

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: P564190

Luminaire Tested: FSR-24-4-LD4-4STD-50-UNV-82-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564190  
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-LD4-4STD-50-UNV-82-97-EDD-90  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

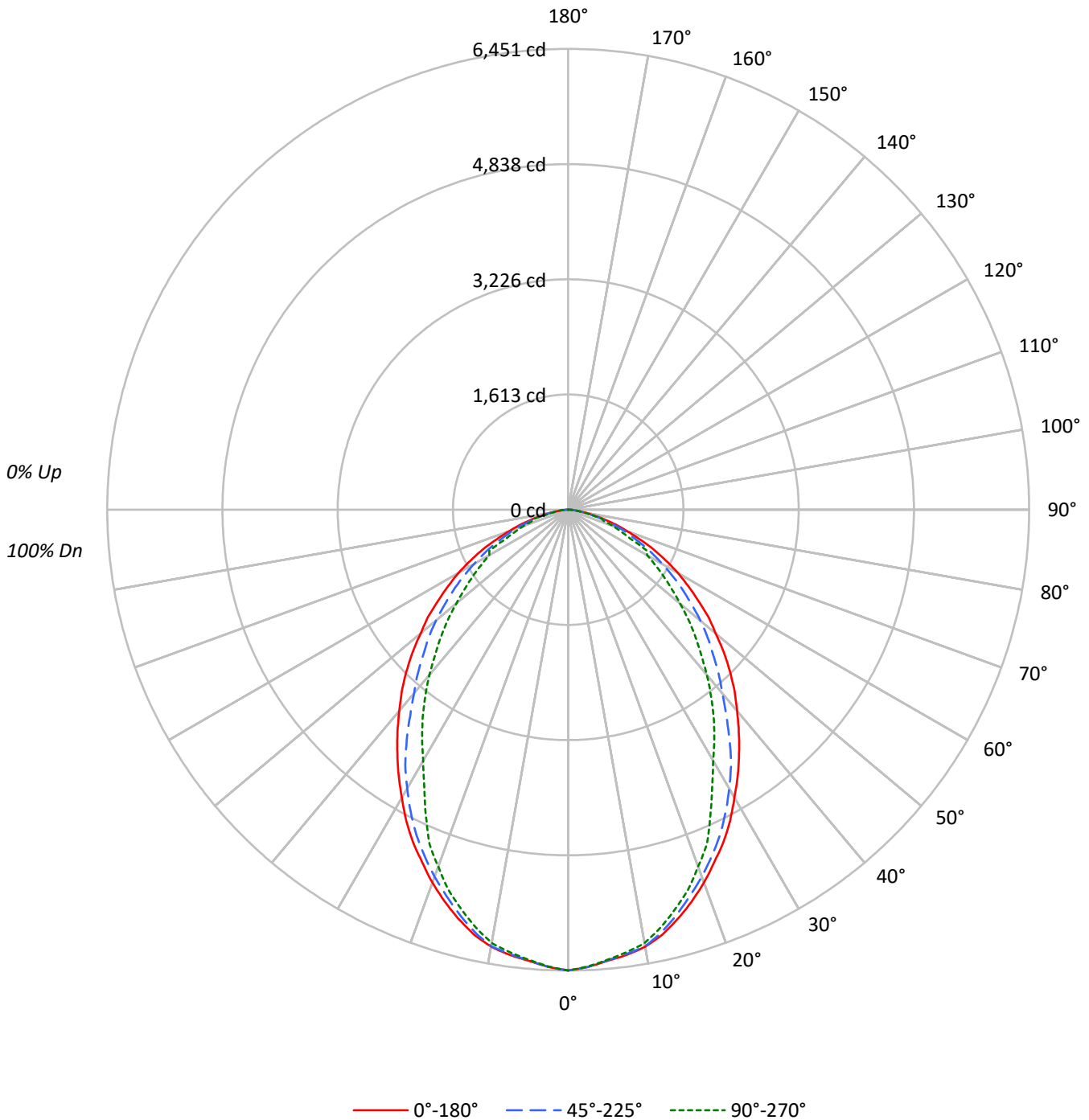
Lumens per Lamp: N/A  
Luminaire Lumens: 12664.0 lumens  
Efficiency: N/A  
Efficacy: 95.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P564190

CATALOG NUMBER: FSR-24-4-LD4-4STD-50-UNV-82-97-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P564190

CATALOG NUMBER: FSR-24-4-LD4-4STD-50-UNV-82-97-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	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				
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°	8680	8680	8680
5°	8562	8552	8542
10°	8487	8477	8416
15°	8259	8176	8061
20°	7955	7827	7614
25°	7628	7462	6997
30°	7230	6998	6303
35°	6847	6468	5831
40°	6458	5894	5305
45°	6088	5449	4796
50°	5635	5058	4277
55°	5213	4583	3831
60°	4776	4094	3432
65°	4202	3585	3039
70°	3462	3139	2582
75°	2753	2404	2520
80°	1849	1733	1618
85°	1152	1382	1612

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6088 cd/sqm



TEST NUMBER: P564190

CATALOG NUMBER: FSR-24-4-LD4-4STD-50-UNV-82-97-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	600.5	4.7
10°-20°	1648.0	13.0
20°-30°	2281.5	18.0
30°-40°	2432.8	19.2
40°-50°	2219.4	17.5
50°-60°	1738.7	13.7
60°-70°	1133.2	8.9
70°-80°	502.1	4.0
80°-90°	107.8	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°	4530.0	35.8
0°-40°	6962.8	55.0
0°-60°	10920.9	86.2
0°-90°	12664.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12664.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6451	6451	6451	6451	6451	
5°	6339	6332	6332	6324	6324	602
15°	5929	5929	5869	5810	5787	1667
25°	5138	5108	5026	4848	4713	2359
35°	4169	4139	3938	3639	3550	2606
45°	3199	3132	2864	2625	2521	2464
55°	2222	2155	1954	1723	1633	1993
65°	1320	1245	1126	1148	955	1301
75°	530	492	462	440	485	567
85°	75	82	90	97	104	103
90°	0	0	0	0	0	



TEST NUMBER: P564190

CATALOG NUMBER: FSR-24-4-LD4-4STD-50-UNV-82-97-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6450.9	6450.9	6450.9	6450.9	6450.9
2.5°	6406.1	6406.1	6406.1	6398.7	6398.7
5°	6339.0	6331.5	6331.5	6324.1	6324.1
7.5°	6286.8	6279.3	6271.9	6264.4	6249.5
10°	6212.2	6212.2	6204.8	6167.5	6160.0
12.5°	6092.9	6085.4	6055.6	6003.4	5988.5
15°	5928.8	5928.8	5869.2	5809.5	5787.1
17.5°	5749.9	5742.4	5667.8	5608.2	5578.3
20°	5556.0	5541.0	5466.5	5369.5	5317.3
22.5°	5339.7	5339.7	5250.2	5123.4	5071.2
25°	5138.3	5108.5	5026.5	4847.5	4713.2
27.5°	4907.1	4862.4	4772.9	4519.3	4362.7
30°	4653.6	4631.2	4504.4	4176.3	4057.0
32.5°	4414.9	4377.6	4243.4	3900.4	3803.4
35°	4168.8	4139.0	3937.6	3639.3	3549.8
37.5°	3922.7	3885.4	3631.9	3393.2	3281.4
40°	3676.6	3631.9	3355.9	3139.7	3020.4
42.5°	3445.4	3385.8	3117.3	2886.1	2751.9
45°	3199.3	3132.2	2863.7	2625.1	2520.7
47.5°	2953.2	2893.6	2647.5	2401.4	2282.0
50°	2692.2	2640.0	2416.3	2170.2	2043.4
52.5°	2475.9	2393.9	2177.6	1931.5	1827.1
55°	2222.4	2155.3	1953.9	1722.7	1633.2
57.5°	1991.2	1924.1	1737.6	1521.4	1446.8
60°	1774.9	1678.0	1521.4	1334.9	1275.3
62.5°	1536.3	1461.7	1327.5	1170.9	1245.4
65°	1320.0	1245.4	1126.1	1148.5	954.6
67.5°	1081.4	1044.1	939.7	835.3	805.4
70°	880.0	835.3	798.0	686.1	656.3
72.5°	701.0	656.3	604.1	544.4	522.0
75°	529.5	492.2	462.4	440.0	484.7
77.5°	365.4	350.5	328.1	305.8	298.3
80°	238.6	231.2	223.7	216.3	208.8
82.5°	141.7	141.7	141.7	141.7	141.7
85°	74.6	82.0	89.5	96.9	104.4
87.5°	44.7	44.7	52.2	59.7	67.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)