

PURE EDGE LIGHTING

TEST REPORT

SCOPE OF WORK

LED Performance Testing

MODEL NUMBER

FJ24-TUBS-FL-30K-BK

PROJECT NUMBER

G104797632

REPORT NUMBER

104797632CHI-029

ISSUE DATE

5/12/2022

REVISED DATE

None

TEST DATES

2022-05-09 through 2022-05-12.

DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

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REPORT NUMBER

104797632CHI-029

MODEL NUMBER(s)

FJ24-TUBS-FL-30K-BK

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:



Maximilian Carvajal
Engineer
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Reviewer:



Jeff Davis
N.A. Technical Lead
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SAMPLE INFORMATION

REPORT NO. 104797632CHI-029

ITEMS RECEIVED

Item No.	Control No.	Model No.	Description	Type	Received
1	AH04282022112833	FJ24-TUBS-FL-30K-BK	LOW VOLTAGE TRACK HEAD	Production	4/28/2022

TESTED SAMPLE CONFIGURATIONS

Config No.	Tested Model No.	Item Nos. Utilized
1	FJ24-TUBS-FL-30K-BK	1

SAMPLE PHOTOS - TESTED CONFIGURATIONS



SUMMARY

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PRODUCT INFORMATION AND SUMMARY OF DATA

Product Model No.:	FJ24-TUBS-FL-30K-BK
Product Description:	LOW VOLTAGE TRACK HEAD
LED Model No.:	LUMINUS/CXM/CLM
Driver Model No.:	DR-24V-1100-33D
Light Source:	LED

Criteria	Results	
	Goniophotometer	Integrating Sphere
Light Output (lumens)	434.4	420.1
Input Power (W) @ 120V (Vac)	11.33	11.29
Lumen Efficacy (lm/W)	38.3	37.2
Input Power Factor () @ 120V (Vac)	0.965	0.964

Criteria	Results
Input ATHD (%) @ 120V (Vac)	15.17
Correlated Color Temperature (K)	3017
Color Rendering Index - Ra ()	92.6
Color Rendering Index - R9 ()	62.8
Duv ()	-0.0003
Chromaticity Coordinate (x)	0.435
Chromaticity Coordinate (y)	0.403
Chromaticity Coordinate (u')	0.250
Chromaticity Coordinate (v')	0.521

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. 104797632CHI-029

Test Configuration	Tested Model No.	Pass/Fail/NA
1	FJ24-TUBS-FL-30K-BK	NA

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

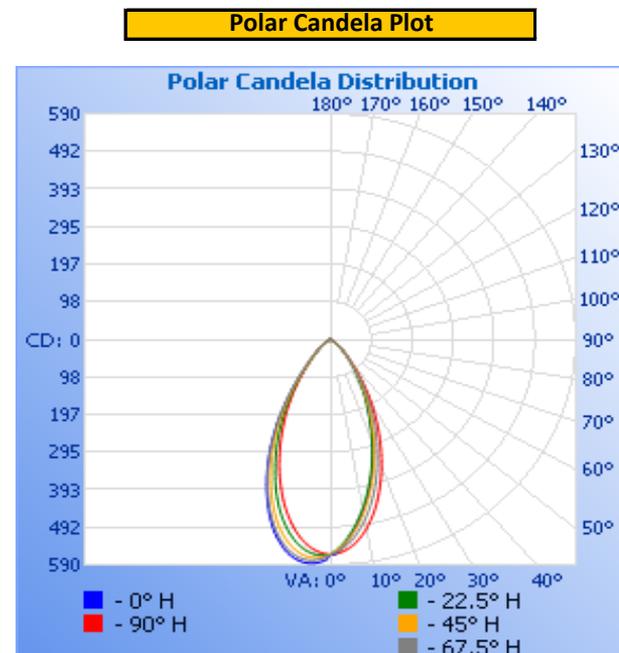
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()
Up	120.02	97.8	11.33	0.965

Light Output (lm)	Lumen Efficacy (lm/W)
434.4	38.3

INTENSITY SUMMARY - CANDELA

Angle	0	22.5	45	67.5	90
0	563.3	563.3	563.3	563.3	563.3
5	522.1	515.4	522.2	533.0	546.1
10	453.8	448.2	460.1	478.2	501.9
15	377.6	371.9	386.3	408.4	436.1
20	298.2	293.2	307.6	330.0	358.6
25	223.5	219.8	233.1	253.3	278.4
30	162.4	159.6	169.5	184.0	202.7
35	111.1	109.6	115.2	123.9	134.5
40	71.6	70.8	73.4	76.8	80.9
45	44.8	44.5	45.5	46.9	48.5
50	27.4	26.7	27.2	27.3	27.3
55	10.1	8.3	8.5	8.4	8.2
60	0.5	0.5	0.5	0.5	0.5
65	0.2	0.2	0.2	0.2	0.2
70	0.1	0.1	0.1	0.1	0.1
75	0.1	0.1	0.1	0.1	0.1
80	0.0	0.0	0.0	0.0	0.0
85	0.0	0.0	0.0	0.0	0.0
90	0.0	0.0	0.0	0.0	0.0
95	0.0	0.0	0.0	0.0	0.0
100	0.0	0.0	0.0	0.0	0.0
105	0.0	0.0	0.0	0.0	0.0
110	0.0	0.0	0.0	0.0	0.0
115	0.0	0.0	0.0	0.0	0.0
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



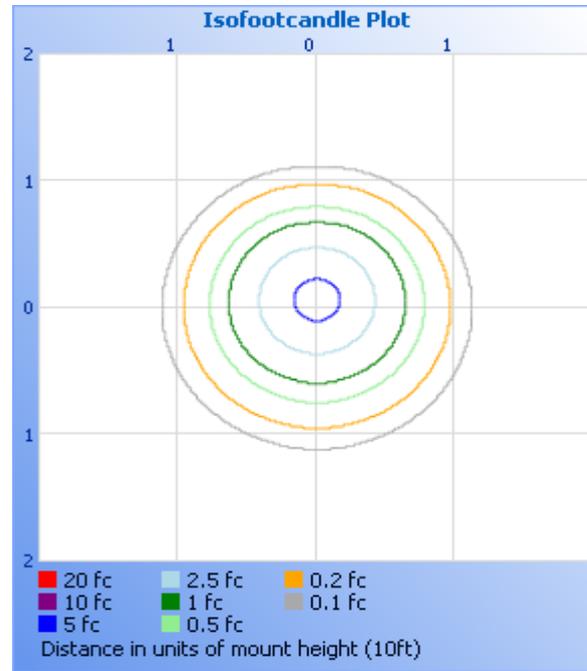
ILLUMINANCE SUMMARY

Mounting Height: 10ft

Illuminance - Cone Of Light	Isoillumination Plot
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Illuminance at a Distance			
	Center Beam fc	Beam Width	
1.7ft	195 fc	1.5 ft	1.5 ft
3.3ft	51.7 fc	3.0 ft	3.0 ft
5.0ft	22.5 fc	4.5 ft	4.5 ft
6.7ft	12.5 fc	6.0 ft	6.1 ft
8.3ft	8.18 fc	7.5 ft	7.5 ft
10.0ft	5.63 fc	9.0 ft	9.1 ft

■ Vert. Spread: 48.4°
■ Horiz. Spread: 48.7°



ZONAL LUMENS

Zonal Lumen Summary

Zone	Lumens	Luminaire
0-30	301.6	69.4%
0-40	386.8	89.0%
0-60	434.2	99.9%
60-90	0.2	0.1%
70-100	0.1	0.0%
90-120	0.0	0.0%
0-90	434.4	100.0%
90-180	0.0	0.0%
0-180	434.4	100.0%

Zone	Lumens	Total	Zone	Lumens	Total
0-10	50.9	11.7%	90-100	0.0	0.0%
10-20	121.9	28.1%	100-110	0.0	0.0%
20-30	128.7	29.6%	110-120	0.0	0.0%
30-40	85.3	19.6%	120-130	0.0	0.0%
40-50	38.4	8.8%	130-140	0.0	0.0%
50-60	9.0	2.1%	140-150	0.0	0.0%
60-70	0.2	0.0%	150-160	0.0	0.0%
70-80	0.1	0.0%	160-170	0.0	0.0%
80-90	0.0	0.0%	170-180	0.0	0.0%

INTEGRATING SPHERE TESTING

REPORT NO. 104797632CHI-029

Test Configuration	Tested Model No.	Pass/Fail/NA
1	FJ24-TUBS-FL-30K-BK	NA

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

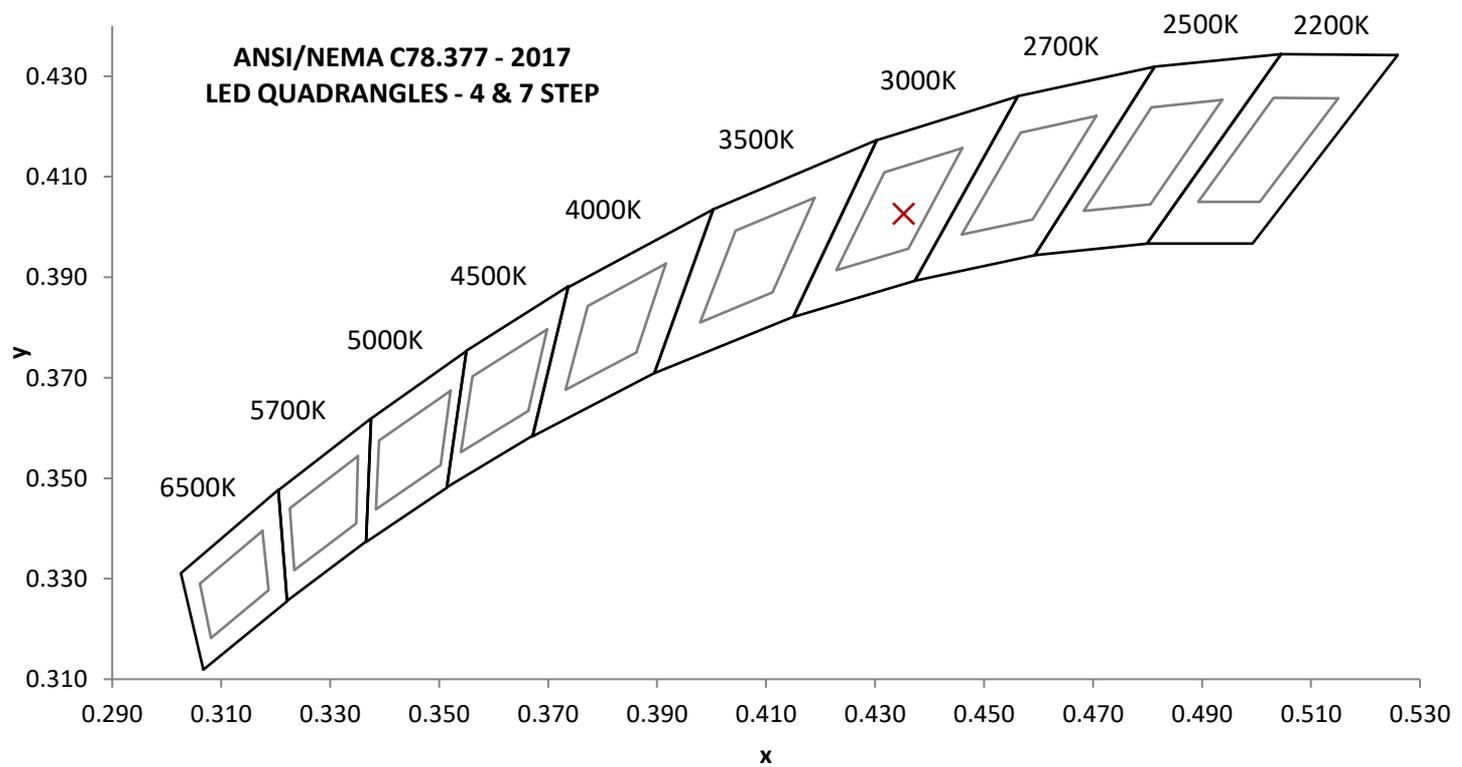
Base Orientation
Up

Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor (l)	Input ATHD (%)
120.01	97.6	11.29	0.964	15.17

Measured at 120.01(Vac)

Light Output (lm)	Lumen Efficacy (lm/W)	CCT (K)	CRI - Ra (l)	CRI - R9 (l)
420.1	37.2	3017	92.6	62.8

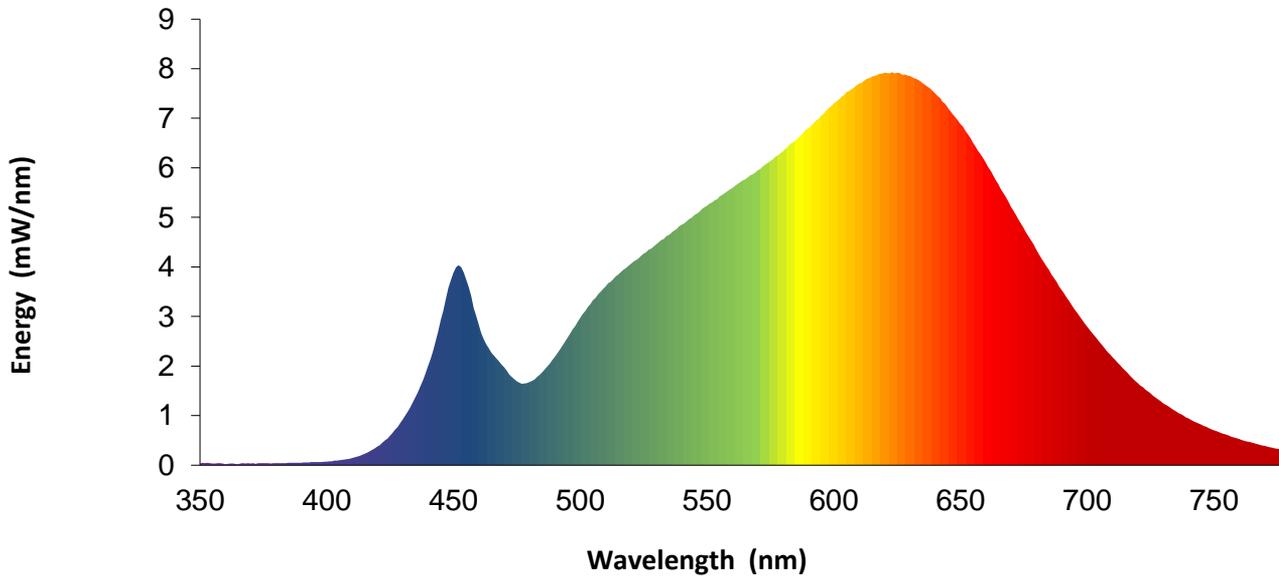
Duv (l)	1931 Chrom (x)	1931 Chrom (y)	1976 Chrom (u')	1976 Chrom (v')
-0.0003	0.435	0.403	0.250	0.521



SPECTRAL DISTRIBUTION OVER WAVELENGTHS

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	0.0	460	2.8	570	6.0	680	4.3
355	0.0	465	2.3	575	6.1	685	3.9
360	0.0	470	2.0	580	6.3	690	3.5
365	0.0	475	1.7	585	6.6	695	3.1
370	0.0	480	1.7	590	6.8	700	2.8
375	0.0	485	1.9	595	7.1	705	2.5
380	0.0	490	2.2	600	7.3	710	2.2
385	0.0	495	2.6	605	7.5	715	1.9
390	0.1	500	3.0	610	7.7	720	1.7
395	0.1	505	3.3	615	7.8	725	1.5
400	0.1	510	3.6	620	7.9	730	1.3
405	0.1	515	3.8	625	7.9	735	1.1
410	0.1	520	4.1	630	7.9	740	0.9
415	0.2	525	4.3	635	7.7	745	0.8
420	0.4	530	4.5	640	7.5	750	0.7
425	0.6	535	4.6	645	7.2	755	0.6
430	0.9	540	4.9	650	6.9	760	0.5
435	1.4	545	5.0	655	6.5	765	0.5
440	2.0	550	5.2	660	6.1	770	0.4
445	2.9	555	5.4	665	5.7	775	0.3
450	3.9	560	5.6	670	5.2	780	0.3
455	3.8	565	5.8	675	4.8	---	---

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. 104797632CHI-029

#	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	EQAH002615	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	FJ24-TUBS-FL-30K-BK	NA

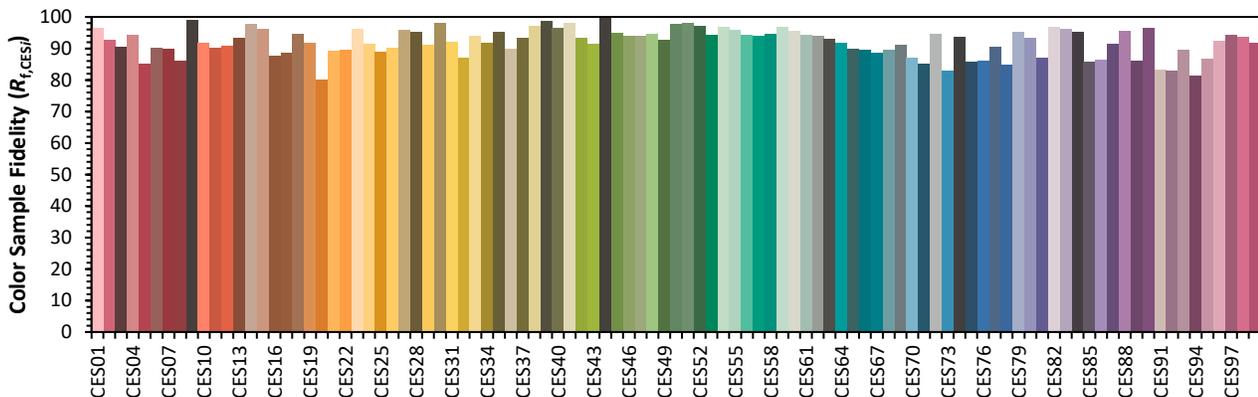
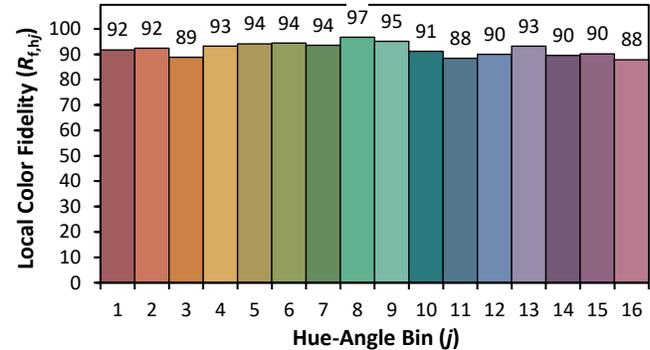
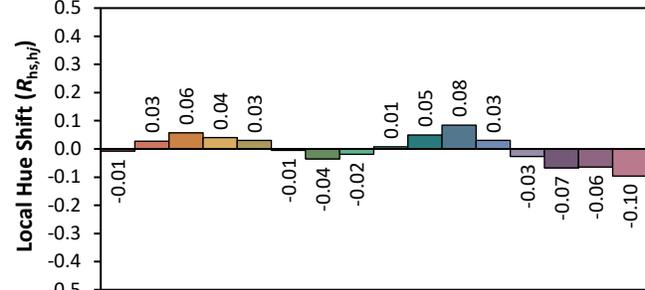
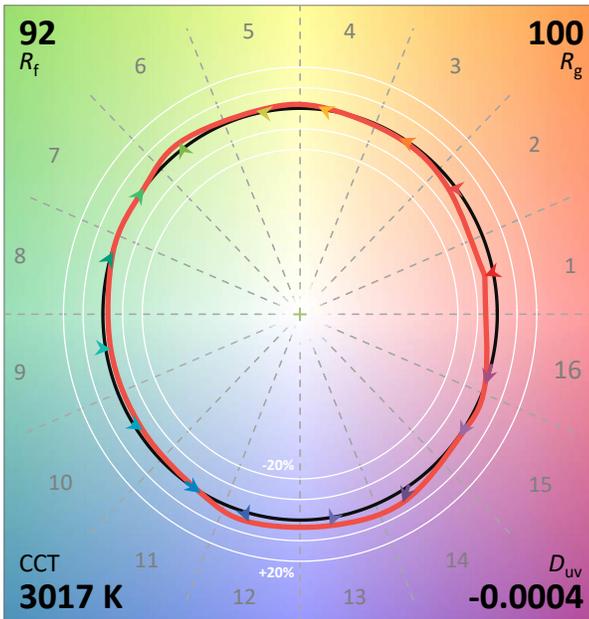
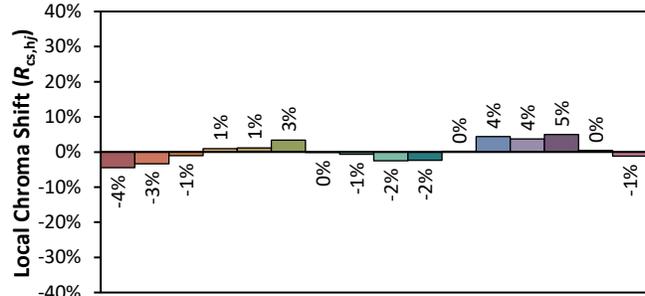
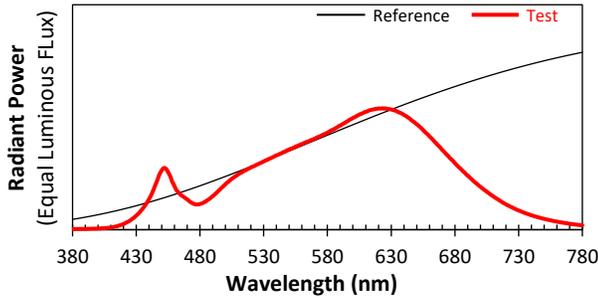
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Pure Edge Lighting

Date: 5/12/2022

Model: FJ24-TUBS-FL-30K-BK



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

x 0.4352
 y 0.4026
 u' 0.2501
 v' 0.5205