

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: P561833

Luminaire Tested: FSR-12-4-LD4-2STD-40-UNV-93-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561833  
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-40-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 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

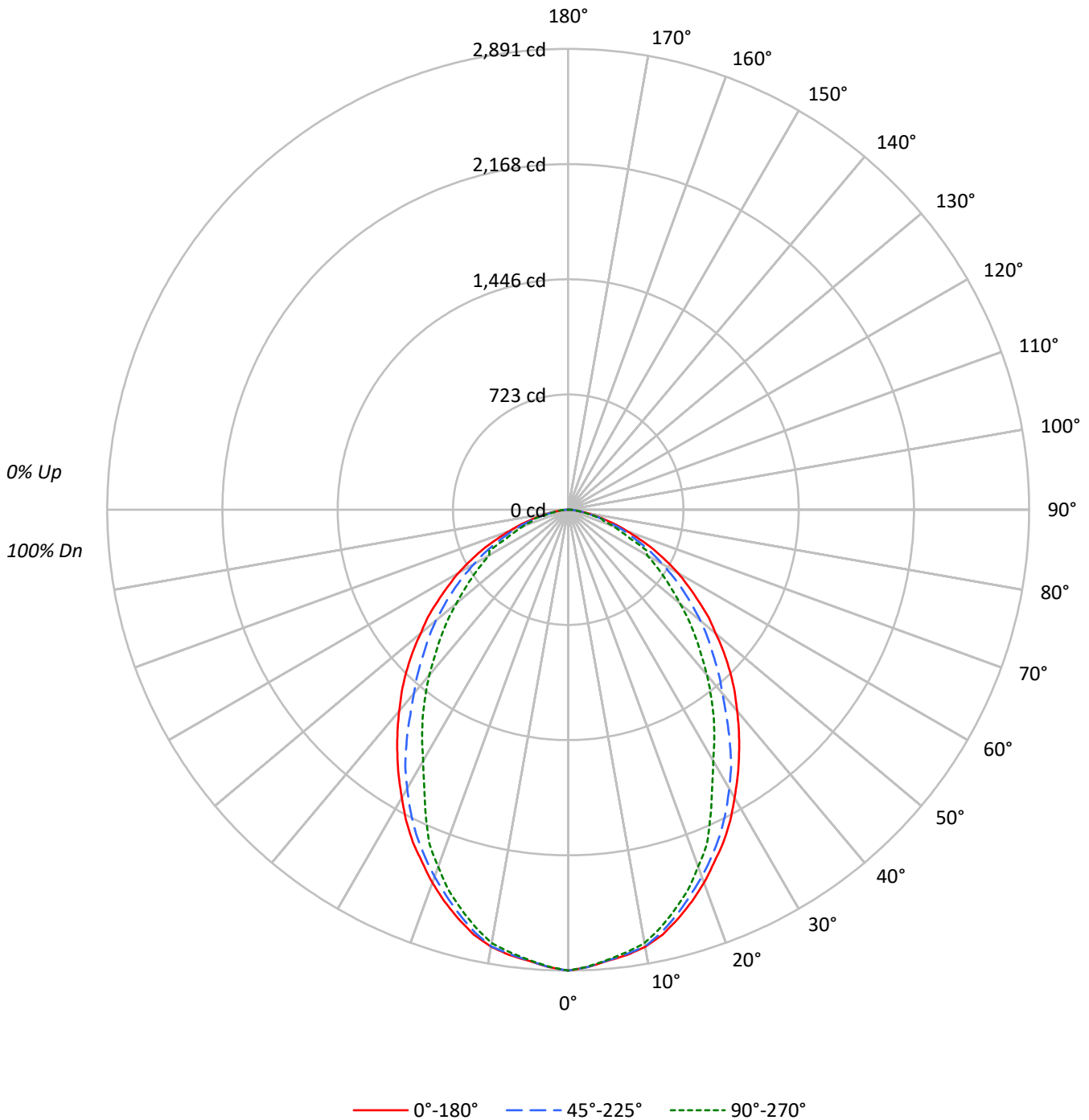
Lumens per Lamp: N/A  
Luminaire Lumens: 5676.0 lumens  
Efficiency: N/A  
Efficacy: 85.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	7780	7780	7780
5°	7675	7666	7657
10°	7608	7599	7544
15°	7403	7329	7226
20°	7131	7016	6825
25°	6838	6689	6272
30°	6481	6273	5650
35°	6138	5798	5227
40°	5789	5284	4755
45°	5457	4885	4300
50°	5051	4534	3834
55°	4673	4108	3434
60°	4281	3670	3076
65°	3767	3214	2724
70°	3103	2814	2314
75°	2467	2154	2259
80°	1658	1554	1450
85°	1031	1238	1445

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5457 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	269.1	4.7
10°-20°	738.6	13.0
20°-30°	1022.6	18.0
30°-40°	1090.4	19.2
40°-50°	994.7	17.5
50°-60°	779.3	13.7
60°-70°	507.9	8.9
70°-80°	225.0	4.0
80°-90°	48.3	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°	2030.3	35.8
0°-40°	3120.7	55.0
0°-60°	4894.8	86.2
0°-90°	5676.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5676.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2891	2891	2891	2891	2891	
5°	2841	2838	2838	2834	2834	270
15°	2657	2657	2631	2604	2594	747
25°	2303	2290	2253	2173	2112	1057
35°	1868	1855	1765	1631	1591	1168
45°	1434	1404	1284	1177	1130	1105
55°	996	966	876	772	732	893
65°	592	558	505	515	428	583
75°	237	221	207	197	217	254
85°	33	37	40	44	47	46
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2891.3	2891.3	2891.3	2891.3	2891.3
2.5°	2871.2	2871.2	2871.2	2867.9	2867.9
5°	2841.1	2837.8	2837.8	2834.5	2834.5
7.5°	2817.7	2814.4	2811.1	2807.7	2801.0
10°	2784.3	2784.3	2781.0	2764.3	2760.9
12.5°	2730.8	2727.5	2714.1	2690.7	2684.0
15°	2657.3	2657.3	2630.6	2603.8	2593.8
17.5°	2577.1	2573.7	2540.3	2513.6	2500.2
20°	2490.2	2483.5	2450.1	2406.6	2383.2
22.5°	2393.2	2393.2	2353.1	2296.3	2272.9
25°	2303.0	2289.6	2252.9	2172.6	2112.5
27.5°	2199.4	2179.3	2139.2	2025.6	1955.4
30°	2085.7	2075.7	2018.9	1871.8	1818.3
32.5°	1978.8	1962.1	1901.9	1748.1	1704.7
35°	1868.5	1855.1	1764.8	1631.1	1591.0
37.5°	1758.2	1741.5	1627.8	1520.8	1470.7
40°	1647.9	1627.8	1504.1	1407.2	1353.7
42.5°	1544.2	1517.5	1397.2	1293.6	1233.4
45°	1433.9	1403.9	1283.5	1176.6	1129.8
47.5°	1323.6	1296.9	1186.6	1076.3	1022.8
50°	1206.6	1183.3	1083.0	972.7	915.9
52.5°	1109.7	1072.9	976.0	865.7	818.9
55°	996.1	966.0	875.7	772.1	732.0
57.5°	892.5	862.4	778.8	681.9	648.4
60°	795.5	752.1	681.9	598.3	571.6
62.5°	688.6	655.1	595.0	524.8	558.2
65°	591.6	558.2	504.7	514.7	427.8
67.5°	484.7	468.0	421.2	374.4	361.0
70°	394.4	374.4	357.6	307.5	294.1
72.5°	314.2	294.1	270.7	244.0	234.0
75°	237.3	220.6	207.2	197.2	217.3
77.5°	163.8	157.1	147.1	137.0	133.7
80°	107.0	103.6	100.3	96.9	93.6
82.5°	63.5	63.5	63.5	63.5	63.5
85°	33.4	36.8	40.1	43.5	46.8
87.5°	20.1	20.1	23.4	26.7	30.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)