

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: P563884

Luminaire Tested: FSR-24-4-LD4-4LO-35-UNV-93-96-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563884  
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-24-4-LD4-4LO-35-UNV-93-96-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

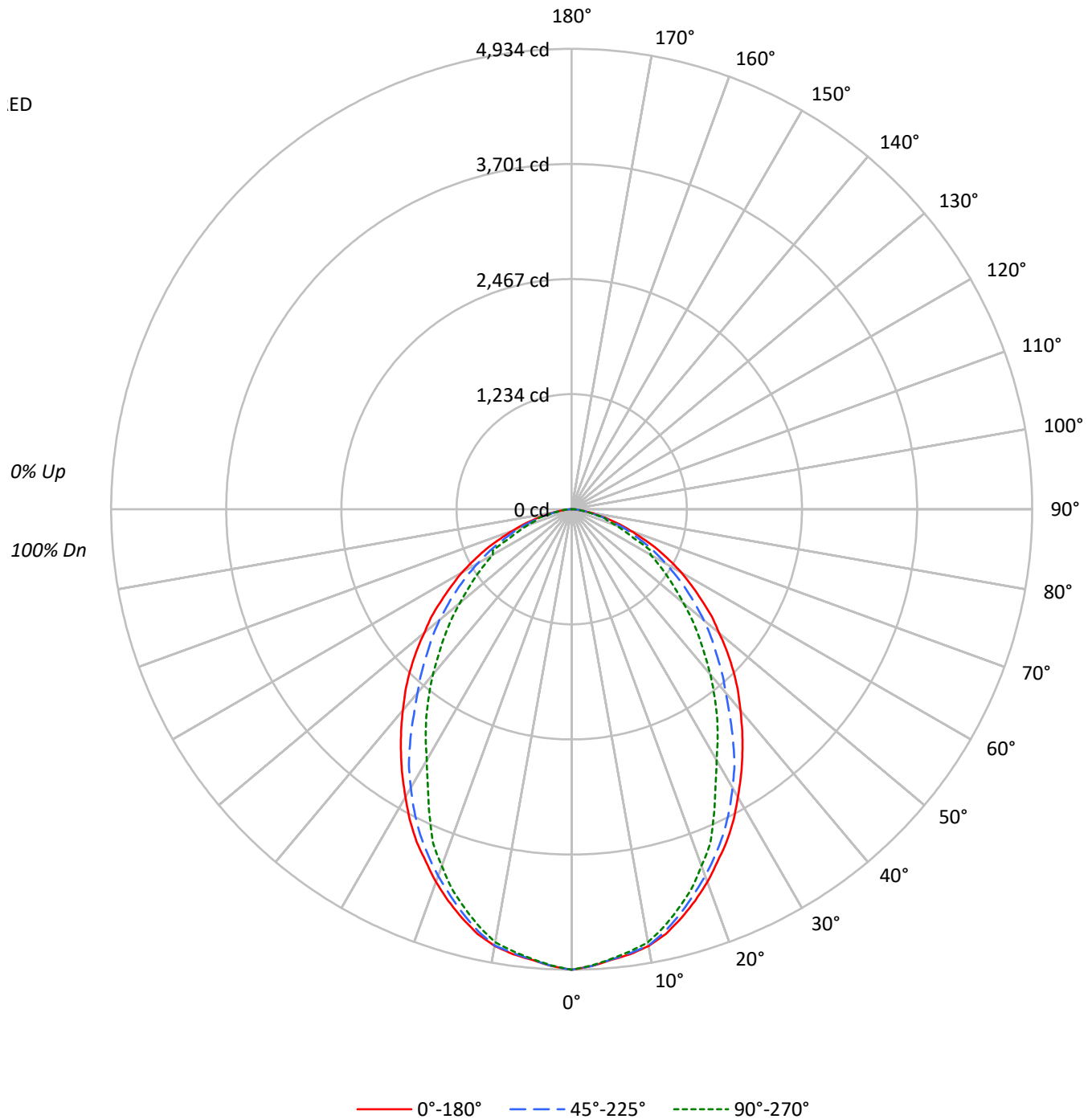
Lumens per Lamp: N/A  
Luminaire Lumens: 9687.0 lumens  
Efficiency: N/A  
Efficacy: 103.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 93.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P563884

CATALOG NUMBER: FSR-24-4-LD4-4LO-35-UNV-93-96-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P563884

CATALOG NUMBER: FSR-24-4-LD4-4LO-35-UNV-93-96-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°	6639	6639	6639
5°	6549	6541	6534
10°	6492	6484	6438
15°	6317	6254	6166
20°	6085	5987	5824
25°	5835	5708	5352
30°	5530	5353	4821
35°	5238	4947	4460
40°	4940	4509	4058
45°	4657	4168	3669
50°	4311	3869	3272
55°	3988	3506	2931
60°	3654	3131	2625
65°	3215	2742	2325
70°	2648	2401	1975
75°	2105	1839	1928
80°	1414	1326	1237
85°	880	1057	1233

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4657 cd/sqm



TEST NUMBER: P563884

CATALOG NUMBER: FSR-24-4-LD4-4LO-35-UNV-93-96-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	459.3	4.7
10°-20°	1260.6	13.0
20°-30°	1745.2	18.0
30°-40°	1860.9	19.2
40°-50°	1697.7	17.5
50°-60°	1330.0	13.7
60°-70°	866.8	8.9
70°-80°	384.0	4.0
80°-90°	82.4	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°	3465.1	35.8
0°-40°	5326.0	55.0
0°-60°	8353.7	86.2
0°-90°	9687.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9687.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4934	4934	4934	4934	4934	
5°	4849	4843	4843	4838	4838	460
15°	4535	4535	4490	4444	4427	1275
25°	3930	3908	3845	3708	3605	1804
35°	3189	3166	3012	2784	2715	1994
45°	2447	2396	2190	2008	1928	1885
55°	1700	1649	1495	1318	1249	1525
65°	1010	953	861	878	730	995
75°	405	376	354	337	371	434
85°	57	63	68	74	80	79
90°	0	0	0	0	0	



TEST NUMBER: P563884

CATALOG NUMBER: FSR-24-4-LD4-4LO-35-UNV-93-96-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4934.4	4934.4	4934.4	4934.4	4934.4
2.5°	4900.2	4900.2	4900.2	4894.5	4894.5
5°	4848.9	4843.2	4843.2	4837.5	4837.5
7.5°	4808.9	4803.2	4797.5	4791.8	4780.4
10°	4751.9	4751.9	4746.2	4717.7	4712.0
12.5°	4660.6	4654.9	4632.1	4592.2	4580.7
15°	4535.1	4535.1	4489.5	4443.8	4426.7
17.5°	4398.2	4392.5	4335.5	4289.8	4267.0
20°	4249.9	4238.5	4181.4	4107.3	4067.3
22.5°	4084.5	4084.5	4016.0	3919.0	3879.1
25°	3930.4	3907.6	3844.9	3708.0	3605.3
27.5°	3753.6	3719.4	3650.9	3457.0	3337.2
30°	3559.6	3542.5	3445.5	3194.5	3103.3
32.5°	3377.1	3348.6	3245.9	2983.5	2909.3
35°	3188.8	3166.0	3012.0	2783.8	2715.4
37.5°	3000.6	2972.1	2778.1	2595.6	2510.0
40°	2812.3	2778.1	2567.0	2401.6	2310.3
42.5°	2635.5	2589.9	2384.5	2207.7	2105.0
45°	2447.2	2395.9	2190.5	2008.0	1928.1
47.5°	2259.0	2213.4	2025.1	1836.9	1745.6
50°	2059.3	2019.4	1848.3	1660.0	1563.0
52.5°	1893.9	1831.2	1665.7	1477.5	1397.6
55°	1700.0	1648.6	1494.6	1317.7	1249.3
57.5°	1523.1	1471.8	1329.2	1163.7	1106.7
60°	1357.7	1283.5	1163.7	1021.1	975.5
62.5°	1175.1	1118.1	1015.4	895.6	952.7
65°	1009.7	952.7	861.4	878.5	730.2
67.5°	827.2	798.6	718.8	638.9	616.1
70°	673.1	638.9	610.4	524.8	502.0
72.5°	536.2	502.0	462.1	416.4	399.3
75°	405.0	376.5	353.7	336.6	370.8
77.5°	279.5	268.1	251.0	233.9	228.2
80°	182.5	176.8	171.1	165.4	159.7
82.5°	108.4	108.4	108.4	108.4	108.4
85°	57.0	62.7	68.5	74.2	79.9
87.5°	34.2	34.2	39.9	45.6	51.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)