

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: P561765

Luminaire Tested: FSR-12-4-LD4-2STD-35-UNV-93-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561765  
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-12-4-LD4-2STD-35-UNV-93-86-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

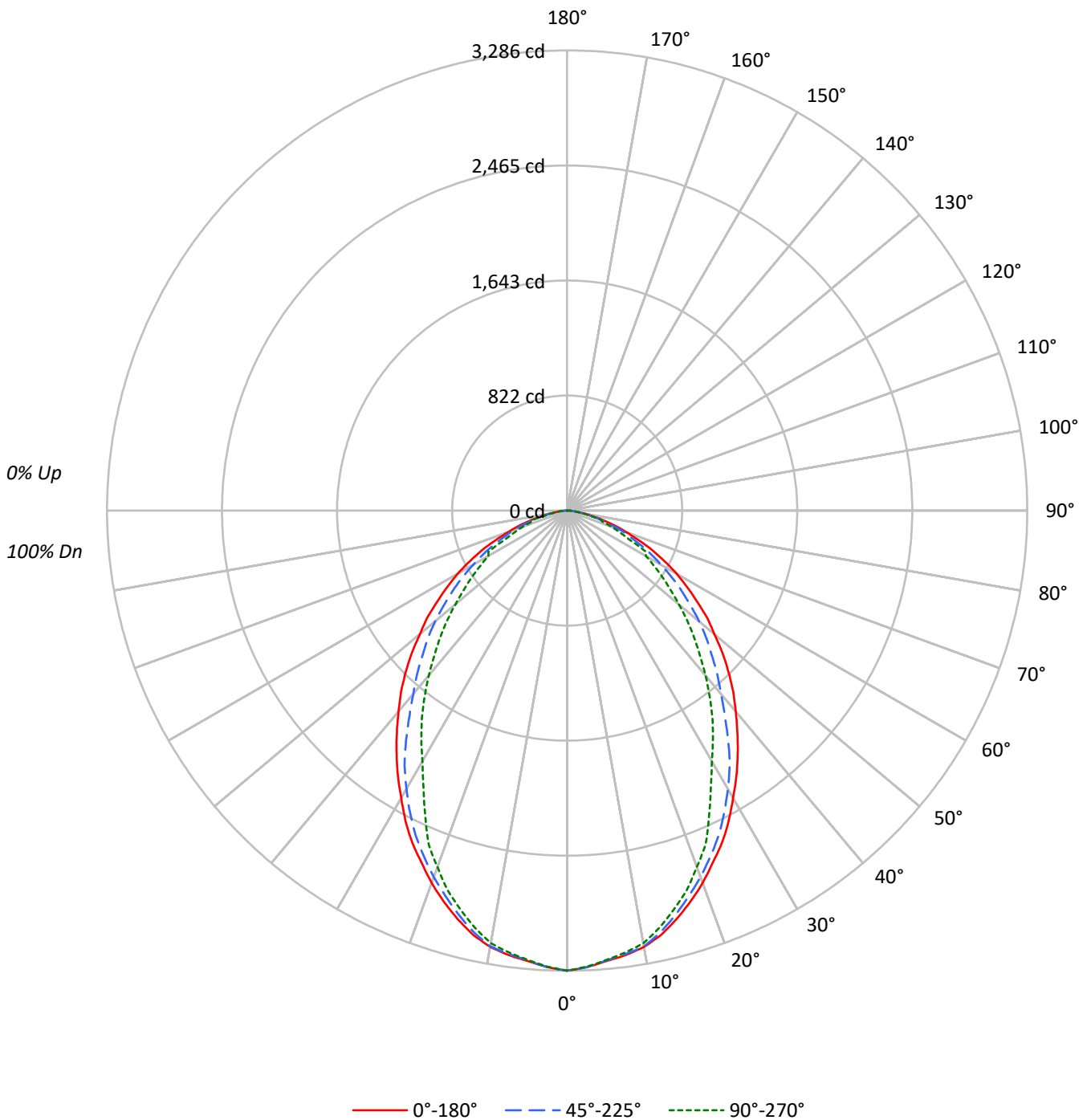
Lumens per Lamp: N/A  
Luminaire Lumens: 6450.0 lumens  
Efficiency: N/A  
Efficacy: 96.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	8841	8841	8841
5°	8721	8711	8701
10°	8646	8635	8573
15°	8413	8328	8211
20°	8103	7973	7755
25°	7770	7601	7127
30°	7365	7129	6421
35°	6975	6588	5939
40°	6578	6004	5404
45°	6201	5551	4886
50°	5740	5152	4357
55°	5310	4669	3902
60°	4865	4170	3496
65°	4281	3652	3096
70°	3526	3198	2630
75°	2804	2449	2567
80°	1883	1765	1649
85°	1173	1408	1643

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6201 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	305.8	4.7
10°-20°	839.3	13.0
20°-30°	1162.0	18.0
30°-40°	1239.1	19.2
40°-50°	1130.4	17.5
50°-60°	885.6	13.7
60°-70°	577.2	8.9
70°-80°	255.7	4.0
80°-90°	54.9	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°	2307.2	35.8
0°-40°	3546.3	55.0
0°-60°	5562.2	86.2
0°-90°	6450.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6450.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3286	3286	3286	3286	3286	
5°	3229	3225	3225	3221	3221	306
15°	3020	3020	2989	2959	2948	849
25°	2617	2602	2560	2469	2400	1201
35°	2123	2108	2006	1854	1808	1327
45°	1630	1595	1459	1337	1284	1255
55°	1132	1098	995	877	832	1015
65°	672	634	574	585	486	663
75°	270	251	236	224	247	289
85°	38	42	46	49	53	53
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3285.5	3285.5	3285.5	3285.5	3285.5
2.5°	3262.8	3262.8	3262.8	3259.0	3259.0
5°	3228.6	3224.8	3224.8	3221.0	3221.0
7.5°	3202.0	3198.2	3194.4	3190.6	3183.0
10°	3164.0	3164.0	3160.2	3141.2	3137.4
12.5°	3103.2	3099.4	3084.2	3057.6	3050.0
15°	3019.7	3019.7	2989.3	2958.9	2947.5
17.5°	2928.5	2924.7	2886.7	2856.3	2841.1
20°	2829.7	2822.1	2784.2	2734.8	2708.2
22.5°	2719.6	2719.6	2674.0	2609.4	2582.9
25°	2617.0	2601.8	2560.1	2468.9	2400.5
27.5°	2499.3	2476.5	2430.9	2301.8	2222.0
30°	2370.1	2358.8	2294.2	2127.1	2066.3
32.5°	2248.6	2229.6	2161.2	1986.5	1937.1
35°	2123.3	2108.1	2005.5	1853.6	1808.0
37.5°	1997.9	1978.9	1849.8	1728.2	1671.3
40°	1872.6	1849.8	1709.2	1599.1	1538.3
42.5°	1754.8	1724.4	1587.7	1469.9	1401.6
45°	1629.5	1595.3	1458.6	1337.0	1283.8
47.5°	1504.1	1473.7	1348.4	1223.1	1162.3
50°	1371.2	1344.6	1230.7	1105.3	1040.7
52.5°	1261.0	1219.3	1109.1	983.8	930.6
55°	1131.9	1097.7	995.2	877.4	831.8
57.5°	1014.2	980.0	885.0	774.9	736.9
60°	904.0	854.6	774.9	679.9	649.5
62.5°	782.5	744.5	676.1	596.3	634.3
65°	672.3	634.3	573.5	584.9	486.2
67.5°	550.8	531.8	478.6	425.4	410.2
70°	448.2	425.4	406.4	349.4	334.3
72.5°	357.0	334.3	307.7	277.3	265.9
75°	269.7	250.7	235.5	224.1	246.9
77.5°	186.1	178.5	167.1	155.7	151.9
80°	121.5	117.7	113.9	110.2	106.4
82.5°	72.2	72.2	72.2	72.2	72.2
85°	38.0	41.8	45.6	49.4	53.2
87.5°	22.8	22.8	26.6	30.4	34.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)