

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: P546647

Luminaire Tested: **FMR-24-4-LD4-1STD-50-UNV-80-84-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: P546647  
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-80-84-EDD  
Description: 2X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

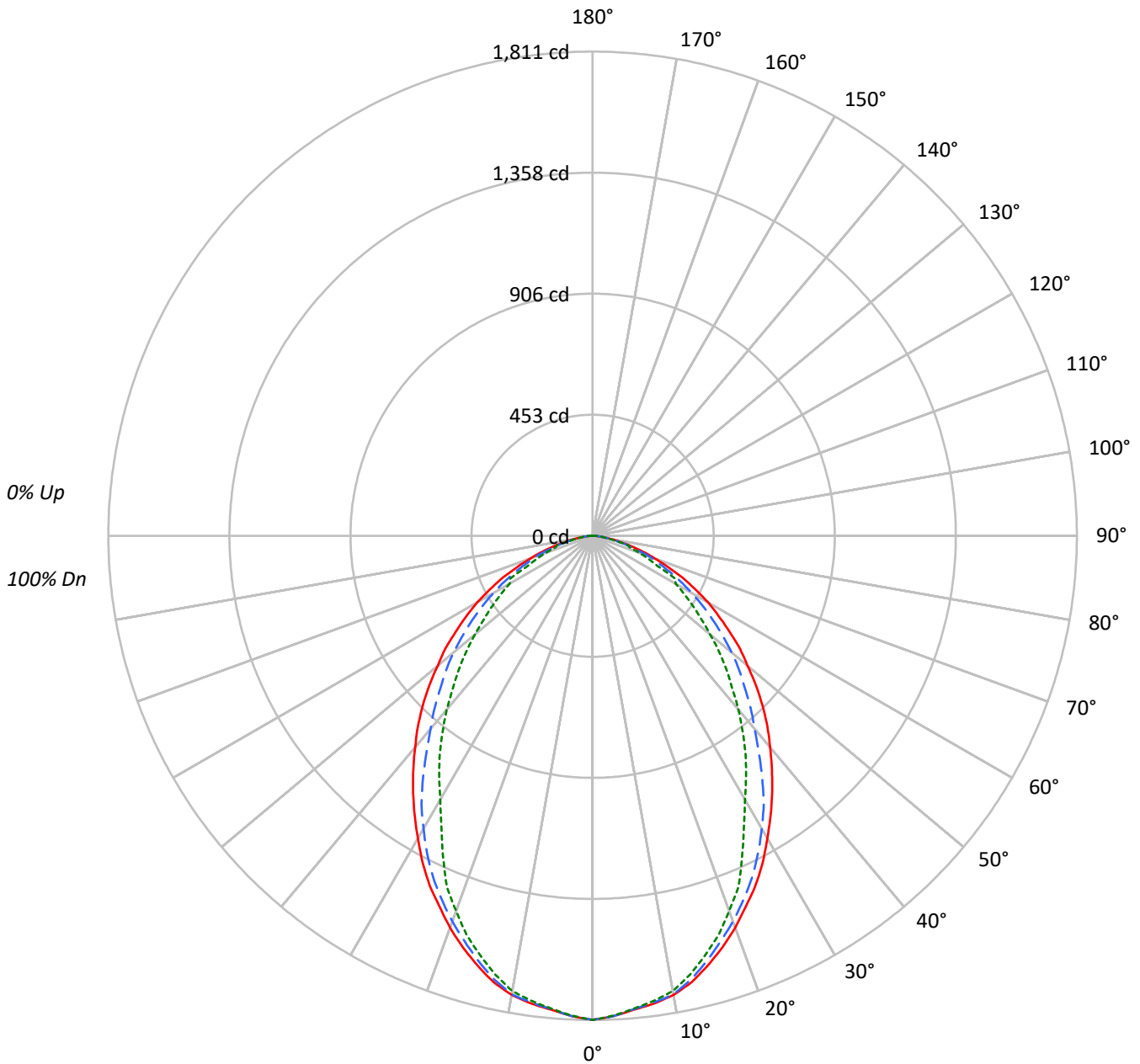
Lumens per Lamp: N/A  
Luminaire Lumens: 3555.0 lumens  
Efficiency: N/A  
Efficacy: 106.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	2437	2437	2437
5°	2403	2401	2398
10°	2383	2380	2363
15°	2318	2295	2263
20°	2233	2197	2137
25°	2141	2095	1964
30°	2030	1965	1769
35°	1922	1816	1637
40°	1813	1655	1489
45°	1709	1530	1346
50°	1582	1420	1201
55°	1464	1287	1076
60°	1341	1149	963
65°	1180	1006	853
70°	972	881	725
75°	773	675	708
80°	519	487	454
85°	323	387	452



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	168.6	4.7
10°-20°	462.6	13.0
20°-30°	640.5	18.0
30°-40°	682.9	19.2
40°-50°	623.0	17.5
50°-60°	488.1	13.7
60°-70°	318.1	8.9
70°-80°	140.9	4.0
80°-90°	30.3	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°	1271.7	35.8
0°-40°	1954.6	55.0
0°-60°	3065.7	86.2
0°-90°	3555.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3555.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1811	1811	1811	1811	1811	
5°	1780	1777	1777	1775	1775	169
15°	1664	1664	1648	1631	1624	468
25°	1442	1434	1411	1361	1323	662
35°	1170	1162	1105	1022	996	732
45°	898	879	804	737	708	692
55°	624	605	548	484	458	560
65°	370	350	316	322	268	365
75°	149	138	130	124	136	159
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°	1810.9	1810.9	1810.9	1810.9	1810.9
2.5°	1798.3	1798.3	1798.3	1796.2	1796.2
5°	1779.5	1777.4	1777.4	1775.3	1775.3
7.5°	1764.8	1762.7	1760.6	1758.5	1754.3
10°	1743.9	1743.9	1741.8	1731.3	1729.2
12.5°	1710.4	1708.3	1699.9	1685.3	1681.1
15°	1664.3	1664.3	1647.6	1630.8	1624.5
17.5°	1614.1	1612.0	1591.1	1574.3	1565.9
20°	1559.7	1555.5	1534.5	1507.3	1492.7
22.5°	1498.9	1498.9	1473.8	1438.2	1423.6
25°	1442.4	1434.0	1411.0	1360.8	1323.1
27.5°	1377.5	1365.0	1339.8	1268.7	1224.7
30°	1306.3	1300.1	1264.5	1172.4	1138.9
32.5°	1239.3	1228.9	1191.2	1094.9	1067.7
35°	1170.3	1161.9	1105.4	1021.6	996.5
37.5°	1101.2	1090.7	1019.5	952.5	921.1
40°	1032.1	1019.5	942.1	881.4	847.9
42.5°	967.2	950.4	875.1	810.2	772.5
45°	898.1	879.3	803.9	736.9	707.6
47.5°	829.0	812.3	743.2	674.1	640.6
50°	755.8	741.1	678.3	609.2	573.6
52.5°	695.0	672.0	611.3	542.2	512.9
55°	623.9	605.0	548.5	483.6	458.5
57.5°	559.0	540.1	487.8	427.1	406.1
60°	498.3	471.0	427.1	374.7	358.0
62.5°	431.3	410.3	372.6	328.7	349.6
65°	370.5	349.6	316.1	322.4	268.0
67.5°	303.6	293.1	263.8	234.5	226.1
70°	247.0	234.5	224.0	192.6	184.2
72.5°	196.8	184.2	169.6	152.8	146.5
75°	148.6	138.2	129.8	123.5	136.1
77.5°	102.6	98.4	92.1	85.8	83.7
80°	67.0	64.9	62.8	60.7	58.6
82.5°	39.8	39.8	39.8	39.8	39.8
85°	20.9	23.0	25.1	27.2	29.3
87.5°	12.6	12.6	14.7	16.7	18.8
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)