

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: P590446

Luminaire Tested: FSR-24-2-LD4-3HI-35-UNV-93-85-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590446  
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-93-85-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

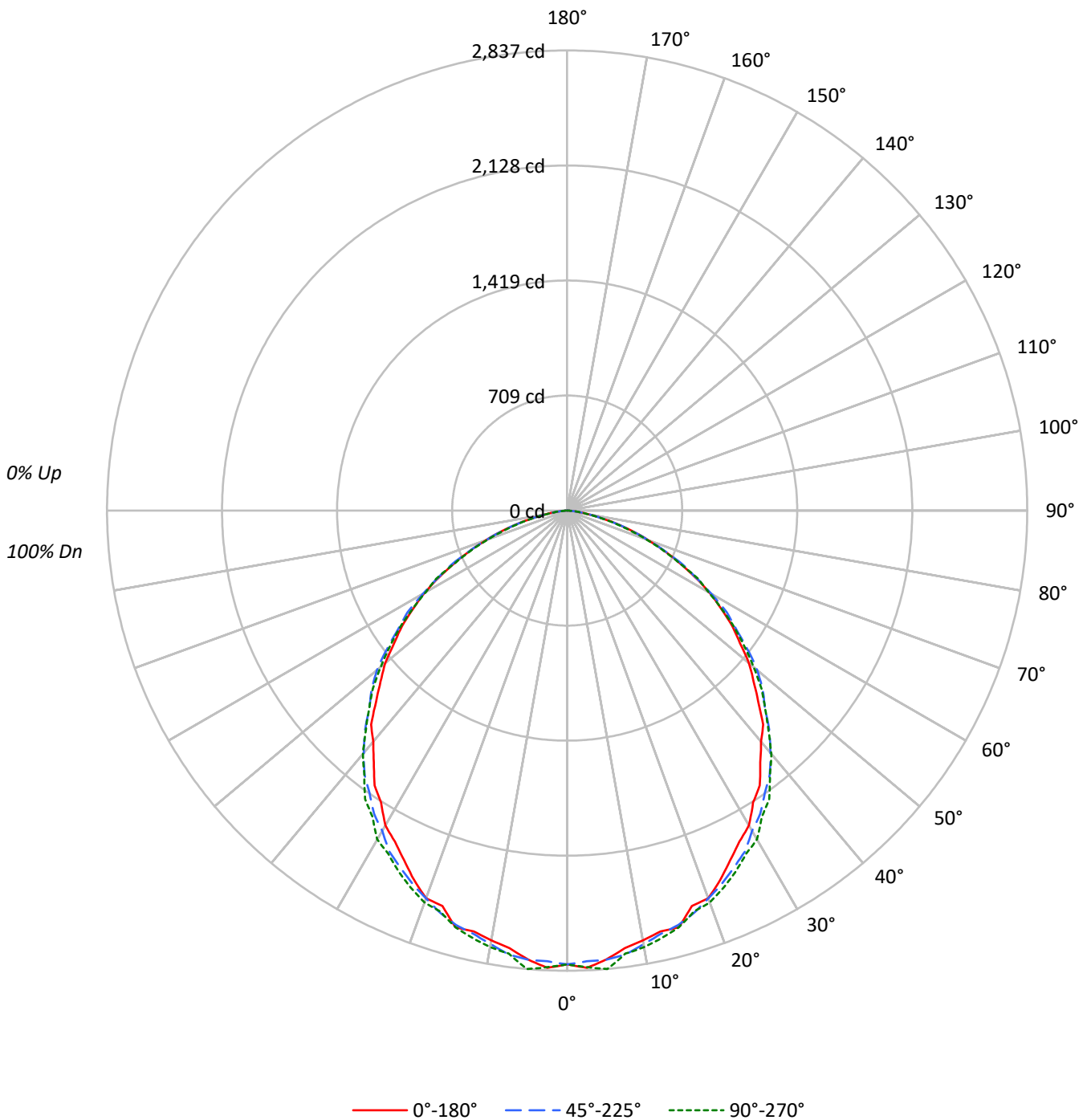
Lumens per Lamp: N/A  
Luminaire Lumens: 7051.0 lumens  
Efficiency: N/A  
Efficacy: 108.8 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 64.8  
Input Voltage (V):  
Input Current (Ain): NR  
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°	7529	7529	7529
5°	7504	7507	7665
10°	7351	7416	7468
15°	7410	7369	7411
20°	7284	7284	7362
25°	7060	7215	7294
30°	6963	7086	7274
35°	6799	6978	7134
40°	6535	6850	6880
45°	6337	6563	6572
50°	6129	6406	6283
55°	5840	5954	5911
60°	5461	5515	5416
65°	4869	4993	4835
70°	4178	4192	4076
75°	3308	3301	3173
80°	2216	2156	2072
85°	1204	1195	1115

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 6732 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	263.2	3.7
10°-20°	745.8	10.6
20°-30°	1117.4	15.8
30°-40°	1324.4	18.8
40°-50°	1326.8	18.8
50°-60°	1126.3	16.0
60°-70°	759.3	10.8
70°-80°	333.6	4.7
80°-90°	54.2	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°	2126.4	30.2
0°-40°	3450.8	48.9
0°-60°	5903.8	83.7
0°-90°	7051.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7051.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2798	2798	2798	2798	2798	
5°	2778	2771	2779	2771	2837	262
15°	2660	2629	2645	2659	2660	741
25°	2378	2391	2430	2462	2457	1099
35°	2070	2076	2124	2173	2172	1285
45°	1665	1696	1724	1769	1727	1288
55°	1245	1236	1269	1260	1260	1107
65°	765	755	784	754	759	761
75°	318	312	318	295	305	341
85°	39	38	39	38	36	57
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2797.7	2797.7	2797.7	2797.7	2797.7
2.5°	2821.9	2800.5	2780.7	2803.8	2817.9
5°	2777.8	2771.3	2778.9	2770.6	2837.4
7.5°	2720.7	2745.6	2760.1	2751.1	2755.0
10°	2690.4	2681.7	2713.9	2736.3	2733.0
12.5°	2657.9	2670.9	2672.7	2696.9	2699.0
15°	2659.7	2629.0	2645.2	2658.9	2660.0
17.5°	2556.4	2589.6	2600.8	2632.2	2593.2
20°	2543.7	2519.5	2543.7	2575.9	2570.8
22.5°	2466.1	2439.0	2491.0	2519.5	2517.7
25°	2377.9	2390.9	2429.9	2461.7	2456.7
27.5°	2300.6	2315.8	2371.4	2415.1	2387.0
30°	2241.0	2233.4	2280.4	2319.4	2341.1
32.5°	2134.5	2161.9	2216.8	2255.5	2234.9
35°	2069.8	2075.9	2124.0	2173.1	2171.7
37.5°	1956.7	1985.3	2052.8	2066.5	2053.9
40°	1860.3	1888.8	1949.9	1964.7	1958.5
42.5°	1789.1	1794.2	1846.6	1863.5	1836.4
45°	1665.2	1696.3	1724.5	1768.9	1727.0
47.5°	1559.8	1574.2	1634.9	1646.8	1624.8
50°	1464.0	1469.1	1530.1	1515.3	1500.9
52.5°	1343.7	1365.1	1399.4	1396.5	1379.5
55°	1244.8	1236.5	1269.0	1260.3	1259.9
57.5°	1125.9	1140.4	1167.1	1153.4	1131.3
60°	1014.7	1015.0	1024.8	1009.3	1006.4
62.5°	890.8	895.1	897.3	878.1	909.2
65°	764.7	754.6	784.2	754.2	759.3
67.5°	648.8	653.8	650.9	632.1	639.4
70°	531.0	537.5	532.8	511.5	518.0
72.5°	423.4	415.4	420.5	393.7	406.0
75°	318.2	311.7	317.5	295.1	305.2
77.5°	216.7	221.8	218.2	206.3	213.1
80°	143.0	139.1	139.1	132.2	133.7
82.5°	83.4	79.5	78.4	76.2	79.5
85°	39.0	37.9	38.7	37.6	36.1
87.5°	14.1	14.4	14.4	13.7	13.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)