

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: P561820

Luminaire Tested: FSR-12-4-LD4-2STD-40-UNV-82-96-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561820  
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-82-96-EDD-90  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

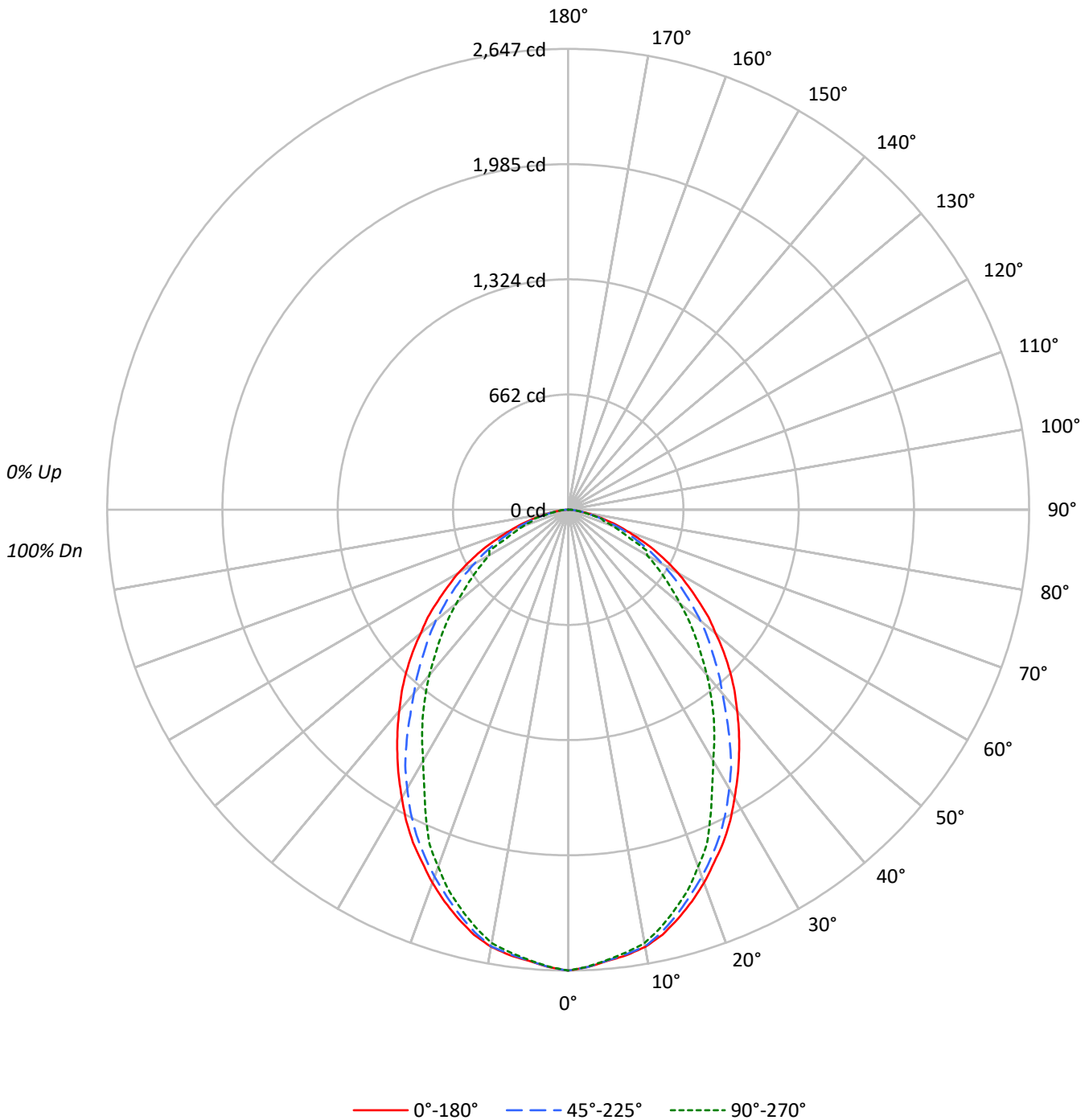
Lumens per Lamp: N/A  
Luminaire Lumens: 5197.0 lumens  
Efficiency: N/A  
Efficacy: 78.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	7124	7124	7124
5°	7027	7019	7011
10°	6966	6958	6907
15°	6778	6710	6616
20°	6529	6424	6249
25°	6261	6124	5743
30°	5934	5744	5173
35°	5620	5308	4786
40°	5300	4838	4354
45°	4996	4472	3937
50°	4625	4151	3511
55°	4279	3762	3144
60°	3920	3360	2816
65°	3449	2942	2494
70°	2841	2577	2119
75°	2259	1972	2068
80°	1517	1423	1328
85°	945	1133	1321

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4996 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	246.4	4.7
10°-20°	676.3	13.0
20°-30°	936.3	18.0
30°-40°	998.3	19.2
40°-50°	910.8	17.5
50°-60°	713.5	13.7
60°-70°	465.0	8.9
70°-80°	206.0	4.0
80°-90°	44.2	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°	1859.0	35.8
0°-40°	2857.4	55.0
0°-60°	4481.7	86.2
0°-90°	5197.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5197.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2647	2647	2647	2647	2647	
5°	2601	2598	2598	2595	2595	247
15°	2433	2433	2409	2384	2375	684
25°	2109	2096	2063	1989	1934	968
35°	1711	1698	1616	1494	1457	1070
45°	1313	1285	1175	1077	1034	1011
55°	912	884	802	707	670	818
65°	542	511	462	471	392	534
75°	217	202	190	181	199	233
85°	31	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°	2647.3	2647.3	2647.3	2647.3	2647.3
2.5°	2628.9	2628.9	2628.9	2625.9	2625.9
5°	2601.4	2598.3	2598.3	2595.3	2595.3
7.5°	2580.0	2576.9	2573.8	2570.8	2564.7
10°	2549.3	2549.3	2546.3	2531.0	2527.9
12.5°	2500.4	2497.3	2485.1	2463.7	2457.5
15°	2433.1	2433.1	2408.6	2384.1	2374.9
17.5°	2359.6	2356.5	2325.9	2301.5	2289.2
20°	2280.0	2273.9	2243.3	2203.5	2182.1
22.5°	2191.3	2191.3	2154.6	2102.5	2081.1
25°	2108.6	2096.4	2062.7	1989.3	1934.2
27.5°	2013.8	1995.4	1958.7	1854.6	1790.4
30°	1909.7	1900.5	1848.5	1713.8	1664.9
32.5°	1811.8	1796.5	1741.4	1600.6	1560.8
35°	1710.8	1698.5	1615.9	1493.5	1456.8
37.5°	1609.8	1594.5	1490.4	1392.5	1346.6
40°	1508.8	1490.4	1377.2	1288.4	1239.5
42.5°	1413.9	1389.4	1279.3	1184.4	1129.3
45°	1312.9	1285.4	1175.2	1077.3	1034.4
47.5°	1211.9	1187.5	1086.5	985.5	936.5
50°	1104.8	1083.4	991.6	890.6	838.6
52.5°	1016.1	982.4	893.6	792.7	749.8
55°	912.0	884.5	801.8	707.0	670.2
57.5°	817.1	789.6	713.1	624.3	593.7
60°	728.4	688.6	624.3	547.8	523.3
62.5°	630.5	599.8	544.8	480.5	511.1
65°	541.7	511.1	462.1	471.3	391.7
67.5°	443.8	428.5	385.6	342.8	330.5
70°	361.1	342.8	327.5	281.6	269.3
72.5°	287.7	269.3	247.9	223.4	214.2
75°	217.3	202.0	189.7	180.6	198.9
77.5°	150.0	143.8	134.7	125.5	122.4
80°	97.9	94.9	91.8	88.8	85.7
82.5°	58.1	58.1	58.1	58.1	58.1
85°	30.6	33.7	36.7	39.8	42.8
87.5°	18.4	18.4	21.4	24.5	27.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)