

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: P561125

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

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561125  
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-LD4-1LO-50-UNV-93-86-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

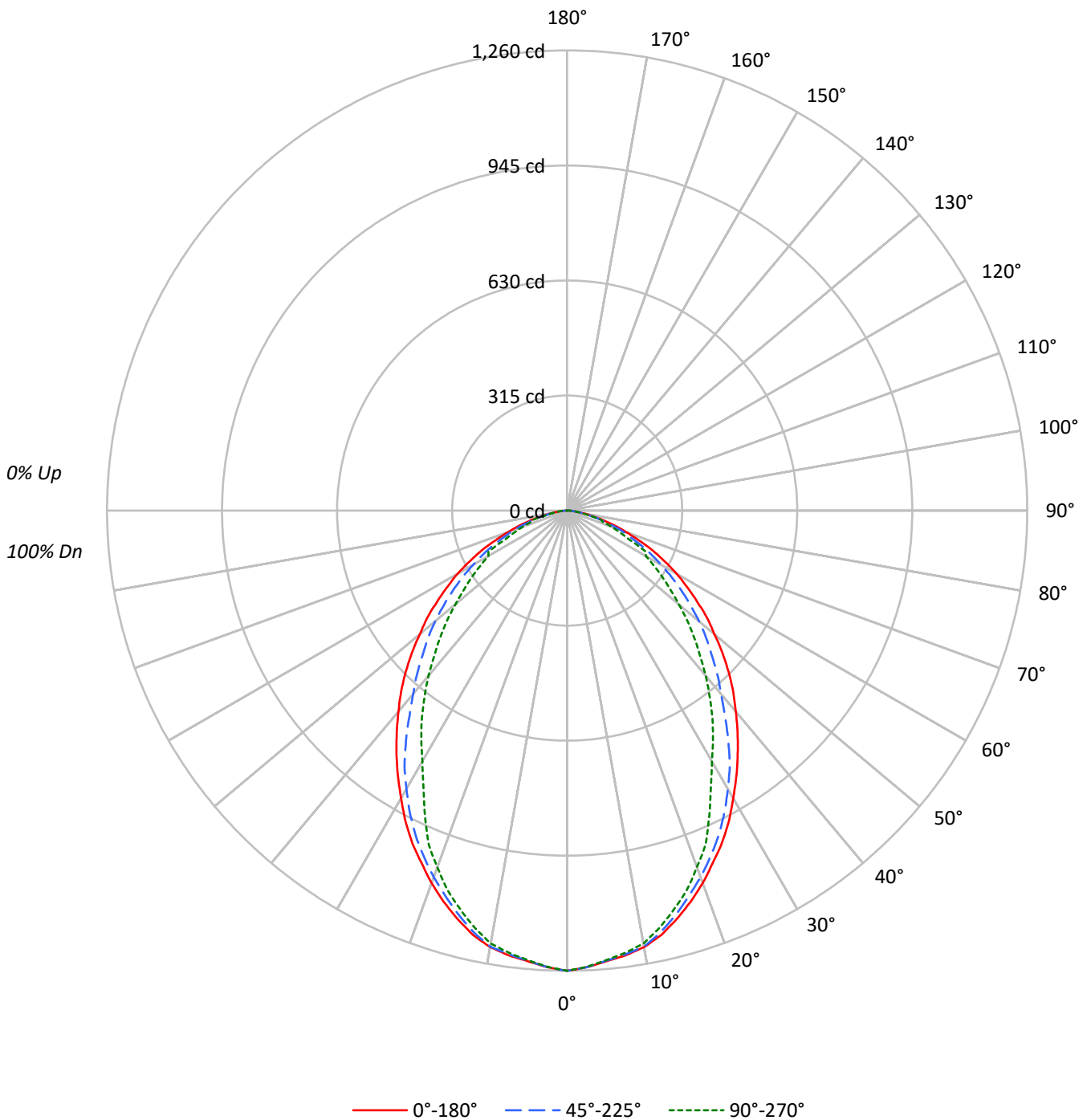
Lumens per Lamp: N/A  
Luminaire Lumens: 2474.0 lumens  
Efficiency: N/A  
Efficacy: 105.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P561125

CATALOG NUMBER: FSR-12-4-LD4-1LO-50-UNV-93-86-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P561125

CATALOG NUMBER: FSR-12-4-LD4-1LO-50-UNV-93-86-EDD

**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									100																			
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87									87																			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75									75																			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65									65																			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56									56																			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50									50																			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44									44																			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40									40																			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36									36																			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33									33																			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30									30																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	3391	3391	3391
5°	3345	3341	3337
10°	3316	3312	3288
15°	3227	3194	3150
20°	3108	3058	2975
25°	2980	2916	2734
30°	2825	2734	2463
35°	2675	2527	2278
40°	2523	2303	2073
45°	2379	2129	1874
50°	2202	1976	1671
55°	2037	1791	1497
60°	1866	1600	1341
65°	1642	1401	1188
70°	1352	1227	1009
75°	1075	939	985
80°	722	677	632
85°	451	540	630

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2379 cd/sqm



TEST NUMBER: P561125

CATALOG NUMBER: FSR-12-4-LD4-1LO-50-UNV-93-86-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	117.3	4.7
10°-20°	321.9	13.0
20°-30°	445.7	18.0
30°-40°	475.3	19.2
40°-50°	433.6	17.5
50°-60°	339.7	13.7
60°-70°	221.4	8.9
70°-80°	98.1	4.0
80°-90°	21.1	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°	885.0	35.8
0°-40°	1360.2	55.0
0°-60°	2133.5	86.2
0°-90°	2474.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2474.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1260	1260	1260	1260	1260	
5°	1238	1237	1237	1236	1236	118
15°	1158	1158	1147	1135	1131	326
25°	1004	998	982	947	921	461
35°	814	809	769	711	694	509
45°	625	612	560	513	492	481
55°	434	421	382	336	319	389
65°	258	243	220	224	186	254
75°	103	96	90	86	95	111
85°	15	16	18	19	20	20
90°	0	0	0	0	0	



TEST NUMBER: P561125

CATALOG NUMBER: FSR-12-4-LD4-1LO-50-UNV-93-86-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1260.2	1260.2	1260.2	1260.2	1260.2
2.5°	1251.5	1251.5	1251.5	1250.0	1250.0
5°	1238.4	1236.9	1236.9	1235.5	1235.5
7.5°	1228.2	1226.7	1225.3	1223.8	1220.9
10°	1213.6	1213.6	1212.1	1204.9	1203.4
12.5°	1190.3	1188.8	1183.0	1172.8	1169.9
15°	1158.2	1158.2	1146.6	1134.9	1130.6
17.5°	1123.3	1121.8	1107.2	1095.6	1089.8
20°	1085.4	1082.5	1067.9	1049.0	1038.8
22.5°	1043.1	1043.1	1025.7	1000.9	990.7
25°	1003.8	998.0	982.0	947.0	920.8
27.5°	958.6	949.9	932.4	882.9	852.3
30°	909.1	904.7	880.0	815.9	792.6
32.5°	862.5	855.2	829.0	762.0	743.0
35°	814.4	808.6	769.2	711.0	693.5
37.5°	766.3	759.0	709.5	662.9	641.0
40°	718.3	709.5	655.6	613.4	590.0
42.5°	673.1	661.4	609.0	563.8	537.6
45°	625.0	611.9	559.5	512.8	492.4
47.5°	576.9	565.3	517.2	469.1	445.8
50°	525.9	515.7	472.0	424.0	399.2
52.5°	483.7	467.7	425.4	377.3	356.9
55°	434.2	421.0	381.7	336.5	319.1
57.5°	389.0	375.9	339.5	297.2	282.6
60°	346.7	327.8	297.2	260.8	249.1
62.5°	300.1	285.6	259.3	228.7	243.3
65°	257.9	243.3	220.0	224.4	186.5
67.5°	211.3	204.0	183.6	163.2	157.3
70°	171.9	163.2	155.9	134.0	128.2
72.5°	136.9	128.2	118.0	106.4	102.0
75°	103.4	96.2	90.3	86.0	94.7
77.5°	71.4	68.5	64.1	59.7	58.3
80°	46.6	45.2	43.7	42.3	40.8
82.5°	27.7	27.7	27.7	27.7	27.7
85°	14.6	16.0	17.5	18.9	20.4
87.5°	8.7	8.7	10.2	11.7	13.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)