

PURE EDGE LIGHTING

TEST REPORT

SCOPE OF WORK

LED Performance Testing

MODEL NUMBER

TUBL-WF-30K-BK

PROJECT NUMBER

G104430061

REPORT NUMBER

104430061CHI-007

ISSUE DATE

3/10/2021

REVISED DATE

None

TEST DATES

02/26/2021 through 03/02/2021.

DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

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REPORT NUMBER

104430061CHI-007

MODEL NUMBER(s)

TUBL-WF-30K-BK

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
Engineer
Lighting Division

Reviewer:



Jeff Davis
NA Technical Lead
Lighting Division

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SAMPLE INFORMATION

REPORT NO. 104430061CHI-007

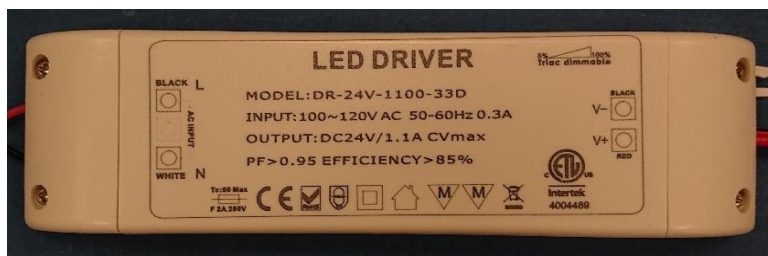
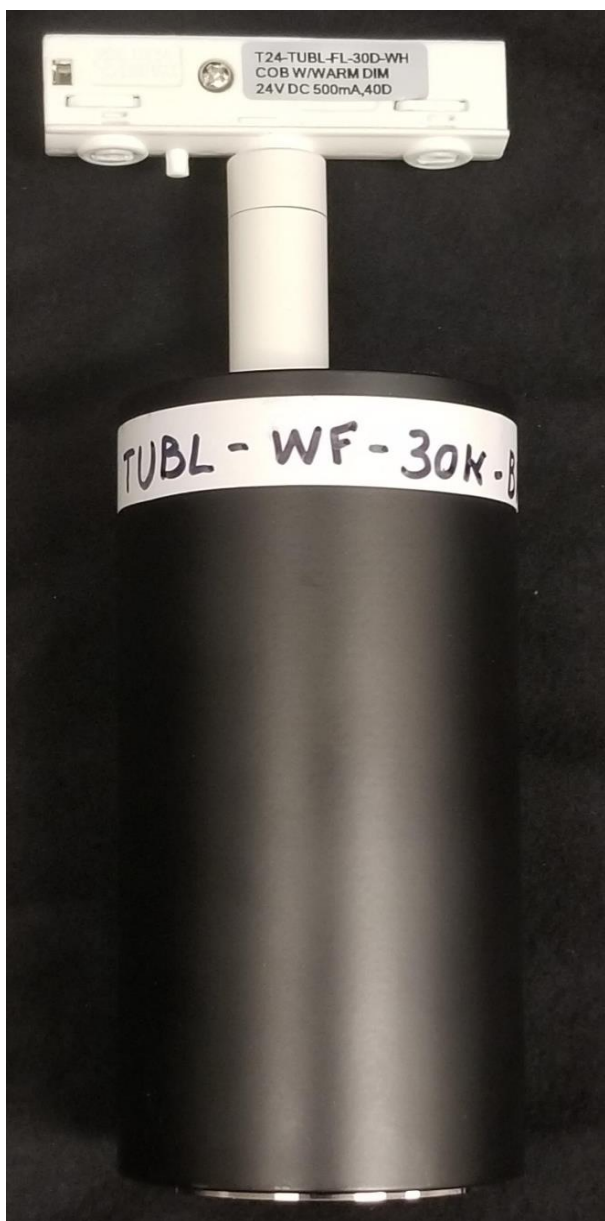
ITEMS RECEIVED

Item No.	Control No.	Model No.	Description	Type	Received
1	AH02182021102128	TUBL-WF-30K-BK	LED ACCENT LIGHT	Prototype	2/18/2021

TESTED SAMPLE CONFIGURATIONS

Config No.	Tested Model No.	Item Nos. Utilized
1	TUBL-WF-30K-BK	1

SAMPLE PHOTOS - TESTED CONFIGURATIONS



SUMMARY

REPORT NO. 104430061CHI-007

PRODUCT INFORMATION AND SUMMARY OF DATA

Product Model No.:	TUBL-WF-30K-BK
Product Description:	LED ACCENT LIGHT
LED Model No.:	LUMINUS/CXM-9-30-90-36-AC40-F5-3
Driver Model No.:	HUARI/DR-24V-1100-33D
Light Source:	LED

Criteria	Results	
	Goniophotometer	Integrating Sphere
Light Output (lumens)	855.9	873.7
Input Power (W) @ 120 (Vac)	17.45	17.45
Lumen Efficacy (lm/W)	49.0	50.1
Input Power Factor () @ 120 (Vac)	0.984	0.984

Criteria	Results
Input ATHD (%) @ 120 (Vac)	13.33
Correlated Color Temperature (K)	2928
Color Rendering Index - Ra ()	90.3
Color Rendering Index - R9 ()	63.8
Duv ()	0.0002
Chromaticity Coordinate (x)	0.443
Chromaticity Coordinate (y)	0.407
Chromaticity Coordinate (u')	0.253
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

REPORT NO. 104430061CHI-007

Test Configuration	Tested Model No.	Pass/Fail/NA
1	TUBL-WF-30K-BK	NA

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

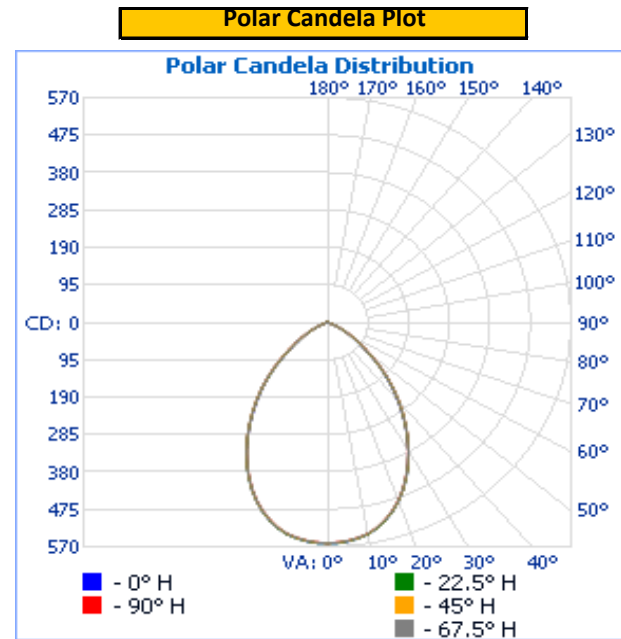
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor (I)
Up	120.03	147.8	17.45	0.984

Light Output (lm)	Lumen Efficacy (lm/W)
855.9	49.0

INTENSITY SUMMARY - CANDELA

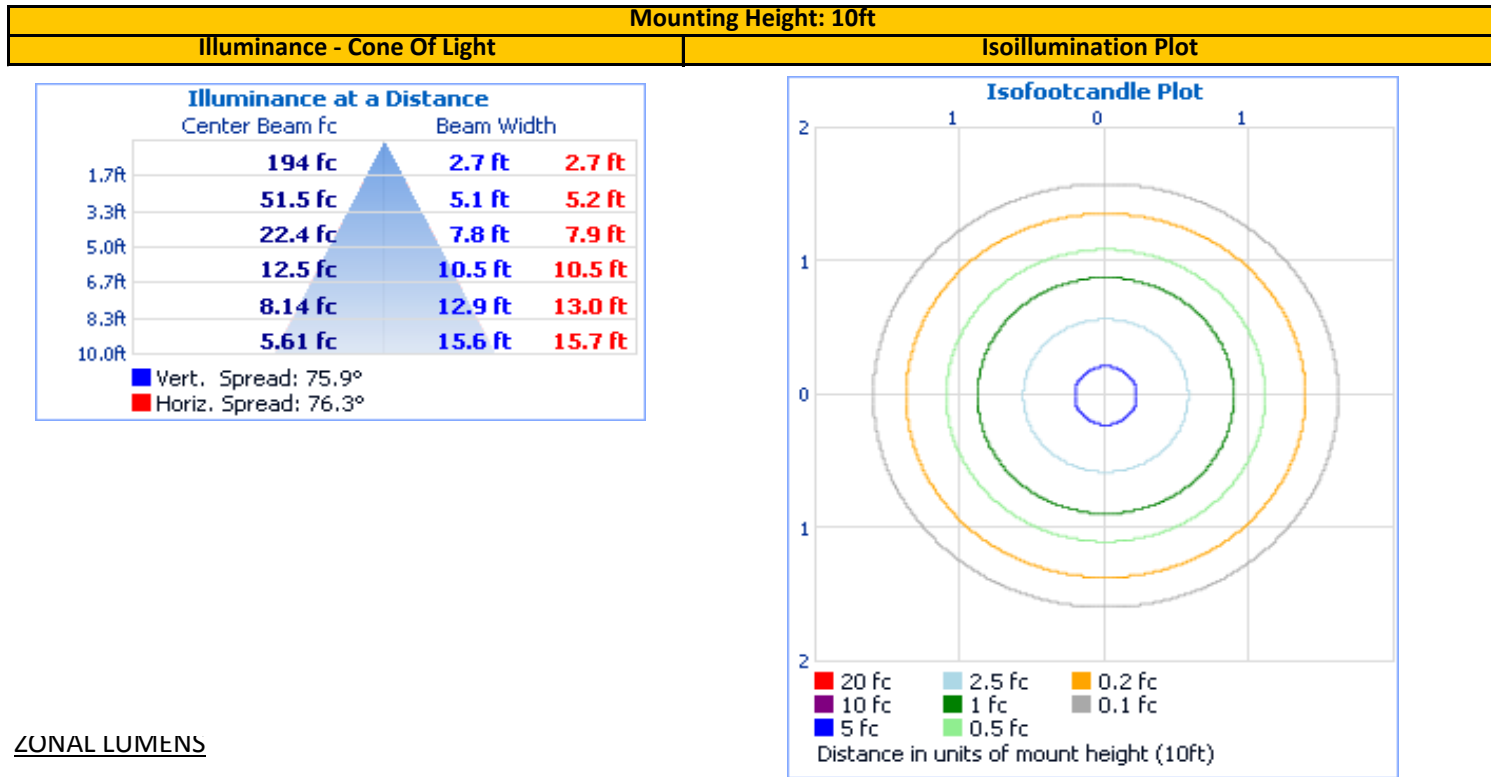
Angle	0	22.5	45	67.5	90
0	560	560	560	560	560
5	558	558	556	556	556
10	546	546	545	544	544
15	521	521	520	519	519
20	484	484	484	483	482
25	435	436	435	434	434
30	379	379	379	379	378
35	318	318	319	319	319
40	255	257	258	258	258
45	195	196	197	198	199
50	133	135	137	138	140
55	86	87	89	90	91
60	52	53	54	55	56
65	24	25	26	26	27
70	4	5	5	5	5
75	0	0	0	0	0
80	0	0	0	0	0
85	0	0	0	0	0
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



REPORT NO. 104430061CHI-007

ILLUMINANCE SUMMARY



ZONAL LUMENS

Zonal Lumen Summary					
Zone	Lumens	Luminaire	Zone	Lumens	Total
0-30	397.7	46.5%	0-10	52.8	6.2%
0-40	596.1	69.7%	10-20	145.8	17.0%
0-60	828.4	96.8%	20-30	199.1	23.3%
60-90	27.5	3.2%	30-40	198.4	23.2%
70-100	1.0	0.1%	40-50	151.2	17.7%
90-120	0.0	0.0%	50-60	81.1	9.5%
0-90	855.9	100.0%	60-70	26.5	3.1%
90-180	0.0	0.0%	70-80	0.9	0.1%
0-180	855.9	100.0%	80-90	0.0	0.0%
			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-007

Test Configuration	Tested Model No.	Pass/Fail/NA
1	TUBL-WF-30K-BK	NA

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

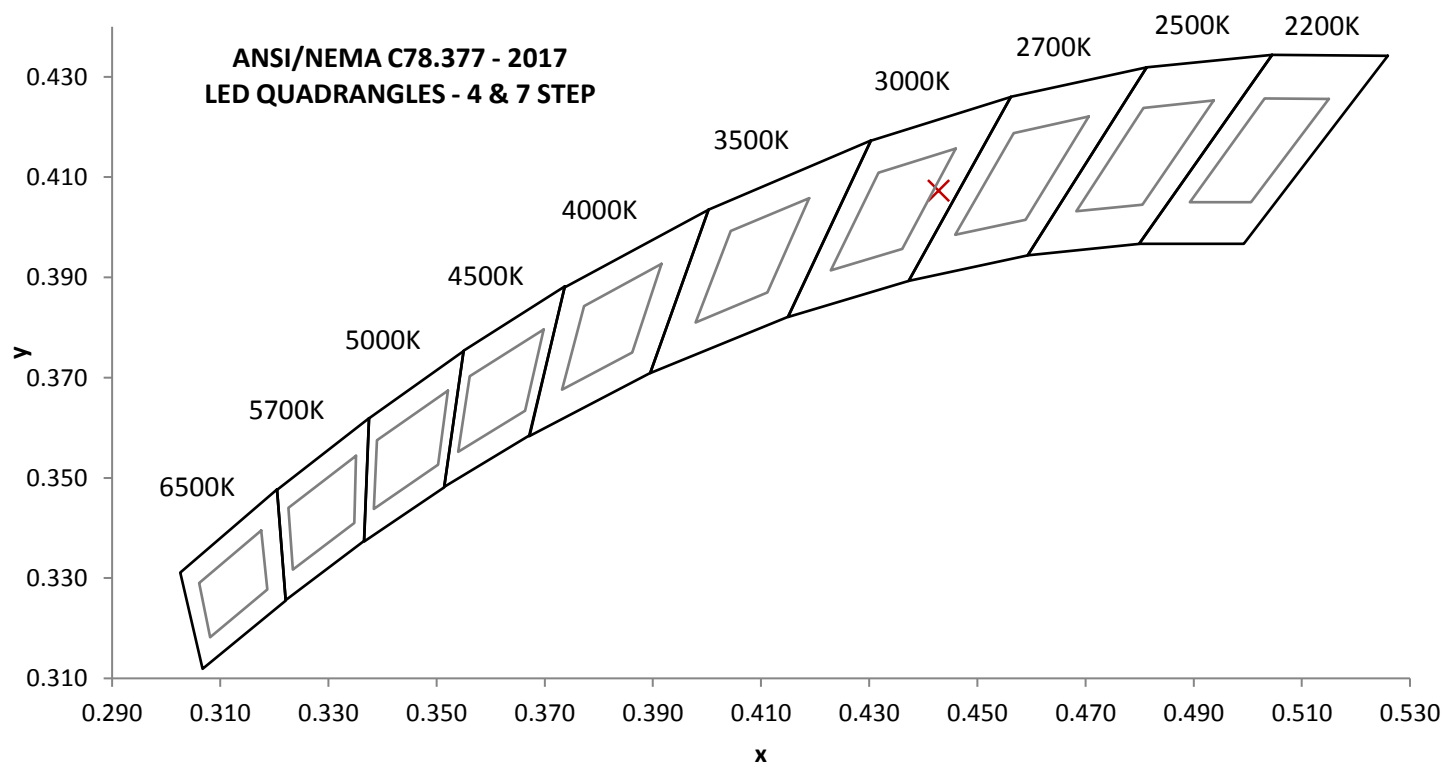
Base Orientation
Up

Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor (l)	Input ATHD (%)
119.98	147.8	17.45	0.984	13.33

Measured at 119.98(Vac)

Light Output (lm)	Lumen Efficacy (lm/W)	CCT (K)	CRI - Ra (l)	CRI - R9 (l)
873.7	50.1	2928	90.3	63.8

Duv (l)	1931 Chrom (x)	1931 Chrom (y)	1976 Chrom (u')	1976 Chrom (v')
0.0002	0.443	0.407	0.253	0.524

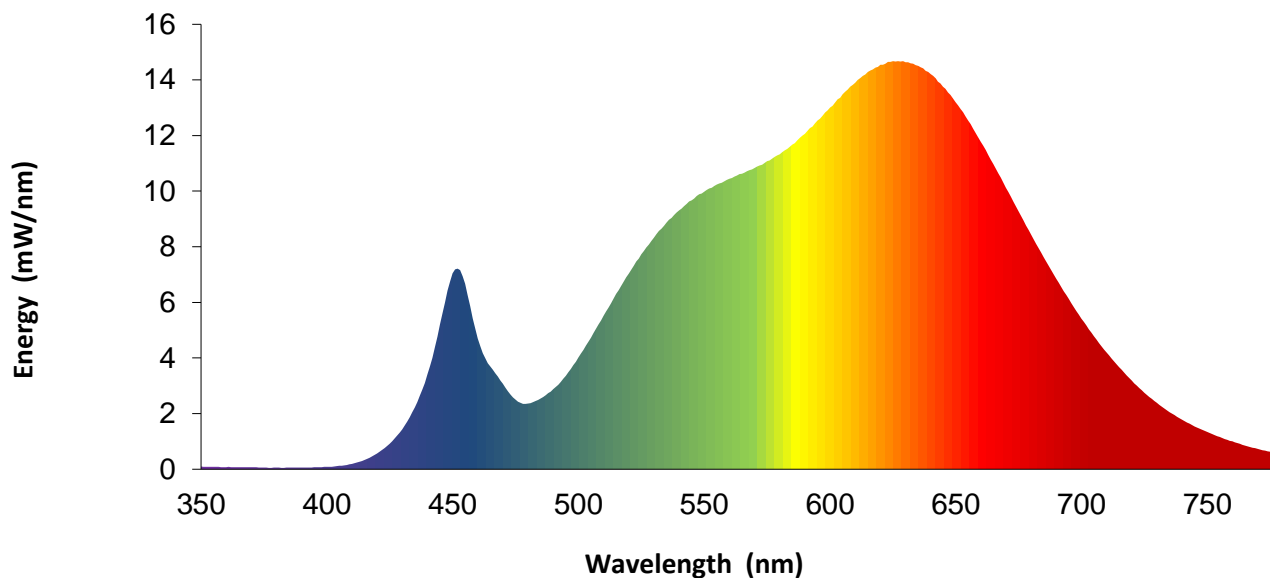


REPORT NO. 104430061CHI-007

SPECTRAL DISTRIBUTION OVER WAVELENGTHS

nm	mW/nm		nm	mW/nm		nm	mW/nm		nm	mW/nm
350	0.1		460	4.7		570	10.8		680	8.4
355	0.1		465	3.7		575	11.1		685	7.6
360	0.1		470	3.1		580	11.3		690	6.9
365	0.1		475	2.5		585	11.7		695	6.1
370	0.1		480	2.4		590	12.1		700	5.4
375	0.1		485	2.5		595	12.5		705	4.8
380	0.1		490	2.9		600	13.0		710	4.2
385	0.1		495	3.4		605	13.5		715	3.7
390	0.1		500	4.0		610	13.9		720	3.2
395	0.1		505	4.7		615	14.3		725	2.8
400	0.1		510	5.5		620	14.5		730	2.4
405	0.1		515	6.3		625	14.7		735	2.1
410	0.2		520	7.0		630	14.6		740	1.8
415	0.3		525	7.7		635	14.5		745	1.5
420	0.6		530	8.3		640	14.2		750	1.3
425	0.9		535	8.9		645	13.8		755	1.2
430	1.4		540	9.3		650	13.2		760	1.0
435	2.2		545	9.7		655	12.5		765	0.9
440	3.4		550	10.0		660	11.8		770	0.7
445	5.2		555	10.2		665	11.0		775	0.6
450	7.0		560	10.5		670	10.1		780	0.5
455	6.7		565	10.6		675	9.3		---	---

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. 104430061CHI-007

#	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	7/2/2020	7/2/2021

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	TUBL-WF-30K-BK	NA

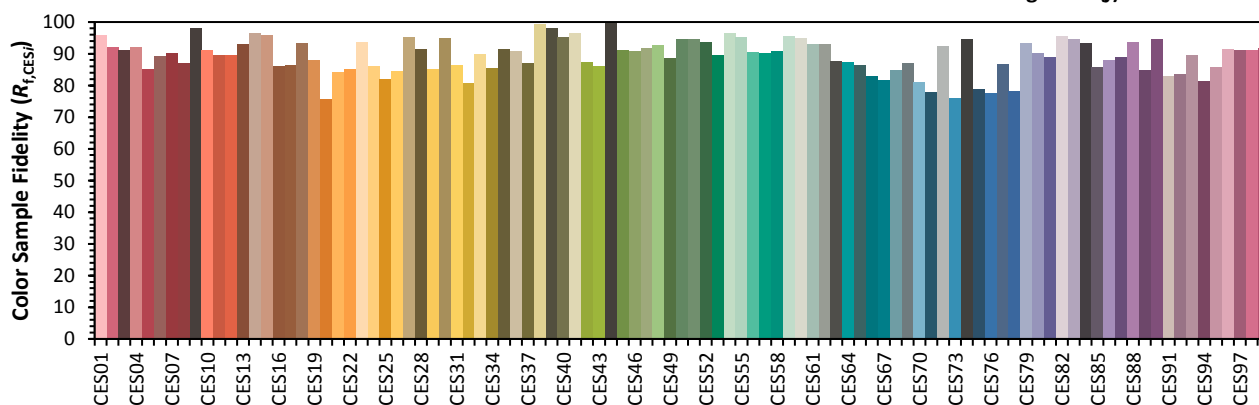
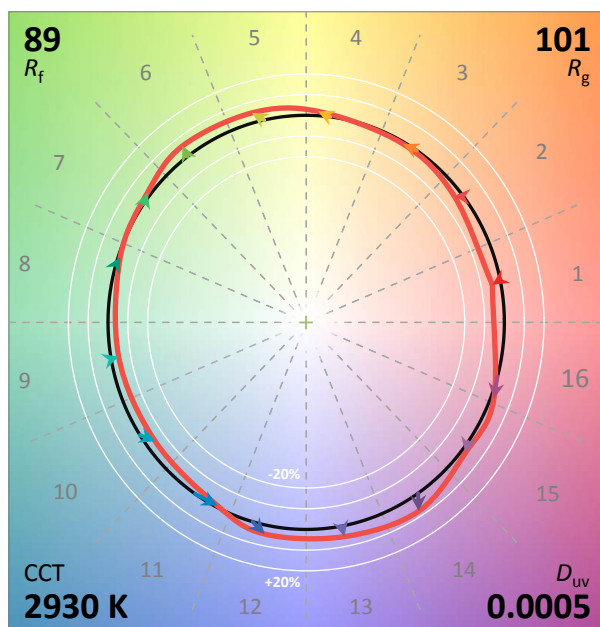
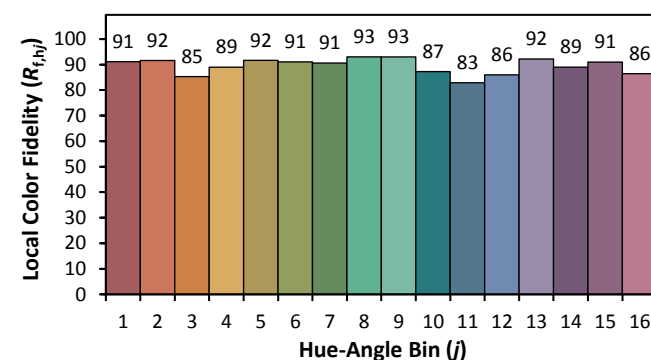
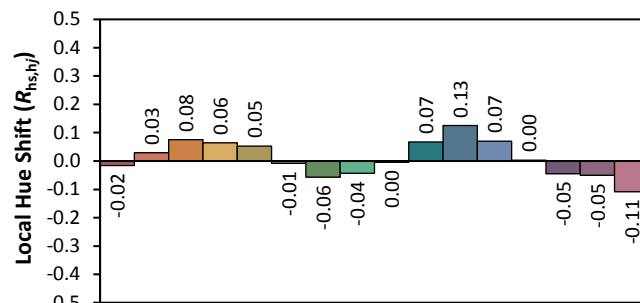
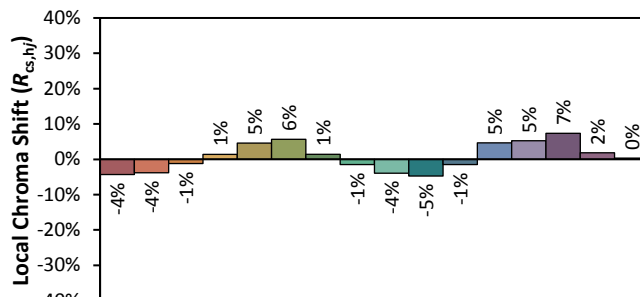
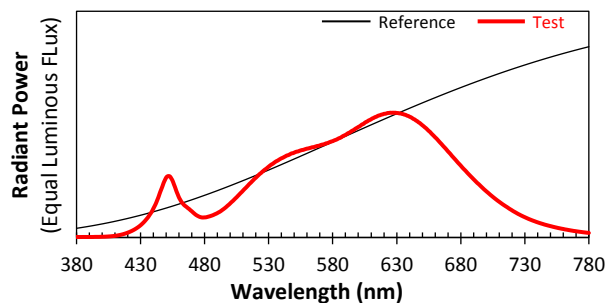
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Pure Edge Lighting

Date: 3/2/2021

Model: TUBL-WF-30K-BK



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

 x 0.4428 y 0.4073 u' 0.2529 v' 0.5235