

VISUAL COMFORT AND COMPANY TEST REPORT

SCOPE OF WORK

LED Performance Testing

MODEL NUMBER

700TDWIT4XX-LED930

PROJECT NUMBER

G105735679

REPORT NUMBER

105735679CHI-004

ISSUE DATE

1/16/2025

REVISED DATE

None

TEST DATES

2024-12-20 through 2025-01-16.

DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

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PAGES

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REPORT NUMBER

105735679CHI-004

MODEL NUMBER(s)

700TDWIT4XX-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-01387083-0.

TEST STANDARDS

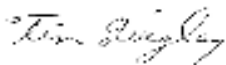
IES LM-79 - 2008: Electrical and Photometric Measurements of Solid State Lighting

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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ITEMS RECEIVED

Item No.	Control No.	Model No.	Description	Type	Received
1	AH12122024023126-002	700TDWIT4XX-LED930	Wit 4 Pendant	Production	12/12/2024

TESTED SAMPLE CONFIGURATIONS

Config No.	Tested Model No.	Item Nos. Utilized
1	700TDWIT4XX-LED930	1

SAMPLE PHOTOS - TESTED CONFIGURATIONS



PRODUCT INFORMATION AND SUMMARY OF DATA

Product Model No.:	700TDWIT4XX-LED930
Product Description:	Wit 4 Pendant
LED Model No.:	XY ELC0435
Driver Model No.:	Macron GBLD001
Light Source:	LED

Criteria	Results	
	Goniophotometer	Integrating Sphere
Light Output (lumens)	2914.8	2958.0
Input Power (W) @ 120 (Vac)	41.30	41.25
Lumen Efficacy (lm/W)	70.6	71.7
Input Power Factor (I) @ 120 (Vac)	0.968	0.977

Criteria	Results
Input ATHD (%) @ 120 (Vac)	9.83
Correlated Color Temperature (K)	2941
Color Rendering Index - Ra	93.9
Color Rendering Index - R9	66.3
Duv	-0.0011
Chromaticity Coordinate (x)	0.440
Chromaticity Coordinate (y)	0.402
Chromaticity Coordinate (u')	0.253
Chromaticity Coordinate (v')	0.521
Input Power (W) @ 277 (Vac)	41.70
Input Power Factor (I) @ 277 (Vac)	0.713
Input ATHD (%) @ 277 (Vac)	51.76

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. 105735679CHI-004

Test Configuration	Tested Model No.	Pass/Fail/NA
1	700TDWIT4XX-LED930	NA

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

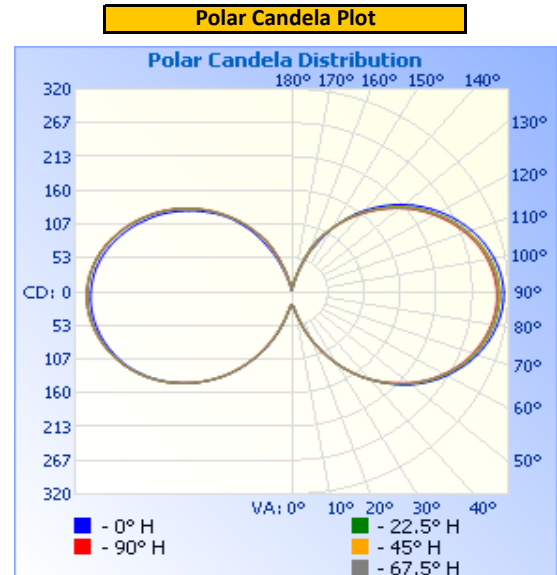
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()
Up/Down	120.04	355.3	41.30	0.968

Light Output (lm)	Lumen Efficacy (lm/W)
2914.8	70.6

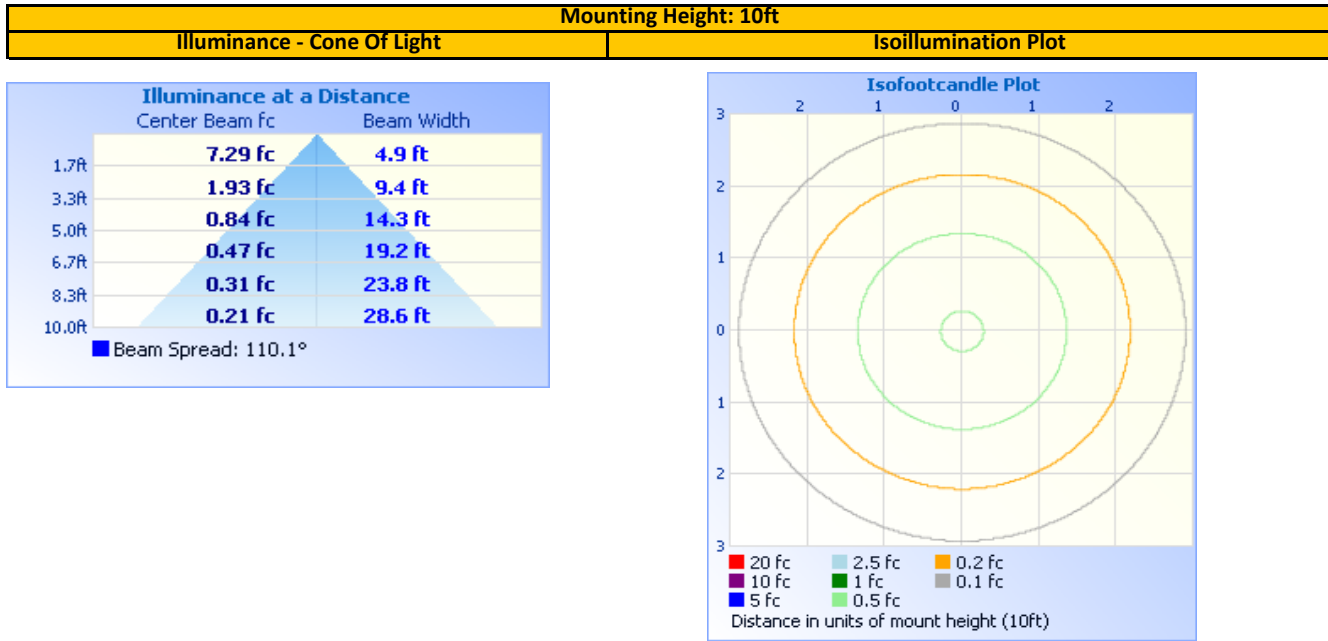
INTENSITY SUMMARY - CANDELA

Angle	0	22.5	45	67.5	90
0	21	21	21	21	21
5	23	23	24	24	24
10	32	33	33	33	34
15	51	53	53	53	53
20	76	77	77	77	78
25	102	103	103	103	103
30	130	131	130	130	130
35	157	157	157	156	156
40	182	182	181	181	181
45	206	205	204	204	203
50	228	227	226	225	225
55	248	246	245	244	243
60	265	262	261	260	260
65	279	277	276	275	274
70	292	288	287	286	285
75	301	297	296	294	293
80	308	303	302	300	299
85	312	307	306	304	303
90	313	307	306	304	303
95	310	304	303	301	300
100	304	298	297	295	294
105	295	289	288	286	285
110	283	277	276	274	273
115	269	263	262	260	259
120	252	247	245	244	243
125	234	229	228	226	225
130	214	209	208	206	205
135	192	187	186	185	184
140	167	164	163	162	161
145	141	140	139	138	137
150	112	114	113	112	112
155	78	89	84	88	88
160	48	56	50	55	57
165	20	26	22	26	27
170	5	8	6	7	8
175	2	2	2	2	2
180	2	2	2	2	2

Entire luminous intensity matrix found in .IES file



ILLUMINANCE SUMMARY



ZONAL LUMENS

Zonal Lumen Summary					
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Zone	Lumens	Luminaire	Zone	Lumens	Total
0-30	67.5	2.3%	90-100	327.7	11.6%
0-40	166.4	5.7%	100-110	301.5	10.7%
0-60	543.7	18.7%	110-120	257.4	9.1%
60-90	913.7	31.3%	120-130	202.5	7.2%
70-100	972.3	33.4%	130-140	143.0	5.1%
90-120	913.7	31.3%	140-150	86.7	3.1%
0-90	1,457.5	50.0%	150-160	39.6	1.4%
90-180	1,457.4	50.0%	160-170	8.1	0.3%
0-180	2,914.8	100.0%	170-180	0.3	0.0%

Test Configuration	Tested Model No.	Pass/Fail/NA
1	700TDWIT4XX-LED930	NA

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

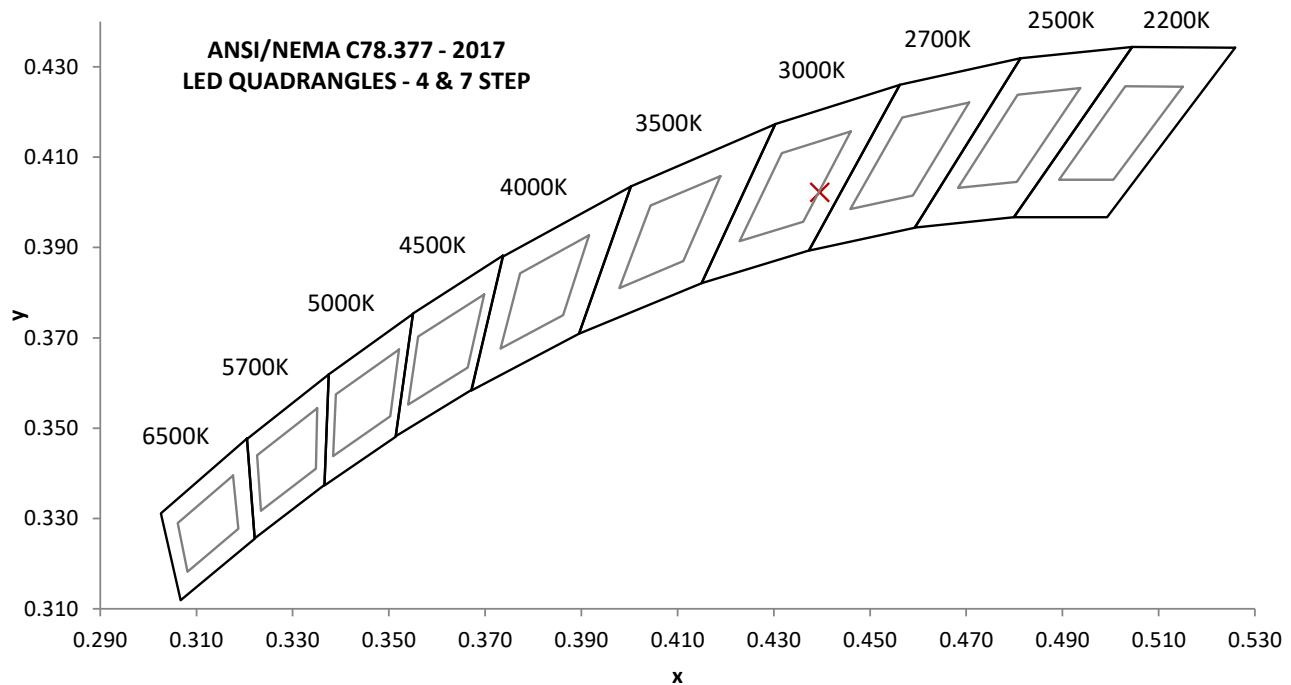
Base Orientation
Up/Down

Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor (l)	Input ATHD (%)
120.00	351.8	41.25	0.977	9.83
277.03	211.0	41.70	0.713	51.76

Measured at 120(Vac)

Light Output (lm)	Lumen Efficacy (lm/W)	CCT (K)	CRI - Ra (l)	CRI - R9 (l)
2958.0	71.7	2941	93.9	66.3

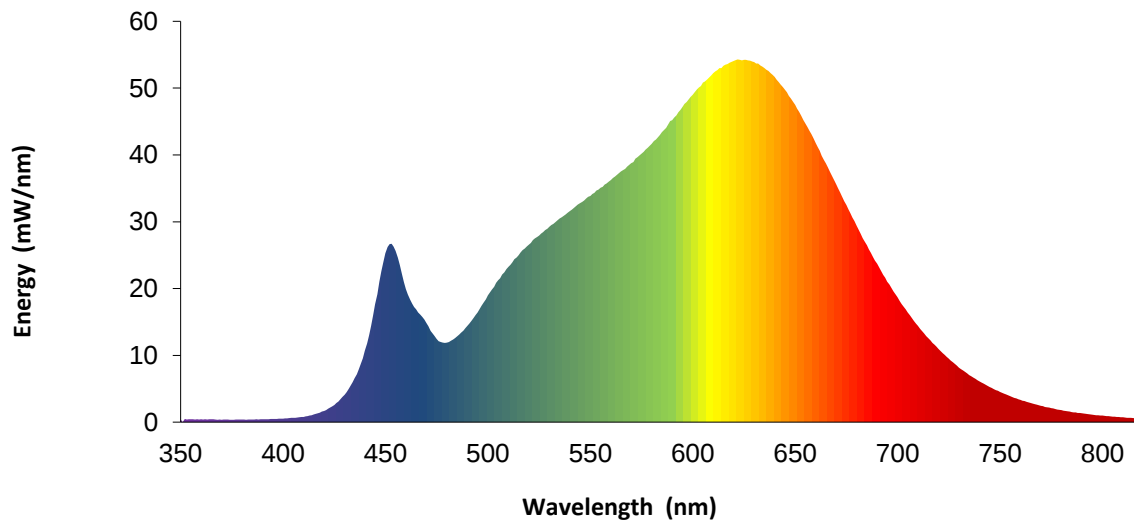
Duv (l)	1931 Chrom (x)	1931 Chrom (y)	1976 Chrom (u')	1976 Chrom (v')
-0.0011	0.440	0.402	0.253	0.521



SPECTRAL DISTRIBUTION OVER WAVELENGTHS

nm	mW/nm		nm	mW/nm		nm	mW/nm		nm	mW/nm
350	0.4		460	19.9		570	38.7		680	29.4
355	0.4		465	16.9		575	40.2		685	26.5
360	0.4		470	14.9		580	41.7		690	23.7
365	0.4		475	12.5		585	43.4		695	21.0
370	0.4		480	11.9		590	45.2		700	18.7
375	0.4		485	12.8		595	47.2		705	16.4
380	0.4		490	14.4		600	49.0		710	14.4
385	0.4		495	16.4		605	50.8		715	12.6
390	0.4		500	19.0		610	52.2		720	11.0
395	0.5		505	21.2		615	53.3		725	9.5
400	0.5		510	23.2		620	54.1		730	8.2
405	0.6		515	25.0		625	54.2		735	7.1
410	0.8		520	26.6		630	53.9		740	6.1
415	1.1		525	27.9		635	53.0		745	5.3
420	1.7		530	29.3		640	51.7		750	4.5
425	2.6		535	30.5		645	49.8		755	3.9
430	4.1		540	31.6		650	47.5		760	3.3
435	6.6		545	32.8		655	44.7		765	2.9
440	10.7		550	33.9		660	41.8		770	2.5
445	17.7		555	35.1		665	38.7		775	2.1
450	25.3		560	36.3		670	35.6		780	1.8
455	25.6		565	37.5		675	32.5		---	---

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



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EQUIPMENT LIST

REPORT NO. 105735679CHI-004

#	Equipment	Model No	Control No.	Last Cal	Cal Due
1	Yokogawa Power Meter	WT310E	CHI0664	4/2/2024	4/2/2025
2	Omega Thermometer	DPI8-C24	146920	9/30/2024	9/30/2025
3	LSI High Speed Mirror Goniometer	6440T	146928	VBUE	VBUE
4	Omega Thermohygrometer	OM-CP-RFPRHTEMP2000A	CHI0764	10/8/2024	10/8/2025
5	Chroma Power Supply	61604	CHI0371	VBUE	VBUE
8	Omega Thermohygrometer	OM-CP-RFPRHTEMP2000A	CHI0727	10/8/2024	10/8/2025
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	146769	4/10/2024	4/10/2025
17	Omega thermometer	USB TC08	CHI0625	4/10/2024	4/10/2025
26	Xitron Power Analyzer	XT2640	CHI0611	7/17/2024	7/17/2025

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

REVISION HISTORY

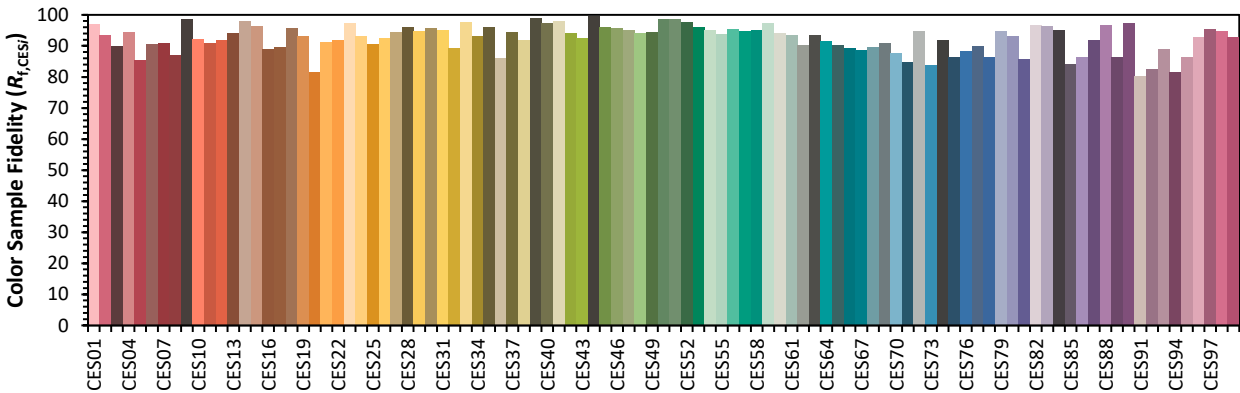
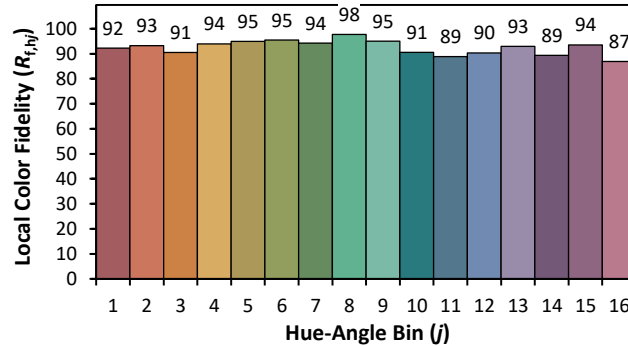
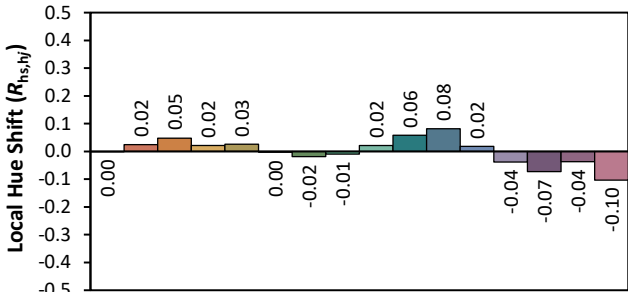
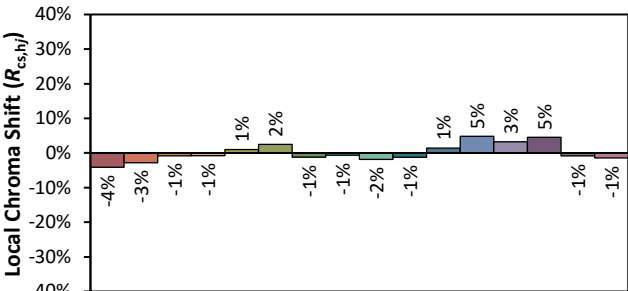
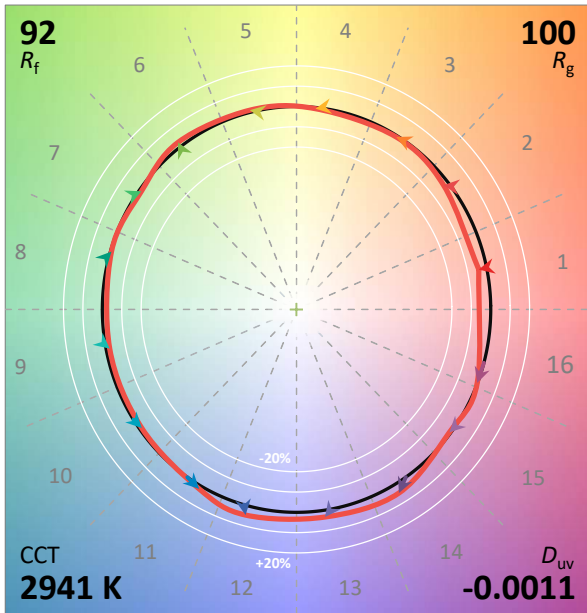
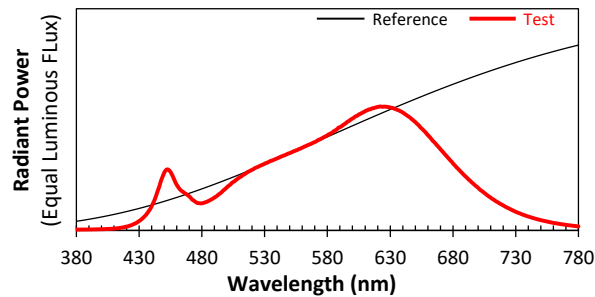
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Test Configuration	Tested Model No.	Pass/Fail/NA
1	700TDWIT4XX-LED930	NA

ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD
Date: 1/16/2025

Manufacturer: VISUAL COMFORT AND COMPANY
Model: 700TDWIT4XX-LED930



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

x 0.4395
y 0.4022
u' 0.2531
v' 0.5210