

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: P590442

Luminaire Tested: FSR-24-2-LD4-3HI-35-UNV-82-94-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590442  
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-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 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

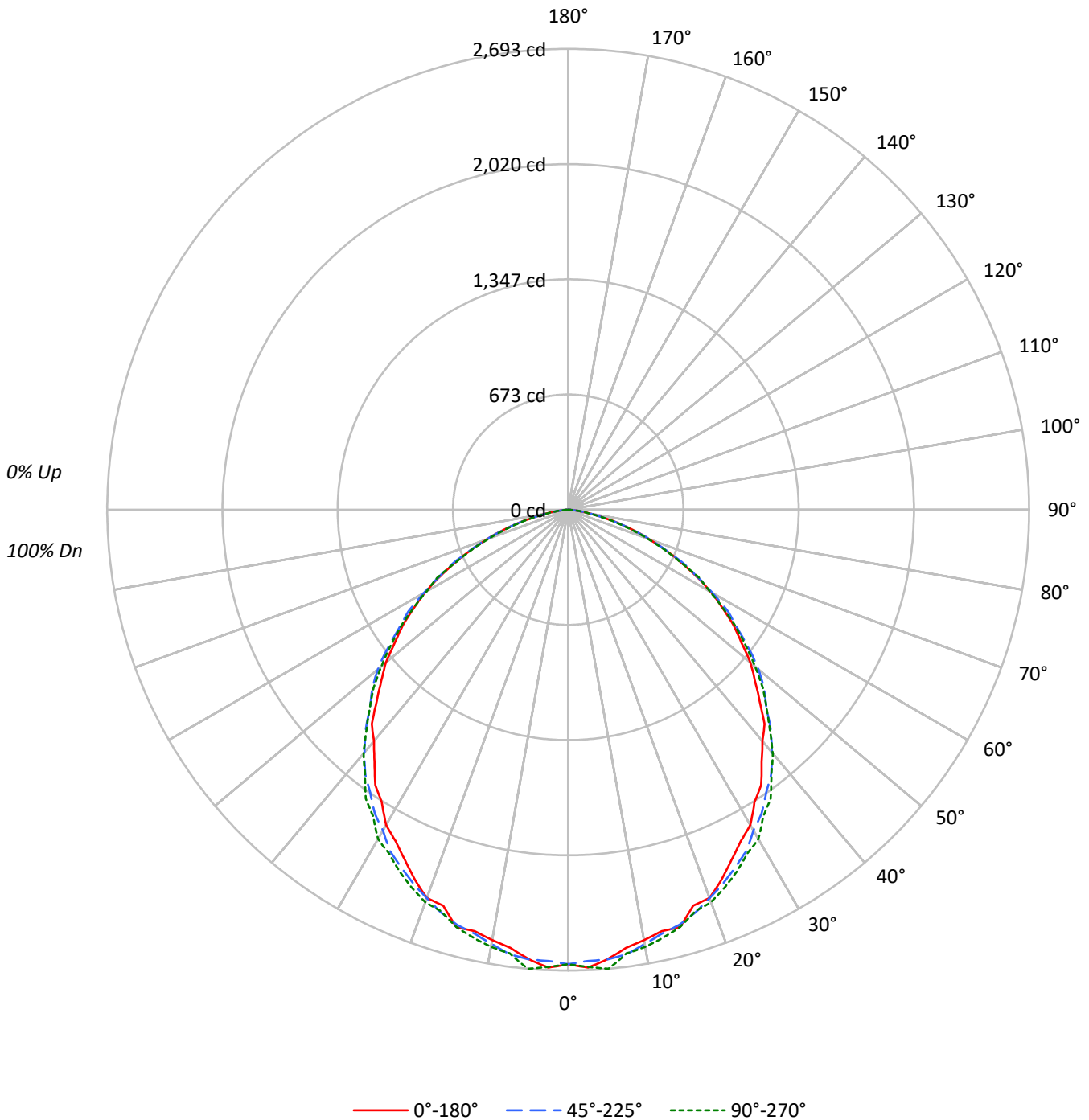
Lumens per Lamp: N/A  
Luminaire Lumens: 6693.0 lumens  
Efficiency: N/A  
Efficacy: 103.3 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 64.8  
Input Voltage (V):  
Input Current (Ain): NR  
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									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°	7146	7146	7146
5°	7123	7125	7275
10°	6978	7039	7089
15°	7033	6995	7034
20°	6915	6915	6988
25°	6702	6849	6924
30°	6610	6726	6905
35°	6454	6623	6772
40°	6203	6502	6531
45°	6016	6229	6239
50°	5818	6080	5964
55°	5544	5651	5611
60°	5184	5236	5141
65°	4622	4740	4589
70°	3965	3979	3869
75°	3141	3134	3012
80°	2104	2046	1967
85°	1142	1133	1059

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 6390 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	249.8	3.7
10°-20°	708.0	10.6
20°-30°	1060.7	15.8
30°-40°	1257.1	18.8
40°-50°	1259.4	18.8
50°-60°	1069.1	16.0
60°-70°	720.8	10.8
70°-80°	316.7	4.7
80°-90°	51.5	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°	2018.4	30.2
0°-40°	3275.6	48.9
0°-60°	5604.1	83.7
0°-90°	6693.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6693.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2656	2656	2656	2656	2656	
5°	2637	2631	2638	2630	2693	249
15°	2525	2496	2511	2524	2525	703
25°	2257	2270	2307	2337	2332	1044
35°	1965	1970	2016	2063	2061	1220
45°	1581	1610	1637	1679	1639	1223
55°	1182	1174	1204	1196	1196	1051
65°	726	716	744	716	721	722
75°	302	296	301	280	290	324
85°	37	36	37	36	34	54
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2655.6	2655.6	2655.6	2655.6	2655.6
2.5°	2678.6	2658.4	2639.5	2661.4	2674.8
5°	2636.8	2630.6	2637.8	2629.9	2693.3
7.5°	2582.6	2606.2	2620.0	2611.4	2615.2
10°	2553.8	2545.5	2576.1	2597.3	2594.2
12.5°	2522.9	2535.3	2537.0	2559.9	2562.0
15°	2524.6	2495.5	2510.9	2523.9	2525.0
17.5°	2426.6	2458.1	2468.7	2498.6	2461.5
20°	2414.6	2391.6	2414.6	2445.1	2440.3
22.5°	2340.8	2315.1	2364.5	2391.6	2389.9
25°	2257.2	2269.5	2306.6	2336.7	2331.9
27.5°	2183.8	2198.2	2251.0	2292.5	2265.8
30°	2127.2	2120.0	2164.6	2201.6	2222.2
32.5°	2026.1	2052.1	2104.3	2140.9	2121.4
35°	1964.7	1970.5	2016.1	2062.8	2061.4
37.5°	1857.4	1884.5	1948.6	1961.6	1949.6
40°	1765.8	1792.9	1850.9	1864.9	1859.1
42.5°	1698.3	1703.1	1752.8	1768.9	1743.2
45°	1580.7	1610.2	1636.9	1679.1	1639.3
47.5°	1480.6	1494.3	1551.9	1563.2	1542.3
50°	1389.7	1394.5	1452.4	1438.4	1424.7
52.5°	1275.5	1295.7	1328.3	1325.6	1309.5
55°	1181.6	1173.7	1204.5	1196.3	1196.0
57.5°	1068.8	1082.5	1107.8	1094.8	1073.9
60°	963.2	963.5	972.8	958.0	955.3
62.5°	845.5	849.7	851.7	833.5	863.0
65°	725.9	716.3	744.4	715.9	720.7
67.5°	615.8	620.6	617.9	600.0	606.9
70°	504.0	510.2	505.7	485.5	491.7
72.5°	401.9	394.3	399.1	373.7	385.4
75°	302.1	295.9	301.4	280.1	289.7
77.5°	205.7	210.5	207.1	195.8	202.3
80°	135.8	132.0	132.0	125.5	126.9
82.5°	79.2	75.4	74.4	72.3	75.4
85°	37.0	36.0	36.7	35.7	34.3
87.5°	13.4	13.7	13.7	13.0	12.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)