

VISUAL COMFORT AND COMPANY TEST REPORT

SCOPE OF WORK

LED Performance Testing

MODEL NUMBER

SLWS22530N

PROJECT NUMBER

G105408958

REPORT NUMBER

105408958CHI-008

ISSUE DATE

4/20/2023

REVISED DATE

None

TEST DATES

2023-04-12 through 2023-04-19.

DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

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REPORT NUMBER

105408958CHI-008

MODEL NUMBER(s)

SLWS22530N

REPORT RENDERED TO:

VISUAL COMFORT AND COMPANY
7400 LINDER AVE
SKOKIE, IL 60077
USA

STATEMENT OF LIMITATION

NVLAP Lab Code 600186-0. 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-01297671-0.

TEST STANDARDS

IES LM-79 - 2008: Electrical and Photometric Measurements of Solid State Lighting

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

ANSI/IES TM-30-18: IES Method for Evaluating Light Source Color Rendition

In Charge of Testing:



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Reviewer:



Jeff Davis
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SAMPLE INFORMATION

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ITEMS RECEIVED

Item No.	Control No.	Model No.	Description	Type	Received
1	AH04062023065219-002	SLWS22530N	Perle 15 Wall Sconce	Production	4/6/2023

TESTED SAMPLE CONFIGURATIONS

Config No.	Tested Model No.	Item Nos. Utilized
1	SLWS22530N	1

SAMPLE PHOTOS - TESTED CONFIGURATIONS



SUMMARY

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PRODUCT INFORMATION AND SUMMARY OF DATA

Product Model No.:	SLWS22530N
Product Description:	Perle 15 Wall Sconce
LED Model No.:	AA3965-01-0x (Samsung SPMWH12245Q7W8WMSA)
Driver Model No.:	DS25W24VBF1UD-0000 (AA7580)
Light Source:	LED

Criteria	Results
	Goniophotometer
Light Output (lumens)	196.9
Input Power (W) @ 120 (Vac)	5.36
Lumen Efficacy (lm/W)	36.7
Input Power Factor (I) @ 120 (Vac)	0.886

Criteria	Results
Input ATHD (%) @ 120 (Vac)	19.96
Correlated Color Temperature (K)	3000
Color Rendering Index - Ra (I)	93.1
Color Rendering Index - R9 (I)	58.2
Duv (I)	-0.0007
Chromaticity Coordinate (x)	0.436
Chromaticity Coordinate (y)	0.402
Chromaticity Coordinate (u')	0.251
Chromaticity Coordinate (v')	0.520

TEST METHODS

SEASONING IN SAMPLE ORIENTATION - LED PRODUCTS

No seasoning was performed in accordance with IESNA LM-79.

INTEGRATING SPHERE TESTING

A spectroradiometer and integrating sphere were used to measure the spectral distribution for each EUT resulting in photometric and colorimetric data. 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 was measured at a position inside the sphere and stabilization procedures to LM-79 were followed.

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 was measured at a position near the EUT at equal height and stabilization procedures to LM-79 were followed.

*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	SLWS22530N	NA

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS (25°C +/- 1°C)

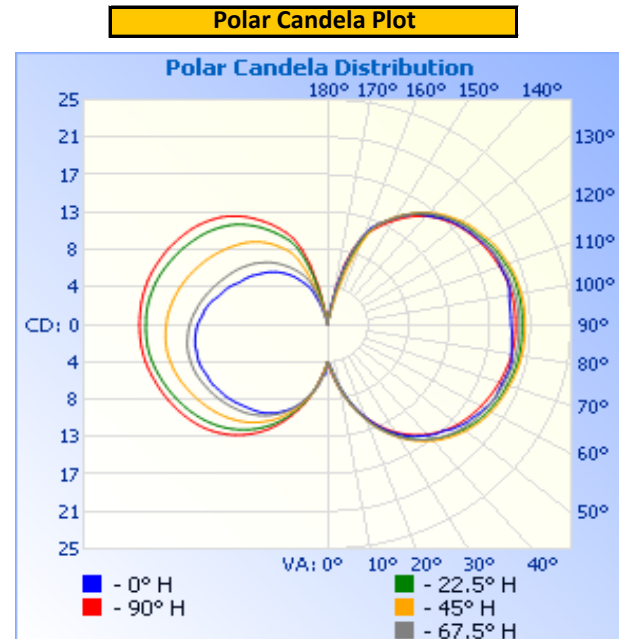
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor (I)
Up	120.07	50.4	5.36	0.886

Light Output (lm)	Lumen Efficacy (lm/W)
196.9	36.7

INTENSITY SUMMARY - CANDELA

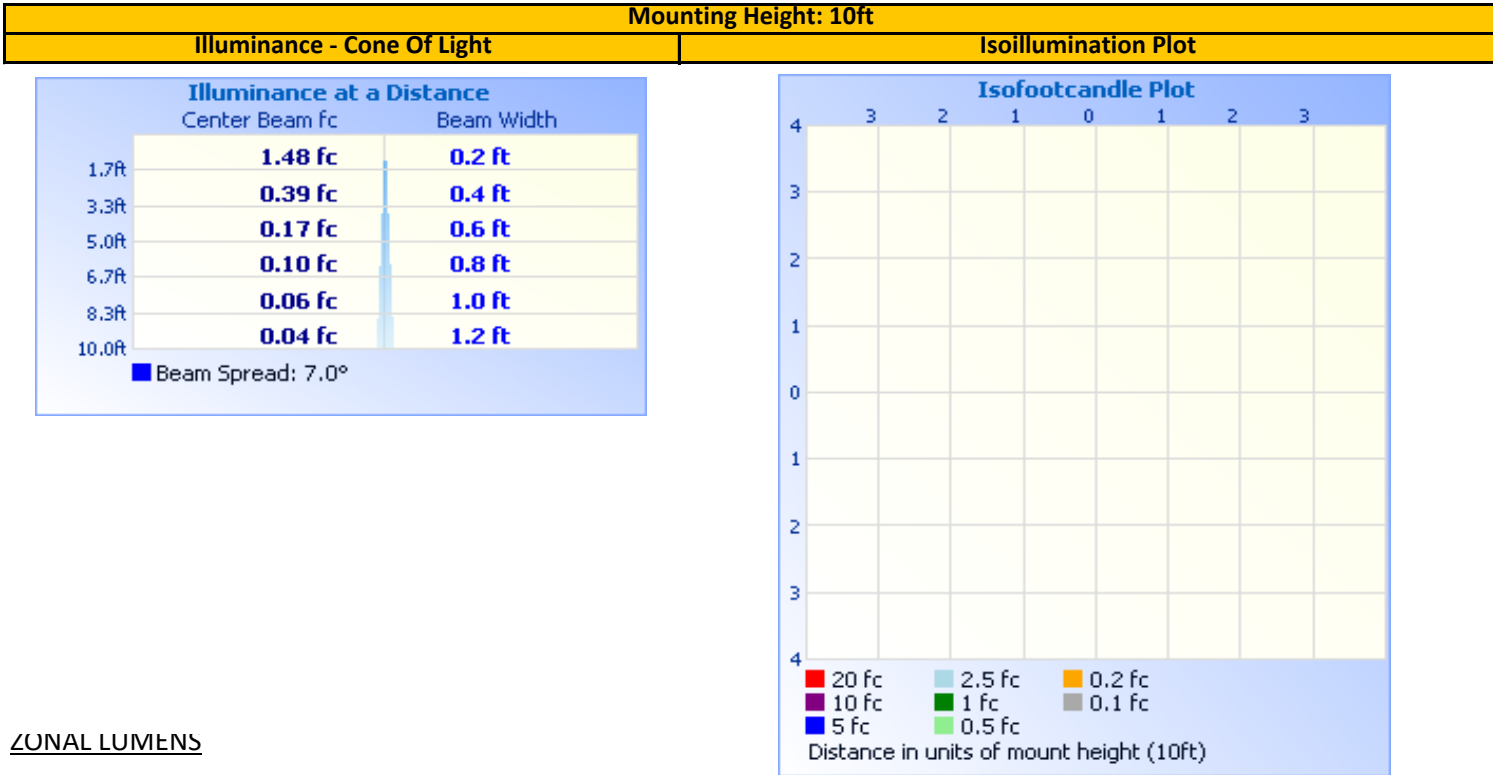
Angle	0	22.5	45	67.5	90
0	4	4	4	4	4
5	5	5	5	5	6
10	7	7	7	7	7
15	9	9	9	9	9
20	11	11	11	11	11
25	13	13	13	13	12
30	14	14	14	14	14
35	15	16	16	16	15
40	16	17	17	17	16
45	17	18	18	17	17
50	18	18	18	18	17
55	18	19	19	18	18
60	19	19	19	19	18
65	19	19	20	19	19
70	19	20	20	19	19
75	19	20	20	19	19
80	19	20	20	20	19
85	19	20	20	20	19
90	19	20	20	20	19
95	19	20	20	20	19
100	19	20	20	20	19
105	19	20	20	19	19
110	19	19	20	19	19
115	19	19	19	19	19
120	18	19	19	18	18
125	18	18	18	18	18
130	17	18	18	18	17
135	17	17	17	17	17
140	16	16	16	16	16
145	15	15	15	15	15
150	14	14	14	14	13
155	12	12	12	12	12
160	10	10	9	10	10
165	7	6	4	6	7
170	2	1	1	1	2
175	0	0	0	0	0
180	0	0	0	0	0

Entire luminous intensity matrix found in .IES file



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ILLUMINANCE SUMMARY



ZONAL LUMENS

Zonal Lumen Summary											
Zone	Lumens	Luminaire	Zone	Lumens	Total	Zone	Lumens	Total			
	0-30	8.8		4.5%	0-10		0.6	0.3%	90-100	19.6	9.9%
	0-40	17.9		9.1%	10-20		2.6	1.3%	100-110	18.5	9.4%
	0-60	45.6		23.1%	20-30		5.6	2.9%	110-120	16.7	8.5%
	60-90	56.4		28.7%	30-40		9.1	4.6%	120-130	14.3	7.3%
	70-100	58.5		29.7%	40-50		12.4	6.3%	130-140	11.4	5.8%
	90-120	54.8		27.9%	50-60		15.3	7.8%	140-150	8.1	4.1%
	0-90	102.0		51.8%	60-70		17.5	8.9%	150-160	4.8	2.4%
	90-180	94.9		48.2%	70-80		19.1	9.7%	160-170	1.4	0.7%
	0-180	196.9		100.0%	80-90		19.8	10.1%	170-180	0.0	0.0%

INTEGRATING SPHERE TESTING

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Test Configuration	Tested Model No.	Pass/Fail/NA
1	SLWS22530N	NA

PHOTOMETRIC, COLORIMETRIC, AND ELECTRICAL MEASUREMENTS (25°C +/- 1°C)

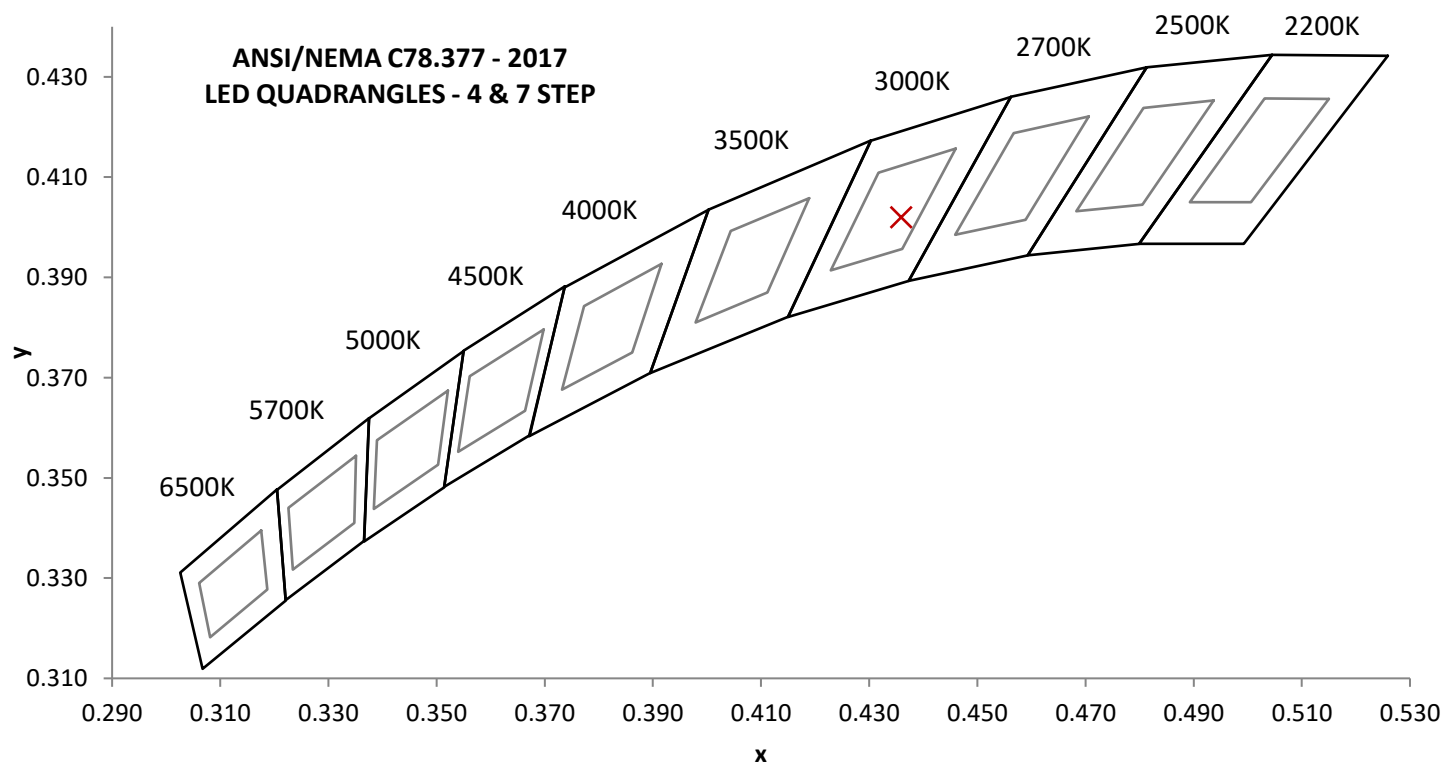
Base Orientation
Up

Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor (I)	Input ATHD (%)
120.01	48.8	5.35	0.915	19.96

Measured at 120.01(Vac)

CCT (K)	CRI - Ra (I)	CRI - R9 (I)
3000	93.1	58.2

Duv (I)	1931 Chrom (x)	1931 Chrom (y)	1976 Chrom (u')	1976 Chrom (v')
-0.0007	0.436	0.402	0.251	0.520

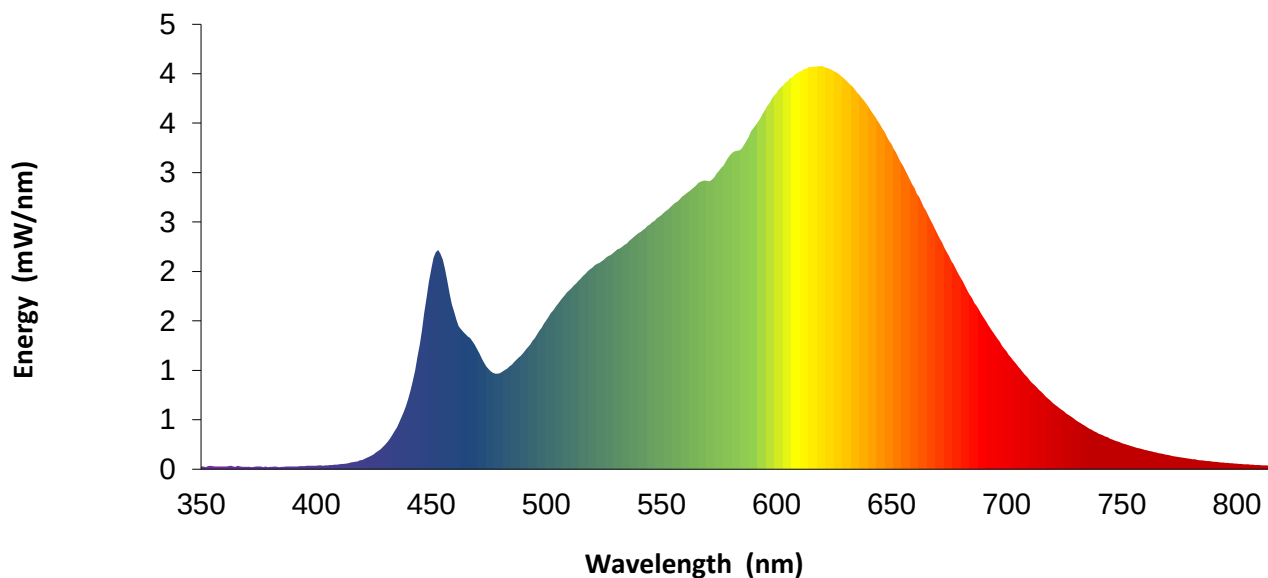


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SPECTRAL DISTRIBUTION OVER WAVELENGTHS

nm	mW/nm		nm	mW/nm		nm	mW/nm		nm	mW/nm
350	0.0		460	1.6		570	2.9		680	1.9
355	0.0		465	1.4		575	3.0		685	1.7
360	0.0		470	1.2		580	3.2		690	1.5
365	0.0		475	1.0		585	3.2		695	1.4
370	0.0		480	1.0		590	3.4		700	1.2
375	0.0		485	1.1		595	3.6		705	1.0
380	0.0		490	1.2		600	3.8		710	0.9
385	0.0		495	1.3		605	3.9		715	0.8
390	0.0		500	1.5		610	4.0		720	0.7
395	0.0		505	1.7		615	4.1		725	0.6
400	0.0		510	1.8		620	4.1		730	0.5
405	0.0		515	1.9		625	4.0		735	0.4
410	0.0		520	2.0		630	3.9		740	0.4
415	0.1		525	2.1		635	3.8		745	0.3
420	0.1		530	2.2		640	3.7		750	0.3
425	0.2		535	2.3		645	3.5		755	0.2
430	0.2		540	2.4		650	3.3		760	0.2
435	0.4		545	2.5		655	3.1		765	0.2
440	0.7		550	2.6		660	2.8		770	0.1
445	1.3		555	2.7		665	2.6		775	0.1
450	2.0		560	2.8		670	2.4		780	0.1
455	2.1		565	2.9		675	2.2		---	---

Without correction of sample absorption.



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	Yokogawa Power Meter	WT310E	CHI0664	4/3/2023	4/3/2024
2	Omega Thermometer	DPI8-C24	146920	10/4/2022	10/4/2023
3	LSI High Speed Mirror Goniometer	6440T	146928	VBUE	VBUE
4	Omega Thermohygrometer	OM-CP-RFPRHTEMP2000A	CHI0780	4/3/2023	4/3/2024
5	Chroma Power Supply	61604	CHI0371	VBUE	VBUE
8	Omega Thermohygrometer	OM-CP-RFPRHTEMP2000A	CHI0778	4/3/2023	4/3/2024
9	Labsphere Spectroradiometer	CDS2600	CHI0539	VBUE	VBUE
10	3 Meter Sphere	SPR600	CHI0088	VBUE	VBUE
11	Elgar AC Power Supply	CW1251	146112	VBUE	VBUE
12	Sorenson DC Power Supply	XFR150-8	146846	VBUE	VBUE
13	Yokogawa Power Meter	WT1600	146767	4/4/2023	4/4/2024
17	Omega thermometer	USB TC08	EQAH002615	4/4/2023	4/4/2024
26	Xitron Power Analyzer	XT-2640	CHI0611	7/6/2022	7/6/2023

Note: Standard sources listed above are traceable to NIST: National Institute of Standards and Technology

REVISION HISTORY

#	Revision Date	Updated By	Reviewed By	Description of Change
---	None	---	---	---
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Test Configuration	Tested Model No.	Pass/Fail/NA
1	SLWS22530N	NA

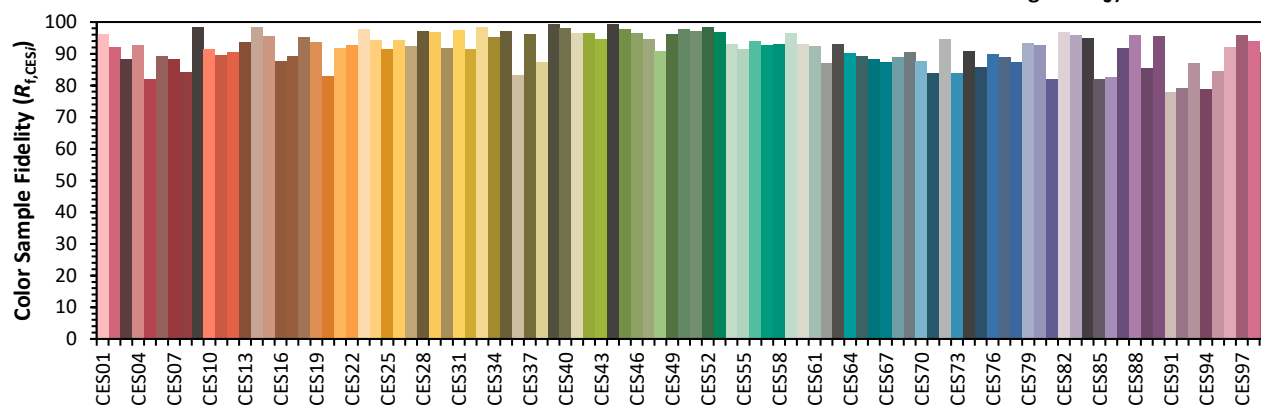
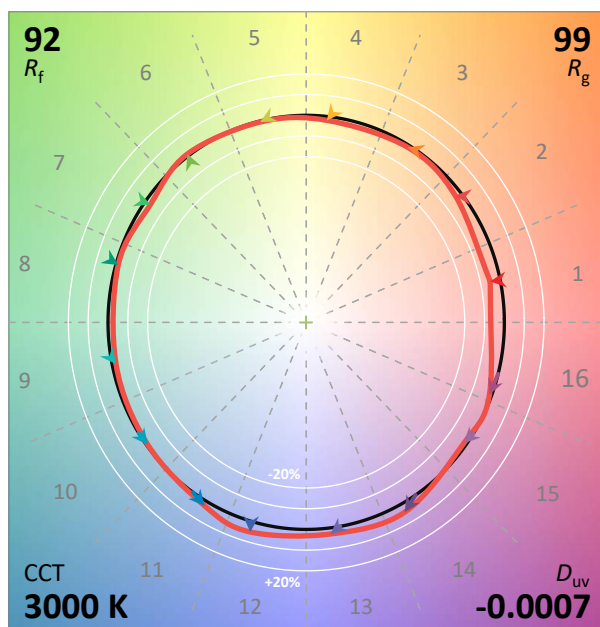
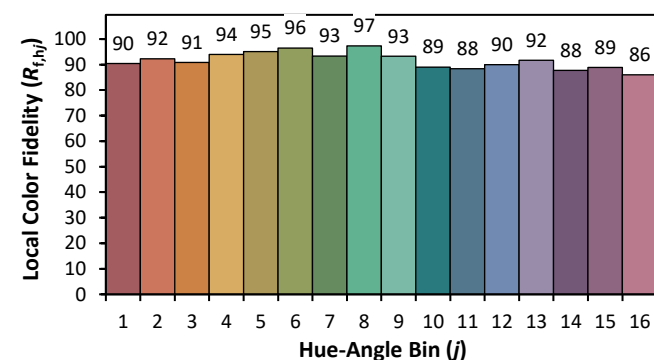
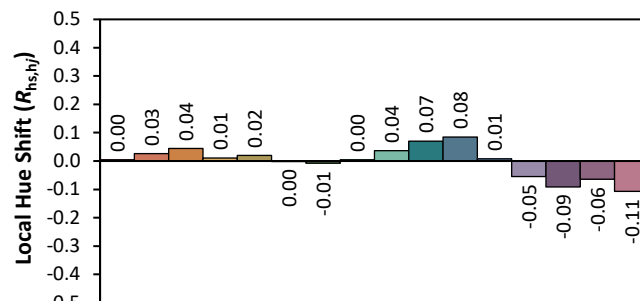
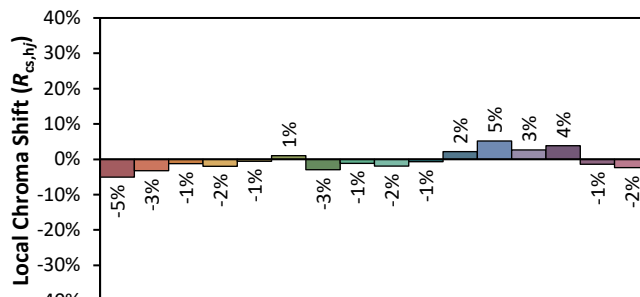
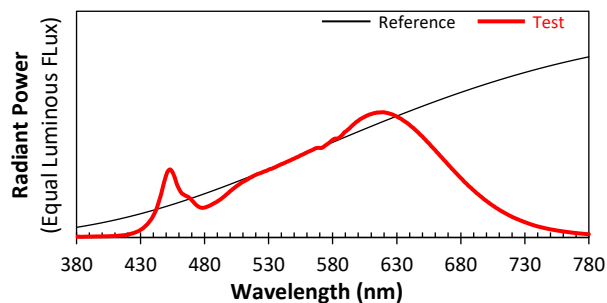
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: VISUAL COMFORT AND COMPANY

Date: 4/12/2023

Model: SLWS22530N



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.4359

y 0.4020

u' 0.2508

v' 0.5204