

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: P561704

Luminaire Tested: FSR-12-4-LD4-2LO-50-UNV-93-88-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561704  
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-LD4-2LO-50-UNV-93-88-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

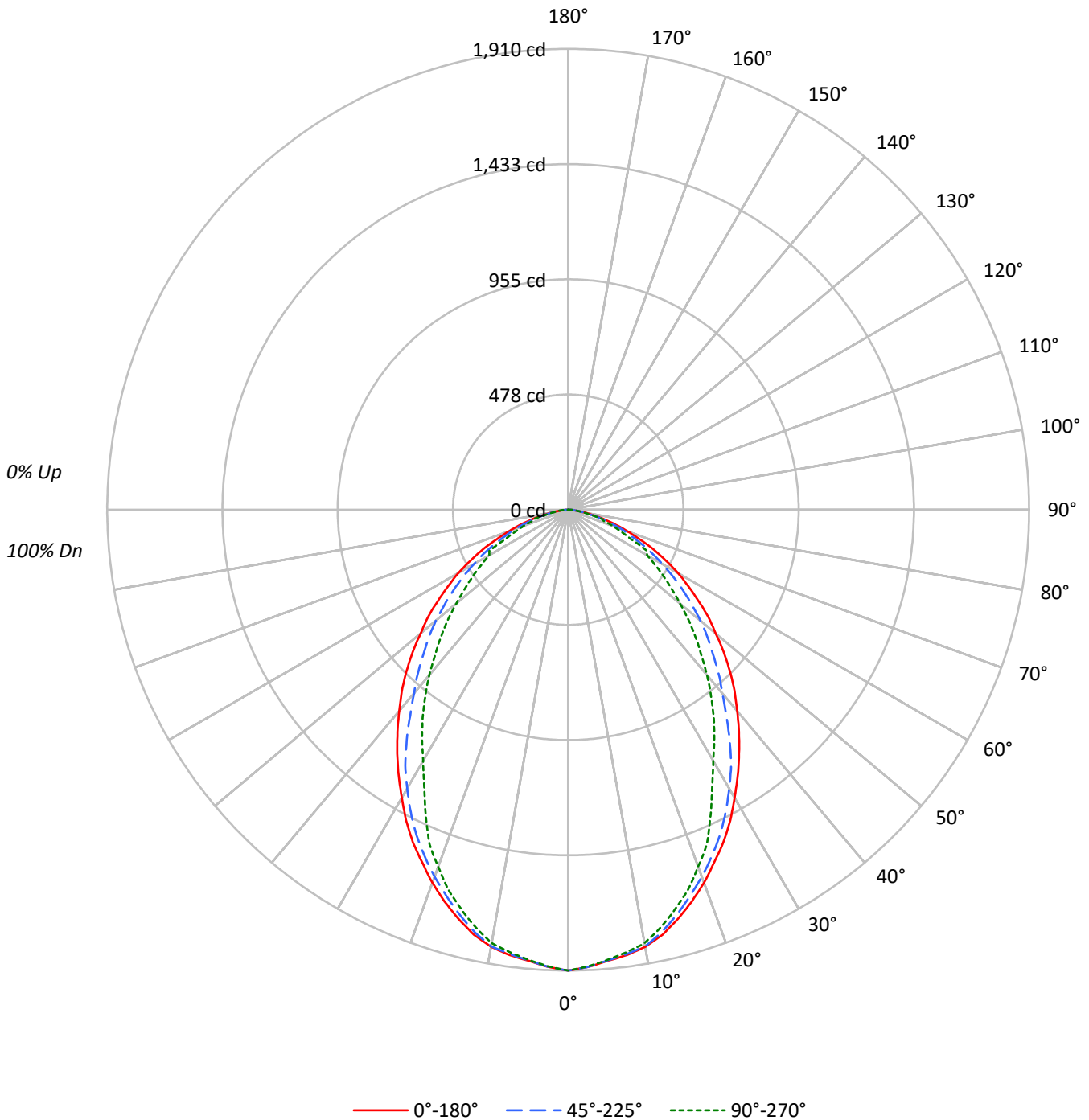
Lumens per Lamp: N/A  
Luminaire Lumens: 3750.0 lumens  
Efficiency: N/A  
Efficacy: 80.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P561704

CATALOG NUMBER: FSR-12-4-LD4-2LO-50-UNV-93-88-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P561704

CATALOG NUMBER: FSR-12-4-LD4-2LO-50-UNV-93-88-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	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°	5140	5140	5140
5°	5071	5065	5059
10°	5026	5020	4984
15°	4891	4842	4774
20°	4711	4635	4509
25°	4518	4419	4144
30°	4282	4144	3733
35°	4055	3830	3453
40°	3824	3491	3142
45°	3605	3227	2841
50°	3337	2995	2533
55°	3088	2715	2269
60°	2829	2425	2032
65°	2489	2124	1800
70°	2050	1859	1529
75°	1630	1423	1492
80°	1096	1026	958
85°	682	818	954

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3605 cd/sqm



TEST NUMBER: P561704

CATALOG NUMBER: FSR-12-4-LD4-2LO-50-UNV-93-88-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	177.8	4.7
10°-20°	488.0	13.0
20°-30°	675.6	18.0
30°-40°	720.4	19.2
40°-50°	657.2	17.5
50°-60°	514.9	13.7
60°-70°	335.6	8.9
70°-80°	148.7	4.0
80°-90°	31.9	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°	1341.4	35.8
0°-40°	2061.8	55.0
0°-60°	3233.9	86.2
0°-90°	3750.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3750.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1910	1910	1910	1910	1910	
5°	1877	1875	1875	1873	1873	178
15°	1756	1756	1738	1720	1714	494
25°	1522	1513	1488	1435	1396	699
35°	1234	1226	1166	1078	1051	772
45°	947	928	848	777	746	730
55°	658	638	579	510	484	590
65°	391	369	334	340	283	385
75°	157	146	137	130	144	168
85°	22	24	26	29	31	31
90°	0	0	0	0	0	



TEST NUMBER: P561704

CATALOG NUMBER: FSR-12-4-LD4-2LO-50-UNV-93-88-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1910.2	1910.2	1910.2	1910.2	1910.2
2.5°	1896.9	1896.9	1896.9	1894.7	1894.7
5°	1877.1	1874.9	1874.9	1872.7	1872.7
7.5°	1861.6	1859.4	1857.2	1855.0	1850.6
10°	1839.5	1839.5	1837.3	1826.3	1824.1
12.5°	1804.2	1802.0	1793.2	1777.7	1773.3
15°	1755.6	1755.6	1738.0	1720.3	1713.7
17.5°	1702.6	1700.4	1678.3	1660.7	1651.8
20°	1645.2	1640.8	1618.7	1590.0	1574.5
22.5°	1581.2	1581.2	1554.7	1517.1	1501.7
25°	1521.5	1512.7	1488.4	1435.4	1395.7
27.5°	1453.1	1439.8	1413.3	1338.2	1291.9
30°	1378.0	1371.4	1333.8	1236.7	1201.3
32.5°	1307.3	1296.3	1256.5	1155.0	1126.2
35°	1234.5	1225.6	1166.0	1077.7	1051.2
37.5°	1161.6	1150.5	1075.5	1004.8	971.7
40°	1088.7	1075.5	993.7	929.7	894.4
42.5°	1020.2	1002.6	923.1	854.6	814.9
45°	947.4	927.5	848.0	777.3	746.4
47.5°	874.5	856.8	784.0	711.1	675.7
50°	797.2	781.7	715.5	642.6	605.1
52.5°	733.2	708.9	644.8	572.0	541.0
55°	658.1	638.2	578.6	510.1	483.6
57.5°	589.6	569.7	514.5	450.5	428.4
60°	525.6	496.9	450.5	395.3	377.6
62.5°	454.9	432.8	393.1	346.7	368.8
65°	390.9	368.8	333.5	340.1	282.7
67.5°	320.2	309.2	278.2	247.3	238.5
70°	260.6	247.3	236.3	203.2	194.3
72.5°	207.6	194.3	178.9	161.2	154.6
75°	156.8	145.7	136.9	130.3	143.5
77.5°	108.2	103.8	97.2	90.5	88.3
80°	70.7	68.5	66.2	64.0	61.8
82.5°	42.0	42.0	42.0	42.0	42.0
85°	22.1	24.3	26.5	28.7	30.9
87.5°	13.2	13.2	15.5	17.7	19.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)