

LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions


Brand: SURE-LITES

Report Number: G2-2303-957-1-R2

Luminaire Tested: SELRA50 / SELRA50SD

Test Date: 3/30/2023

Tested By:



Carlos Y. Sierra  
Senior Technician, Engineering Services

Approved By:



Carlos Bogantes  
Master Technician



NVLAP Lab Code: 200050-0

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**Test Information**

Test Method: LM-79-2019  
 Report Number: G2-2303-957-1-R2  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Test Date: 3/30/2023  
 Issue Date: 4/12/2023  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: SURE-LITES  
 Catalog Number: SELRA50 / SELRA50SD  
 Description: \*\*\*THIS IS A REVISION OF G2-2303-957-1 TO UPDATE THE REPORT\*\*\*  
 ARCHITECTURAL RECESSED EMERGENCY LUMINAIRE (VALUES FOR ONE HEAD ONLY)  
 Light Source: 2 N.A.  
 N.A.. N.A.  
 Ballast/Driver: CLS

**Summary**

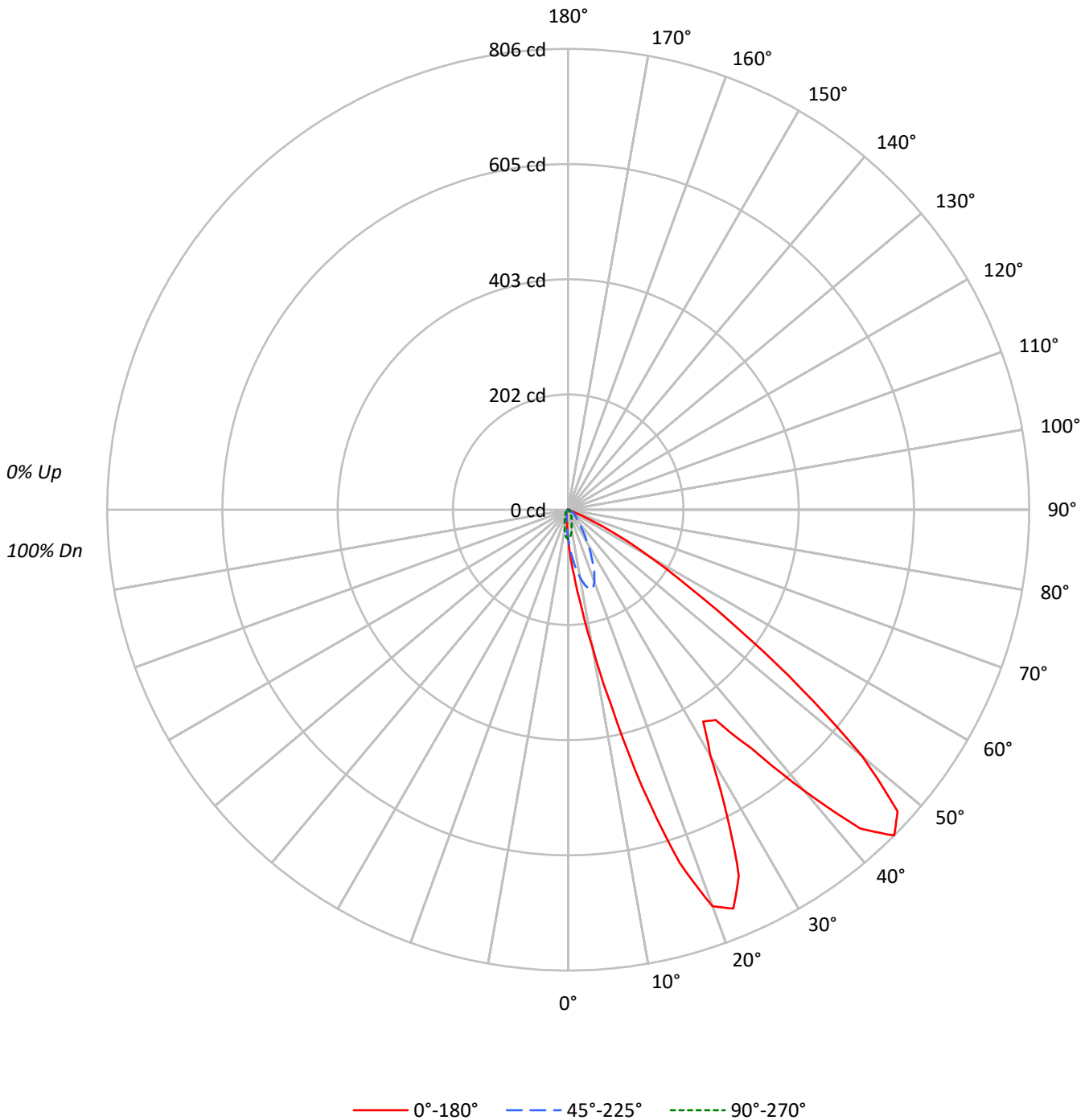
Lumens per Lamp: N/A  
 Luminaire Lumens: 229.1 lumens  
 Efficiency: N/A  
 Efficacy: 109.1 lumens/watt  
 Spacing Criteria (0/90/45): 3 / 0.47 / 1  
 Luminous Opening: Rectangular (W 0.17' x L: 0.25' x H: 0')  
 CIE Type: Direct  
  
 Input Watts (W): 2.1  
 Input Voltage (V): 6.70  
 Input Current (A<sub>in</sub>): 0.314  
 Voltage Rise (V): NR  
 Power Factor: 1  
 Total Harmonic Distortion (THDi): 0%  
 Frequency (hertz): 60  
 Stabilization Time: 0.5 HR  
 Operation Time: 3 HR  
 Ambient Temperature (°C): 25.4  
 Test Distance: 28.75 FT



Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	GONIO 2 IN0056	1/15/2023	7/15/2023
Power Meter	XITRON 2801 IN0072	11/29/2022	11/29/2023
AC Power Source	CHROMA 61604 IN0004	11/29/2022	11/29/2023
DC Power Supply	AGILENT E3634A IN0213	11/29/2022	11/29/2023
Room Thermometer	ONSET IN0144	11/28/2022	11/28/2023

TEST NUMBER: G2-2303-957-1-R2  
CATALOG NUMBER: SELRA50 / SELRA50SD

### 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	111	108	105	102	109	106	103	100	101	99	97	98	96	94	94	93	91				89	
2	103	97	91	87	101	95	90	86	92	87	84	88	85	82	86	83	80				78	
3	96	87	80	75	93	85	79	74	83	77	73	80	75	72	77	74	70				69	
4	88	78	71	65	86	77	70	65	75	68	64	72	67	63	70	66	62				60	
5	82	71	63	57	80	70	62	57	68	61	56	66	60	56	64	59	55				53	
6	76	64	56	50	74	63	56	50	61	55	50	60	54	49	58	53	49				47	
7	71	58	50	45	69	58	50	45	56	49	44	55	49	44	53	48	44				42	
8	66	53	46	40	64	53	45	40	51	45	40	50	44	40	49	44	39				38	
9	62	49	41	36	60	49	41	36	47	41	36	46	40	36	45	40	36				34	
10	58	45	38	33	56	45	38	33	44	37	33	43	37	33	42	37	33				31	

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

	0°	45°	90°	135°	180°
0°	13175	13175	13175	13175	13175
5°	29563	21783	12188	7261	5964
10°	64006	31741	9181	4459	3672
15°	134793	38512	6419	3209	2674
20°	202886	36838	4674	2199	1924
25°	201238	28789	3706	1710	1425
30°	148254	20284	2983	1491	1193
35°	141600	13561	2523	1261	946
40°	216165	9780	2023	1012	674
45°	294463	7672	1827	731	731
50°	269672	6430	1608	804	804
55°	162591	5855	1351	901	450
60°	84733	4133	1033	1033	517
65°	26896	3056	611	611	611
70°	4532	1511	755	755	755
75°	1996	998	998	998	998
80°	1488	1488	1488	0	0
85°	0	0	0	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 47.5°  
 Luminance: 298640 cd/sqm

TEST NUMBER: G2-2303-957-1-R2  
 CATALOG NUMBER: SELRA50 / SELRA50SD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	6.0	2.6
10°-20°	31.2	13.6
20°-30°	51.2	22.4
30°-40°	43.0	18.8
40°-50°	54.6	23.8
50°-60°	33.4	14.6
60°-70°	8.1	3.5
70°-80°	1.2	0.5
80°-90°	0.3	0.1
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°	88.4	38.6
0°-40°	131.4	57.4
0°-60°	219.4	95.8
0°-90°	229.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	229.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	51	51	51	51	51	
5°	114	84	47	28	23	15
15°	504	144	24	12	10	149
25°	706	101	13	6	5	306
35°	449	43	8	4	3	313
45°	806	21	5	2	2	581
55°	361	13	3	2	1	340
65°	44	5	1	1	1	60
75°	2	1	1	1	1	2
85°	0	0	0	0	0	0
90°	0	0	0	0	0	0

TEST NUMBER: G2-2303-957-1-R2  
 CATALOG NUMBER: SELRA50 / SELRA50SD

**CANDELA DISTRIBUTION (FULL):**

	0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°
0°	51	51	51	51	51	51	51	51	51	51	51
2.5°	78	74	75	74	76	75	75	74	76	74	75
5°	114	112	111	112	112	110	109	110	112	109	109
7.5°	166	160	161	160	162	158	162	158	161	157	161
10°	244	242	238	235	239	237	233	229	234	227	227
12.5°	356	351	351	347	351	341	348	336	341	331	327
15°	504	488	493	486	493	482	475	479	474	459	452
17.5°	647	635	635	630	631	627	615	612	603	588	580
20°	738	736	732	728	724	716	706	698	688	673	660
22.5°	755	757	754	748	742	734	725	714	701	685	671
25°	706	708	704	700	691	682	675	662	651	634	621
27.5°	600	609	605	599	591	585	580	567	558	541	531
30°	497	503	501	498	487	485	480	469	462	448	438
32.5°	439	441	438	435	429	423	417	409	400	388	377
35°	449	446	443	438	434	423	412	401	388	375	361
37.5°	526	519	512	508	502	483	465	448	430	406	389
40°	641	630	628	621	607	577	551	526	502	470	442
42.5°	756	749	738	728	706	675	641	606	568	530	493
45°	806	802	792	775	751	720	682	641	596	552	508
47.5°	781	780	768	747	718	691	655	615	569	525	481
50°	671	673	662	632	611	587	558	518	484	448	411
52.5°	512	516	510	490	468	453	433	406	376	349	325
55°	361	365	358	347	329	321	308	289	274	256	240
57.5°	244	247	245	236	226	221	210	204	194	183	176
60°	164	166	164	158	151	152	146	142	134	130	124
62.5°	102	105	104	100	96	99	92	91	86	83	82
65°	44	45	45	43	39	44	39	39	35	36	36
67.5°	16	16	17	16	14	16	15	15	14	14	14
70°	6	6	6	6	6	6	6	6	6	6	6
72.5°	3	4	3	3	3	3	3	3	3	3	3
75°	2	2	2	2	2	2	2	2	2	2	2
77.5°	1	1	1	1	1	1	1	1	1	1	1
80°	1	1	1	1	1	1	1	1	1	1	1
82.5°	1	1	1	1	1	1	1	1	1	1	1
85°	0	0	0	0	0	0	0	0	0	0	0
87.5°	0	0	0	0	0	0	0	0	0	0	0
90°	0	0	0	0	0	0	0	0	0	0	0

TEST NUMBER: G2-2303-957-1-R2  
 CATALOG NUMBER: SELRA50 / SELRA50SD

**CANDELA DISTRIBUTION (continued):**

	11°	12°	13°	14°	15°	22.5°	45°	67.5°	90°	112.5°	135°
0°	51	51	51	51	51	51	51	51	51	51	51
2.5°	74	75	73	73	75	73	66	57	50	43	37
5°	110	110	107	107	108	104	84	63	47	34	28
7.5°	157	157	153	152	155	142	103	68	41	28	21
10°	226	224	217	216	214	196	121	66	35	22	17
12.5°	322	322	310	306	302	265	135	62	29	18	14
15°	444	441	426	418	413	340	144	57	24	15	12
17.5°	566	557	538	525	511	395	144	49	20	12	10
20°	646	629	609	595	575	426	134	41	17	11	8
22.5°	653	636	619	597	577	412	119	34	14	9	7
25°	605	584	570	546	524	369	101	28	13	8	6
27.5°	514	498	484	463	446	312	84	23	11	7	6
30°	426	412	401	384	370	258	68	20	10	7	5
32.5°	366	354	343	328	314	217	55	17	9	6	5
35°	347	333	319	305	291	194	43	15	8	5	4
37.5°	368	349	329	310	292	180	35	13	7	5	4
40°	413	383	357	331	307	170	29	11	6	4	3
42.5°	453	417	382	350	319	160	25	10	6	4	2
45°	464	421	384	347	313	148	21	9	5	3	2
47.5°	437	394	357	321	289	133	18	8	4	3	2
50°	379	340	309	278	251	115	16	7	4	2	2
52.5°	302	272	250	223	203	97	14	6	3	2	2
55°	223	207	189	175	160	78	13	5	3	2	2
57.5°	166	153	145	133	124	61	11	4	2	2	2
60°	117	110	106	98	90	45	8	4	2	2	2
62.5°	78	73	67	64	60	29	7	3	2	2	1
65°	34	32	30	28	26	14	5	2	1	1	1
67.5°	14	13	12	12	12	8	3	2	1	1	1
70°	6	6	6	5	6	5	2	2	1	1	1
72.5°	3	3	3	3	3	2	1	1	1	1	1
75°	2	2	2	2	2	2	1	1	1	1	1
77.5°	1	1	1	1	1	1	1	1	1	1	1
80°	1	1	1	1	1	1	1	1	1	1	0
82.5°	1	1	1	1	1	1	1	1	1	1	0
85°	0	0	0	0	0	0	0	0	0	0	0
87.5°	0	0	0	0	0	0	0	0	0	0	0
90°	0	0	0	0	0	0	0	0	0	0	0

TEST NUMBER: G2-2303-957-1-R2  
 CATALOG NUMBER: SELRA50 / SELRA50SD

**CANDELA DISTRIBUTION (continued):**

	157.5°	180°
0°	51	51
2.5°	34	34
5°	24	23
7.5°	18	18
10°	15	14
12.5°	12	12
15°	10	10
17.5°	8	8
20°	7	7
22.5°	6	6
25°	5	5
27.5°	5	4
30°	4	4
32.5°	4	3
35°	3	3
37.5°	3	2
40°	2	2
42.5°	2	2
45°	2	2
47.5°	2	2
50°	2	2
52.5°	2	2
55°	2	1
57.5°	2	2
60°	1	1
62.5°	1	1
65°	1	1
67.5°	1	1
70°	1	1
72.5°	1	1
75°	1	1
77.5°	0	0
80°	0	0
82.5°	0	1
85°	0	0
87.5°	0	0
90°	0	0



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**CIE UGR TABLE:**

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	29.59	31.04	29.96	31.35	31.66	5.90	7.34	6.27	7.66	7.97
	3H	29.58	30.85	29.95	31.18	31.54	6.59	7.87	6.97	8.19	8.56
	4H	29.51	30.70	29.92	31.05	31.43	7.04	8.22	7.44	8.57	8.95
	6H	29.45	30.53	29.86	30.90	31.29	7.78	8.86	8.19	9.23	9.63
	8H	29.41	30.44	29.84	30.83	31.23	7.99	9.02	8.42	9.41	9.82
	12H	29.37	30.35	29.80	30.74	31.16	8.00	8.98	8.43	9.36	9.79
4H	2H	29.41	30.59	29.81	30.94	31.32	7.23	8.41	7.63	8.76	9.14
	3H	29.40	30.36	29.82	30.76	31.16	8.04	8.99	8.45	9.39	9.80
	4H	29.33	30.18	29.76	30.60	31.04	8.50	9.35	8.94	9.77	10.21
	6H	29.26	29.99	29.72	30.44	30.90	9.31	10.04	9.78	10.49	10.95
	8H	29.21	29.89	29.68	30.34	30.81	9.54	10.22	10.01	10.67	11.14
	12H	29.17	29.77	29.65	30.25	30.73	9.54	10.15	10.03	10.63	11.10
8H	4H	29.21	29.89	29.67	30.33	30.80	8.79	9.48	9.26	9.92	10.39
	6H	29.11	29.67	29.61	30.17	30.65	9.71	10.28	10.21	10.77	11.25
	8H	29.05	29.56	29.57	30.07	30.56	9.97	10.48	10.49	11.00	11.49
	12H	29.00	29.46	29.51	29.95	30.52	9.98	10.44	10.49	10.93	11.50
12H	4H	29.16	29.77	29.65	30.25	30.72	8.80	9.41	9.29	9.89	10.37
	6H	29.05	29.56	29.57	30.07	30.56	9.72	10.23	10.24	10.74	11.23
	8H	29.00	29.46	29.51	29.95	30.52	10.01	10.46	10.52	10.96	11.53