

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: P561464

Luminaire Tested: FSR-12-4-LD4-2HI-50-UNV-80-88-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561464  
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-LD4-2HI-50-UNV-80-88-EDD-90  
Description: 1X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .500 CLEAR PC ENVIRON  
SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

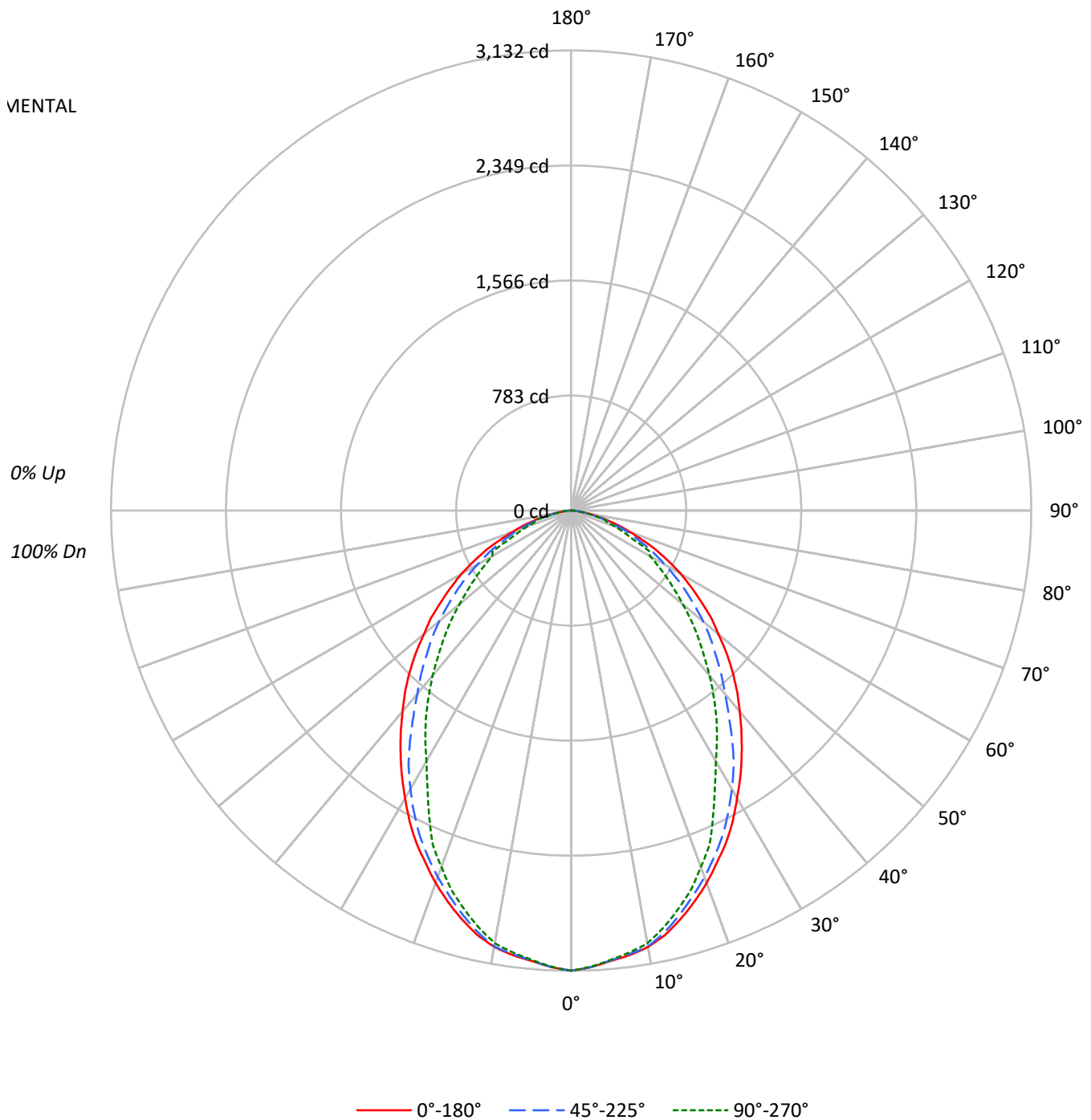
Lumens per Lamp: N/A  
Luminaire Lumens: 6148.0 lumens  
Efficiency: N/A  
Efficacy: 71.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P561464

CATALOG NUMBER: FSR-12-4-LD4-2HI-50-UNV-80-88-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P561464

CATALOG NUMBER: FSR-12-4-LD4-2HI-50-UNV-80-88-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	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°	8427	8427	8427
5°	8313	8303	8293
10°	8241	8231	8172
15°	8019	7938	7827
20°	7724	7600	7392
25°	7407	7245	6794
30°	7020	6795	6120
35°	6648	6280	5661
40°	6270	5723	5151
45°	5911	5291	4657
50°	5472	4911	4153
55°	5062	4450	3720
60°	4638	3975	3332
65°	4080	3481	2951
70°	3361	3048	2507
75°	2673	2334	2446
80°	1796	1683	1571
85°	1118	1340	1565

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5911 cd/sqm



TEST NUMBER: P561464

CATALOG NUMBER: FSR-12-4-LD4-2HI-50-UNV-80-88-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	291.5	4.7
10°-20°	800.1	13.0
20°-30°	1107.6	18.0
30°-40°	1181.0	19.2
40°-50°	1077.5	17.5
50°-60°	844.1	13.7
60°-70°	550.1	8.9
70°-80°	243.7	4.0
80°-90°	52.3	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°	2199.2	35.8
0°-40°	3380.2	55.0
0°-60°	5301.8	86.2
0°-90°	6148.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6148.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3132	3132	3132	3132	3132	
5°	3077	3074	3074	3070	3070	292
15°	2878	2878	2849	2820	2810	809
25°	2494	2480	2440	2353	2288	1145
35°	2024	2009	1912	1767	1723	1265
45°	1553	1521	1390	1274	1224	1196
55°	1079	1046	949	836	793	968
65°	641	605	547	558	463	632
75°	257	239	224	214	235	276
85°	36	40	43	47	51	50
90°	0	0	0	0	0	



TEST NUMBER: P561464

CATALOG NUMBER: FSR-12-4-LD4-2HI-50-UNV-80-88-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3131.7	3131.7	3131.7	3131.7	3131.7
2.5°	3110.0	3110.0	3110.0	3106.4	3106.4
5°	3077.4	3073.8	3073.8	3070.2	3070.2
7.5°	3052.1	3048.4	3044.8	3041.2	3034.0
10°	3015.9	3015.9	3012.2	2994.1	2990.5
12.5°	2957.9	2954.3	2939.8	2914.5	2907.2
15°	2878.3	2878.3	2849.3	2820.3	2809.5
17.5°	2791.4	2787.8	2751.6	2722.6	2708.1
20°	2697.3	2690.0	2653.8	2606.7	2581.4
22.5°	2592.3	2592.3	2548.8	2487.3	2461.9
25°	2494.5	2480.0	2440.2	2353.3	2288.1
27.5°	2382.3	2360.5	2317.1	2194.0	2118.0
30°	2259.2	2248.3	2186.8	2027.5	1969.5
32.5°	2143.3	2125.2	2060.0	1893.5	1846.4
35°	2023.8	2009.4	1911.6	1766.8	1723.3
37.5°	1904.4	1886.3	1763.2	1647.3	1593.0
40°	1784.9	1763.2	1629.2	1524.2	1466.3
42.5°	1672.7	1643.7	1513.4	1401.1	1336.0
45°	1553.2	1520.6	1390.3	1274.4	1223.7
47.5°	1433.7	1404.7	1285.3	1165.8	1107.9
50°	1307.0	1281.6	1173.0	1053.6	992.0
52.5°	1202.0	1162.2	1057.2	937.7	887.0
55°	1078.9	1046.3	948.6	836.3	792.9
57.5°	966.7	934.1	843.6	738.6	702.4
60°	861.7	814.6	738.6	648.1	619.1
62.5°	745.8	709.6	644.4	568.4	604.6
65°	640.8	604.6	546.7	557.6	463.4
67.5°	525.0	506.9	456.2	405.5	391.0
70°	427.2	405.5	387.4	333.1	318.6
72.5°	340.3	318.6	293.3	264.3	253.4
75°	257.1	239.0	224.5	213.6	235.3
77.5°	177.4	170.2	159.3	148.4	144.8
80°	115.9	112.2	108.6	105.0	101.4
82.5°	68.8	68.8	68.8	68.8	68.8
85°	36.2	39.8	43.4	47.1	50.7
87.5°	21.7	21.7	25.3	29.0	32.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)