

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: P561754

Luminaire Tested: FSR-12-4-LD4-2STD-35-UNV-82-94-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561754  
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-82-94-EDD-90  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

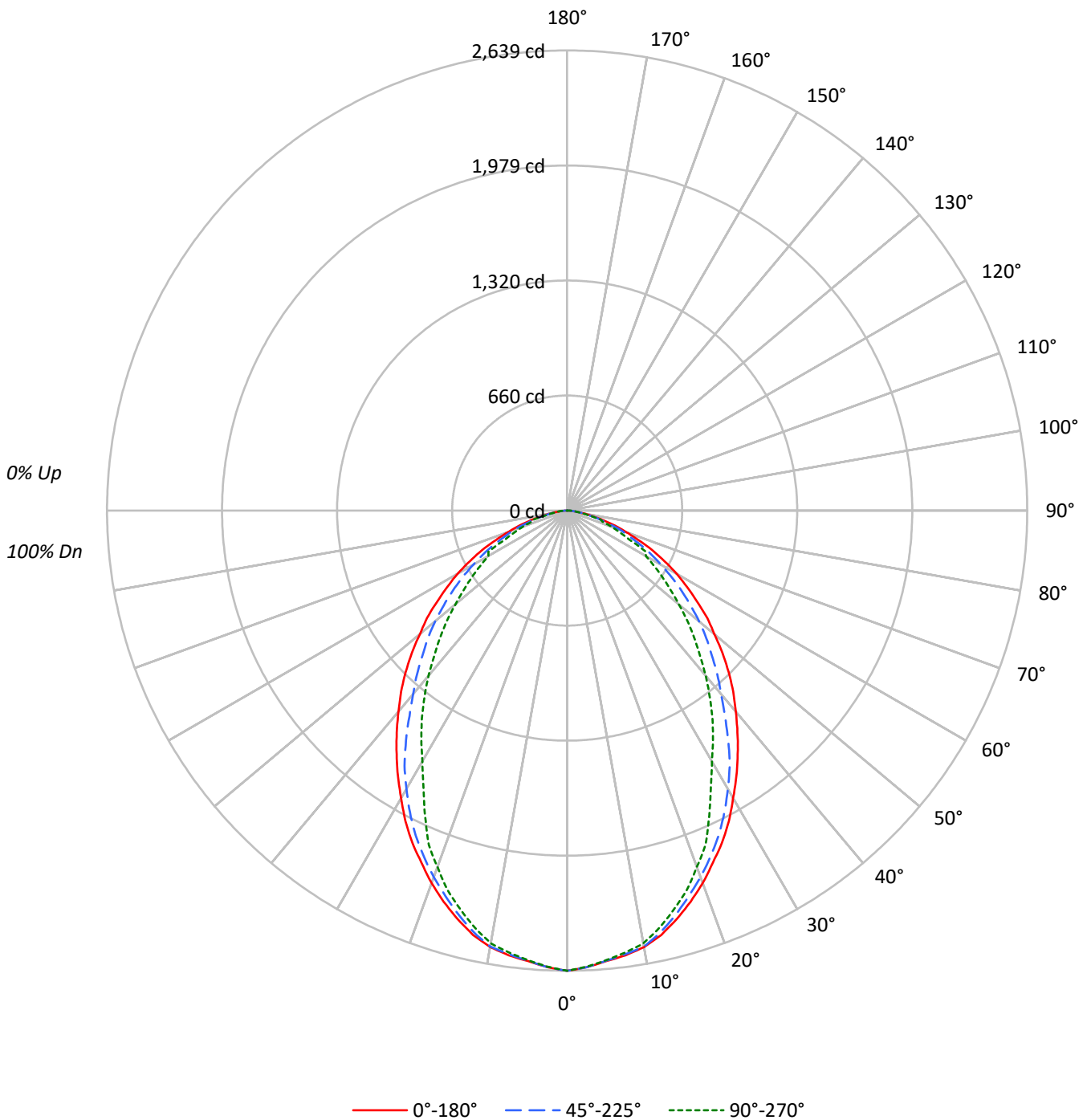
Lumens per Lamp: N/A  
Luminaire Lumens: 5181.0 lumens  
Efficiency: N/A  
Efficacy: 77.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	7102	7102	7102
5°	7005	6997	6989
10°	6945	6936	6886
15°	6757	6690	6596
20°	6509	6404	6230
25°	6242	6106	5725
30°	5916	5726	5157
35°	5603	5292	4771
40°	5284	4823	4341
45°	4981	4459	3924
50°	4611	4138	3500
55°	4266	3750	3135
60°	3908	3350	2808
65°	3438	2933	2486
70°	2832	2569	2113
75°	2252	1967	2062
80°	1512	1418	1323
85°	942	1130	1318

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4981 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	245.7	4.7
10°-20°	674.2	13.0
20°-30°	933.4	18.0
30°-40°	995.3	19.2
40°-50°	908.0	17.5
50°-60°	711.3	13.7
60°-70°	463.6	8.9
70°-80°	205.4	4.0
80°-90°	44.1	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°	1853.3	35.8
0°-40°	2848.6	55.0
0°-60°	4467.9	86.2
0°-90°	5181.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5181.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2639	2639	2639	2639	2639	
5°	2593	2590	2590	2587	2587	246
15°	2426	2426	2401	2377	2368	682
25°	2102	2090	2056	1983	1928	965
35°	1706	1693	1611	1489	1452	1066
45°	1309	1281	1172	1074	1031	1008
55°	909	882	799	705	668	815
65°	540	510	461	470	390	532
75°	217	201	189	180	198	232
85°	30	34	37	40	43	42
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2639.1	2639.1	2639.1	2639.1	2639.1
2.5°	2620.8	2620.8	2620.8	2617.8	2617.8
5°	2593.4	2590.3	2590.3	2587.3	2587.3
7.5°	2572.0	2569.0	2565.9	2562.9	2556.8
10°	2541.5	2541.5	2538.4	2523.2	2520.1
12.5°	2492.7	2489.6	2477.4	2456.1	2450.0
15°	2425.6	2425.6	2401.2	2376.7	2367.6
17.5°	2352.3	2349.3	2318.8	2294.4	2282.2
20°	2273.0	2266.9	2236.4	2196.7	2175.4
22.5°	2184.5	2184.5	2147.9	2096.1	2074.7
25°	2102.2	2089.9	2056.4	1983.2	1928.2
27.5°	2007.6	1989.3	1952.7	1848.9	1784.8
30°	1903.8	1894.7	1842.8	1708.6	1659.8
32.5°	1806.2	1790.9	1736.0	1595.7	1556.0
35°	1705.5	1693.3	1610.9	1488.9	1452.3
37.5°	1604.8	1589.6	1485.8	1388.2	1342.4
40°	1504.2	1485.8	1373.0	1284.5	1235.7
42.5°	1409.6	1385.2	1275.3	1180.7	1125.8
45°	1308.9	1281.4	1171.6	1074.0	1031.2
47.5°	1208.2	1183.8	1083.1	982.4	933.6
50°	1101.4	1080.1	988.5	887.8	836.0
52.5°	1012.9	979.4	890.9	790.2	747.5
55°	909.2	881.7	799.4	704.8	668.2
57.5°	814.6	787.2	710.9	622.4	591.9
60°	726.1	686.5	622.4	546.1	521.7
62.5°	628.5	598.0	543.1	479.0	509.5
65°	540.0	509.5	460.7	469.9	390.5
67.5°	442.4	427.1	384.4	341.7	329.5
70°	360.0	341.7	326.5	280.7	268.5
72.5°	286.8	268.5	247.1	222.7	213.6
75°	216.6	201.4	189.2	180.0	198.3
77.5°	149.5	143.4	134.2	125.1	122.0
80°	97.6	94.6	91.5	88.5	85.4
82.5°	58.0	58.0	58.0	58.0	58.0
85°	30.5	33.6	36.6	39.7	42.7
87.5°	18.3	18.3	21.4	24.4	27.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)