

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: P589391

Luminaire Tested: **FMR-24-2-LD4-3LO-35-UNV-93-86-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589391  
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-93-86-EDD  
Description: 2X2 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

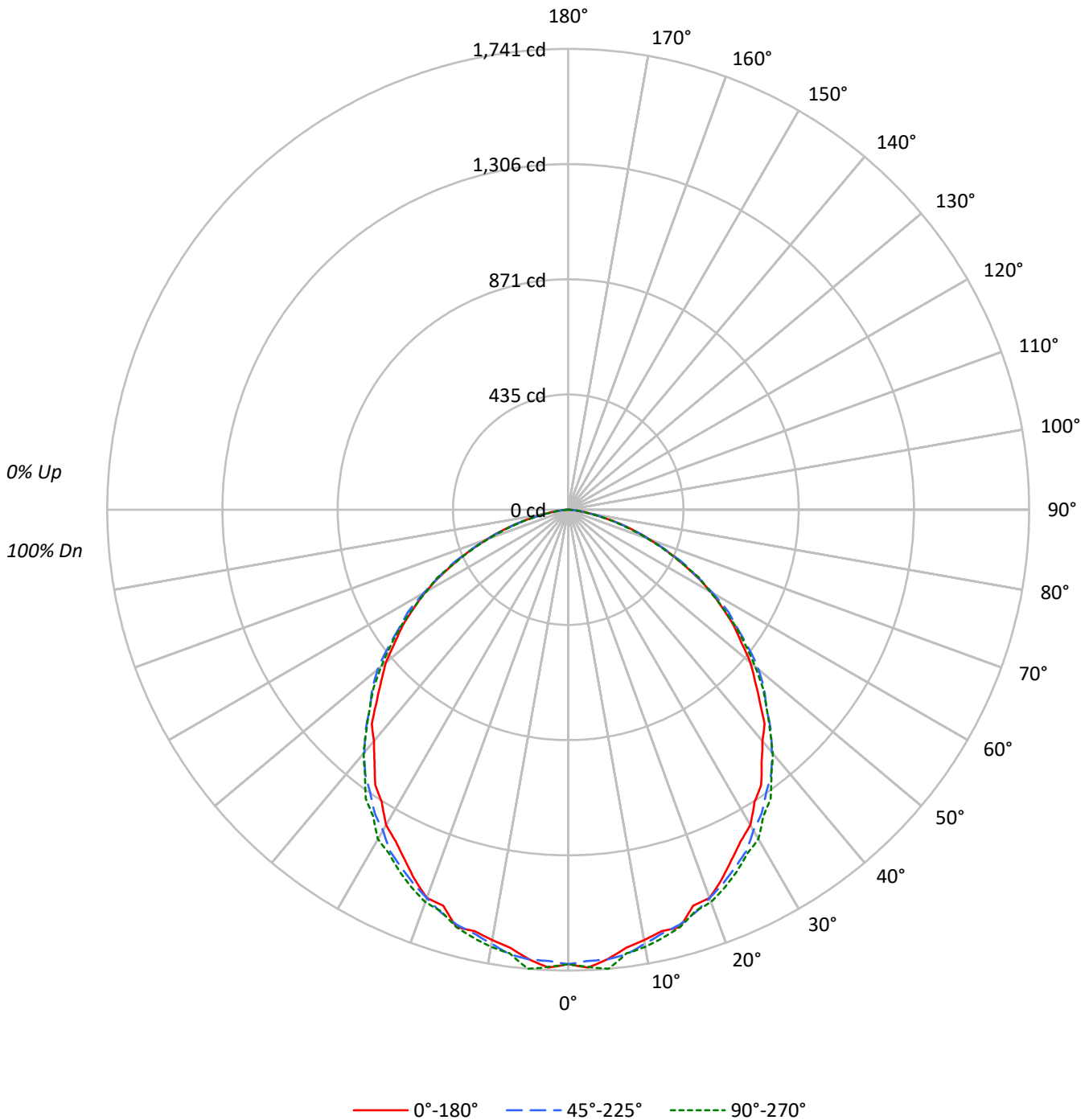
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4327.0 lumens  
Efficiency: N/A  
Efficacy: 123.3 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°	4620	4620	4620
5°	4605	4606	4703
10°	4511	4551	4583
15°	4547	4522	4548
20°	4470	4470	4518
25°	4333	4428	4476
30°	4273	4348	4464
35°	4173	4282	4378
40°	4010	4203	4222
45°	3889	4027	4033
50°	3761	3931	3856
55°	3584	3653	3628
60°	3351	3385	3324
65°	2988	3064	2967
70°	2564	2573	2501
75°	2031	2025	1947
80°	1361	1322	1271
85°	738	732	685



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	161.5	3.7
10°-20°	457.7	10.6
20°-30°	685.7	15.8
30°-40°	812.7	18.8
40°-50°	814.2	18.8
50°-60°	691.1	16.0
60°-70°	466.0	10.8
70°-80°	204.7	4.7
80°-90°	33.3	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°	1304.9	30.2
0°-40°	2117.6	48.9
0°-60°	3623.0	83.7
0°-90°	4327.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4327.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1717	1717	1717	1717	1717	
5°	1705	1701	1705	1700	1741	161
15°	1632	1613	1623	1632	1632	455
25°	1459	1467	1491	1511	1508	675
35°	1270	1274	1303	1334	1333	789
45°	1022	1041	1058	1086	1060	790
55°	764	759	779	773	773	679
65°	469	463	481	463	466	467
75°	195	191	195	181	187	209
85°	24	23	24	23	22	35
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1716.8	1716.8	1716.8	1716.8	1716.8
2.5°	1731.7	1718.6	1706.4	1720.6	1729.3
5°	1704.7	1700.7	1705.3	1700.2	1741.2
7.5°	1669.6	1684.9	1693.8	1688.2	1690.7
10°	1651.0	1645.7	1665.4	1679.2	1677.2
12.5°	1631.1	1639.0	1640.1	1655.0	1656.3
15°	1632.2	1613.3	1623.3	1631.7	1632.4
17.5°	1568.8	1589.2	1596.0	1615.3	1591.4
20°	1561.0	1546.2	1561.0	1580.7	1577.6
22.5°	1513.4	1496.7	1528.6	1546.2	1545.0
25°	1459.3	1467.2	1491.2	1510.7	1507.6
27.5°	1411.8	1421.1	1455.3	1482.1	1464.8
30°	1375.2	1370.6	1399.4	1423.4	1436.7
32.5°	1309.9	1326.7	1360.4	1384.1	1371.5
35°	1270.2	1273.9	1303.4	1333.6	1332.7
37.5°	1200.8	1218.3	1259.8	1268.2	1260.4
40°	1141.6	1159.1	1196.6	1205.7	1201.9
42.5°	1097.9	1101.0	1133.2	1143.6	1127.0
45°	1021.9	1041.0	1058.3	1085.5	1059.8
47.5°	957.2	966.0	1003.3	1010.6	997.1
50°	898.4	901.5	939.0	929.9	921.0
52.5°	824.6	837.7	858.8	857.0	846.6
55°	763.9	758.8	778.7	773.4	773.2
57.5°	690.9	699.8	716.2	707.8	694.3
60°	622.7	622.9	628.9	619.3	617.6
62.5°	546.6	549.3	550.6	538.9	557.9
65°	469.3	463.1	481.2	462.8	466.0
67.5°	398.1	401.2	399.5	387.9	392.4
70°	325.9	329.8	327.0	313.9	317.9
72.5°	259.8	254.9	258.0	241.6	249.2
75°	195.3	191.3	194.8	181.1	187.3
77.5°	133.0	136.1	133.9	126.6	130.8
80°	87.8	85.3	85.3	81.1	82.0
82.5°	51.2	48.8	48.1	46.8	48.8
85°	23.9	23.3	23.7	23.1	22.2
87.5°	8.6	8.9	8.9	8.4	8.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)