

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: P590447

Luminaire Tested: FSR-24-2-LD4-3HI-35-UNV-93-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590447  
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-LD4-3HI-35-UNV-93-86-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

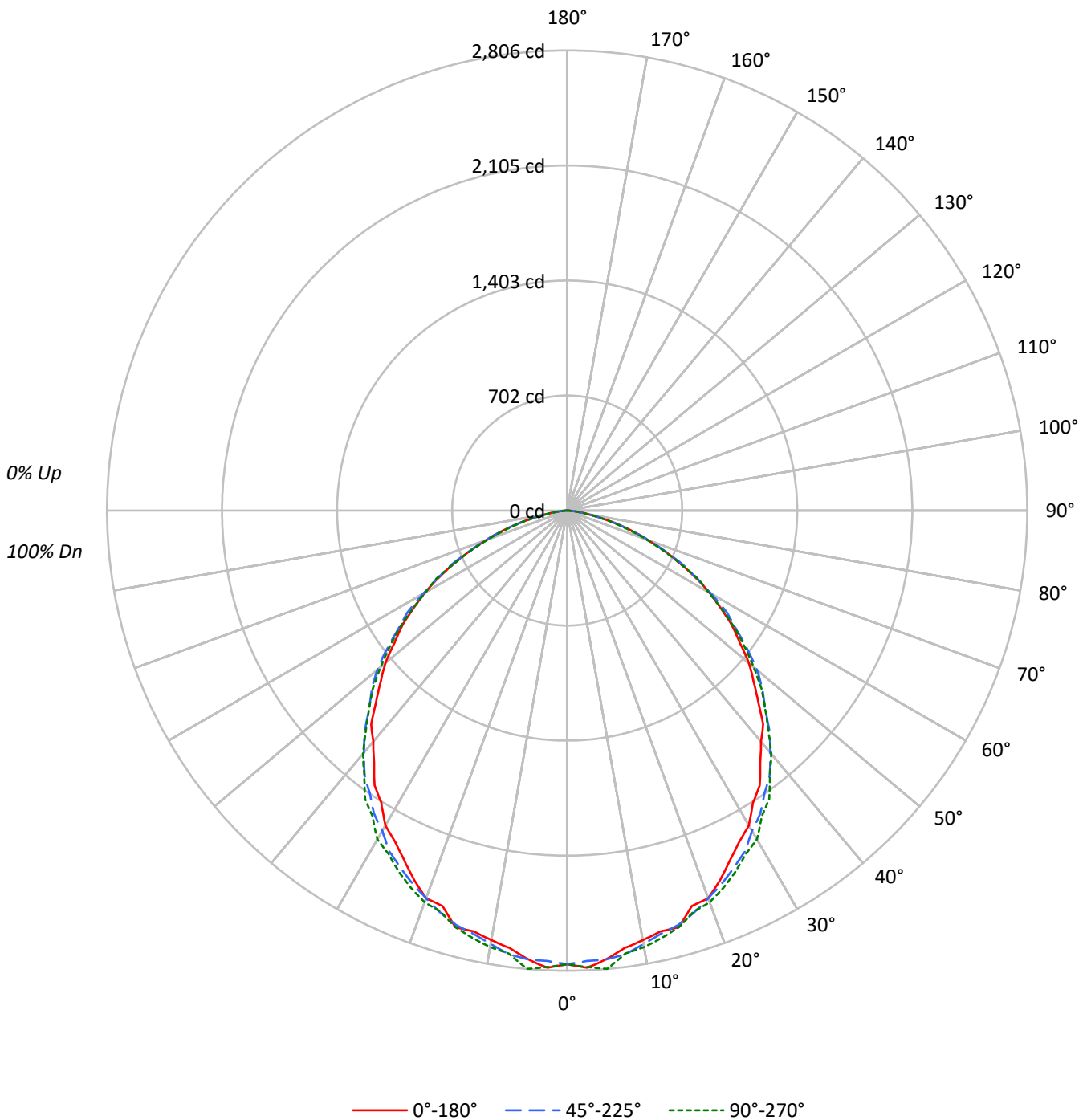
Lumens per Lamp: N/A  
Luminaire Lumens: 6972.0 lumens  
Efficiency: N/A  
Efficacy: 107.6 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 64.8  
Input Voltage (V):  
Input Current (Ain): NR  
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																		
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	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°	7444	7444	7444
5°	7420	7422	7579
10°	7269	7332	7384
15°	7327	7287	7327
20°	7203	7203	7279
25°	6981	7134	7212
30°	6885	7006	7193
35°	6723	6899	7054
40°	6461	6773	6803
45°	6266	6489	6498
50°	6060	6334	6213
55°	5774	5887	5845
60°	5400	5454	5356
65°	4814	4937	4781
70°	4131	4145	4030
75°	3272	3265	3138
80°	2191	2131	2049
85°	1192	1179	1102

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 6656 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	260.2	3.7
10°-20°	737.5	10.6
20°-30°	1104.9	15.8
30°-40°	1309.5	18.8
40°-50°	1312.0	18.8
50°-60°	1113.6	16.0
60°-70°	750.8	10.8
70°-80°	329.9	4.7
80°-90°	53.6	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°	2102.6	30.2
0°-40°	3412.1	48.9
0°-60°	5837.7	83.7
0°-90°	6972.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6972.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2766	2766	2766	2766	2766	
5°	2747	2740	2748	2740	2806	259
15°	2630	2600	2616	2629	2630	733
25°	2351	2364	2403	2434	2429	1087
35°	2047	2053	2100	2149	2147	1271
45°	1647	1677	1705	1749	1708	1274
55°	1231	1223	1255	1246	1246	1095
65°	756	746	775	746	751	752
75°	315	308	314	292	302	337
85°	39	38	38	37	36	56
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2766.3	2766.3	2766.3	2766.3	2766.3
2.5°	2790.2	2769.2	2749.5	2772.4	2786.3
5°	2746.7	2740.2	2747.7	2739.5	2805.6
7.5°	2690.2	2714.9	2729.2	2720.2	2724.2
10°	2660.2	2651.7	2683.4	2705.6	2702.4
12.5°	2628.1	2640.9	2642.7	2666.7	2668.8
15°	2629.9	2599.5	2615.6	2629.2	2630.2
17.5°	2527.7	2560.6	2571.7	2602.7	2564.2
20°	2515.2	2491.3	2515.2	2547.0	2542.0
22.5°	2438.4	2411.6	2463.1	2491.3	2489.5
25°	2351.3	2364.1	2402.7	2434.1	2429.1
27.5°	2274.8	2289.8	2344.8	2388.1	2360.2
30°	2215.9	2208.4	2254.8	2293.4	2314.8
32.5°	2110.5	2137.7	2192.0	2230.2	2209.8
35°	2046.6	2052.7	2100.2	2148.8	2147.3
37.5°	1934.8	1963.0	2029.8	2043.4	2030.9
40°	1839.4	1867.7	1928.0	1942.7	1936.6
42.5°	1769.1	1774.1	1825.9	1842.7	1815.9
45°	1646.6	1677.3	1705.1	1749.1	1707.6
47.5°	1542.3	1556.6	1616.6	1628.4	1606.6
50°	1447.6	1452.6	1513.0	1498.3	1484.1
52.5°	1328.7	1349.8	1383.7	1380.8	1364.0
55°	1230.8	1222.6	1254.8	1246.2	1245.8
57.5°	1113.3	1127.6	1154.0	1140.5	1118.7
60°	1003.3	1003.7	1013.3	997.9	995.1
62.5°	880.8	885.1	887.2	868.3	899.0
65°	756.1	746.1	775.4	745.8	750.8
67.5°	641.5	646.5	643.6	625.1	632.2
70°	525.0	531.5	526.8	505.8	512.2
72.5°	418.6	410.8	415.8	389.3	401.5
75°	314.7	308.2	314.0	291.8	301.8
77.5°	214.3	219.3	215.7	203.9	210.7
80°	141.4	137.5	137.5	130.7	132.2
82.5°	82.5	78.6	77.5	75.4	78.6
85°	38.6	37.5	38.2	37.1	35.7
87.5°	13.9	14.3	14.3	13.6	12.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)