

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: P589392

Luminaire Tested: **FMR-24-2-LD4-3LO-35-UNV-93-87-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589392  
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-LD4-3LO-35-UNV-93-87-EDD  
Description: 2X2 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

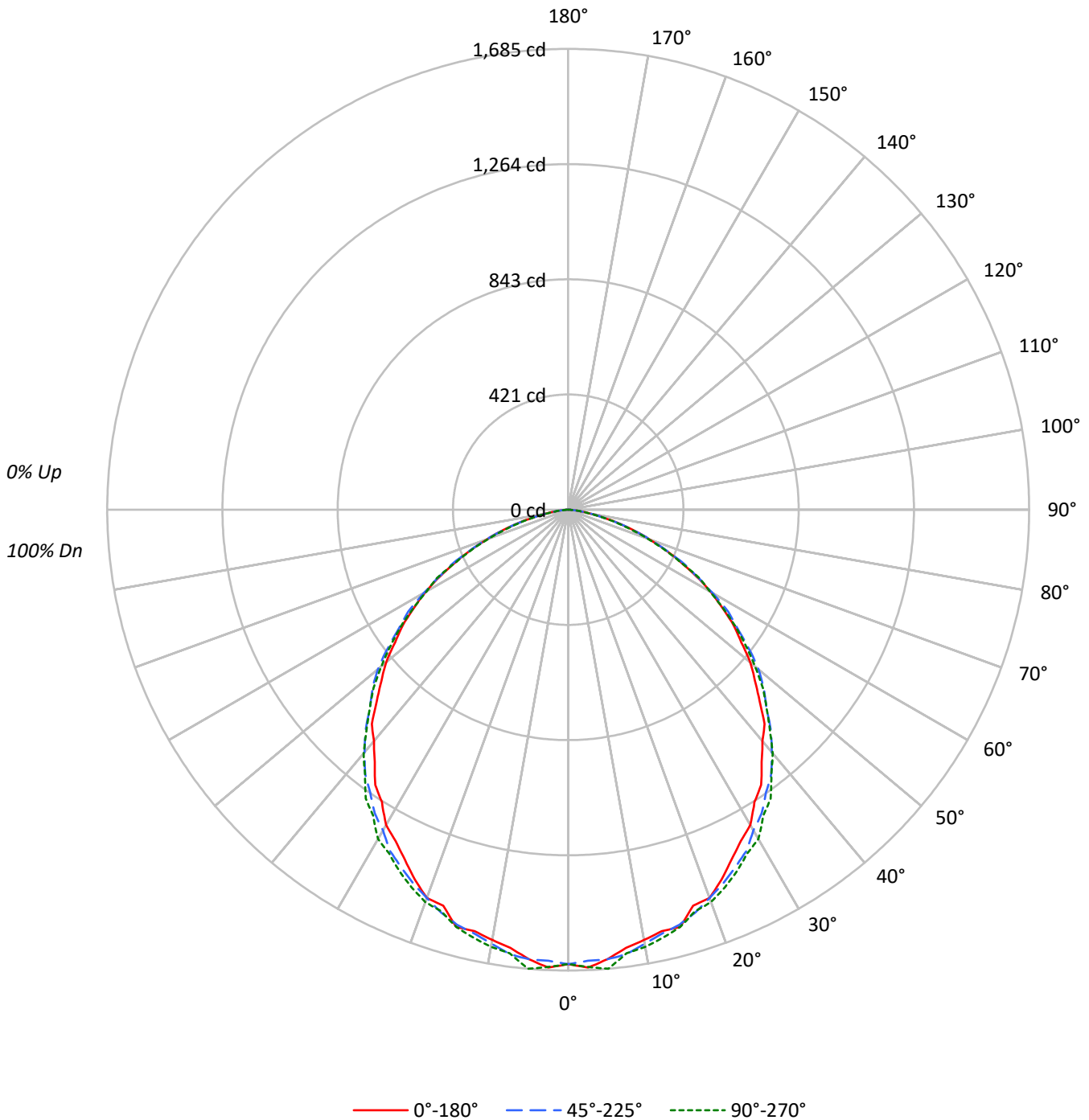
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4187.0 lumens  
Efficiency: N/A  
Efficacy: 119.3 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): 35.1  
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				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°	4471	4471	4471
5°	4456	4457	4551
10°	4365	4403	4435
15°	4400	4376	4401
20°	4326	4326	4372
25°	4192	4284	4331
30°	4135	4208	4320
35°	4038	4143	4236
40°	3881	4067	4085
45°	3763	3897	3903
50°	3640	3804	3731
55°	3468	3535	3510
60°	3243	3275	3216
65°	2891	2965	2871
70°	2481	2489	2420
75°	1965	1960	1885
80°	1316	1280	1230
85°	716	710	661



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	156.3	3.7
10°-20°	442.9	10.6
20°-30°	663.5	15.8
30°-40°	786.4	18.8
40°-50°	787.9	18.8
50°-60°	668.8	16.0
60°-70°	450.9	10.8
70°-80°	198.1	4.7
80°-90°	32.2	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°	1262.7	30.2
0°-40°	2049.1	48.9
0°-60°	3505.8	83.7
0°-90°	4187.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4187.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1661	1661	1661	1661	1661	
5°	1650	1646	1650	1645	1685	156
15°	1579	1561	1571	1579	1580	440
25°	1412	1420	1443	1462	1459	653
35°	1229	1233	1261	1290	1290	763
45°	989	1007	1024	1050	1026	765
55°	739	734	754	748	748	658
65°	454	448	466	448	451	452
75°	189	185	188	175	181	203
85°	23	22	23	22	21	34
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1661.3	1661.3	1661.3	1661.3	1661.3
2.5°	1675.7	1663.0	1651.2	1664.9	1673.3
5°	1649.5	1645.6	1650.1	1645.2	1684.9
7.5°	1615.6	1630.4	1639.0	1633.6	1636.0
10°	1597.6	1592.4	1611.5	1624.8	1622.9
12.5°	1578.3	1586.0	1587.1	1601.5	1602.7
15°	1579.4	1561.1	1570.8	1578.9	1579.6
17.5°	1518.0	1537.7	1544.4	1563.1	1539.9
20°	1510.5	1496.1	1510.5	1529.6	1526.6
22.5°	1464.4	1448.3	1479.2	1496.1	1495.1
25°	1412.0	1419.8	1442.9	1461.8	1458.8
27.5°	1366.1	1375.2	1408.2	1434.1	1417.4
30°	1330.8	1326.2	1354.1	1377.3	1390.2
32.5°	1267.5	1283.8	1316.4	1339.3	1327.1
35°	1229.1	1232.7	1261.3	1290.4	1289.6
37.5°	1161.9	1178.9	1219.0	1227.1	1219.6
40°	1104.7	1121.6	1157.9	1166.7	1163.0
42.5°	1062.4	1065.4	1096.5	1106.6	1090.5
45°	988.8	1007.3	1024.0	1050.4	1025.5
47.5°	926.2	934.8	970.8	977.9	964.8
50°	869.4	872.4	908.6	899.8	891.2
52.5°	797.9	810.6	831.0	829.3	819.2
55°	739.2	734.2	753.5	748.4	748.2
57.5°	668.6	677.2	693.0	684.9	671.8
60°	602.5	602.7	608.5	599.3	597.6
62.5°	529.0	531.5	532.8	521.4	539.9
65°	454.1	448.1	465.7	447.9	450.9
67.5°	385.2	388.2	386.5	375.4	379.7
70°	315.3	319.2	316.4	303.7	307.6
72.5°	251.4	246.7	249.7	233.8	241.1
75°	189.0	185.1	188.5	175.2	181.3
77.5°	128.7	131.7	129.6	122.5	126.6
80°	84.9	82.6	82.6	78.5	79.4
82.5°	49.5	47.2	46.5	45.3	47.2
85°	23.2	22.5	23.0	22.3	21.4
87.5°	8.4	8.6	8.6	8.2	7.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)