

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: P564064

Luminaire Tested: FSR-24-4-LD4-4STD-35-UNV-93-84-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564064  
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-35-UNV-93-84-EDD-90  
Description: 2X4 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**

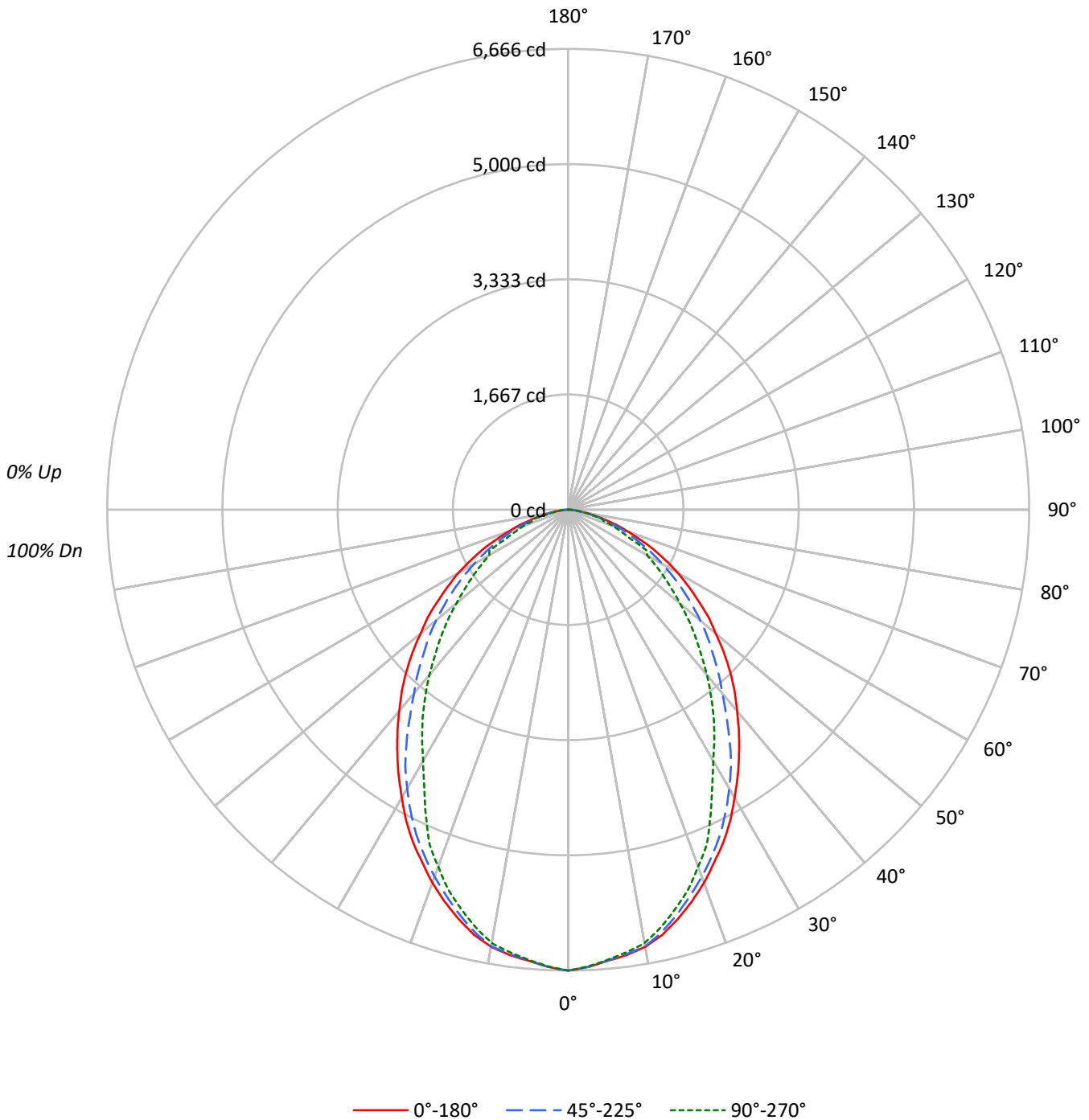
Lumens per Lamp: N/A  
Luminaire Lumens: 13087.0 lumens  
Efficiency: N/A  
Efficacy: 98.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



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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	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°	8969	8969	8969
5°	8848	8837	8827
10°	8771	8760	8697
15°	8534	8449	8330
20°	8221	8089	7868
25°	7883	7712	7231
30°	7471	7232	6514
35°	7076	6684	6025
40°	6673	6091	5482
45°	6291	5631	4957
50°	5824	5227	4420
55°	5387	4737	3959
60°	4936	4231	3546
65°	4343	3705	3141
70°	3578	3244	2668
75°	2845	2484	2604
80°	1911	1791	1672
85°	1190	1428	1666

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6291 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	620.5	4.7
10°-20°	1703.0	13.0
20°-30°	2357.7	18.0
30°-40°	2514.0	19.2
40°-50°	2293.5	17.5
50°-60°	1796.8	13.7
60°-70°	1171.1	8.9
70°-80°	518.8	4.0
80°-90°	111.4	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°	4681.3	35.8
0°-40°	7195.4	55.0
0°-60°	11285.7	86.2
0°-90°	13087.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13087.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6666	6666	6666	6666	6666	
5°	6551	6543	6543	6535	6535	622
15°	6127	6127	6065	6004	5980	1722
25°	5310	5279	5194	5009	4871	2438
35°	4308	4277	4069	3761	3668	2693
45°	3306	3237	2959	2713	2605	2547
55°	2297	2227	2019	1780	1688	2060
65°	1364	1287	1164	1187	986	1344
75°	547	509	478	455	501	586
85°	77	85	92	100	108	107
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6666.3	6666.3	6666.3	6666.3	6666.3
2.5°	6620.1	6620.1	6620.1	6612.4	6612.4
5°	6550.7	6543.0	6543.0	6535.3	6535.3
7.5°	6496.8	6489.1	6481.4	6473.7	6458.3
10°	6419.7	6419.7	6412.0	6373.5	6365.8
12.5°	6296.4	6288.7	6257.9	6203.9	6188.5
15°	6126.9	6126.9	6065.2	6003.6	5980.4
17.5°	5941.9	5934.2	5857.1	5795.5	5764.7
20°	5741.5	5726.1	5649.1	5548.9	5494.9
22.5°	5518.0	5518.0	5425.6	5294.5	5240.6
25°	5310.0	5279.1	5194.4	5009.4	4870.7
27.5°	5071.0	5024.8	4932.3	4670.3	4508.5
30°	4809.0	4785.9	4654.9	4315.8	4192.5
32.5°	4562.4	4523.9	4385.1	4030.6	3930.4
35°	4308.1	4277.2	4069.2	3760.9	3668.4
37.5°	4053.8	4015.2	3753.2	3506.6	3391.0
40°	3799.4	3753.2	3468.0	3244.5	3121.2
42.5°	3560.5	3498.9	3221.4	2982.5	2843.8
45°	3306.2	3236.8	2959.4	2712.8	2604.9
47.5°	3051.9	2990.2	2735.9	2481.6	2358.3
50°	2782.1	2728.2	2497.0	2242.7	2111.7
52.5°	2558.6	2473.9	2250.4	1996.0	1888.2
55°	2296.6	2227.3	2019.2	1780.3	1687.8
57.5°	2057.7	1988.3	1795.7	1572.2	1495.1
60°	1834.2	1734.0	1572.2	1379.5	1317.9
62.5°	1587.6	1510.5	1371.8	1210.0	1287.0
65°	1364.1	1287.0	1163.7	1186.8	986.5
67.5°	1117.5	1078.9	971.1	863.2	832.3
70°	909.4	863.2	824.6	709.0	678.2
72.5°	724.4	678.2	624.2	562.6	539.5
75°	547.2	508.6	477.8	454.7	500.9
77.5°	377.6	362.2	339.1	316.0	308.3
80°	246.6	238.9	231.2	223.5	215.8
82.5°	146.4	146.4	146.4	146.4	146.4
85°	77.1	84.8	92.5	100.2	107.9
87.5°	46.2	46.2	53.9	61.7	69.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)