

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: P546476

Luminaire Tested: **FMR-24-4-LD4-1HI-40-UNV-82-94-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: P546476  
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-82-94-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

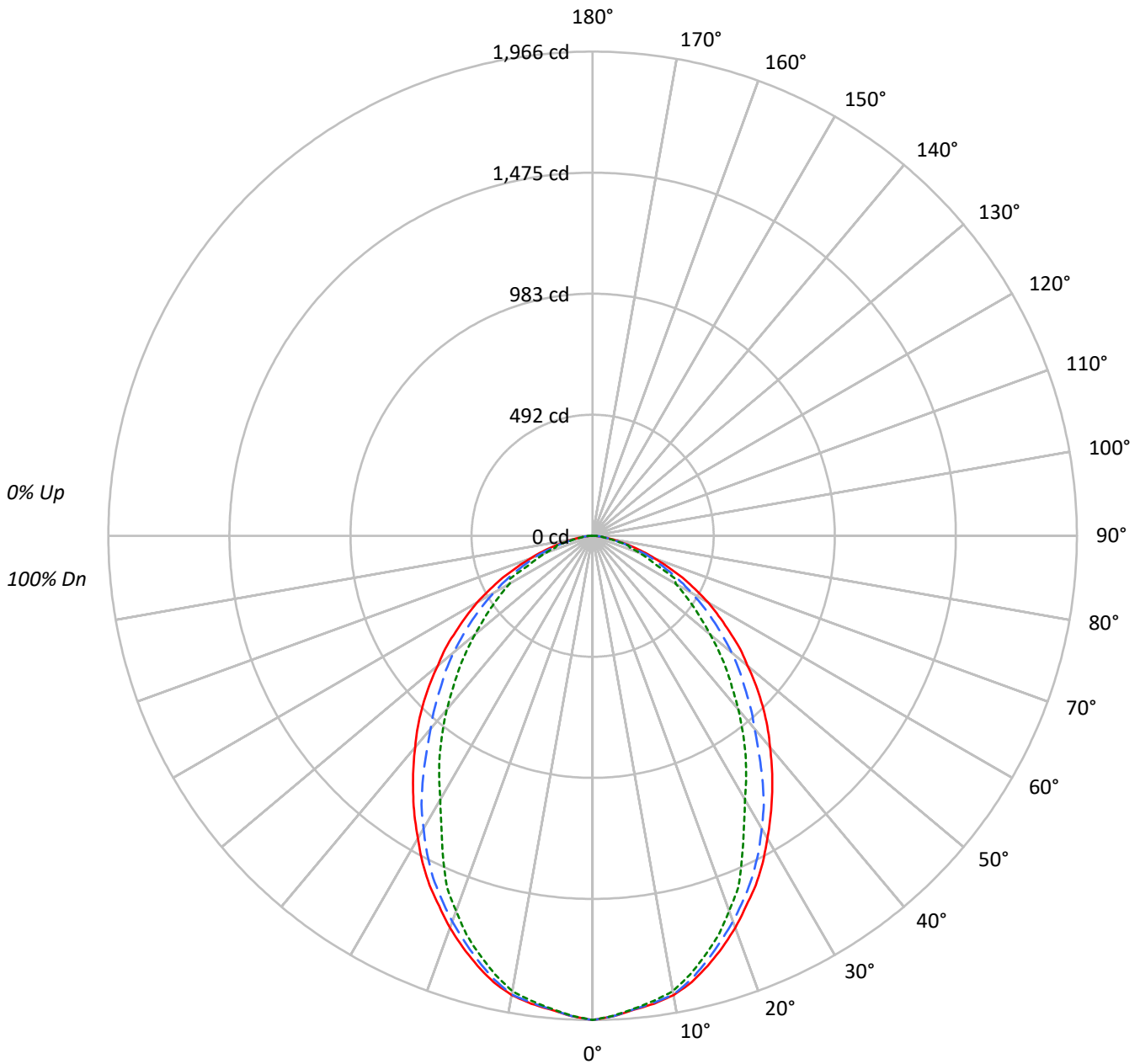
Lumens per Lamp: N/A  
Luminaire Lumens: 3860.0 lumens  
Efficiency: N/A  
Efficacy: 89.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	2646	2646	2646
5°	2610	2607	2603
10°	2587	2584	2565
15°	2517	2492	2457
20°	2425	2386	2321
25°	2325	2275	2133
30°	2204	2133	1921
35°	2087	1971	1777
40°	1968	1797	1617
45°	1856	1661	1462
50°	1718	1542	1304
55°	1589	1397	1168
60°	1456	1248	1046
65°	1281	1093	926
70°	1055	957	787
75°	839	732	768
80°	563	528	493
85°	350	421	491



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	183.0	4.7
10°-20°	502.3	13.0
20°-30°	695.4	18.0
30°-40°	741.5	19.2
40°-50°	676.5	17.5
50°-60°	530.0	13.7
60°-70°	345.4	8.9
70°-80°	153.0	4.0
80°-90°	32.9	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°	1380.8	35.8
0°-40°	2122.3	55.0
0°-60°	3328.7	86.2
0°-90°	3860.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3860.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1966	1966	1966	1966	1966	
5°	1932	1930	1930	1928	1928	183
15°	1807	1807	1789	1771	1764	508
25°	1566	1557	1532	1478	1437	719
35°	1271	1262	1200	1109	1082	794
45°	975	955	873	800	768	751
55°	677	657	596	525	498	608
65°	402	380	343	350	291	397
75°	161	150	141	134	148	173
85°	23	25	27	30	32	32
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1966.2	1966.2	1966.2	1966.2	1966.2
2.5°	1952.6	1952.6	1952.6	1950.3	1950.3
5°	1932.1	1929.9	1929.9	1927.6	1927.6
7.5°	1916.2	1914.0	1911.7	1909.4	1904.9
10°	1893.5	1893.5	1891.2	1879.9	1877.6
12.5°	1857.1	1854.9	1845.8	1829.8	1825.3
15°	1807.1	1807.1	1788.9	1770.7	1763.9
17.5°	1752.6	1750.3	1727.6	1709.4	1700.3
20°	1693.5	1688.9	1666.2	1636.6	1620.7
22.5°	1627.5	1627.5	1600.3	1561.6	1545.7
25°	1566.2	1557.1	1532.1	1477.5	1436.6
27.5°	1495.7	1482.1	1454.8	1377.5	1329.8
30°	1418.4	1411.6	1373.0	1272.9	1236.6
32.5°	1345.7	1334.3	1293.4	1188.8	1159.3
35°	1270.7	1261.6	1200.2	1109.3	1082.0
37.5°	1195.7	1184.3	1107.0	1034.3	1000.2
40°	1120.6	1107.0	1022.9	957.0	920.6
42.5°	1050.2	1032.0	950.2	879.7	838.8
45°	975.2	954.7	872.9	800.1	768.3
47.5°	900.1	882.0	807.0	731.9	695.6
50°	820.6	804.7	736.5	661.5	622.8
52.5°	754.7	729.7	663.7	588.7	556.9
55°	677.4	656.9	595.6	525.1	497.8
57.5°	606.9	586.5	529.6	463.7	441.0
60°	541.0	511.4	463.7	406.9	388.7
62.5°	468.3	445.5	404.6	356.9	379.6
65°	402.3	379.6	343.2	350.1	291.0
67.5°	329.6	318.2	286.4	254.6	245.5
70°	268.2	254.6	243.2	209.1	200.0
72.5°	213.7	200.0	184.1	165.9	159.1
75°	161.4	150.0	140.9	134.1	147.8
77.5°	111.4	106.8	100.0	93.2	90.9
80°	72.7	70.5	68.2	65.9	63.6
82.5°	43.2	43.2	43.2	43.2	43.2
85°	22.7	25.0	27.3	29.6	31.8
87.5°	13.6	13.6	15.9	18.2	20.5
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)