

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: P546676

Luminaire Tested: **FMR-24-4-LD4-1STD-50-UNV-93-94-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: P546676  
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-93-94-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

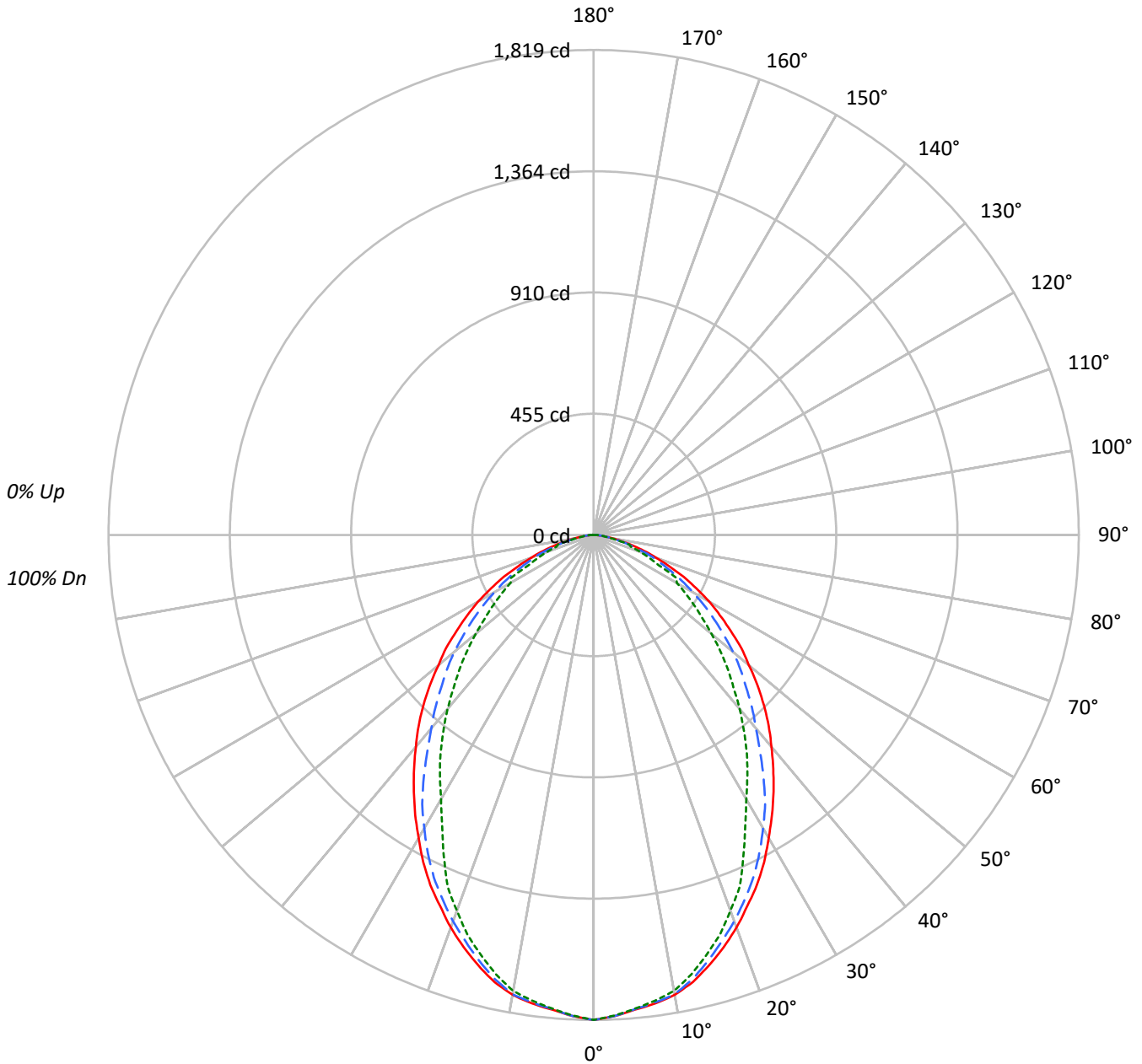
Lumens per Lamp: N/A  
Luminaire Lumens: 3571.0 lumens  
Efficiency: N/A  
Efficacy: 107.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	2447	2447	2447
5°	2414	2411	2409
10°	2393	2390	2373
15°	2329	2305	2273
20°	2243	2207	2147
25°	2151	2104	1973
30°	2039	1973	1777
35°	1931	1824	1644
40°	1821	1662	1496
45°	1717	1537	1353
50°	1589	1426	1206
55°	1470	1293	1080
60°	1347	1154	968
65°	1185	1011	857
70°	976	885	728
75°	776	678	711
80°	521	489	456
85°	324	389	454



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	169.3	4.7
10°-20°	464.7	13.0
20°-30°	643.4	18.0
30°-40°	686.0	19.2
40°-50°	625.8	17.5
50°-60°	490.3	13.7
60°-70°	319.5	8.9
70°-80°	141.6	4.0
80°-90°	30.4	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°	1277.4	35.8
0°-40°	1963.4	55.0
0°-60°	3079.5	86.2
0°-90°	3571.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3571.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1819	1819	1819	1819	1819	
5°	1788	1785	1785	1783	1783	170
15°	1672	1672	1655	1638	1632	470
25°	1449	1440	1417	1367	1329	665
35°	1176	1167	1110	1026	1001	735
45°	902	883	808	740	711	695
55°	627	608	551	486	460	562
65°	372	351	318	324	269	367
75°	149	139	130	124	137	160
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°	1819.0	1819.0	1819.0	1819.0	1819.0
2.5°	1806.4	1806.4	1806.4	1804.3	1804.3
5°	1787.5	1785.4	1785.4	1783.3	1783.3
7.5°	1772.8	1770.7	1768.5	1766.4	1762.2
10°	1751.7	1751.7	1749.6	1739.1	1737.0
12.5°	1718.1	1716.0	1707.6	1692.8	1688.6
15°	1671.8	1671.8	1655.0	1638.2	1631.9
17.5°	1621.3	1619.2	1598.2	1581.4	1573.0
20°	1566.7	1562.5	1541.4	1514.1	1499.4
22.5°	1505.7	1505.7	1480.5	1444.7	1430.0
25°	1448.9	1440.5	1417.4	1366.9	1329.0
27.5°	1383.7	1371.1	1345.9	1274.4	1230.2
30°	1312.2	1305.9	1270.2	1177.6	1144.0
32.5°	1244.9	1234.4	1196.6	1099.8	1072.5
35°	1175.5	1167.1	1110.3	1026.2	1001.0
37.5°	1106.1	1095.6	1024.1	956.8	925.3
40°	1036.7	1024.1	946.3	885.3	851.7
42.5°	971.5	954.7	879.0	813.8	776.0
45°	902.1	883.2	807.5	740.2	710.8
47.5°	832.8	815.9	746.5	677.1	643.5
50°	759.2	744.4	681.3	611.9	576.2
52.5°	698.2	675.0	614.1	544.7	515.2
55°	626.7	607.7	551.0	485.8	460.5
57.5°	561.5	542.6	490.0	429.0	408.0
60°	500.5	473.2	429.0	376.4	359.6
62.5°	433.2	412.2	374.3	330.2	351.2
65°	372.2	351.2	317.5	323.8	269.2
67.5°	304.9	294.4	265.0	235.5	227.1
70°	248.1	235.5	225.0	193.5	185.1
72.5°	197.7	185.1	170.3	153.5	147.2
75°	149.3	138.8	130.4	124.1	136.7
77.5°	103.0	98.8	92.5	86.2	84.1
80°	67.3	65.2	63.1	61.0	58.9
82.5°	40.0	40.0	40.0	40.0	40.0
85°	21.0	23.1	25.2	27.3	29.4
87.5°	12.6	12.6	14.7	16.8	18.9
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)