

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: P564128

Luminaire Tested: FSR-24-4-LD4-4STD-40-UNV-93-84-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564128  
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-40-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 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

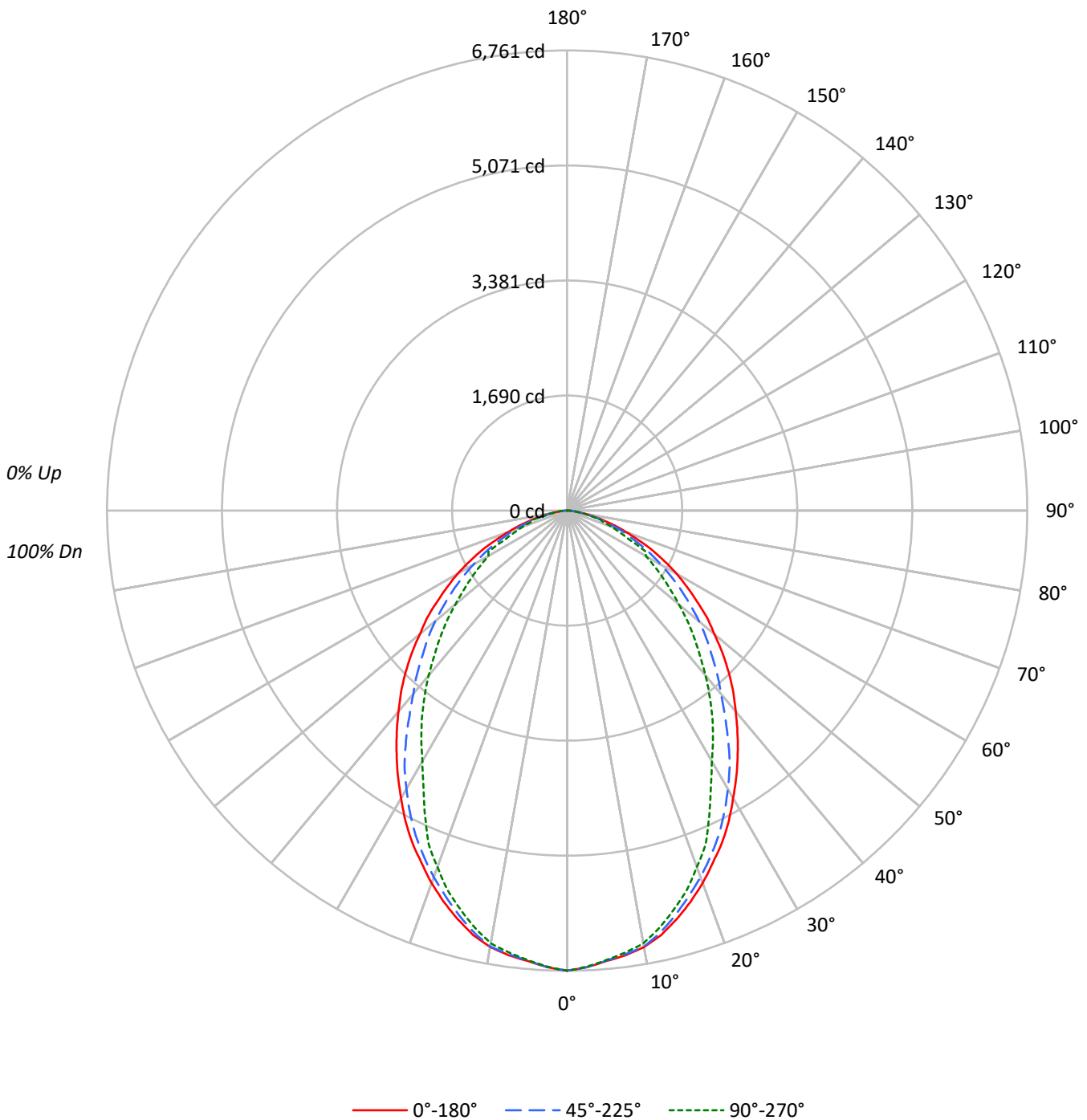
Lumens per Lamp: N/A  
Luminaire Lumens: 13273.0 lumens  
Efficiency: N/A  
Efficacy: 99.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	9097	9097	9097
5°	8973	8963	8952
10°	8896	8885	8821
15°	8656	8569	8449
20°	8338	8203	7980
25°	7995	7821	7334
30°	7578	7335	6606
35°	7177	6779	6111
40°	6768	6178	5560
45°	6381	5711	5027
50°	5906	5301	4483
55°	5464	4804	4016
60°	5006	4291	3597
65°	4405	3758	3185
70°	3628	3290	2706
75°	2885	2519	2641
80°	1938	1817	1696
85°	1207	1448	1689

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6381 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	629.4	4.7
10°-20°	1727.2	13.0
20°-30°	2391.3	18.0
30°-40°	2549.8	19.2
40°-50°	2326.1	17.5
50°-60°	1822.3	13.7
60°-70°	1187.7	8.9
70°-80°	526.2	4.0
80°-90°	113.0	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°	4747.9	35.8
0°-40°	7297.6	55.0
0°-60°	11446.1	86.2
0°-90°	13273.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13273.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6761	6761	6761	6761	6761	
5°	6644	6636	6636	6628	6628	631
15°	6214	6214	6151	6089	6065	1747
25°	5385	5354	5268	5081	4940	2472
35°	4369	4338	4127	3814	3721	2732
45°	3353	3283	3002	2751	2642	2583
55°	2329	2259	2048	1806	1712	2089
65°	1384	1305	1180	1204	1000	1363
75°	555	516	485	461	508	595
85°	78	86	94	102	109	108
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6761.1	6761.1	6761.1	6761.1	6761.1
2.5°	6714.2	6714.2	6714.2	6706.4	6706.4
5°	6643.8	6636.0	6636.0	6628.2	6628.2
7.5°	6589.1	6581.3	6573.5	6565.7	6550.0
10°	6511.0	6511.0	6503.2	6464.1	6456.3
12.5°	6385.9	6378.1	6346.8	6292.1	6276.5
15°	6213.9	6213.9	6151.4	6088.9	6065.4
17.5°	6026.4	6018.5	5940.4	5877.8	5846.6
20°	5823.1	5807.5	5729.3	5627.7	5573.0
22.5°	5596.5	5596.5	5502.7	5369.8	5315.1
25°	5385.4	5354.2	5268.2	5080.6	4939.9
27.5°	5143.1	5096.2	5002.4	4736.7	4572.5
30°	4877.4	4853.9	4721.0	4377.1	4252.1
32.5°	4627.2	4588.2	4447.5	4087.9	3986.3
35°	4369.3	4338.0	4127.0	3814.3	3720.6
37.5°	4111.4	4072.3	3806.5	3556.4	3439.2
40°	3853.4	3806.5	3517.3	3290.7	3165.6
42.5°	3611.1	3548.6	3267.2	3024.9	2884.2
45°	3353.2	3282.8	3001.5	2751.3	2641.9
47.5°	3095.2	3032.7	2774.8	2516.8	2391.8
50°	2821.7	2767.0	2532.5	2274.5	2141.7
52.5°	2595.0	2509.0	2282.4	2024.4	1915.0
55°	2329.3	2258.9	2047.9	1805.6	1711.8
57.5°	2086.9	2016.6	1821.2	1594.5	1516.4
60°	1860.3	1758.7	1594.5	1399.1	1336.6
62.5°	1610.2	1532.0	1391.3	1227.2	1305.3
65°	1383.5	1305.3	1180.3	1203.7	1000.5
67.5°	1133.4	1094.3	984.9	875.4	844.2
70°	922.3	875.4	836.3	719.1	687.8
72.5°	734.7	687.8	633.1	570.6	547.1
75°	555.0	515.9	484.6	461.2	508.1
77.5°	383.0	367.4	343.9	320.5	312.7
80°	250.1	242.3	234.5	226.7	218.9
82.5°	148.5	148.5	148.5	148.5	148.5
85°	78.2	86.0	93.8	101.6	109.4
87.5°	46.9	46.9	54.7	62.5	70.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)