

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: P589231

Luminaire Tested: **FMR-24-2-LD4-2STD-40-UNV-93-86-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589231  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: FMR-24-2-LD4-2STD-40-UNV-93-86-EDD  
Description: 2X2 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

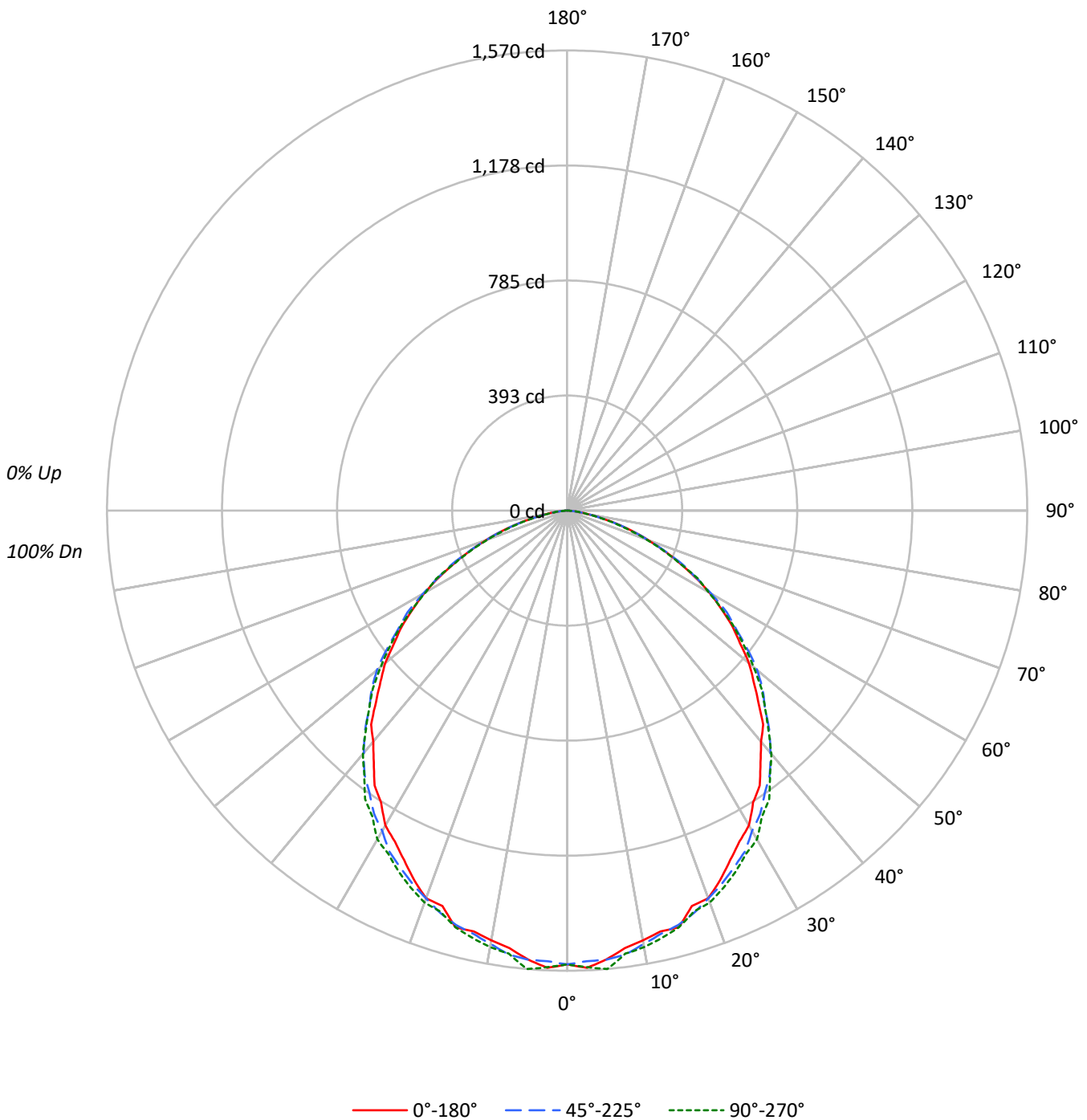
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3902.0 lumens  
Efficiency: N/A  
Efficacy: 117.2 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
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: P589231

CATALOG NUMBER: FMR-24-2-LD4-2STD-40-UNV-93-86-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P589231

CATALOG NUMBER: FMR-24-2-LD4-2STD-40-UNV-93-86-EDD

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20	
RC	80				70				50				30				10	0
RW	70	50	30	10	70	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	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26

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

	0°	45°	90°
0°	4166	4166	4166
5°	4152	4154	4242
10°	4068	4104	4133
15°	4101	4078	4101
20°	4031	4031	4074
25°	3907	3993	4037
30°	3854	3921	4025
35°	3763	3861	3948
40°	3616	3791	3808
45°	3507	3632	3637
50°	3392	3545	3477
55°	3232	3294	3271
60°	3022	3052	2997
65°	2695	2763	2676
70°	2312	2320	2256
75°	1831	1827	1756
80°	1227	1193	1147
85°	667	661	618



TEST NUMBER: P589231

CATALOG NUMBER: FMR-24-2-LD4-2STD-40-UNV-93-86-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	145.6	3.7
10°-20°	412.7	10.6
20°-30°	618.4	15.8
30°-40°	732.9	18.8
40°-50°	734.3	18.8
50°-60°	623.3	16.0
60°-70°	420.2	10.8
70°-80°	184.6	4.7
80°-90°	30.0	0.8
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°	1176.7	30.2
0°-40°	1909.6	48.9
0°-60°	3267.2	83.7
0°-90°	3902.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3902.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1548	1548	1548	1548	1548	
5°	1537	1534	1538	1533	1570	145
15°	1472	1455	1464	1472	1472	410
25°	1316	1323	1345	1362	1360	608
35°	1145	1149	1175	1203	1202	711
45°	922	939	954	979	956	713
55°	689	684	702	697	697	613
65°	423	418	434	417	420	421
75°	176	172	176	163	169	189
85°	22	21	21	21	20	31
90°	0	0	0	0	0	



TEST NUMBER: P589231

CATALOG NUMBER: FMR-24-2-LD4-2STD-40-UNV-93-86-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1548.2	1548.2	1548.2	1548.2	1548.2
2.5°	1561.6	1549.8	1538.8	1551.6	1559.4
5°	1537.2	1533.6	1537.8	1533.2	1570.2
7.5°	1505.6	1519.4	1527.4	1522.4	1524.6
10°	1488.8	1484.0	1501.8	1514.2	1512.4
12.5°	1470.9	1478.1	1479.1	1492.4	1493.6
15°	1471.9	1454.9	1463.9	1471.5	1472.1
17.5°	1414.7	1433.1	1439.3	1456.7	1435.1
20°	1407.7	1394.3	1407.7	1425.5	1422.7
22.5°	1364.7	1349.7	1378.5	1394.3	1393.3
25°	1315.9	1323.1	1344.7	1362.3	1359.5
27.5°	1273.2	1281.6	1312.3	1336.5	1320.9
30°	1240.2	1236.0	1262.0	1283.5	1295.5
32.5°	1181.2	1196.4	1226.8	1248.2	1236.8
35°	1145.4	1148.8	1175.4	1202.6	1201.8
37.5°	1082.9	1098.6	1136.0	1143.6	1136.6
40°	1029.5	1045.3	1079.1	1087.2	1083.9
42.5°	990.1	992.9	1021.9	1031.3	1016.3
45°	921.5	938.7	954.3	978.9	955.7
47.5°	863.2	871.2	904.7	911.3	899.1
50°	810.2	813.0	846.8	838.6	830.6
52.5°	743.6	755.4	774.4	772.8	763.4
55°	688.9	684.3	702.2	697.4	697.2
57.5°	623.1	631.1	645.9	638.3	626.1
60°	561.5	561.7	567.1	558.5	556.9
62.5°	493.0	495.3	496.5	486.0	503.1
65°	423.2	417.6	434.0	417.4	420.2
67.5°	359.0	361.8	360.2	349.8	353.8
70°	293.9	297.4	294.9	283.1	286.7
72.5°	234.3	229.9	232.7	217.9	224.7
75°	176.1	172.5	175.7	163.3	168.9
77.5°	119.9	122.7	120.7	114.1	117.9
80°	79.2	77.0	77.0	73.2	74.0
82.5°	46.2	44.0	43.4	42.2	44.0
85°	21.6	21.0	21.4	20.8	20.0
87.5°	7.8	8.0	8.0	7.6	7.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)