

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: P561858

Luminaire Tested: FSR-12-4-LD4-2STD-50-UNV-81-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561858  
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-LD4-2STD-50-UNV-81-85-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

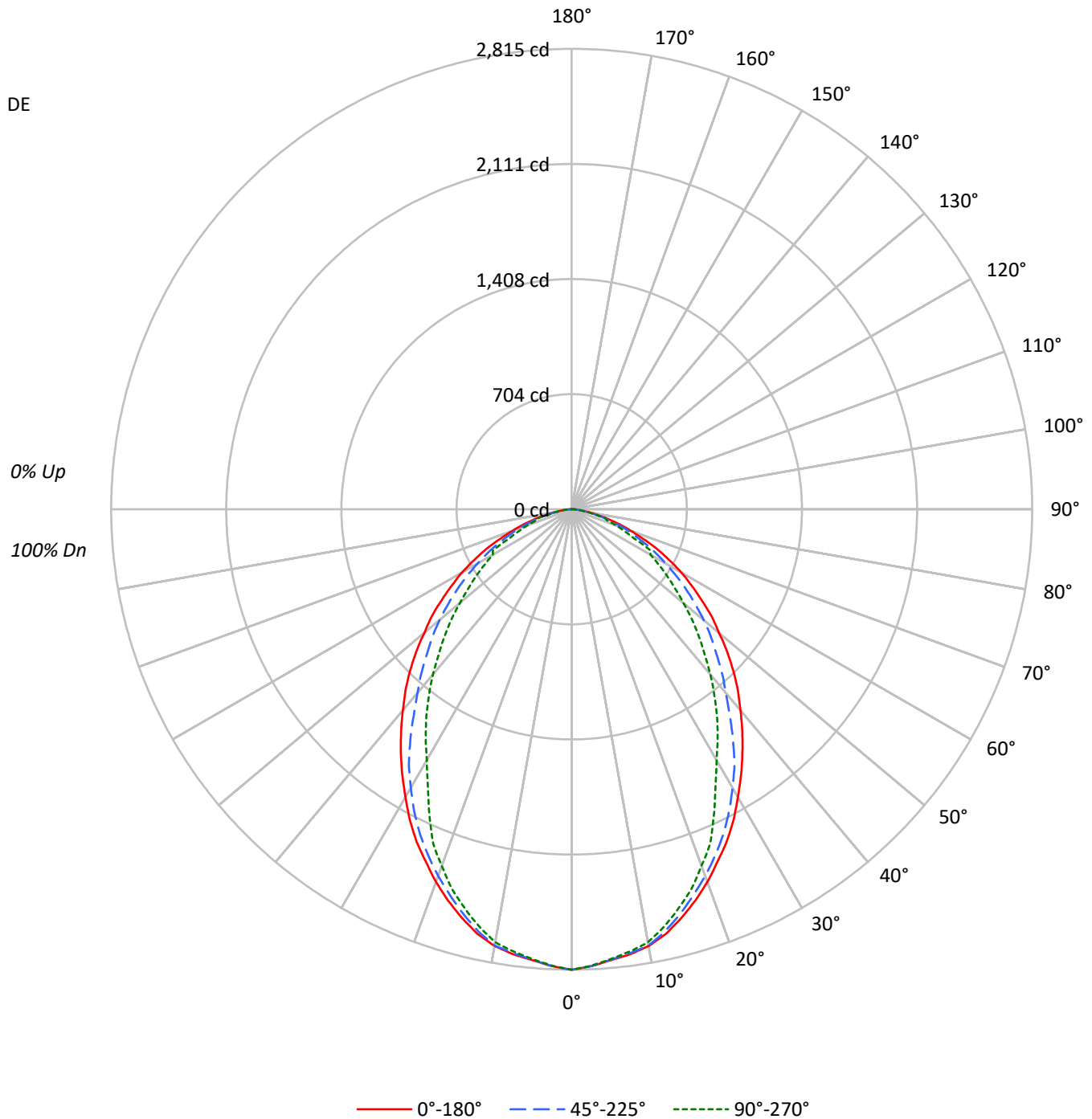
Lumens per Lamp: N/A  
Luminaire Lumens: 5527.0 lumens  
Efficiency: N/A  
Efficacy: 83.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P561858

CATALOG NUMBER: FSR-12-4-LD4-2STD-50-UNV-81-85-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P561858

CATALOG NUMBER: FSR-12-4-LD4-2STD-50-UNV-81-85-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	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°	7576	7576	7576
5°	7473	7464	7455
10°	7408	7400	7346
15°	7209	7136	7036
20°	6944	6832	6646
25°	6658	6513	6108
30°	6311	6109	5502
35°	5977	5645	5090
40°	5637	5145	4631
45°	5314	4756	4187
50°	4919	4415	3733
55°	4550	4001	3344
60°	4169	3574	2996
65°	3668	3130	2653
70°	3022	2740	2253
75°	2403	2098	2200
80°	1615	1512	1412
85°	1003	1207	1408

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5314 cd/sqm



TEST NUMBER: P561858

CATALOG NUMBER: FSR-12-4-LD4-2STD-50-UNV-81-85-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	262.1	4.7
10°-20°	719.2	13.0
20°-30°	995.7	18.0
30°-40°	1061.7	19.2
40°-50°	968.6	17.5
50°-60°	758.8	13.7
60°-70°	494.6	8.9
70°-80°	219.1	4.0
80°-90°	47.0	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°	1977.0	35.8
0°-40°	3038.8	55.0
0°-60°	4766.3	86.2
0°-90°	5527.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5527.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2815	2815	2815	2815	2815	
5°	2767	2763	2763	2760	2760	263
15°	2588	2588	2562	2536	2526	727
25°	2242	2230	2194	2116	2057	1030
35°	1819	1806	1718	1588	1549	1137
45°	1396	1367	1250	1146	1100	1076
55°	970	941	853	752	713	870
65°	576	544	492	501	417	568
75°	231	215	202	192	212	248
85°	32	36	39	42	46	45
90°	0	0	0	0	0	



TEST NUMBER: P561858

CATALOG NUMBER: FSR-12-4-LD4-2STD-50-UNV-81-85-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2815.4	2815.4	2815.4	2815.4	2815.4
2.5°	2795.9	2795.9	2795.9	2792.6	2792.6
5°	2766.6	2763.3	2763.3	2760.0	2760.0
7.5°	2743.8	2740.5	2737.3	2734.0	2727.5
10°	2711.2	2711.2	2708.0	2691.7	2688.4
12.5°	2659.2	2655.9	2642.9	2620.1	2613.6
15°	2587.5	2587.5	2561.5	2535.5	2525.7
17.5°	2509.4	2506.2	2473.6	2447.6	2434.6
20°	2424.8	2418.3	2385.7	2343.4	2320.7
22.5°	2330.4	2330.4	2291.4	2236.0	2213.2
25°	2242.5	2229.5	2193.7	2115.6	2057.0
27.5°	2141.6	2122.1	2083.1	1972.4	1904.0
30°	2031.0	2021.2	1965.9	1822.7	1770.6
32.5°	1926.8	1910.6	1852.0	1702.2	1659.9
35°	1819.4	1806.4	1718.5	1588.3	1549.3
37.5°	1712.0	1695.7	1585.1	1480.9	1432.1
40°	1604.6	1585.1	1464.6	1370.3	1318.2
42.5°	1503.7	1477.7	1360.5	1259.6	1201.0
45°	1396.3	1367.0	1249.8	1145.7	1100.1
47.5°	1288.9	1262.9	1155.4	1048.0	996.0
50°	1175.0	1152.2	1054.5	947.1	891.8
52.5°	1080.6	1044.8	950.4	843.0	797.4
55°	969.9	940.6	852.8	751.9	712.8
57.5°	869.0	839.7	758.4	664.0	631.4
60°	774.6	732.3	664.0	582.6	556.6
62.5°	670.5	637.9	579.3	511.0	543.5
65°	576.1	543.5	491.5	501.2	416.6
67.5°	471.9	455.7	410.1	364.5	351.5
70°	384.1	364.5	348.3	299.4	286.4
72.5°	305.9	286.4	263.6	237.6	227.8
75°	231.1	214.8	201.8	192.0	211.6
77.5°	159.5	153.0	143.2	133.4	130.2
80°	104.2	100.9	97.6	94.4	91.1
82.5°	61.8	61.8	61.8	61.8	61.8
85°	32.5	35.8	39.1	42.3	45.6
87.5°	19.5	19.5	22.8	26.0	29.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)