

VANTAGE LIGHTING

TEST REPORT

SCOPE OF WORK

LED Performance Testing

MODEL NUMBER

SUR22L-Y115W-D1MV-GRN

PROJECT NUMBER

G105471856

REPORT NUMBER

105471856CRT-011

ISSUE DATE

1/15/2024

REVISED DATE

None

TEST DATES

1/12/2024 - 1/15/2024

DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

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REPORT NUMBER

105471856CRT-011

MODEL NUMBER(s)

SUR22L-Y115W-D1MV-GRN

REPORT RENDERED TO:

VANTAGE LIGHTING
181 NARRAGANSETT PARK DRIVE
EAST PROVIDENCE, RI 01916
USA

STATEMENT OF LIMITATION

NVLAP Lab Code 100402-0. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. government.

AUTHORIZATION

The testing performed was authorized by signed quote number Qu-01343314-0.

TEST STANDARDS

ANSI/IES LM-79-19: Optical and Electrical Measurements of Solid State Lighting Products

IES LM-79-08: Electrical and Photometric Measurements of Solid State Lighting

ANSI NEMA ANSLG C78.377: 2017: Specifications for the Chromaticity of Solid State Lighting (SSL) Products

In Charge of Testing:



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Reviewer:



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SAMPLE INFORMATION

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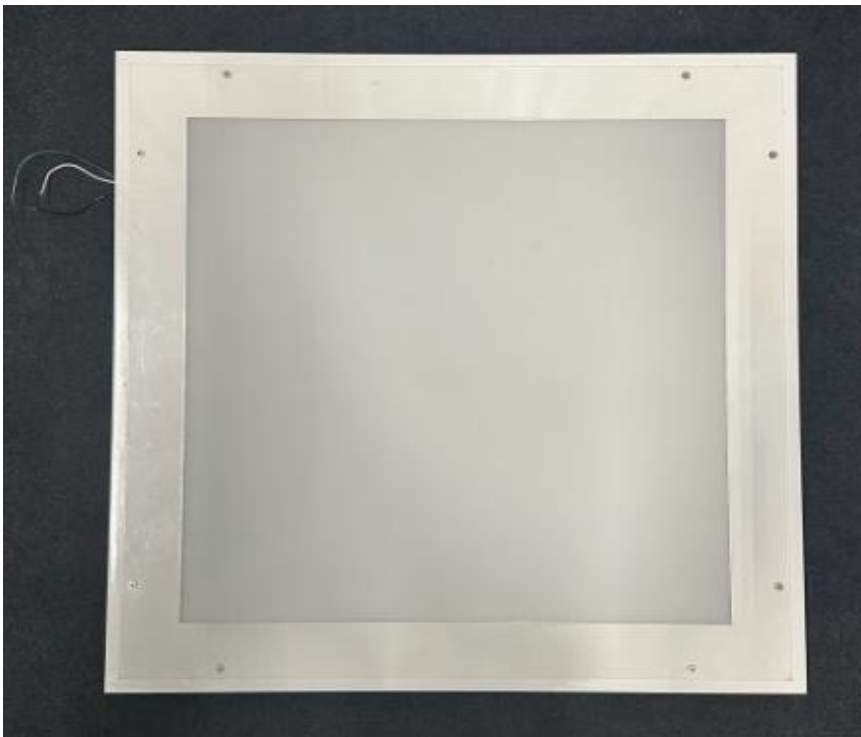
ITEMS RECEIVED

Item No.	Control No.	Model No.	Description	Type	Received Date	Sampling Date
1	CRT2401101319-001B	SUR22L-Y115W-D1MV-GRN	2x2 recessed troffer with diffuse lens (option 3)	Prototype	1/10/2024	N/A

TESTED SAMPLE CONFIGURATIONS

Config No.	Tested Model No.	Item Nos. Utilized
1	SUR22L-Y115W-D1MV-GRN	1

SAMPLE PHOTOS



SUMMARY

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PRODUCT INFORMATION AND SUMMARY OF DATA

Test Configuration 1	
Product Model No.:	SUR22L-Y115W-D1MV-GRN
Product Description:	2x2 recessed troffer with diffuse lens (option 3)
LED Board Model No.:	ACE LEDS LE64C-GRNM-22 22" 520-540nm green
Driver Model No.:	Acuity Optotronic OTI50WUNV 1A4 1DIM DIM-1 J10

Criteria	Results	
	Goniophotometer	Integrating Sphere
Light Output (lumens)	9999.1	10145.7
Input Power (W) @ 120 (Vac)	106.03	105.81
Luminous Efficacy (lm/W)	94.30	95.89
Input Power Factor () @ 120 (Vac)	0.988	0.987

Criteria	Results
Input ATHD (%) @ 120 (Vac)	8.12
Correlated Color Temperature (K)	7001
Color Rendering Index - Ra ()	-17.6
Color Rendering Index - R9 ()	-357.9
Duv ()	0.141
Chromaticity Coordinate (x)	0.225
Chromaticity Coordinate (y)	0.714
Chromaticity Coordinate (u')	0.081
Chromaticity Coordinate (v')	0.578

TEST METHODS

SEASONING IN SAMPLE ORIENTATION - LED PRODUCTS

No seasoning was performed in accordance with ANSI/IES LM-79-19

DUT SAMPLING METHOD

For testing plans, program requirements, or shipments requiring sampling of DUTs or components, the selections for each test were random. All samples are marked with control numbers regardless of being tested.

INTEGRATING SPHERE TESTING

A spectroradiometer and integrating sphere were used to measure the spectral power distribution for photometric and colorimetric data of the DUT. Electrical measurements of the unit were measured using a power analyzer. Each DUT was operated at the rated input voltage of the system in its designated orientation. The ambient temperature and relative humidity was measured at 25°C ± 1.2°C and 10-65% respectively at a position inside of the sphere within 1.5m and at equal height of the DUT. Stabilization procedures to LM-79-19 were followed. The DUT was mounted in a 4π configuration.

TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING

A Type C Mirror Goniophotometer system was used to measure the luminous intensity (candela) at each angle of distribution for the DUT. Electrical measurements of the unit were measured using a power analyzer. Each DUT was operated at the rated input voltage of the system in its designated orientation. The ambient temperature and relative humidity was measured at 25°C ± 1.2°C and 10-65% respectively at a position within 1.5m and at equal height of the DUT. Stabilization procedures to LM-79-19 were followed. The test distance was ≥ 5x the longest luminous dimension of the DUT.

ANSI/IES Technical Memorandums (TM) reported are not NVLAP accredited

TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING

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Test Configuration	Tested Model No.	Pass/Fail/NA
1	SUR22L-Y115W-D1MV-GRN	NA

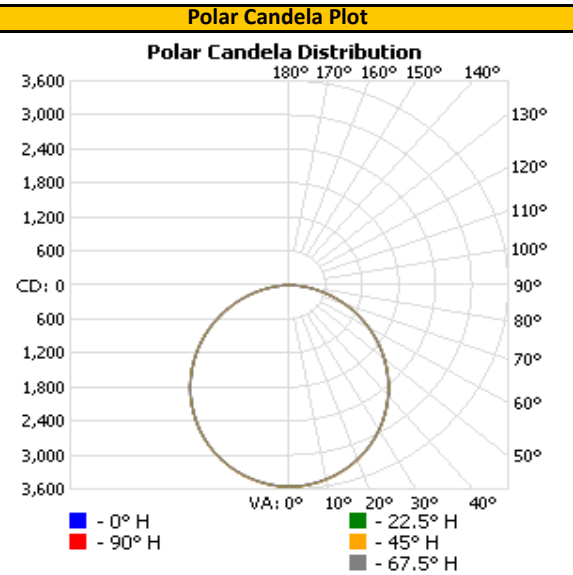
PHOTOMETRIC AND ELECTRICAL MEASUREMENTS

Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()
Up	120.07	893.4	106.03	0.988

Light Output (lm)	Efficacy (lm/W)
9999.1	94.3

LUMINOUS INTENSITY SUMMARY (candela)

Vertical Angle (°)	Horizontal				
	0	22.5	45	67.5	90
0	3553	3553	3553	3553	3553
5	3536	3535	3539	3534	3535
10	3480	3478	3484	3476	3479
15	3392	3393	3395	3389	3390
20	3273	3273	3279	3270	3274
25	3125	3126	3129	3122	3124
30	2950	2950	2951	2945	2946
35	2750	2748	2750	2744	2747
40	2534	2531	2533	2526	2528
45	2293	2295	2296	2289	2293
50	2046	2044	2046	2041	2041
55	1784	1785	1786	1784	1781
60	1516	1513	1518	1514	1513
65	1241	1241	1241	1241	1237
70	971	970	970	971	972
75	699	697	699	699	698
80	441	438	439	437	438
85	195	192	191	188	189
90	0	0	0	0	0
95	0	0	0	0	0
100	0	0	0	0	0
105	0	0	0	0	0
110	0	0	0	0	0
115	0	0	0	0	0
120	0	0	0	0	0
125	0	0	0	0	0
130	0	0	0	0	0
135	0	0	0	0	0
140	0	0	0	0	0
145	0	0	0	0	0
150	0	0	0	0	0
155	0	0	0	0	0
160	0	0	0	0	0
165	0	0	0	0	0
170	0	0	0	0	0
175	0	0	0	0	0
180	0	0	0	0	0



Full luminous intensity matrix found in .IES file

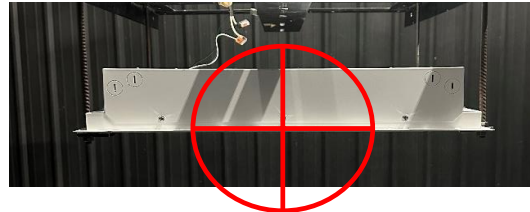
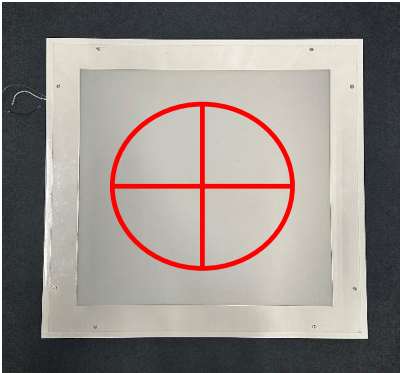
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ORIENTATION AND ALIGNMENT OF DUT

Luminous Opening		
Length (ft)	Width (ft)	Height (ft)
1.56	1.56	0.00
0°-180° H	90°-270° H	0°-180° V

Test Distance (ft)
29.2

PHOTOMETRIC CENTER OF DUT



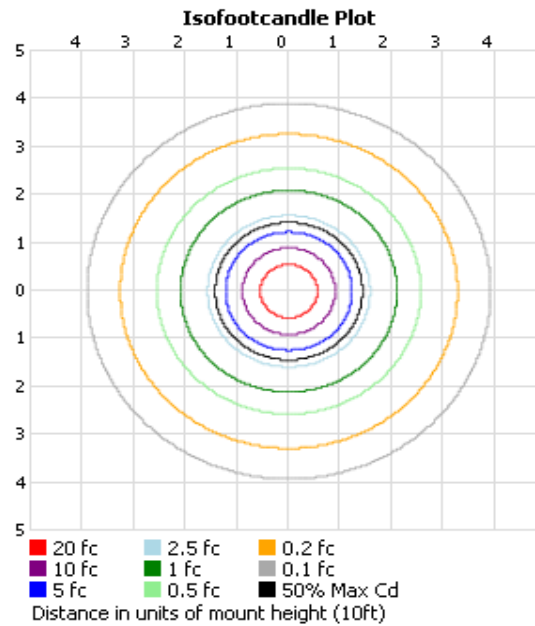
ILLUMINANCE SUMMARY

ILLUMINANCE - Cone Of Light Isoillumination Plot

Illuminance at a Distance

	Center Beam Fc	Beam Width	
1.7ft	1,229 fc	4.9 ft	4.9 ft
3.3ft	326 fc	9.4 ft	9.4 ft
5.0ft	142 fc	14.3 ft	14.3 ft
6.7ft	79.1 fc	19.2 ft	19.2 ft
8.3ft	51.6 fc	23.8 ft	23.7 ft
10.0ft	35.5 fc	28.6 ft	28.6 ft

■ Vert. Spread: 110.1°
■ Horiz. Spread: 110.1°



ZONAL LUMENS

Zonal Lumen Summary

Zone (°)	Lumens	Luminaire
0-30	2,731.6	27.3%
0-40	4,450.4	44.5%
0-60	7,813.2	78.1%
60-90	2,186.0	21.9%
70-100	957.6	9.6%
90-120	0.0	0.0%
0-90	9,999.1	100.0%
90-180	0.0	0.0%
0-180	9,999.1	100.0%

Zone (°)	Lumens	Total	Zone (°)	Lumens	Total
0-10	335.6	3.4%	90-100	0.0	0.0%
10-20	956.7	9.6%	100-110	0.0	0.0%
20-30	1439.3	14.4%	110-120	0.0	0.0%
30-40	1718.8	17.2%	120-130	0.0	0.0%
40-50	1768.8	17.7%	130-140	0.0	0.0%
50-60	1594.0	15.9%	140-150	0.0	0.0%
60-70	1228.4	12.3%	150-160	0.0	0.0%
70-80	739.2	7.4%	160-170	0.0	0.0%
80-90	218.4	2.2%	170-180	0.0	0.0%

INTEGRATING SPHERE TESTING

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Test Configuration	Tested Model No.	Pass/Fail/NA
1	SUR22L-Y115W-D1MV-GRN	NA

PHOTOMETRIC, RADIOMETRIC, COLORIMETRIC, AND ELECTRICAL MEASUREMENTS

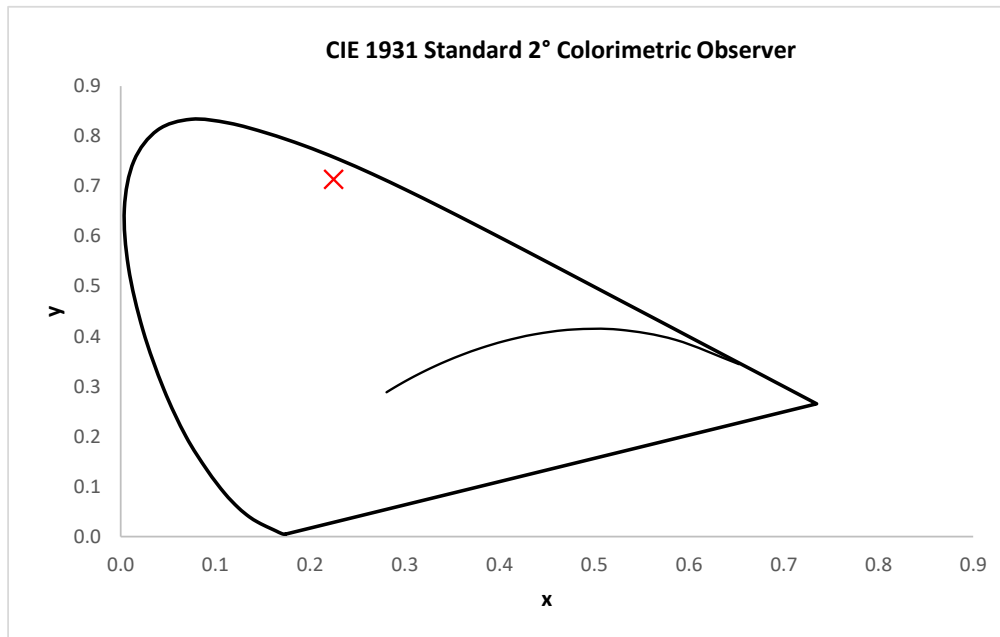
Base Orientation
Up

Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()	Input ATHD (%)
120.07	893.2	105.81	0.987	8.12

Measured at 120.07(Vac)

Light Output (lm)	Efficacy (lm/W)	CCT (K)	CRI - Ra ()	CRI - R9 ()
10145.7	95.9	7001	-17.6	-357.9

Duv ()	1931 Chrom (x)	1931 Chrom (y)	1976 Chrom (u')	1976 Chrom (v')
0.1409	0.225	0.714	0.081	0.578

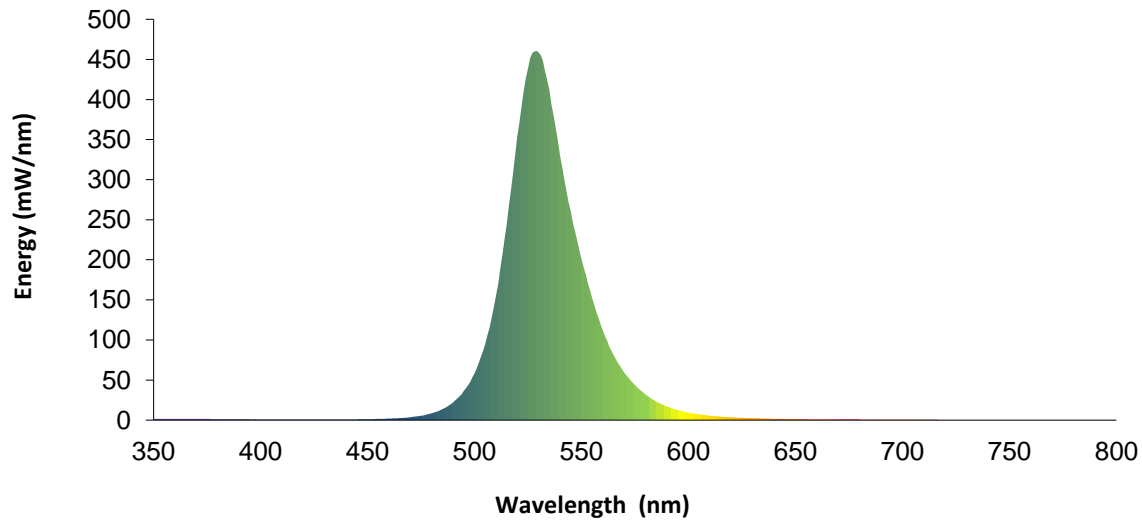


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SPECTRAL POWER DISTRIBUTION

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	1.5	460	1.9	570	59.2	680	0.7
355	1.6	465	2.5	575	43.7	685	0.6
360	1.5	470	3.6	580	31.9	690	0.6
365	1.4	475	5.5	585	23.4	695	0.5
370	1.7	480	8.6	590	16.9	700	0.5
375	1.4	485	13.7	595	12.6	705	0.4
380	1.3	490	22.1	600	9.3	710	0.4
385	1.2	495	36.5	605	7.2	715	0.3
390	1.1	500	58.5	610	5.5	720	0.3
395	1.0	505	95.9	615	4.4	725	0.3
400	0.9	510	154.5	620	3.5	730	0.3
405	0.8	515	244.3	625	2.9	735	0.3
410	0.8	520	353.9	630	2.4	740	0.2
415	0.8	525	439.3	635	2.0	745	0.2
420	0.8	530	458.7	640	1.7	750	0.2
425	0.8	535	411.5	645	1.4	755	0.2
430	0.8	540	330.6	650	1.2	760	0.2
435	0.9	545	260.5	655	1.1	765	0.2
440	0.9	550	200.1	660	0.9	770	0.2
445	1.0	555	152.3	665	0.9	775	0.2
450	1.2	560	111.4	670	0.8	780	0.2
455	1.5	565	81.5	675	0.8	---	---

Spectral radiant flux was measured by 1nm increments. 1nm data is on file.



Portrayed color in graphic is estimated by wavelength (nm) and may not be exact - it is a visual representation only

EQUIPMENT LIST

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#	Equipment	Model No	Control No.	Last Cal	Cal Due
1	LSI Type C Goniophotometer System	6440	---	11/1/2023	2/1/2024
2	Elgar AC Power Supply	CW1251	---	VBU	VBU
3	Yokogawa Power Analyzer	WT210	E464	6/21/2023	6/21/2024
4	Traceable Hygrothermometer	4800	L206	3/7/2023	3/7/2024
5	Omega Thermometer	DPI8-C24	M263	3/9/2023	3/9/2024
6	Tape Measure	Crescent	---	9/21/2021	9/21/2024
7	Elgar AC Power Supply	CW1251	---	VBU	VBU
8	Sorenson DC Power Supply	XFR 150-8	---	VBU	VBU
9	Traceable Thermometer	4800	L204	3/7/2023	3/7/2024
10	Yokogawa Power Analyzer	WT1600	E462	7/31/2023	7/31/2024
11	Fluke Thermometer	53 II	N1324	6/28/2023	6/28/2024
12	Fisher Scientific Stopwatch	14-649-9	N1315	3/2/2023	3/2/2024
13	Current Monitor	411	A197	8/26/2021	8/26/2024
14	3M Integrating Sphere Spectrometer System	CDS 2600	L231	1/10/2024	4/10/2024

The AC power supplies used for testing have a crest factor capable of 0-3.5

REVISION HISTORY

#	Revision Date	Updated By	Reviewed By	Description of Change
---	None	---	---	---
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