

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: P561828

Luminaire Tested: FSR-12-4-LD4-2STD-40-UNV-93-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561828  
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-93-86-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

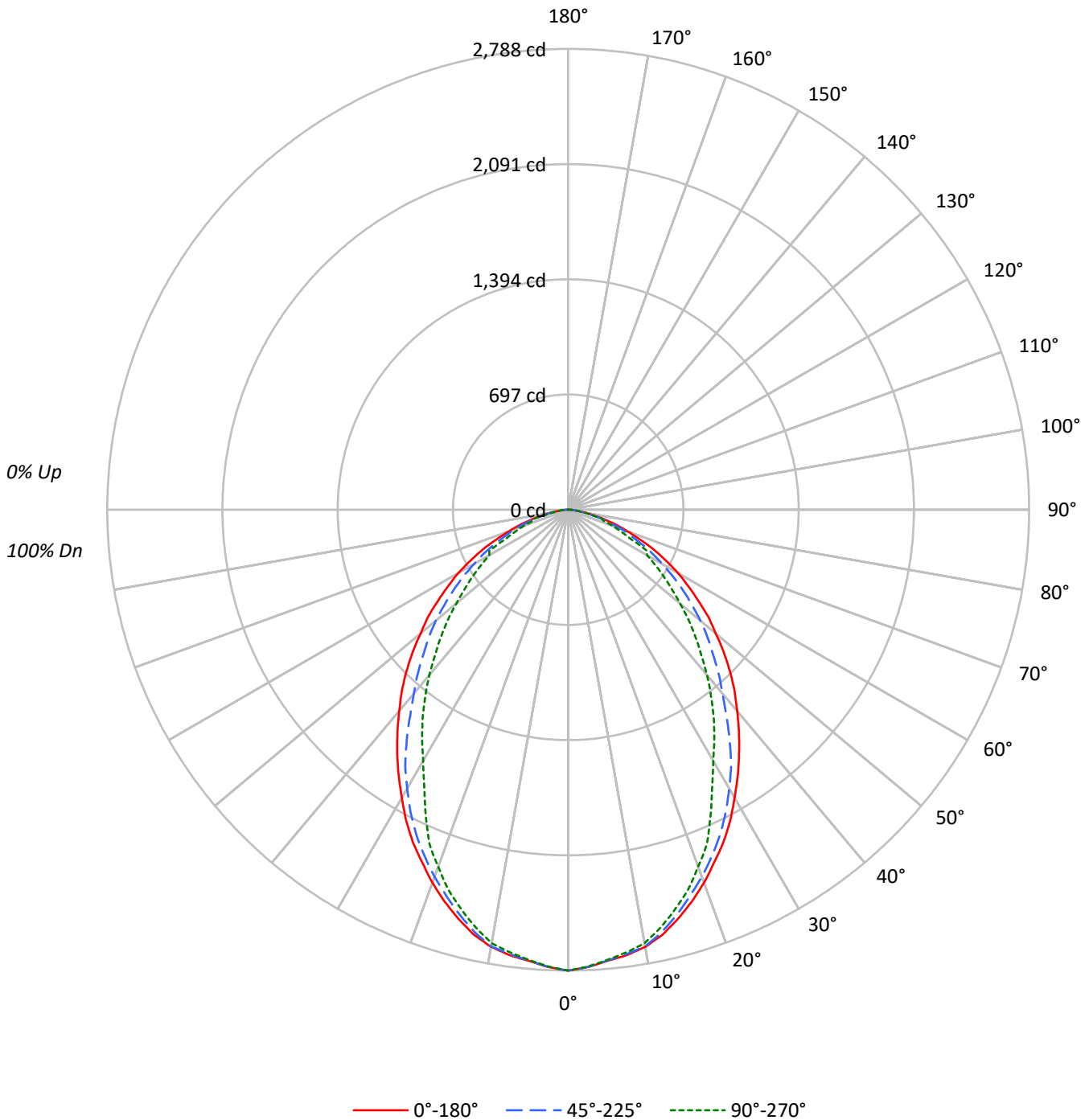
Lumens per Lamp: N/A  
Luminaire Lumens: 5474.0 lumens  
Efficiency: N/A  
Efficacy: 82.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	7504	7504	7504
5°	7401	7393	7384
10°	7337	7329	7276
15°	7139	7068	6969
20°	6877	6767	6582
25°	6595	6451	6049
30°	6250	6050	5449
35°	5920	5591	5041
40°	5583	5096	4586
45°	5263	4711	4147
50°	4872	4372	3698
55°	4507	3963	3312
60°	4129	3539	2967
65°	3633	3100	2627
70°	2993	2714	2232
75°	2380	2078	2178
80°	1599	1499	1399
85°	994	1195	1392

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5263 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	259.6	4.7
10°-20°	712.3	13.0
20°-30°	986.2	18.0
30°-40°	1051.6	19.2
40°-50°	959.3	17.5
50°-60°	751.6	13.7
60°-70°	489.8	8.9
70°-80°	217.0	4.0
80°-90°	46.6	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°	1958.1	35.8
0°-40°	3009.7	55.0
0°-60°	4720.6	86.2
0°-90°	5474.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5474.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2788	2788	2788	2788	2788	
5°	2740	2737	2737	2734	2734	260
15°	2563	2563	2537	2511	2502	720
25°	2221	2208	2173	2095	2037	1020
35°	1802	1789	1702	1573	1534	1127
45°	1383	1354	1238	1135	1090	1065
55°	961	932	845	745	706	862
65°	571	538	487	496	413	562
75°	229	213	200	190	210	245
85°	32	36	39	42	45	45
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2788.4	2788.4	2788.4	2788.4	2788.4
2.5°	2769.0	2769.0	2769.0	2765.8	2765.8
5°	2740.0	2736.8	2736.8	2733.6	2733.6
7.5°	2717.5	2714.2	2711.0	2707.8	2701.3
10°	2685.2	2685.2	2682.0	2665.9	2662.7
12.5°	2633.7	2630.4	2617.5	2595.0	2588.5
15°	2562.7	2562.7	2536.9	2511.2	2501.5
17.5°	2485.4	2482.1	2449.9	2424.1	2411.2
20°	2401.6	2395.1	2362.9	2321.0	2298.4
22.5°	2308.1	2308.1	2269.4	2214.6	2192.0
25°	2221.0	2208.1	2172.7	2095.3	2037.3
27.5°	2121.1	2101.8	2063.1	1953.5	1885.8
30°	2011.5	2001.8	1947.0	1805.2	1753.6
32.5°	1908.3	1892.2	1834.2	1685.9	1644.0
35°	1802.0	1789.1	1702.0	1573.1	1534.4
37.5°	1695.6	1679.5	1569.9	1466.7	1418.4
40°	1589.2	1569.9	1450.6	1357.1	1305.5
42.5°	1489.3	1463.5	1347.4	1247.5	1189.5
45°	1382.9	1353.9	1237.8	1134.7	1089.6
47.5°	1276.5	1250.7	1144.4	1038.0	986.4
50°	1163.7	1141.1	1044.4	938.1	883.3
52.5°	1070.2	1034.8	941.3	834.9	789.8
55°	960.6	931.6	844.6	744.6	706.0
57.5°	860.7	831.7	751.1	657.6	625.4
60°	767.2	725.3	657.6	577.0	551.2
62.5°	664.1	631.8	573.8	506.1	538.3
65°	570.6	538.3	486.8	496.4	412.6
67.5°	467.4	451.3	406.2	361.0	348.1
70°	380.4	361.0	344.9	296.6	283.7
72.5°	303.0	283.7	261.1	235.3	225.6
75°	228.9	212.8	199.9	190.2	209.5
77.5°	158.0	151.5	141.8	132.2	128.9
80°	103.2	99.9	96.7	93.5	90.3
82.5°	61.2	61.2	61.2	61.2	61.2
85°	32.2	35.5	38.7	41.9	45.1
87.5°	19.3	19.3	22.6	25.8	29.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)