

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: P590993

Luminaire Tested: FSR-24-2-LD4-4STD-50-UNV-93-88-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590993  
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-93-88-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

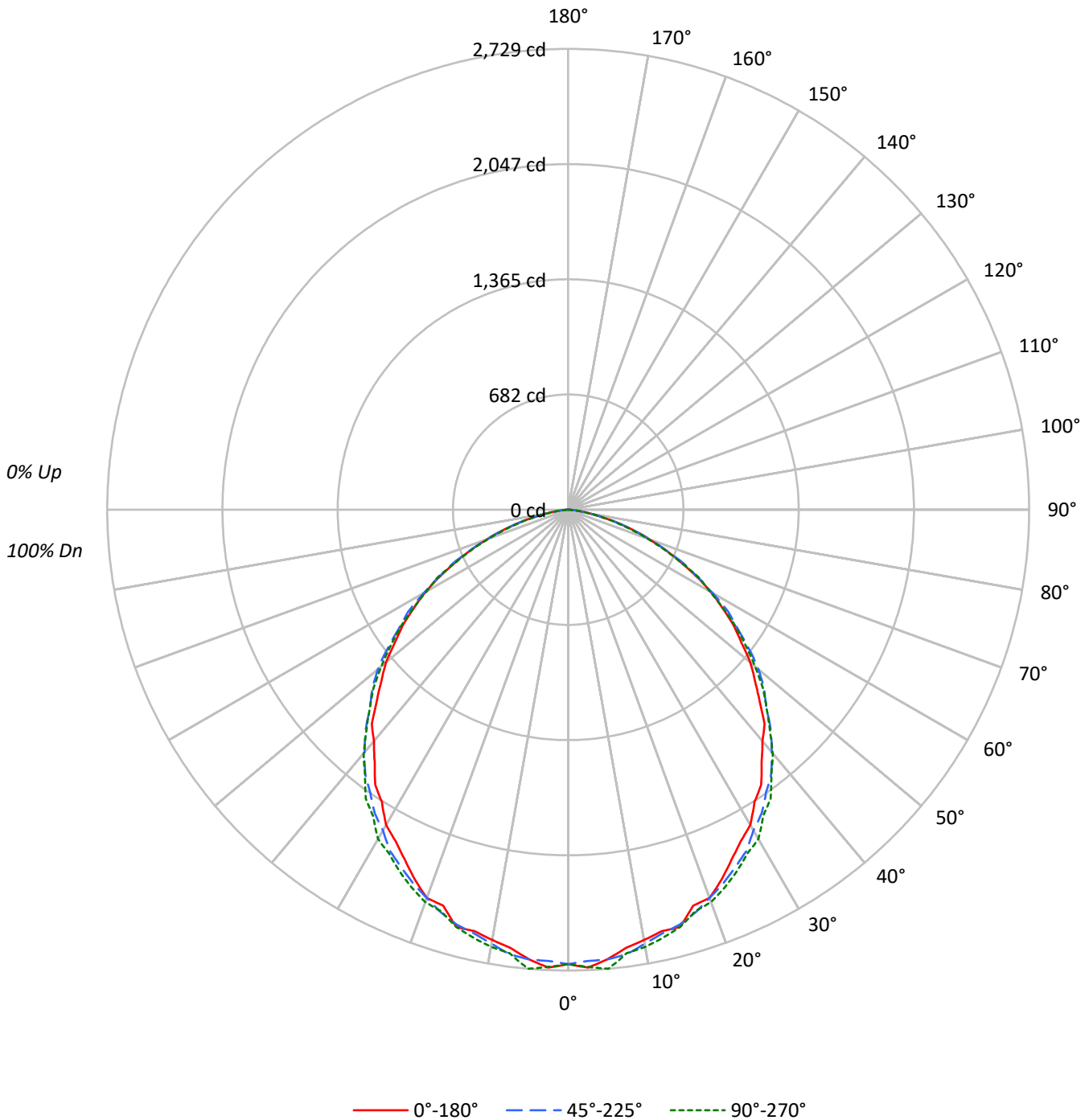
Lumens per Lamp: N/A  
Luminaire Lumens: 6782.0 lumens  
Efficiency: N/A  
Efficacy: 101.8 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
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	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°	7241	7241	7241
5°	7217	7220	7372
10°	7071	7133	7183
15°	7127	7088	7128
20°	7007	7007	7081
25°	6791	6940	7016
30°	6698	6815	6997
35°	6540	6711	6862
40°	6285	6588	6617
45°	6095	6312	6322
50°	5895	6162	6044
55°	5617	5727	5686
60°	5253	5305	5210
65°	4683	4803	4650
70°	4018	4032	3920
75°	3183	3175	3053
80°	2132	2073	1993
85°	1158	1149	1071

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 6475 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	253.1	3.7
10°-20°	717.4	10.6
20°-30°	1074.8	15.8
30°-40°	1273.8	18.8
40°-50°	1276.2	18.8
50°-60°	1083.3	16.0
60°-70°	730.3	10.8
70°-80°	320.9	4.7
80°-90°	52.2	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°	2045.3	30.2
0°-40°	3319.1	48.9
0°-60°	5678.6	83.7
0°-90°	6782.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6782.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2691	2691	2691	2691	2691	
5°	2672	2666	2673	2665	2729	252
15°	2558	2529	2544	2558	2559	713
25°	2287	2300	2337	2368	2363	1057
35°	1991	1997	2043	2090	2089	1236
45°	1602	1632	1659	1701	1661	1239
55°	1197	1189	1221	1212	1212	1065
65°	736	726	754	726	730	732
75°	306	300	305	284	294	328
85°	38	36	37	36	35	54
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2690.9	2690.9	2690.9	2690.9	2690.9
2.5°	2714.2	2693.7	2674.6	2696.8	2710.4
5°	2671.8	2665.6	2672.9	2664.9	2729.1
7.5°	2616.9	2640.9	2654.8	2646.1	2649.9
10°	2587.7	2579.4	2610.3	2631.9	2628.7
12.5°	2556.5	2569.0	2570.7	2594.0	2596.1
15°	2558.2	2528.7	2544.3	2557.5	2558.6
17.5°	2458.8	2490.8	2501.6	2531.8	2494.3
20°	2446.7	2423.4	2446.7	2477.6	2472.7
22.5°	2372.0	2345.9	2395.9	2423.4	2421.7
25°	2287.2	2299.7	2337.2	2367.8	2362.9
27.5°	2212.8	2227.4	2280.9	2323.0	2295.9
30°	2155.5	2148.2	2193.4	2230.9	2251.8
32.5°	2053.0	2079.4	2132.2	2169.4	2149.6
35°	1990.8	1996.7	2042.9	2090.2	2088.8
37.5°	1882.1	1909.5	1974.5	1987.7	1975.5
40°	1789.3	1816.8	1875.5	1889.7	1883.8
42.5°	1720.9	1725.7	1776.1	1792.4	1766.4
45°	1601.7	1631.6	1658.7	1701.4	1661.1
47.5°	1500.2	1514.1	1572.5	1584.0	1562.8
50°	1408.2	1413.0	1471.8	1457.5	1443.6
52.5°	1292.5	1313.0	1346.0	1343.2	1326.9
55°	1197.3	1189.3	1220.6	1212.2	1211.9
57.5°	1083.0	1096.9	1122.6	1109.4	1088.2
60°	976.0	976.3	985.7	970.7	968.0
62.5°	856.8	861.0	863.0	844.6	874.5
65°	735.5	725.8	754.3	725.5	730.3
67.5°	624.0	628.9	626.1	608.0	615.0
70°	510.7	517.0	512.5	492.0	498.2
72.5°	407.2	399.6	404.4	378.7	390.5
75°	306.1	299.8	305.4	283.9	293.6
77.5°	208.5	213.3	209.9	198.4	205.0
80°	137.6	133.8	133.8	127.2	128.6
82.5°	80.3	76.4	75.4	73.3	76.4
85°	37.5	36.5	37.2	36.1	34.7
87.5°	13.6	13.9	13.9	13.2	12.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)