

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: P563104

Luminaire Tested: FSR-24-4-LD4-3HI-35-UNV-93-84-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563104  
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-LD4-3HI-35-UNV-93-84-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

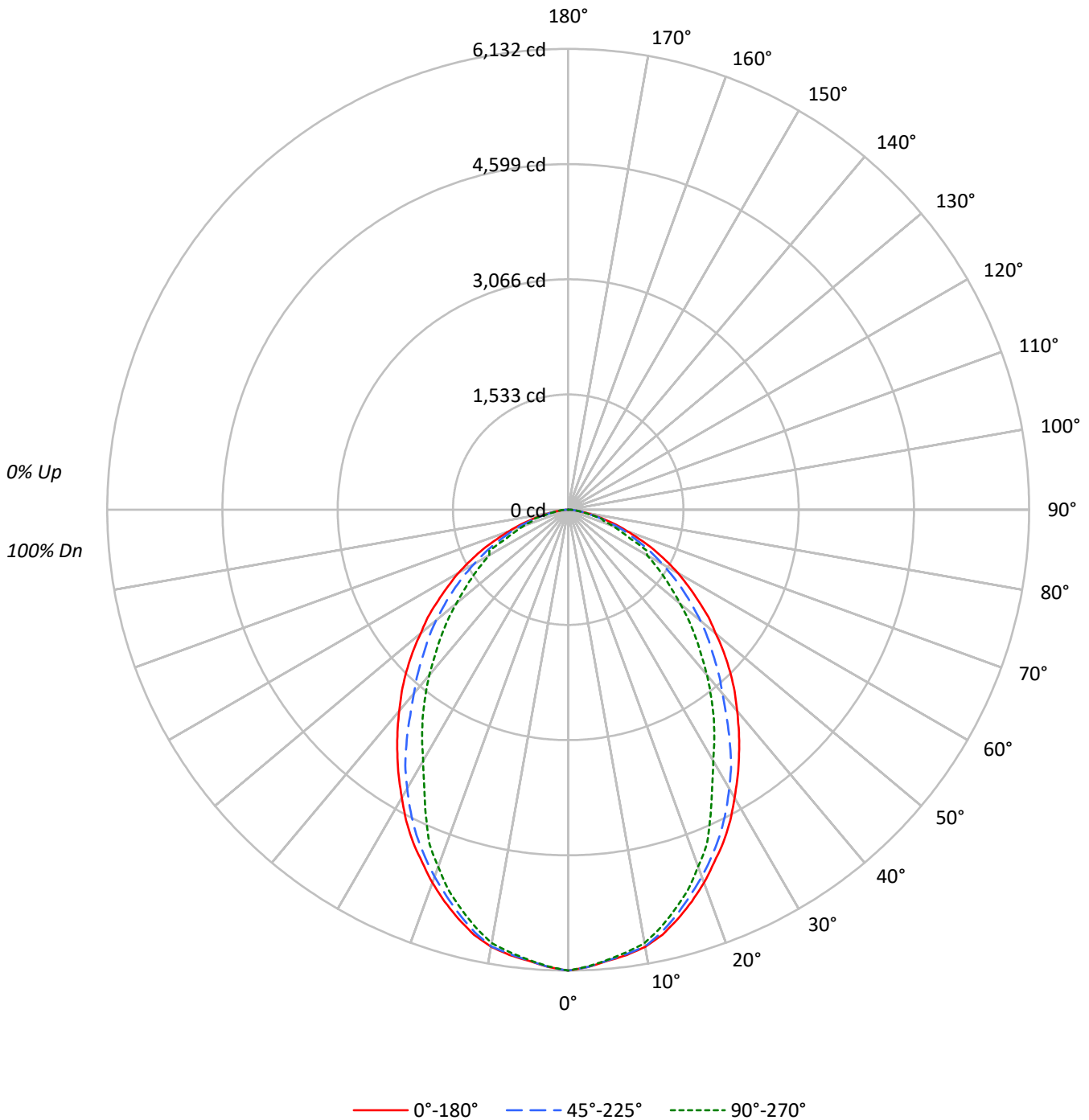
Lumens per Lamp: N/A  
Luminaire Lumens: 12039.0 lumens  
Efficiency: N/A  
Efficacy: 92.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 129.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	0																			
RCR																																														
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																												
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87																												
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75																												
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65																												
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56																												
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50																												
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44																												
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40																												
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36																												
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33																												
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																												

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

	0°	45°	90°
0°	8251	8251	8251
5°	8139	8130	8120
10°	8069	8059	8001
15°	7851	7772	7663
20°	7563	7441	7238
25°	7252	7094	6652
30°	6873	6653	5992
35°	6510	6149	5543
40°	6139	5603	5043
45°	5787	5180	4560
50°	5357	4808	4066
55°	4956	4357	3642
60°	4540	3892	3262
65°	3995	3408	2889
70°	3291	2984	2454
75°	2617	2285	2396
80°	1758	1648	1538
85°	1095	1314	1533

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5787 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	570.9	4.7
10°-20°	1566.7	13.0
20°-30°	2168.9	18.0
30°-40°	2312.7	19.2
40°-50°	2109.9	17.5
50°-60°	1652.9	13.7
60°-70°	1077.3	8.9
70°-80°	477.3	4.0
80°-90°	102.5	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°	4306.4	35.8
0°-40°	6619.2	55.0
0°-60°	10382.0	86.2
0°-90°	12039.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12039.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6132	6132	6132	6132	6132	
5°	6026	6019	6019	6012	6012	572
15°	5636	5636	5580	5523	5502	1584
25°	4885	4856	4778	4608	4481	2243
35°	3963	3935	3743	3460	3375	2478
45°	3041	2978	2722	2496	2396	2343
55°	2113	2049	1858	1638	1553	1895
65°	1255	1184	1070	1092	908	1237
75°	503	468	440	418	461	539
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°	6132.5	6132.5	6132.5	6132.5	6132.5
2.5°	6090.0	6090.0	6090.0	6082.9	6082.9
5°	6026.2	6019.1	6019.1	6012.0	6012.0
7.5°	5976.5	5969.4	5962.4	5955.3	5941.1
10°	5905.6	5905.6	5898.5	5863.1	5856.0
12.5°	5792.2	5785.1	5756.8	5707.1	5693.0
15°	5636.2	5636.2	5579.5	5522.8	5501.5
17.5°	5466.1	5459.0	5388.1	5331.4	5303.0
20°	5281.8	5267.6	5196.7	5104.5	5054.9
22.5°	5076.2	5076.2	4991.1	4870.6	4820.9
25°	4884.7	4856.4	4778.4	4608.2	4480.6
27.5°	4665.0	4622.4	4537.3	4296.3	4147.4
30°	4423.9	4402.6	4282.1	3970.2	3856.7
32.5°	4197.0	4161.6	4034.0	3707.9	3615.7
35°	3963.1	3934.7	3743.3	3459.7	3374.7
37.5°	3729.1	3693.7	3452.6	3225.8	3119.4
40°	3495.2	3452.6	3190.3	2984.7	2871.3
42.5°	3275.4	3218.7	2963.5	2743.7	2616.1
45°	3041.4	2977.6	2722.4	2495.5	2396.3
47.5°	2807.5	2750.8	2516.8	2282.9	2169.4
50°	2559.3	2509.7	2297.0	2063.1	1942.6
52.5°	2353.7	2275.8	2070.2	1836.2	1737.0
55°	2112.7	2048.9	1857.5	1637.7	1552.6
57.5°	1892.9	1829.1	1651.9	1446.3	1375.4
60°	1687.3	1595.2	1446.3	1269.0	1212.3
62.5°	1460.5	1389.6	1261.9	1113.1	1184.0
65°	1254.9	1184.0	1070.5	1091.8	907.5
67.5°	1028.0	992.5	893.3	794.0	765.7
70°	836.6	794.0	758.6	652.2	623.9
72.5°	666.4	623.9	574.3	517.5	496.3
75°	503.4	467.9	439.6	418.3	460.8
77.5°	347.4	333.2	311.9	290.7	283.6
80°	226.9	219.8	212.7	205.6	198.5
82.5°	134.7	134.7	134.7	134.7	134.7
85°	70.9	78.0	85.1	92.2	99.3
87.5°	42.5	42.5	49.6	56.7	63.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)