

# Visual Comfort and Company

## TEST REPORT

**SCOPE OF WORK**

LM-79 testing report

**REPORT NUMBER**

220401100GZU-022

**ISSUE DATE**

09 April 2022

**REVISION DATE**

None

**NUMBER OF PAGES**

13

**DOCUMENT CONTROL NUMBER**

Report format for LM-79:2008\_F  
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Report No.: 220401100GZU-022

## TEST REPORT

### TEST OF ONE LED LUMINAIRE

MODEL NO. 700PRTEBL24xx-LED927

#### RENDERED TO

Visual Comfort and Company

Contact Name: Tess Gallagher

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Email: Tgallagher@visualcomfortco.com

Phone No.: 8474104774

TEST: Electrical and Photometric as required to the IES LM-79 test standard.

STATEMENT OF LIMITATION: The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

AUTHORIZATION: The testing performed was authorized by signed quote number: QGZ220329042.

STANDARDS USED: The following American National Standards or Illuminating Engineering Society of North America Test Guides were used in part or totally to test each specimen:

IES LM-79: 2008 Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products

ANSI C78.377:2017 Specifications of the Chromaticity of Solid State Lighting Products

DESCRIPTION OF SAMPLE: The client submitted one sample of model 700PRTEBL24xx-LED927. The sample was received, in undamaged condition. The sample designation was S220401100-022.

DATES OF TESTS: 07 April 2022

ISSUED BY: Intertek Testing Services Shenzhen Ltd. Guangzhou Branch

TEST LOCATION: Room 02, & 101/E201/E301/E401/E501/E601/E701/E801 of Room 01 1-8/F., No. 7-2. Caipin Road, Science City, GETDD, Guangzhou, Guangdong, China

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# TEST REPORT

## SUMMARY

Model Number:	700PRTEBL24xx-LED927 (Remark: "XX" denote other appearance colors for the characters that change)
Description:	LED Luminaries
Brand Name:	--

### Test Condition: 120V, 60Hz For 700PRTEBL24xx-LED927

Criteria	Result
Total Lumen Output	535.7 lm
Total Power	9.2 W
Luminaire Efficacy	58.48 lm/W
S/MH(C0/180)	0.47
S/MH(C90/270)	1.60
Correlated Color Temperature (CCT)	2690 K
Color Rendering Index (CRI)	93
R9	74
Chromaticity Coordinate (x)	0.4596
Chromaticity Coordinate (y)	0.4088
Chromaticity Coordinate (u')	0.2631
Chromaticity Coordinate (v')	0.5266

### Remark:

Measurement uncertainty for applicable tests has been established.

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# TEST REPORT

## EQUIPMENT LIST

Equipment Used	Model Number	Control Number
Temperature Meter	RS210	SA047-126
Sensing - DC Power Supply	IT6122	SA063-12-09
Sensing- AC power source for Integrating Sphere System	APW-105N	SA063-12-05
Everfine - AC power source for Goniophotometer System	DPS1060	SA063-16-03
Two meter integrating sphere unit	Sensing – 2M	SA063-12-01
YOKOGAWA – Digital Power Meter	WT-210	SA011-122
Everfine – Goniophotometer	Go-R5000	SA063-16
KONICA MINOLTA - Illuminance meter	CX-2B_WL	SA063-16-01
Standard lamp	S82134	SA063-12-13
Standard lamp	S1320039	SA063-12-24
Standard lamp	D908S	SA063-16-05
Standard lamp	D215S	SA063-16-06

## GENERAL REMARK

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When determining for test conclusion, measurement uncertainty of tests has been considered.

Throughout this report a ☐ comma ☒ point is used as the decimal separator.

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## TEST REPORT

### TEST METHOD

#### Seasoning in Sample Orientation – LED Products

No seasoning was performed in accordance with IES LM-79

#### Light Distribution and Output Measurements

Light Distribution and total light output (luminous flux) were measured using a Go-R5000 Type-C Rotating Mirror Goniophotometer. Temperature 25°C and relative humidity of 60% was measured at a position in the testing laboratory.

The lamp rotates only around the fixed vertical axle in the prescribed burning position. The lamp and mirror permit the measurement of luminous intensity at the direction of any horizontal or vertical angle without tilting the lamp. The lamp was allowed to stabilize before measurements were made.

#### Chromaticity Measurements

Chromaticity was measured using a 2 meters integrating sphere spectral lamp measurement system, 4 $\pi$  geometry, with an interior coating reflectance no less than 95 %. Temperature was measured at a position inside the sphere shielded from direct light. Relative humidity of 65% was measured at a position in the testing laboratory.

Spectral radiant flux measurements were made using spectroradiometer attached to the detector port of the integrating sphere. Each lamp was allowed to stabilise before measurements were made. The calibration of the integrating sphere spectroradiometer system is by the reference/standard lamps which are traceable to National Institute of Metrology P.R. CHINA. Lamp efficacy (lumens per watt) for each lamp model was then computed based on the luminous flux result. Electrical measurements including voltage, power and power factor were measured using YOKOGAWA - Digital Power Meter., model WT210.

Correction factor (self-absorption) has been considered when doing measurement.

Standard lamp used for Goniophotometer method:

Model: D908S

Current: 7.255A

Standard lamp used for integrating sphere:

Model: S82134

Current: 1.830

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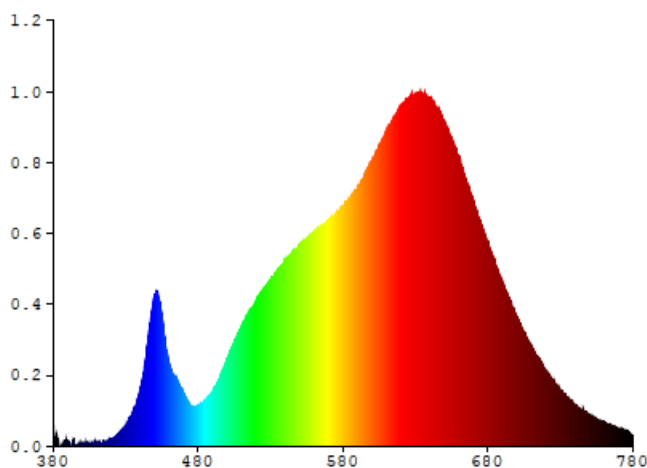
## TEST REPORT

### RESULTS OF TESTS

**Test Condition: 120V, 60Hz For 700PRTEBL24xx-LED927**

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0000	480	0.0310	580	0.1829	680	0.1558	780	0.0070
385	0.0000	485	0.0349	585	0.1902	685	0.1390		
390	0.0042	490	0.0419	590	0.1984	690	0.1261		
395	0.0004	495	0.0533	595	0.2084	695	0.1112		
400	0.0004	500	0.0667	600	0.2191	700	0.0987		
405	0.0016	505	0.0798	605	0.2308	705	0.0871		
410	0.0021	510	0.0925	610	0.2419	710	0.0767		
415	0.0033	515	0.1029	615	0.2507	715	0.0670		
420	0.0048	520	0.1106	620	0.2605	720	0.0576		
425	0.0096	525	0.1203	625	0.2657	725	0.0504		
430	0.0123	530	0.1274	630	0.2696	730	0.0430		
435	0.0263	535	0.1350	635	0.2688	735	0.0368		
440	0.0440	540	0.1422	640	0.2661	740	0.0317		
445	0.0779	545	0.1487	645	0.2587	745	0.0274		
450	0.1149	550	0.1540	650	0.2480	750	0.0237		
455	0.0987	555	0.1594	655	0.2354	755	0.0199		
460	0.0626	560	0.1648	660	0.2197	760	0.0186		
465	0.0520	565	0.1685	665	0.2032	765	0.0162		
470	0.0401	570	0.1723	670	0.1882	770	0.0133		
475	0.0307	575	0.1779	675	0.1677	775	0.0115		



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## TEST REPORT

### RESULTS OF TESTS (cont'd)

**Test Condition: 120V, 60Hz For 700PRTEBL24xx-LED927**

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

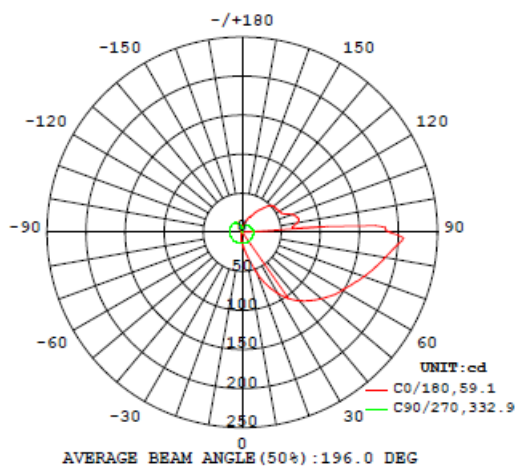
#### Photometric Measurements at 25°C – Integrating Sphere Method

Intertek Sample No.	Base Orientation	Correlated Color Temperatur e (K)	CRI	R9	CIE 31'	CIE 31'	CIE 76'	CIE 76'
					Chromaticit y	Chromaticit y	Chromaticit y	Chromaticit y
					Coordinate (x)	Coordinate (y)	Coordinate (u')	Coordinate (v')
700PRTEBL24xx-LED927								
S2204011 00-022	--	2690	93	74	0.4596	0.4088	0.2631	0.5266

#### Photometric and Electrical Measurements at 25°C – Distribution Method

Intertek Sample No.	Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (Watts)	Input Power Factor	Absolute	Lumen
						Luminous Flux (Lumens)	Efficacy (Lumens Per Watt)
700PRTEBL24xx-LED927							
S2204011 00-022	--	120.0	89.3	9.2	0.854	535.7	58.48

#### Intensity (Candlepower) Summary at 25°C – Candelas



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## TEST REPORT

### RESULTS OF TESTS (cont'd)

**Test Condition: 120V, 60Hz For 700PRTEBL24xx-LED927**

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	14.5	14.5	14.5	14.5	14.4
5	19.1	18.7	17.4	15.9	14.3
10	26.9	25.3	21.7	17.5	14.3
15	38.7	35.7	27.7	19.6	14.2
20	56.3	50.0	35.2	21.8	14.2
25	74.0	66.8	45.8	24.8	14.2
30	89.6	81.1	58.0	28.1	14.3
35	103.4	94.2	69.7	31.8	14.3
40	114.7	105.1	79.3	35.9	14.3
45	123.7	114.3	87.9	40.5	14.4
50	132.2	121.6	95.7	45.2	14.4
55	140.8	128.1	101.7	50.0	14.4
60	148.1	134.1	107.3	54.4	14.5
65	156.1	139.4	111.8	58.5	14.5
70	165.6	144.2	115.3	62.0	14.6
75	175.7	148.7	118.0	65.0	14.6
80	185.9	152.4	120.0	67.2	14.7
85	198.2	155.0	121.5	68.8	14.7
90	188.9	155.9	122.2	69.9	14.7
95	64.6	155.0	122.4	70.1	14.5
100	71.8	152.7	122.2	69.8	14.2
105	73.8	147.3	121.3	68.6	13.6
110	67.7	138.1	119.9	66.3	12.9
115	57.0	128.6	117.7	61.8	12.3
120	55.2	117.9	114.0	54.6	11.9
125	52.8	105.1	108.6	45.6	11.8
130	52.6	91.4	98.1	39.0	11.9
135	48.5	75.8	81.2	36.4	12.0
140	40.0	57.1	65.4	33.5	12.0
145	33.4	42.2	57.5	28.4	11.6
150	24.7	34.9	46.0	22.0	10.7
155	22.2	25.6	29.5	16.2	9.4
160	16.8	16.0	17.1	11.8	8.3
165	12.0	10.5	11.0	8.4	6.5
170	7.8	7.8	7.8	5.7	4.7
175	3.1	3.9	3.5	2.7	2.6
180	0.1	0.1	0.0	0.0	0.0

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## TEST REPORT

### RESULTS OF TESTS (cont'd)

**Test Condition: 120V, 60Hz For 700PRTEBL24xx-LED927**

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
700PRTEBL24xx-LED927		
0-30	19.3	3.6
0-40	41.3	7.7
0-60	116.4	21.7
0-90	290.8	54.3
60-90	174.4	32.6
0-180	535.7	100

Beam Angle

**Total Beam Angle (°)**

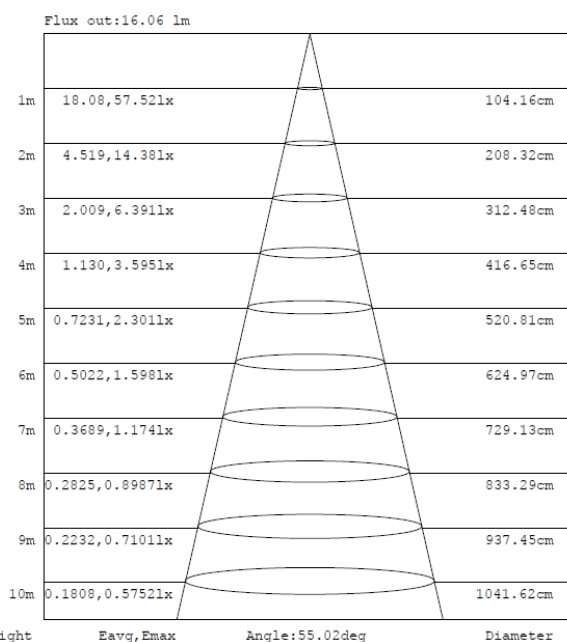
196.0

Illumination Plots

Model No.: 700PRTEBL24xx-LED927

Mount Height: 2.5 m

Illuminance - Cone of Light



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# TEST REPORT

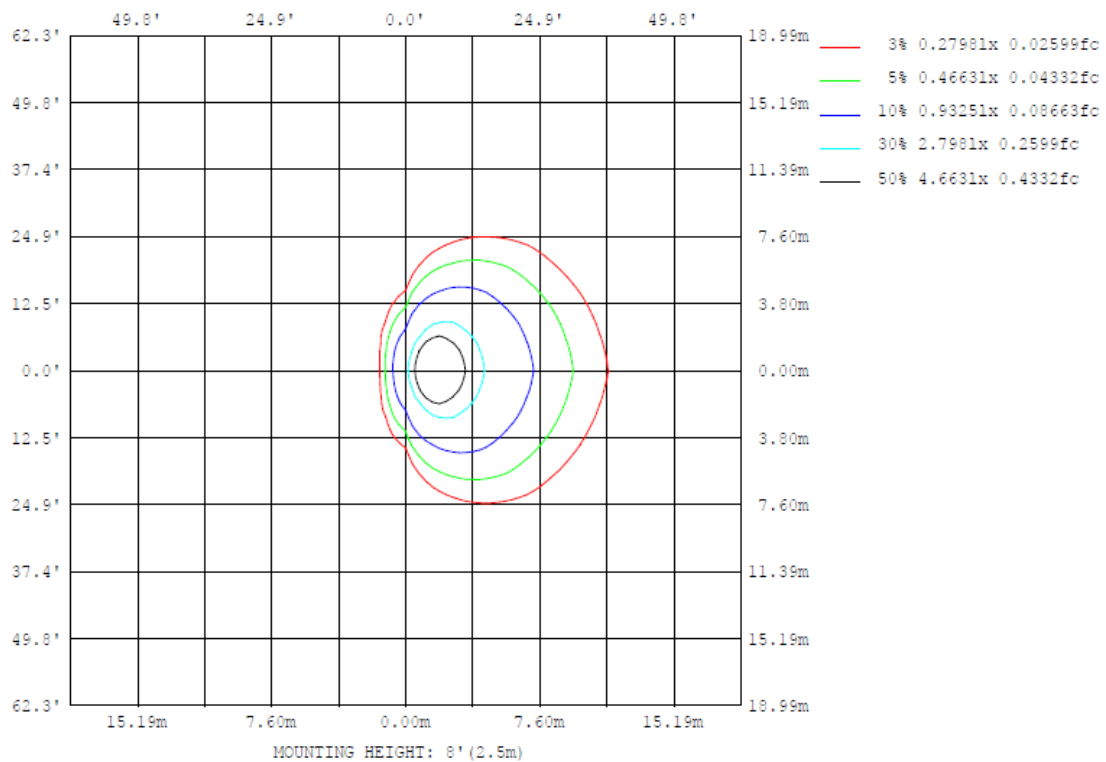
## RESULTS OF TESTS (cont'd)

**Test Condition: 120V, 60Hz For 700PRTEBL24xx-LED927**

Model No.: 700PRTEBL24xx-LED927

Mount Height: 2.5 m

Isoillumination Plot



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## TEST REPORT

### RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700PRTEBL24xx-LED927

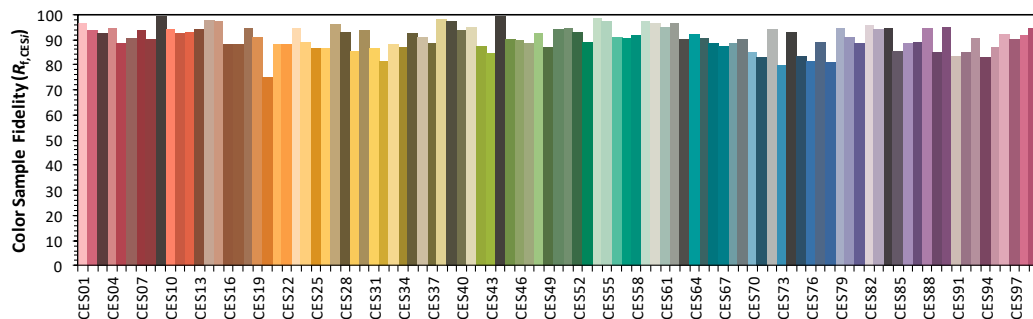
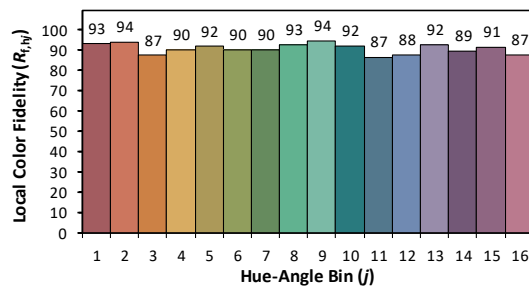
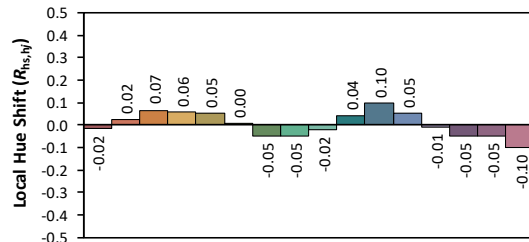
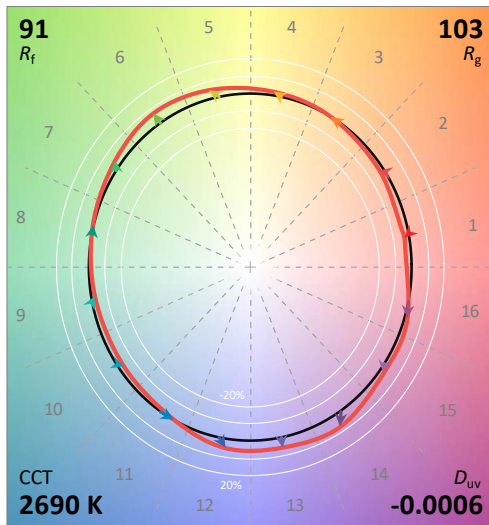
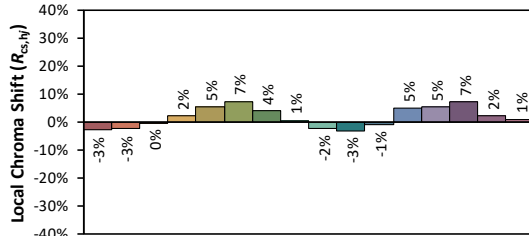
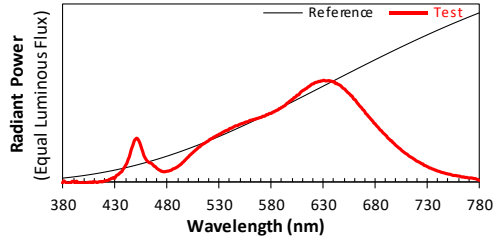
#### ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2022/4/7

Model: 700PRTEBL24xx-LED927



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

$x$  0.4596  
 $y$  0.4088  
 $u'$  0.2631  
 $v'$  0.5266

CIE 13.3-1995  
(CRI)  
 $R_a$  93  
 $R_g$  74

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

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## TEST REPORT

### PRODUCT PICTURE (not to scale)



**External view of 700PRTEBL24xx-LED927**



**External view of 700PRTEBL24xx-LED927**

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## TEST REPORT

### PRODUCT PICTURE (not to scale)



View of LED Driver A122-1201000ID



View of LED

In Charge Of Tests:

*Done Ye*

Done Ye  
Engineer

Report Reviewed By

*Shelley Ying*

Shelley Ying  
Reviewer

Attachment: None

\*\*\*\*\* End of Report \*\*\*\*\*