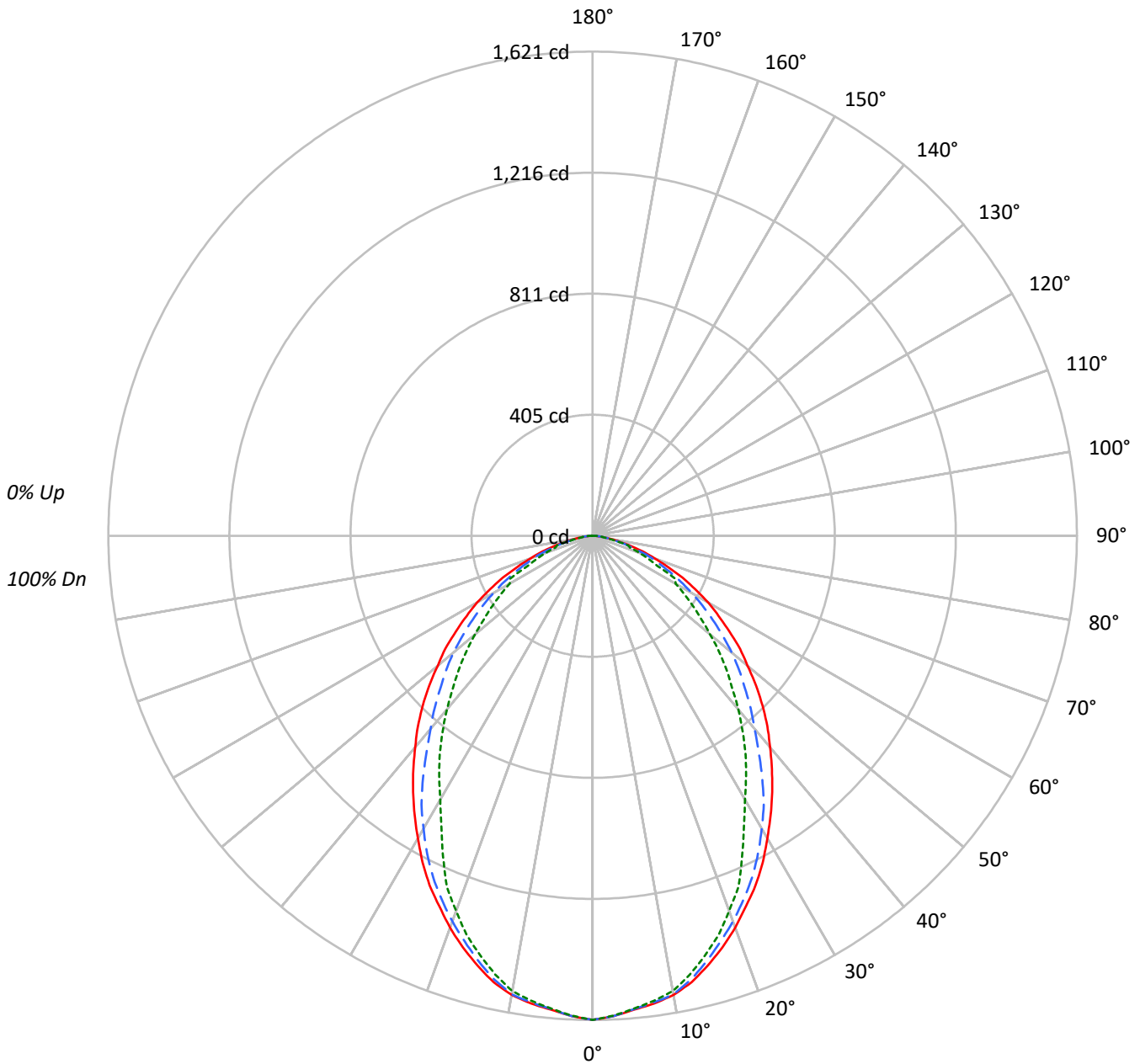
Lumens per Lamp: N/A  
Luminaire Lumens: 3182.0 lumens  
Efficiency: N/A  
Efficacy: 95.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	2181	2181	2181
5°	2151	2149	2146
10°	2133	2130	2115
15°	2075	2054	2025
20°	1999	1967	1913
25°	1917	1875	1758
30°	1817	1758	1584
35°	1721	1625	1465
40°	1623	1481	1333
45°	1530	1369	1205
50°	1416	1271	1075
55°	1310	1152	963
60°	1200	1029	862
65°	1056	901	764
70°	870	789	649
75°	691	604	633
80°	465	435	407
85°	289	347	404



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	150.9	4.7
10°-20°	414.1	13.0
20°-30°	573.3	18.0
30°-40°	611.3	19.2
40°-50°	557.7	17.5
50°-60°	436.9	13.7
60°-70°	284.7	8.9
70°-80°	126.2	4.0
80°-90°	27.1	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°	1138.2	35.8
0°-40°	1749.5	55.0
0°-60°	2744.0	86.2
0°-90°	3182.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3182.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1621	1621	1621	1621	1621	
5°	1593	1591	1591	1589	1589	151
15°	1490	1490	1475	1460	1454	419
25°	1291	1284	1263	1218	1184	593
35°	1048	1040	989	914	892	655
45°	804	787	720	660	633	619
55°	558	542	491	433	410	501
65°	332	313	283	289	240	327
75°	133	124	116	111	122	143
85°	19	21	22	24	26	26
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1620.9	1620.9	1620.9	1620.9	1620.9
2.5°	1609.6	1609.6	1609.6	1607.8	1607.8
5°	1592.8	1590.9	1590.9	1589.0	1589.0
7.5°	1579.6	1577.8	1575.9	1574.0	1570.3
10°	1560.9	1560.9	1559.0	1549.7	1547.8
12.5°	1530.9	1529.1	1521.6	1508.4	1504.7
15°	1489.7	1489.7	1474.7	1459.7	1454.1
17.5°	1444.7	1442.9	1424.1	1409.1	1401.6
20°	1396.0	1392.3	1373.5	1349.2	1336.0
22.5°	1341.7	1341.7	1319.2	1287.3	1274.2
25°	1291.1	1283.6	1263.0	1218.0	1184.3
27.5°	1233.0	1221.7	1199.3	1135.5	1096.2
30°	1169.3	1163.7	1131.8	1049.3	1019.4
32.5°	1109.3	1099.9	1066.2	980.0	955.7
35°	1047.5	1040.0	989.4	914.4	891.9
37.5°	985.6	976.3	912.6	852.6	824.5
40°	923.8	912.6	843.2	788.9	758.9
42.5°	865.7	850.7	783.3	725.2	691.4
45°	803.9	787.0	719.6	659.6	633.4
47.5°	742.0	727.0	665.2	603.4	573.4
50°	676.5	663.3	607.1	545.3	513.4
52.5°	622.1	601.5	547.2	485.3	459.1
55°	558.4	541.5	490.9	432.9	410.4
57.5°	500.3	483.4	436.6	382.3	363.5
60°	446.0	421.6	382.3	335.4	320.4
62.5°	386.0	367.3	333.5	294.2	312.9
65°	331.7	312.9	282.9	288.6	239.9
67.5°	271.7	262.3	236.1	209.9	202.4
70°	221.1	209.9	200.5	172.4	164.9
72.5°	176.1	164.9	151.8	136.8	131.2
75°	133.0	123.7	116.2	110.6	121.8
77.5°	91.8	88.1	82.4	76.8	75.0
80°	60.0	58.1	56.2	54.3	52.5
82.5°	35.6	35.6	35.6	35.6	35.6
85°	18.7	20.6	22.5	24.4	26.2
87.5°	11.2	11.2	13.1	15.0	16.9
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)