

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: P561248

Luminaire Tested: FSR-12-4-LD4-1STD-40-UNV-93-84-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561248  
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-LD4-1STD-40-UNV-93-84-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

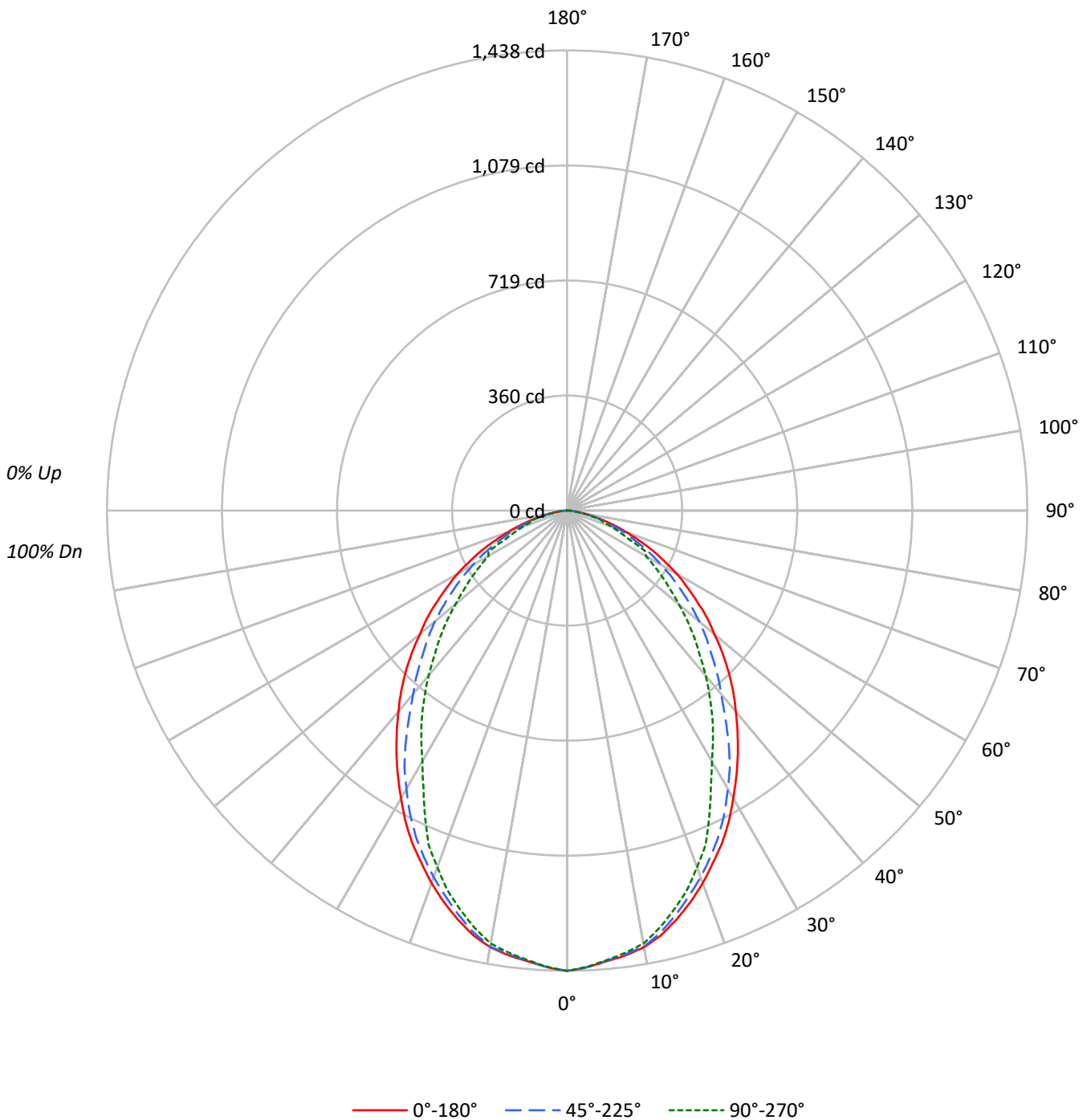
Lumens per Lamp: N/A  
Luminaire Lumens: 2824.0 lumens  
Efficiency: N/A  
Efficacy: 84.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P561248

CATALOG NUMBER: FSR-12-4-LD4-1STD-40-UNV-93-84-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P561248

CATALOG NUMBER: FSR-12-4-LD4-1STD-40-UNV-93-84-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	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°	3871	3871	3871
5°	3818	3814	3809
10°	3785	3781	3754
15°	3683	3646	3595
20°	3548	3491	3395
25°	3402	3328	3121
30°	3224	3121	2811
35°	3054	2885	2600
40°	2880	2629	2366
45°	2715	2430	2139
50°	2513	2256	1908
55°	2325	2044	1709
60°	2130	1826	1531
65°	1875	1599	1356
70°	1544	1400	1151
75°	1228	1072	1124
80°	824	773	722
85°	513	618	719

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2715 cd/sqm



TEST NUMBER: P561248

CATALOG NUMBER: FSR-12-4-LD4-1STD-40-UNV-93-84-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	133.9	4.7
10°-20°	367.5	13.0
20°-30°	508.8	18.0
30°-40°	542.5	19.2
40°-50°	494.9	17.5
50°-60°	387.7	13.7
60°-70°	252.7	8.9
70°-80°	112.0	4.0
80°-90°	24.0	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°	1010.2	35.8
0°-40°	1552.7	55.0
0°-60°	2435.3	86.2
0°-90°	2824.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2824.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1438	1438	1438	1438	1438	
5°	1414	1412	1412	1410	1410	134
15°	1322	1322	1309	1296	1290	372
25°	1146	1139	1121	1081	1051	526
35°	930	923	878	812	792	581
45°	713	698	639	585	562	550
55°	496	481	436	384	364	444
65°	294	278	251	256	213	290
75°	118	110	103	98	108	127
85°	17	18	20	22	23	23
90°	0	0	0	0	0	



TEST NUMBER: P561248

CATALOG NUMBER: FSR-12-4-LD4-1STD-40-UNV-93-84-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1438.5	1438.5	1438.5	1438.5	1438.5
2.5°	1428.5	1428.5	1428.5	1426.9	1426.9
5°	1413.6	1411.9	1411.9	1410.2	1410.2
7.5°	1401.9	1400.3	1398.6	1396.9	1393.6
10°	1385.3	1385.3	1383.6	1375.3	1373.7
12.5°	1358.7	1357.0	1350.4	1338.7	1335.4
15°	1322.1	1322.1	1308.8	1295.5	1290.5
17.5°	1282.2	1280.5	1263.9	1250.6	1243.9
20°	1238.9	1235.6	1219.0	1197.4	1185.7
22.5°	1190.7	1190.7	1170.8	1142.5	1130.9
25°	1145.8	1139.2	1120.9	1081.0	1051.0
27.5°	1094.3	1084.3	1064.3	1007.8	972.9
30°	1037.7	1032.7	1004.5	931.3	904.7
32.5°	984.5	976.2	946.3	869.8	848.1
35°	929.6	923.0	878.1	811.6	791.6
37.5°	874.7	866.4	809.9	756.7	731.7
40°	819.9	809.9	748.4	700.1	673.5
42.5°	768.3	755.0	695.1	643.6	613.7
45°	713.4	698.5	638.6	585.4	562.1
47.5°	658.6	645.2	590.4	535.5	508.9
50°	600.3	588.7	538.8	483.9	455.7
52.5°	552.1	533.8	485.6	430.7	407.4
55°	495.6	480.6	435.7	384.2	364.2
57.5°	444.0	429.1	387.5	339.3	322.6
60°	395.8	374.2	339.3	297.7	284.4
62.5°	342.6	326.0	296.0	261.1	277.7
65°	294.4	277.7	251.1	256.1	212.9
67.5°	241.1	232.8	209.5	186.3	179.6
70°	196.2	186.3	177.9	153.0	146.3
72.5°	156.3	146.3	134.7	121.4	116.4
75°	118.1	109.8	103.1	98.1	108.1
77.5°	81.5	78.2	73.2	68.2	66.5
80°	53.2	51.6	49.9	48.2	46.6
82.5°	31.6	31.6	31.6	31.6	31.6
85°	16.6	18.3	20.0	21.6	23.3
87.5°	10.0	10.0	11.6	13.3	15.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)