

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: P561385

Luminaire Tested: FSR-12-4-LD4-2HI-35-UNV-93-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561385  
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-LD4-2HI-35-UNV-93-88-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

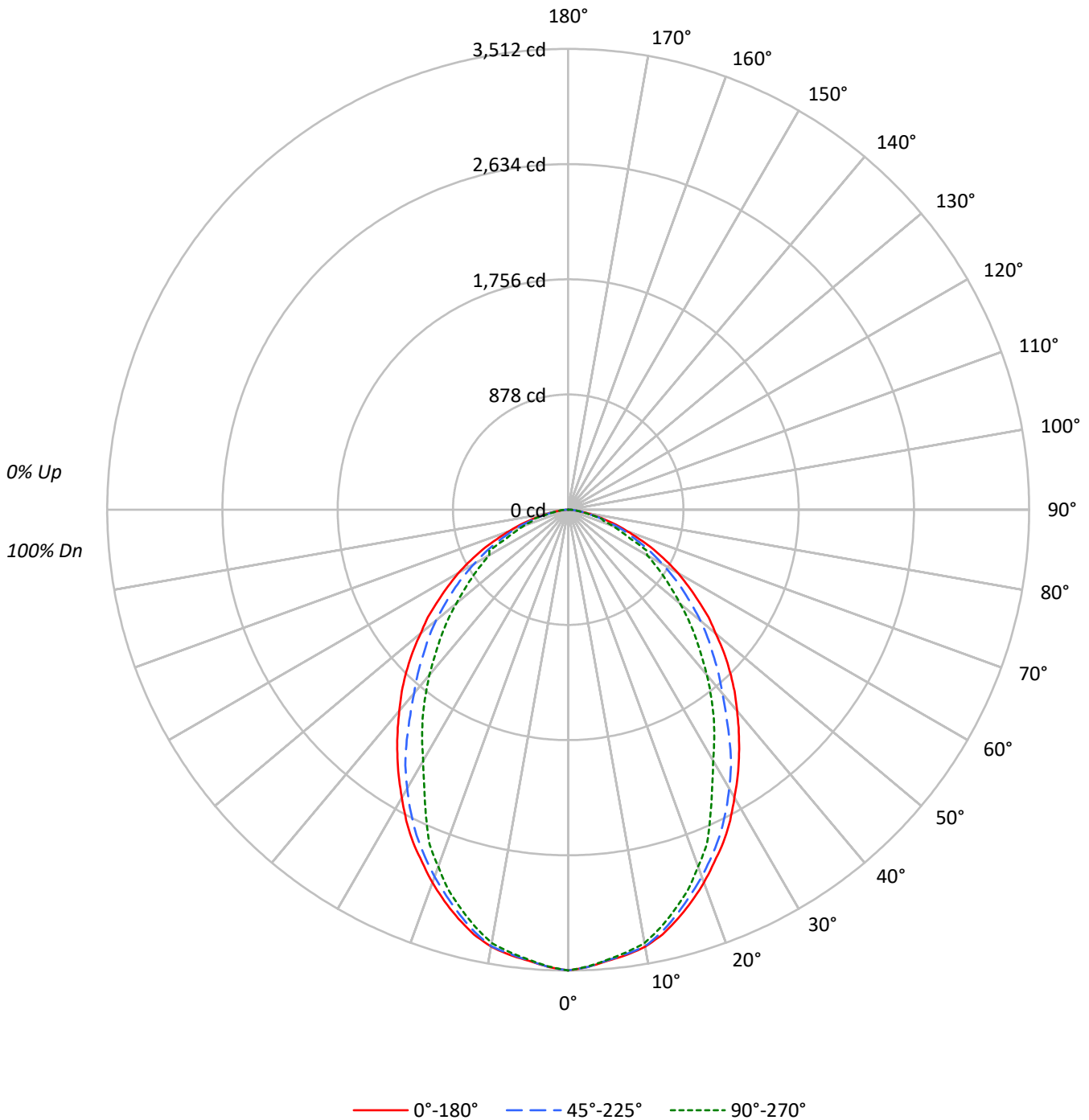
Lumens per Lamp: N/A  
Luminaire Lumens: 6894.0 lumens  
Efficiency: N/A  
Efficacy: 79.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	9450	9450	9450
5°	9322	9311	9300
10°	9241	9230	9163
15°	8992	8901	8777
20°	8661	8522	8289
25°	8305	8125	7618
30°	7872	7619	6862
35°	7455	7042	6348
40°	7031	6418	5776
45°	6628	5933	5222
50°	6136	5507	4657
55°	5676	4990	4171
60°	5200	4457	3736
65°	4576	3903	3309
70°	3770	3418	2811
75°	2996	2617	2744
80°	2013	1888	1762
85°	1254	1504	1754

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6628 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	326.9	4.7
10°-20°	897.1	13.0
20°-30°	1242.0	18.0
30°-40°	1324.4	19.2
40°-50°	1208.2	17.5
50°-60°	946.5	13.7
60°-70°	616.9	8.9
70°-80°	273.3	4.0
80°-90°	58.7	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°	2466.0	35.8
0°-40°	3790.4	55.0
0°-60°	5945.1	86.2
0°-90°	6894.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6894.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3512	3512	3512	3512	3512	
5°	3451	3447	3447	3443	3443	328
15°	3228	3228	3195	3163	3150	907
25°	2797	2781	2736	2639	2566	1284
35°	2269	2253	2144	1981	1932	1419
45°	1742	1705	1559	1429	1372	1342
55°	1210	1173	1064	938	889	1085
65°	719	678	613	625	520	708
75°	288	268	252	240	264	309
85°	41	45	49	53	57	56
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3511.7	3511.7	3511.7	3511.7	3511.7
2.5°	3487.4	3487.4	3487.4	3483.3	3483.3
5°	3450.8	3446.8	3446.8	3442.7	3442.7
7.5°	3422.4	3418.3	3414.3	3410.2	3402.1
10°	3381.8	3381.8	3377.7	3357.4	3353.4
12.5°	3316.8	3312.8	3296.5	3268.1	3260.0
15°	3227.5	3227.5	3195.0	3162.6	3150.4
17.5°	3130.1	3126.0	3085.4	3053.0	3036.7
20°	3024.5	3016.4	2975.8	2923.0	2894.6
22.5°	2906.8	2906.8	2858.1	2789.1	2760.7
25°	2797.2	2781.0	2736.3	2638.9	2565.8
27.5°	2671.3	2647.0	2598.3	2460.2	2375.0
30°	2533.3	2521.1	2452.1	2273.5	2208.5
32.5°	2403.4	2383.1	2310.0	2123.3	2070.5
35°	2269.4	2253.2	2143.6	1981.2	1932.5
37.5°	2135.4	2115.1	1977.1	1847.2	1786.3
40°	2001.5	1977.1	1826.9	1709.2	1644.2
42.5°	1875.6	1843.1	1697.0	1571.1	1498.1
45°	1741.6	1705.1	1559.0	1429.0	1372.2
47.5°	1607.7	1575.2	1441.2	1307.2	1242.3
50°	1465.6	1437.2	1315.4	1181.4	1112.4
52.5°	1347.8	1303.2	1185.5	1051.5	994.6
55°	1209.8	1173.3	1063.7	937.8	889.1
57.5°	1084.0	1047.4	945.9	828.2	787.6
60°	966.2	913.5	828.2	726.7	694.2
62.5°	836.3	795.7	722.6	637.4	678.0
65°	718.6	678.0	613.0	625.2	519.7
67.5°	588.7	568.4	511.5	454.7	438.5
70°	479.1	454.7	434.4	373.5	357.3
72.5°	381.6	357.3	328.8	296.4	284.2
75°	288.2	267.9	251.7	239.5	263.9
77.5°	198.9	190.8	178.6	166.5	162.4
80°	129.9	125.9	121.8	117.7	113.7
82.5°	77.1	77.1	77.1	77.1	77.1
85°	40.6	44.7	48.7	52.8	56.8
87.5°	24.4	24.4	28.4	32.5	36.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)