

PURE EDGE LIGHTING

TEST REPORT

SCOPE OF WORK

LED Performance Testing

MODEL NUMBER

LS3-24V-3-30KZ

PROJECT NUMBER

G104797632

REPORT NUMBER

104797632CHI-009

ISSUE DATE

5/20/2022

REVISED DATE

None

TEST DATES

2022-05-11 through 2022-05-16.

DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

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REPORT NUMBER

104797632CHI-009

MODEL NUMBER(s)

LS3-24V-3-30KZ

REPORT RENDERED TO:

PURE EDGE LIGHTING
1718 WEST FULLERTON AVE
CHICAGO, IL 60614
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-01199885-2.

TEST STANDARDS

IESNA 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

IES TM-30-18: IES Method for Evaluating Light Source Color Rendition

In Charge of Testing:

Reviewer:



Maximilian Carvajal
Engineer
Lighting Division



Jeff 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	AH04282022112833	LS3-24V-3-30KZ	LINEAR STRIP LIGHT	Prototype	4/28/2022

TESTED SAMPLE CONFIGURATIONS

Config No.	Tested Model No.	Item Nos. Utilized
1	LS3-24V-3-30KZ	1

SAMPLE PHOTOS - TESTED CONFIGURATIONS



SUMMARY

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PRODUCT INFORMATION AND SUMMARY OF DATA

Product Model No.:	LS3-24V-3-30KZ
Product Description:	LINEAR STRIP LIGHT
LED Model No.:	EASING HOME 4MM COB
Driver Model No.:	DR-24V-1100-33D
Light Source:	LED

Criteria	Results	
	Goniophotometer	Integrating Sphere
Light Output (lumens)	1338.7	1295.1
Input Power (W) @ 120V (Vac)	20.74	21.13
Lumen Efficacy (lm/W)	64.5	61.3
Input Power Factor () @ 120V (Vac)	0.985	0.986

Criteria	Results
Input ATHD (%) @ 120V (Vac)	14.51
Correlated Color Temperature (K)	2906
Color Rendering Index - Ra ()	94.5
Color Rendering Index - R9 ()	75.5
Duv ()	0.0003
Chromaticity Coordinate (x)	0.444
Chromaticity Coordinate (y)	0.407
Chromaticity Coordinate (u')	0.254
Chromaticity Coordinate (v')	0.524

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.

TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING

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Test Configuration	Tested Model No.	Pass/Fail/NA
1	LS3-24V-3-30KZ	NA

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

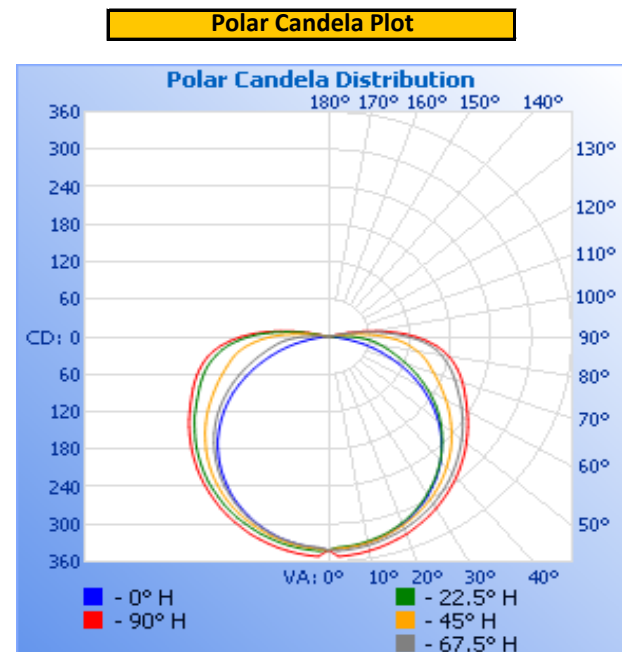
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor (I)
Up	120.06	175.3	20.74	0.985

Light Output (lm)	Lumen Efficacy (lm/W)
1338.7	64.5

INTENSITY SUMMARY - CANDELA

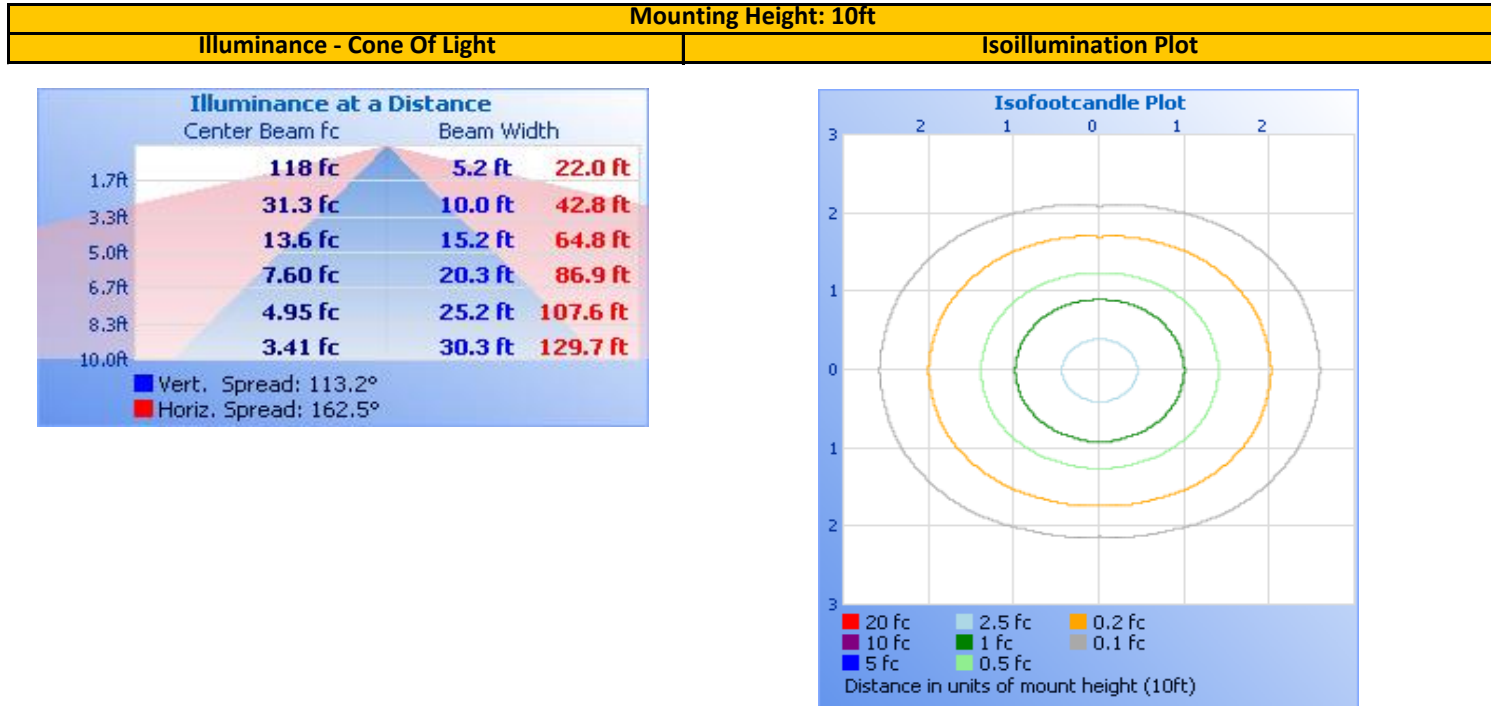
Angle	0	22.5	45	67.5	90
0	341.2	341.2	341.2	341.2	341.2
5	337.8	336.2	338.2	342.1	350.9
10	334.5	332.2	334.8	339.0	347.6
15	328.4	326.1	328.9	333.5	342.5
20	319.1	317.1	321.3	327.0	336.2
25	307.4	305.6	311.8	318.9	327.3
30	293.5	291.4	300.7	309.3	317.5
35	276.9	275.4	287.2	297.3	305.8
40	258.0	257.4	271.9	284.8	293.5
45	236.4	237.7	255.2	271.1	279.8
50	212.8	216.8	237.4	256.7	265.7
55	186.0	194.2	218.9	242.2	251.3
60	158.1	169.9	200.1	227.0	236.5
65	128.0	144.9	181.8	211.9	222.8
70	97.0	120.4	164.8	198.5	210.4
75	67.8	98.3	150.6	185.0	196.7
80	38.4	79.8	133.7	169.9	180.8
85	14.6	62.0	113.3	149.9	159.3
90	0.8	37.4	84.8	118.2	130.0
95	0.7	7.4	49.0	80.5	92.0
100	0.7	0.8	11.4	39.5	50.3
105	0.7	0.7	0.8	5.3	11.0
110	0.7	0.7	0.7	0.7	0.7
115	0.7	0.7	0.6	0.6	0.5
120	0.0	0.0	0.0	0.0	0.0
125	0.0	0.0	0.0	0.0	0.0
130	0.0	0.0	0.0	0.0	0.0
135	0.0	0.0	0.0	0.0	0.0
140	0.0	0.0	0.0	0.0	0.0
145	0.0	0.0	0.0	0.0	0.0
150	0.0	0.0	0.0	0.0	0.0
155	0.0	0.0	0.0	0.0	0.0
160	0.0	0.0	0.0	0.0	0.0
165	0.0	0.0	0.0	0.0	0.0
170	0.0	0.0	0.0	0.0	0.0
175	0.0	0.0	0.0	0.0	0.0
180	0.0	0.0	0.0	0.0	0.0

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	270.3	20.2%	0-10	32.4	2.4%
0-40	450.5	33.7%	10-20	93.5	7.0%
0-60	843.1	63.0%	20-30	144.5	10.8%
60-90	437.1	32.6%	30-40	180.2	13.5%
70-100	311.9	23.3%	40-50	197.3	14.7%
90-120	58.6	4.4%	50-60	195.3	14.6%
0-90	1,280.1	95.6%	60-70	176.9	13.2%
90-180	58.6	4.4%	70-80	149.3	11.2%
0-180	1,338.7	100.0%	80-90	110.8	8.3%
			90-100	51.7	3.9%
			100-110	6.3	0.5%
			110-120	0.5	0.0%
			120-130	0.0	0.0%
			130-140	0.0	0.0%
			140-150	0.0	0.0%
			150-160	0.0	0.0%
			160-170	0.0	0.0%
			170-180	0.0	0.0%

INTEGRATING SPHERE TESTING

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Test Configuration	Tested Model No.	Pass/Fail/NA
1	LS3-24V-3-30KZ	NA

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

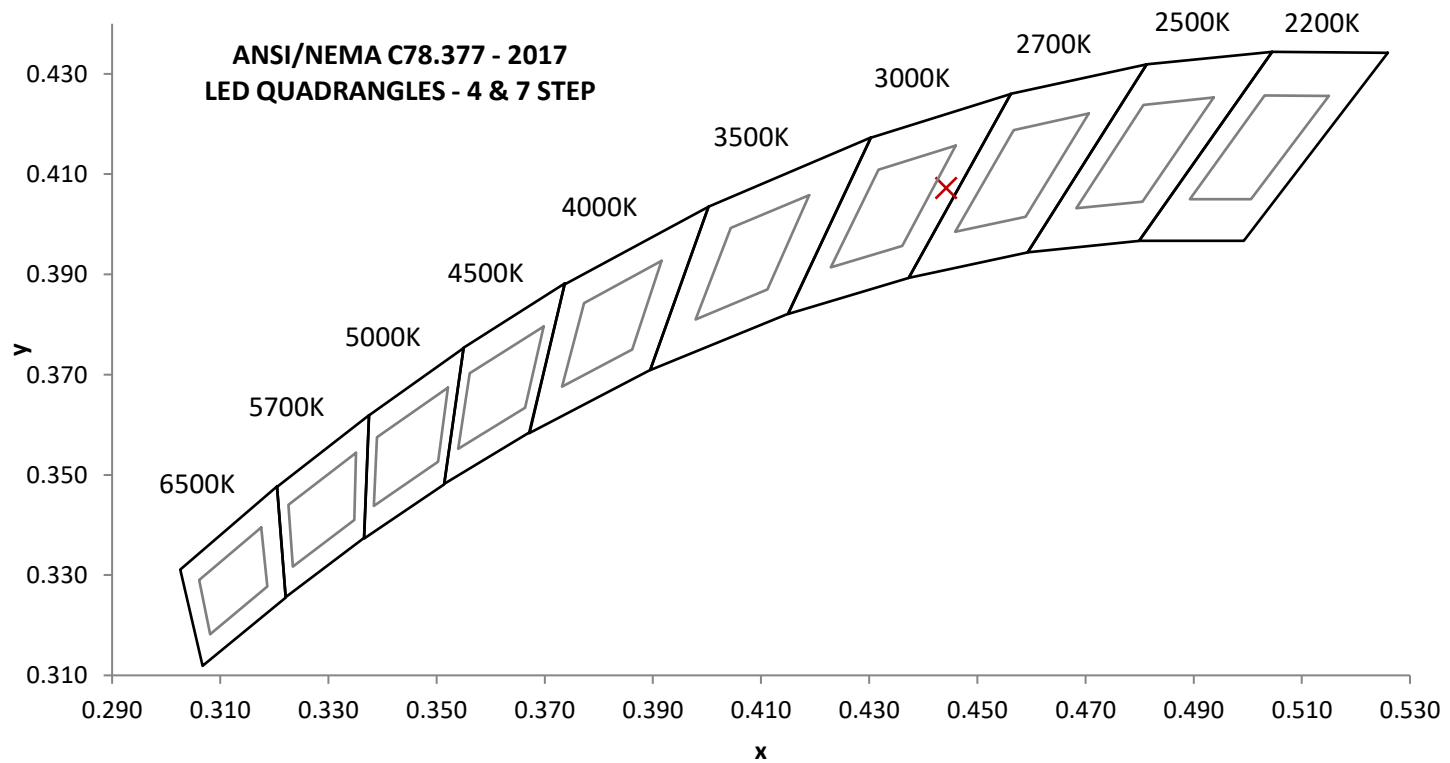
Base Orientation
Up

Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor (l)	Input ATHD (%)
120.01	178.7	21.13	0.986	14.51

Measured at 120.01(Vac)

Light Output (lm)	Lumen Efficacy (lm/W)	CCT (K)	CRI - Ra (l)	CRI - R9 (l)
1295.1	61.3	2906	94.5	75.5

Duv (l)	1931 Chrom (x)	1931 Chrom (y)	1976 Chrom (u')	1976 Chrom (v')
0.0003	0.444	0.407	0.254	0.524

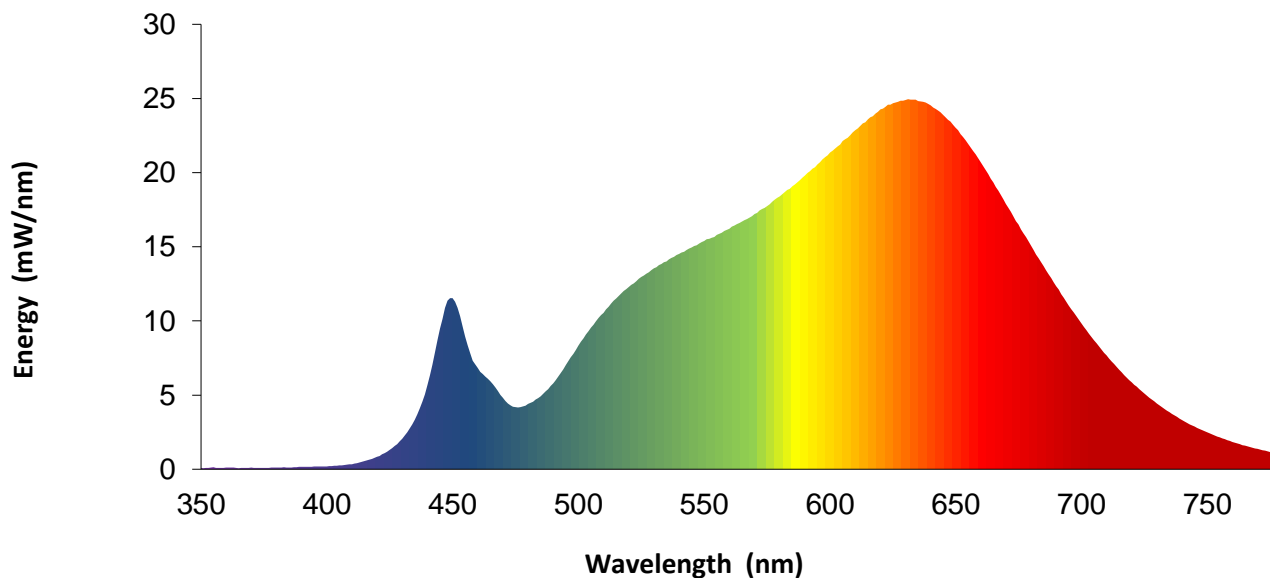


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SPECTRAL DISTRIBUTION OVER WAVELENGTHS

nm	mW/nm		nm	mW/nm		nm	mW/nm		nm	mW/nm
350	0.1		460	6.8		570	17.2		680	15.1
355	0.1		465	5.9		575	17.8		685	13.7
360	0.1		470	4.8		580	18.4		690	12.3
365	0.1		475	4.2		585	19.1		695	11.0
370	0.1		480	4.4		590	19.8		700	9.8
375	0.1		485	4.9		595	20.5		705	8.7
380	0.1		490	5.8		600	21.4		710	7.7
385	0.1		495	7.0		605	22.1		715	6.7
390	0.2		500	8.3		610	22.9		720	5.9
395	0.2		505	9.5		615	23.6		725	5.1
400	0.2		510	10.5		620	24.3		730	4.4
405	0.3		515	11.5		625	24.7		735	3.8
410	0.3		520	12.3		630	24.9		740	3.3
415	0.5		525	13.0		635	24.8		745	2.9
420	0.8		530	13.6		640	24.5		750	2.5
425	1.3		535	14.0		645	23.9		755	2.1
430	2.1		540	14.5		650	23.0		760	1.8
435	3.3		545	15.0		655	21.9		765	1.6
440	5.7		550	15.4		660	20.7		770	1.4
445	9.5		555	15.8		665	19.3		775	1.2
450	11.5		560	16.2		670	17.9		780	1.0
455	8.9		565	16.7		675	16.5		---	---

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

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#	Equipment	Model No	Control No.	Last Cal	Cal Due
1	Yokogawa Power Meter	WT310E	CHI0664	3/30/2022	3/30/2023
2	Omega Thermometer	DPI8-C24	146920	10/4/2021	10/4/2022
3	LSI High Speed Mirror Goniometer	6440T	146928	VBU	VBU
4	Newport Thermohygrometer	iServer	CHI0452	2/3/2022	2/3/2023
5	Chroma Power Supply	61604	CHI0371	VBU	VBU
8	Newport Humidity Recorder	iServer	146961	9/21/2021	9/21/2022
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	4/4/2022	4/4/2023
17	Omega thermometer	USB TC08	EQA002615	4/5/2022	4/5/2023
26	Xitron Power Analyzer	XT-2640	CHI0611	6/9/2021	6/9/2022

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
1	LS3-24V-3-30KZ	NA

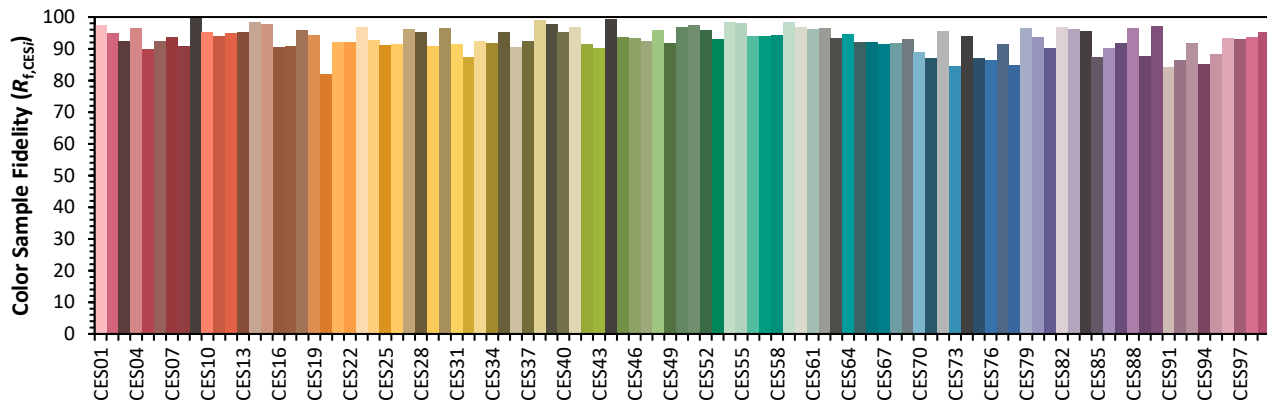
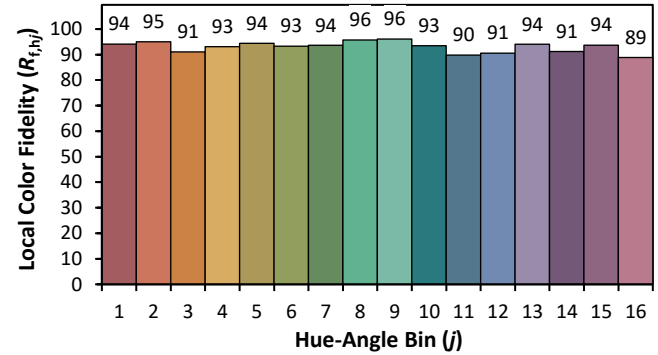
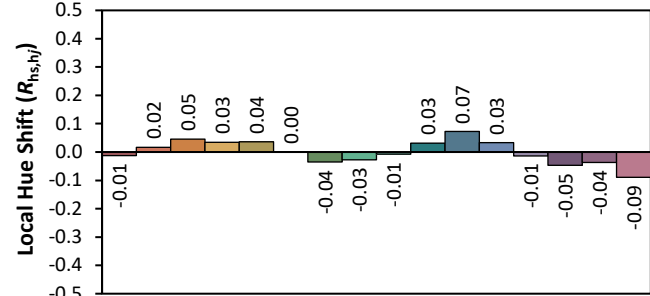
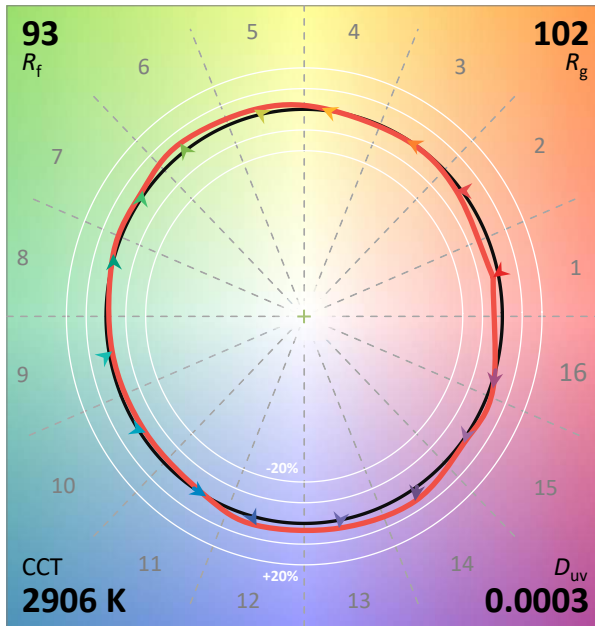
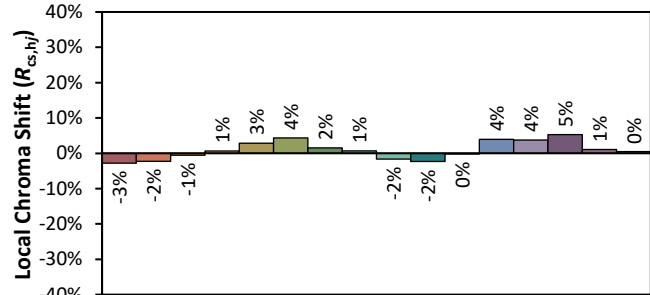
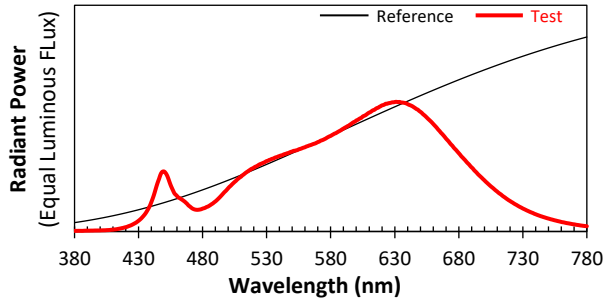
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Pure Edge Lighting

Date: 5/16/2022

Model: LS3-24V-3-30KZ



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

x 0.4442

y 0.4072

u' 0.2539

v' 0.5237