

VISUAL COMFORT AND COMPANY TEST REPORT

SCOPE OF WORK

LED Performance Testing

MODEL NUMBER

KWLS30327CNB

PROJECT NUMBER

G106070014

REPORT NUMBER

106070014CRT-002

ISSUE DATE

4/29/2025

REVISION DATE

None

TEST DATES

4/24/2025 to 4/28/2025

DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

© 2017 INTERTEK



WARNING: This document may contain information subject to EAR99.
Diversion contrary to US law is prohibited.

REPORT NUMBER

106070014CRT-002

MODEL NUMBER(s)

KWLS30327CNB

REPORT RENDERED TO:

VISUAL COMFORT AND COMPANY
7400 LINDER AVE
SKOKIE, IL 60077
USA

STATEMENT OF LIMITATION

NVLAP Lab Code 100402-0. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. government.

AUTHORIZATION

The testing performed was authorized by signed quote number Qu-01505675-0.

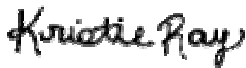
TEST STANDARDS

ANSI/IES LM-79-19: Optical and Electrical Measurements of Solid State Lighting Products

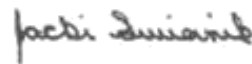
ANSI C78.377-2017: Specifications for the Chromaticity of Solid State Lighting (SSL) Products

In Charge of Testing:

Reviewer:



Kristie Ray
Team Lead, Engineering
Lighting Division



Jacki Swiernik
Staff Engineer
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. 106070014CRT-002

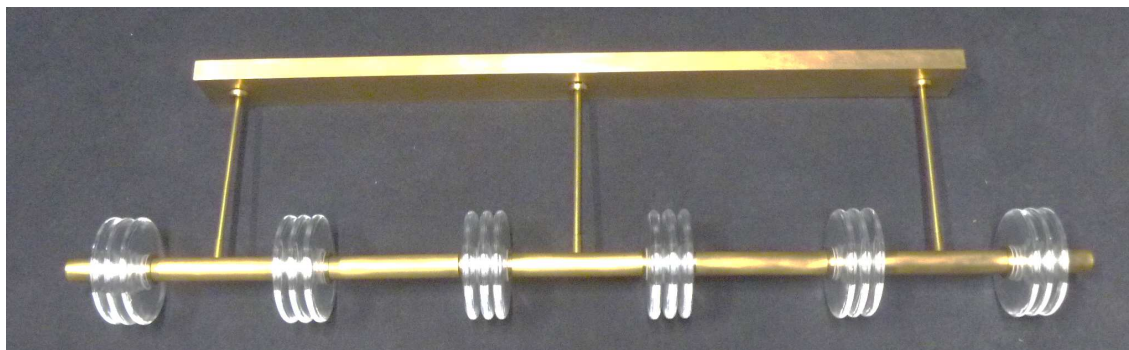
ITEMS RECEIVED

Item No.	Control No.	Model No.	Description	Type	Received Date	Sampling Date
1	CRT2504211438-001	KWLS30327CNB	LAUREL XL LINEAR CHAN 27 CL NB	Production	4/21/2025	N/A

TESTED SAMPLE CONFIGURATIONS

Config No.	Tested Model No.	Item Nos. Utilized
1	KWLS30327CNB	1

SAMPLE PHOTOS



SUMMARY

REPORT NO. 106070014CRT-002

PRODUCT INFORMATION AND SUMMARY OF DATA

Test Configuration 1	
Product Model No.:	KWLS30327CNB
Product Description:	LAUREL XL LINEAR CHAN 27 CL NB
LED Model No.:	Samsung 2835 3V (XY-CONCEPT_7_FTR_LED)
Driver Model No.:	MACRON MDR-608-24-100-LC (AA3318)

Criteria	Results	
	Goniophotometer	Integrating Sphere
Light Output (lumens)	1891.1	1921.8
Input Power (W) @ 120 (Vac)	46.18	45.98
Luminous Efficacy (lm/W)	41.0	41.8
Input Power Factor () @ 120 (Vac)	0.993	0.993

Criteria	Results
Input ATHD (%) @ 120 (Vac)	6.16
Correlated Color Temperature (K)	2529
Color Rendering Index - Ra ()	95.3
Color Rendering Index - R9 ()	72.3
Duv ()	-0.001
Chromaticity Coordinate (x)	0.472
Chromaticity Coordinate (y)	0.409
Chromaticity Coordinate (u')	0.271
Chromaticity Coordinate (v')	0.528

TEST METHODS

SEASONING IN SAMPLE ORIENTATION - LED PRODUCTS

No seasoning was performed in accordance with ANSI/IES LM-79-19

DUT SAMPLING METHOD

For testing plans, program requirements, or shipments requiring sampling of DUTs or components, the selections for each test were random. All samples are marked with control numbers regardless of being tested.

INTEGRATING SPHERE TESTING

A spectroradiometer and integrating sphere were used to measure the spectral power distribution for photometric and colorimetric data of the DUT. Electrical measurements of the unit were measured using a power analyzer. Each DUT was operated at the rated input voltage of the system in its designated orientation. The ambient temperature and relative humidity was measured at 25°C ± 1.2°C and 10-65% respectively at a position inside of the sphere within 1.5m and at equal height of the DUT. Stabilization procedures to LM-79-19 were followed. The DUT was mounted in a 4π configuration.

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 DUT. Electrical measurements of the unit were measured using a power analyzer. Each DUT was operated at the rated input voltage of the system in its designated orientation. The ambient temperature and relative humidity was measured at 25°C ± 1.2°C and 10-65% respectively at a position within 1.5m and at equal height of the DUT. Stabilization procedures to LM-79-19 were followed. The test distance was ≥ 5x the longest luminous dimension of the DUT.

ANSI/IES Technical Memorandums (TM) reported are not NVLAP accredited

TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING

REPORT NO. 106070014CRT-002

Test Configuration	Tested Model No.	Pass/Fail/NA
1	KWLS30327CNB	NA

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS

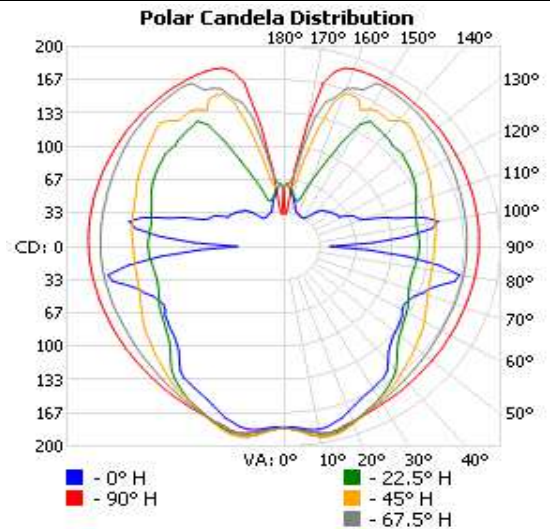
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()
Up	120.04	387.3	46.18	0.993

Light Output (lm)	Efficacy (lm/W)
1891.1	41.0

LUMINOUS INTENSITY SUMMARY (candela)

Vertical	Horizontal					Polar Candela Plot	
Angle (°)	0	22.5	45	67.5	90		
0	181	181	181	181	181		
5	183	186	186	185	185		
10	186	193	193	190	190		
15	182	192	194	191	190		
20	175	187	189	187	187		
25	168	181	183	183	184		
30	164	176	177	179	182		
35	161	170	173	176	181		
40	150	161	168	174	180		
45	139	148	163	172	179		
50	134	139	158	170	178		
55	131	135	154	169	178		
60	126	131	150	168	178		
65	127	127	145	168	178		
70	136	123	141	168	178		
75	149	122	140	168	178		
80	165	122	139	169	179		
85	114	124	138	169	180		
90	43	125	139	169	180		
95	115	125	141	169	181		
100	145	124	142	170	181		
105	110	127	143	171	182		
110	79	130	146	172	182		
115	72	135	150	173	183		
120	59	138	153	175	184		
125	57	141	157	177	184		
130	54	143	161	179	186		
135	51	142	166	181	187		
140	43	145	164	182	187		
145	35	147	160	184	188		
150	33	141	159	185	189		
155	34	95	163	173	189		
160	36	64	163	168	189		
165	41	47	122	150	181		
170	51	51	67	99	124		
175	60	61	60	64	36		
180	58	58	58	58	58		

Full luminous intensity matrix found in .IES file



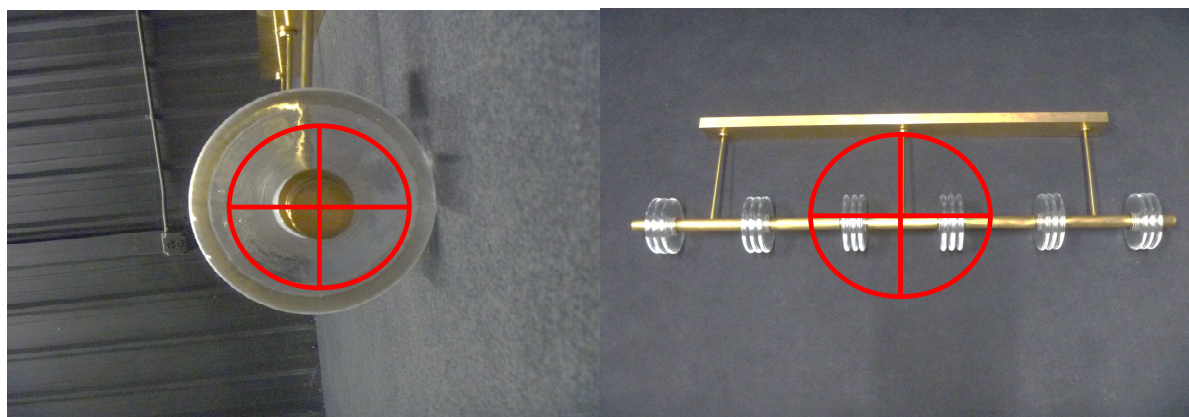
REPORT NO. 106070014CRT-002

ORIENTATION AND ALIGNMENT OF DUT

Luminous Opening		
Length (ft)	Width (ft)	Height (ft)
5.50	0.67	0.67
0°-180° H	90°-270° H	0°-180° V

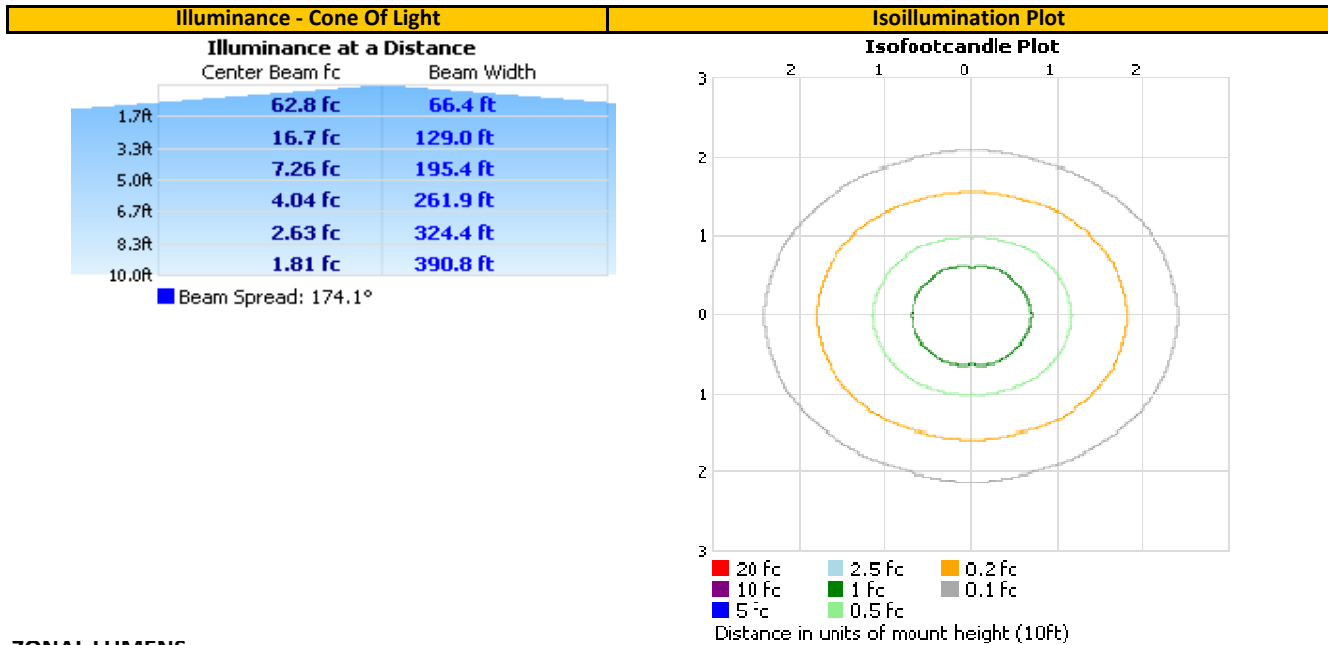
Test Distance (ft)
29.2

PHOTOMETRIC CENTER OF DUT



REPORT NO. 106070014CRT-002

ILLUMINANCE SUMMARY



ZONAL LUMENS

Zonal Lumen Summary

Zone (°)	Lumens	Luminaire
0-30	155.2	8.2%
0-40	263.2	13.9%
0-60	524.9	27.8%
60-90	461.7	24.4%
70-100	472.3	25.0%
90-120	458.4	24.2%
0-90	986.6	52.2%
90-180	904.5	47.8%
0-180	1,891.1	100.0%

Zone (°)	Lumens	Total	Zone (°)	Lumens	Total
0-10	17.9	0.9%	90-100	157.9	8.3%
10-20	53.8	2.8%	100-110	155.6	8.2%
20-30	83.5	4.4%	110-120	144.8	7.7%
30-40	108.0	5.7%	120-130	133.6	7.1%
40-50	124.4	6.6%	130-140	117.6	6.2%
50-60	137.3	7.3%	140-150	94.6	5.0%
60-70	147.2	7.8%	150-160	63.6	3.4%
70-80	157.2	8.3%	160-170	30.6	1.6%
80-90	157.2	8.3%	170-180	6.1	0.3%

REPORT NO. 106070014CRT-002

UNIFIED GLARE RATING (UGR) SUMMARY

Reflectances					
Ceiling Cavity	70	70	50	50	30
Walls	50	30	50	30	30
Floor Cavity	20	20	20	20	20

Room Size	
X=2H	Y=2H
	3H
	4H
	6H
	8H
	12H

UGR Viewed Crosswise				
6.6	7.6	7.5	8.5	9.8
10.0	10.9	10.9	11.9	13.1
12.1	13.0	13.0	13.9	15.2
14.7	15.5	15.6	16.4	17.7
15.8	16.6	16.8	17.6	18.9
16.9	17.6	17.8	18.6	19.9

4H	2H
	3H
	4H
	6H
	8H
	12H

7.9	8.8	8.8	9.7	11.0
11.4	12.1	12.3	13.1	14.4
13.4	14.1	14.4	15.1	16.4
16.0	16.6	17.0	17.7	19.0
17.3	17.9	18.3	18.9	20.2
18.5	19.0	19.5	20.1	21.4

8H	4H
	6H
	8H
	12H

14.4	15.0	15.3	16.0	17.3
17.0	17.5	18.0	18.6	19.9
18.4	18.9	19.5	19.9	21.3
19.9	20.3	20.9	21.3	22.7

12H	4H
	6H
	8H

14.7	15.2	15.7	16.3	17.6
17.4	17.9	18.4	18.9	20.3
18.9	19.3	19.9	20.4	21.7

Room Size	
X=2H	Y=2H
	3H
	4H
	6H
	8H
	12H

UGR Viewed Endwise				
8.4	9.4	9.3	10.3	11.5
12.0	12.9	12.9	13.8	15.1
13.9	14.8	14.9	15.7	17.0
16.1	16.9	17.0	17.8	19.1
17.2	18.0	18.2	19.0	20.3
18.6	19.3	19.6	20.3	21.6

4H	2H
	3H
	4H
	6H
	8H
	12H

9.1	10.0	10.1	10.9	12.2
13.0	13.7	13.9	14.7	16.0
15.2	15.9	16.1	16.8	18.1
17.5	18.2	18.5	19.2	20.5
18.8	19.4	19.8	20.4	21.7
20.3	20.9	21.3	21.9	23.2

8H	4H
	6H
	8H
	12H

15.7	16.3	16.7	17.3	18.6
18.4	18.9	19.4	19.9	21.2
19.9	20.4	20.9	21.4	22.7
21.7	22.1	22.7	23.1	24.5

12H	4H
	6H
	8H

15.9	16.4	16.9	17.4	18.7
18.6	19.1	19.6	20.1	21.5
20.3	20.7	21.3	21.7	23.1

Maximum UGR	
24.5	

INTEGRATING SPHERE TESTING

REPORT NO. 106070014CRT-002

Test Configuration	Tested Model No.	Pass/Fail/NA
1	KWLS30327CNB	NA

PHOTOMETRIC, RADIOMETRIC, COLORIMETRIC, AND ELECTRICAL MEASUREMENTS

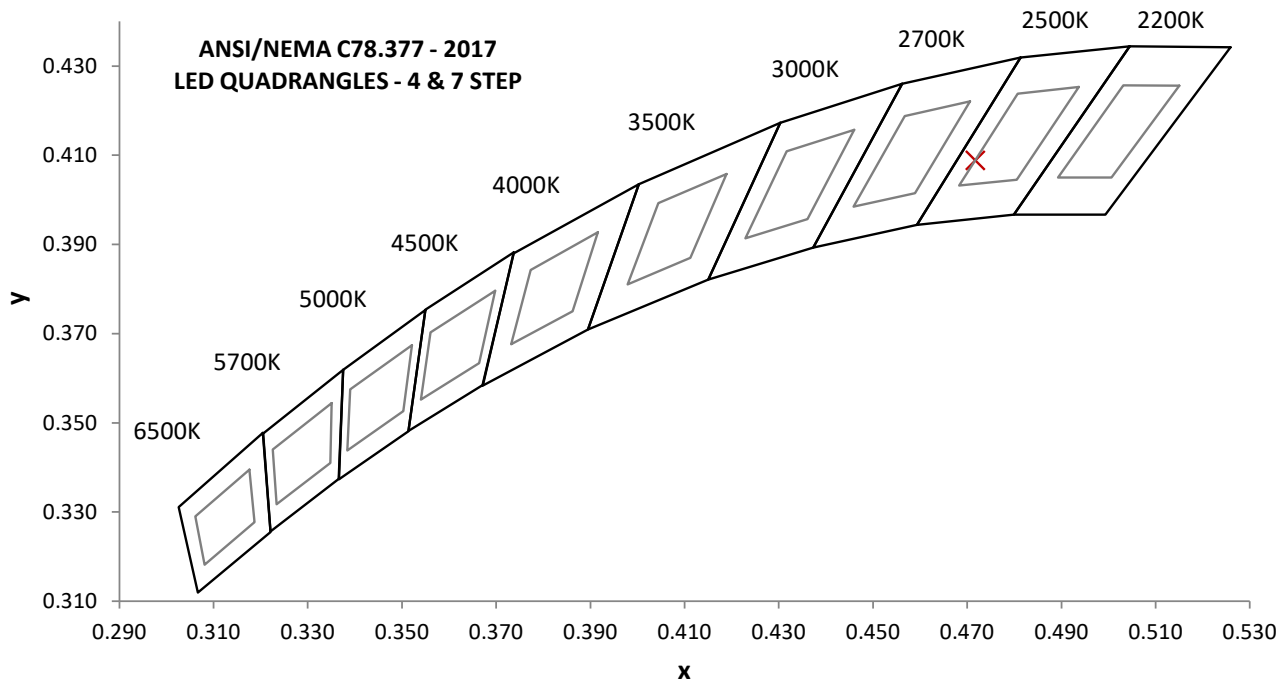
Base Orientation
Up

Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor (l)	Input ATHD (%)
120.02	385.9	45.98	0.993	6.16

Measured at 120.02(Vac)

Light Output (lm)	Efficacy (lm/W)	CCT (K)	CRI - Ra (l)	CRI - R9 (l)
1921.8	41.8	2529	95.3	72.3

Duv (l)	1931 Chrom (x)	1931 Chrom (y)	1976 Chrom (u')	1976 Chrom (v')
-0.0015	0.472	0.409	0.271	0.528

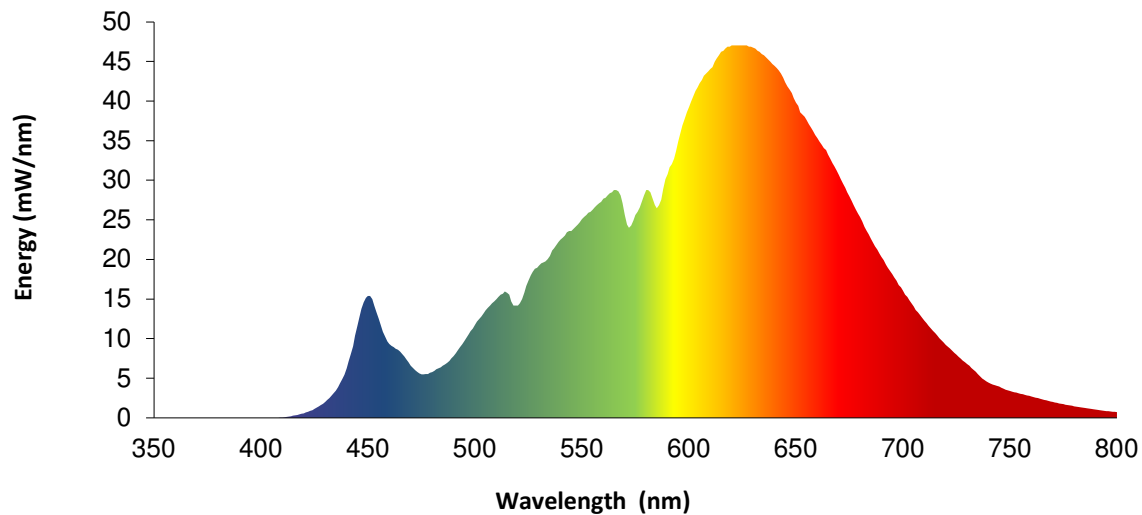


REPORT NO. 106070014CRT-002

SPECTRAL POWER DISTRIBUTION

nm	mW/nm		nm	mW/nm		nm	mW/nm		nm	mW/nm
350	0.0		460	9.3		570	25.6		680	25.4
355	0.0		465	8.4		575	25.6		685	22.6
360	0.0		470	6.6		580	28.8		690	20.3
365	0.0		475	5.5		585	26.4		695	18.1
370	0.0		480	5.8		590	30.8		700	16.1
375	0.0		485	6.6		595	34.9		705	14.0
380	0.0		490	7.8		600	39.3		710	12.3
385	0.0		495	9.7		605	42.3		715	10.7
390	0.0		500	11.7		610	44.0		720	9.2
395	0.0		505	13.6		615	46.2		725	8.0
400	0.0		510	15.0		620	47.0		730	6.8
405	0.0		515	15.8		625	47.0		735	5.5
410	0.0		520	14.2		630	46.8		740	4.5
415	0.3		525	17.3		635	45.8		745	3.9
420	0.6		530	19.2		640	44.4		750	3.4
425	1.1		535	20.4		645	42.4		755	3.0
430	2.0		540	22.5		650	39.8		760	2.7
435	3.4		545	23.6		655	37.6		765	2.3
440	6.2		550	25.1		660	35.3		770	2.0
445	11.6		555	26.3		665	33.3		775	1.7
450	15.4		560	27.7		670	30.7		780	1.5
455	12.5		565	28.8		675	27.9		---	---

Spectral radiant flux was measured by 1nm increments. 1nm data is on file.



Portrayed color in graphic is estimated by wavelength (nm) and may not be exact - it is a visual representation only

SEE ANNEX A FOR IES TM-30 REPORT*

* = Not a NVLAP Accredited Test/Reporting Method

EQUIPMENT LIST

REPORT NO. 106070014CRT-002

#	Equipment	Model No	Control No.	Last Cal	Cal Due
1	Elgar AC Power Supply	CW1251	---	VBV	VBV
2	Sorenson DC Power Supply	XFR 150-8	---	VBV	VBV
3	Testo Hygrometer	608-H1	L253	6/3/2024	6/3/2025
4	Yokogawa Power Analyzer	WT310E	L247	6/10/2024	6/10/2025
5	Fluke Thermometer	53 II	N1324	7/15/2024	7/15/2025
6	Fisher Scientific Stopwatch	14-649-9	N1132	8/3/2024	8/3/2025
7	3M Integrating Sphere Spectrometer System	CDS2600	L231	4/11/2025	7/11/2025
8	LSI Type C Goniophotometer System	6440	---	4/21/2025	7/20/2025
9	Elgar AC Power Supply	CW1251	---	VBV	VBV
10	Testo Hygrothermometer	608-H1	L253	6/3/2024	6/3/2025
11	Tape Measure	Crescent	L288	12/9/2024	12/9/2027
12	M-D Building Products Digital Level	Smart Tool	L112	8/13/2024	8/13/2025
13	Yokogawa Power Analyzer	WT210	E464	6/12/2024	6/12/2025
14	Omega Thermometer	DPI8-C24	M263	3/13/2025	3/13/2026
The AC power supplies used for testing have a crest factor capable of 0-3.5					

REVISION HISTORY

#	Revision Date	Updated By	Reviewed By	Description of Change
---	None	---	---	---
---	---	---	---	---
---	---	---	---	---

ANNEX A - IES TM-30 CALCULATIONS

REPORT NO. 106070014CRT-002

Test Configuration	Tested Model No.	Pass/Fail/NA
1	KWLS30327CNB	NA

TM-30 REPORT

ANSI/IES TM-30-20 Color Rendition Report

Unique Identifier:

CRT2504211438-001

Manufacturer:

VISUAL COMFORT AND COMPAN'

Creation Date:

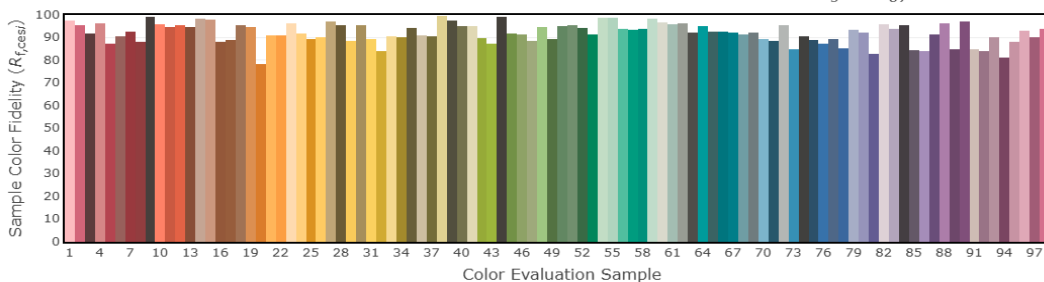
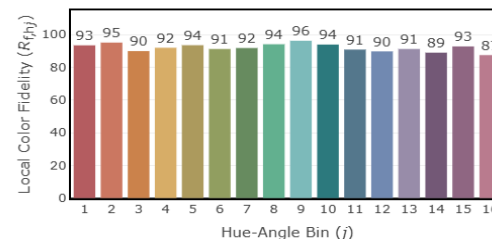
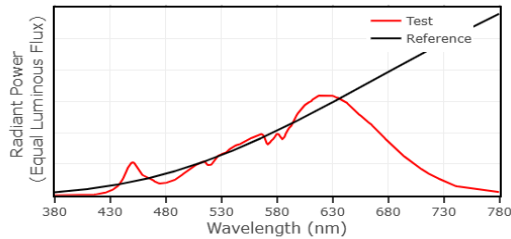
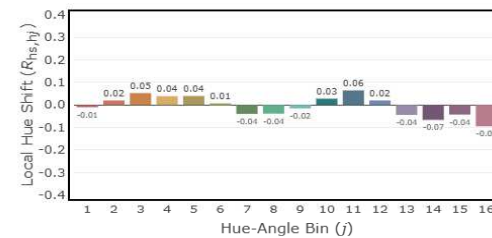
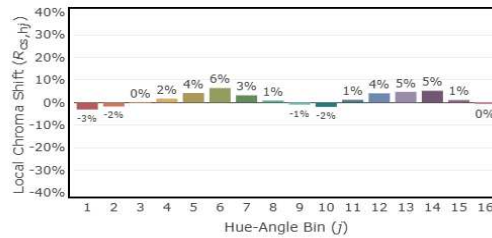
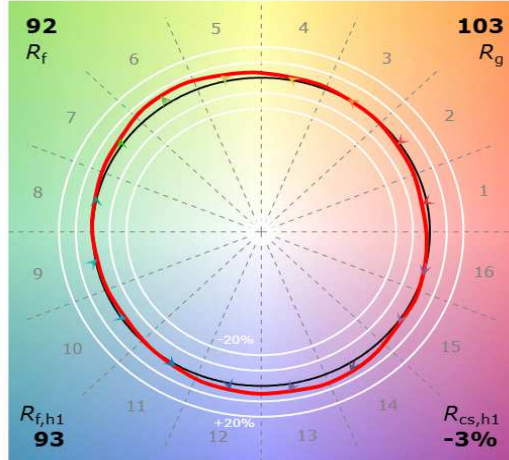
4/29/25

Catalog Number or Model:

KWLS30327CNB

CCT: 2528 K
 D_{uv} : -0.0015

P2 V- F2



The content of this report was generated by the Illuminating Engineering Society's online spectral calculator (www.ies.org/spectralcalculator), in conformance with the ANSI/IES TM-30-20 standard published by the IES, 120 Wall Street, New York, New York 10005.