

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: P561288

Luminaire Tested: FSR-12-4-LD4-1STD-50-UNV-81-88-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561288  
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-50-UNV-81-88-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

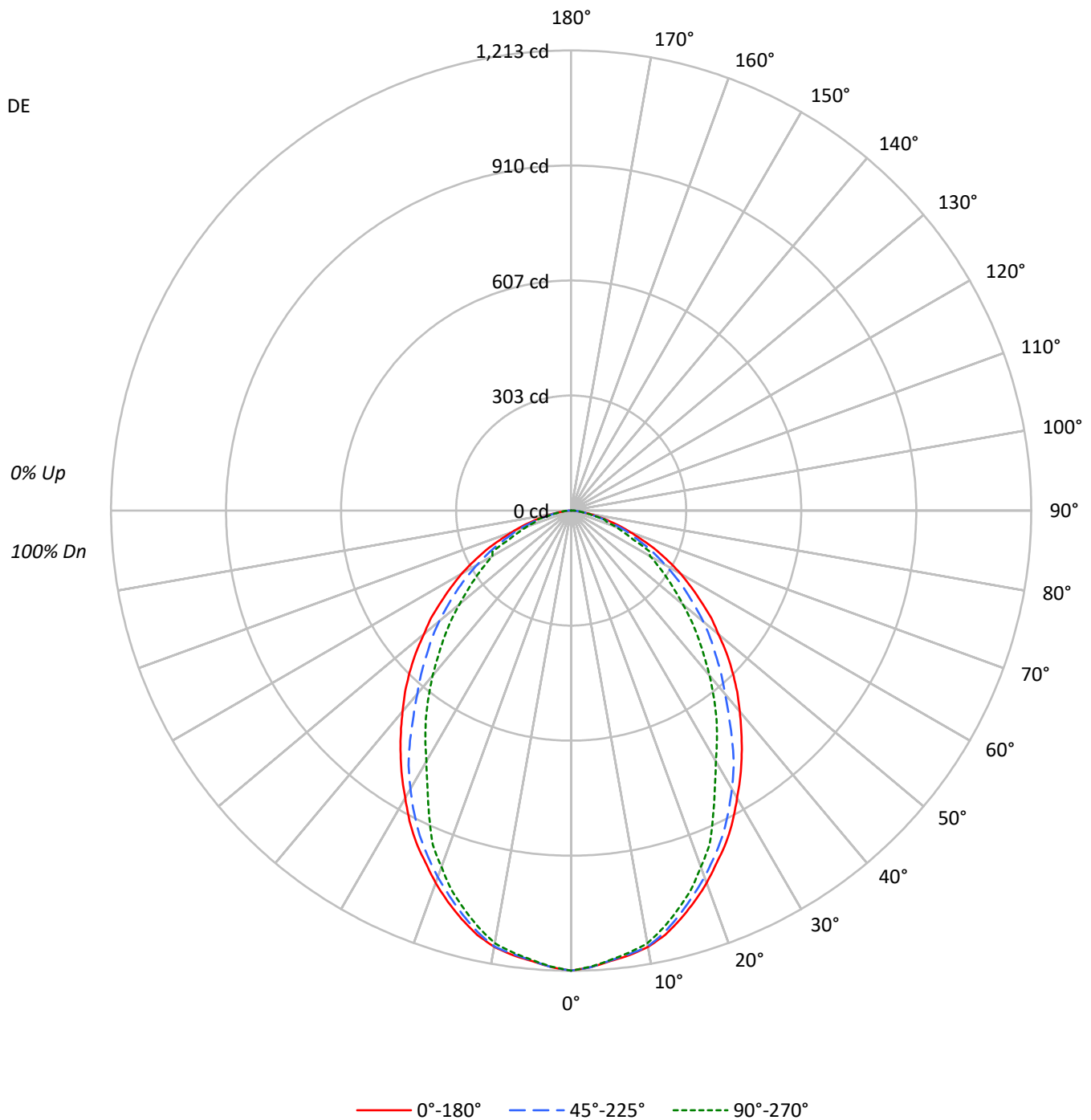
Lumens per Lamp: N/A  
Luminaire Lumens: 2381.0 lumens  
Efficiency: N/A  
Efficacy: 71.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P561288

CATALOG NUMBER: FSR-12-4-LD4-1STD-50-UNV-81-88-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P561288

CATALOG NUMBER: FSR-12-4-LD4-1STD-50-UNV-81-88-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°	3264	3264	3264
5°	3219	3216	3212
10°	3192	3188	3165
15°	3105	3074	3031
20°	2991	2943	2863
25°	2869	2806	2631
30°	2719	2632	2370
35°	2575	2432	2192
40°	2428	2217	1995
45°	2289	2049	1803
50°	2119	1902	1608
55°	1960	1724	1441
60°	1796	1539	1291
65°	1580	1348	1143
70°	1302	1180	971
75°	1036	904	947
80°	696	652	609
85°	432	519	605

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2289 cd/sqm



TEST NUMBER: P561288

CATALOG NUMBER: FSR-12-4-LD4-1STD-50-UNV-81-88-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	112.9	4.7
10°-20°	309.8	13.0
20°-30°	429.0	18.0
30°-40°	457.4	19.2
40°-50°	417.3	17.5
50°-60°	326.9	13.7
60°-70°	213.1	8.9
70°-80°	94.4	4.0
80°-90°	20.2	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°	851.7	35.8
0°-40°	1309.1	55.0
0°-60°	2053.3	86.2
0°-90°	2381.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2381.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1213	1213	1213	1213	1213	
5°	1192	1190	1190	1189	1189	113
15°	1115	1115	1104	1092	1088	313
25°	966	960	945	911	886	444
35°	784	778	740	684	667	490
45°	602	589	538	494	474	463
55°	418	405	367	324	307	375
65°	248	234	212	216	180	245
75°	100	92	87	83	91	107
85°	14	15	17	18	20	19
90°	0	0	0	0	0	



TEST NUMBER: P561288

CATALOG NUMBER: FSR-12-4-LD4-1STD-50-UNV-81-88-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1212.8	1212.8	1212.8	1212.8	1212.8
2.5°	1204.4	1204.4	1204.4	1203.0	1203.0
5°	1191.8	1190.4	1190.4	1189.0	1189.0
7.5°	1182.0	1180.6	1179.2	1177.8	1175.0
10°	1168.0	1168.0	1166.6	1159.6	1158.2
12.5°	1145.5	1144.1	1138.5	1128.7	1125.9
15°	1114.7	1114.7	1103.5	1092.3	1088.1
17.5°	1081.0	1079.6	1065.6	1054.4	1048.8
20°	1044.6	1041.8	1027.8	1009.5	999.7
22.5°	1003.9	1003.9	987.1	963.3	953.5
25°	966.1	960.5	945.0	911.4	886.2
27.5°	922.6	914.2	897.4	849.7	820.3
30°	874.9	870.7	846.9	785.2	762.8
32.5°	830.1	823.1	797.8	733.3	715.1
35°	783.8	778.2	740.3	684.2	667.4
37.5°	737.5	730.5	682.8	638.0	616.9
40°	691.3	682.8	631.0	590.3	567.9
42.5°	647.8	636.6	586.1	542.6	517.4
45°	601.5	588.9	538.4	493.6	473.9
47.5°	555.2	544.0	497.8	451.5	429.1
50°	506.2	496.4	454.3	408.0	384.2
52.5°	465.5	450.1	409.4	363.2	343.5
55°	417.8	405.2	367.4	323.9	307.1
57.5°	374.4	361.8	326.7	286.0	272.0
60°	333.7	315.5	286.0	251.0	239.8
62.5°	288.8	274.8	249.6	220.1	234.2
65°	248.2	234.2	211.7	215.9	179.5
67.5°	203.3	196.3	176.7	157.0	151.4
70°	165.5	157.0	150.0	129.0	123.4
72.5°	131.8	123.4	113.6	102.4	98.1
75°	99.6	92.5	86.9	82.7	91.1
77.5°	68.7	65.9	61.7	57.5	56.1
80°	44.9	43.5	42.1	40.7	39.3
82.5°	26.6	26.6	26.6	26.6	26.6
85°	14.0	15.4	16.8	18.2	19.6
87.5°	8.4	8.4	9.8	11.2	12.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)