

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: P546463

Luminaire Tested: **FMR-24-4-LD4-1HI-40-UNV-81-84-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: P546463  
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-81-84-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

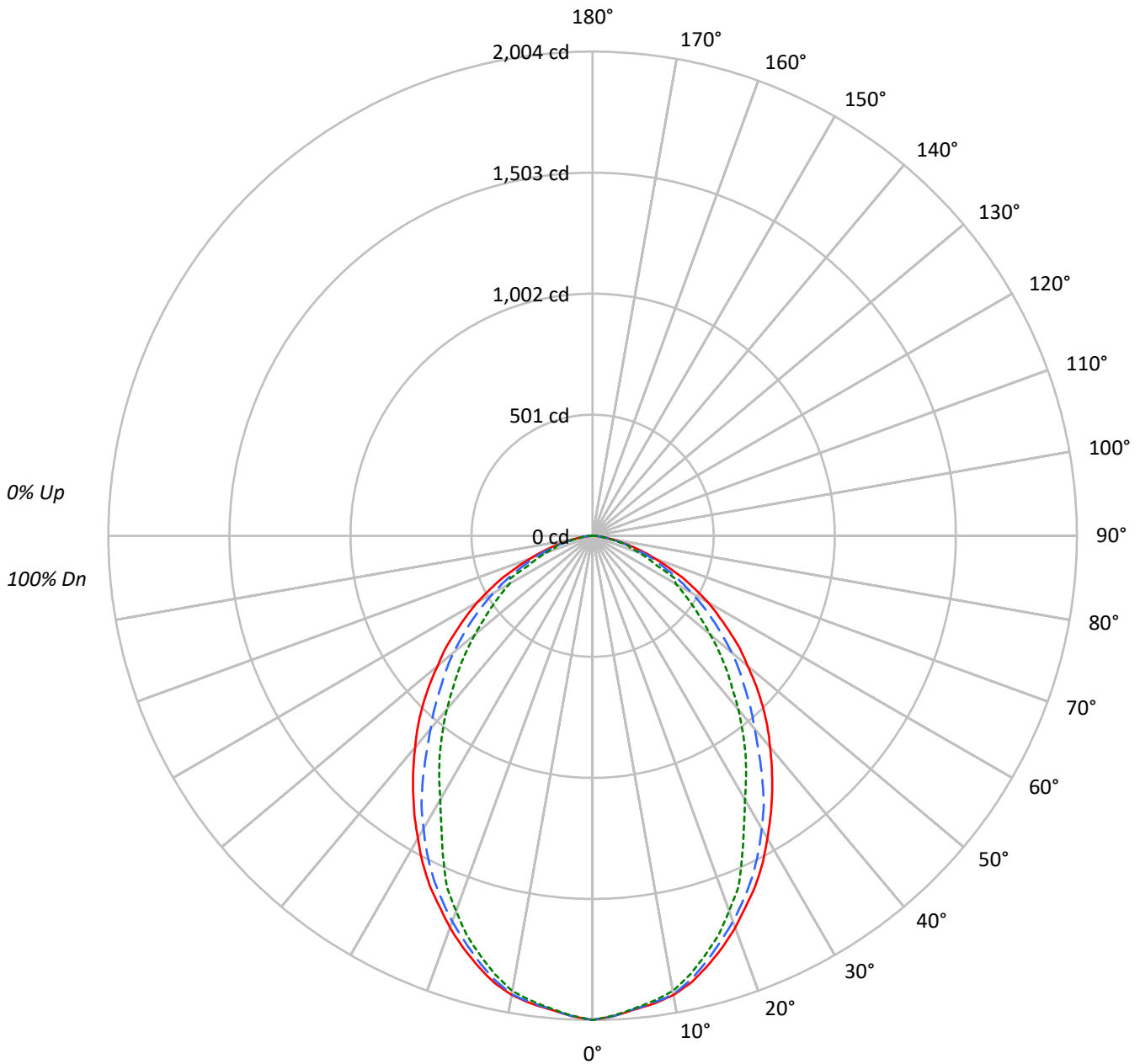
Lumens per Lamp: N/A  
Luminaire Lumens: 3934.0 lumens  
Efficiency: N/A  
Efficacy: 91.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	2696	2696	2696
5°	2660	2657	2653
10°	2637	2633	2614
15°	2566	2540	2504
20°	2471	2431	2365
25°	2370	2318	2174
30°	2246	2174	1958
35°	2127	2009	1811
40°	2006	1831	1648
45°	1891	1693	1490
50°	1751	1571	1329
55°	1620	1424	1190
60°	1484	1272	1066
65°	1306	1114	944
70°	1076	975	802
75°	855	747	783
80°	574	539	503
85°	358	429	500



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	186.5	4.7
10°-20°	511.9	13.0
20°-30°	708.7	18.0
30°-40°	755.7	19.2
40°-50°	689.5	17.5
50°-60°	540.1	13.7
60°-70°	352.0	8.9
70°-80°	156.0	4.0
80°-90°	33.5	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°	1407.2	35.8
0°-40°	2162.9	55.0
0°-60°	3392.5	86.2
0°-90°	3934.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3934.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2004	2004	2004	2004	2004	
5°	1969	1967	1967	1964	1964	187
15°	1842	1842	1823	1805	1798	518
25°	1596	1587	1561	1506	1464	733
35°	1295	1286	1223	1130	1103	810
45°	994	973	890	816	783	766
55°	690	670	607	535	507	619
65°	410	387	350	357	296	404
75°	164	153	144	137	151	176
85°	23	26	28	30	32	32
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2003.9	2003.9	2003.9	2003.9	2003.9
2.5°	1990.0	1990.0	1990.0	1987.7	1987.7
5°	1969.2	1966.9	1966.9	1964.5	1964.5
7.5°	1953.0	1950.6	1948.3	1946.0	1941.4
10°	1929.8	1929.8	1927.5	1915.9	1913.6
12.5°	1892.7	1890.4	1881.1	1864.9	1860.3
15°	1841.8	1841.8	1823.2	1804.7	1797.7
17.5°	1786.2	1783.8	1760.7	1742.1	1732.9
20°	1725.9	1721.3	1698.1	1668.0	1651.8
22.5°	1658.7	1658.7	1630.9	1591.6	1575.3
25°	1596.2	1586.9	1561.4	1505.8	1464.1
27.5°	1524.4	1510.5	1482.7	1403.9	1355.3
30°	1445.6	1438.7	1399.3	1297.3	1260.3
32.5°	1371.5	1359.9	1318.2	1211.6	1181.5
35°	1295.0	1285.8	1223.2	1130.5	1102.7
37.5°	1218.6	1207.0	1128.2	1054.1	1019.3
40°	1142.1	1128.2	1042.5	975.3	938.3
42.5°	1070.3	1051.8	968.4	896.6	854.9
45°	993.9	973.0	889.6	815.5	783.0
47.5°	917.4	898.9	822.4	746.0	708.9
50°	836.3	820.1	750.6	674.2	634.8
52.5°	769.1	743.7	676.5	600.0	567.6
55°	690.4	669.5	607.0	535.2	507.4
57.5°	618.6	597.7	539.8	472.6	449.4
60°	551.4	521.3	472.6	414.7	396.2
62.5°	477.2	454.1	412.4	363.7	386.9
65°	410.1	386.9	349.8	356.8	296.5
67.5°	335.9	324.3	291.9	259.5	250.2
70°	273.4	259.5	247.9	213.1	203.9
72.5°	217.8	203.9	187.7	169.1	162.2
75°	164.5	152.9	143.6	136.7	150.6
77.5°	113.5	108.9	101.9	95.0	92.7
80°	74.1	71.8	69.5	67.2	64.9
82.5°	44.0	44.0	44.0	44.0	44.0
85°	23.2	25.5	27.8	30.1	32.4
87.5°	13.9	13.9	16.2	18.5	20.9
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)