

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: P564001

Luminaire Tested: FSR-24-4-LD4-4LO-50-UNV-93-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564001  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/20/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-4-LD4-4LO-50-UNV-93-84-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

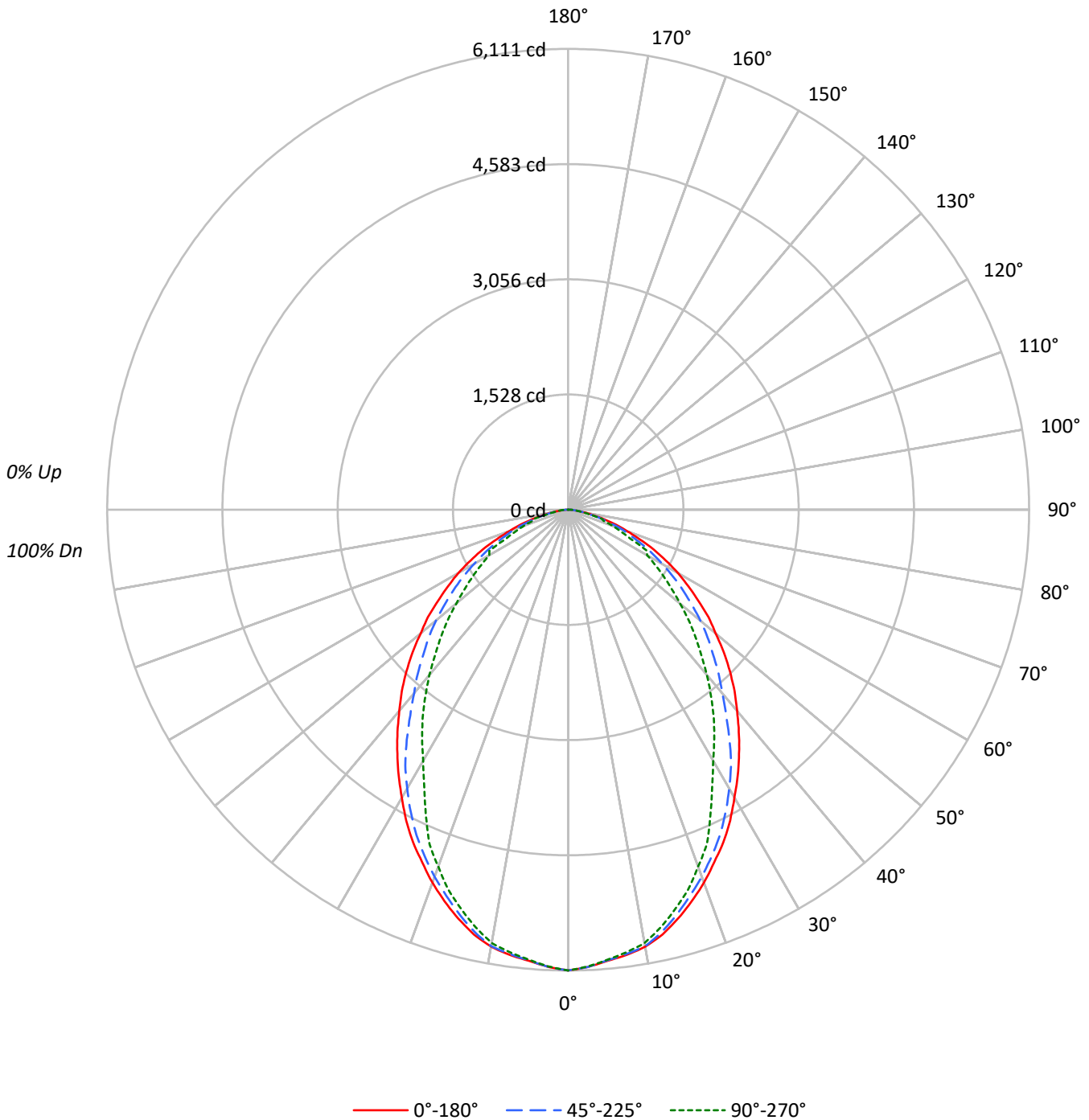
Lumens per Lamp: N/A  
Luminaire Lumens: 11996.0 lumens  
Efficiency: N/A  
Efficacy: 128.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 93.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87				87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75				75
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65				65
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56				56
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50				50
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44				44
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40				40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36				36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33				33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30				30

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

	0°	45°	90°
0°	8222	8222	8222
5°	8110	8101	8091
10°	8040	8030	7972
15°	7823	7744	7636
20°	7536	7414	7212
25°	7226	7069	6628
30°	6849	6629	5971
35°	6486	6127	5523
40°	6117	5583	5025
45°	5767	5162	4543
50°	5338	4791	4052
55°	4938	4342	3629
60°	4524	3878	3251
65°	3981	3396	2879
70°	3279	2974	2446
75°	2608	2277	2387
80°	1752	1642	1533
85°	1090	1309	1527

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5767 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	568.8	4.7
10°-20°	1561.1	13.0
20°-30°	2161.2	18.0
30°-40°	2304.5	19.2
40°-50°	2102.3	17.5
50°-60°	1647.0	13.7
60°-70°	1073.4	8.9
70°-80°	475.6	4.0
80°-90°	102.1	0.9
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°	4291.1	35.8
0°-40°	6595.5	55.0
0°-60°	10344.9	86.2
0°-90°	11996.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	11996.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6111	6111	6111	6111	6111	
5°	6005	5998	5998	5990	5990	570
15°	5616	5616	5560	5503	5482	1579
25°	4867	4839	4761	4592	4465	2235
35°	3949	3921	3730	3447	3363	2469
45°	3031	2967	2713	2487	2388	2334
55°	2105	2042	1851	1632	1547	1888
65°	1250	1180	1067	1088	904	1232
75°	502	466	438	417	459	538
85°	71	78	85	92	99	98
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6110.6	6110.6	6110.6	6110.6	6110.6
2.5°	6068.2	6068.2	6068.2	6061.2	6061.2
5°	6004.6	5997.6	5997.6	5990.5	5990.5
7.5°	5955.2	5948.1	5941.1	5934.0	5919.9
10°	5884.5	5884.5	5877.5	5842.2	5835.1
12.5°	5771.5	5764.5	5736.2	5686.7	5672.6
15°	5616.1	5616.1	5559.6	5503.1	5481.9
17.5°	5446.6	5439.5	5368.9	5312.3	5284.1
20°	5262.9	5248.8	5178.1	5086.3	5036.8
22.5°	5058.0	5058.0	4973.3	4853.2	4803.7
25°	4867.3	4839.0	4761.3	4591.8	4464.6
27.5°	4648.3	4605.9	4521.1	4281.0	4132.6
30°	4408.1	4386.9	4266.8	3956.0	3843.0
32.5°	4182.1	4146.7	4019.6	3694.6	3602.8
35°	3948.9	3920.7	3729.9	3447.4	3362.6
37.5°	3715.8	3680.5	3440.3	3214.2	3108.3
40°	3482.7	3440.3	3178.9	2974.1	2861.0
42.5°	3263.7	3207.2	2952.9	2733.9	2606.7
45°	3030.6	2967.0	2712.7	2486.6	2387.7
47.5°	2797.5	2740.9	2507.8	2274.7	2161.7
50°	2550.2	2500.8	2288.8	2055.7	1935.6
52.5°	2345.3	2267.6	2062.8	1829.6	1730.7
55°	2105.2	2041.6	1850.8	1631.8	1547.1
57.5°	1886.2	1822.6	1646.0	1441.1	1370.5
60°	1681.3	1589.5	1441.1	1264.5	1208.0
62.5°	1455.2	1384.6	1257.4	1109.1	1179.7
65°	1250.4	1179.7	1066.7	1087.9	904.2
67.5°	1024.3	989.0	890.1	791.2	762.9
70°	833.6	791.2	755.9	649.9	621.7
72.5°	664.0	621.7	572.2	515.7	494.5
75°	501.6	466.2	438.0	416.8	459.2
77.5°	346.1	332.0	310.8	289.6	282.6
80°	226.1	219.0	211.9	204.9	197.8
82.5°	134.2	134.2	134.2	134.2	134.2
85°	70.6	77.7	84.8	91.8	98.9
87.5°	42.4	42.4	49.4	56.5	63.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)