

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: P560992

Luminaire Tested: FSR-12-4-LD4-1LO-35-UNV-93-84-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560992  
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-35-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 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

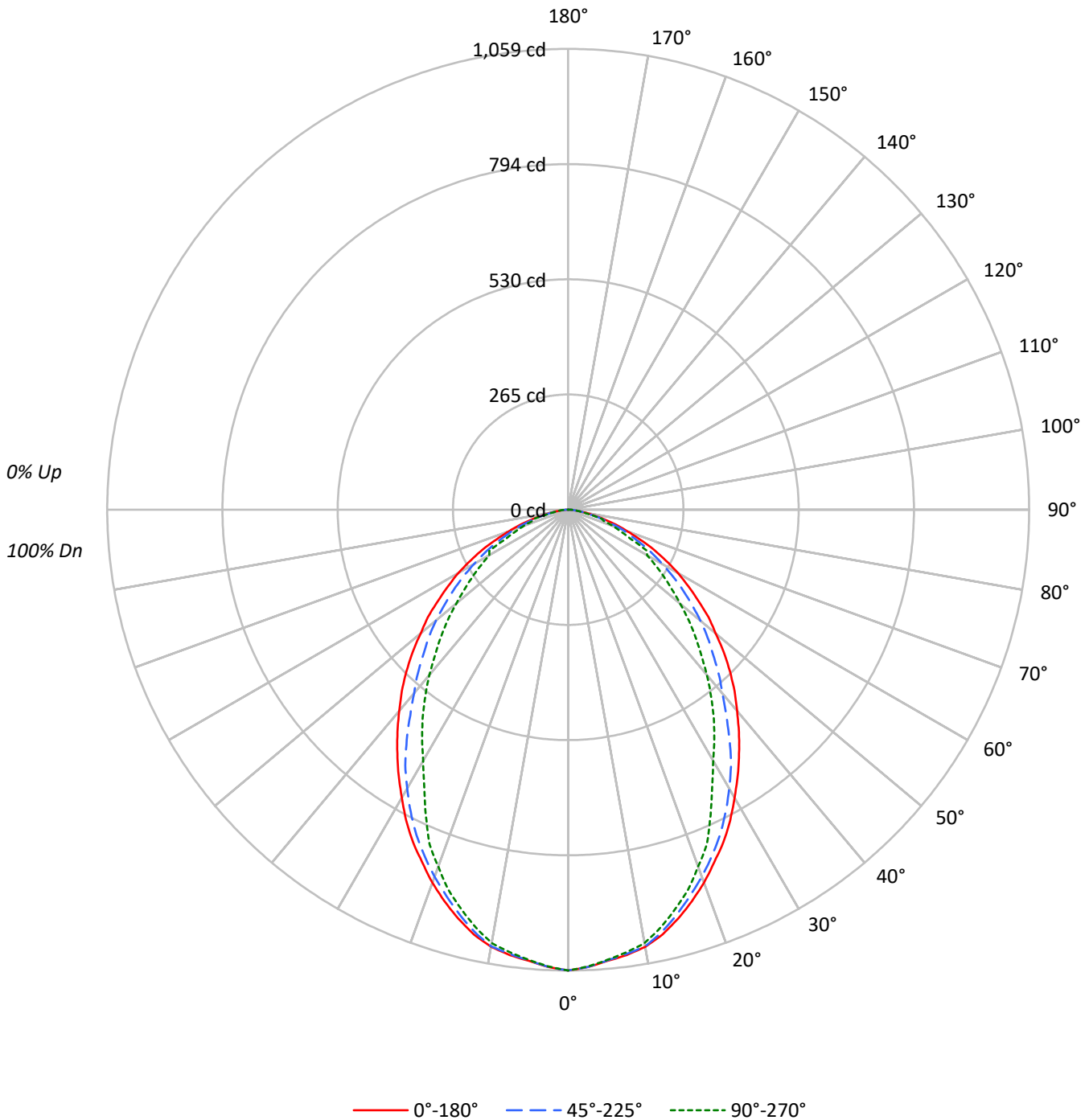
Lumens per Lamp: N/A  
Luminaire Lumens: 2079.0 lumens  
Efficiency: N/A  
Efficacy: 88.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P560992

CATALOG NUMBER: FSR-12-4-LD4-1LO-35-UNV-93-84-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P560992

CATALOG NUMBER: FSR-12-4-LD4-1LO-35-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	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°	2850	2850	2850
5°	2811	2808	2804
10°	2787	2783	2763
15°	2712	2684	2647
20°	2612	2570	2500
25°	2504	2450	2298
30°	2374	2298	2069
35°	2248	2123	1915
40°	2120	1935	1742
45°	1999	1789	1575
50°	1850	1661	1405
55°	1711	1505	1258
60°	1568	1344	1127
65°	1380	1177	998
70°	1137	1031	847
75°	904	789	828
80°	607	569	532
85°	377	454	528

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1999 cd/sqm



TEST NUMBER: P560992

CATALOG NUMBER: FSR-12-4-LD4-1LO-35-UNV-93-84-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	98.6	4.7
10°-20°	270.5	13.0
20°-30°	374.5	18.0
30°-40°	399.4	19.2
40°-50°	364.3	17.5
50°-60°	285.5	13.7
60°-70°	186.0	8.9
70°-80°	82.4	4.0
80°-90°	17.7	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°	743.7	35.8
0°-40°	1143.1	55.0
0°-60°	1792.9	86.2
0°-90°	2079.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2079.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1059	1059	1059	1059	1059	
5°	1041	1039	1039	1038	1038	99
15°	973	973	964	954	950	274
25°	844	839	825	796	774	387
35°	684	680	646	598	583	428
45°	525	514	470	431	414	405
55°	365	354	321	283	268	327
65°	217	204	185	188	157	214
75°	87	81	76	72	80	93
85°	12	14	15	16	17	17
90°	0	0	0	0	0	



TEST NUMBER: P560992

CATALOG NUMBER: FSR-12-4-LD4-1LO-35-UNV-93-84-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1059.0	1059.0	1059.0	1059.0	1059.0
2.5°	1051.7	1051.7	1051.7	1050.4	1050.4
5°	1040.7	1039.4	1039.4	1038.2	1038.2
7.5°	1032.1	1030.9	1029.6	1028.4	1026.0
10°	1019.8	1019.8	1018.6	1012.5	1011.3
12.5°	1000.2	999.0	994.1	985.6	983.1
15°	973.3	973.3	963.5	953.7	950.1
17.5°	943.9	942.7	930.5	920.7	915.8
20°	912.1	909.7	897.4	881.5	872.9
22.5°	876.6	876.6	861.9	841.1	832.5
25°	843.5	838.6	825.2	795.8	773.8
27.5°	805.6	798.2	783.5	741.9	716.2
30°	764.0	760.3	739.5	685.6	666.0
32.5°	724.8	718.7	696.6	640.3	624.4
35°	684.4	679.5	646.4	597.5	582.8
37.5°	644.0	637.9	596.2	557.1	538.7
40°	603.6	596.2	550.9	515.4	495.8
42.5°	565.6	555.8	511.8	473.8	451.8
45°	525.2	514.2	470.1	431.0	413.8
47.5°	484.8	475.0	434.6	394.2	374.6
50°	442.0	433.4	396.7	356.3	335.5
52.5°	406.5	393.0	357.5	317.1	300.0
55°	364.8	353.8	320.8	282.8	268.1
57.5°	326.9	315.9	285.3	249.8	237.5
60°	291.4	275.5	249.8	219.1	209.4
62.5°	252.2	240.0	217.9	192.2	204.5
65°	216.7	204.5	184.9	188.5	156.7
67.5°	177.5	171.4	154.3	137.1	132.2
70°	144.5	137.1	131.0	112.6	107.7
72.5°	115.1	107.7	99.2	89.4	85.7
75°	86.9	80.8	75.9	72.2	79.6
77.5°	60.0	57.5	53.9	50.2	49.0
80°	39.2	38.0	36.7	35.5	34.3
82.5°	23.3	23.3	23.3	23.3	23.3
85°	12.2	13.5	14.7	15.9	17.1
87.5°	7.3	7.3	8.6	9.8	11.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)