

VISUAL COMFORT AND COMPANY TEST REPORT

SCOPE OF WORK

LED Performance Testing

MODEL NUMBER

SLWS22830N

PROJECT NUMBER

G105408985

REPORT NUMBER

105408958CHI-007

ISSUE DATE

4/14/2023

REVISED DATE

None

TEST DATES

2023-04-12 through 2023-04-13.

DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

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REPORT NUMBER

105408958CHI-007

MODEL NUMBER(s)

SLWS22830N

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:



David Dalo
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Reviewer:



Jeff Davis
NA Technical Lead
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SAMPLE INFORMATION

REPORT NO. 105408958CHI-007

ITEMS RECEIVED

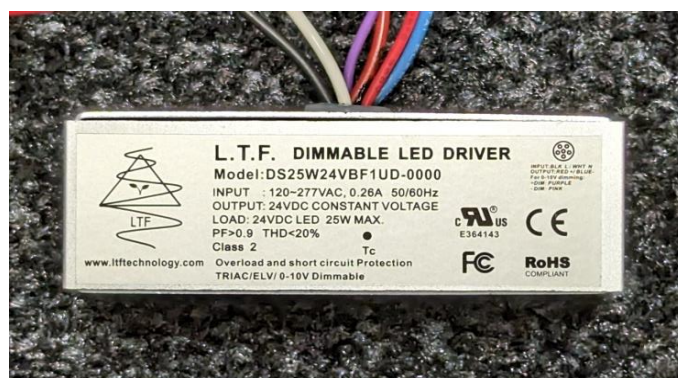
Item No.	Control No.	Model No.	Description	Type	Received
1	AH04062023065219-002	SLWS22830N	Perle 28 Wall Sconce	Production	4/6/2023

TESTED SAMPLE CONFIGURATIONS

Config No.	Tested Model No.	Item Nos. Utilized
1	SLWS22830N	1

SAMPLE PHOTOS - TESTED CONFIGURATIONS

Distribution was performed with below orientation and crystals aligned



SUMMARY

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PRODUCT INFORMATION AND SUMMARY OF DATA

Product Model No.:	SLWS22830N
Product Description:	Perle 28 Wall Sconce
LED Model No.:	AA3965-01-0x (Samsung SPMWH12245Q7W8WMSA)
Driver Model No.:	DS25W24VBF1UD-0000 (AA7580)
Light Source:	LED

Criteria	Results	
	Goniophotometer	Integrating Sphere
Light Output (lumens)	432.2	411.8
Input Power (W) @ 120 (Vac)	9.28	9.24
Lumen Efficacy (lm/W)	46.6	44.6
Input Power Factor (I) @ 120 (Vac)	0.926	0.929

Criteria	Results
Input ATHD (%) @ 120 (Vac)	18.52
Correlated Color Temperature (K)	2990
Color Rendering Index - Ra (I)	93.2
Color Rendering Index - R9 (I)	58.9
Duv (I)	-0.0009
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	SLWS22830N	NA

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

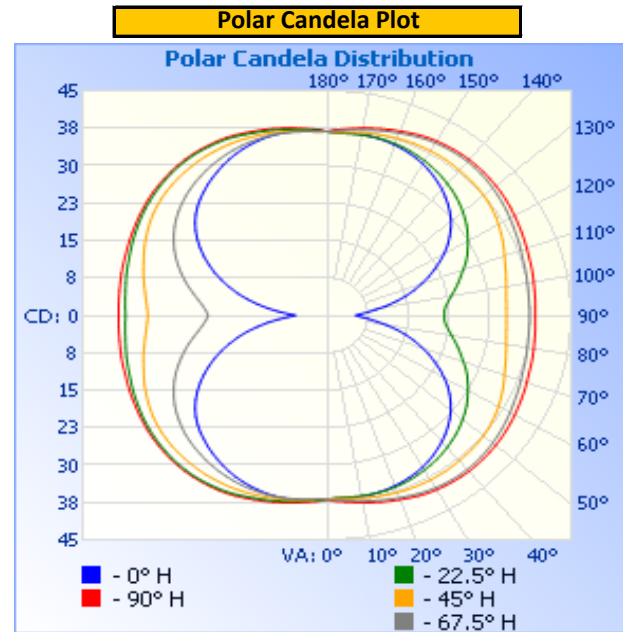
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor (I)
Up	120.04	83.5	9.28	0.926

Light Output (lm)	Lumen Efficacy (lm/W)
432.2	46.6

INTENSITY SUMMARY - CANDELA

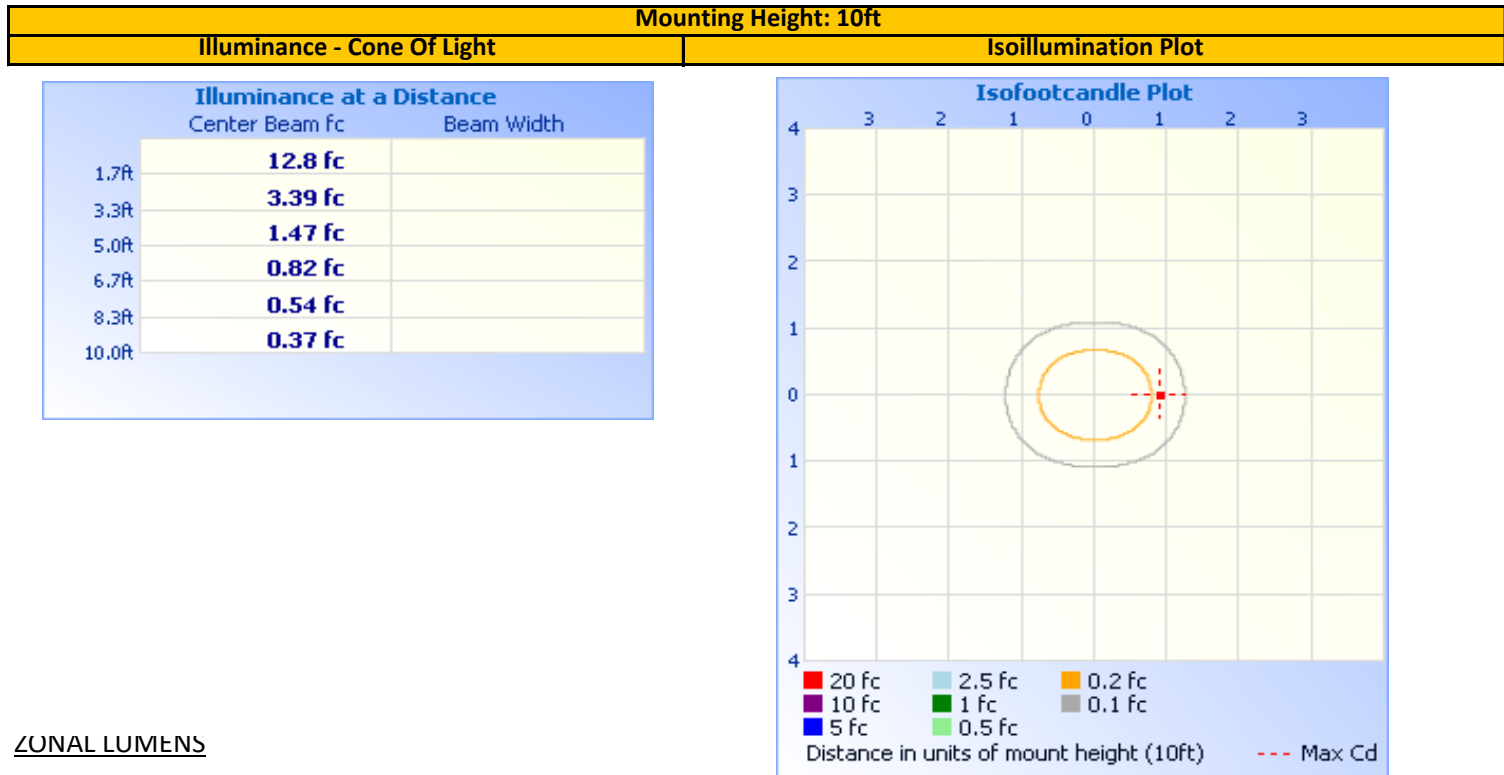
Angle	0	22.5	45	67.5	90
0	37	37	37	37	37
5	37	37	37	37	38
10	37	37	37	38	38
15	37	37	37	38	39
20	36	37	38	39	39
25	36	36	38	39	40
30	35	36	38	40	40
35	34	35	38	40	41
40	33	34	38	40	41
45	32	34	38	40	41
50	30	33	38	40	41
55	28	31	37	39	40
60	25	30	37	39	40
65	22	29	36	38	40
70	19	27	35	38	39
75	15	25	34	38	39
80	11	23	34	37	39
85	8	22	33	37	39
90	5	22	33	37	38
95	8	22	33	37	39
100	11	23	34	37	39
105	15	25	34	38	39
110	19	27	35	38	39
115	22	29	36	38	40
120	25	30	37	39	40
125	28	31	37	39	40
130	30	33	38	40	41
135	32	34	38	40	41
140	33	34	38	40	41
145	34	35	38	40	41
150	35	36	38	40	40
155	36	36	38	39	40
160	36	37	38	39	39
165	37	37	37	38	39
170	37	37	37	38	38
175	37	37	37	37	38
180	37	37	37	37	37

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
0-30	31.9	7.4%	0-10	3.6	0.8%
0-40	55.9	12.9%	10-20	10.7	2.5%
0-60	117.2	27.1%	20-30	17.7	4.1%
60-90	98.9	22.9%	30-40	23.9	5.5%
70-100	97.1	22.5%	40-50	29.0	6.7%
90-120	98.9	22.9%	50-60	32.4	7.5%
0-90	216.1	50.0%	60-70	33.7	7.8%
90-180	216.1	50.0%	70-80	33.3	7.7%
0-180	432.2	100.0%	80-90	31.9	7.4%
			90-100	31.9	7.4%
			100-110	33.3	7.7%
			110-120	33.7	7.8%
			120-130	32.4	7.5%
			130-140	29.0	6.7%
			140-150	23.9	5.5%
			150-160	17.7	4.1%
			160-170	10.7	2.5%
			170-180	3.6	0.8%

INTEGRATING SPHERE TESTING

REPORT NO. 105408958CHI-007

Test Configuration	Tested Model No.	Pass/Fail/NA
1	SLWS22830N	NA

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

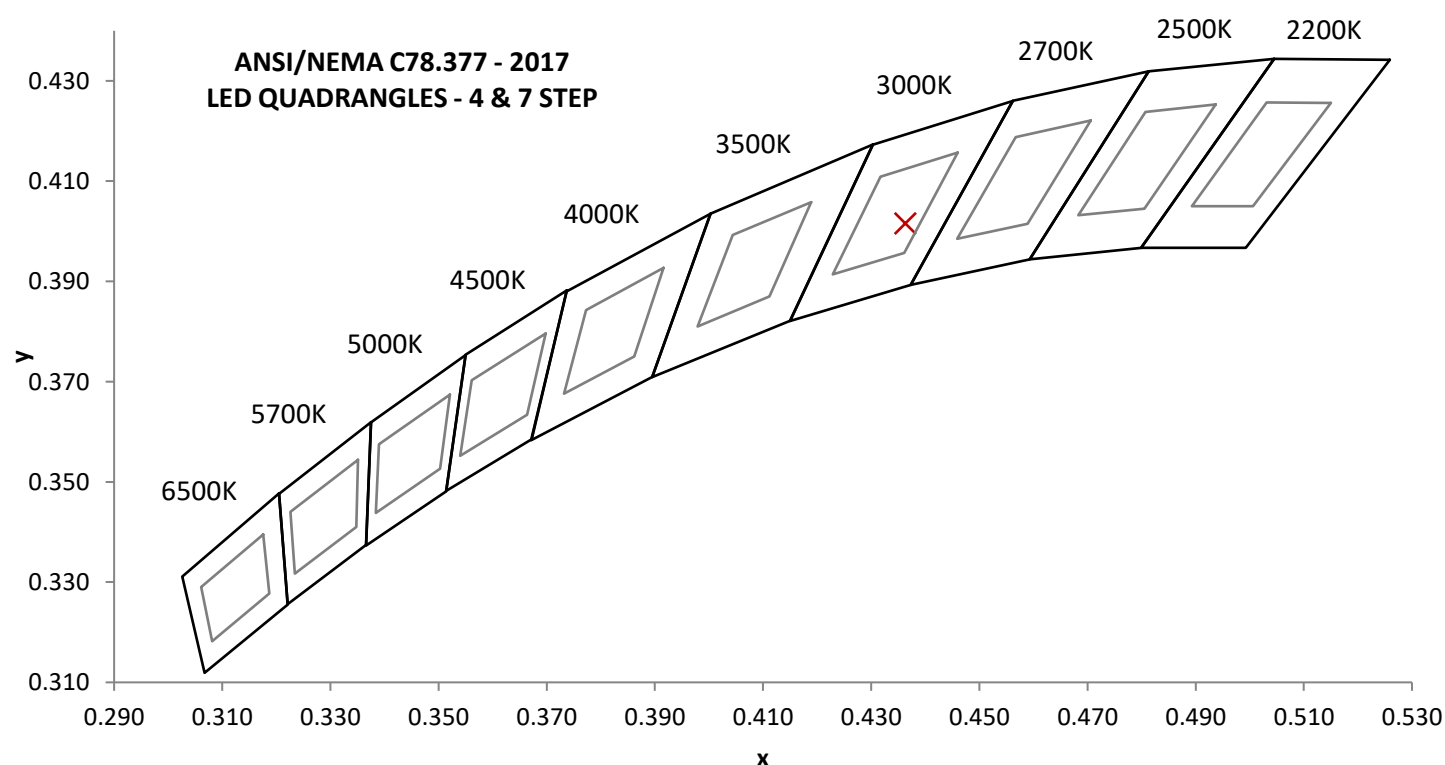
Base Orientation
Up

Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor (l)	Input ATHD (%)
120.04	82.8	9.24	0.929	18.52

Measured at 120.04(Vac)

Light Output (lm)	Lumen Efficacy (lm/W)	CCT (K)	CRI - Ra (l)	CRI - R9 (l)
411.8	44.6	2990	93.2	58.9

Duv (l)	1931 Chrom (x)	1931 Chrom (y)	1976 Chrom (u')	1976 Chrom (v')
-0.0009	0.436	0.402	0.251	0.520

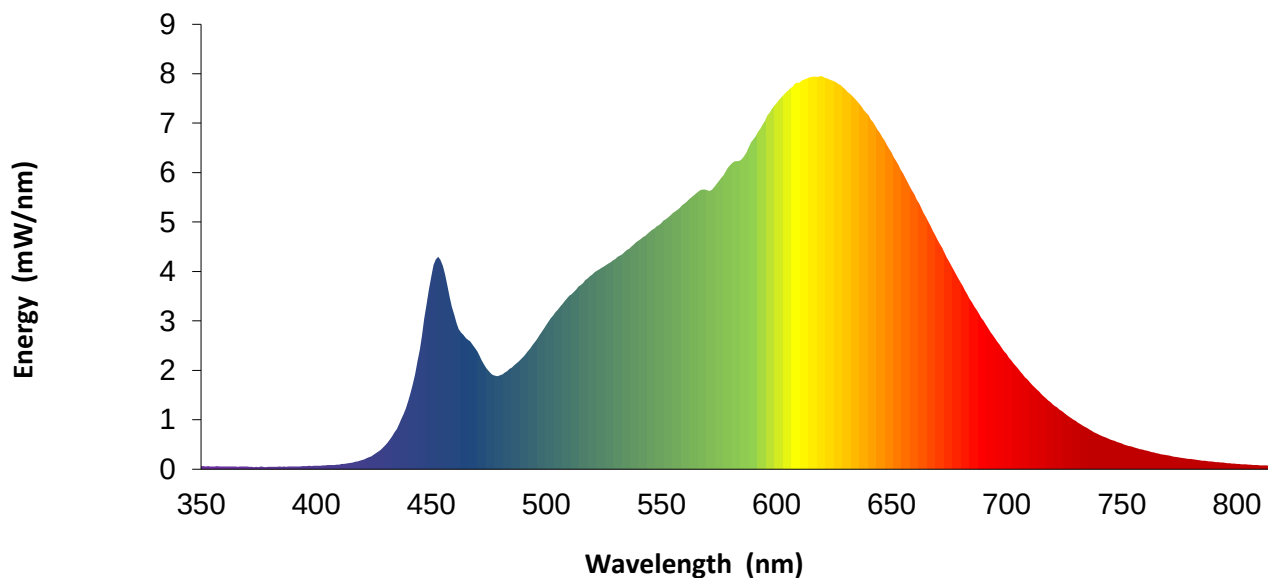


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SPECTRAL DISTRIBUTION OVER WAVELENGTHS

nm	mW/nm		nm	mW/nm		nm	mW/nm		nm	mW/nm
350	0.1		460	3.1		570	5.6		680	3.8
355	0.1		465	2.7		575	5.8		685	3.4
360	0.1		470	2.4		580	6.2		690	3.0
365	0.1		475	2.0		585	6.3		695	2.6
370	0.1		480	1.9		590	6.7		700	2.3
375	0.0		485	2.1		595	7.0		705	2.0
380	0.1		490	2.3		600	7.4		710	1.8
385	0.0		495	2.6		605	7.7		715	1.5
390	0.1		500	2.9		610	7.8		720	1.3
395	0.1		505	3.2		615	7.9		725	1.1
400	0.1		510	3.5		620	7.9		730	1.0
405	0.1		515	3.7		625	7.8		735	0.8
410	0.1		520	3.9		630	7.7		740	0.7
415	0.1		525	4.1		635	7.4		745	0.6
420	0.2		530	4.3		640	7.2		750	0.5
425	0.3		535	4.4		645	6.8		755	0.4
430	0.5		540	4.6		650	6.4		760	0.4
435	0.8		545	4.8		655	6.0		765	0.3
440	1.4		550	5.0		660	5.6		770	0.3
445	2.4		555	5.2		665	5.1		775	0.2
450	3.9		560	5.4		670	4.6		780	0.2
455	4.1		565	5.6		675	4.2		---	---

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

REPORT NO. 105408958CHI-007

#	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	Newport Thermohygrometer	iServer	146958	10/6/2022	10/6/2023
5	Chroma Power Supply	61604	CHI0371	VBUE	VBUE
6	Sorenson DC Power Supply	XHR 150-7	146922	VBUE	VBUE
7	Multi Channel Spectroradiometer	OL770	CHI0092	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	EQA002615	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

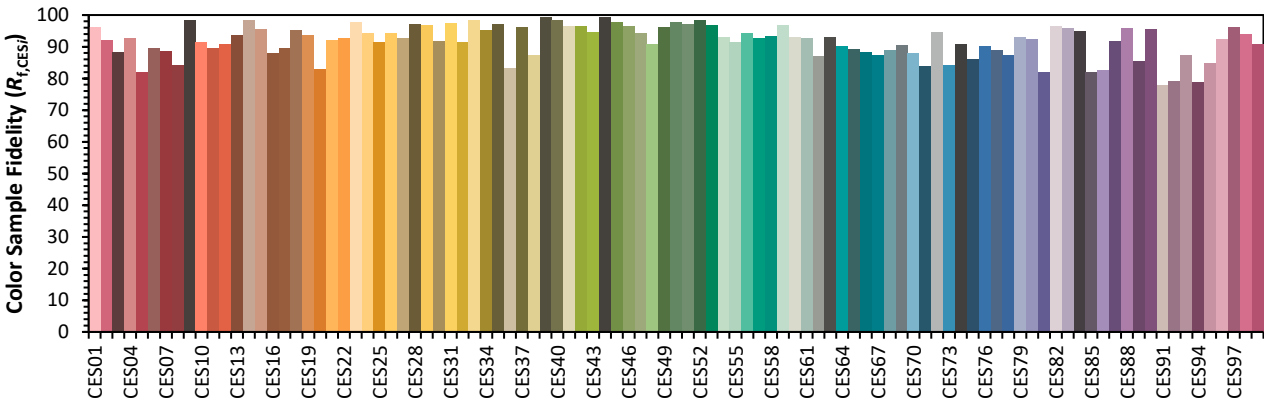
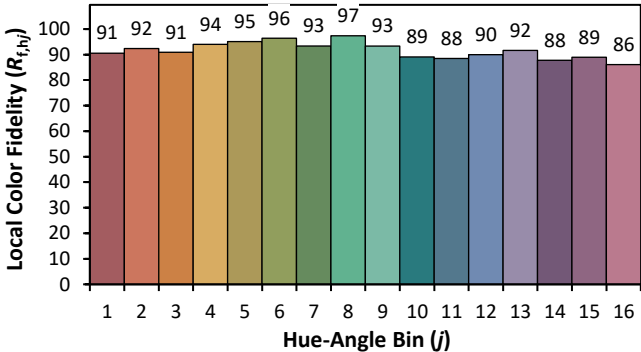
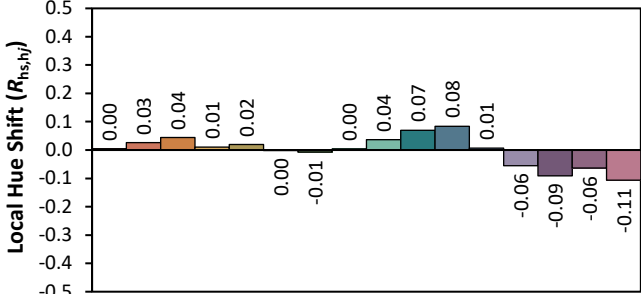
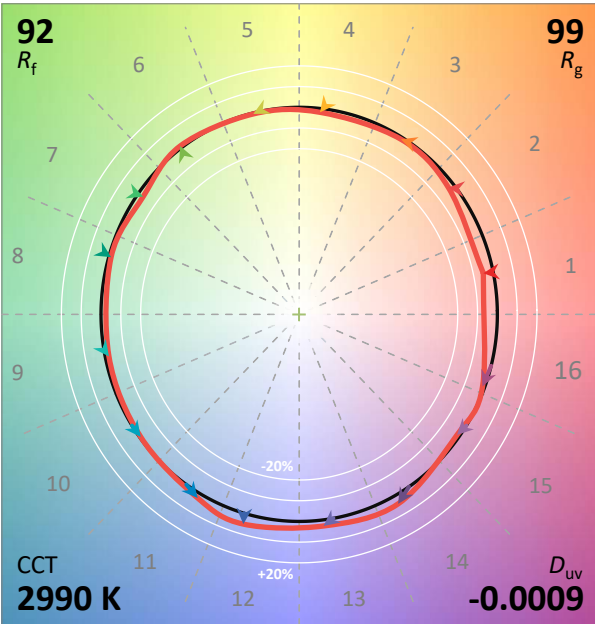
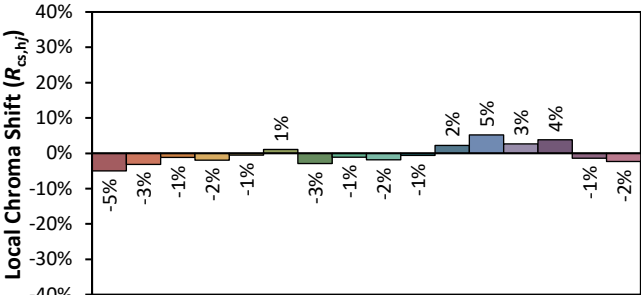
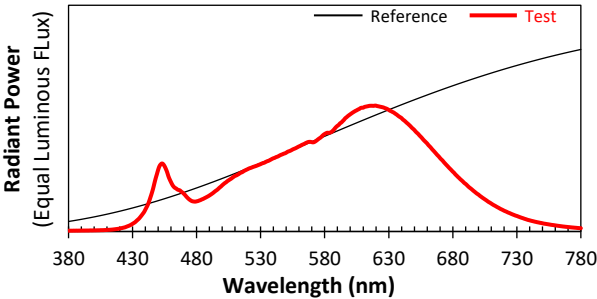
REVISION HISTORY

#	Revision Date	Updated By	Reviewed By	Description of Change
---	None	---	---	---
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Test Configuration	Tested Model No.	Pass/Fail/NA
1	SLWS22830N	NA

ANSI/IES TM-30-18 Color Rendition Report

Source:	User SPD	Manufacturer:	VISUAL COMFORT AND COMPANY
Date:	4/12/2023	Model:	SLWS22830N



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

x 0.4363
y 0.4015
u' 0.2513
v' 0.5203