

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: P546483

Luminaire Tested: **FMR-24-4-LD4-1HI-40-UNV-93-88-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: P546483  
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-LD4-1HI-40-UNV-93-88-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

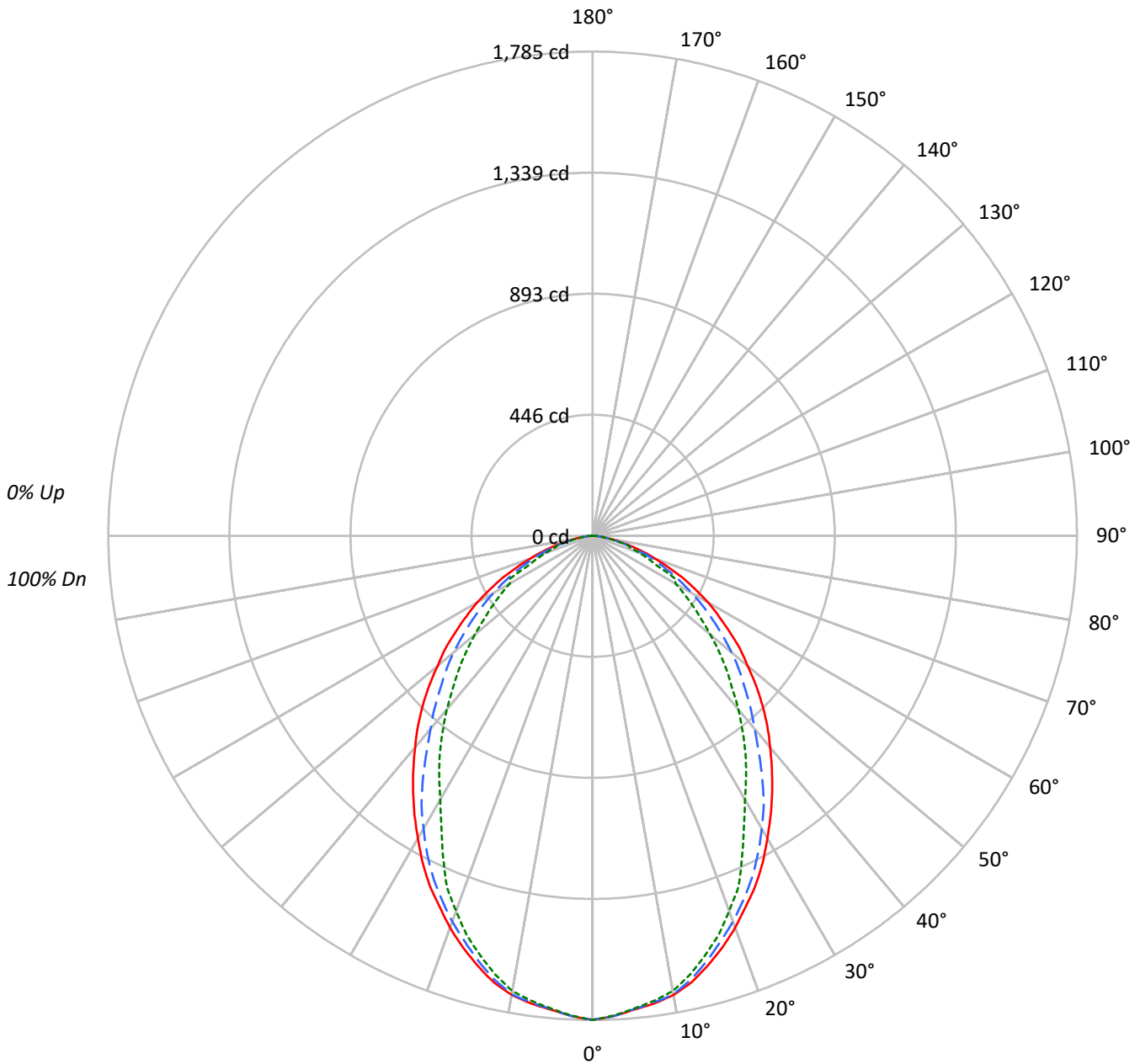
Lumens per Lamp: N/A  
Luminaire Lumens: 3504.0 lumens  
Efficiency: N/A  
Efficacy: 81.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 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°	2402	2402	2402
5°	2369	2366	2363
10°	2348	2346	2329
15°	2285	2262	2230
20°	2201	2166	2107
25°	2111	2065	1936
30°	2000	1936	1744
35°	1895	1790	1613
40°	1787	1631	1468
45°	1684	1508	1327
50°	1559	1400	1184
55°	1442	1268	1060
60°	1322	1133	950
65°	1163	992	841
70°	958	869	714
75°	762	665	697
80°	511	480	448
85°	318	383	446



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	166.1	4.7
10°-20°	456.0	13.0
20°-30°	631.3	18.0
30°-40°	673.1	19.2
40°-50°	614.1	17.5
50°-60°	481.1	13.7
60°-70°	313.6	8.9
70°-80°	138.9	4.0
80°-90°	29.8	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°	1253.4	35.8
0°-40°	1926.5	55.0
0°-60°	3021.7	86.2
0°-90°	3504.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3504.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1785	1785	1785	1785	1785	
5°	1754	1752	1752	1750	1750	166
15°	1640	1640	1624	1607	1601	461
25°	1422	1414	1391	1341	1304	653
35°	1154	1145	1090	1007	982	721
45°	885	867	792	726	697	682
55°	615	596	541	477	452	552
65°	365	345	312	318	264	360
75°	146	136	128	122	134	157
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°	1784.9	1784.9	1784.9	1784.9	1784.9
2.5°	1772.5	1772.5	1772.5	1770.4	1770.4
5°	1753.9	1751.9	1751.9	1749.8	1749.8
7.5°	1739.5	1737.4	1735.4	1733.3	1729.2
10°	1718.9	1718.9	1716.8	1706.5	1704.4
12.5°	1685.8	1683.8	1675.5	1661.1	1657.0
15°	1640.4	1640.4	1623.9	1607.4	1601.2
17.5°	1590.9	1588.9	1568.2	1551.7	1543.5
20°	1537.3	1533.1	1512.5	1485.7	1471.2
22.5°	1477.4	1477.4	1452.7	1417.6	1403.2
25°	1421.7	1413.5	1390.8	1341.2	1304.1
27.5°	1357.8	1345.4	1320.6	1250.5	1207.1
30°	1287.6	1281.4	1246.3	1155.5	1122.5
32.5°	1221.6	1211.2	1174.1	1079.2	1052.4
35°	1153.5	1145.2	1089.5	1007.0	982.2
37.5°	1085.4	1075.1	1004.9	938.9	907.9
40°	1017.3	1004.9	928.6	868.7	835.7
42.5°	953.3	936.8	862.5	798.6	761.4
45°	885.2	866.7	792.4	726.3	697.4
47.5°	817.1	800.6	732.5	664.4	631.4
50°	744.9	730.5	668.6	600.5	565.4
52.5°	685.1	662.4	602.5	534.4	505.5
55°	614.9	596.3	540.6	476.7	451.9
57.5°	550.9	532.4	480.8	420.9	400.3
60°	491.1	464.3	420.9	369.4	352.9
62.5°	425.1	404.4	367.3	324.0	344.6
65°	365.2	344.6	311.6	317.8	264.1
67.5°	299.2	288.9	260.0	231.1	222.9
70°	243.5	231.1	220.8	189.8	181.6
72.5°	194.0	181.6	167.1	150.6	144.4
75°	146.5	136.2	127.9	121.7	134.1
77.5°	101.1	97.0	90.8	84.6	82.5
80°	66.0	64.0	61.9	59.8	57.8
82.5°	39.2	39.2	39.2	39.2	39.2
85°	20.6	22.7	24.8	26.8	28.9
87.5°	12.4	12.4	14.4	16.5	18.6
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)