

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

220401100GZU-021

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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TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. 700PRTEBL12xx-LED927

RENDERED TO

Visual Comfort and Company

Contact Name: Tess Gallagher

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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 700PRTEBL12xx-LED927. The sample was received, in undamaged condition. The sample designation was S220401100-021.

DATES OF TESTS: 08 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:	700PRTEBL12xx-LED927 (Remark: "XX" denote other appearance colors for the characters that change)
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For 700PRTEBL12xx-LED927

Criteria	Result
Total Lumen Output	568.0 lm
Total Power	9.3 W
Luminaire Efficacy	60.88 lm/W
S/MH(C0/180)	1.18
S/MH(C90/270)	1.17
Correlated Color Temperature (CCT)	2622 K
Color Rendering Index (CRI)	93
R9	75
Chromaticity Coordinate (x)	0.4649
Chromaticity Coordinate (y)	0.4094
Chromaticity Coordinate (u')	0.2663
Chromaticity Coordinate (v')	0.5277

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 π 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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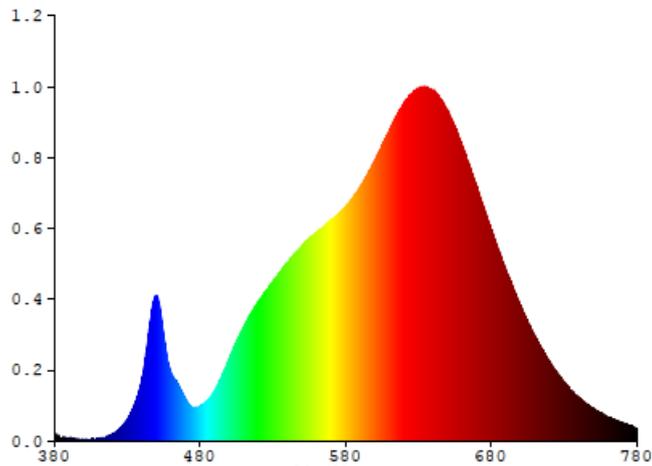
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For 700PRTEBL12xx-LED927

Spectral Distribution over Visible Wavelengths

nm	mW/nm								
380	0.0644	480	0.3648	580	2.4786	680	2.2297	780	0.1227
385	0.0367	485	0.4250	585	2.5705	685	2.0201		
390	0.0218	490	0.5306	590	2.6925	690	1.8086		
395	0.0179	495	0.6871	595	2.8260	695	1.6170		
400	0.0163	500	0.8727	600	2.9748	700	1.4342		
405	0.0144	505	1.0494	605	3.1269	705	1.2635		
410	0.0216	510	1.2097	610	3.2804	710	1.1052		
415	0.0389	515	1.3492	615	3.4411	715	0.9666		
420	0.0754	520	1.4743	620	3.5792	720	0.8421		
425	0.1300	525	1.5838	625	3.6653	725	0.7266		
430	0.2244	530	1.6897	630	3.7149	730	0.6226		
435	0.3858	535	1.7887	635	3.7393	735	0.5339		
440	0.6547	540	1.8845	640	3.7085	740	0.4583		
445	1.1730	545	1.9827	645	3.6262	745	0.3947		
450	1.5299	550	2.0618	650	3.4981	750	0.3414		
455	1.1064	555	2.1454	655	3.3260	755	0.2956		
460	0.7169	560	2.2097	660	3.1248	760	0.2551		
465	0.5888	565	2.2618	665	2.9148	765	0.2211		
470	0.4402	570	2.3309	670	2.6877	770	0.1899		
475	0.3512	575	2.3991	675	2.4149	775	0.1660		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700PRTEBL12xx-LED927

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

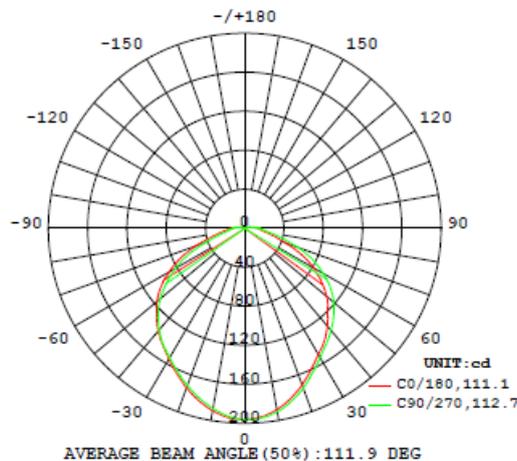
Photometric Measurements at 25°C – Integrating Sphere Method

Intertek Sample No.	Base Orientation	Correlated Color Temperature (K)	CRI	R9	CIE 31' Chromaticity Coordinate		CIE 76' Chromaticity Coordinate	
					(x)	(y)	(u')	(v')
700PRTEBL12xx-LED927								
S2204011 00-021	--	2622	93	75	0.4649	0.4094	0.2663	0.5277

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 Luminous Flux (Lumens)	Lumen Efficacy (Lumens Per Watt)
700PRTEBL12xx-LED927							
S2204011 00-021	--	120.0	91.0	9.3	0.854	568.0	60.88

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700PRTEBL12xx-LED927

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	196.3	196.2	196.2	196.2	196.1
5	194.1	194.6	194.9	195.2	195.3
10	188.7	189.5	190.3	190.8	190.9
15	180.7	181.8	182.8	183.4	183.6
20	170.7	171.7	172.9	173.7	174.2
25	159.8	160.5	161.7	162.7	163.5
30	149.5	149.8	150.8	152.1	153.2
35	141.2	141.3	142.8	144.0	144.8
40	131.0	131.0	132.8	135.0	136.7
45	120.3	120.3	122.7	125.7	127.9
50	108.8	109.2	112.2	115.8	118.4
55	95.4	96.5	99.9	103.7	106.4
60	80.4	82.6	86.6	89.9	92.1
65	63.5	66.2	71.0	73.8	76.4
70	44.4	46.8	51.2	55.3	57.7
75	30.2	32.1	34.7	37.3	39.1
80	20.9	22.1	23.5	24.7	25.7
85	15.9	16.5	17.0	17.5	18.0
90	12.5	12.9	13.4	13.7	14.1
95	9.8	10.1	10.5	10.8	11.1
100	7.7	7.9	8.2	8.5	8.7
105	5.9	6.1	6.3	6.5	6.8
110	1.7	4.5	4.7	4.9	5.1
115	1.3	3.3	3.4	3.6	3.7
120	0.9	2.3	2.4	2.5	2.5
125	0.7	1.4	1.6	1.7	1.7
130	0.6	0.9	1.1	1.2	1.2
135	0.5	0.7	0.9	0.9	0.9
140	0.4	0.6	0.7	0.7	0.7
145	0.3	0.4	0.5	0.5	0.5
150	0.3	0.3	0.4	0.4	0.4
155	0.3	0.3	0.3	0.3	0.3
160	0.3	0.3	0.3	0.3	0.3
165	0.3	0.3	0.3	0.3	0.3
170	0.3	0.3	0.3	0.3	0.3
175	0.3	0.3	0.3	0.3	0.3
180	0.3	0.3	0.3	0.3	0.3

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TEST REPORT RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700PRTEBL12xx-LED927

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
700PRTEBL12xx-LED927		
0-30	144.6	25.5
0-40	235.1	41.4
0-60	422.5	74.4
0-90	545.1	96.0
60-90	122.6	21.6
0-180	568.0	100

Beam Angle

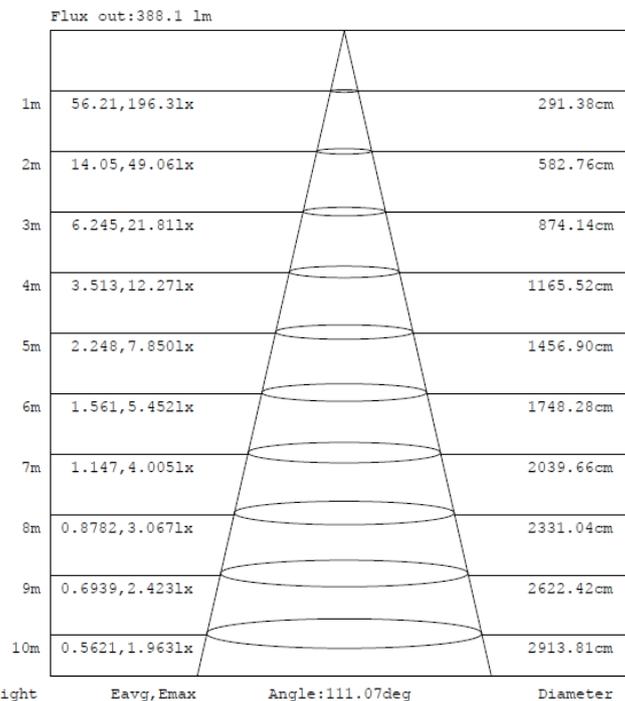
Total Beam Angle (°)
111.9

Illumination Plots

Model No.: 700PRTEBL12xx-LED927

Mount Height: 2.5 m

Illuminance - Cone of Light

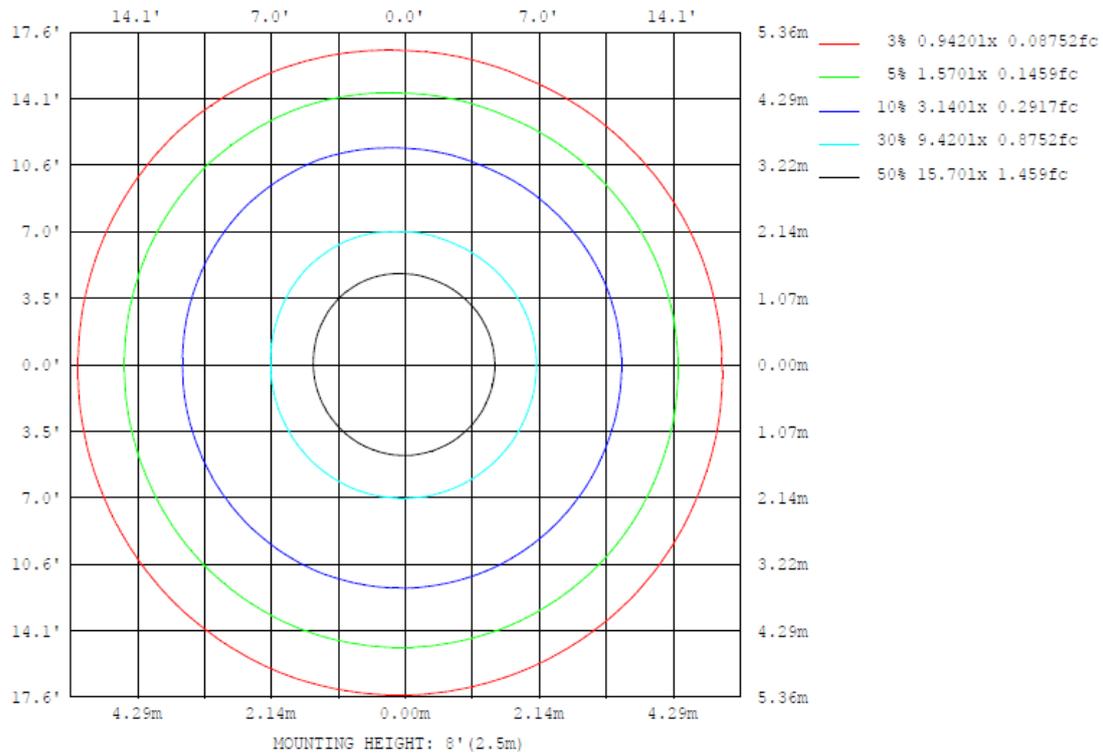


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TEST REPORT
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700PRTEBL12xx-LED927

Model No.: 700PRTEBL12xx-LED927
Mount Height: 2.5 m
Isoillumination Plot



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TEST REPORT

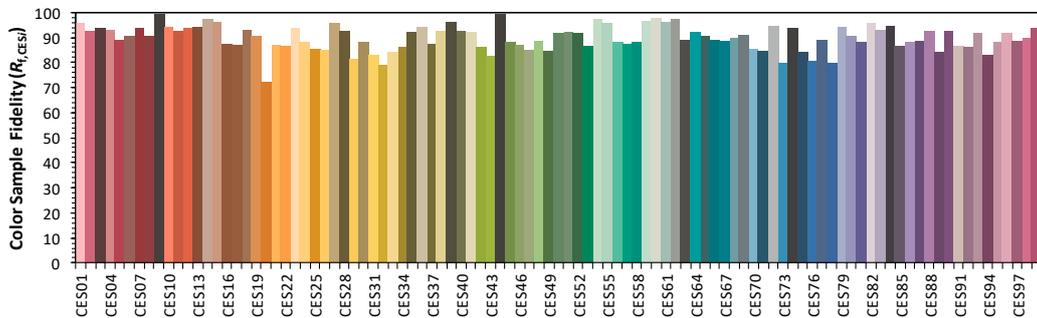
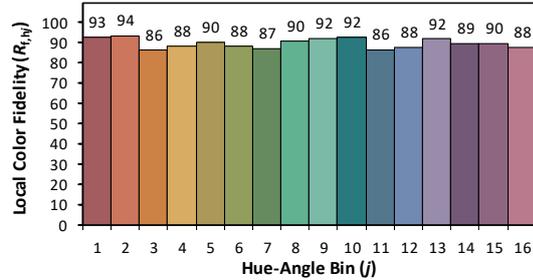
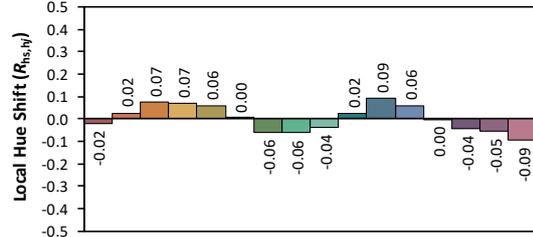
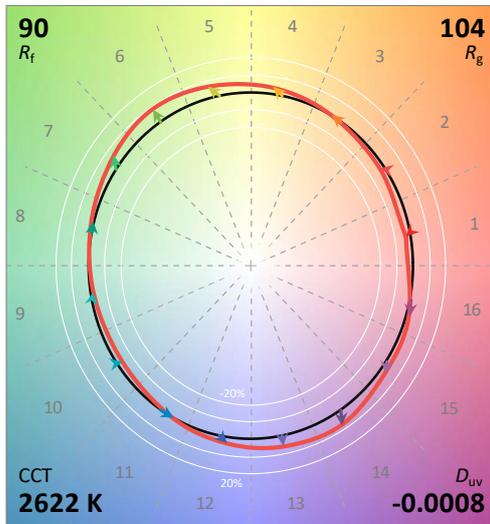
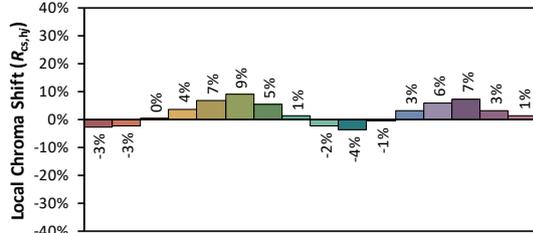
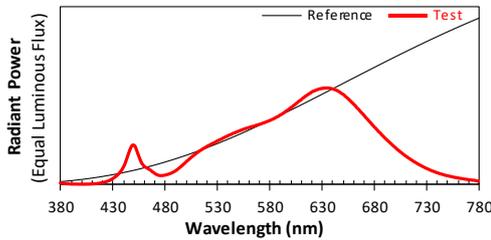
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700PRTEBL12xx-LED927

ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD
Date: 2022/4/8

Manufacturer: Visual Comfort and Company
Model: 700PRTEBL12xx-LED927



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

x 0.4649
 y 0.4094
 u' 0.2663
 v' 0.5277

CIE 13.3-1995 (CRI)	
R_a	93
R_g	75

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 700PRTEBL12xx-LED927

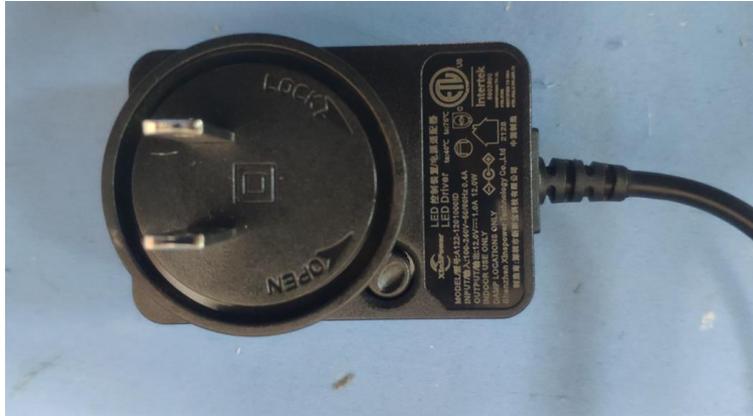


External view of 700PRTEBL12xx-LED927

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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 *****