

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: P590986

Luminaire Tested: FSR-24-2-LD4-4STD-50-UNV-82-94-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590986  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-2-LD4-4STD-50-UNV-82-94-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

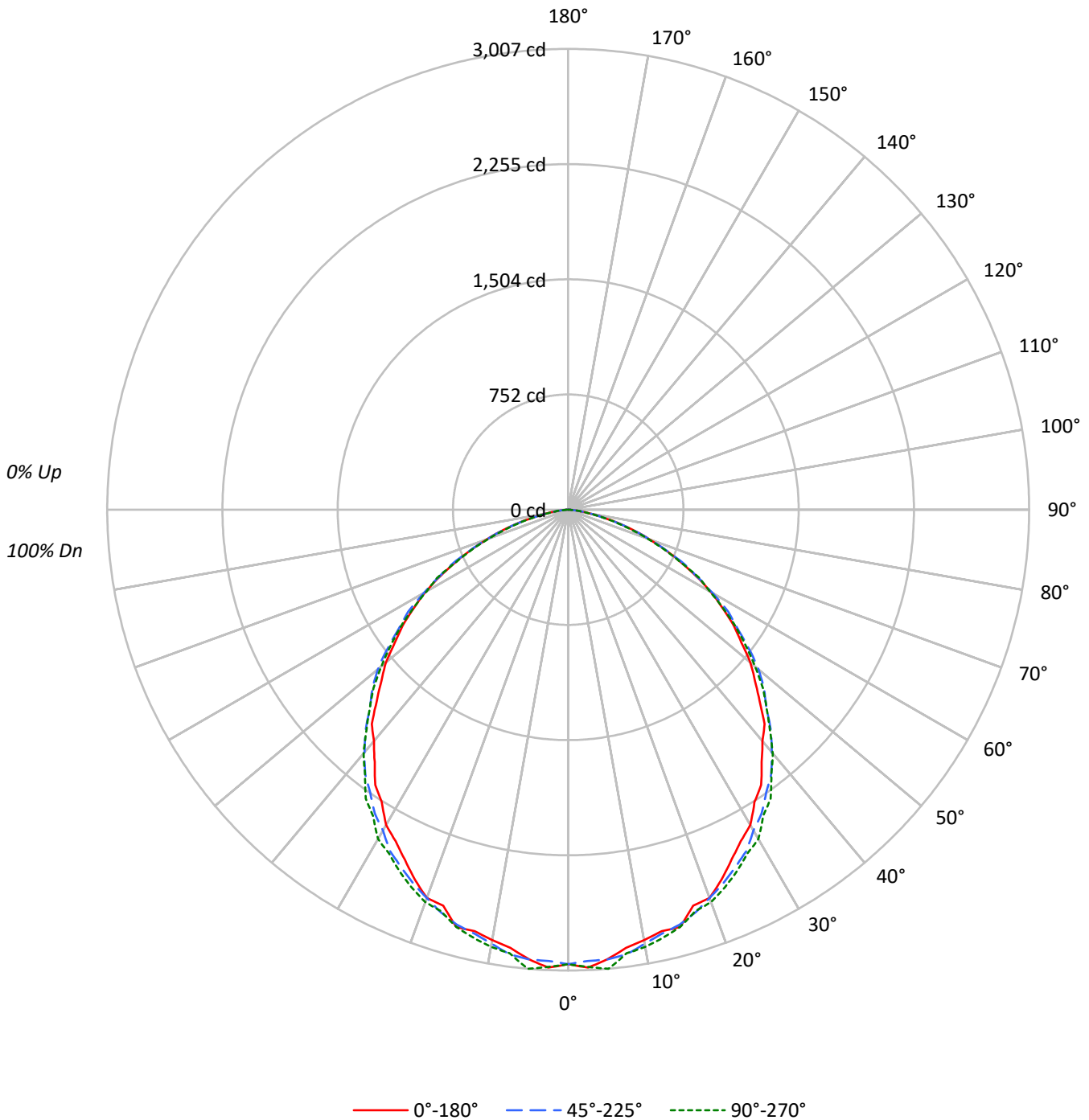
Lumens per Lamp: N/A  
Luminaire Lumens: 7473.0 lumens  
Efficiency: N/A  
Efficacy: 112.2 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
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	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88					86				
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75					73				
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64					62				
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55					53				
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48					46				
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43					41				
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38					36				
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34					32				
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31					29				
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28					26				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	7979	7979	7979
5°	7953	7956	8123
10°	7791	7859	7915
15°	7853	7810	7854
20°	7720	7720	7803
25°	7483	7647	7731
30°	7380	7510	7710
35°	7206	7395	7561
40°	6926	7260	7292
45°	6717	6956	6966
50°	6496	6789	6659
55°	6190	6310	6265
60°	5788	5845	5740
65°	5161	5292	5124
70°	4428	4443	4319
75°	3507	3499	3363
80°	2349	2284	2196
85°	1275	1266	1183

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 7135 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	278.9	3.7
10°-20°	790.5	10.6
20°-30°	1184.3	15.8
30°-40°	1403.6	18.8
40°-50°	1406.2	18.8
50°-60°	1193.7	16.0
60°-70°	804.8	10.8
70°-80°	353.6	4.7
80°-90°	57.5	0.8
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°	2253.7	30.2
0°-40°	3657.3	48.9
0°-60°	6257.2	83.7
0°-90°	7473.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7473.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2965	2965	2965	2965	2965	
5°	2944	2937	2945	2936	3007	278
15°	2819	2786	2804	2818	2819	785
25°	2520	2534	2575	2609	2604	1165
35°	2194	2200	2251	2303	2302	1362
45°	1765	1798	1828	1875	1830	1365
55°	1319	1310	1345	1336	1335	1174
65°	810	800	831	799	805	806
75°	337	330	336	313	324	361
85°	41	40	41	40	38	60
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2965.1	2965.1	2965.1	2965.1	2965.1
2.5°	2990.7	2968.2	2947.1	2971.6	2986.5
5°	2944.0	2937.2	2945.2	2936.4	3007.2
7.5°	2883.6	2910.0	2925.3	2915.7	2919.9
10°	2851.4	2842.2	2876.3	2900.0	2896.6
12.5°	2816.9	2830.7	2832.6	2858.3	2860.6
15°	2818.9	2786.3	2803.5	2818.1	2819.2
17.5°	2709.4	2744.6	2756.4	2789.8	2748.4
20°	2696.0	2670.3	2696.0	2730.0	2724.7
22.5°	2613.7	2584.9	2640.1	2670.3	2668.4
25°	2520.2	2534.0	2575.4	2609.1	2603.7
27.5°	2438.3	2454.4	2513.3	2559.7	2529.8
30°	2375.1	2367.1	2416.9	2458.2	2481.2
32.5°	2262.2	2291.3	2349.5	2390.5	2368.6
35°	2193.7	2200.2	2251.1	2303.2	2301.6
37.5°	2073.8	2104.1	2175.7	2190.2	2176.8
40°	1971.6	2001.9	2066.6	2082.3	2075.8
42.5°	1896.2	1901.6	1957.1	1975.1	1946.4
45°	1764.9	1797.8	1827.7	1874.8	1830.4
47.5°	1653.1	1668.4	1732.7	1745.4	1722.0
50°	1551.7	1557.0	1621.7	1606.0	1590.7
52.5°	1424.2	1446.8	1483.1	1480.1	1462.1
55°	1319.3	1310.5	1344.9	1335.7	1335.3
57.5°	1193.3	1208.6	1237.0	1222.4	1199.1
60°	1075.4	1075.8	1086.1	1069.7	1066.6
62.5°	944.1	948.7	951.0	930.7	963.6
65°	810.5	799.8	831.1	799.4	804.7
67.5°	687.6	692.9	689.9	670.0	677.6
70°	562.8	569.7	564.7	542.1	549.0
72.5°	448.7	440.3	445.6	417.3	430.3
75°	337.3	330.4	336.5	312.8	323.5
77.5°	229.7	235.1	231.2	218.6	225.9
80°	151.6	147.4	147.4	140.1	141.7
82.5°	88.4	84.2	83.1	80.8	84.2
85°	41.3	40.2	41.0	39.8	38.3
87.5°	14.9	15.3	15.3	14.5	13.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)