

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: P564201

Luminaire Tested: FSR-24-4-LD4-4STD-50-UNV-93-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564201  
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-93-88-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

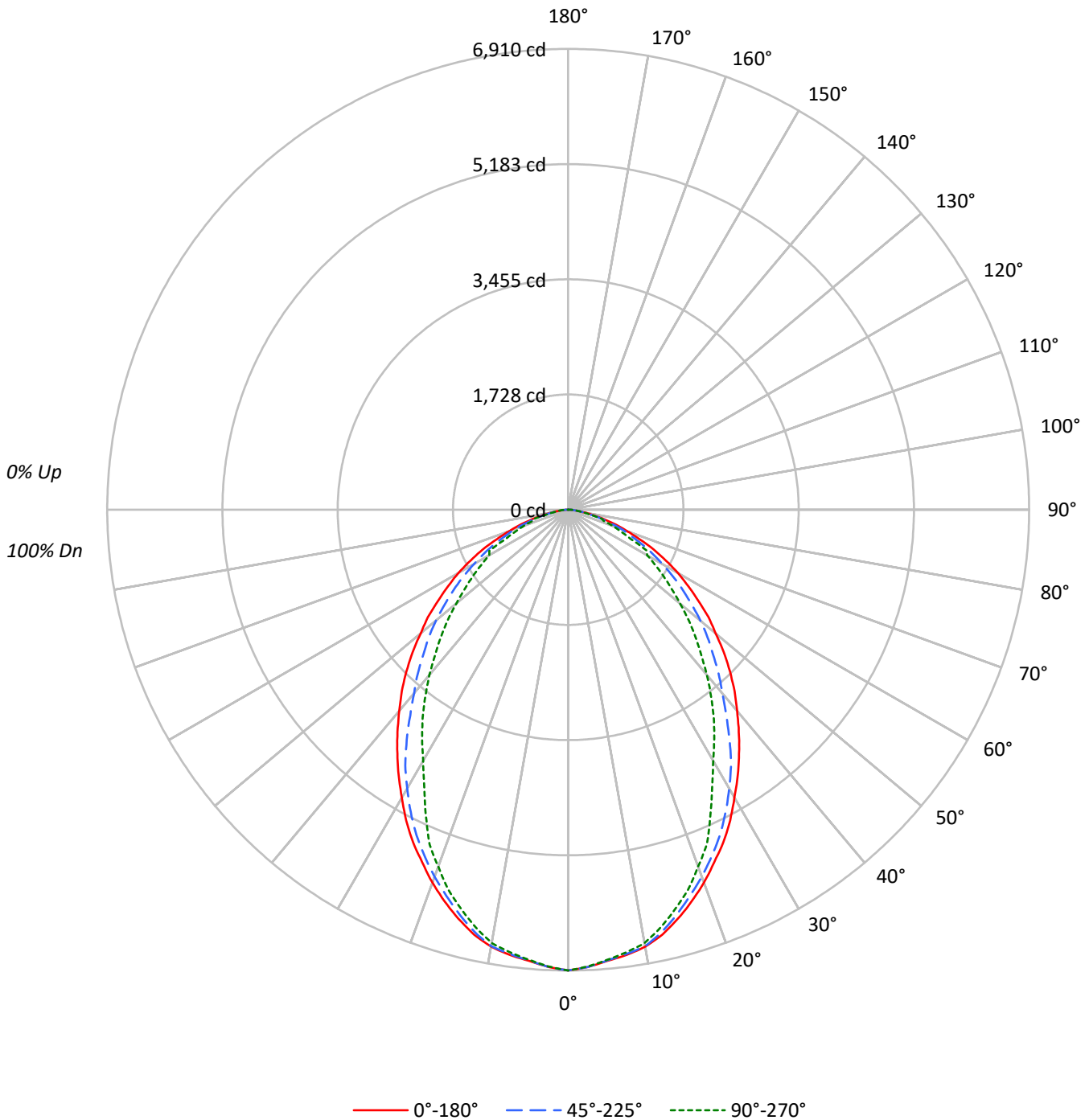
Lumens per Lamp: N/A  
Luminaire Lumens: 13565.0 lumens  
Efficiency: N/A  
Efficacy: 101.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	9297	9297	9297
5°	9171	9160	9149
10°	9091	9080	9015
15°	8846	8757	8635
20°	8521	8384	8155
25°	8171	7993	7495
30°	7744	7496	6751
35°	7335	6928	6246
40°	6917	6314	5682
45°	6521	5837	5138
50°	6036	5418	4582
55°	5584	4910	4104
60°	5116	4385	3676
65°	4501	3840	3255
70°	3708	3362	2766
75°	2949	2575	2699
80°	1980	1857	1733
85°	1233	1480	1726

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6521 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	643.2	4.7
10°-20°	1765.2	13.0
20°-30°	2443.9	18.0
30°-40°	2605.9	19.2
40°-50°	2377.3	17.5
50°-60°	1862.4	13.7
60°-70°	1213.8	8.9
70°-80°	537.8	4.0
80°-90°	115.5	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°	4852.3	35.8
0°-40°	7458.2	55.0
0°-60°	11697.9	86.2
0°-90°	13565.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13565.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6910	6910	6910	6910	6910	
5°	6790	6782	6782	6774	6774	645
15°	6351	6351	6287	6223	6199	1785
25°	5504	5472	5384	5192	5049	2527
35°	4465	4434	4218	3898	3802	2792
45°	3427	3355	3068	2812	2700	2640
55°	2380	2309	2093	1845	1749	2135
65°	1414	1334	1206	1230	1022	1393
75°	567	527	495	471	519	608
85°	80	88	96	104	112	111
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6909.8	6909.8	6909.8	6909.8	6909.8
2.5°	6861.9	6861.9	6861.9	6853.9	6853.9
5°	6790.0	6782.0	6782.0	6774.0	6774.0
7.5°	6734.1	6726.1	6718.1	6710.1	6694.1
10°	6654.2	6654.2	6646.2	6606.3	6598.3
12.5°	6526.4	6518.4	6486.5	6430.5	6414.6
15°	6350.7	6350.7	6286.7	6222.8	6198.9
17.5°	6158.9	6150.9	6071.1	6007.2	5975.2
20°	5951.2	5935.3	5855.4	5751.5	5695.6
22.5°	5719.6	5719.6	5623.7	5487.9	5432.0
25°	5503.9	5471.9	5384.1	5192.4	5048.6
27.5°	5256.3	5208.3	5112.5	4840.9	4673.1
30°	4984.7	4960.7	4824.9	4473.4	4345.6
32.5°	4729.0	4689.1	4545.3	4177.9	4074.0
35°	4465.4	4433.5	4217.8	3898.3	3802.4
37.5°	4201.8	4161.9	3890.3	3634.7	3514.8
40°	3938.2	3890.3	3594.7	3363.1	3235.2
42.5°	3690.6	3626.7	3339.1	3091.4	2947.7
45°	3427.0	3355.1	3067.5	2811.9	2700.0
47.5°	3163.3	3099.4	2835.8	2572.2	2444.4
50°	2883.8	2827.8	2588.2	2324.6	2188.8
52.5°	2652.1	2564.2	2332.6	2069.0	1957.1
55°	2380.5	2308.6	2092.9	1845.3	1749.4
57.5°	2132.9	2061.0	1861.3	1629.6	1549.7
60°	1901.2	1797.4	1629.6	1429.9	1366.0
62.5°	1645.6	1565.7	1421.9	1254.2	1334.0
65°	1413.9	1334.0	1206.2	1230.2	1022.5
67.5°	1158.3	1118.4	1006.5	894.7	862.7
70°	942.6	894.7	854.7	734.9	703.0
72.5°	750.9	703.0	647.0	583.1	559.2
75°	567.2	527.2	495.3	471.3	519.2
77.5°	391.4	375.4	351.5	327.5	319.5
80°	255.6	247.6	239.6	231.7	223.7
82.5°	151.8	151.8	151.8	151.8	151.8
85°	79.9	87.9	95.9	103.8	111.8
87.5°	47.9	47.9	55.9	63.9	71.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)