

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P560932

Luminaire Tested: FSR-12-4-LD4-1HI-50-UNV-93-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560932  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/20/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-12-4-LD4-1HI-50-UNV-93-86-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

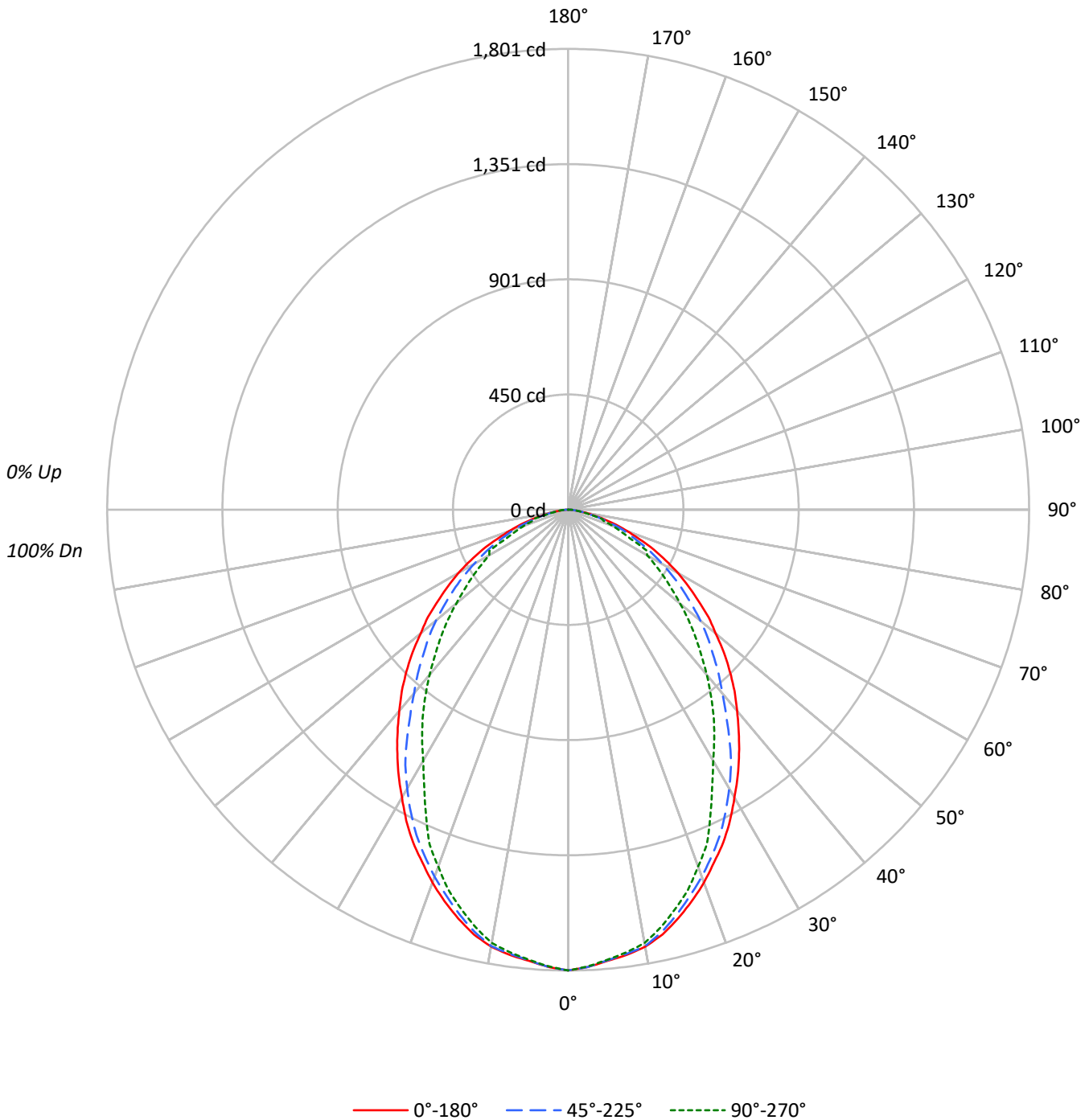
Lumens per Lamp: N/A  
Luminaire Lumens: 3535.0 lumens  
Efficiency: N/A  
Efficacy: 81.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: 24 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	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°	4846	4846	4846
5°	4780	4774	4769
10°	4738	4733	4699
15°	4611	4564	4500
20°	4441	4370	4251
25°	4259	4166	3906
30°	4036	3907	3519
35°	3823	3611	3255
40°	3605	3291	2962
45°	3399	3042	2678
50°	3146	2824	2388
55°	2911	2559	2139
60°	2666	2286	1916
65°	2346	2001	1697
70°	1932	1752	1441
75°	1537	1342	1407
80°	1032	969	903
85°	642	772	898

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3399 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	167.6	4.7
10°-20°	460.0	13.0
20°-30°	636.9	18.0
30°-40°	679.1	19.2
40°-50°	619.5	17.5
50°-60°	485.3	13.7
60°-70°	316.3	8.9
70°-80°	140.1	4.0
80°-90°	30.1	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°	1264.5	35.8
0°-40°	1943.6	55.0
0°-60°	3048.5	86.2
0°-90°	3535.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3535.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1801	1801	1801	1801	1801	
5°	1770	1767	1767	1765	1765	168
15°	1655	1655	1638	1622	1615	465
25°	1434	1426	1403	1353	1316	658
35°	1164	1155	1099	1016	991	728
45°	893	874	799	733	704	688
55°	620	602	545	481	456	556
65°	368	348	314	321	266	363
75°	148	137	129	123	135	158
85°	21	23	25	27	29	29
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1800.7	1800.7	1800.7	1800.7	1800.7
2.5°	1788.2	1788.2	1788.2	1786.1	1786.1
5°	1769.5	1767.4	1767.4	1765.3	1765.3
7.5°	1754.9	1752.8	1750.7	1748.6	1744.5
10°	1734.1	1734.1	1732.0	1721.6	1719.5
12.5°	1700.8	1698.7	1690.4	1675.8	1671.6
15°	1655.0	1655.0	1638.3	1621.7	1615.4
17.5°	1605.0	1602.9	1582.1	1565.4	1557.1
20°	1550.9	1546.7	1525.9	1498.8	1484.3
22.5°	1490.5	1490.5	1465.5	1430.1	1415.6
25°	1434.3	1426.0	1403.1	1353.1	1315.6
27.5°	1369.8	1357.3	1332.3	1261.5	1217.8
30°	1299.0	1292.7	1257.4	1165.8	1132.5
32.5°	1232.4	1222.0	1184.5	1088.7	1061.7
35°	1163.7	1155.4	1099.1	1015.9	990.9
37.5°	1095.0	1084.6	1013.8	947.2	916.0
40°	1026.3	1013.8	936.8	876.4	843.1
42.5°	961.8	945.1	870.2	805.6	768.2
45°	893.1	874.3	799.4	732.8	703.6
47.5°	824.4	807.7	739.0	670.3	637.0
50°	751.5	736.9	674.5	605.8	570.4
52.5°	691.1	668.2	607.9	539.2	510.0
55°	620.4	601.6	545.4	480.9	455.9
57.5°	555.8	537.1	485.0	424.7	403.9
60°	495.4	468.4	424.7	372.6	356.0
62.5°	428.8	408.0	370.5	326.8	347.6
65°	368.5	347.6	314.3	320.6	266.5
67.5°	301.8	291.4	262.3	233.2	224.8
70°	245.6	233.2	222.7	191.5	183.2
72.5°	195.7	183.2	168.6	152.0	145.7
75°	147.8	137.4	129.1	122.8	135.3
77.5°	102.0	97.8	91.6	85.4	83.3
80°	66.6	64.5	62.5	60.4	58.3
82.5°	39.6	39.6	39.6	39.6	39.6
85°	20.8	22.9	25.0	27.1	29.1
87.5°	12.5	12.5	14.6	16.7	18.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)