



UL LLC  
1075 W Lambert Rd Suite B  
Brea, CA 92821

## Integrating Sphere Test Report

Relevant Standards  
IES LM-79-2008, ANSI C82.77-10-2014, CIE 13.3-1995  
CIE 15-2004, ANSI C78.377-2017, IES TM-30-2018

**Prepared For**  
**B-K Lighting INC**

Daniel Carrejo  
40429 Brickyard Dr.  
Madera, CA 93636  
United States

**Catalog Number**  
**HU-LED-TR-X109-NSP-WHP-9-C-1-INC-120-PROTOTYPE(90CRI 2700K)**

Order Number

13244408

Test Number

13244408.23

Test Date

2020-05-28

Prepared By

Austin Duff, Technician

Approved By

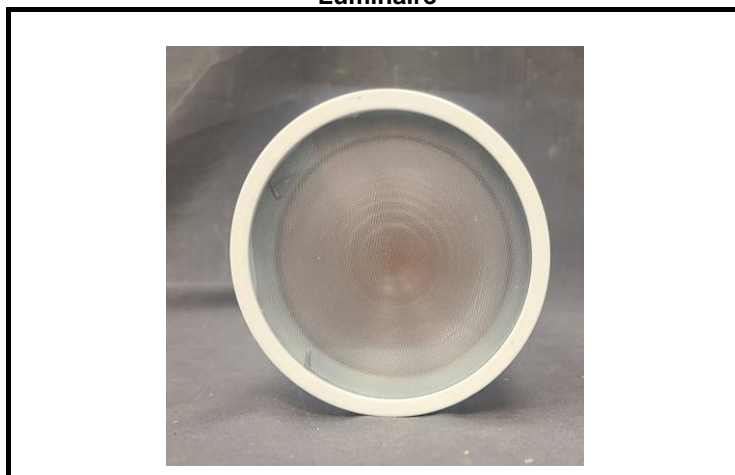
Eric Gaudreau, Engineering Leader

The results contained in this report pertain only to the tested sample.  
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**Luminaire Description:** White metal cylindrical housing and clear glass lens  
**Lamp:** One (1) White LED with optic below  
**Mounting:** Pendant  
**Ballast/Driver:** One (1) ERP ESS040W-0900-42

**Luminaire**



**Summary of Results**

Radiant Flux:	3759 mW
Luminous Flux:	1050 lm
Luminaire Efficacy:	29.7 lm/W
CCT:	2709 K
CRI (Ra):	91.0
Chromaticity (x):	0.4592
Chromaticity (y):	0.4107
Chromaticity (u):	0.2620
Chromaticity (v):	0.3515
Duv:	0.0002

**Test Conditions**

Test Temperature:	25.1 °C
Voltage:	120.0 VAC
Current:	0.2987 A
Power:	35.39 W
Power Factor:	0.987
Frequency:	60 Hz
Current THD:	10.8 %

Testing was performed in a 2-meter integrating sphere using the 4 $\pi$  geometry method.  
Absorption correction was employed for this measurement.



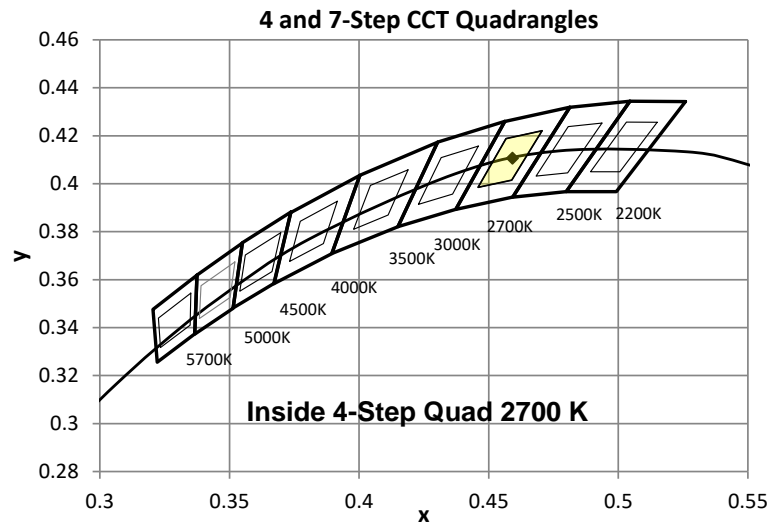
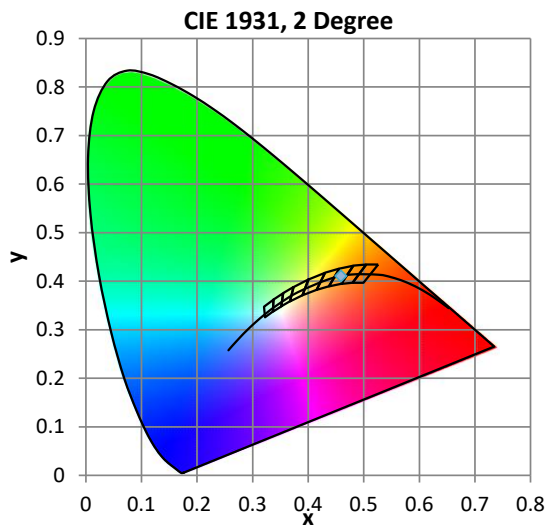
## Color Quality - Integrating Sphere

### Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.1 °C	120.0 VAC	0.2987 A	35.39 W	0.987	60 Hz	10.8 %

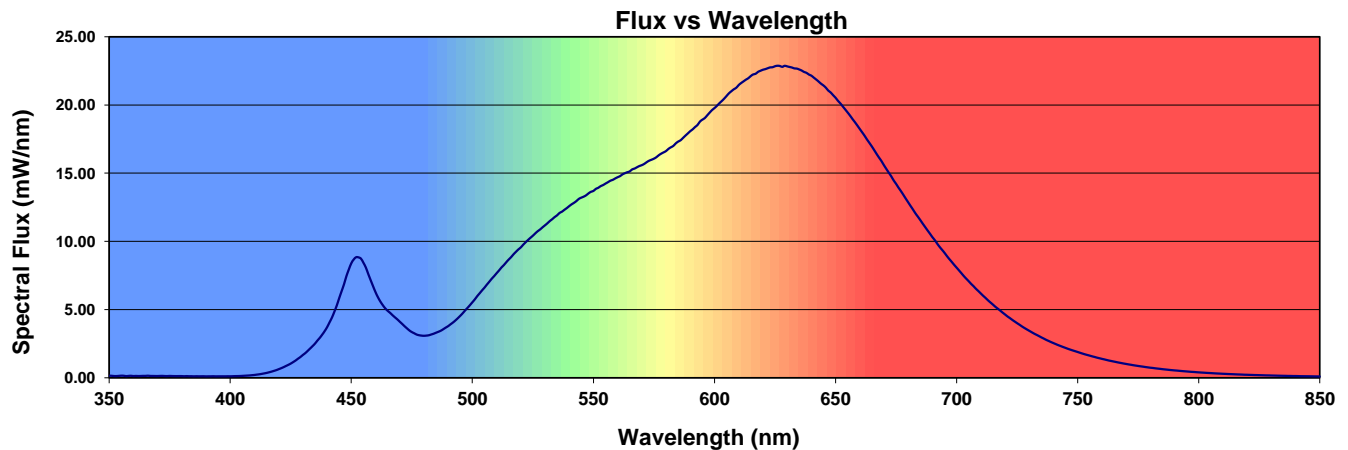
### Summary of Results

<b>Total Output:</b>	1050 Lumens	<b>Chromaticity (x):</b>	0.4592
<b>Efficacy:</b>	29.7 lm/w	<b>Chromaticity (y):</b>	0.4107
<b>CCT:</b>	2709 K	<b>Chromaticity (u'):</b>	0.2620
<b>CRI (Ra):</b>	91.0	<b>Chromaticity (v'):</b>	0.5273
<b>CRI (R9):</b>	62.1	<b>TM-30 Rf:</b>	90
<b>Peak Wavelength:</b>	626 nm	<b>TM-30 Rg:</b>	101
<b>Dominant Wavelength:</b>	584 nm	<b>TM-30 Rcs,h1:</b>	-5%
<b>S/P Ratio:</b>	1.23	<b>Duv:</b>	0.0001



### Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
91.0	91.7	93.7	92.9	91.5	90.1	91.0	93.4	83.7	62.1	82.9	90.7	75.5	92.0	94.8	89.2



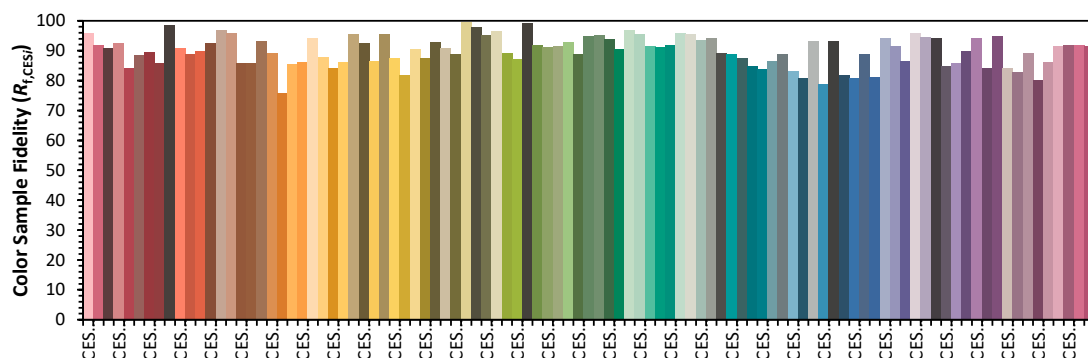
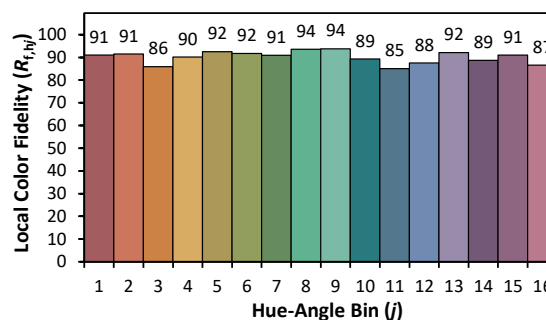
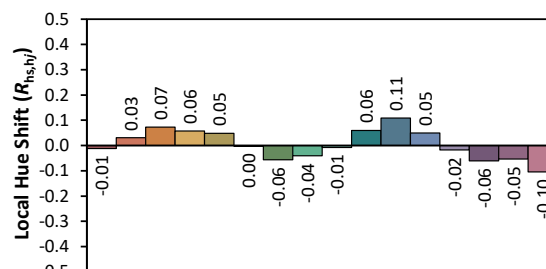
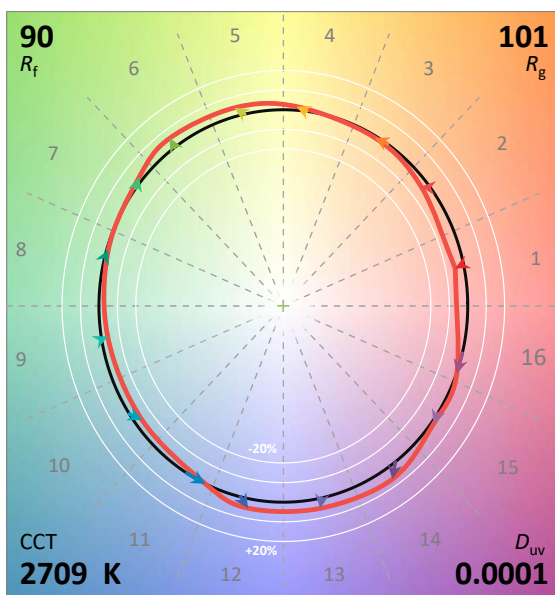
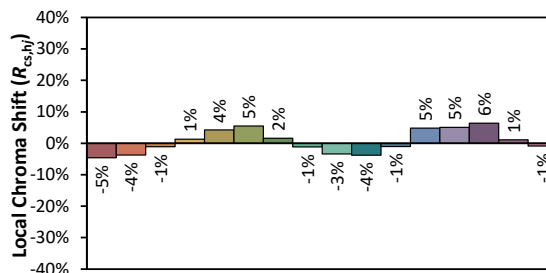
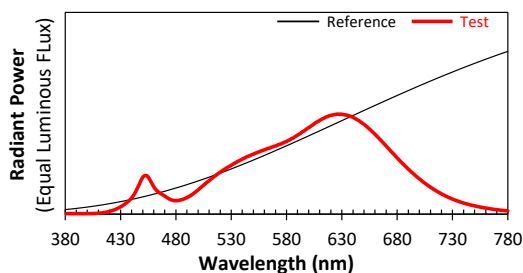
# ANSI/IES TM-30-18 Color Rendition Report

Source: Test Number: 13244408.23

Manufacturer: B-K Lighting INC

Date: 2020-05-28

Model: HU-LED-TR-X109-NSP-WHP-9-C-1-IN



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

x 0.4592

y 0.4107

u' 0.2620

v' 0.5273

CIE 13.3-1995  
(CRI)

R<sub>a</sub> 91

R<sub>g</sub> 62

Colors are for visual orientation purposes only. Created with the IES TM-30-18 Calculator Version 2.00.