

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: P563178

Luminaire Tested: FSR-24-4-LD4-3HI-40-UNV-93-94-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563178  
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-40-UNV-93-94-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

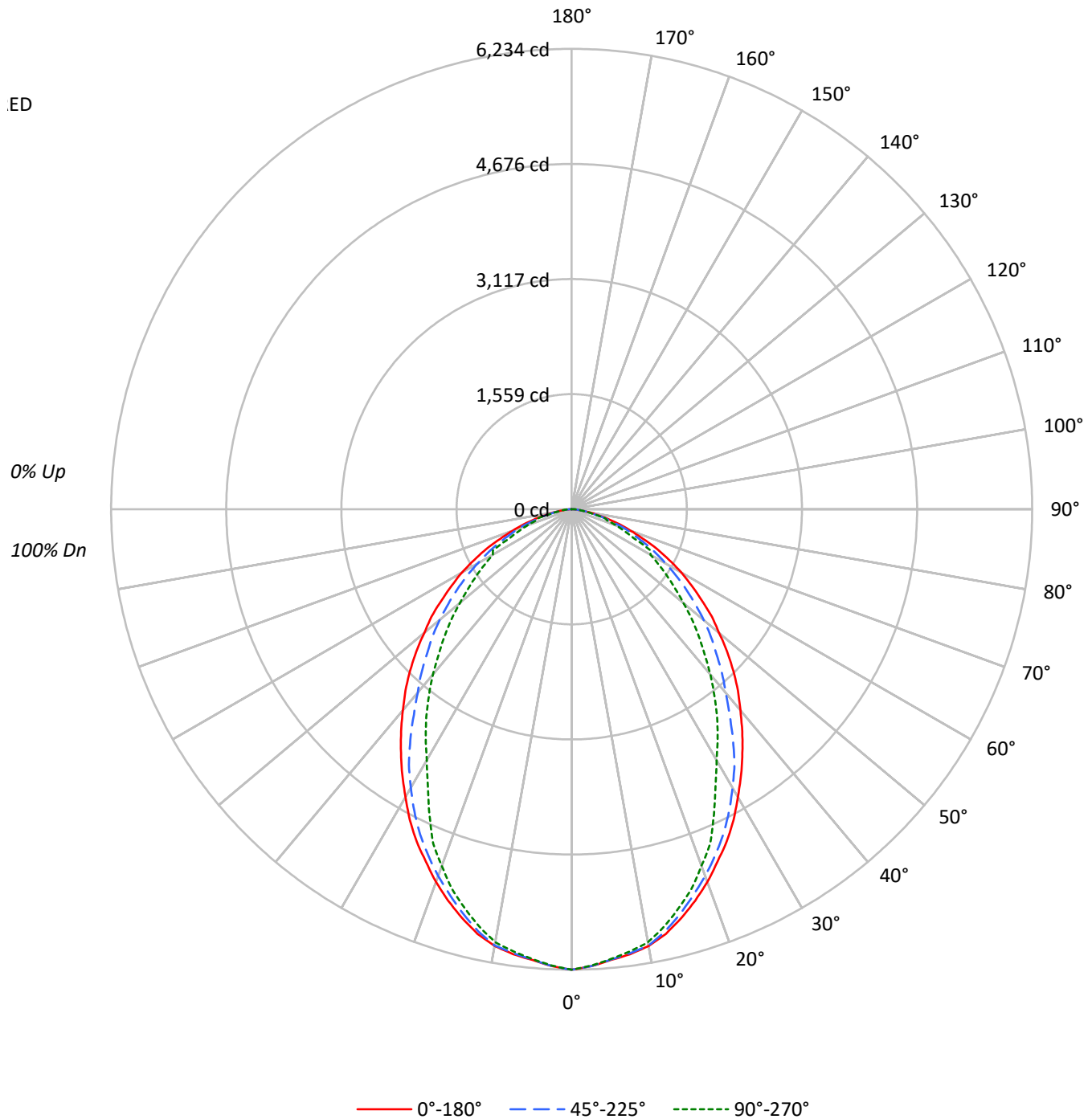
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 12239.0 lumens  
Efficiency: N/A  
Efficacy: 94.4 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	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°	8388	8388	8388
5°	8274	8265	8255
10°	8203	8193	8134
15°	7981	7901	7791
20°	7688	7564	7358
25°	7372	7212	6762
30°	6987	6763	6092
35°	6618	6251	5635
40°	6241	5697	5127
45°	5883	5266	4635
50°	5446	4888	4134
55°	5038	4430	3703
60°	4616	3957	3317
65°	4061	3465	2937
70°	3346	3034	2495
75°	2660	2323	2436
80°	1787	1675	1564
85°	1113	1335	1558

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5883 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	580.3	4.7
10°-20°	1592.7	13.0
20°-30°	2205.0	18.0
30°-40°	2351.1	19.2
40°-50°	2144.9	17.5
50°-60°	1680.4	13.7
60°-70°	1095.2	8.9
70°-80°	485.2	4.0
80°-90°	104.2	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°	4378.0	35.8
0°-40°	6729.1	55.0
0°-60°	10554.4	86.2
0°-90°	12239.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12239.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6234	6234	6234	6234	6234	
5°	6126	6119	6119	6112	6112	582
15°	5730	5730	5672	5614	5593	1611
25°	4966	4937	4858	4685	4555	2280
35°	4029	4000	3806	3517	3431	2519
45°	3092	3027	2768	2537	2436	2382
55°	2148	2083	1888	1665	1578	1926
65°	1276	1204	1088	1110	922	1257
75°	512	476	447	425	468	548
85°	72	79	86	94	101	100
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6234.4	6234.4	6234.4	6234.4	6234.4
2.5°	6191.1	6191.1	6191.1	6183.9	6183.9
5°	6126.3	6119.1	6119.1	6111.9	6111.9
7.5°	6075.8	6068.6	6061.4	6054.2	6039.8
10°	6003.7	6003.7	5996.5	5960.5	5953.3
12.5°	5888.4	5881.2	5852.4	5801.9	5787.5
15°	5729.9	5729.9	5672.2	5614.5	5592.9
17.5°	5556.9	5549.7	5477.6	5419.9	5391.1
20°	5369.5	5355.1	5283.0	5189.3	5138.9
22.5°	5160.5	5160.5	5074.0	4951.5	4901.0
25°	4965.9	4937.1	4857.8	4684.8	4555.1
27.5°	4742.5	4699.2	4612.7	4367.7	4216.3
30°	4497.4	4475.8	4353.3	4036.1	3920.8
32.5°	4266.8	4230.7	4101.0	3769.5	3675.8
35°	4028.9	4000.1	3805.5	3517.2	3430.7
37.5°	3791.1	3755.0	3510.0	3279.4	3171.2
40°	3553.2	3510.0	3243.3	3034.3	2919.0
42.5°	3329.8	3272.2	3012.7	2789.3	2659.5
45°	3092.0	3027.1	2767.6	2537.0	2436.1
47.5°	2854.1	2796.5	2558.6	2320.8	2205.5
50°	2601.9	2551.4	2335.2	2097.3	1974.8
52.5°	2392.8	2313.6	2104.6	1866.7	1765.8
55°	2147.8	2082.9	1888.3	1664.9	1578.4
57.5°	1924.4	1859.5	1679.3	1470.3	1398.2
60°	1715.4	1621.7	1470.3	1290.1	1232.5
62.5°	1484.7	1412.6	1282.9	1131.6	1203.6
65°	1275.7	1203.6	1088.3	1109.9	922.5
67.5°	1045.1	1009.0	908.1	807.2	778.4
70°	850.5	807.2	771.2	663.1	634.2
72.5°	677.5	634.2	583.8	526.1	504.5
75°	511.7	475.7	446.9	425.2	468.5
77.5°	353.2	338.7	317.1	295.5	288.3
80°	230.6	223.4	216.2	209.0	201.8
82.5°	136.9	136.9	136.9	136.9	136.9
85°	72.1	79.3	86.5	93.7	100.9
87.5°	43.2	43.2	50.5	57.7	64.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)