

# VISUAL COMFORT AND COMPANY TEST REPORT

**SCOPE OF WORK**

LED Performance Testing

**MODEL NUMBER**

700WSSPRS-LED927

**PROJECT NUMBER**

G104941221

**REPORT NUMBER**

104941221CRT-008

**ISSUE DATE**

7/28/2022

**REVISED DATE**

None

**TEST DATES**

7/14/2022 through 7/28/2022

**DOCUMENT CONTROL NUMBER**

RTTDS-R-AMER-Test-3407

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**REPORT NUMBER**

104941221CRT-008

**MODEL NUMBER(s)**

700WSSPRS-LED927

**REPORT RENDERED TO:**

VISUAL COMFORT AND COMPANY  
7400 LINDER AVE  
SKOKIE, IL 60077

**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 federal government.

**AUTHORIZATION**

The testing performed was authorized by signed quote number Qu-01236637-1.

**TEST STANDARDS**

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

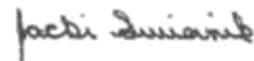
ANSI NEMA ANSLG C78.377: 2017: Specifications for the Chromaticity of Solid State Lighting (SSL) Products

In Charge of Testing:



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Reviewer:



Jacki Swiernik  
Staff Engineer  
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## SAMPLE INFORMATION

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### ITEMS RECEIVED

Item No.	Control No.	Model No.	Description	Type	Received
1	CRT2207111030-001	700WSSPRS-LED927	Spur Wall	Production	6/30/2022

### SAMPLE PHOTOS - TESTED CONFIGURATIONS



**SUMMARY**

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**PRODUCT INFORMATION AND SUMMARY OF DATA**

Product Model No.:	700WSSPRS-LED927
Product Description:	Spur Wall
LED Model No.:	BRIDGELUX Bridgelux DS412 V10 Gen 8
Driver Model No.:	LTF DA12W300C2742-3001
Light Source:	LED

Criteria	Results	
	Goniophotometer	Integrating Sphere
Light Output (lumens)	777.3	729.1
Input Power (W) @ 120 (Vac)	10.91	10.99
Luminous Efficacy (lm/W)	71.23	66.34
Input Power Factor (I) @ 120 (Vac)	0.988	0.987

Criteria	Results
Input ATHD (%) @ 120 (Vac)	8.23
Correlated Color Temperature (K)	2538
Color Rendering Index - Ra (I)	91.9
Color Rendering Index - R9 (I)	66.9
Duv (I)	-0.0009
Chromaticity Coordinate (x)	0.472
Chromaticity Coordinate (y)	0.410
Chromaticity Coordinate (u')	0.270
Chromaticity Coordinate (v')	0.529

**TEST METHODS**

**SEASONING IN SAMPLE ORIENTATION - LED PRODUCTS**

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

**INTEGRATING SPHERE TESTING**

A spectroradiometer and integrating sphere were used to measure the spectral power distribution for photometric and colorimetric data of the EUT. Electrical measurements of the unit were measured using a power analyzer. Each EUT 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 EUT. Stabilization procedures to LM-79-19 were followed. The EUT 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 EUT. Electrical measurements of the unit were measured using a power analyzer. Each EUT 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 EUT. Stabilization procedures to LM-79-19 were followed. The test distance was ≥ 5x the longest luminous dimension of the EUT.

**TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING**

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**PHOTOMETRIC AND ELECTRICAL MEASUREMENTS**

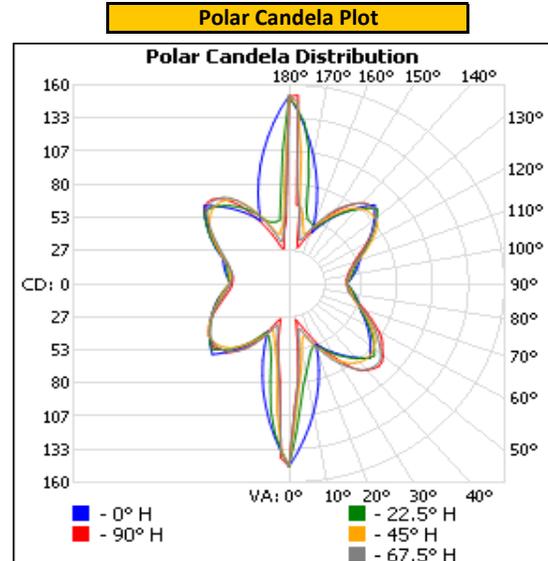
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ( )
Wall Mount	120.11	92.0	10.91	0.988

Light Output (lm)	Efficacy (lm/W)
777.3	71.2

**LUMINOUS INTENSITY SUMMARY (candela)**

Angle (°)	0	22.5	45	67.5	90
0	147	147	147	147	147
5	126	123	120	116	113
10	105	100	96	91	87
15	84	80	76	72	68
20	63	61	59	58	57
25	56	56	56	56	56
30	63	63	63	63	64
35	70	71	71	71	71
40	78	78	78	78	78
45	85	86	86	85	85
50	79	80	80	80	80
55	73	74	74	74	74
60	67	68	68	68	68
65	61	62	62	62	62
70	56	57	57	57	57
75	53	53	53	53	53
80	49	50	50	50	50
85	46	46	46	46	46
90	43	43	43	43	43
95	46	46	46	46	46
100	49	49	49	49	49
105	53	52	52	52	52
110	56	55	55	56	56
115	61	61	61	61	61
120	68	68	68	69	69
125	76	76	76	76	76
130	83	83	84	84	84
135	90	90	91	91	90
140	80	80	81	81	81
145	70	70	71	71	71
150	60	60	61	61	61
155	50	50	51	51	51
160	56	57	58	58	56
165	80	81	81	82	82
170	104	104	105	105	105
175	128	128	128	128	128
180	151	151	151	151	151

Entire luminous intensity matrix found in .IES file



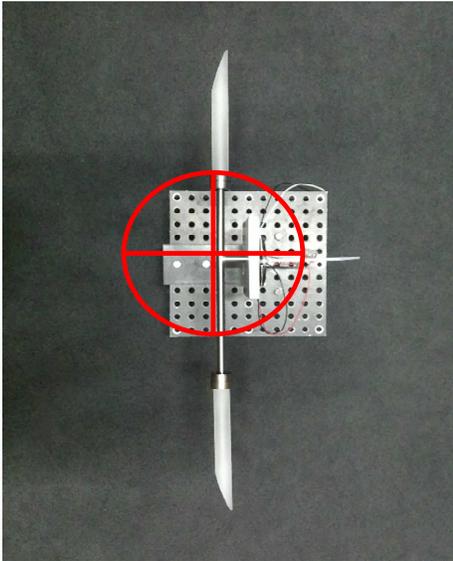
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**ORIENTATION AND ALIGNMENT OF EUT**

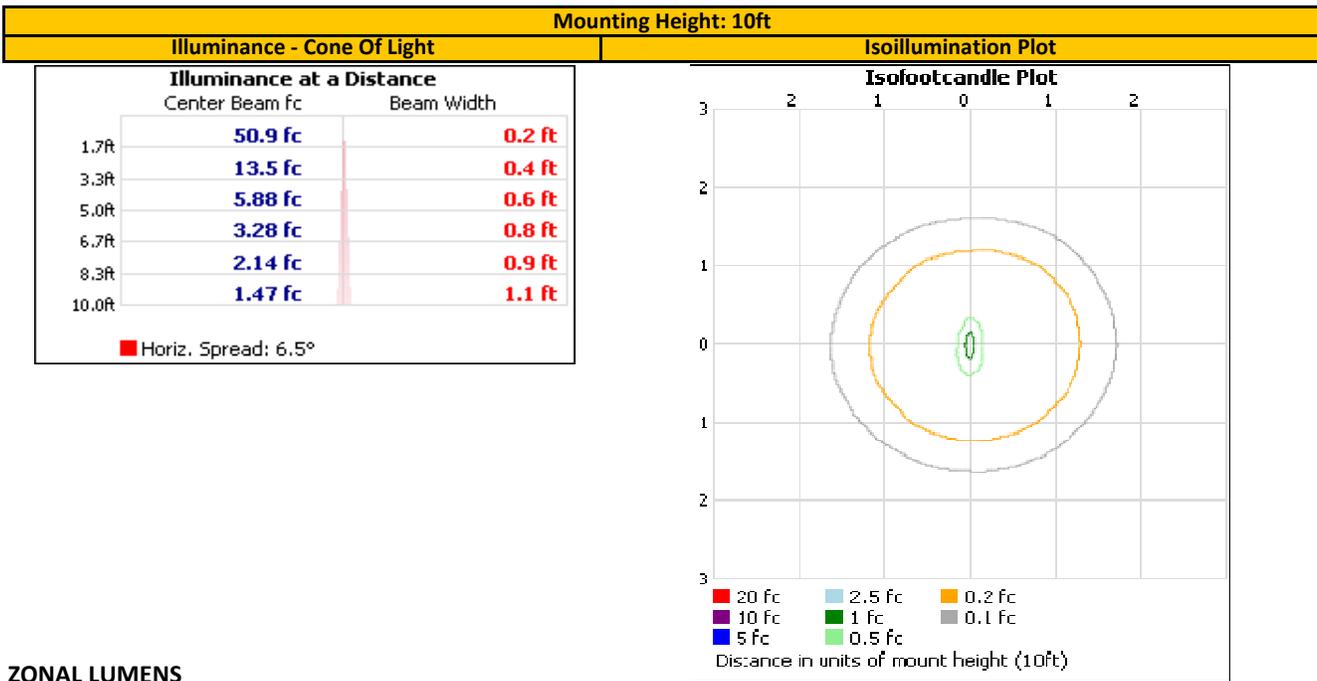
Luminous Opening		
Length (ft)	Width (ft)	Height (ft)
0.08	0.08	2.46
0°-180° H	90°-270° H	0°-180° V

Test Distance (ft)
29.6

**PHOTOMETRIC CENTER OF EUT**



**ILLUMINANCE SUMMARY**



**ZONAL LUMENS**

Zonal Lumen Summary					
Zone	Lumens	Luminaire			
0-30	47.8	6.2%			
0-40	92.6	11.9%			
0-60	222.7	28.6%			
60-90	169.0	21.7%			
70-100	154.2	19.8%			
90-120	157.6	20.3%			
0-90	391.7	50.4%			
90-180	385.6	49.6%			
0-180	777.3	100.0%			
Zone	Lumens	Total	Zone	Lumens	Total
0-10	8.1	1.0%	90-100	48.4	6.2%
10-20	14.3	1.8%	100-110	51.1	6.6%
20-30	25.5	3.3%	110-120	58.0	7.5%
30-40	44.8	5.8%	120-130	66.4	8.5%
40-50	62.3	8.0%	130-140	65.1	8.4%
50-60	67.7	8.7%	140-150	48.0	6.2%
60-70	63.2	8.1%	150-160	27.3	3.5%
70-80	55.8	7.2%	160-170	14.0	1.8%
80-90	50.0	6.4%	170-180	7.1	0.9%

**INTEGRATING SPHERE TESTING**

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**PHOTOMETRIC, RADIOMETRIC, COLORIMETRIC, AND ELECTRICAL MEASUREMENTS**

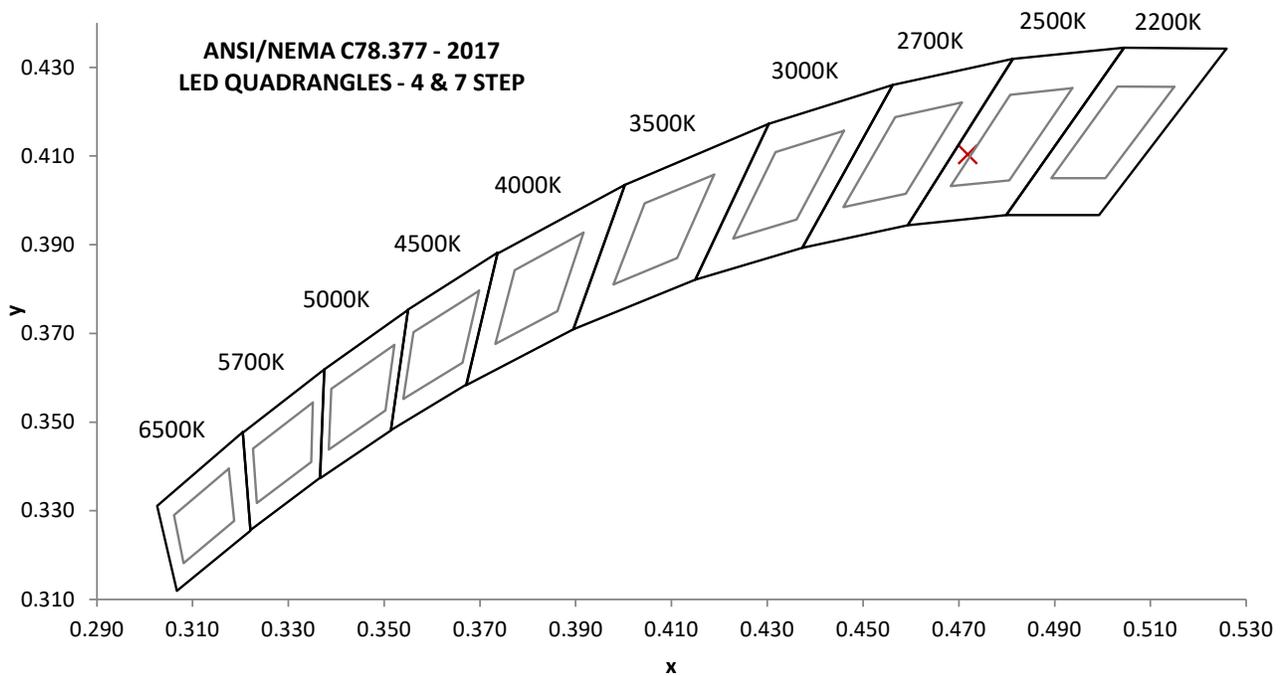
Base Orientation
Wall Mount

Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor (l)	Input ATHD (%)
120.05	92.8	10.99	0.987	8.23

**Measured at 120.05(Vac)**

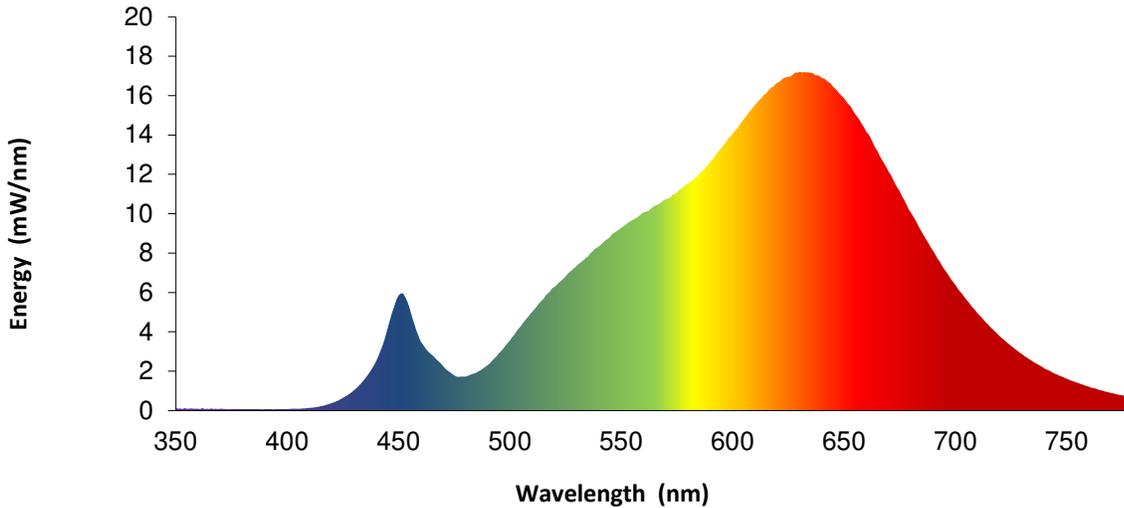
Light Output (lm)	Efficacy (lm/W)	CCT (K)	CRI - Ra (l)	CRI - R9 (l)
729.1	66.3	2538	91.9	66.9

Duv (l)	1931 Chrom (x)	1931 Chrom (y)	1976 Chrom (u')	1976 Chrom (v')
-0.0009	0.472	0.410	0.270	0.529



SPECTRAL POWER DISTRIBUTION

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	0.1	460	3.5	570	10.7	680	10.1
355	0.1	465	2.8	575	11.1	685	9.0
360	0.1	470	2.3	580	11.5	690	8.1
365	0.1	475	1.8	585	12.0	695	7.2
370	0.1	480	1.7	590	12.7	700	6.4
375	0.1	485	1.9	595	13.4	705	5.6
380	0.1	490	2.3	600	14.1	710	4.9
385	0.1	495	2.9	605	14.8	715	4.3
390	0.1	500	3.6	610	15.5	720	3.8
395	0.1	505	4.3	615	16.1	725	3.3
400	0.1	510	5.0	620	16.7	730	2.9
405	0.1	515	5.7	625	16.9	735	2.5
410	0.1	520	6.3	630	17.2	740	2.1
415	0.2	525	6.8	635	17.2	745	1.9
420	0.4	530	7.4	640	16.9	750	1.6
425	0.6	535	7.8	645	16.5	755	1.4
430	1.0	540	8.4	650	15.9	760	1.2
435	1.6	545	8.8	655	15.1	765	1.0
440	2.5	550	9.3	660	14.2	770	0.9
445	4.1	555	9.7	665	13.2	775	0.8
450	5.8	560	10.1	670	12.1	780	0.7
455	5.2	565	10.4	675	11.1	---	---



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	Elgar AC Power Supply	CW1251	---	VBU	VBU
2	Sorenson DC Power Supply	XFR 150-8	---	VBU	VBU
3	Traceable Hygrothermometer	200110913	L206	2/21/2022	2/21/2023
4	Yokogawa Power Analyzer	WT1600	E462	5/21/2022	5/21/2023
5	Fluke Thermometer	53 II	D588	6/13/2022	6/13/2023
6	Current Monitor	411	A197	8/26/2021	8/26/2024
7	3M Integrating Sphere Spectrometer System	CDS 2600	L231	7/1/2022	10/1/2022
8	LSI High Speed Mirror Goniophotometer	6440	---	6/30/2022	9/30/2022
9	Elgar AC Power Supply	CW1251	---	VBU	VBU
10	Yokogawa Power Analyzer	WT210	307-E464	6/21/2022	6/21/2023
11	Traceable Hygrothermometer	4800	L204	2/21/2022	2/21/2023
12	Sorenson DC Power Supply	XG 150-10	---	VBU	VBU
13	Omega Thermometer	DPI8-C24	M263	3/1/2022	3/1/2023
14	Bosch Distance Laser	Pro GLM 20	L210	3/21/2022	3/15/2023
15	Tape Measure	Crescent	---	9/21/2021	9/21/2024

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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**ANNEX A - TM-30 CALCULATIONS**

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**TM-30 REPORT**

