

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: P546474

Luminaire Tested: **FMR-24-4-LD4-1HI-40-UNV-82-87-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: P546474  
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-82-87-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

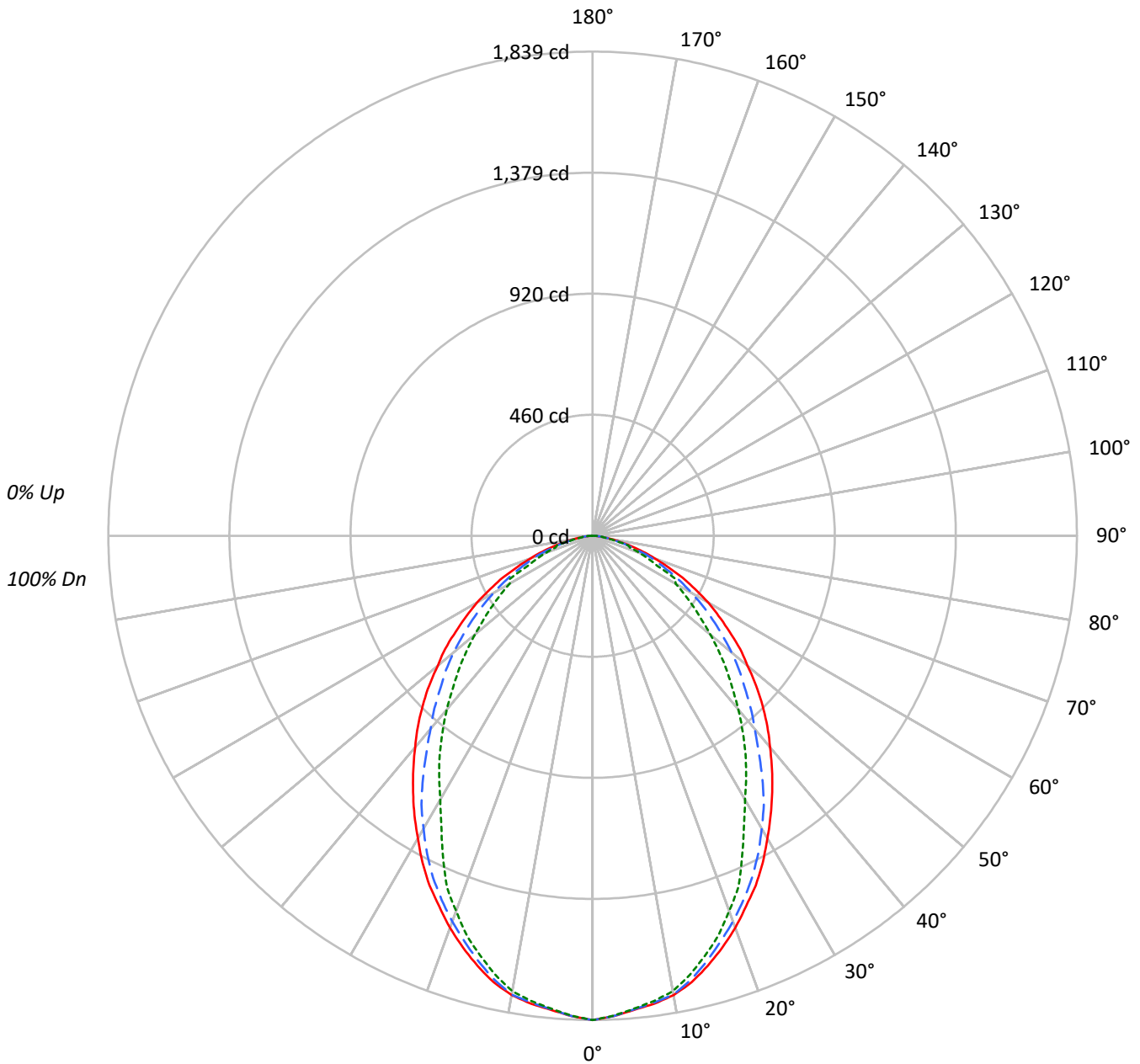
Lumens per Lamp: N/A  
Luminaire Lumens: 3611.0 lumens  
Efficiency: N/A  
Efficacy: 83.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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

TEST NUMBER: P546474

CATALOG NUMBER: FMR-24-4-LD4-1HI-40-UNV-82-87-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P546474

CATALOG NUMBER: FMR-24-4-LD4-1HI-40-UNV-82-87-EDD

**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°	2475	2475	2475
5°	2441	2438	2435
10°	2420	2417	2400
15°	2355	2331	2299
20°	2268	2232	2171
25°	2175	2128	1995
30°	2062	1995	1797
35°	1952	1844	1663
40°	1841	1681	1513
45°	1736	1554	1368
50°	1607	1442	1220
55°	1487	1307	1092
60°	1362	1167	978
65°	1198	1022	867
70°	987	895	736
75°	785	685	718
80°	527	494	461
85°	329	394	460



TEST NUMBER: P546474

CATALOG NUMBER: FMR-24-4-LD4-1HI-40-UNV-82-87-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	171.2	4.7
10°-20°	469.9	13.0
20°-30°	650.6	18.0
30°-40°	693.7	19.2
40°-50°	632.8	17.5
50°-60°	495.8	13.7
60°-70°	323.1	8.9
70°-80°	143.1	4.0
80°-90°	30.7	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°	1291.7	35.8
0°-40°	1985.4	55.0
0°-60°	3114.0	86.2
0°-90°	3611.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3611.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1839	1839	1839	1839	1839	
5°	1808	1805	1805	1803	1803	172
15°	1690	1690	1674	1656	1650	475
25°	1465	1457	1433	1382	1344	673
35°	1189	1180	1123	1038	1012	743
45°	912	893	817	748	719	703
55°	634	614	557	491	466	568
65°	376	355	321	328	272	371
75°	151	140	132	126	138	162
85°	21	23	26	28	30	30
90°	0	0	0	0	0	



TEST NUMBER: P546474

CATALOG NUMBER: FMR-24-4-LD4-1HI-40-UNV-82-87-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1839.4	1839.4	1839.4	1839.4	1839.4
2.5°	1826.6	1826.6	1826.6	1824.5	1824.5
5°	1807.5	1805.4	1805.4	1803.2	1803.2
7.5°	1792.6	1790.5	1788.4	1786.2	1782.0
10°	1771.3	1771.3	1769.2	1758.6	1756.5
12.5°	1737.3	1735.2	1726.7	1711.8	1707.6
15°	1690.5	1690.5	1673.5	1656.5	1650.1
17.5°	1639.5	1637.4	1616.1	1599.1	1590.6
20°	1584.2	1580.0	1558.7	1531.1	1516.2
22.5°	1522.6	1522.6	1497.0	1460.9	1446.0
25°	1465.1	1456.6	1433.2	1382.2	1343.9
27.5°	1399.2	1386.5	1360.9	1288.6	1244.0
30°	1326.9	1320.5	1284.4	1190.8	1156.8
32.5°	1258.9	1248.2	1210.0	1112.1	1084.5
35°	1188.7	1180.2	1122.8	1037.7	1012.2
37.5°	1118.5	1107.9	1035.6	967.5	935.6
40°	1048.3	1035.6	956.9	895.2	861.2
42.5°	982.4	965.4	888.9	822.9	784.7
45°	912.3	893.1	816.6	748.5	718.7
47.5°	842.1	825.1	754.9	684.7	650.7
50°	767.7	752.8	689.0	618.8	582.7
52.5°	706.0	682.6	620.9	550.8	521.0
55°	633.7	614.5	557.1	491.2	465.7
57.5°	567.8	548.6	495.5	433.8	412.5
60°	506.1	478.5	433.8	380.6	363.6
62.5°	438.1	416.8	378.5	333.9	355.1
65°	376.4	355.1	321.1	327.5	272.2
67.5°	308.3	297.7	267.9	238.2	229.7
70°	250.9	238.2	227.5	195.6	187.1
72.5°	199.9	187.1	172.2	155.2	148.9
75°	151.0	140.3	131.8	125.5	138.2
77.5°	104.2	99.9	93.6	87.2	85.1
80°	68.0	65.9	63.8	61.7	59.5
82.5°	40.4	40.4	40.4	40.4	40.4
85°	21.3	23.4	25.5	27.6	29.8
87.5°	12.8	12.8	14.9	17.0	19.1
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)