

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: P563482

Luminaire Tested: FSR-24-4-LD4-3STD-35-UNV-82-94-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563482  
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-LD4-3STD-35-UNV-82-94-EDD-90  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

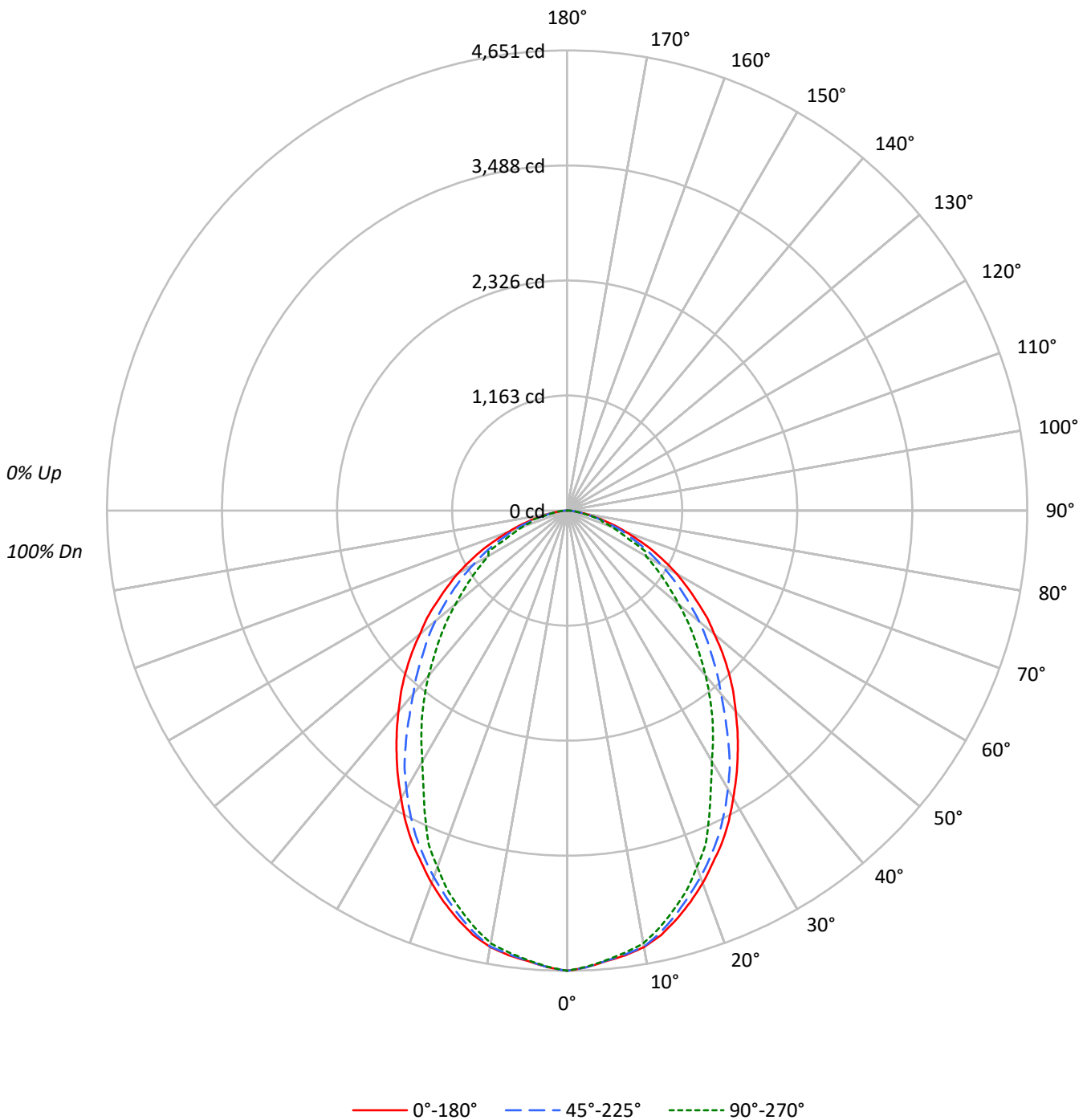
Lumens per Lamp: N/A  
Luminaire Lumens: 9131.0 lumens  
Efficiency: N/A  
Efficacy: 91.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 99.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



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### Luminous Intensity Polar Plot





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**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°	6258	6258	6258
5°	6173	6166	6159
10°	6120	6112	6068
15°	5955	5895	5812
20°	5736	5643	5490
25°	5500	5380	5045
30°	5213	5046	4545
35°	4937	4663	4204
40°	4656	4250	3825
45°	4389	3929	3458
50°	4063	3647	3084
55°	3759	3305	2762
60°	3444	2952	2474
65°	3030	2585	2191
70°	2496	2264	1862
75°	1985	1733	1817
80°	1333	1250	1167
85°	831	996	1162

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4389 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	433.0	4.7
10°-20°	1188.2	13.0
20°-30°	1645.0	18.0
30°-40°	1754.1	19.2
40°-50°	1600.2	17.5
50°-60°	1253.7	13.7
60°-70°	817.1	8.9
70°-80°	362.0	4.0
80°-90°	77.7	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°	3266.2	35.8
0°-40°	5020.3	55.0
0°-60°	7874.2	86.2
0°-90°	9131.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9131.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4651	4651	4651	4651	4651	
5°	4571	4565	4565	4560	4560	434
15°	4275	4275	4232	4189	4173	1202
25°	3705	3683	3624	3495	3398	1701
35°	3006	2984	2839	2624	2560	1879
45°	2307	2258	2065	1893	1818	1777
55°	1602	1554	1409	1242	1178	1437
65°	952	898	812	828	688	938
75°	382	355	333	317	350	409
85°	54	59	64	70	75	75
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4651.2	4651.2	4651.2	4651.2	4651.2
2.5°	4618.9	4618.9	4618.9	4613.6	4613.6
5°	4570.6	4565.2	4565.2	4559.8	4559.8
7.5°	4532.9	4527.5	4522.2	4516.8	4506.0
10°	4479.1	4479.1	4473.8	4446.9	4441.5
12.5°	4393.1	4387.7	4366.2	4328.6	4317.8
15°	4274.8	4274.8	4231.8	4188.8	4172.6
17.5°	4145.8	4140.4	4086.6	4043.6	4022.1
20°	4006.0	3995.2	3941.4	3871.5	3833.9
22.5°	3850.0	3850.0	3785.5	3694.1	3656.4
25°	3704.8	3683.3	3624.2	3495.1	3398.3
27.5°	3538.1	3505.9	3441.4	3258.5	3145.6
30°	3355.3	3339.2	3247.8	3011.2	2925.2
32.5°	3183.3	3156.4	3059.6	2812.2	2742.3
35°	3005.8	2984.3	2839.1	2624.0	2559.5
37.5°	2828.4	2801.5	2618.7	2446.6	2365.9
40°	2650.9	2618.7	2419.7	2263.8	2177.7
42.5°	2484.2	2441.2	2247.6	2080.9	1984.2
45°	2306.8	2258.4	2064.8	1892.7	1817.5
47.5°	2129.3	2086.3	1908.9	1731.4	1645.4
50°	1941.1	1903.5	1742.2	1564.7	1473.3
52.5°	1785.2	1726.1	1570.1	1392.7	1317.4
55°	1602.4	1554.0	1408.8	1242.1	1177.6
57.5°	1435.7	1387.3	1252.9	1096.9	1043.2
60°	1279.8	1209.9	1096.9	962.5	919.5
62.5°	1107.7	1053.9	957.1	844.2	898.0
65°	951.8	898.0	811.9	828.1	688.3
67.5°	779.7	752.8	677.5	602.2	580.7
70°	634.5	602.2	575.4	494.7	473.2
72.5°	505.4	473.2	435.5	392.5	376.4
75°	381.8	354.9	333.4	317.3	349.5
77.5°	263.5	252.7	236.6	220.5	215.1
80°	172.1	166.7	161.3	155.9	150.6
82.5°	102.2	102.2	102.2	102.2	102.2
85°	53.8	59.1	64.5	69.9	75.3
87.5°	32.3	32.3	37.6	43.0	48.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)