

# VISUAL COMFORT AND COMPANY TEST REPORT

## SCOPE OF WORK

LED Performance Testing

## MODEL NUMBER

700PRTEBL66N-LED927

## PROJECT NUMBER

G105235466

## REPORT NUMBER

105235466CHI-002

## ISSUE DATE

10/31/2022

## REVISED DATE

None

## TEST DATES

2022-10-18 through 2022-10-28.

## DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

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**REPORT NUMBER**

105235466CHI-002

**MODEL NUMBER(s)**

700PRTEBL66N-LED927

**REPORT RENDERED TO:**

VISUAL COMFORT AND COMPANY  
7400 LINDER AVE  
SKOKIE, IL 60077  
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-01297671-0.

**TEST STANDARDS**

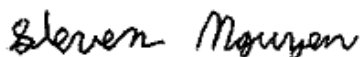
IESNA LM-79 - 2008: Electrical and Photometric Measurements of Solid State Lighting

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:



Steven Nguyen  
Engineer  
Lighting Division

Reviewer:



Jeff Davis  
N.A. Technical Lead  
Lighting Division

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**SAMPLE INFORMATION**

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ITEMS RECEIVED

| Item No. | Control No.      | Model No.           | Description            | Type       | Received   |
|----------|------------------|---------------------|------------------------|------------|------------|
| 1        | AH10112022074545 | 700PRTEBL66N-LED927 | Ebell Large Floor Lamp | Production | 10/11/2022 |

TESTED SAMPLE CONFIGURATIONS

| Config No. | Tested Model No.    | Item Nos. Utilized |
|------------|---------------------|--------------------|
| 1          | 700PRTEBL66N-LED927 | 1                  |

SAMPLE PHOTOS - TESTED CONFIGURATIONS



## SUMMARY

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### PRODUCT INFORMATION AND SUMMARY OF DATA

|                      |                                    |
|----------------------|------------------------------------|
| Product Model No.:   | 700PRTEBL66N-LED927                |
| Product Description: | Ebell Large Floor Lamp             |
| LED Model No.:       | BXRE-27G2000-C-82                  |
| Driver Model No.:    | PSS30W-0700-38-VCC (AA4609), 500mA |
| Light Source:        | LED                                |

| Criteria                              | Results         |                    |
|---------------------------------------|-----------------|--------------------|
|                                       | Goniophotometer | Integrating Sphere |
| Light Output (lumens)                 | 617.7           | 628.4              |
| Input Power (W) @ 120VAC (Vac)        | 9.55            | 9.50               |
| Lumen Efficacy (lm/W)                 | 64.7            | 66.1               |
| Input Power Factor (I) @ 120VAC (Vac) | 0.857           | 0.865              |

| Criteria                         | Results |
|----------------------------------|---------|
| Input ATHD (%) @ 120VAC (Vac)    | 54.16   |
| Correlated Color Temperature (K) | 2656    |
| Color Rendering Index - Ra (I)   | 92.4    |
| Color Rendering Index - R9 (I)   | 71.1    |
| Duv (I)                          | -0.0003 |
| Chromaticity Coordinate (x)      | 0.463   |
| Chromaticity Coordinate (y)      | 0.410   |
| Chromaticity Coordinate (u')     | 0.265   |
| Chromaticity Coordinate (v')     | 0.528   |

| Criteria                      | Results       |
|-------------------------------|---------------|
|                               | Standby Power |
| Input Voltage (V) @ 120 (Vac) | 120.0         |
| Output Power (W) @ 120 (Vac)  | 0.01          |

## 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. "&UPPER('Cover Page'!P6)

| Test Configuration | Tested Model No.    | Pass/Fail/NA |
|--------------------|---------------------|--------------|
| 1                  | 700PRTEBL66N-LED927 | NA           |

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

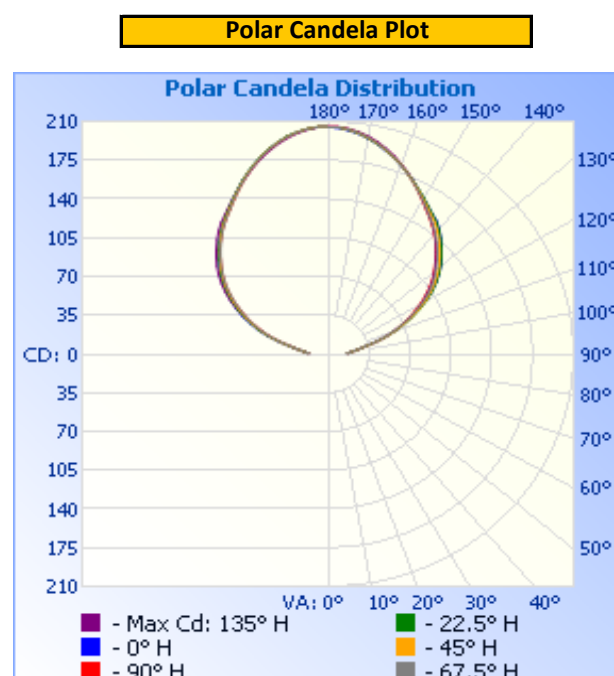
| Base Orientation | Input Voltage (Vac) | Input Current (mA) | Input Power (W) | Input Power Factor ( ) |
|------------------|---------------------|--------------------|-----------------|------------------------|
| Down             | 120.05              | 93.1               | 9.55            | 0.857                  |

| Light Output (lm) | Lumen Efficacy (lm/W) |
|-------------------|-----------------------|
| 617.7             | 64.7                  |

**INTENSITY SUMMARY - CANDELA**

| Angle | 0   | 22.5 | 45  | 67.5 | 90  |
|-------|-----|------|-----|------|-----|
| 0     | 0   | 0    | 0   | 0    | 0   |
| 5     | 0   | 0    | 0   | 0    | 0   |
| 10    | 0   | 0    | 0   | 0    | 0   |
| 15    | 0   | 0    | 0   | 0    | 0   |
| 20    | 0   | 0    | 0   | 0    | 0   |
| 25    | 0   | 0    | 0   | 0    | 0   |
| 30    | 0   | 0    | 0   | 0    | 0   |
| 35    | 0   | 0    | 0   | 0    | 0   |
| 40    | 0   | 0    | 0   | 0    | 0   |
| 45    | 0   | 0    | 0   | 0    | 0   |
| 50    | 0   | 0    | 0   | 0    | 0   |
| 55    | 0   | 0    | 0   | 0    | 0   |
| 60    | 0   | 0    | 0   | 0    | 0   |
| 65    | 0   | 0    | 0   | 0    | 0   |
| 70    | 0   | 0    | 0   | 0    | 0   |
| 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    | 19  | 19   | 19  | 19   | 19  |
| 100   | 27  | 27   | 28  | 28   | 28  |
| 105   | 41  | 42   | 42  | 42   | 42  |
| 110   | 59  | 60   | 60  | 59   | 59  |
| 115   | 78  | 80   | 79  | 77   | 75  |
| 120   | 97  | 97   | 96  | 93   | 91  |
| 125   | 113 | 113  | 111 | 108  | 106 |
| 130   | 126 | 126  | 124 | 121  | 119 |
| 135   | 137 | 137  | 135 | 132  | 130 |
| 140   | 148 | 147  | 145 | 143  | 141 |
| 145   | 155 | 155  | 154 | 151  | 151 |
| 150   | 163 | 163  | 162 | 161  | 161 |
| 155   | 172 | 173  | 172 | 172  | 172 |
| 160   | 182 | 182  | 182 | 182  | 182 |
| 165   | 190 | 191  | 191 | 191  | 191 |
| 170   | 198 | 198  | 198 | 199  | 199 |
| 175   | 203 | 203  | 203 | 204  | 204 |
| 180   | 205 | 205  | 205 | 205  | 205 |

Entire luminous intensity matrix found in .IES file



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ORIENTATION AND ALIGNMENT OF EUT

| Luminous Opening |            |             |
|------------------|------------|-------------|
| Length (ft)      | Width (ft) | Height (ft) |
| -0.25            | -0.25      | -0.25       |
| 0°-180° H        | 90°-270° H | 0°-180° V   |

| Test Distance (ft) |
|--------------------|
| 30.0               |

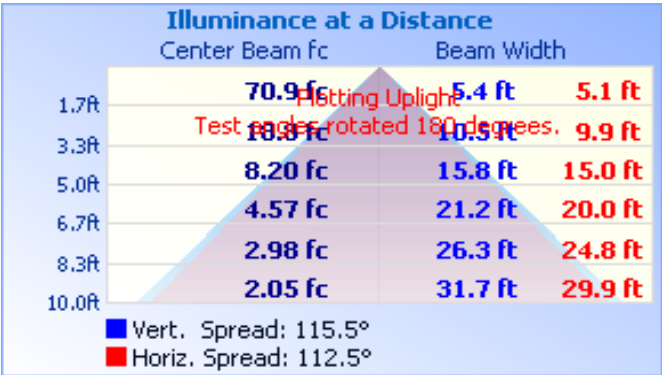
PHOTOMETRIC CENTER OF EUT



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ILLUMINANCE SUMMARY

|                             |
|-----------------------------|
| Mounting Height: 10ft       |
| Illuminance - Cone Of Light |



ZONAL LUMENS

|                     |
|---------------------|
| Zonal Lumen Summary |
|---------------------|

| Zone   | Lumens | Luminaire |
|--------|--------|-----------|
| 0-30   | 0.2    | 0.0%      |
| 0-40   | 0.5    | 0.1%      |
| 0-60   | 2.8    | 0.5%      |
| 60-90  | 23.8   | 3.9%      |
| 70-100 | 41.9   | 6.8%      |
| 90-120 | 143.6  | 23.2%     |
| 0-90   | 26.7   | 4.3%      |
| 90-180 | 591.1  | 95.7%     |
| 0-180  | 617.7  | 100.0%    |

| Zone  | Lumens | Total | Zone    | Lumens | Total |
|-------|--------|-------|---------|--------|-------|
| 0-10  | 0.0    | 0.0%  | 90-100  | 19.7   | 3.4%  |
| 10-20 | 0.0    | 0.0%  | 100-110 | 45.2   | 7.7%  |
| 20-30 | 0.0    | 0.0%  | 110-120 | 76.6   | 13.0% |
| 30-40 | 0.0    | 0.0%  | 120-130 | 97.0   | 16.5% |
| 40-50 | 0.0    | 0.0%  | 130-140 | 102.4  | 17.4% |
| 50-60 | 0.0    | 0.0%  | 140-150 | 95.5   | 16.2% |
| 60-70 | 0.0    | 0.0%  | 150-160 | 79.4   | 13.5% |
| 70-80 | 0.0    | 0.0%  | 160-170 | 53.9   | 9.2%  |
| 80-90 | 0.0    | 0.0%  | 170-180 | 19.3   | 3.3%  |

# **INTEGRATING SPHERE TESTING**

**REPORT NO. 105235466CHI-002**

| Test Configuration | Tested Model No.    | Pass/Fail/NA |
|--------------------|---------------------|--------------|
| 1                  | 700PRTEBL66N-LED927 | NA           |

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

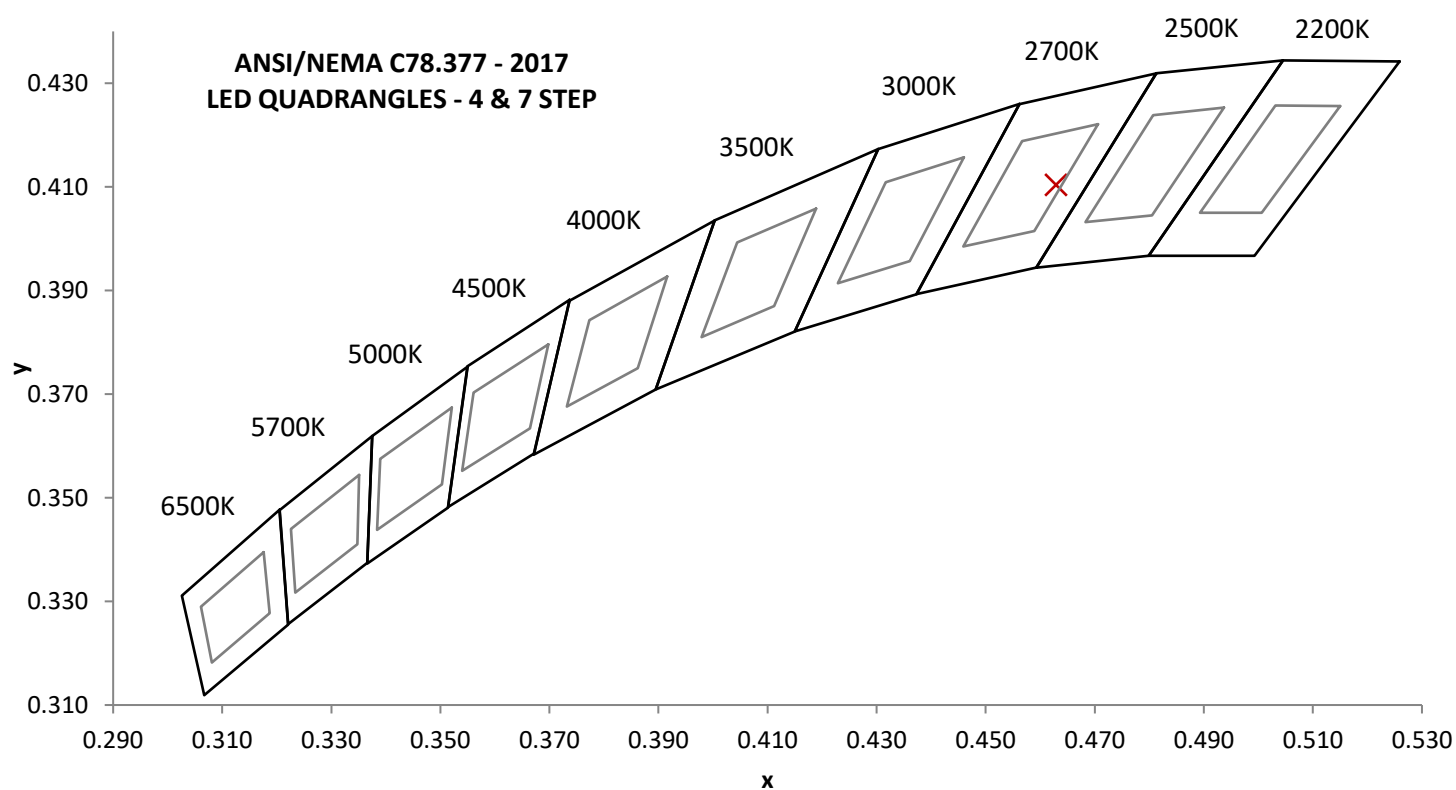
| Base Orientation |
|------------------|
| Down             |

| Input Voltage (Vac) | Input Current (mA) | Input Power (W) | Input Power Factor ( ) | Input ATHD (%) |
|---------------------|--------------------|-----------------|------------------------|----------------|
| 119.98              | 91.5               | 9.50            | 0.865                  | 54.16          |

Measured at 119.98(Vac)

| Light Output (lm) | Lumen Efficacy (lm/W) | CCT (K) | CRI - Ra ( ) | CRI - R9 ( ) |
|-------------------|-----------------------|---------|--------------|--------------|
| 628.4             | 66.1                  | 2656    | 92.4         | 71.1         |

| Duv ( ) | 1931 Chrom (x) | 1931 Chrom (y) | 1976 Chrom (u') | 1976 Chrom (v') |
|---------|----------------|----------------|-----------------|-----------------|
| -0.0003 | 0.463          | 0.410          | 0.265           | 0.528           |

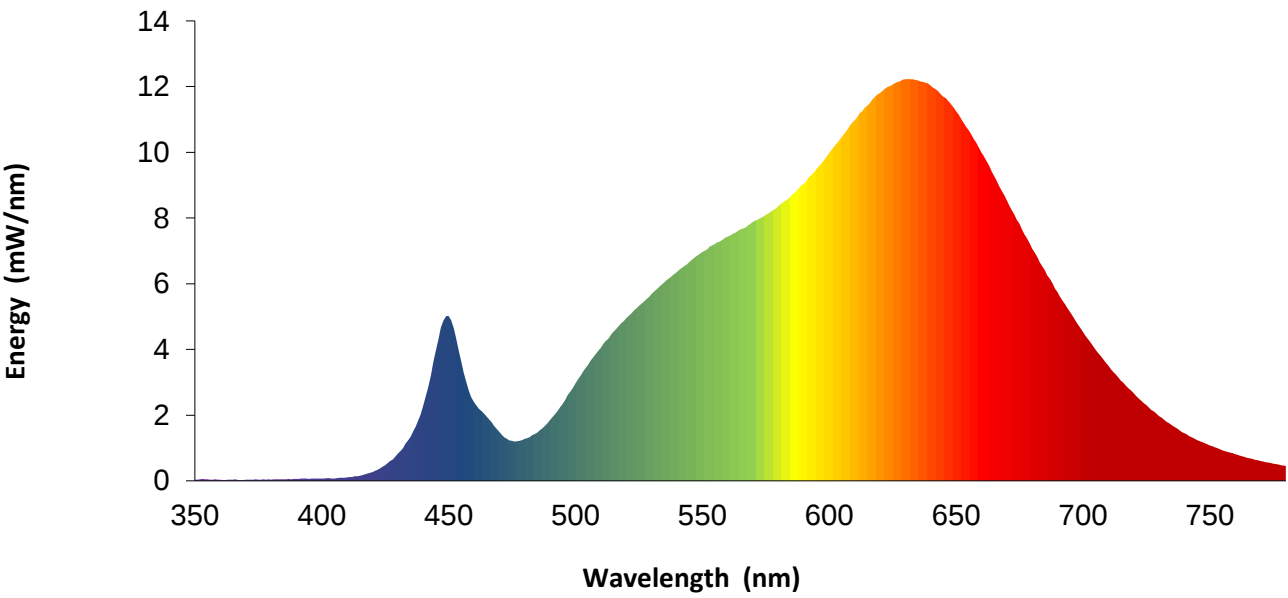


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SPECTRAL DISTRIBUTION OVER WAVELENGTHS

| nm  | mW/nm |  | nm  | mW/nm |  | nm  | mW/nm |  | nm  | mW/nm |
|-----|-------|--|-----|-------|--|-----|-------|--|-----|-------|
| 350 | 0.0   |  | 460 | 2.4   |  | 570 | 7.9   |  | 680 | 7.1   |
| 355 | 0.0   |  | 465 | 2.0   |  | 575 | 8.1   |  | 685 | 6.4   |
| 360 | 0.0   |  | 470 | 1.5   |  | 580 | 8.4   |  | 690 | 5.7   |
| 365 | 0.0   |  | 475 | 1.2   |  | 585 | 8.7   |  | 695 | 5.1   |
| 370 | 0.0   |  | 480 | 1.3   |  | 590 | 9.0   |  | 700 | 4.5   |
| 375 | 0.0   |  | 485 | 1.5   |  | 595 | 9.5   |  | 705 | 4.0   |
| 380 | 0.0   |  | 490 | 1.9   |  | 600 | 10.0  |  | 710 | 3.5   |
| 385 | 0.0   |  | 495 | 2.3   |  | 605 | 10.5  |  | 715 | 3.1   |
| 390 | 0.1   |  | 500 | 3.0   |  | 610 | 11.0  |  | 720 | 2.7   |
| 395 | 0.1   |  | 505 | 3.5   |  | 615 | 11.4  |  | 725 | 2.3   |
| 400 | 0.1   |  | 510 | 4.1   |  | 620 | 11.8  |  | 730 | 2.0   |
| 405 | 0.1   |  | 515 | 4.5   |  | 625 | 12.1  |  | 735 | 1.7   |
| 410 | 0.1   |  | 520 | 4.9   |  | 630 | 12.2  |  | 740 | 1.5   |
| 415 | 0.2   |  | 525 | 5.3   |  | 635 | 12.2  |  | 745 | 1.2   |
| 420 | 0.3   |  | 530 | 5.7   |  | 640 | 12.0  |  | 750 | 1.1   |
| 425 | 0.5   |  | 535 | 6.0   |  | 645 | 11.7  |  | 755 | 0.9   |
| 430 | 0.8   |  | 540 | 6.4   |  | 650 | 11.3  |  | 760 | 0.8   |
| 435 | 1.3   |  | 545 | 6.7   |  | 655 | 10.7  |  | 765 | 0.7   |
| 440 | 2.3   |  | 550 | 7.0   |  | 660 | 10.0  |  | 770 | 0.6   |
| 445 | 4.0   |  | 555 | 7.2   |  | 665 | 9.3   |  | 775 | 0.5   |
| 450 | 5.0   |  | 560 | 7.4   |  | 670 | 8.5   |  | 780 | 0.5   |
| 455 | 3.6   |  | 565 | 7.7   |  | 675 | 7.8   |  | --- | ---   |

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**

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| #  | 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      | 10/4/2022 | 10/4/2023 |
| 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   | 146769      | 4/5/2022  | 4/5/2023  |
| 17 | Omega thermometer                | USB TC08 | EQAH002615  | 4/5/2022  | 4/5/2023  |
| 26 | Xitron Power Analyzer            | XT-2640  | CHI0611     | 7/6/2022  | 7/6/2023  |

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          | ---        | ---         | ---                   |
| --- | ---           | ---        | ---         | ---                   |
| --- | ---           | ---        | ---         | ---                   |

| Test Configuration | Tested Model No.    | Pass/Fail/NA |
|--------------------|---------------------|--------------|
| 1                  | 700PRTEBL66N-LED927 | NA           |

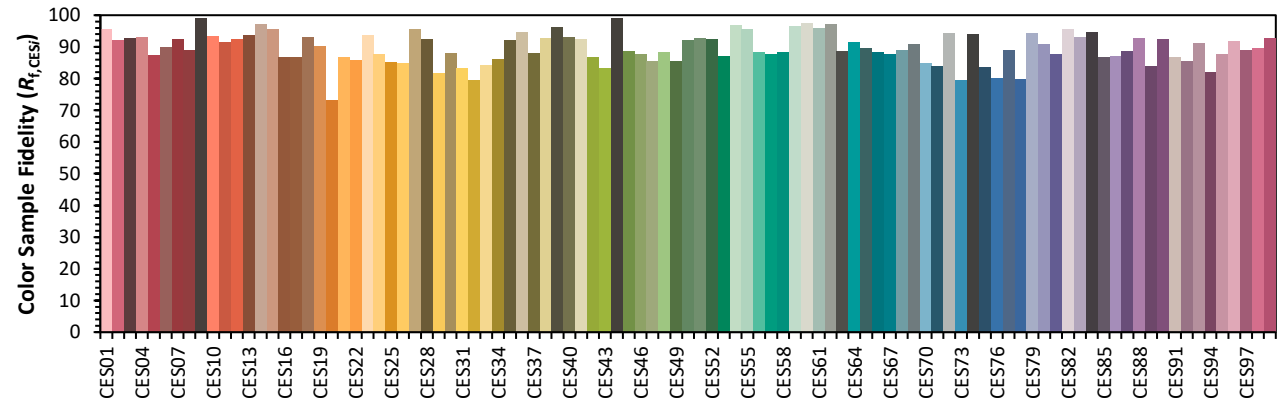
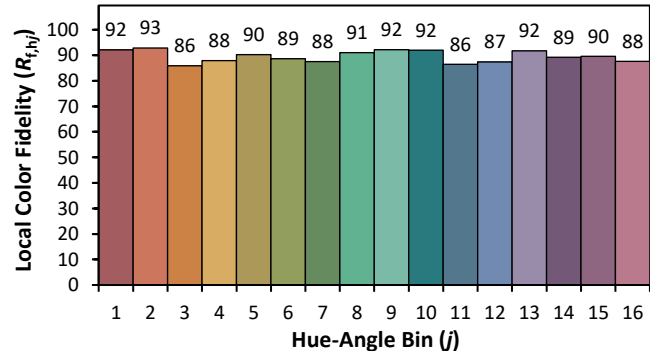
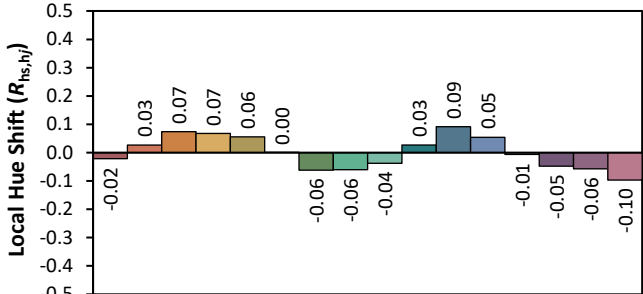
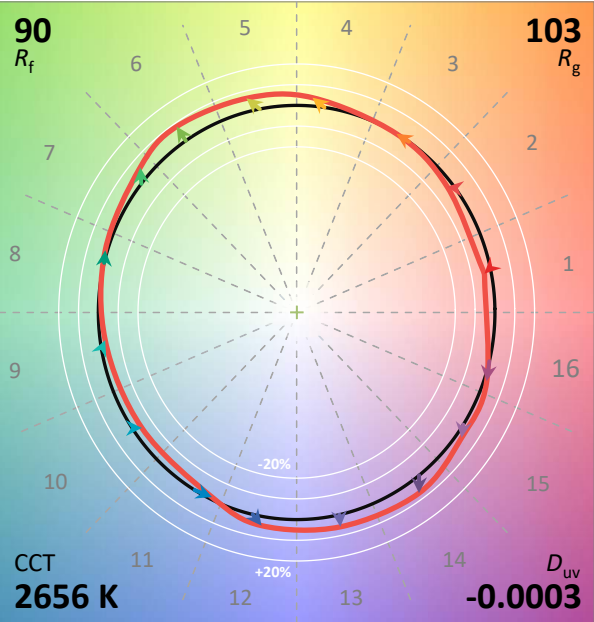
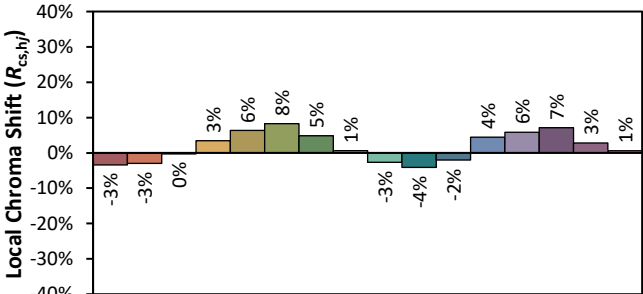
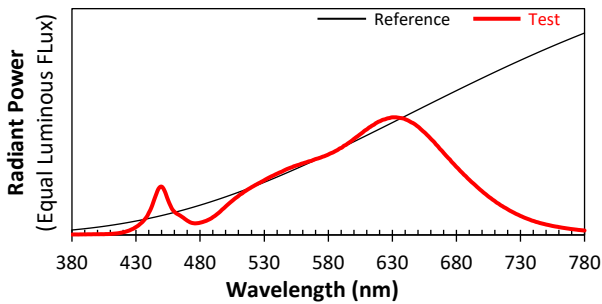
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Date: 10/18/2022

Manufacturer: VISUAL COMFORT AND COMPANY

Model: 700PRTEBL66N-LED927



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

x 0.4629

y 0.4103

u' 0.2646

v' 0.5277