

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: P561742

Luminaire Tested: FSR-12-4-LD4-2STD-35-UNV-81-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561742  
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-81-97-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

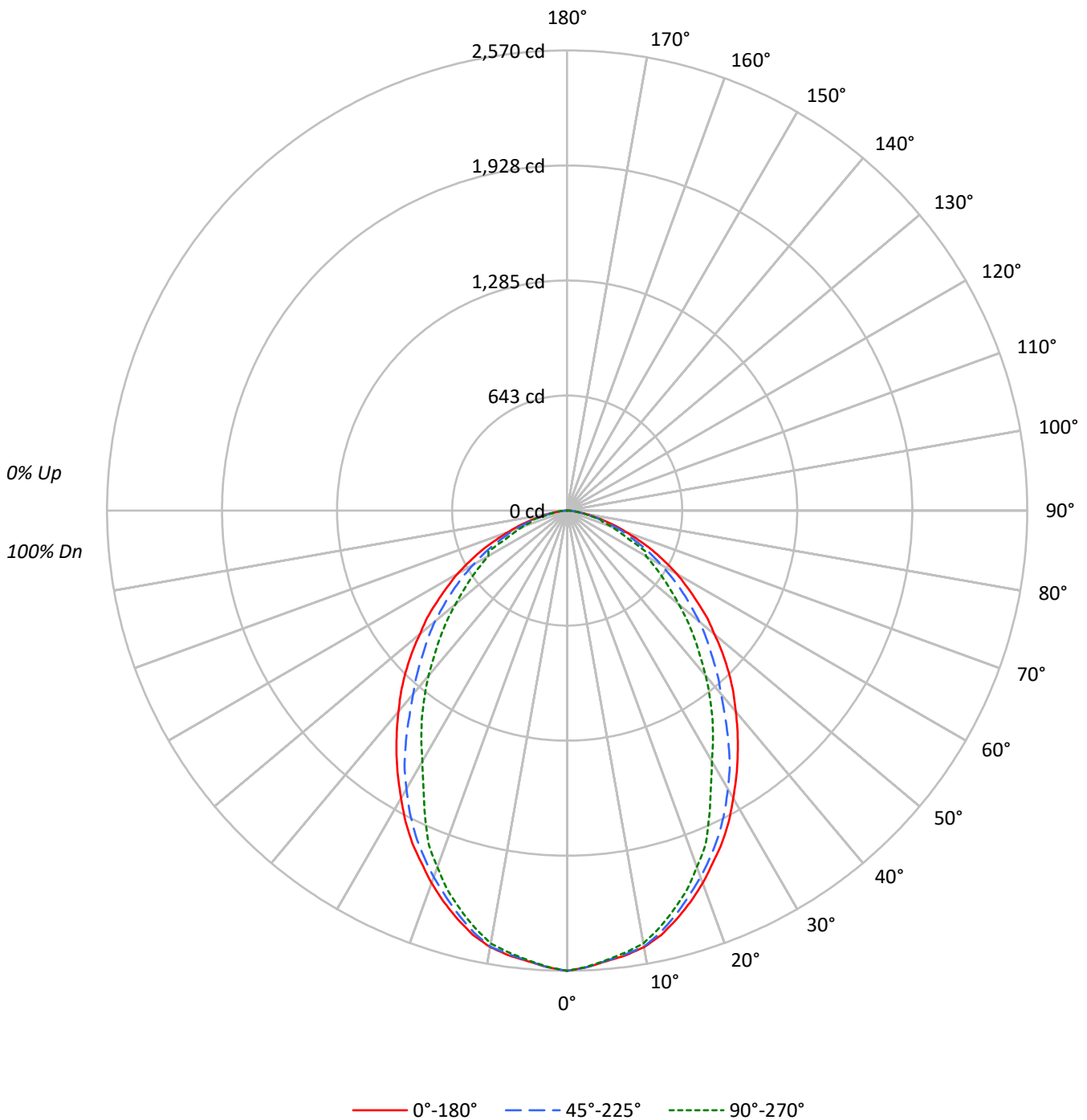
Lumens per Lamp: N/A  
Luminaire Lumens: 5046.0 lumens  
Efficiency: N/A  
Efficacy: 75.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	6917	6917	6917
5°	6823	6815	6807
10°	6764	6756	6707
15°	6581	6515	6424
20°	6340	6237	6067
25°	6079	5947	5576
30°	5762	5577	5023
35°	5457	5154	4646
40°	5146	4697	4228
45°	4851	4343	3822
50°	4491	4031	3409
55°	4154	3652	3053
60°	3806	3263	2735
65°	3349	2857	2422
70°	2758	2502	2057
75°	2194	1915	2008
80°	1474	1381	1289
85°	917	1102	1284

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4851 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	239.3	4.7
10°-20°	656.6	13.0
20°-30°	909.1	18.0
30°-40°	969.3	19.2
40°-50°	884.3	17.5
50°-60°	692.8	13.7
60°-70°	451.5	8.9
70°-80°	200.0	4.0
80°-90°	43.0	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°	1805.0	35.8
0°-40°	2774.3	55.0
0°-60°	4351.5	86.2
0°-90°	5046.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5046.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2570	2570	2570	2570	2570	
5°	2526	2523	2523	2520	2520	240
15°	2362	2362	2339	2315	2306	664
25°	2047	2036	2003	1932	1878	940
35°	1661	1649	1569	1450	1414	1038
45°	1275	1248	1141	1046	1004	982
55°	886	859	778	686	651	794
65°	526	496	449	458	380	518
75°	211	196	184	175	193	226
85°	30	33	36	39	42	41
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2570.4	2570.4	2570.4	2570.4	2570.4
2.5°	2552.5	2552.5	2552.5	2549.6	2549.6
5°	2525.8	2522.8	2522.8	2519.8	2519.8
7.5°	2505.0	2502.0	2499.0	2496.1	2490.1
10°	2475.3	2475.3	2472.3	2457.4	2454.5
12.5°	2427.7	2424.8	2412.9	2392.1	2386.1
15°	2362.4	2362.4	2338.6	2314.8	2305.9
17.5°	2291.0	2288.1	2258.4	2234.6	2222.7
20°	2213.8	2207.8	2178.1	2139.5	2118.7
22.5°	2127.6	2127.6	2092.0	2041.4	2020.6
25°	2047.4	2035.5	2002.8	1931.5	1878.0
27.5°	1955.3	1937.4	1901.8	1800.7	1738.3
30°	1854.2	1845.3	1794.8	1664.1	1616.5
32.5°	1759.1	1744.3	1690.8	1554.1	1515.5
35°	1661.1	1649.2	1569.0	1450.1	1414.4
37.5°	1563.0	1548.2	1447.1	1352.0	1307.5
40°	1465.0	1447.1	1337.2	1251.0	1203.5
42.5°	1372.8	1349.1	1242.1	1150.0	1096.5
45°	1274.8	1248.0	1141.1	1046.0	1004.4
47.5°	1176.7	1152.9	1054.9	956.8	909.3
50°	1072.7	1051.9	962.8	864.7	814.2
52.5°	986.5	953.9	867.7	769.6	728.0
55°	885.5	858.8	778.5	686.4	650.8
57.5°	793.4	766.7	692.4	606.2	576.5
60°	707.2	668.6	606.2	531.9	508.1
62.5°	612.1	582.4	528.9	466.5	496.2
65°	526.0	496.2	448.7	457.6	380.4
67.5°	430.9	416.0	374.4	332.8	320.9
70°	350.6	332.8	318.0	273.4	261.5
72.5°	279.3	261.5	240.7	216.9	208.0
75°	211.0	196.1	184.2	175.3	193.1
77.5°	145.6	139.7	130.7	121.8	118.9
80°	95.1	92.1	89.1	86.2	83.2
82.5°	56.5	56.5	56.5	56.5	56.5
85°	29.7	32.7	35.7	38.6	41.6
87.5°	17.8	17.8	20.8	23.8	26.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)