

PURE EDGE LIGHTING

TEST REPORT

SCOPE OF WORK

LED Performance Testing

MODEL NUMBER

ST5A-24V-3-30K

PROJECT NUMBER

G104430061

REPORT NUMBER

104430061CHI-011

ISSUE DATE

3/10/2021

REVISED DATE

None

TEST DATES

03/01/2021 through 03/04/2021.

DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

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REPORT NUMBER

104430061CHI-011

MODEL NUMBER(s)

ST5A-24V-3-30K

REPORT RENDERED TO:

PURE EDGE LIGHTING
1718 WEST FULLERTON AVE
CHICAGO
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-01100816-1.

TEST STANDARDS

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

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:



Ian Smith
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Reviewer:



Jeff Davis
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SAMPLE INFORMATION

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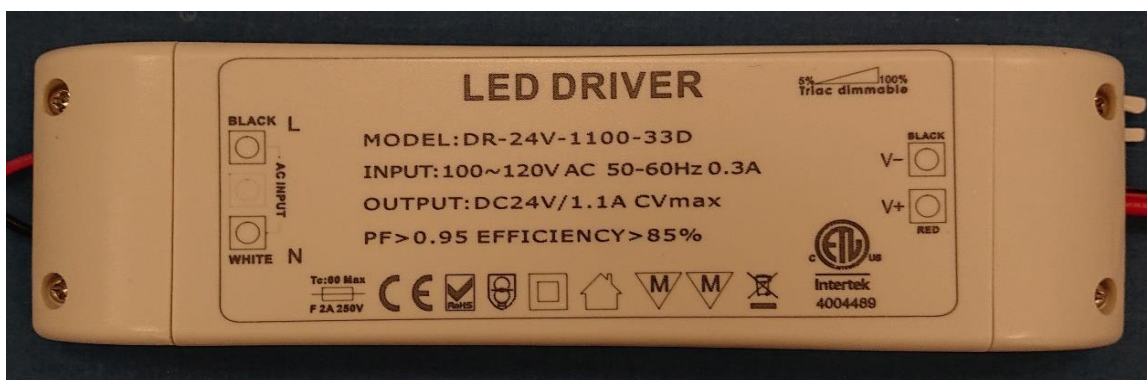
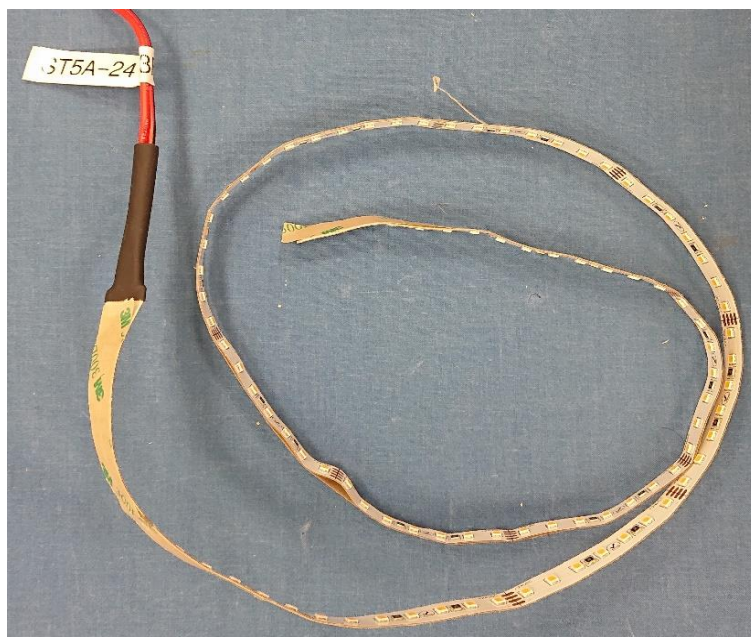
ITEMS RECEIVED

Item No.	Control No.	Model No.	Description	Type	Received
1	AH02182021102128	ST5A-24V-3-30K	LED STRIP LIGHT	Production	2/18/2021

TESTED SAMPLE CONFIGURATIONS

Config No.	Tested Model No.	Item Nos. Utilized
1	ST5A-24V-3-30K	1

SAMPLE PHOTOS - TESTED CONFIGURATIONS



SUMMARY

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PRODUCT INFORMATION AND SUMMARY OF DATA

Product Model No.:	ST5A-24V-3-30K
Product Description:	LED STRIP LIGHT
LED Model No.:	LIANGAN/ LA-D2835P927M-3E2-00301
Driver Model No.:	HUARI/DR-24V-1100-33D
Light Source:	LED

Criteria	Results	
	Goniophotometer	Integrating Sphere
Light Output (lumens)	1609.2	1659.3
Input Power (W) @ 120 (Vac)	16.42	16.42
Lumen Efficacy (lm/W)	98.0	101.1
Input Power Factor () @ 120 (Vac)	0.980	0.980

Criteria	Results
Input ATHD (%) @ 120 (Vac)	14.94
Correlated Color Temperature (K)	3049
Color Rendering Index - Ra ()	92.3
Color Rendering Index - R9 ()	61.1
Duv ()	0.0016
Chromaticity Coordinate (x)	0.431
Chromaticity Coordinate (y)	0.398
Chromaticity Coordinate (u')	0.249
Chromaticity Coordinate (v')	0.518

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	ST5A-24V-3-30K	NA

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

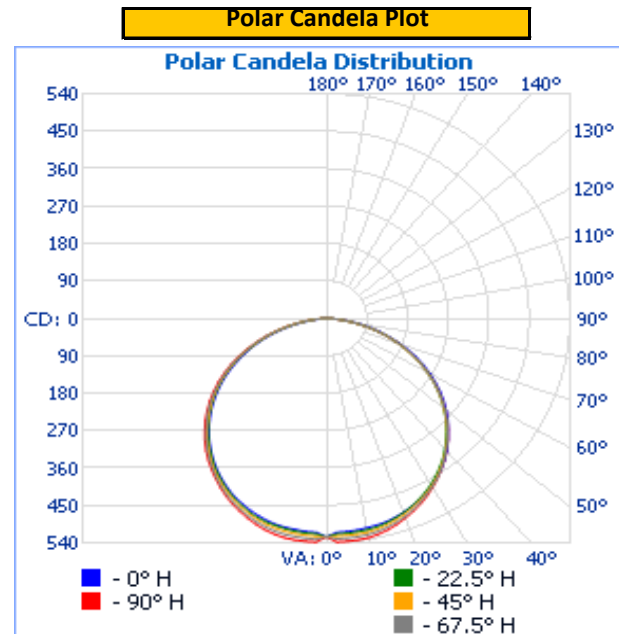
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor (I)
Up	120.04	139.7	16.42	0.980

Light Output (lm)	Lumen Efficacy (lm/W)
1609.2	98.0

INTENSITY SUMMARY - CANDELA

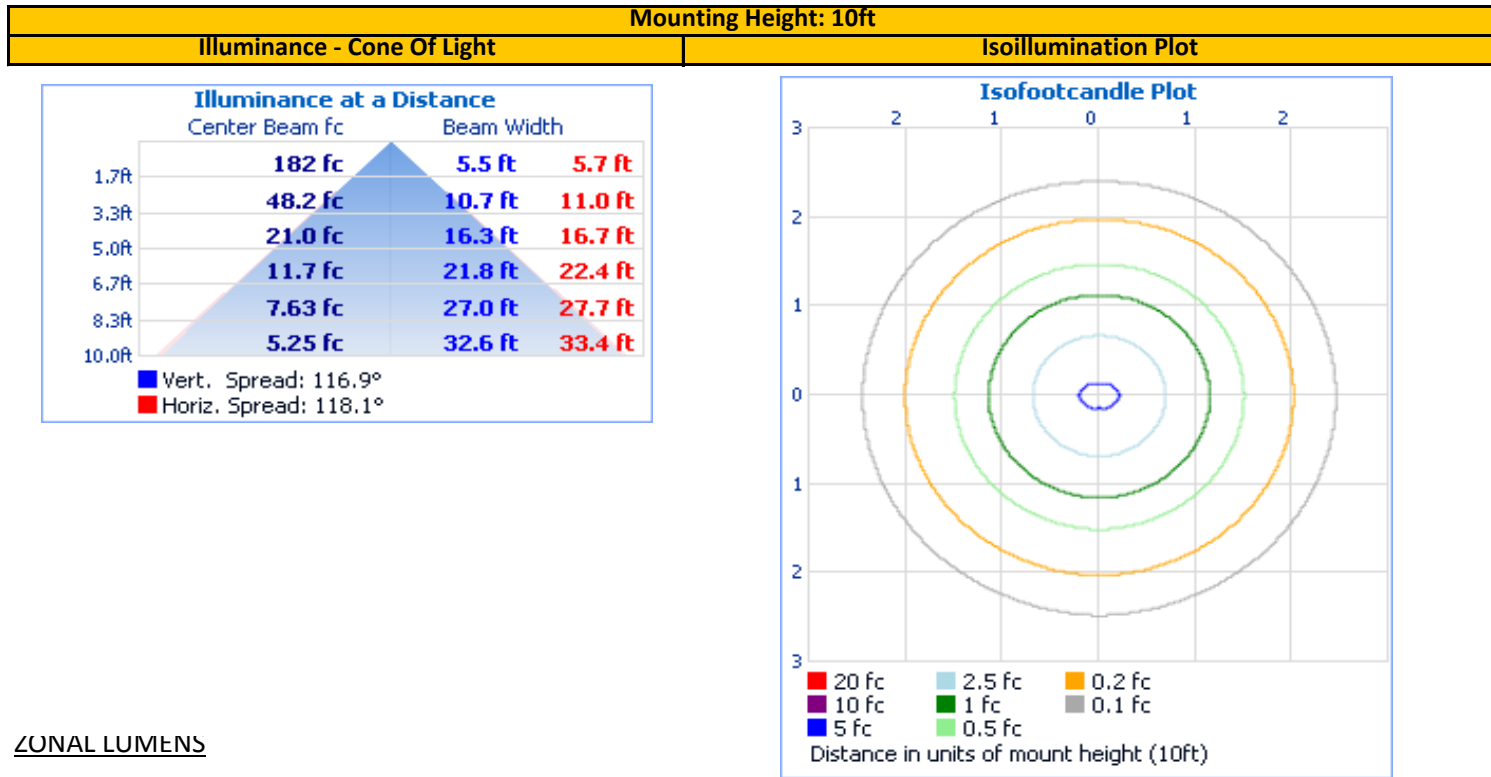
Angle	0	22.5	45	67.5	90
0	525	525	525	525	525
5	515	519	524	530	538
10	512	516	522	528	536
15	507	510	514	520	526
20	497	497	502	507	511
25	483	482	485	489	492
30	465	462	466	468	470
35	443	437	441	443	444
40	415	409	411	413	415
45	382	376	378	380	382
50	346	340	341	343	345
55	308	301	301	302	305
60	265	258	258	259	261
65	219	212	212	212	214
70	170	164	165	165	164
75	121	115	115	114	115
80	74	68	68	67	66
85	30	26	26	26	25
90	0	0	0	0	0
95	0	0	0	0	0
100	0	0	0	0	0
105	0	0	0	0	0
110	0	0	0	0	0
115	0	0	0	0	0
120	0	0	0	0	0
125	0	0	0	0	0
130	0	0	0	0	0
135	0	0	0	0	0
140	0	0	0	0	0
145	0	0	0	0	0
150	0	0	0	0	0
155	0	0	0	0	0
160	0	0	0	0	0
165	0	0	0	0	0
170	0	0	0	0	0
175	0	0	0	0	0
180	0	0	0	0	0

Entire luminous intensity matrix found in .IES file



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ILLUMINANCE SUMMARY



ZONAL LUMENS

Zonal Lumen Summary					
Zone	Lumens	Luminaire	Zone	Lumens	Total
0-30	418.8	26.0%	0-10	50.0	3.1%
0-40	693.3	43.1%	10-20	145.3	9.0%
0-60	1,251.6	77.8%	20-30	223.5	13.9%
60-90	357.6	22.2%	30-40	274.5	17.1%
70-100	149.8	9.3%	40-50	290.3	18.0%
90-120	0.0	0.0%	50-60	267.9	16.6%
0-90	1,609.2	100.0%	60-70	207.9	12.9%
90-180	0.0	0.0%	70-80	119.3	7.4%
0-180	1,609.2	100.0%	80-90	30.4	1.9%
			90-100	0.0	0.0%
			100-110	0.0	0.0%
			110-120	0.0	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

REPORT NO. 104430061CHI-011

Test Configuration	Tested Model No.	Pass/Fail/NA
1	ST5A-24V-3-30K	NA

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

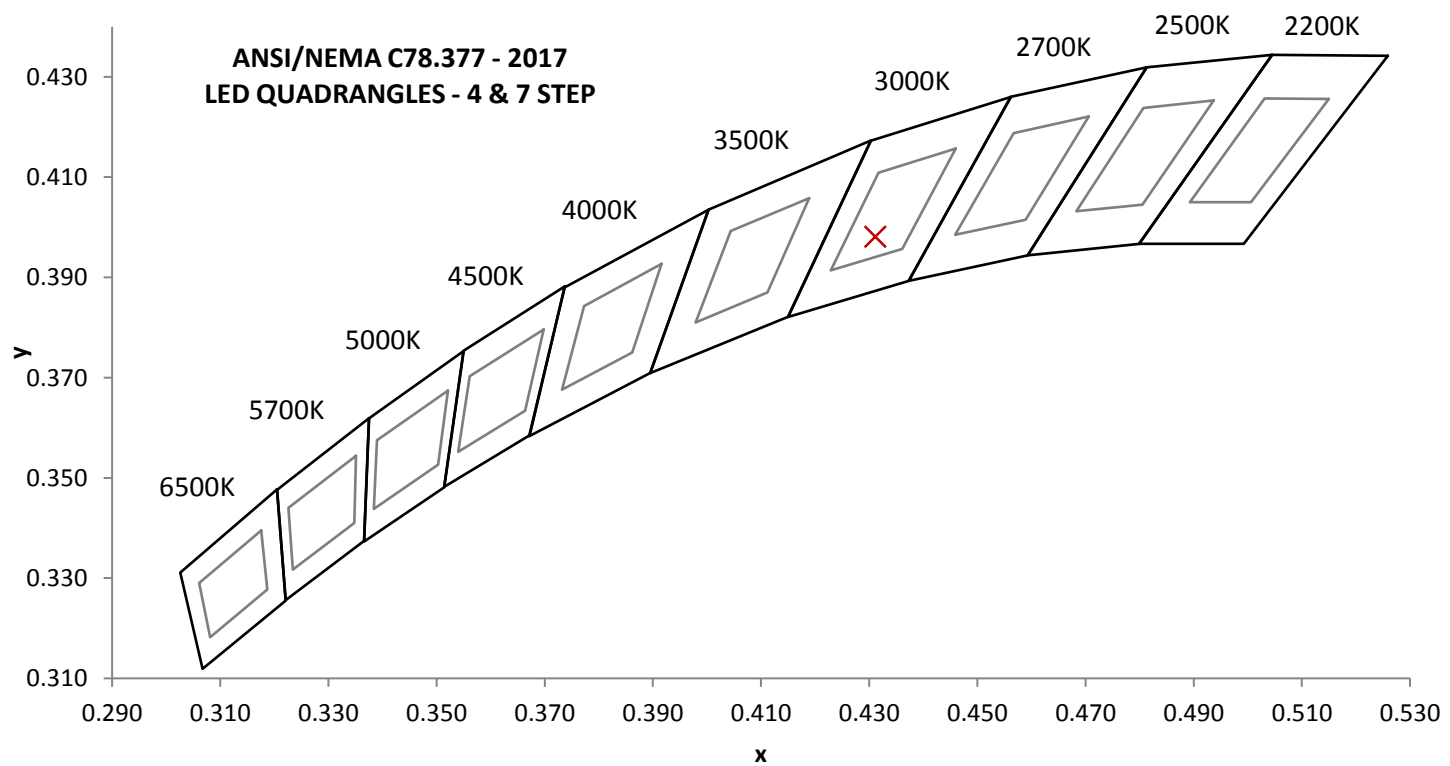
Base Orientation
Up

Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor (l)	Input ATHD (%)
119.99	139.7	16.42	0.980	14.94

Measured at 119.99(Vac)

Light Output (lm)	Lumen Efficacy (lm/W)	CCT (K)	CRI - Ra (l)	CRI - R9 (l)
1659.3	101.1	3049	92.3	61.1

Duv (l)	1931 Chrom (x)	1931 Chrom (y)	1976 Chrom (u')	1976 Chrom (v')
0.0016	0.431	0.398	0.249	0.518

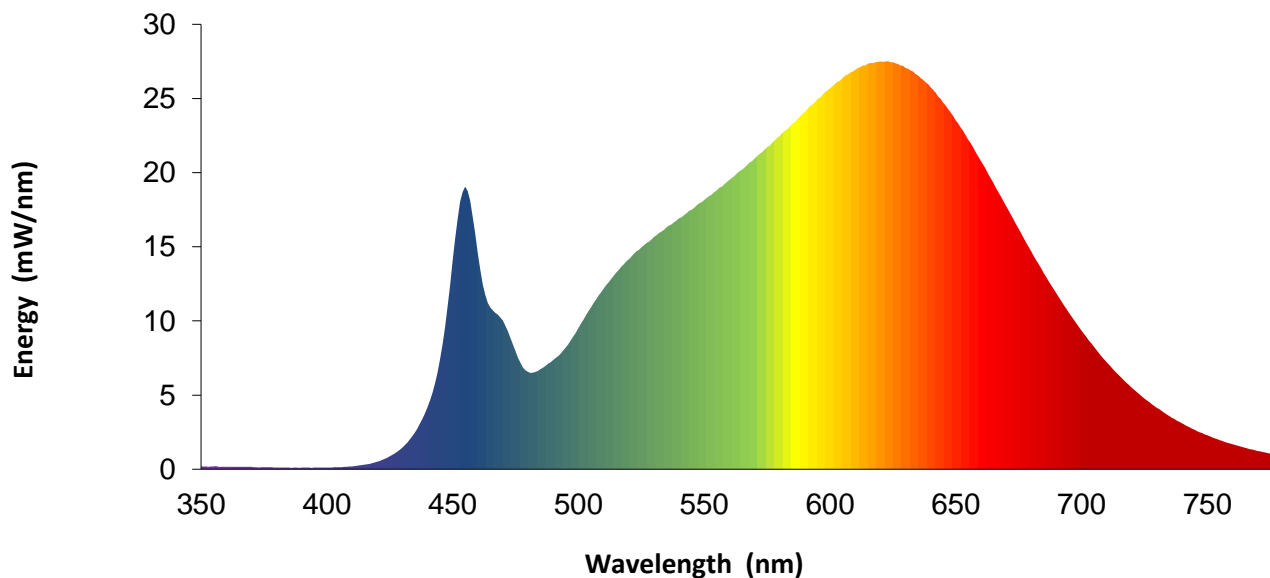


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SPECTRAL DISTRIBUTION OVER WAVELENGTHS

nm	mW/nm		nm	mW/nm		nm	mW/nm		nm	mW/nm
350	0.2		460	14.6		570	20.9		680	14.7
355	0.2		465	10.9		575	21.7		685	13.2
360	0.2		470	10.0		580	22.5		690	11.9
365	0.2		475	8.0		585	23.3		695	10.6
370	0.2		480	6.6		590	24.1		700	9.4
375	0.1		485	6.8		595	24.9		705	8.3
380	0.1		490	7.4		600	25.7		710	7.2
385	0.1		495	8.2		605	26.4		715	6.3
390	0.1		500	9.5		610	26.9		720	5.5
395	0.1		505	10.9		615	27.3		725	4.8
400	0.1		510	12.2		620	27.5		730	4.1
405	0.1		515	13.3		625	27.4		735	3.6
410	0.2		520	14.2		630	27.1		740	3.1
415	0.3		525	15.0		635	26.6		745	2.7
420	0.5		530	15.6		640	25.8		750	2.3
425	0.9		535	16.3		645	24.7		755	2.0
430	1.5		540	16.9		650	23.5		760	1.7
435	2.5		545	17.5		655	22.2		765	1.4
440	4.2		550	18.2		660	20.8		770	1.2
445	7.4		555	18.8		665	19.3		775	1.1
450	14.0		560	19.5		670	17.8		780	0.9
455	19.0		565	20.2		675	16.2		---	---

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	WT210	146919	7/1/2020	7/1/2021
2	Omega Thermometer	DPI8-C24	146920	10/1/2020	10/1/2021
3	LSI High Speed Mirror Goniometer	6440T	146928	VBV	VBV
4	Newport Thermohygrometer	iServer	146957	1/29/2021	1/29/2022
5	Pacific AC Power Supply	118-ACX	CHI0153	VBV	VBV
6	Newport Humidity Recorder	iServer	146961	9/3/2020	9/3/2021
7	Labsphere 2M Sphere & Spectroradiometer	CDS1100	146137	VBV	VBV
8	Elgar AC Power Supply	CW1251	146113	VBV	VBV
9	Sorenson DC Power Supply	XFR150-8	146847	VBV	VBV
10	Yokogawa Power Meter	WT1600	146767	4/6/2020	4/6/2021
11	Omega Thermometer	MDSi8	146873	7/1/2020	7/1/2021

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	ST5A-24V-3-30K	NA

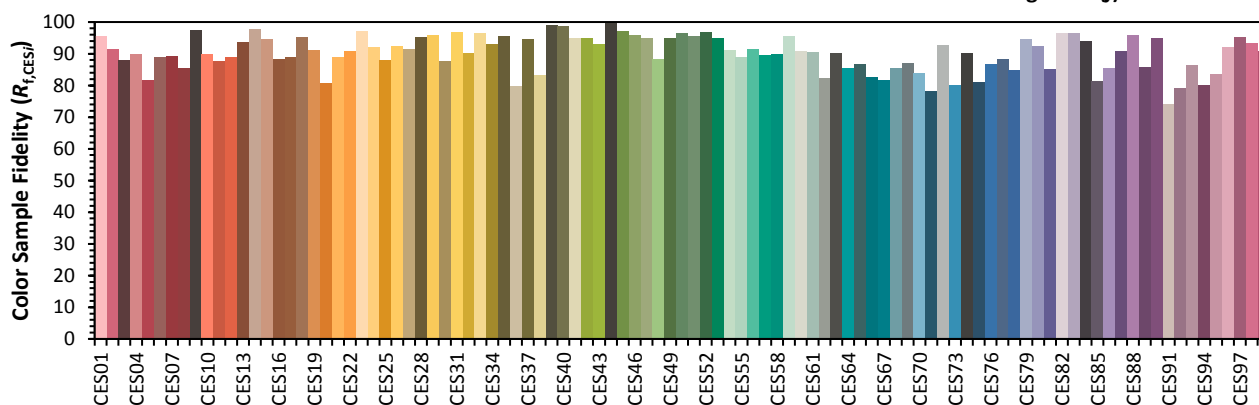
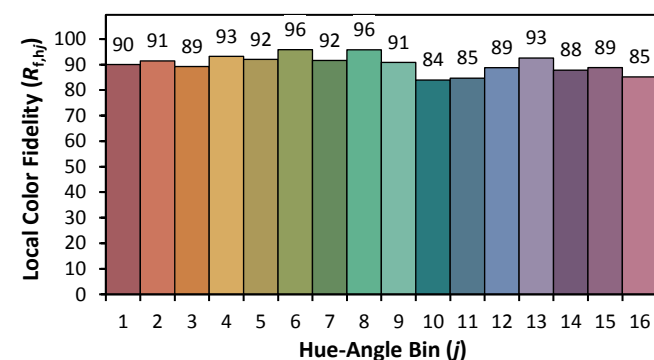
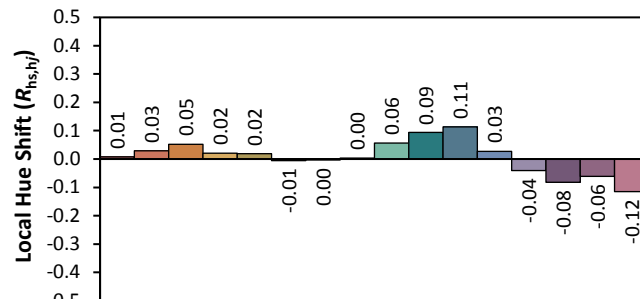
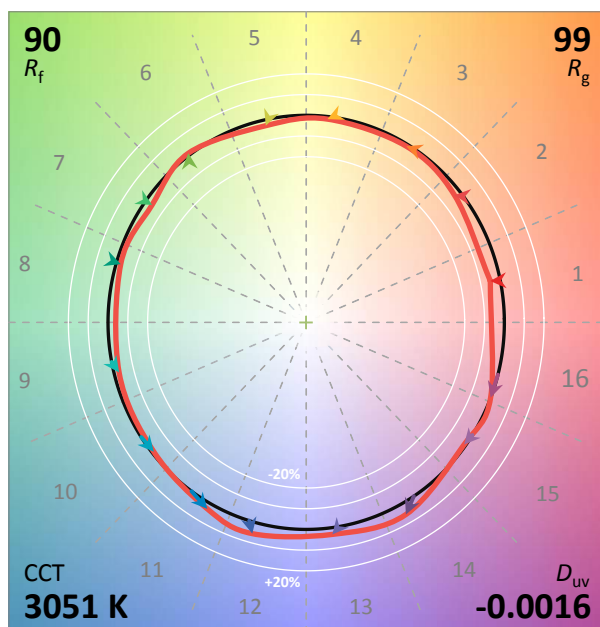
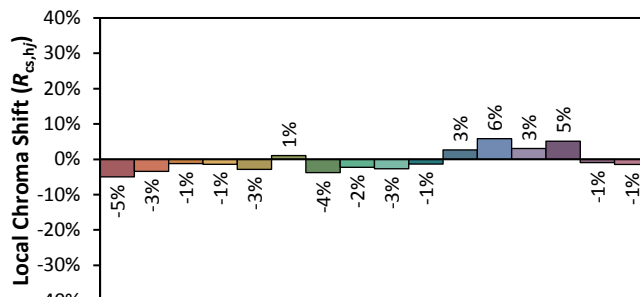
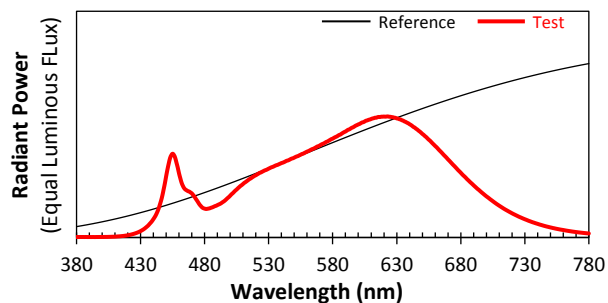
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Pure Edge Lighting

Date: 3/4/2021

Model: ST5A-24V-3-30K



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

x 0.4311

y 0.3981

u' 0.2494

v' 0.5182