

# PURE EDGE LIGHTING

## TEST REPORT

### SCOPE OF WORK

LED Performance Testing

### MODEL NUMBER

TUBL-FL-30K-BK

### PROJECT NUMBER

G104430061

### REPORT NUMBER

104430061CHI-006

### ISSUE DATE

3/10/2021

### REVISED DATE

None

### TEST DATES

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

### DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

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**REPORT NUMBER**

104430061CHI-006

**MODEL NUMBER(s)**

TUBL-FL-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  
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## SAMPLE INFORMATION

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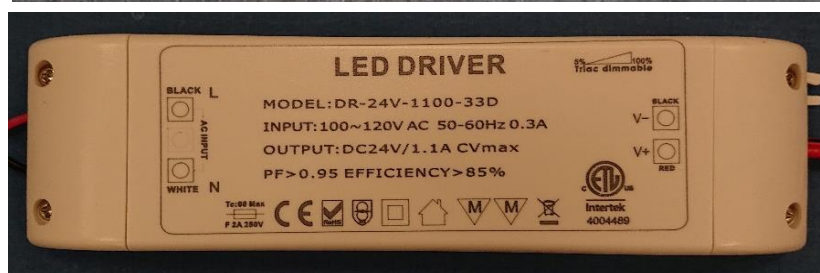
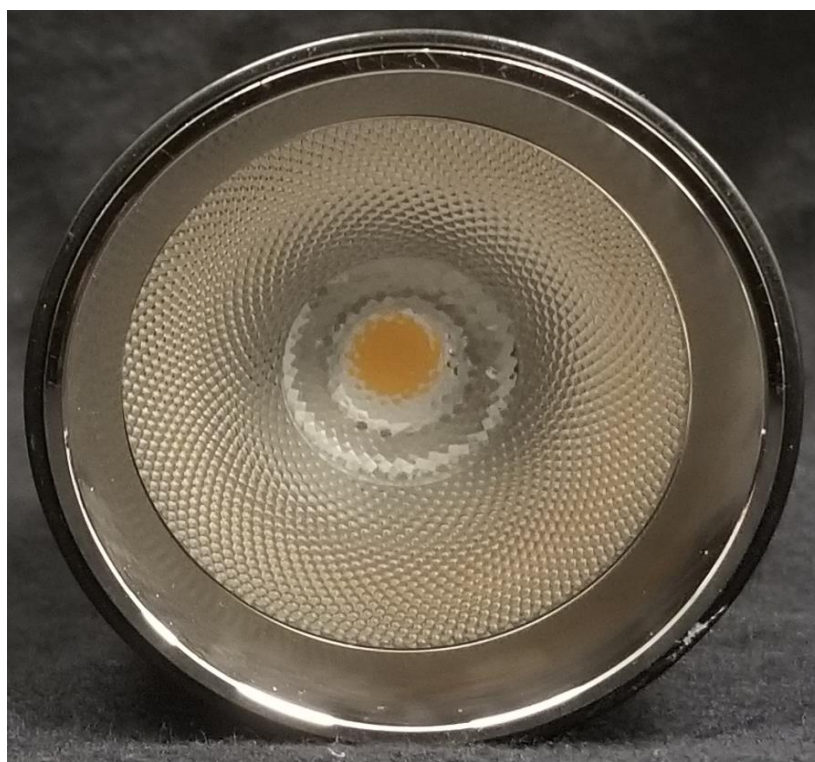
## ITEMS RECEIVED

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

## TESTED SAMPLE CONFIGURATIONS

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

## SAMPLE PHOTOS - TESTED CONFIGURATIONS



## SUMMARY

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### PRODUCT INFORMATION AND SUMMARY OF DATA

Product Model No.:	TUBL-FL-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)	1051.3	1069.0
Input Power (W) @ 120 (Vac)	16.74	16.67
Lumen Efficacy (lm/W)	62.8	64.1
Input Power Factor ( ) @ 120 (Vac)	0.983	0.983

Criteria	Results
Input ATHD (%) @ 120 (Vac)	13.39
Correlated Color Temperature (K)	2942
Color Rendering Index - Ra ( )	90.5
Color Rendering Index - R9 ( )	64.2
Duv ( )	0.0003
Chromaticity Coordinate (x)	0.441
Chromaticity Coordinate (y)	0.405
Chromaticity Coordinate (u')	0.253
Chromaticity Coordinate (v')	0.522

### 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-006**

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

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

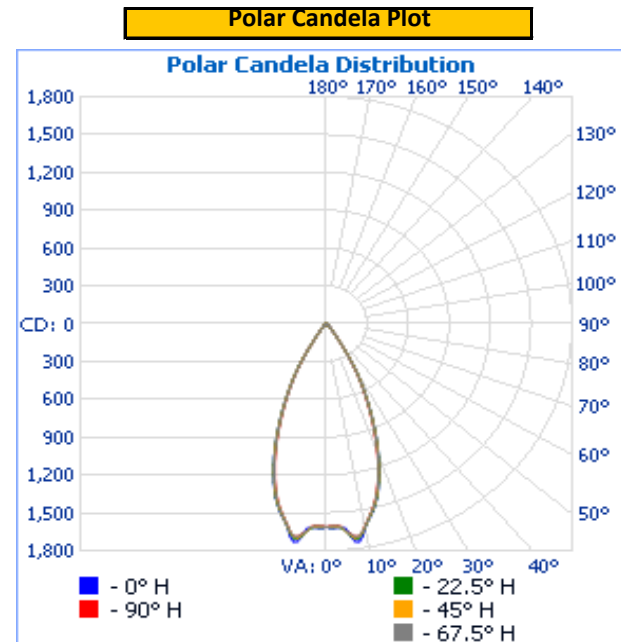
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor (I)
Up	120.04	141.9	16.74	0.983

Light Output (lm)	Lumen Efficacy (lm/W)
1051.3	62.8

**INTENSITY SUMMARY - CANDELA**

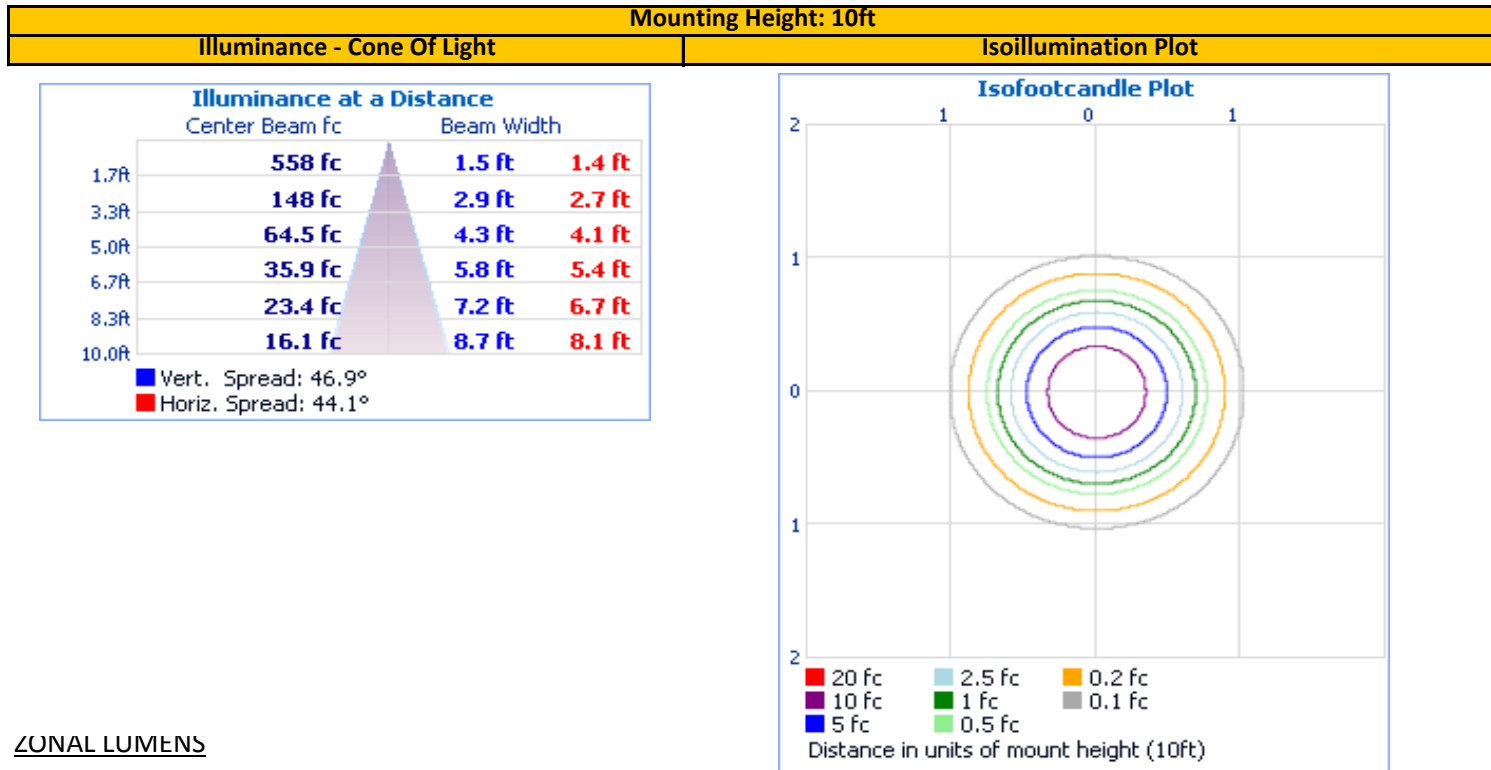
Angle	0	22.5	45	67.5	90
0	1612	1612	1612	1612	1612
5	1630	1649	1652	1650	1648
10	1639	1638	1634	1632	1628
15	1430	1427	1419	1414	1408
20	1118	1117	1109	1100	1092
25	763	763	758	750	741
30	452	455	450	444	435
35	154	157	158	156	152
40	64	65	64	62	60
45	31	32	32	31	30
50	19	19	19	19	18
55	12	12	12	12	12
60	7	7	7	7	7
65	3	3	3	3	3
70	0	1	1	1	1
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



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ILLUMINANCE SUMMARY



ZONAL LUMENS

Zonal Lumen Summary					
Zone	Lumens	Luminaire	Zone	Lumens	Total
0-30	892.3	84.9%	0-10	159.3	15.2%
0-40	1,010.6	96.1%	10-20	388.8	37.0%
0-60	1,047.7	99.7%	20-30	344.2	32.7%
60-90	3.6	0.3%	30-40	118.3	11.3%
70-100	0.5	0.0%	40-50	26.1	2.5%
90-120	0.0	0.0%	50-60	11.0	1.0%
0-90	1,051.3	100.0%	60-70	3.2	0.3%
90-180	0.0	0.0%	70-80	0.3	0.0%
0-180	1,051.3	100.0%	80-90	0.2	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-006**

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

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

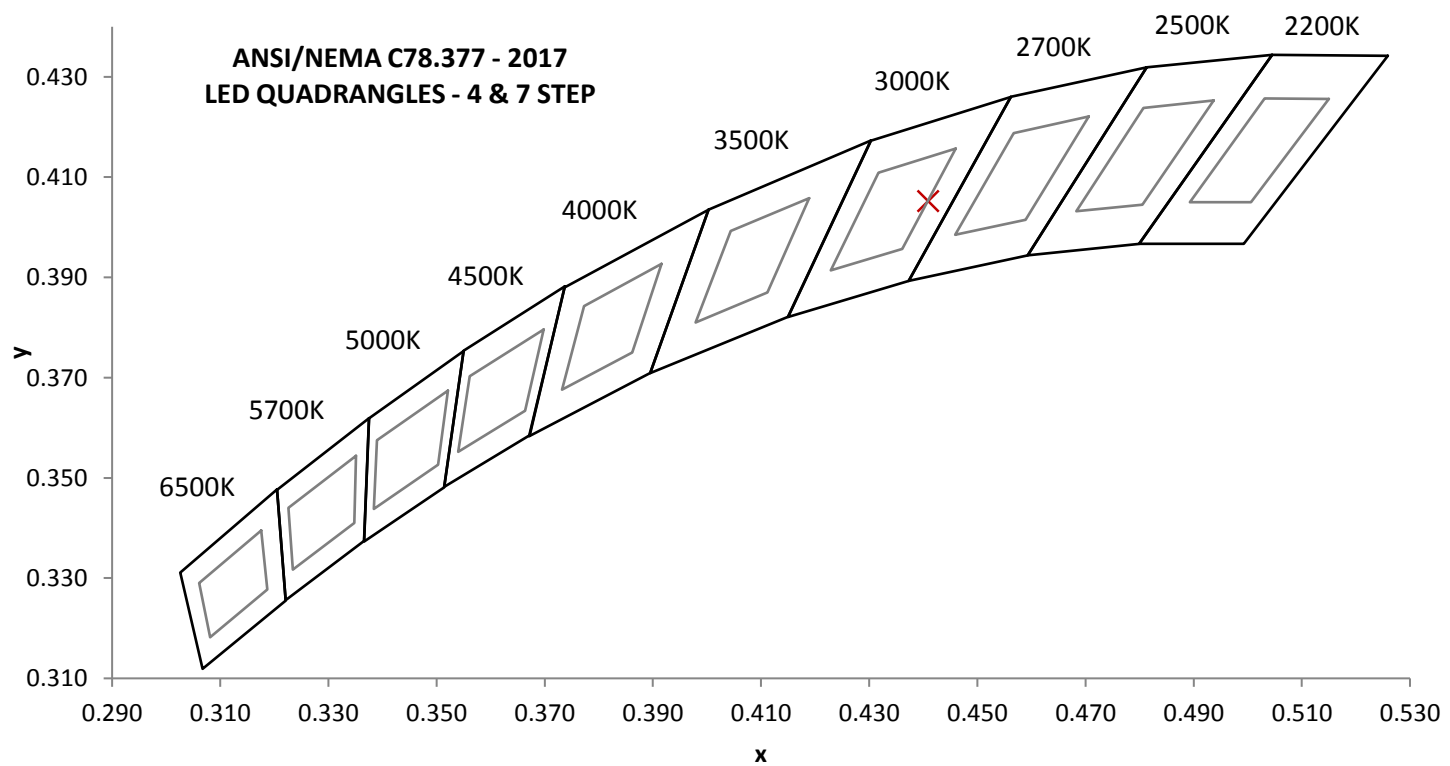
Base Orientation
Up

Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor (l)	Input ATHD (%)
120.00	141.5	16.67	0.983	13.39

**Measured at 120(Vac)**

Light Output (lm)	Lumen Efficacy (lm/W)	CCT (K)	CRI - Ra (l)	CRI - R9 (l)
1069.0	64.1	2942	90.5	64.2

Duv (l)	1931 Chrom (x)	1931 Chrom (y)	1976 Chrom (u')	1976 Chrom (v')
0.0003	0.441	0.405	0.253	0.522

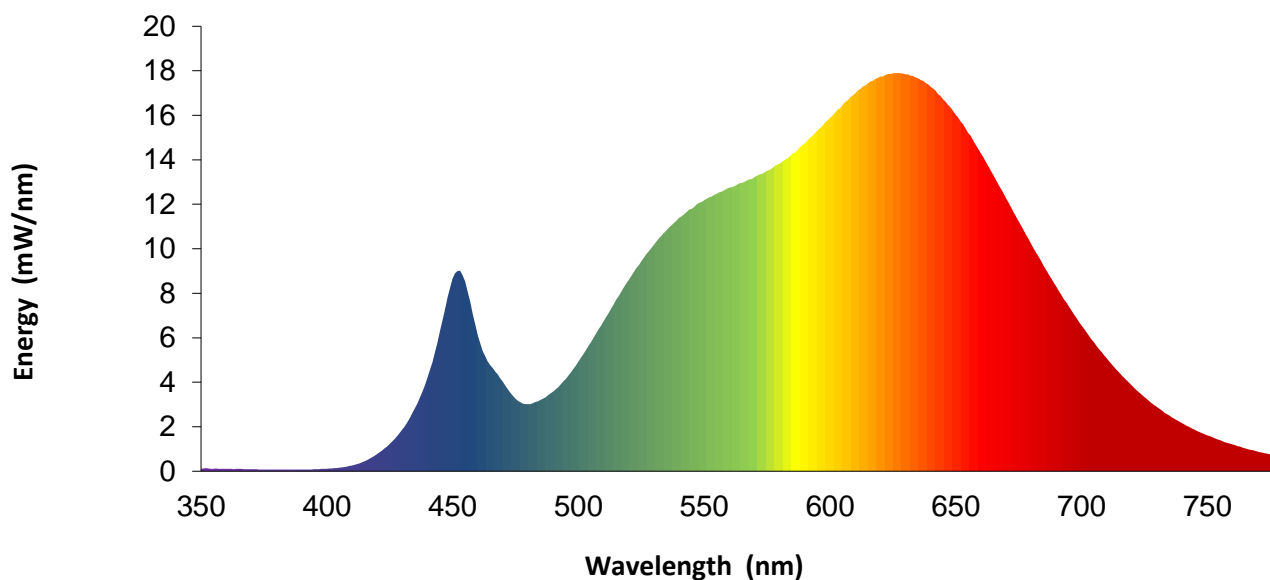


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SPECTRAL DISTRIBUTION OVER WAVELENGTHS

nm	mW/nm		nm	mW/nm		nm	mW/nm		nm	mW/nm
350	0.1		460	6.1		570	13.2		680	10.2
355	0.1		465	4.8		575	13.5		685	9.2
360	0.1		470	4.0		580	13.8		690	8.3
365	0.1		475	3.3		585	14.3		695	7.4
370	0.1		480	3.0		590	14.7		700	6.6
375	0.1		485	3.2		595	15.3		705	5.8
380	0.1		490	3.6		600	15.9		710	5.1
385	0.1		495	4.2		605	16.5		715	4.4
390	0.1		500	4.9		610	17.0		720	3.9
395	0.1		505	5.8		615	17.4		725	3.3
400	0.1		510	6.7		620	17.7		730	2.9
405	0.2		515	7.7		625	17.9		735	2.5
410	0.3		520	8.6		630	17.8		740	2.2
415	0.5		525	9.4		635	17.7		745	1.9
420	0.8		530	10.2		640	17.3		750	1.6
425	1.2		535	10.8		645	16.7		755	1.4
430	1.9		540	11.4		650	16.0		760	1.2
435	2.8		545	11.8		655	15.2		765	1.0
440	4.2		550	12.2		660	14.3		770	0.9
445	6.3		555	12.5		665	13.3		775	0.8
450	8.7		560	12.7		670	12.3		780	0.7
455	8.5		565	13.0		675	11.3		---	---

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**

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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	TUBL-FL-30K-BK	NA

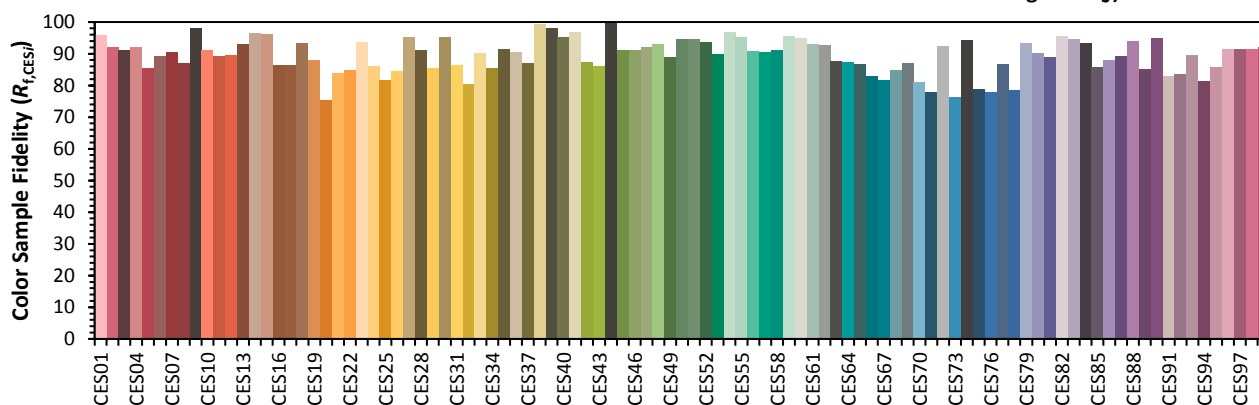
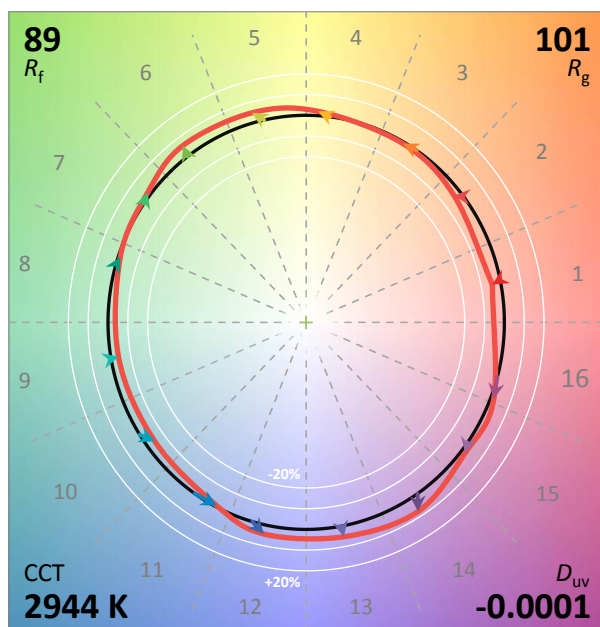
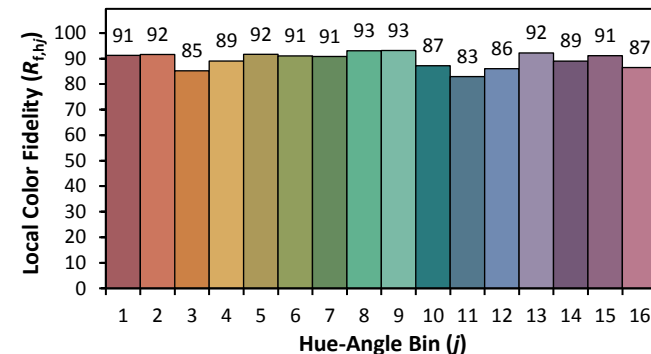
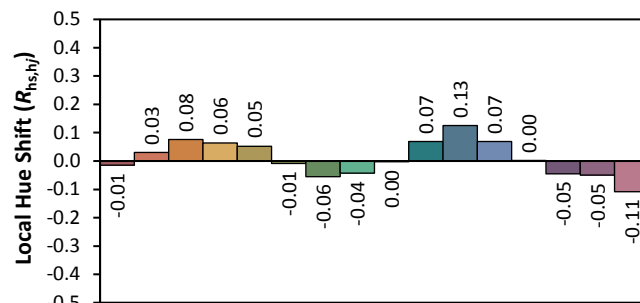
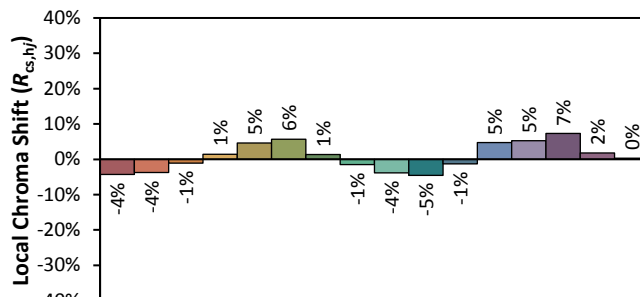
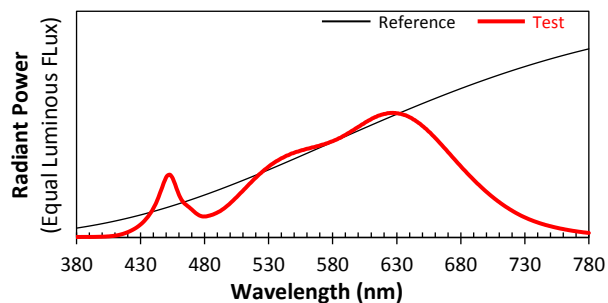
## ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Pure Edge Lighting

Date: 3/3/2021

Model: TUBL-FL-30K-BK



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

 $x$  0.4409 $y$  0.4052 $u'$  0.2526 $v'$  0.5224