

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: P561574

Luminaire Tested: FSR-12-4-LD4-2LO-35-UNV-93-87-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561574  
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-35-UNV-93-87-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

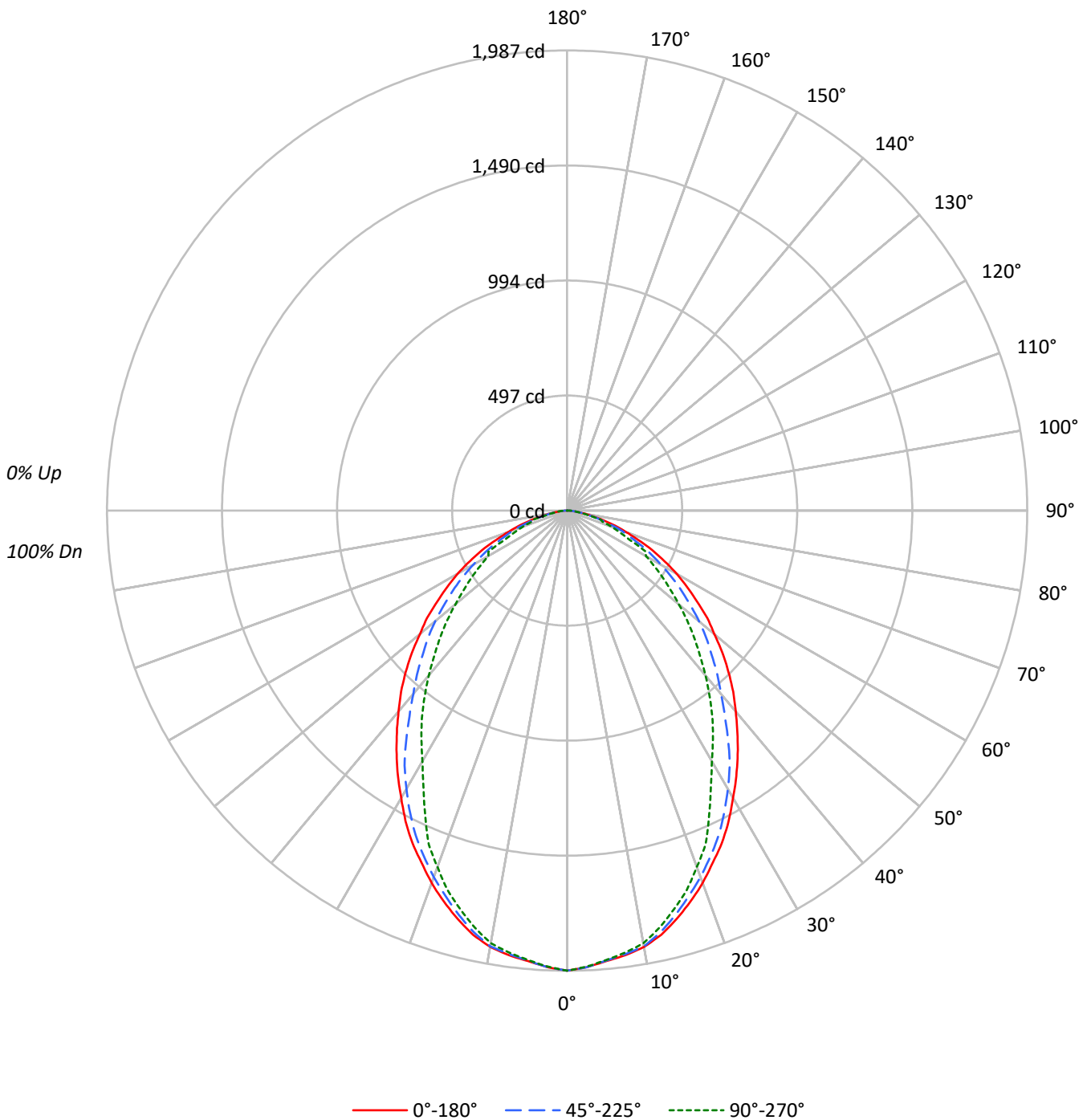
Lumens per Lamp: N/A  
Luminaire Lumens: 3900.0 lumens  
Efficiency: N/A  
Efficacy: 83.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P561574

CATALOG NUMBER: FSR-12-4-LD4-2LO-35-UNV-93-87-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P561574

CATALOG NUMBER: FSR-12-4-LD4-2LO-35-UNV-93-87-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	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					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°	5346	5346	5346
5°	5273	5267	5261
10°	5228	5221	5184
15°	5087	5036	4965
20°	4900	4821	4689
25°	4698	4596	4310
30°	4453	4310	3882
35°	4217	3983	3591
40°	3978	3631	3267
45°	3750	3356	2954
50°	3471	3115	2635
55°	3211	2823	2360
60°	2942	2521	2113
65°	2588	2208	1872
70°	2132	1933	1590
75°	1696	1481	1552
80°	1139	1068	996
85°	710	852	994

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3750 cd/sqm



TEST NUMBER: P561574

CATALOG NUMBER: FSR-12-4-LD4-2LO-35-UNV-93-87-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	184.9	4.7
10°-20°	507.5	13.0
20°-30°	702.6	18.0
30°-40°	749.2	19.2
40°-50°	683.5	17.5
50°-60°	535.4	13.7
60°-70°	349.0	8.9
70°-80°	154.6	4.0
80°-90°	33.2	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°	1395.1	35.8
0°-40°	2144.3	55.0
0°-60°	3363.2	86.2
0°-90°	3900.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3900.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1987	1987	1987	1987	1987	
5°	1952	1950	1950	1948	1948	185
15°	1826	1826	1808	1789	1782	513
25°	1582	1573	1548	1493	1452	726
35°	1284	1275	1213	1121	1093	803
45°	985	965	882	808	776	759
55°	684	664	602	530	503	614
65°	406	384	347	354	294	401
75°	163	152	142	136	149	175
85°	23	25	28	30	32	32
90°	0	0	0	0	0	



TEST NUMBER: P561574

CATALOG NUMBER: FSR-12-4-LD4-2LO-35-UNV-93-87-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1986.6	1986.6	1986.6	1986.6	1986.6
2.5°	1972.8	1972.8	1972.8	1970.5	1970.5
5°	1952.2	1949.9	1949.9	1947.6	1947.6
7.5°	1936.1	1933.8	1931.5	1929.2	1924.6
10°	1913.1	1913.1	1910.8	1899.3	1897.0
12.5°	1876.4	1874.1	1864.9	1848.8	1844.2
15°	1825.8	1825.8	1807.5	1789.1	1782.2
17.5°	1770.7	1768.4	1745.5	1727.1	1717.9
20°	1711.0	1706.4	1683.4	1653.6	1637.5
22.5°	1644.4	1644.4	1616.8	1577.8	1561.7
25°	1582.4	1573.2	1547.9	1492.8	1451.5
27.5°	1511.2	1497.4	1469.9	1391.8	1343.5
30°	1433.1	1426.2	1387.2	1286.1	1249.4
32.5°	1359.6	1348.1	1306.8	1201.2	1171.3
35°	1283.8	1274.6	1212.6	1120.8	1093.2
37.5°	1208.0	1196.6	1118.5	1045.0	1010.5
40°	1132.3	1118.5	1033.5	966.9	930.1
42.5°	1061.1	1042.7	960.0	888.8	847.5
45°	985.3	964.6	881.9	808.4	776.3
47.5°	909.5	891.1	815.3	739.5	702.8
50°	829.1	813.0	744.1	668.3	629.3
52.5°	762.5	737.2	670.6	594.8	562.7
55°	684.4	663.7	601.7	530.5	503.0
57.5°	613.2	592.5	535.1	468.5	445.6
60°	546.6	516.7	468.5	411.1	392.7
62.5°	473.1	450.1	408.8	360.6	383.5
65°	406.5	383.5	346.8	353.7	294.0
67.5°	333.0	321.5	289.4	257.2	248.0
70°	271.0	257.2	245.7	211.3	202.1
72.5°	215.9	202.1	186.0	167.7	160.8
75°	163.1	151.6	142.4	135.5	149.3
77.5°	112.5	107.9	101.1	94.2	91.9
80°	73.5	71.2	68.9	66.6	64.3
82.5°	43.6	43.6	43.6	43.6	43.6
85°	23.0	25.3	27.6	29.9	32.2
87.5°	13.8	13.8	16.1	18.4	20.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)