

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: P561060

Luminaire Tested: FSR-12-4-LD4-1LO-40-UNV-93-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561060  
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-12-4-LD4-1LO-40-UNV-93-86-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

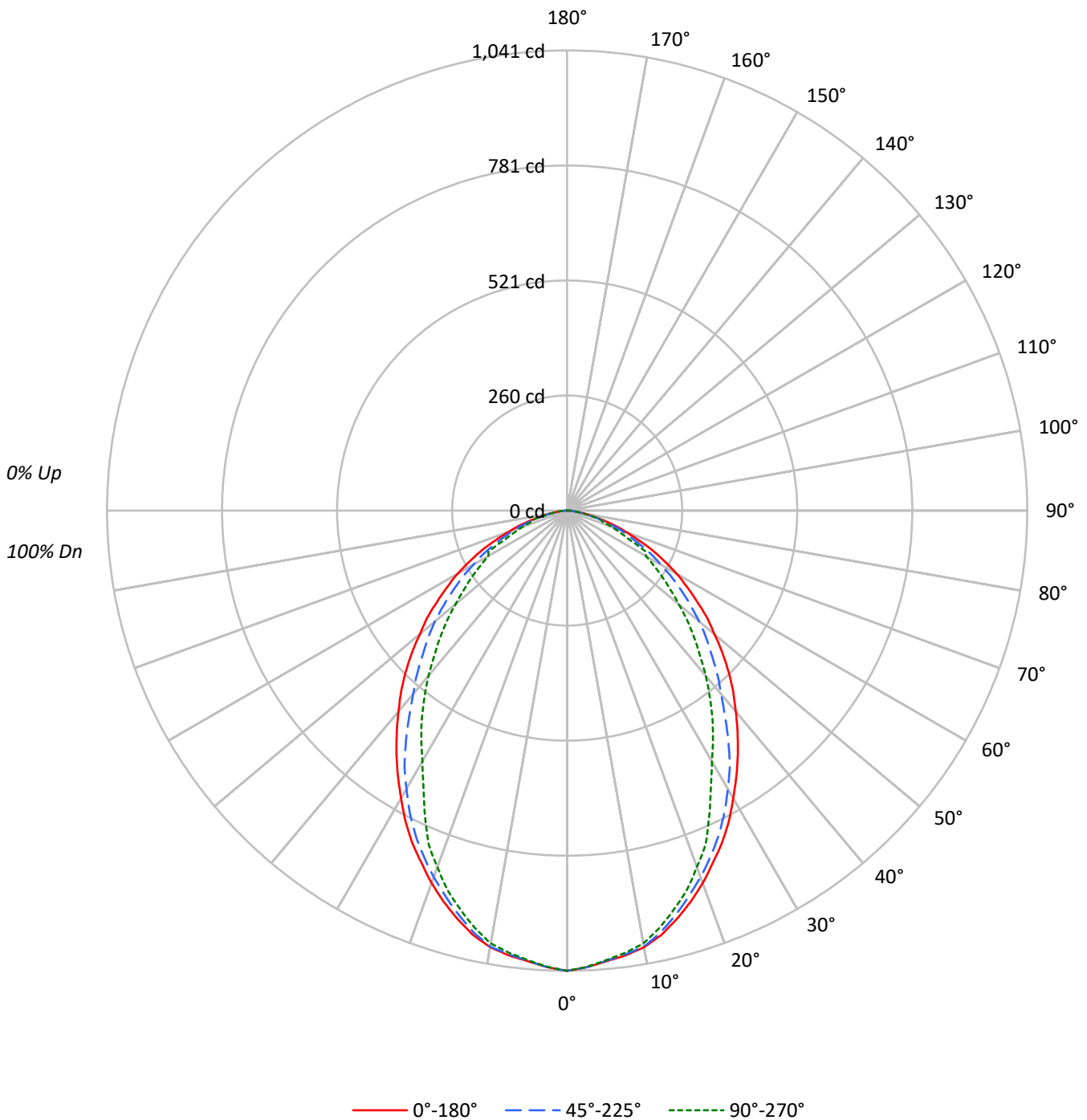
Lumens per Lamp: N/A  
Luminaire Lumens: 2044.0 lumens  
Efficiency: N/A  
Efficacy: 87.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	2802	2802	2802
5°	2764	2760	2757
10°	2740	2737	2717
15°	2666	2639	2602
20°	2568	2527	2458
25°	2462	2409	2259
30°	2334	2259	2035
35°	2211	2088	1882
40°	2085	1903	1713
45°	1965	1759	1548
50°	1819	1633	1381
55°	1683	1480	1237
60°	1542	1322	1108
65°	1357	1158	981
70°	1117	1013	833
75°	889	776	813
80°	597	559	522
85°	371	445	522

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1965 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	96.9	4.7
10°-20°	266.0	13.0
20°-30°	368.2	18.0
30°-40°	392.7	19.2
40°-50°	358.2	17.5
50°-60°	280.7	13.7
60°-70°	182.9	8.9
70°-80°	81.0	4.0
80°-90°	17.4	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°	731.2	35.8
0°-40°	1123.8	55.0
0°-60°	1762.7	86.2
0°-90°	2044.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2044.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1041	1041	1041	1041	1041	
5°	1023	1022	1022	1021	1021	97
15°	957	957	947	938	934	269
25°	829	824	811	782	761	381
35°	673	668	636	587	573	421
45°	516	506	462	424	407	398
55°	359	348	315	278	264	322
65°	213	201	182	185	154	210
75°	86	79	75	71	78	92
85°	12	13	14	16	17	17
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1041.2	1041.2	1041.2	1041.2	1041.2
2.5°	1034.0	1034.0	1034.0	1032.8	1032.8
5°	1023.1	1021.9	1021.9	1020.7	1020.7
7.5°	1014.7	1013.5	1012.3	1011.1	1008.7
10°	1002.7	1002.7	1001.5	995.4	994.2
12.5°	983.4	982.2	977.4	969.0	966.6
15°	956.9	956.9	947.3	937.7	934.1
17.5°	928.0	926.8	914.8	905.2	900.4
20°	896.7	894.3	882.3	866.7	858.2
22.5°	861.8	861.8	847.4	826.9	818.5
25°	829.3	824.5	811.3	782.4	760.7
27.5°	792.0	784.8	770.4	729.4	704.2
30°	751.1	747.5	727.0	674.1	654.8
32.5°	712.6	706.6	684.9	629.5	613.9
35°	672.9	668.0	635.5	587.4	573.0
37.5°	633.1	627.1	586.2	547.7	529.6
40°	593.4	586.2	541.7	506.8	487.5
42.5°	556.1	546.5	503.1	465.8	444.2
45°	516.4	505.5	462.2	423.7	406.8
47.5°	476.7	467.0	427.3	387.6	368.3
50°	434.5	426.1	390.0	350.3	329.8
52.5°	399.6	386.4	351.5	311.8	294.9
55°	358.7	347.9	315.4	278.1	263.6
57.5°	321.4	310.6	280.5	245.6	233.5
60°	286.5	270.8	245.6	215.5	205.8
62.5°	248.0	235.9	214.3	189.0	201.0
65°	213.1	201.0	181.8	185.4	154.1
67.5°	174.5	168.5	151.7	134.8	130.0
70°	142.0	134.8	128.8	110.7	105.9
72.5°	113.1	105.9	97.5	87.9	84.3
75°	85.5	79.4	74.6	71.0	78.2
77.5°	59.0	56.6	53.0	49.4	48.1
80°	38.5	37.3	36.1	34.9	33.7
82.5°	22.9	22.9	22.9	22.9	22.9
85°	12.0	13.2	14.4	15.6	16.9
87.5°	7.2	7.2	8.4	9.6	10.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)