

VISUAL COMFORT AND COMPANY TEST REPORT

SCOPE OF WORK

LED Performance Testing

MODEL NUMBER

SLPD22630NS

PROJECT NUMBER

G105408958

REPORT NUMBER

105408958CHI-009

ISSUE DATE

4/13/2023

REVISED DATE

None

TEST DATES

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

DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

© 2017 INTERTEK



REPORT NUMBER

105408958CHI-009

MODEL NUMBER(s)

SLPD22630NS

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
Engineer
Lighting Division

Reviewer:



Jeff Davis
NA Technical Lead
Lighting Division

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

SAMPLE INFORMATION

REPORT NO. 105408958CHI-009

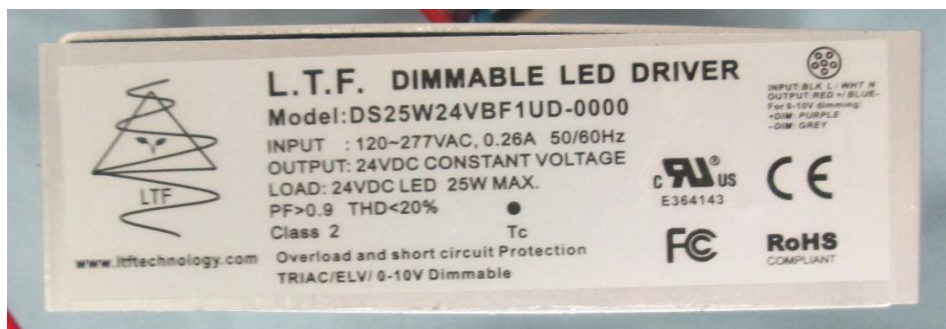
ITEMS RECEIVED

Item No.	Control No.	Model No.	Description	Type	Received
1	AH04062023065219-003	SLPD22630NS	Perle 24 Pendant	Production	4/6/2023

TESTED SAMPLE CONFIGURATIONS

Config No.	Tested Model No.	Item Nos. Utilized
1	SLPD22630NS	1

SAMPLE PHOTOS - TESTED CONFIGURATIONS



SUMMARY

REPORT NO. 105408958CHI-009

PRODUCT INFORMATION AND SUMMARY OF DATA

Product Model No.:	SLPD22630NS
Product Description:	Perle 24 Pendant
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)	479.3	500.5
Input Power (W) @ 120 (Vac)	10.27	10.28
Lumen Efficacy (lm/W)	46.7	48.7
Input Power Factor (I) @ 120 (Vac)	0.947	0.949

Criteria	Results
Input ATHD (%) @ 120 (Vac)	15.34
Correlated Color Temperature (K)	2986
Color Rendering Index - Ra (I)	92.9
Color Rendering Index - R9 (I)	57.6
Duv (I)	-0.0007
Chromaticity Coordinate (x)	0.437
Chromaticity Coordinate (y)	0.402
Chromaticity Coordinate (u')	0.251
Chromaticity Coordinate (v')	0.521

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

REPORT NO. 105408958CHI-009

Test Configuration	Tested Model No.	Pass/Fail/NA
1	SLPD22630NS	NA

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

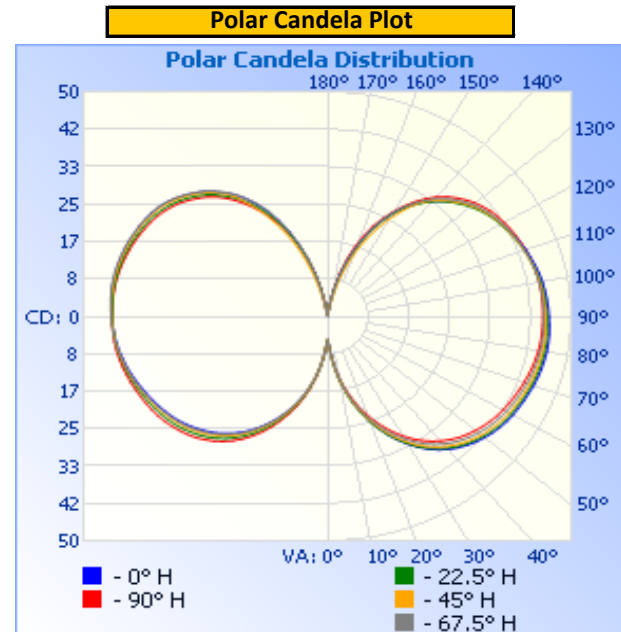
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor (I)
Up	120.04	90.3	10.27	0.947

Light Output (lm)	Lumen Efficacy (lm/W)
479.3	46.7

INTENSITY SUMMARY - CANDELA

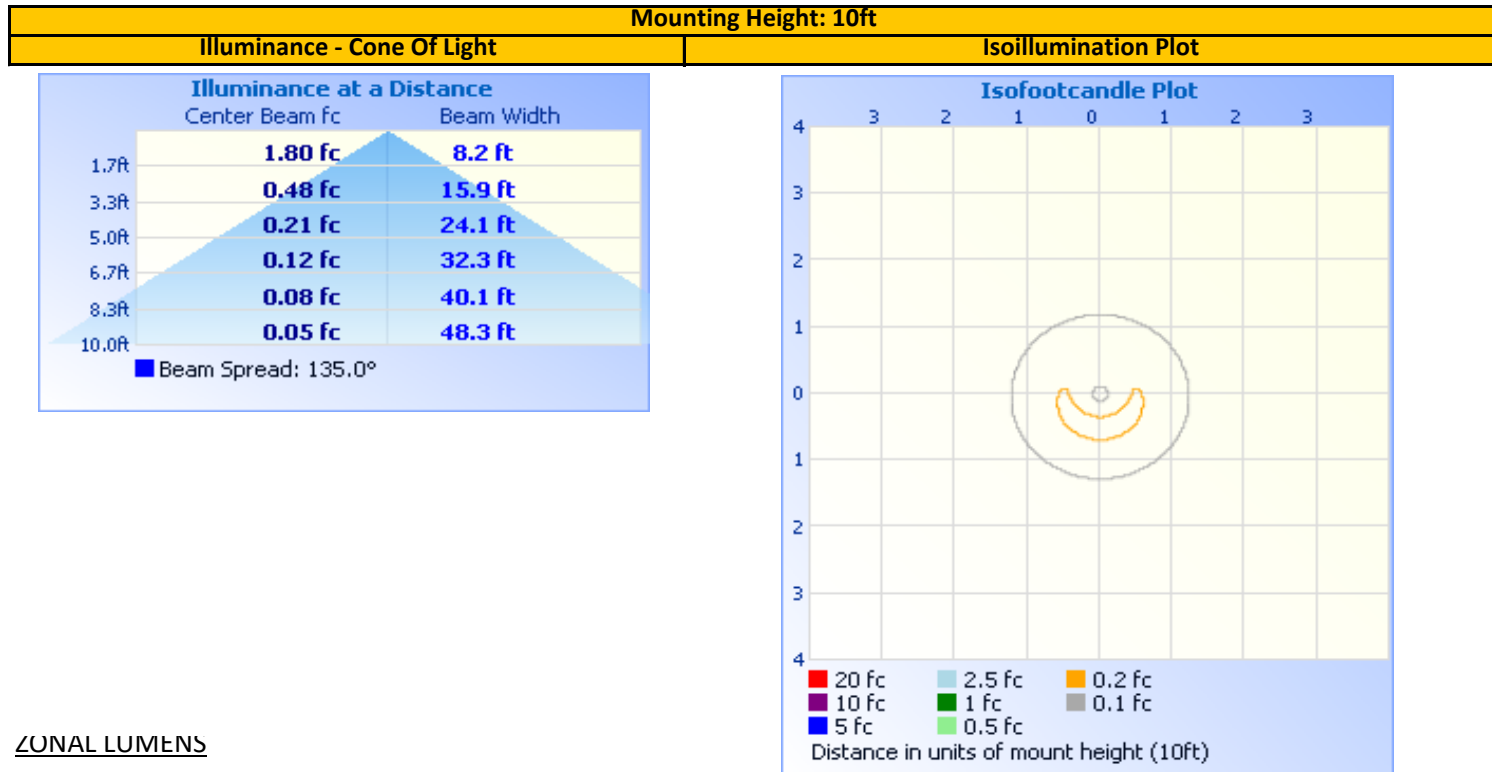
Angle	0	22.5	45	67.5	90
0	5	5	5	5	5
5	9	9	9	9	9
10	14	15	14	14	14
15	20	20	20	19	19
20	25	25	24	24	23
25	29	29	29	28	27
30	33	33	32	31	31
35	36	36	35	35	34
40	39	38	38	37	36
45	41	40	40	39	38
50	42	42	41	40	40
55	43	43	42	42	41
60	44	44	43	42	42
65	44	44	44	43	42
70	45	45	44	44	43
75	45	45	45	44	44
80	46	45	45	44	44
85	46	45	45	44	44
90	45	45	45	44	44
95	45	45	45	44	44
100	45	44	44	44	44
105	44	44	44	44	44
110	43	43	43	43	43
115	42	42	42	42	43
120	41	41	41	41	42
125	40	40	40	40	41
130	38	38	38	39	39
135	36	36	36	37	37
140	34	33	34	34	35
145	30	30	30	31	31
150	26	26	25	27	27
155	21	21	19	21	22
160	15	15	13	15	17
165	9	9	7	9	10
170	3	3	1	3	4
175	0	0	0	0	0
180	0	0	0	0	0

Entire luminous intensity matrix found in .IES file



REPORT NO. 105408958CHI-009

ILLUMINANCE SUMMARY



ZONAL LUMENS

Zonal Lumen Summary					
Zone	Lumens	Luminaire	Zone	Lumens	Total
0-30	19.1	4.0%	0-10	1.0	0.2%
0-40	40.4	8.4%	10-20	5.4	1.1%
0-60	106.5	22.2%	20-30	12.7	2.6%
60-90	136.9	28.6%	30-40	21.2	4.4%
70-100	143.3	29.9%	40-50	29.5	6.2%
90-120	137.6	28.7%	50-60	36.6	7.6%
0-90	243.5	50.8%	60-70	42.2	8.8%
90-180	235.9	49.2%	70-80	46.3	9.7%
0-180	479.3	100.0%	80-90	48.5	10.1%
			90-100	48.5	10.1%
			100-110	46.5	9.7%
			110-120	42.5	8.9%
			120-130	36.7	7.7%
			130-140	28.9	6.0%
			140-150	19.7	4.1%
			150-160	10.1	2.1%
			160-170	2.7	0.6%
			170-180	0.1	0.0%

INTEGRATING SPHERE TESTING

REPORT NO. 105408958CHI-009

Test Configuration	Tested Model No.	Pass/Fail/NA
1	SLPD22630NS	NA

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

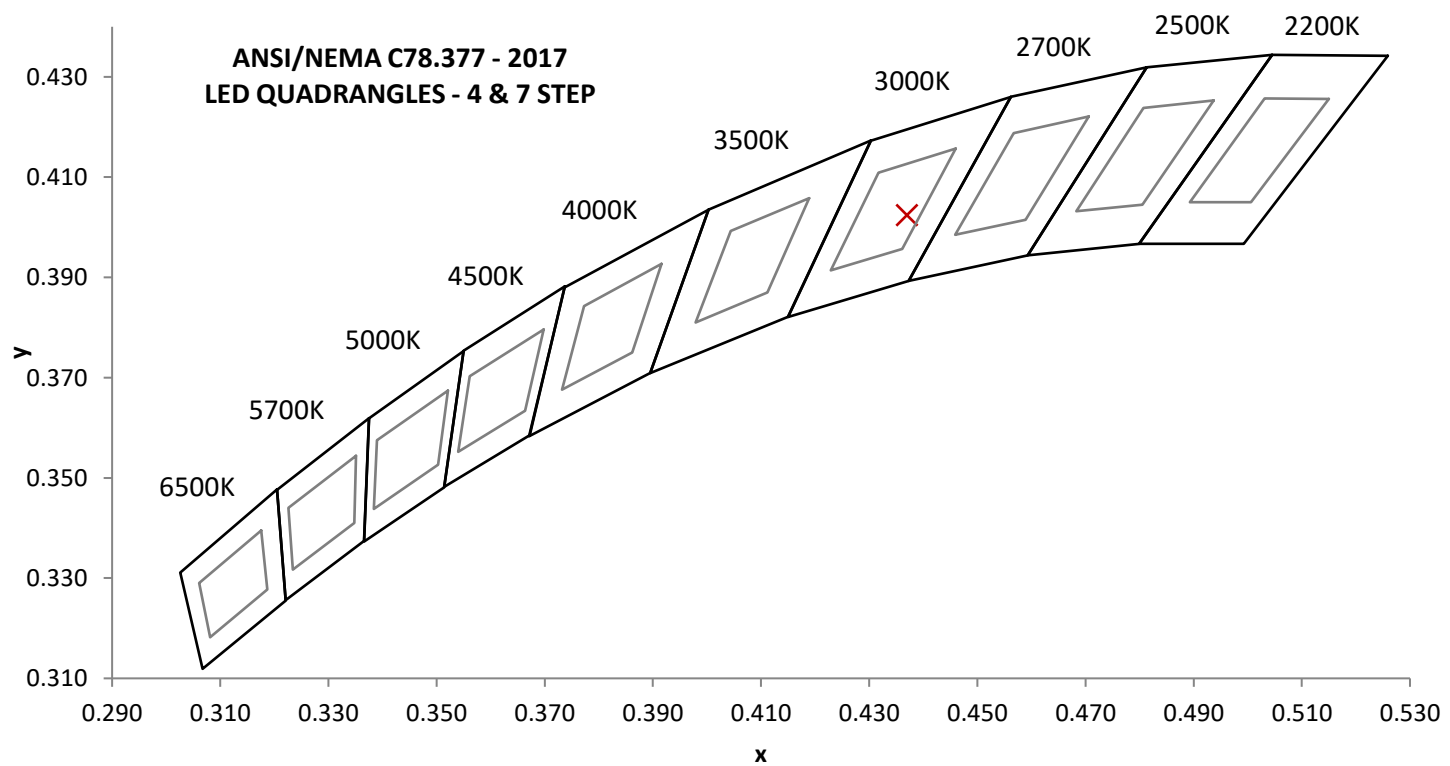
Base Orientation
Up

Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor (l)	Input ATHD (%)
120.02	90.3	10.28	0.949	15.34

Measured at 120.02(Vac)

Light Output (lm)	Lumen Efficacy (lm/W)	CCT (K)	CRI - Ra (l)	CRI - R9 (l)
500.5	48.7	2986	92.9	57.6

Duv (l)	1931 Chrom (x)	1931 Chrom (y)	1976 Chrom (u')	1976 Chrom (v')
-0.0007	0.437	0.402	0.251	0.521

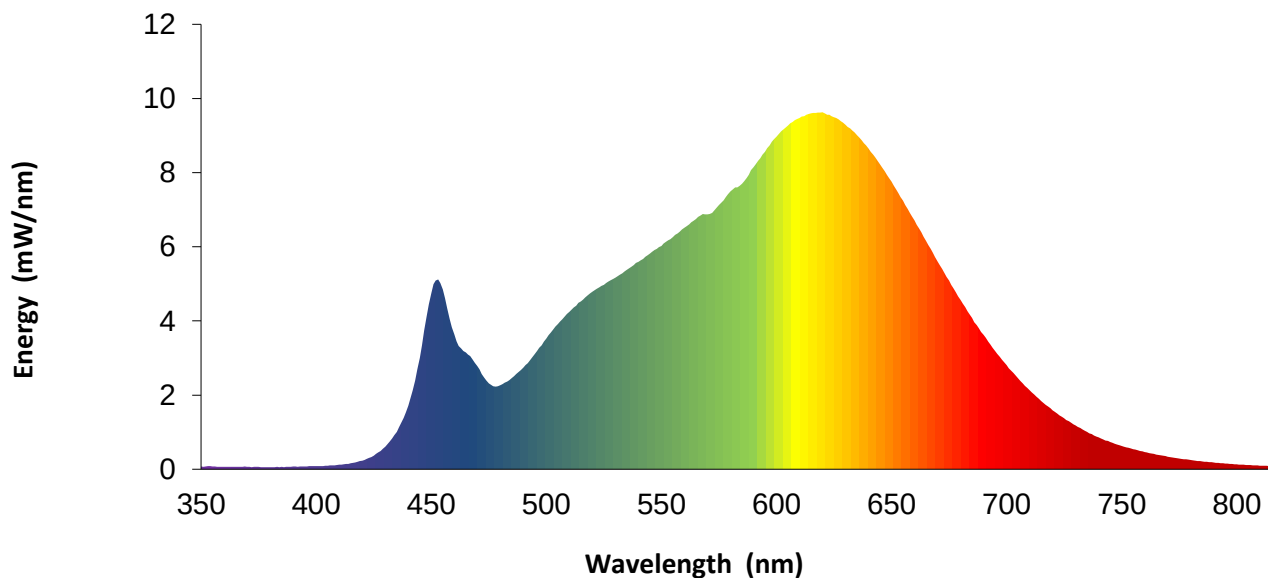


REPORT NO. 105408958CHI-009

SPECTRAL DISTRIBUTION OVER WAVELENGTHS

nm	mW/nm		nm	mW/nm		nm	mW/nm		nm	mW/nm
350	0.1		460	3.6		570	6.9		680	4.6
355	0.1		465	3.2		575	7.1		685	4.1
360	0.1		470	2.8		580	7.5		690	3.6
365	0.1		475	2.3		585	7.7		695	3.2
370	0.1		480	2.3		590	8.1		700	2.8
375	0.1		485	2.5		595	8.6		705	2.5
380	0.1		490	2.7		600	9.0		710	2.1
385	0.1		495	3.1		605	9.3		715	1.8
390	0.1		500	3.5		610	9.5		720	1.6
395	0.1		505	3.9		615	9.6		725	1.4
400	0.1		510	4.2		620	9.6		730	1.2
405	0.1		515	4.5		625	9.5		735	1.0
410	0.1		520	4.8		630	9.3		740	0.9
415	0.2		525	5.0		635	9.0		745	0.7
420	0.2		530	5.2		640	8.7		750	0.6
425	0.4		535	5.4		645	8.2		755	0.5
430	0.6		540	5.6		650	7.8		760	0.5
435	1.0		545	5.8		655	7.2		765	0.4
440	1.7		550	6.0		660	6.7		770	0.3
445	3.0		555	6.3		665	6.2		775	0.3
450	4.8		560	6.5		670	5.6		780	0.3
455	4.8		565	6.7		675	5.1		---	---

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-009

#	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	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	---	---	---
---	---	---	---	---
---	---	---	---	---

Test Configuration	Tested Model No.	Pass/Fail/NA
1	SLPD22630NS	NA

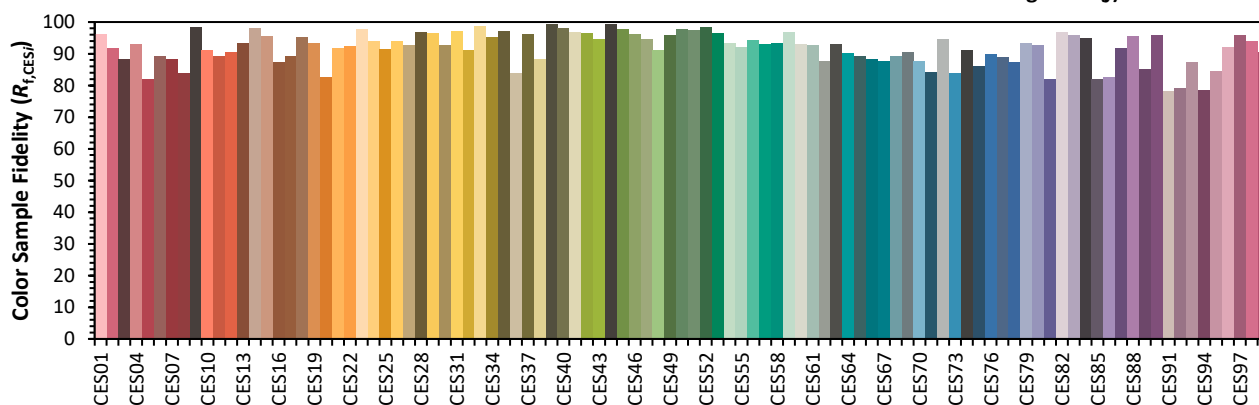
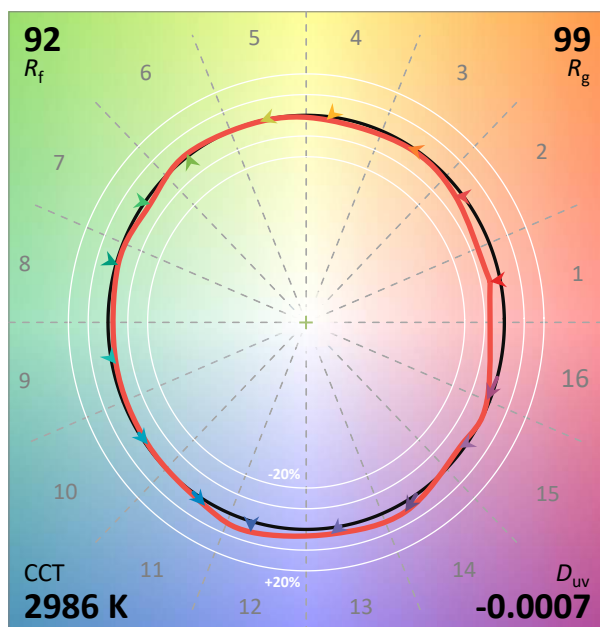
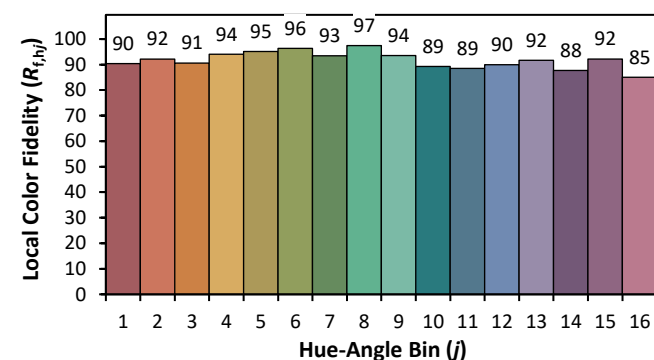
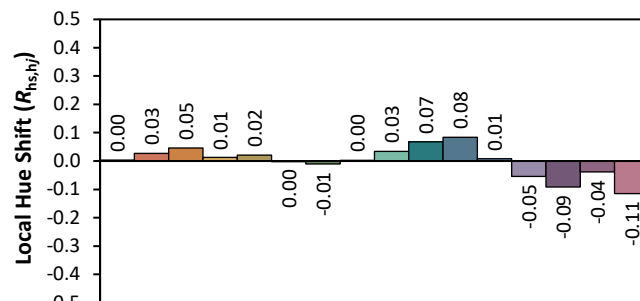
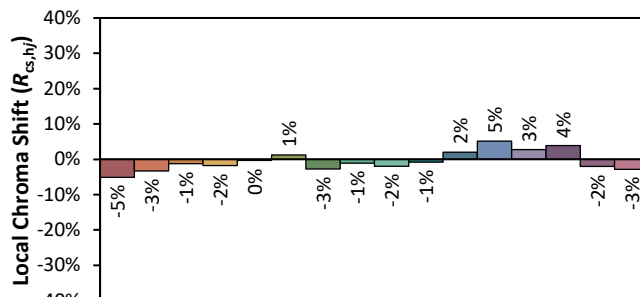
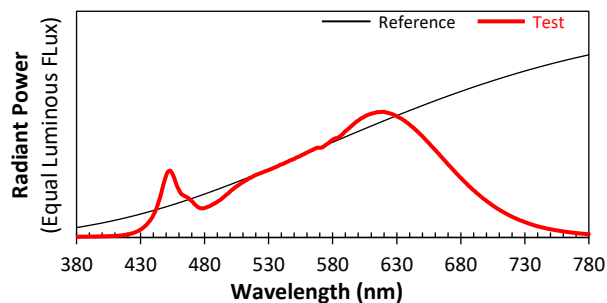
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: VISUAL COMFORT AND COMPANY

Date: 4/13/2023

Model: SLPD22630NS



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

 x 0.4370 y 0.4024 u' 0.2513 v' 0.5207