

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: P546475

Luminaire Tested: **FMR-24-4-LD4-1HI-40-UNV-82-88-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: P546475  
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-82-88-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC 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**

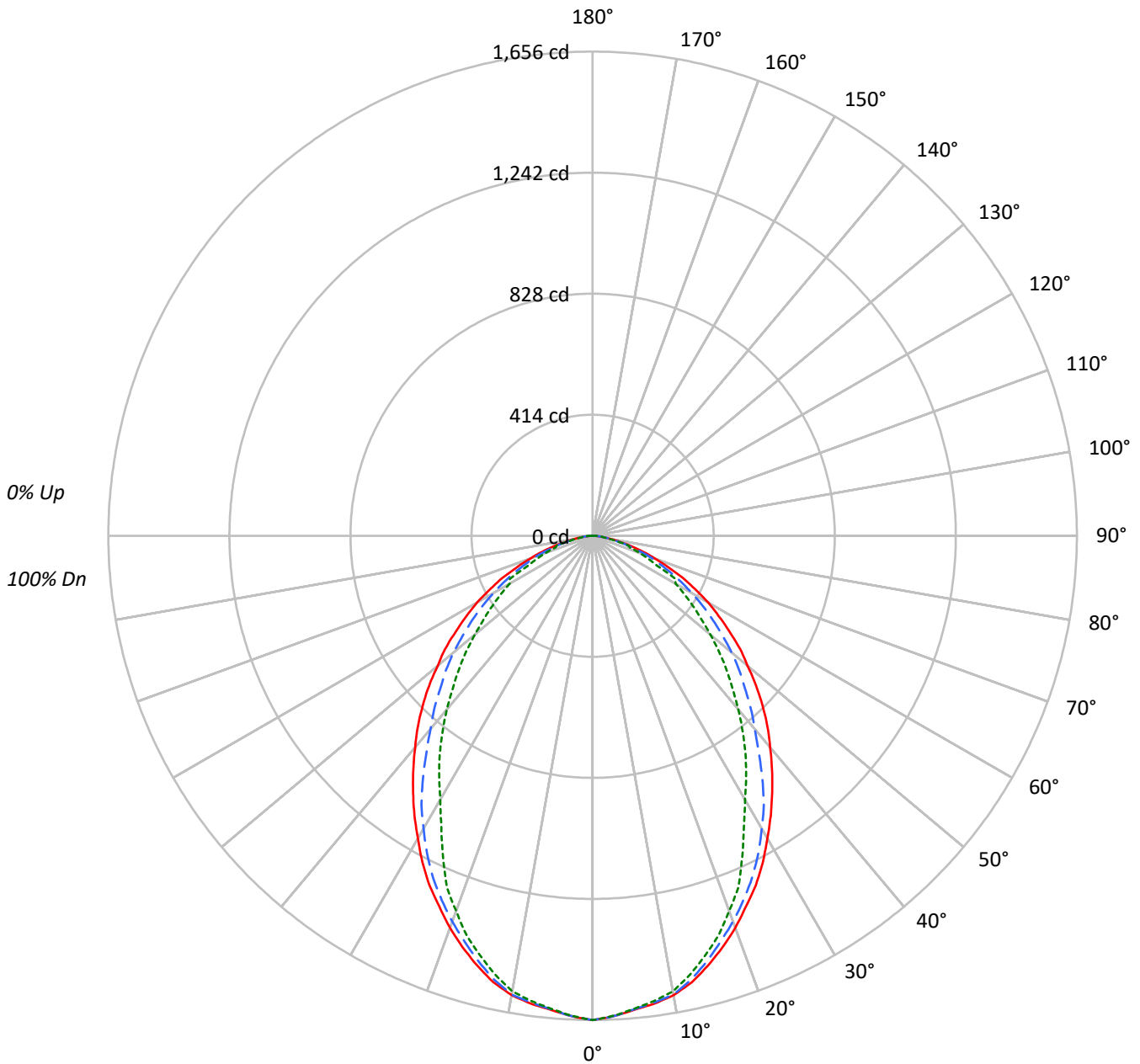
Lumens per Lamp: N/A  
Luminaire Lumens: 3252.0 lumens  
Efficiency: N/A  
Efficacy: 75.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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: P546475

CATALOG NUMBER: FMR-24-4-LD4-1HI-40-UNV-82-88-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P546475

CATALOG NUMBER: FMR-24-4-LD4-1HI-40-UNV-82-88-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			100																
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87			87																
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75			75																
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65			65																
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56			56																
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50			50																
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44			44																
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40			40																
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36			36																
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33			33																
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30			30																

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	2229	2229	2229
5°	2199	2196	2193
10°	2179	2177	2161
15°	2121	2099	2070
20°	2043	2010	1955
25°	1959	1916	1797
30°	1857	1797	1619
35°	1758	1661	1497
40°	1658	1514	1362
45°	1563	1399	1232
50°	1447	1299	1098
55°	1339	1177	984
60°	1227	1051	881
65°	1079	921	780
70°	889	806	663
75°	707	617	647
80°	475	446	415
85°	296	355	414



TEST NUMBER: P546475

CATALOG NUMBER: FMR-24-4-LD4-1HI-40-UNV-82-88-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	154.2	4.7
10°-20°	423.2	13.0
20°-30°	585.9	18.0
30°-40°	624.7	19.2
40°-50°	569.9	17.5
50°-60°	446.5	13.7
60°-70°	291.0	8.9
70°-80°	128.9	4.0
80°-90°	27.7	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°	1163.3	35.8
0°-40°	1788.0	55.0
0°-60°	2804.4	86.2
0°-90°	3252.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3252.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1656	1656	1656	1656	1656	
5°	1628	1626	1626	1624	1624	155
15°	1522	1522	1507	1492	1486	428
25°	1320	1312	1291	1245	1210	606
35°	1070	1063	1011	934	912	669
45°	822	804	735	674	647	633
55°	571	554	502	442	419	512
65°	339	320	289	295	245	334
75°	136	126	119	113	124	146
85°	19	21	23	25	27	27
90°	0	0	0	0	0	



TEST NUMBER: P546475

CATALOG NUMBER: FMR-24-4-LD4-1HI-40-UNV-82-88-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1656.5	1656.5	1656.5	1656.5	1656.5
2.5°	1645.0	1645.0	1645.0	1643.1	1643.1
5°	1627.8	1625.9	1625.9	1624.0	1624.0
7.5°	1614.4	1612.5	1610.6	1608.6	1604.8
10°	1595.2	1595.2	1593.3	1583.8	1581.8
12.5°	1564.6	1562.7	1555.0	1541.6	1537.8
15°	1522.5	1522.5	1507.2	1491.8	1486.1
17.5°	1476.5	1474.6	1455.4	1440.1	1432.5
20°	1426.7	1422.9	1403.7	1378.8	1365.4
22.5°	1371.2	1371.2	1348.2	1315.6	1302.2
25°	1319.5	1311.8	1290.7	1244.8	1210.3
27.5°	1260.1	1248.6	1225.6	1160.5	1120.3
30°	1195.0	1189.3	1156.7	1072.4	1041.8
32.5°	1133.7	1124.1	1089.7	1001.6	976.7
35°	1070.5	1062.9	1011.2	934.5	911.6
37.5°	1007.3	997.7	932.6	871.4	842.6
40°	944.1	932.6	861.8	806.2	775.6
42.5°	884.8	869.4	800.5	741.1	706.7
45°	821.6	804.3	735.4	674.1	647.3
47.5°	758.4	743.0	679.8	616.6	586.0
50°	691.3	677.9	620.5	557.3	524.7
52.5°	635.8	614.7	559.2	496.0	469.2
55°	570.7	553.5	501.7	442.4	419.4
57.5°	511.3	494.1	446.2	390.7	371.5
60°	455.8	430.9	390.7	342.8	327.5
62.5°	394.5	375.4	340.9	300.7	319.8
65°	339.0	319.8	289.2	294.9	245.1
67.5°	277.7	268.1	241.3	214.5	206.8
70°	226.0	214.5	204.9	176.2	168.5
72.5°	180.0	168.5	155.1	139.8	134.1
75°	136.0	126.4	118.7	113.0	124.5
77.5°	93.8	90.0	84.3	78.5	76.6
80°	61.3	59.4	57.5	55.5	53.6
82.5°	36.4	36.4	36.4	36.4	36.4
85°	19.2	21.1	23.0	24.9	26.8
87.5°	11.5	11.5	13.4	15.3	17.2
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)