

VISUAL COMFORT AND COMPANY TEST REPORT

SCOPE OF WORK

LED Performance Testing

MODEL NUMBER

700WSCLR53NB-LED930

PROJECT NUMBER

G105408958

REPORT NUMBER

105408958CHI-001

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-001

MODEL NUMBER(s)

700WSCLR53NB-LED930

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
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SAMPLE INFORMATION

REPORT NO. 105408958CHI-001

ITEMS RECEIVED

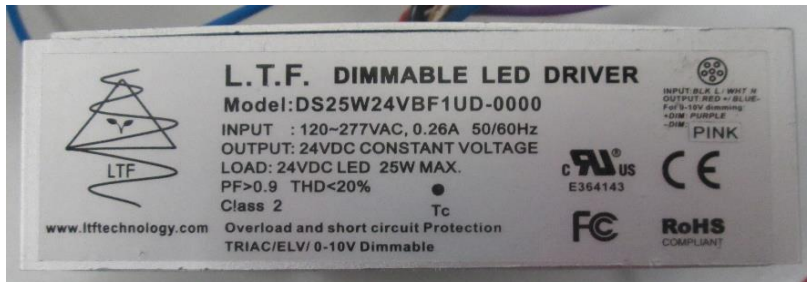
Item No.	Control No.	Model No.	Description	Type	Received
1	AH04062023065219-001	700WSCLR53NB-LED930	Collier 53 Wall Sconce	Production	4/6/2023

TESTED SAMPLE CONFIGURATIONS

Config No.	Tested Model No.	Item Nos. Utilized
2	700WSCLR53NB-LED930	1

SAMPLE PHOTOS - TESTED CONFIGURATIONS

Distribution was performed with below orientation with crystals aligned



SUMMARY

REPORT NO. 105408958CHI-001

PRODUCT INFORMATION AND SUMMARY OF DATA

Product Model No.:	700WSCLR53NB-LED930
Product Description:	Collier 53 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)	995.8	954.7
Input Power (W) @ 120 (Vac)	17.40	17.31
Lumen Efficacy (lm/W)	57.2	55.2
Input Power Factor (PF) @ 120 (Vac)	0.972	0.973

Criteria	Results
Input ATHD (%) @ 120 (Vac)	11.70
Correlated Color Temperature (K)	3018
Color Rendering Index - Ra (I)	91.8
Color Rendering Index - R9 (I)	52.0
Duv (I)	-0.0008
Chromaticity Coordinate (x)	0.435
Chromaticity Coordinate (y)	0.401
Chromaticity Coordinate (u')	0.250
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

REPORT NO. 105408958CHI-001

Test Configuration	Tested Model No.	Pass/Fail/NA
2	700WSCLR53NB-LED930	NA

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

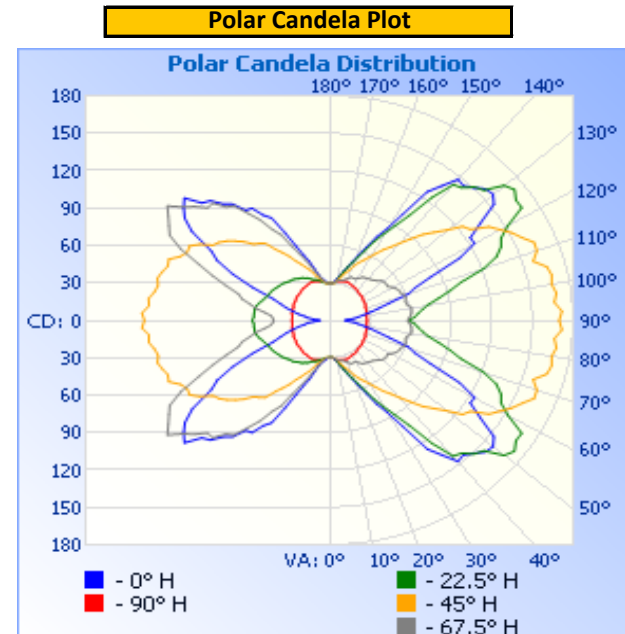
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor (I)
Up	119.99	149.3	17.40	0.972

Light Output (lm)	Lumen Efficacy (lm/W)
995.8	57.2

INTENSITY SUMMARY - CANDELA

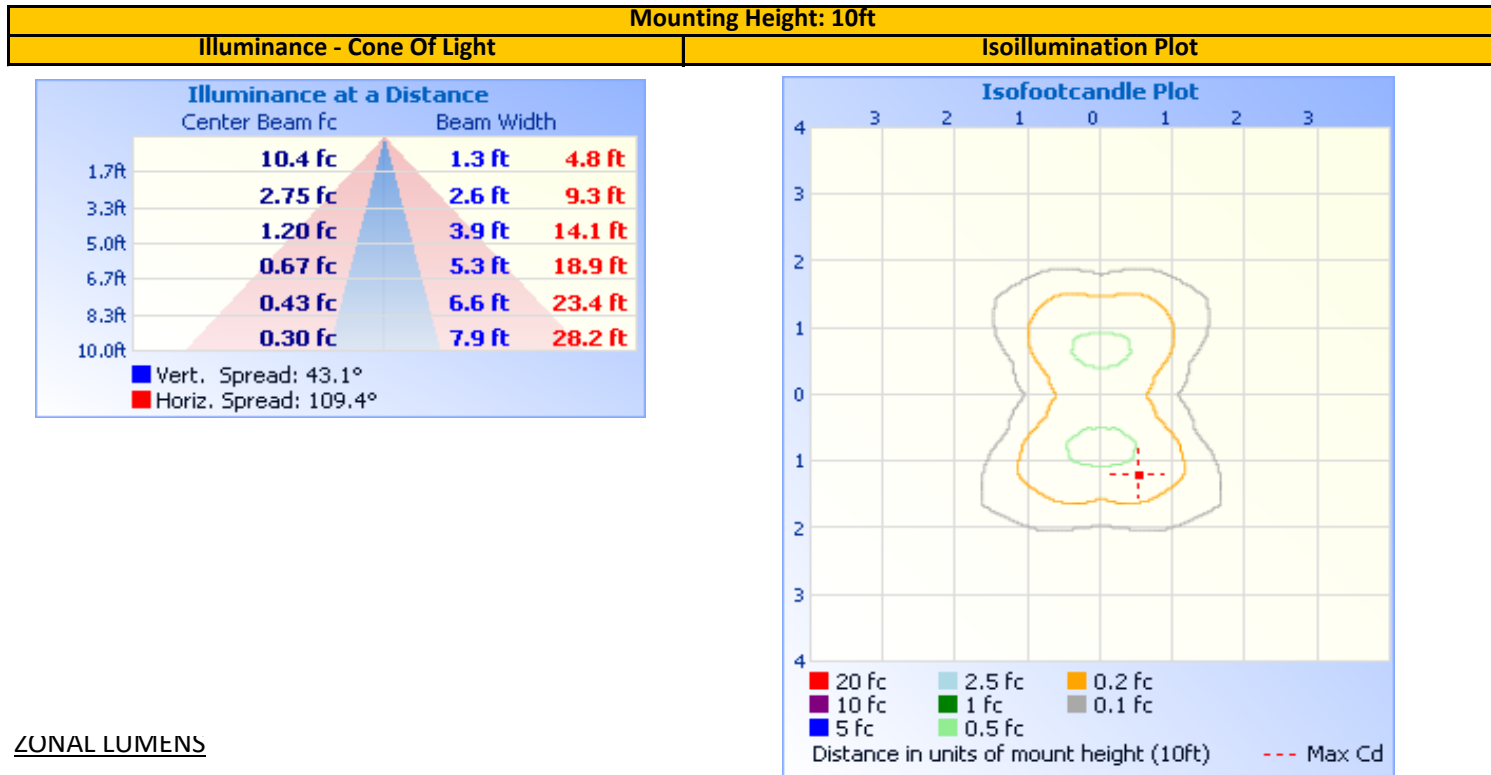
Angle	0	22.5	45	67.5	90
0	30	30	30	30	30
5	30	30	30	30	30
10	34	33	32	32	32
15	41	40	38	33	33
20	50	49	43	35	33
25	65	62	51	38	33
30	85	80	58	38	33
35	126	103	69	42	32
40	148	142	81	44	32
45	151	151	97	46	31
50	158	168	113	50	31
55	136	168	127	51	30
60	124	152	145	53	30
65	82	140	157	57	29
70	62	121	163	59	29
75	38	92	166	58	28
80	26	74	166	61	28
85	19	66	167	61	28
90	11	58	170	58	28
95	19	66	167	61	28
100	26	74	166	61	28
105	38	92	166	58	28
110	62	121	163	59	29
115	82	140	157	57	29
120	124	152	145	53	30
125	136	168	127	51	30
130	158	168	113	50	31
135	151	151	97	46	31
140	148	142	81	44	32
145	126	103	69	42	32
150	85	80	58	38	33
155	65	62	51	38	33
160	50	49	43	35	33
165	41	40	38	33	33
170	34	33	32	32	32
175	30	30	30	30	30
180	30	30	30	30	30

Entire luminous intensity matrix found in .IES file



REPORT NO. 105408958CHI-001

ILLUMINANCE SUMMARY



ZONAL LUMENS

Zonal Lumen Summary					
Zone	Lumens	Luminaire	Zone	Lumens	Total
0-30	37.8	3.8%	90-100	78.4	7.9%
0-40	83.7	8.4%	100-110	83.1	8.3%
0-60	245.1	24.6%	110-120	91.3	9.2%
60-90	252.9	25.4%	120-130	90.4	9.1%
70-100	240.0	24.1%	130-140	71.0	7.1%
90-120	252.9	25.4%	140-150	45.9	4.6%
0-90	497.9	50.0%	150-160	24.1	2.4%
90-180	497.9	50.0%	160-170	10.8	1.1%
0-180	995.8	100.0%	170-180	3.0	0.3%

INTEGRATING SPHERE TESTING

REPORT NO. 105408958CHI-001

Test Configuration	Tested Model No.	Pass/Fail/NA
2	700WSCLR53NB-LED930	NA

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

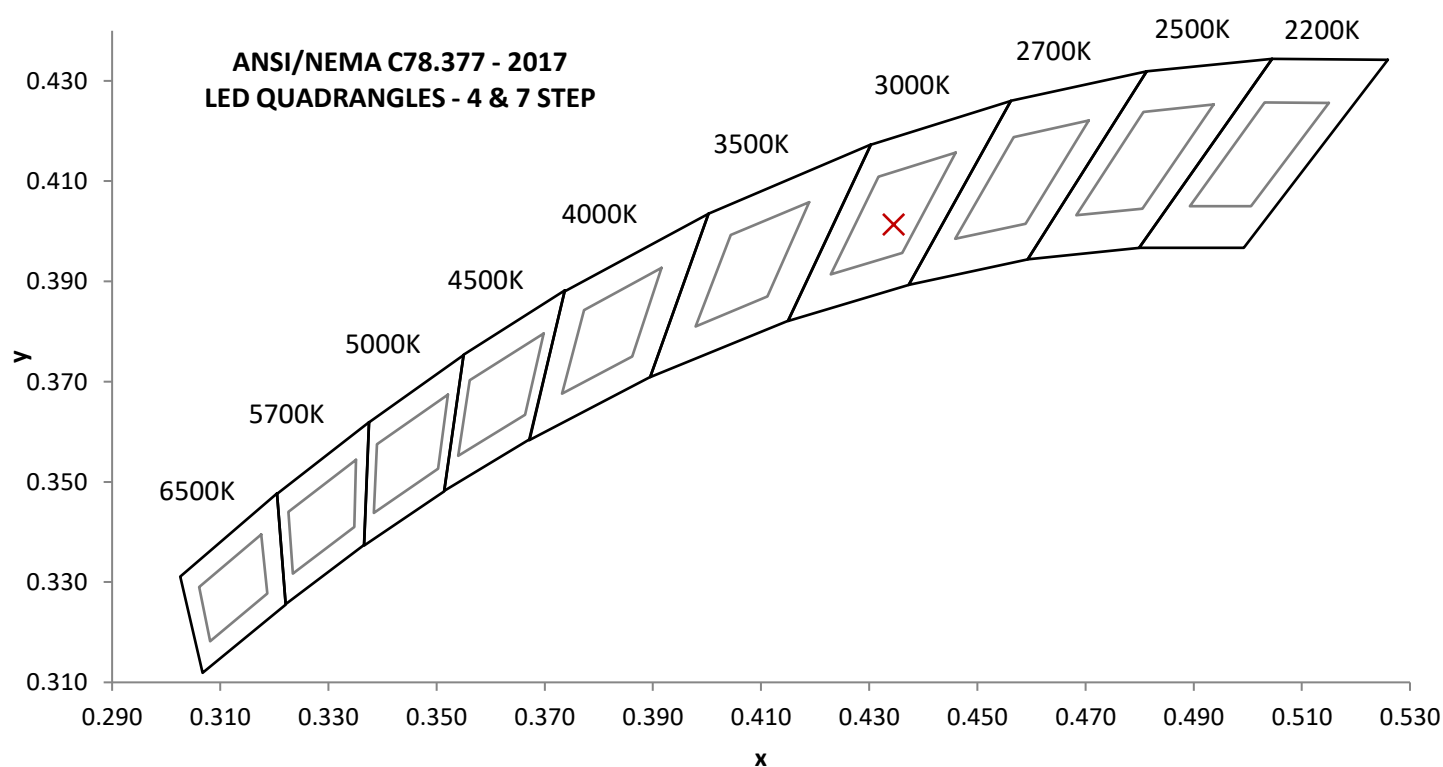
Base Orientation
Up

Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor (I)	Input ATHD (%)
119.99	148.2	17.31	0.973	11.70

Measured at 119.99(Vac)

Light Output (lm)	Lumen Efficacy (lm/W)	CCT (K)	CRI - Ra (I)	CRI - R9 (I)
954.7	55.2	3018	91.8	52.0

Duv (I)	1931 Chrom (x)	1931 Chrom (y)	1976 Chrom (u')	1976 Chrom (v')
-0.0008	0.435	0.401	0.250	0.520

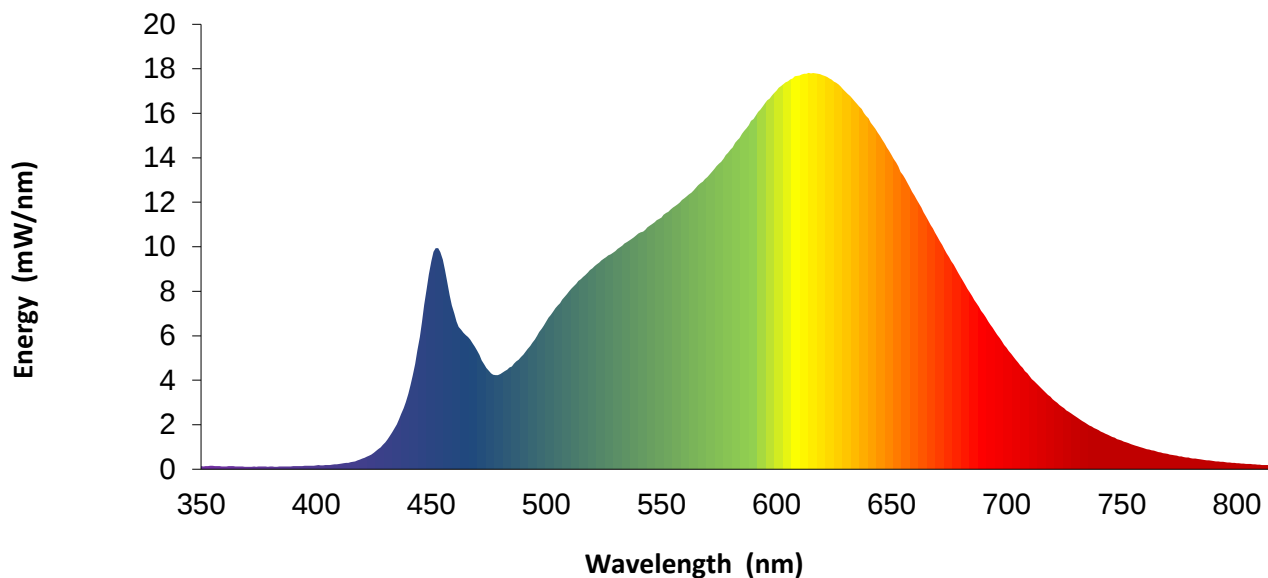


REPORT NO. 105408958CHI-001

SPECTRAL DISTRIBUTION OVER WAVELENGTHS

nm	mW/nm		nm	mW/nm		nm	mW/nm		nm	mW/nm
350	0.1		460	7.0		570	13.1		680	8.6
355	0.2		465	6.0		575	13.7		685	7.8
360	0.1		470	5.3		580	14.4		690	7.0
365	0.1		475	4.4		585	15.1		695	6.2
370	0.1		480	4.3		590	15.7		700	5.5
375	0.1		485	4.6		595	16.4		705	4.8
380	0.1		490	5.2		600	17.0		710	4.2
385	0.1		495	5.8		605	17.4		715	3.6
390	0.1		500	6.7		610	17.7		720	3.2
395	0.2		505	7.4		615	17.8		725	2.7
400	0.2		510	8.0		620	17.7		730	2.4
405	0.2		515	8.5		625	17.4		735	2.0
410	0.2		520	9.0		630	17.0		740	1.8
415	0.3		525	9.5		635	16.4		745	1.5
420	0.5		530	9.8		640	15.8		750	1.3
425	0.7		535	10.2		645	15.0		755	1.1
430	1.2		540	10.6		650	14.1		760	0.9
435	2.0		545	11.0		655	13.2		765	0.8
440	3.4		550	11.3		660	12.3		770	0.7
445	5.9		555	11.8		665	11.4		775	0.6
450	9.4		560	12.2		670	10.4		780	0.5
455	9.4		565	12.6		675	9.5		---	---

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-001

#	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	VBU	VBU
4	Newport Thermohygrometer	iServer	146958	10/6/2022	10/6/2023
5	Chroma Power Supply	61604	CHI0371	VBU	VBU
6	Sorenson DC Power Supply	XHR 150-7	146922	VBU	VBU
7	Multi Channel Spectroradiometer	OL770	CHI0092	VBU	VBU
8	Omega Thermohygrometer	OM-CP-RFPRHTEMP2000A	CHI0778	4/3/2023	4/3/2024
9	Labsphere Spectroradiometer	CDS2600	CHI0539	VBU	VBU
10	3 Meter Sphere	SPR600	CHI0088	VBU	VBU
11	Elgar AC Power Supply	CW1251	146112	VBU	VBU
12	Sorenson DC Power Supply	XFR150-8	146846	VBU	VBU
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
2	700WSCLR53NB-LED930	NA

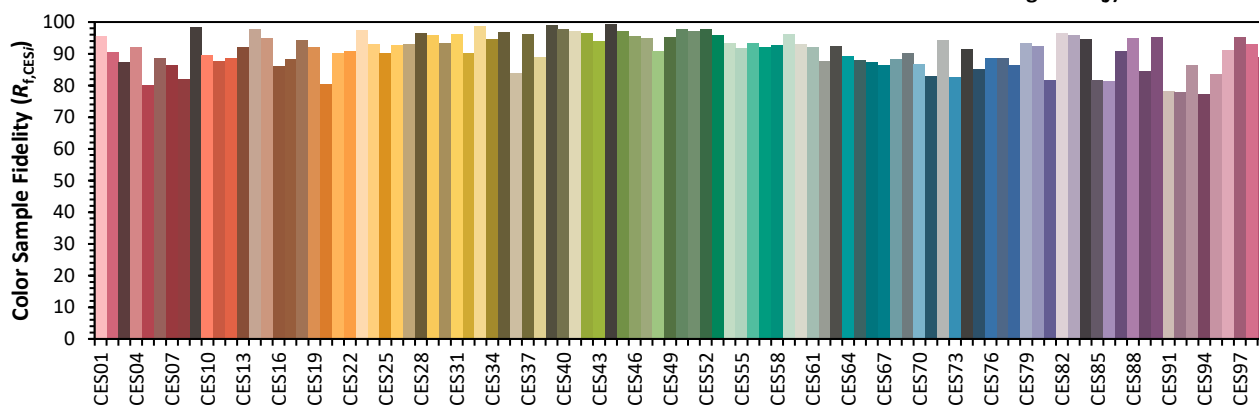
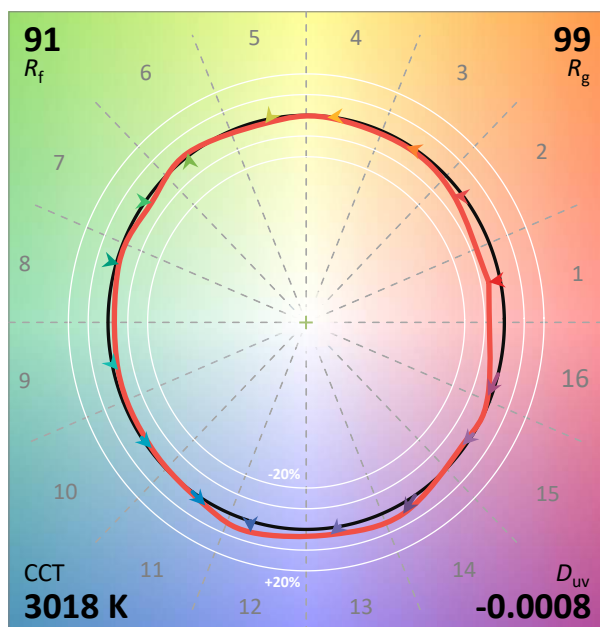
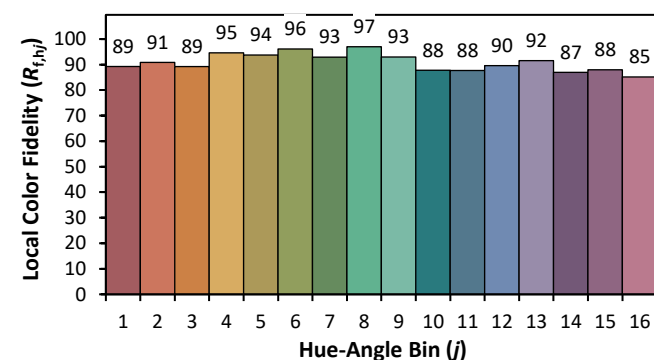
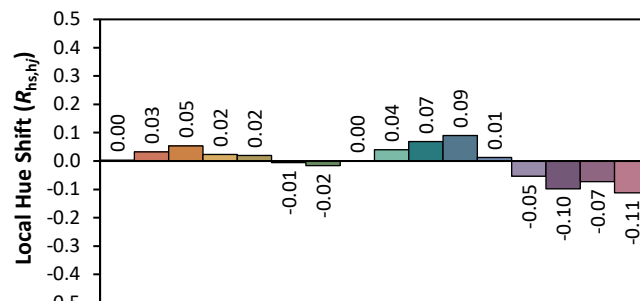
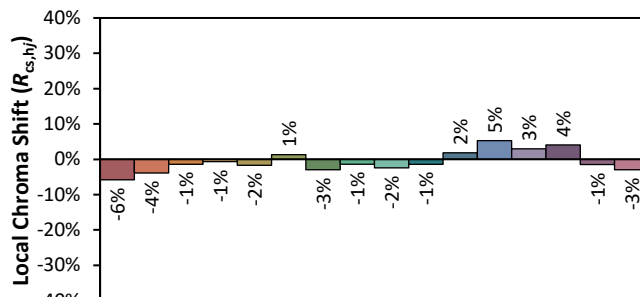
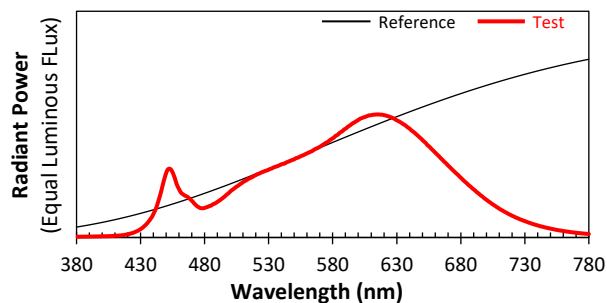
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: VISUAL COMFORT AND COMPANY

Date: 4/13/2023

Model: 700WSCLR53NB-LED930



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

x 0.4345

y 0.4013

u' 0.2502

v' 0.5199