

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: G2-2303-958-1-R2

Luminaire Tested: AP2SQLED30

Test Date: 3/30/2023

Tested By:

A handwritten signature in blue ink, reading "Carlos Y. Sierra".

Carlos Y. Sierra
Senior Technician, Engineering Services

Approved By:

A handwritten signature in blue ink, reading "CAB".

Carlos Bogantes
Master Technician



NVLAP Lab Code: 200050-0

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Test Information

Test Method: LM-79-2019
 Report Number: G2-2303-958-1-R2
 Test Lab: COOPER LIGHTING SOLUTIONS
 Test Date: 3/30/2023
 Issue Date: 4/21/2023
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: SURE-LITES
 Catalog Number: AP2SQLED30
 Description: ***THIS IS A REVISION OF G2-2303-958-1 TO UPDATE THE REPORT***
 AP2SQ LUMINAIRE (VALUES FOR HALF LUMINAIRE ONLY)
 Light Source: N.A.
 N.A.. N.A.
 Ballast/Driver: CLS

Summary

Lumens per Lamp: N/A
 Luminaire Lumens: 99.0 lumens
 Efficiency: N/A
 Efficacy: 100.5 lumens/watt
 Spacing Criteria (0/90/45): 0.81 / 0.27 / 0.38
 Luminous Opening: Circular (Dia: 0.25' x H: 0')
 CIE Type: Direct

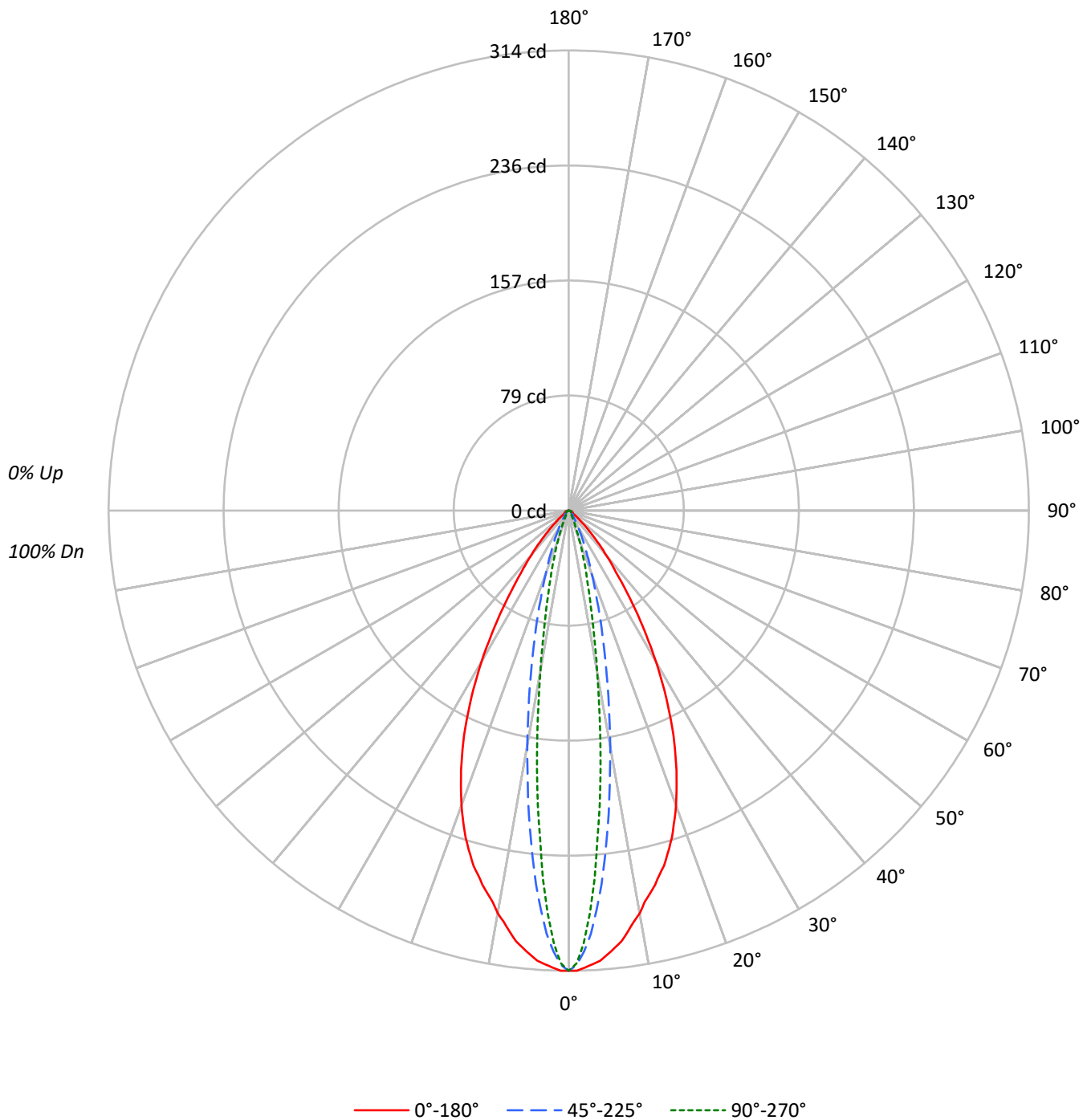
Input Watts (W): 0.985
 Input Voltage (V): 4.02
 Input Current (Ain): 0.245
 Voltage Rise (V): NR
 Power Factor: 1
 Total Harmonic Distortion (THDi): 0%
 Frequency (hertz): 60
 Stabilization Time: 0.5 HR
 Operation Time: 3 HR
 Ambient Temperature (°C): 25.3
 Test Distance: 28.75 FT



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

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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
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102
1	114	111	109	106	111	109	107	105	105	103	102		101	100	99		98
2	108	104	100	97	106	102	99	96	99	96	94		96	94	92		93
3	104	98	93	89	102	96	92	88	94	90	87		91	88	86		89
4	99	92	87	83	97	91	86	83	89	85	82		87	83	81		85
5	95	87	82	78	93	86	81	78	85	80	77		83	79	76		81
6	91	83	77	74	90	82	77	73	81	76	73		79	75	72		78
7	87	79	74	70	86	78	73	70	77	73	69		76	72	69		75
8	84	75	70	66	83	75	70	66	74	69	66		73	69	66		72
9	81	72	67	63	80	72	67	63	71	66	63		70	66	63		69
10	78	69	64	61	77	69	64	61	68	64	60		67	63	60		67

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	68854	68854	68854
5°	66916	56350	49527
10°	62123	36294	24938
15°	56981	20204	10897
20°	49938	10734	4667
25°	40889	5807	1936
30°	30131	3038	1013
35°	19274	1874	803
40°	11450	1145	859
45°	6202	930	930
50°	3070	682	1023
55°	1529	765	765
60°	1316	877	877
65°	1557	519	519
70°	1282	641	641
75°	1694	847	847
80°	1263	0	0
85°	2516	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 6202 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	22.2	22.4
10°-20°	32.6	32.9
20°-30°	22.8	23.0
30°-40°	11.3	11.4
40°-50°	4.9	5.0
50°-60°	2.3	2.4
60°-70°	1.6	1.7
70°-80°	1.1	1.1
80°-90°	0.1	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°	77.5	78.4
0°-40°	88.8	89.8
0°-60°	96.1	97.1
0°-90°	99.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	99.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	314	314	314	314	314	
5°	304	289	256	232	225	28
15°	251	171	89	56	48	70
25°	169	73	24	11	8	76
35°	72	22	7	3	3	46
45°	20	7	3	3	3	16
55°	4	3	2	2	2	4
65°	3	2	1	1	1	3
75°	2	1	1	1	1	2
85°	1	0	0	0	0	1
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

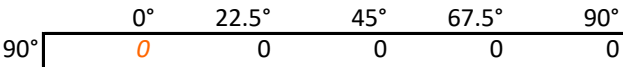
	0°	22.5°	45°	67.5°	90°
0°	314	314	314	314	314
1°	314	313	310	309	309
2°	312	309	301	297	295
3°	310	304	289	278	275
4°	308	297	273	257	252
5°	304	289	256	232	225
6°	300	279	237	210	202
7°	296	268	218	188	178
8°	290	256	199	166	154
9°	284	243	180	143	132
10°	279	229	163	124	112
11°	272	217	146	105	94
12°	267	205	130	90	80
13°	262	193	115	76	67
14°	256	182	102	66	57
15°	251	171	89	56	48
17.5°	234	144	64	38	32
20°	214	118	46	26	20
22.5°	192	94	33	17	13
25°	169	73	24	11	8
27.5°	144	55	17	7	5
30°	119	41	12	5	4
32.5°	94	30	9	4	3
35°	72	22	7	3	3
37.5°	53	17	5	3	3
40°	40	12	4	3	3
42.5°	29	9	4	3	3
45°	20	7	3	3	3
47.5°	13	5	3	3	3
50°	9	4	2	3	3
52.5°	6	3	2	2	3
55°	4	3	2	2	2
57.5°	3	2	2	2	2
60°	3	2	2	2	2
62.5°	3	2	2	2	2
65°	3	2	1	1	1
67.5°	2	2	1	1	1
70°	2	1	1	1	1
72.5°	2	1	1	1	1
75°	2	1	1	1	1
77.5°	2	1	1	1	1
80°	1	1	0	0	0
82.5°	1	0	0	0	0
85°	1	0	0	0	0
87.5°	0	0	0	0	0

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



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CANDELA DISTRIBUTION (continued):



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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	7.02	8.05	7.39	8.36	8.68	4.98	6.01	5.35	6.32	6.64
	3H	8.96	9.87	9.34	10.20	10.57	6.15	7.06	6.53	7.39	7.76
	4H	10.16	11.00	10.57	11.36	11.75	7.17	8.01	7.57	8.36	8.75
	6H	11.08	11.85	11.50	12.23	12.62	7.29	8.06	7.71	8.44	8.83
	8H	11.47	12.19	11.90	12.58	12.99	7.24	7.96	7.67	8.35	8.76
	12H	11.98	12.67	12.41	13.05	13.48	7.18	7.87	7.61	8.25	8.69
4H	2H	6.97	7.81	7.37	8.16	8.55	5.11	5.95	5.51	6.30	6.69
	3H	9.07	9.76	9.48	10.16	10.57	6.71	7.40	7.13	7.81	8.22
	4H	10.46	11.08	10.90	11.50	11.95	7.98	8.60	8.42	9.02	9.47
	6H	11.66	12.18	12.13	12.63	13.11	8.12	8.65	8.59	9.10	9.57
	8H	12.13	12.62	12.61	13.07	13.55	8.05	8.54	8.53	8.99	9.47
	12H	12.72	13.15	13.21	13.64	14.11	7.99	8.41	8.48	8.90	9.38
8H	4H	10.52	11.01	11.00	11.46	11.94	8.24	8.73	8.72	9.18	9.66
	6H	11.79	12.18	12.30	12.68	13.17	8.35	8.74	8.86	9.24	9.73
	8H	12.33	12.67	12.86	13.19	13.69	8.28	8.63	8.81	9.15	9.65
	12H	12.96	13.26	13.49	13.76	14.34	8.23	8.53	8.75	9.03	9.61
12H	4H	10.46	10.89	10.95	11.38	11.85	8.28	8.70	8.77	9.19	9.66
	6H	11.72	12.07	12.25	12.59	13.08	8.37	8.72	8.90	9.24	9.73
	8H	12.28	12.58	12.80	13.08	13.66	8.32	8.62	8.84	9.11	9.69

END OF REPORT