

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: P560898

Luminaire Tested: FSR-12-4-LD4-1HI-50-UNV-81-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560898  
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-81-85-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

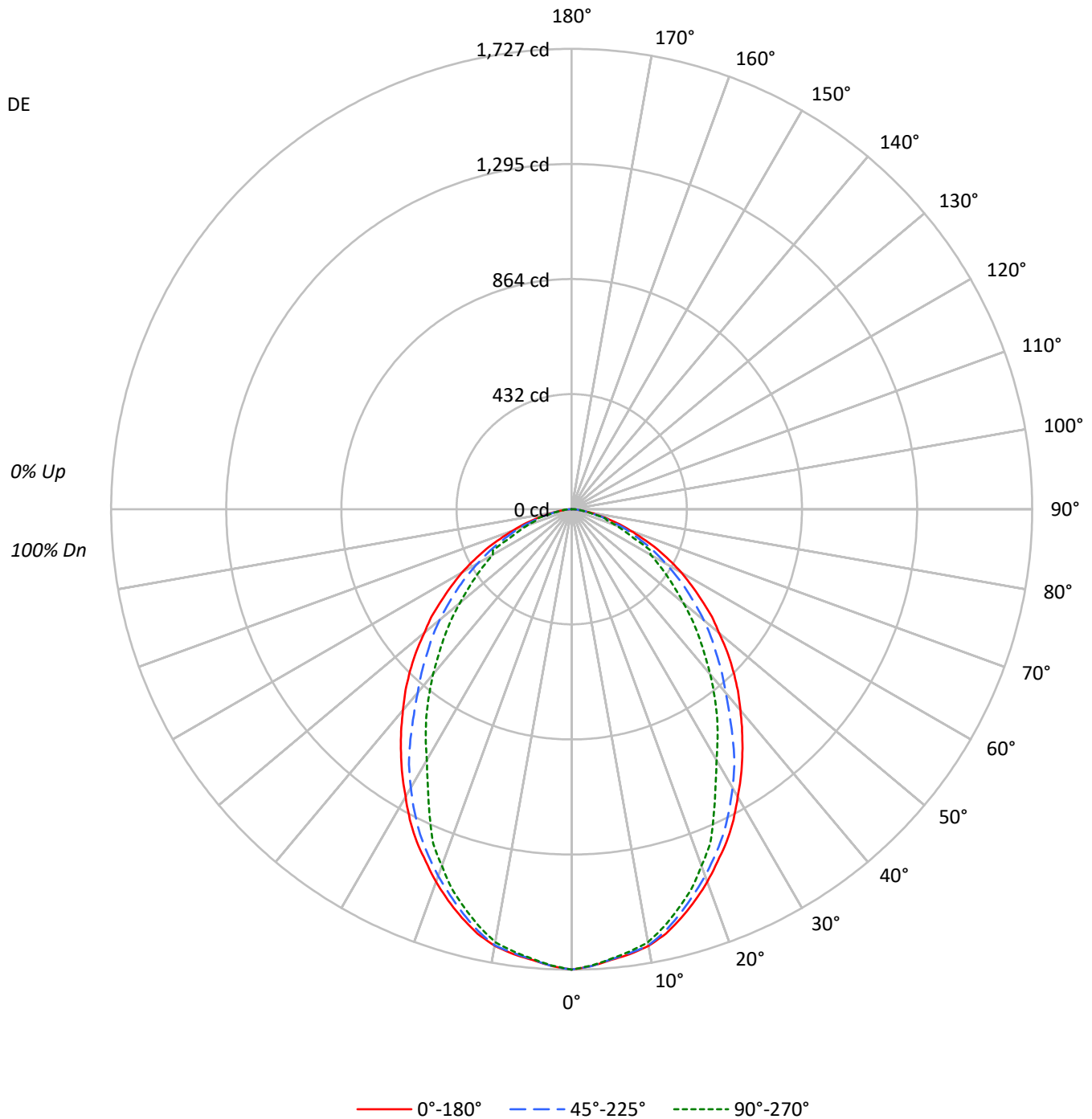
Lumens per Lamp: N/A  
Luminaire Lumens: 3390.0 lumens  
Efficiency: N/A  
Efficacy: 78.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



TEST NUMBER: P560898

CATALOG NUMBER: FSR-12-4-LD4-1HI-50-UNV-81-85-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P560898

CATALOG NUMBER: FSR-12-4-LD4-1HI-50-UNV-81-85-EDD-90

**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	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°	4647	4647	4647
5°	4584	4578	4573
10°	4544	4538	4506
15°	4422	4377	4316
20°	4259	4190	4076
25°	4084	3995	3746
30°	3871	3747	3375
35°	3666	3463	3122
40°	3457	3156	2840
45°	3259	2917	2568
50°	3017	2708	2290
55°	2791	2454	2051
60°	2557	2192	1837
65°	2250	1919	1627
70°	1854	1681	1382
75°	1473	1287	1350
80°	990	928	866
85°	618	741	861

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3259 cd/sqm



TEST NUMBER: P560898

CATALOG NUMBER: FSR-12-4-LD4-1HI-50-UNV-81-85-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	160.7	4.7
10°-20°	441.1	13.0
20°-30°	610.7	18.0
30°-40°	651.2	19.2
40°-50°	594.1	17.5
50°-60°	465.4	13.7
60°-70°	303.3	8.9
70°-80°	134.4	4.0
80°-90°	28.9	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°	1212.6	35.8
0°-40°	1863.9	55.0
0°-60°	2923.4	86.2
0°-90°	3390.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3390.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1727	1727	1727	1727	1727	
5°	1697	1695	1695	1693	1693	161
15°	1587	1587	1571	1555	1549	446
25°	1376	1368	1346	1298	1262	631
35°	1116	1108	1054	974	950	698
45°	856	838	767	703	675	660
55°	595	577	523	461	437	534
65°	353	333	301	307	256	348
75°	142	132	124	118	130	152
85°	20	22	24	26	28	28
90°	0	0	0	0	0	



TEST NUMBER: P560898

CATALOG NUMBER: FSR-12-4-LD4-1HI-50-UNV-81-85-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1726.8	1726.8	1726.8	1726.8	1726.8
2.5°	1714.8	1714.8	1714.8	1712.8	1712.8
5°	1696.9	1694.9	1694.9	1692.9	1692.9
7.5°	1682.9	1680.9	1678.9	1676.9	1672.9
10°	1662.9	1662.9	1660.9	1651.0	1649.0
12.5°	1631.0	1629.0	1621.0	1607.0	1603.0
15°	1587.1	1587.1	1571.1	1555.1	1549.1
17.5°	1539.2	1537.2	1517.2	1501.2	1493.3
20°	1487.3	1483.3	1463.3	1437.4	1423.4
22.5°	1429.4	1429.4	1405.4	1371.5	1357.5
25°	1375.5	1367.5	1345.5	1297.6	1261.7
27.5°	1313.6	1301.6	1277.6	1209.8	1167.8
30°	1245.7	1239.7	1205.8	1117.9	1086.0
32.5°	1181.8	1171.8	1135.9	1044.1	1018.1
35°	1115.9	1108.0	1054.1	974.2	950.3
37.5°	1050.1	1040.1	972.2	908.3	878.4
40°	984.2	972.2	898.3	840.5	808.5
42.5°	922.3	906.3	834.5	772.6	736.6
45°	856.4	838.5	766.6	702.7	674.8
47.5°	790.5	774.6	708.7	642.8	610.9
50°	720.7	706.7	646.8	580.9	547.0
52.5°	662.8	640.8	582.9	517.0	489.1
55°	594.9	576.9	523.0	461.2	437.2
57.5°	533.0	515.1	465.1	407.3	387.3
60°	475.1	449.2	407.3	357.3	341.4
62.5°	411.2	391.3	355.3	313.4	333.4
65°	353.3	333.4	301.4	307.4	255.5
67.5°	289.5	279.5	251.5	223.6	215.6
70°	235.6	223.6	213.6	183.7	175.7
72.5°	187.7	175.7	161.7	145.7	139.7
75°	141.7	131.8	123.8	117.8	129.8
77.5°	97.8	93.8	87.8	81.8	79.9
80°	63.9	61.9	59.9	57.9	55.9
82.5°	37.9	37.9	37.9	37.9	37.9
85°	20.0	22.0	24.0	26.0	27.9
87.5°	12.0	12.0	14.0	16.0	18.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)