

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: P561876

Luminaire Tested: FSR-12-4-LD4-2STD-50-UNV-82-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561876  
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-50-UNV-82-86-EDD-90  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

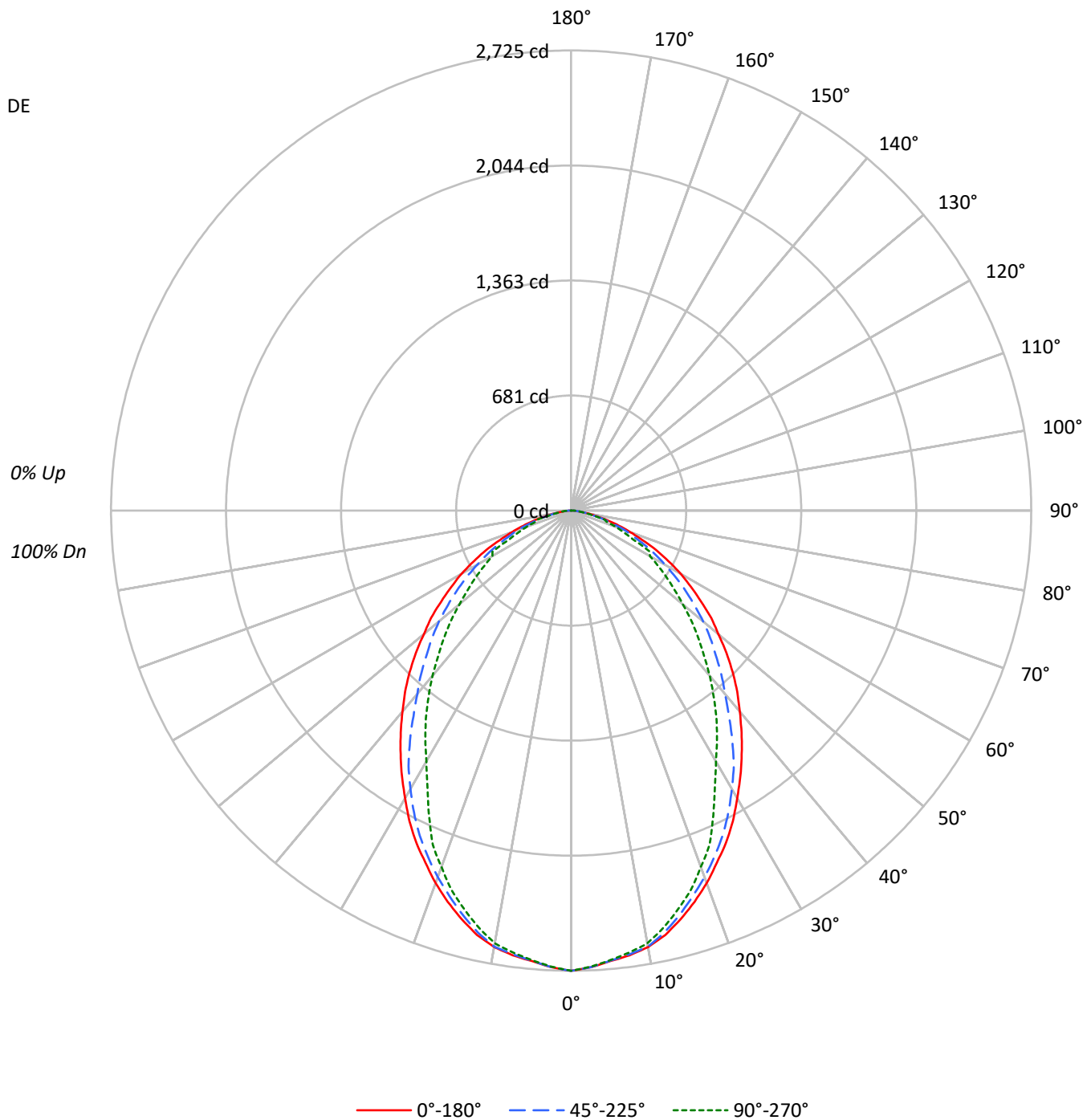
Lumens per Lamp: N/A  
Luminaire Lumens: 5350.0 lumens  
Efficiency: N/A  
Efficacy: 80.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	7333	7333	7333
5°	7234	7225	7217
10°	7171	7163	7111
15°	6978	6908	6811
20°	6722	6613	6433
25°	6445	6305	5912
30°	6109	5913	5326
35°	5786	5465	4927
40°	5456	4980	4482
45°	5144	4604	4053
50°	4761	4273	3614
55°	4405	3872	3237
60°	4035	3459	2899
65°	3550	3029	2568
70°	2925	2652	2181
75°	2326	2031	2129
80°	1562	1464	1367
85°	973	1167	1362

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5144 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	253.7	4.7
10°-20°	696.2	13.0
20°-30°	963.9	18.0
30°-40°	1027.7	19.2
40°-50°	937.6	17.5
50°-60°	734.5	13.7
60°-70°	478.7	8.9
70°-80°	212.1	4.0
80°-90°	45.6	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°	1913.7	35.8
0°-40°	2941.5	55.0
0°-60°	4613.6	86.2
0°-90°	5350.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5350.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2725	2725	2725	2725	2725	
5°	2678	2675	2675	2672	2672	254
15°	2505	2505	2480	2454	2445	704
25°	2171	2158	2124	2048	1991	997
35°	1761	1749	1664	1538	1500	1101
45°	1352	1323	1210	1109	1065	1041
55°	939	910	825	728	690	842
65°	558	526	476	485	403	550
75°	224	208	195	186	205	240
85°	32	35	38	41	44	44
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2725.2	2725.2	2725.2	2725.2	2725.2
2.5°	2706.3	2706.3	2706.3	2703.2	2703.2
5°	2678.0	2674.8	2674.8	2671.7	2671.7
7.5°	2655.9	2652.8	2649.6	2646.5	2640.2
10°	2624.4	2624.4	2621.3	2605.5	2602.3
12.5°	2574.0	2570.8	2558.2	2536.2	2529.9
15°	2504.7	2504.7	2479.5	2454.3	2444.8
17.5°	2429.1	2425.9	2394.4	2369.2	2356.6
20°	2347.2	2340.9	2309.3	2268.4	2246.3
22.5°	2255.8	2255.8	2218.0	2164.4	2142.4
25°	2170.7	2158.1	2123.5	2047.9	1991.1
27.5°	2073.1	2054.2	2016.3	1909.2	1843.1
30°	1965.9	1956.5	1902.9	1764.3	1713.9
32.5°	1865.1	1849.4	1792.7	1647.7	1606.8
35°	1761.2	1748.6	1663.5	1537.5	1499.7
37.5°	1657.2	1641.4	1534.3	1433.5	1386.2
40°	1553.2	1534.3	1417.7	1326.4	1276.0
42.5°	1455.6	1430.3	1316.9	1219.3	1162.5
45°	1351.6	1323.2	1209.8	1109.0	1064.9
47.5°	1247.6	1222.4	1118.4	1014.5	964.1
50°	1137.3	1115.3	1020.8	916.8	863.2
52.5°	1046.0	1011.3	920.0	816.0	771.9
55°	938.9	910.5	825.4	727.8	690.0
57.5°	841.2	812.8	734.1	642.7	611.2
60°	749.8	708.9	642.7	563.9	538.7
62.5°	649.0	617.5	560.8	494.6	526.1
65°	557.6	526.1	475.7	485.2	403.3
67.5°	456.8	441.1	397.0	352.9	340.3
70°	371.8	352.9	337.1	289.8	277.2
72.5°	296.2	277.2	255.2	230.0	220.5
75°	223.7	207.9	195.3	185.9	204.8
77.5°	154.4	148.1	138.6	129.2	126.0
80°	100.8	97.7	94.5	91.4	88.2
82.5°	59.9	59.9	59.9	59.9	59.9
85°	31.5	34.7	37.8	41.0	44.1
87.5°	18.9	18.9	22.1	25.2	28.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)