

VISUAL COMFORT & CO.

TEST REPORT

SCOPE OF WORK

LED Performance Testing

MODEL NUMBER

700FIA30B-LED930

PROJECT NUMBER

G105767533

REPORT NUMBER

105767533CHI-003

ISSUE DATE

3/21/2024

REVISED DATE

None

TEST DATES

2024-03-19.

DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

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REPORT NUMBER

105767533CHI-003

MODEL NUMBER(s)

700FIA30B-LED930

REPORT RENDERED TO:

VISUAL COMFORT & CO.
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-01426816-0.

TEST STANDARDS

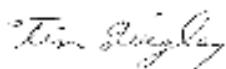
IES LM-79 - 2008: Electrical and Photometric Measurements of Solid State Lighting

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:



T. Quigley
Engineer
Lighting Division

Reviewer:



J. Davis
N.A. Technical Lead
Lighting Division

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SAMPLE INFORMATION

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ITEMS RECEIVED

Item No.	Control No.	Model No.	Description	Type	Received
1	AH03152024020953	700FIA30B-LED930	Fiama 30 Chandelier	Production	3/15/2024

TESTED SAMPLE CONFIGURATIONS

Config No.	Tested Model No.	Item Nos. Utilized
1	700FIA30B-LED930	1

SAMPLE PHOTOS - TESTED CONFIGURATIONS



SUMMARY

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PRODUCT INFORMATION AND SUMMARY OF DATA

Product Model No.:	700FIA30B-LED930
Product Description:	Fiana 30 Chandelier
LED Model No.:	Samsung SPMWH1228FD7WAUMSC
Driver Model No.:	(x2) LTF DS45W1200C2036F5UD-0000
Light Source:	LED

Criteria	Results	
	Goniophotometer	Integrating Sphere
Light Output (lumens)	3726.2	3805.7
Input Power (W) @ 120 (Vac)	78.44	78.46
Lumen Efficacy (lm/W)	47.5	48.5
Input Power Factor (I) @ 120 (Vac)	0.986	0.986

Criteria	Results
Input ATHD (%) @ 120 (Vac)	12.00
Correlated Color Temperature (K)	3121
Color Rendering Index - Ra (I)	94.3
Color Rendering Index - R9 (I)	69.0
Duv (I)	-0.0055
Chromaticity Coordinate (x)	0.421
Chromaticity Coordinate (y)	0.385
Chromaticity Coordinate (u')	0.249
Chromaticity Coordinate (v')	0.511
Input Power (W) @ 277 (Vac)	78.08
Input Power Factor (I) @ 277 (Vac)	0.883
Input ATHD (%) @ 277 (Vac)	19.22

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	700FIA30B-LED930	NA

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

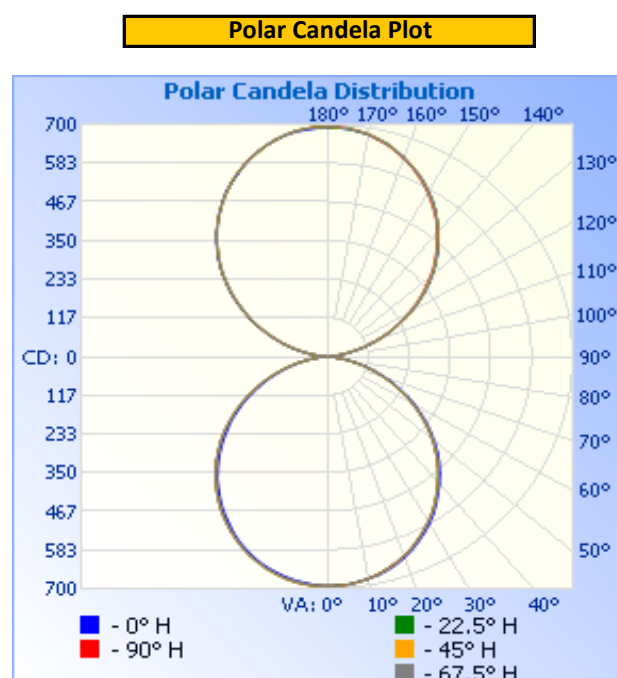
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()
Up/Down	120.00	662.8	78.44	0.986

Light Output (lm)	Lumen Efficacy (lm/W)
3726.2	47.5

INTENSITY SUMMARY - CANDELA

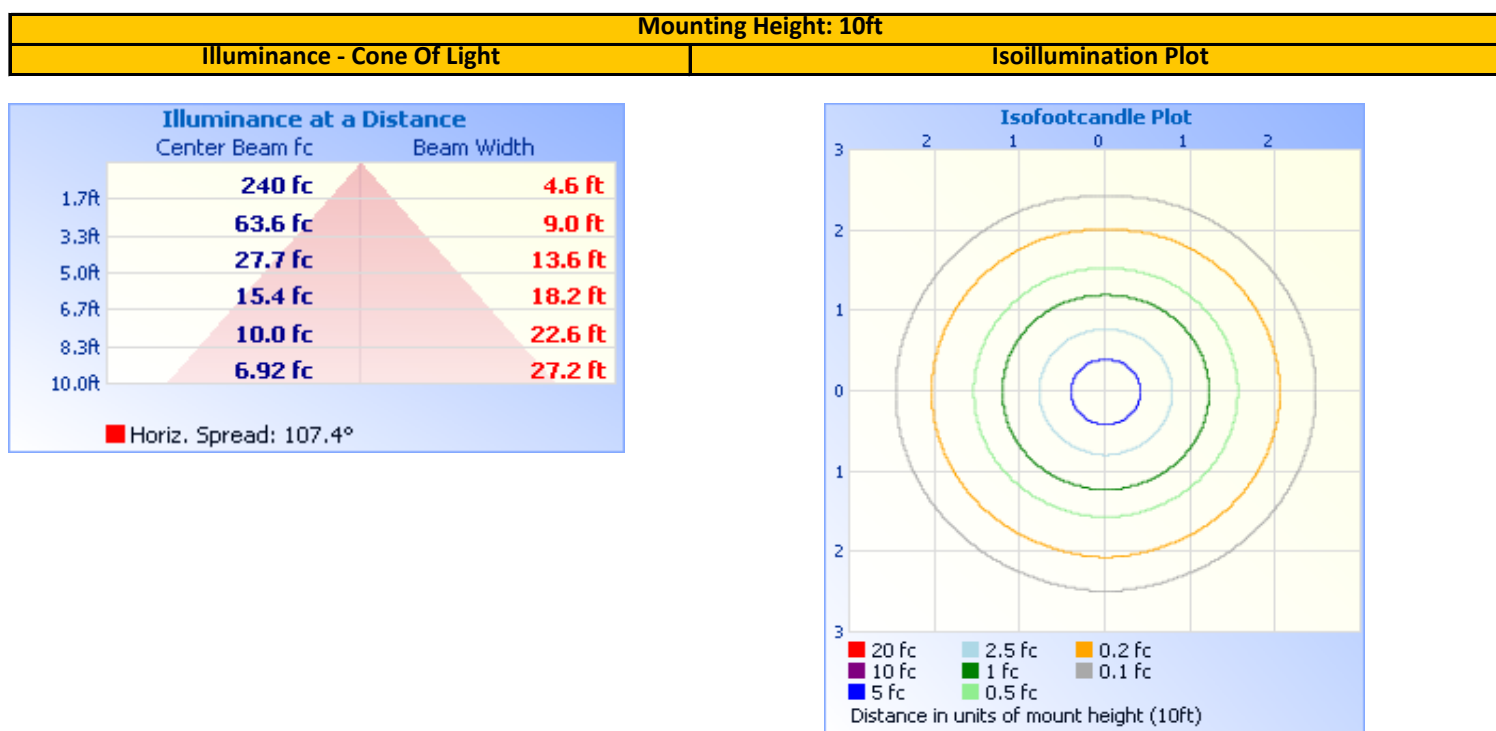
Angle	0	22.5	45	67.5	90
0	692	692	692	692	692
5	689	689	690	691	690
10	680	680	680	680	680
15	667	663	667	664	662
20	645	641	645	640	639
25	616	610	616	611	610
30	582	576	582	577	575
35	542	535	542	542	537
40	499	491	499	499	493
45	453	445	453	453	446
50	400	393	400	400	394
55	346	337	346	346	338
60	288	280	281	288	281
65	228	220	221	228	223
70	169	162	164	169	165
75	113	106	108	113	113
80	60	55	56	60	60
85	18	15	16	18	18
90	6	7	8	6	6
95	15	15	15	15	15
100	55	55	55	55	55
105	107	107	107	107	107
110	165	165	163	165	165
115	222	222	221	222	222
120	281	280	280	281	281
125	340	340	338	340	340
130	395	395	394	395	395
135	446	444	443	446	446
140	494	493	492	491	494
145	539	538	536	536	539
150	577	576	576	575	577
155	611	611	610	609	611
160	639	639	640	639	639
165	664	664	663	662	664
170	680	681	681	680	680
175	689	690	691	692	689
180	691	691	693	693	691

Entire luminous intensity matrix found in .IES file



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ILLUMINANCE SUMMARY



ZONAL LUMENS

Zonal Lumen Summary					
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Zone	Lumens	Luminaire	Zone	Lumens	Total
0-30	533.5	14.3%	0-10	65.5	1.8%
0-40	868.9	23.3%	10-20	186.9	5.0%
0-60	1,514.2	40.6%	20-30	281.2	7.5%
60-90	358.4	9.6%	30-40	335.4	9.0%
70-100	161.1	4.3%	40-50	343.0	9.2%
90-120	348.8	9.4%	50-60	302.3	8.1%
0-90	1,872.7	50.3%	60-70	219.6	5.9%
90-180	1,853.6	49.7%	70-80	114.5	3.1%
0-180	3,726.2	100.0%	80-90	24.3	0.7%
			90-100	22.3	0.6%
			100-110	110.9	3.0%
			110-120	215.6	5.8%
			120-130	298.2	8.0%
			130-140	340.2	9.1%
			140-150	334.1	9.0%
			150-160	280.2	7.5%
			160-170	186.5	5.0%
			170-180	65.5	1.8%

INTEGRATING SPHERE TESTING

REPORT NO. 105767533CHI-003

Test Configuration	Tested Model No.	Pass/Fail/NA
1	700FIA30B-LED930	NA

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

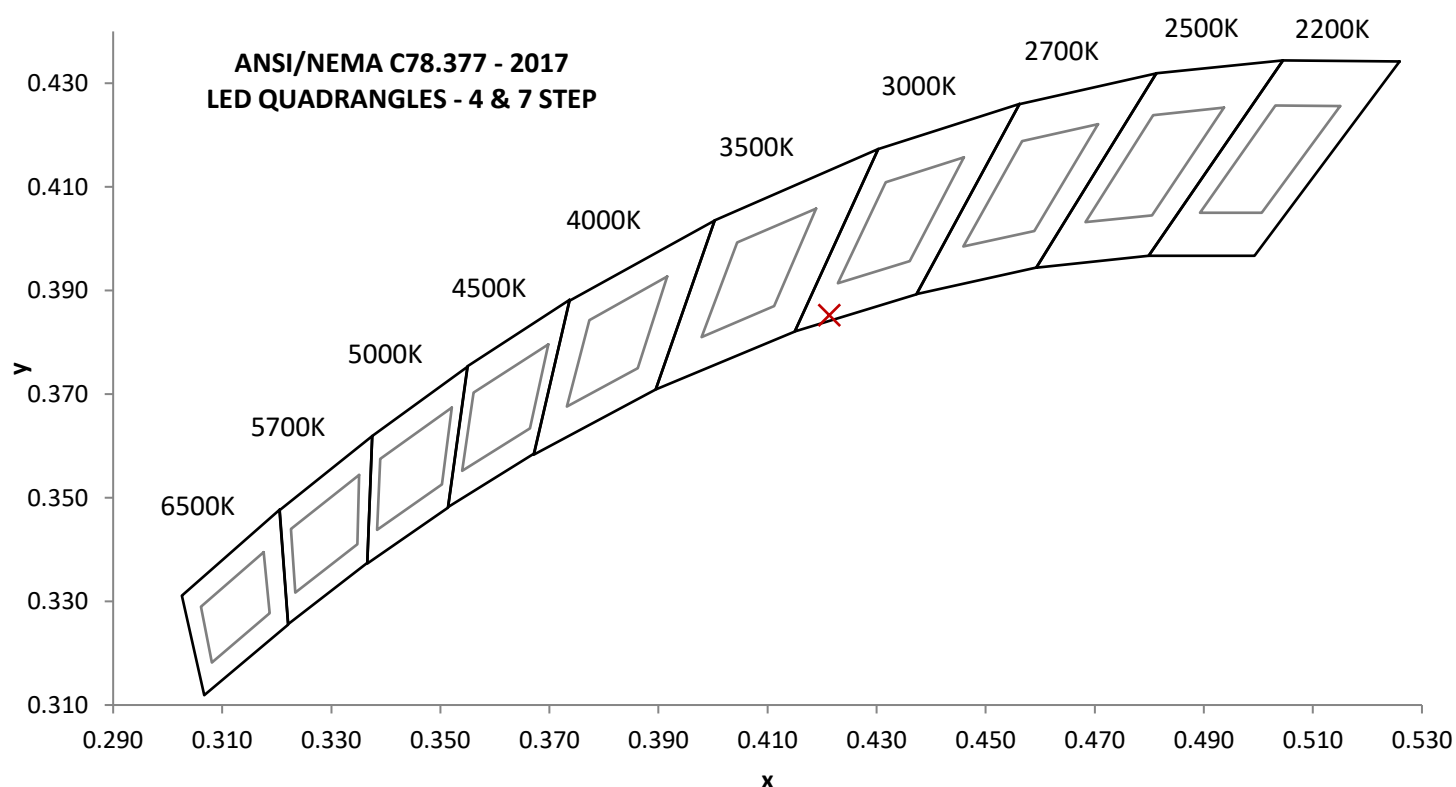
Base Orientation
Up/Down

Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()	Input ATHD (%)
120.00	662.8	78.46	0.986	12.00
276.98	318.6	78.08	0.883	19.22

Measured at 120(Vac)

Light Output (lm)	Lumen Efficacy (lm/W)	CCT (K)	CRI - Ra ()	CRI - R9 ()
3805.7	48.5	3121	94.3	69.0

Duv ()	1931 Chrom (x)	1931 Chrom (y)	1976 Chrom (u')	1976 Chrom (v')
-0.0055	0.421	0.385	0.249	0.511

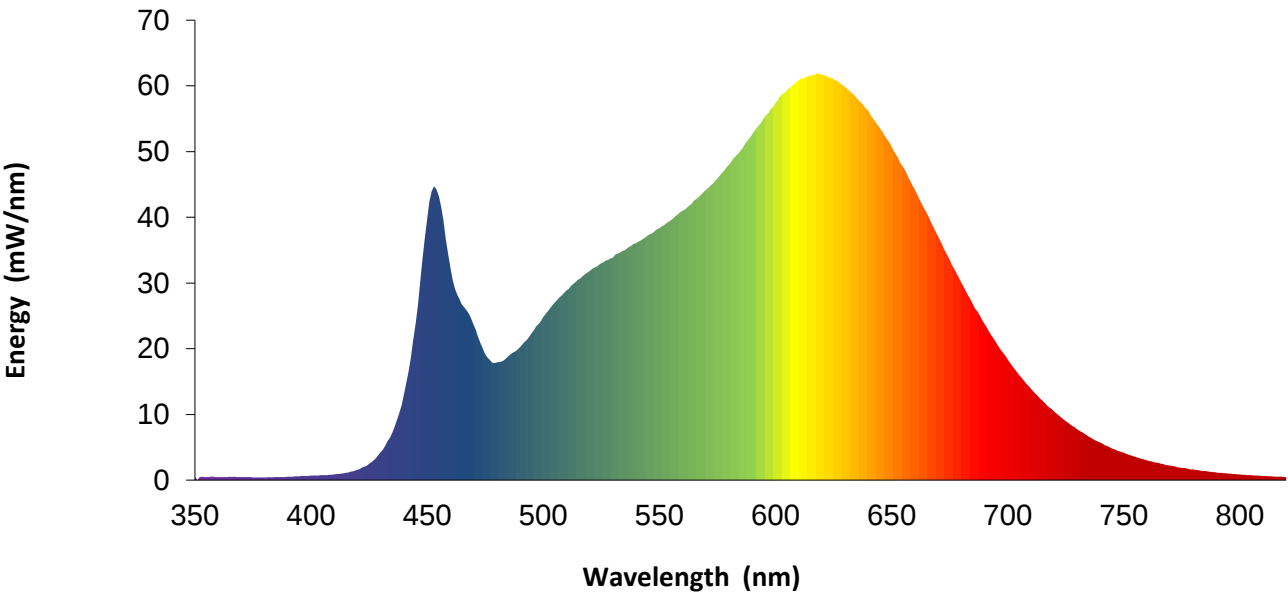


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SPECTRAL DISTRIBUTION OVER WAVELENGTHS

nm	mW/nm		nm	mW/nm		nm	mW/nm		nm	mW/nm
350	0.5		460	32.4		570	44.1		680	30.1
355	0.5		465	26.7		575	45.9		685	26.9
360	0.5		470	23.7		580	48.0		690	23.8
365	0.5		475	19.2		585	50.1		695	21.0
370	0.5		480	17.9		590	52.6		700	18.4
375	0.4		485	18.8		595	55.1		705	16.0
380	0.4		490	20.2		600	57.4		710	13.9
385	0.5		495	22.3		605	59.4		715	12.1
390	0.5		500	24.8		610	60.8		720	10.5
395	0.6		505	27.0		615	61.6		725	9.0
400	0.7		510	28.9		620	61.7		730	7.7
405	0.7		515	30.5		625	61.0		735	6.6
410	0.9		520	31.8		630	59.9		740	5.7
415	1.1		525	33.0		635	58.1		745	4.8
420	1.6		530	33.9		640	56.2		750	4.2
425	2.5		535	35.0		645	53.5		755	3.5
430	4.2		540	36.1		650	50.8		760	3.0
435	7.3		545	37.2		655	47.6		765	2.6
440	13.0		550	38.3		660	44.2		770	2.2
445	23.8		555	39.6		665	40.8		775	1.9
450	39.7		560	41.0		670	37.1		780	1.6
455	43.2		565	42.5		675	33.6		---	---

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. 105767533CHI-003

#	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	10/9/2023	10/9/2024
3	LSI High Speed Mirror Goniometer	6440T	146928	VBV	VBV
4	Omega Thermohygrometer	OM-CP-RFPRHTEMP2000A	CHI0780	4/3/2023	4/3/2024
5	Chroma Power Supply	61604	CHI0371	VBV	VBV
6	Sorenson DC Power Supply	XHR 150-7	146922	VBV	VBV
7	Multi Channel Spectroradiometer	OL770	CHI0092	VBV	VBV
8	Omega Thermohygrometer	OM-CP-RFPRHTEMP2000A	CHI0778	4/3/2023	4/3/2024
9	Labsphere Spectroradiometer	CDS2600	CHI0539	VBV	VBV
10	3 Meter Sphere	SPR600	CHI0088	VBV	VBV
11	Elgar AC Power Supply	CW1251	146112	VBV	VBV
12	Sorenson DC Power Supply	XFR150-8	146846	VBV	VBV
13	Yokogawa Power Meter	WT1600	146769	4/4/2023	4/4/2024
17	Omega thermometer	USB TC08	EQAH002615	4/4/2023	4/4/2024
26	Xitron Power Analyzer	XT2640	CHI0611	7/7/2023	7/7/2024

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

REVISION HISTORY

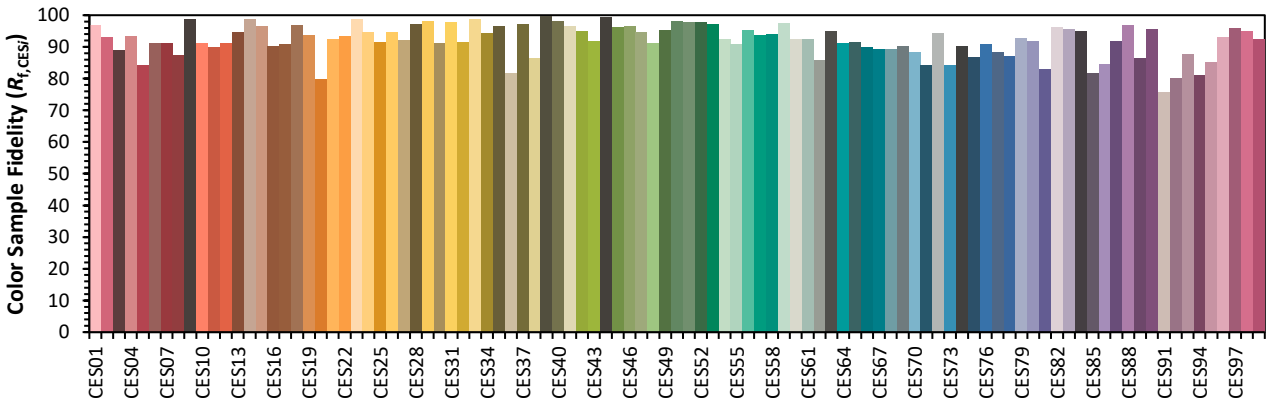
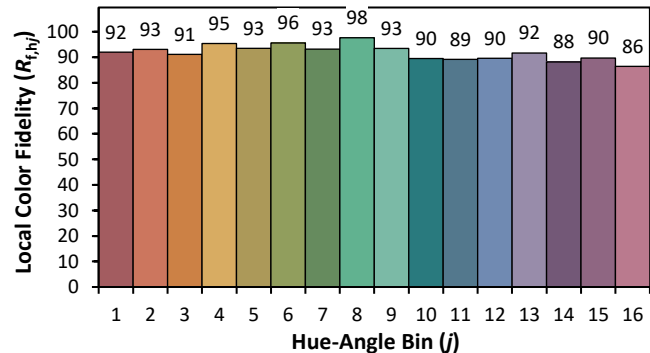
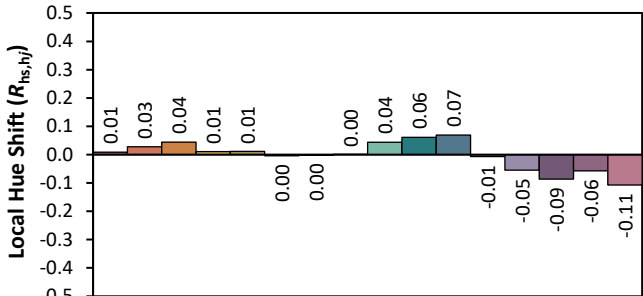
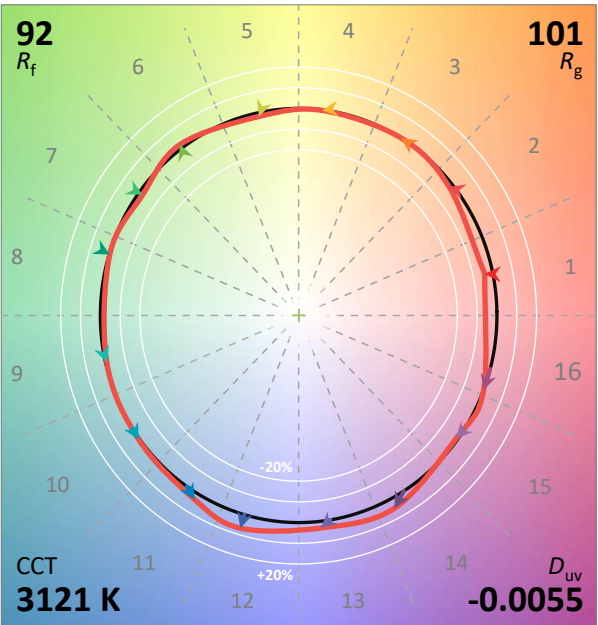
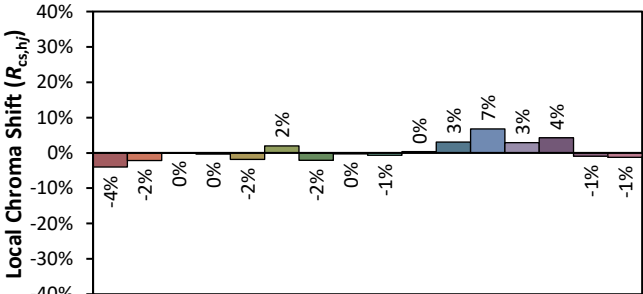
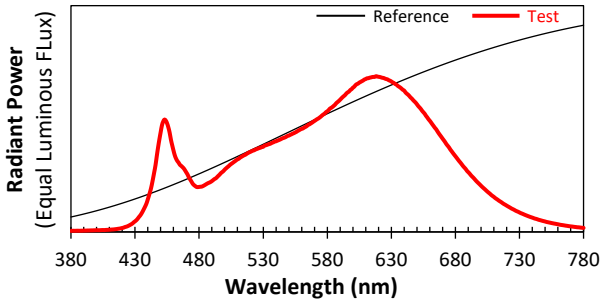
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Test Configuration	Tested Model No.	Pass/Fail/NA
1	700FIA30B-LED930	NA

ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD
Date: 3/19/2024

Manufacturer: VISUAL COMFORT & CO.
Model: 700FIA30B-LED930



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

x 0.4213
y 0.3852
u' 0.2486
v' 0.5113