

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

220401100GZU-004

ISSUE DATE

02 April 2022

REVISION DATE

None

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13

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Report No.: 220401100GZU-004

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. 700PHB36xx-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 700PHB36xx-LED927. The sample was received, in undamaged condition. The sample designation was S220401100-004.

DATES OF TESTS: 02 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:	700PHB36xx-LED927 (Remark: "XX" denote other appearance colors for the characters that change)
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For 700PHB36xx-LED927

Criteria	Result
Total Lumen Output	1107.8 lm
Total Power	22.3 W
Luminaire Efficacy	49.76 lm/W
S/MH(C0/180)	3.63
S/MH(C90/270)	3.61
Correlated Color Temperature (CCT)	2715 K
Color Rendering Index (CRI)	92
R9	74
Chromaticity Coordinate (x)	0.4587
Chromaticity Coordinate (y)	0.4104
Chromaticity Coordinate (u')	0.2618
Chromaticity Coordinate (v')	0.5271

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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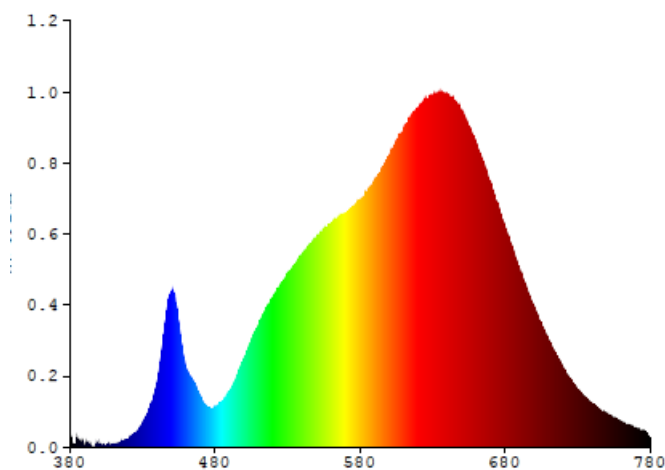
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For 700PHB36xx-LED927

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0090	480	0.0449	580	0.2742	680	0.2420	780	0.0087
385	0.0091	485	0.0498	585	0.2835	685	0.2206		
390	0.0005	490	0.0616	590	0.2958	690	0.1958		
395	0.0000	495	0.0779	595	0.3097	695	0.1736		
400	0.0022	500	0.0983	600	0.3242	700	0.1552		
405	0.0017	505	0.1182	605	0.3396	705	0.1343		
410	0.0017	510	0.1354	610	0.3522	710	0.1177		
415	0.0050	515	0.1526	615	0.3663	715	0.1018		
420	0.0080	520	0.1662	620	0.3768	720	0.0873		
425	0.0153	525	0.1795	625	0.3870	725	0.0734		
430	0.0259	530	0.1929	630	0.3905	730	0.0632		
435	0.0426	535	0.2028	635	0.3942	735	0.0547		
440	0.0700	540	0.2138	640	0.3920	740	0.0472		
445	0.1265	545	0.2251	645	0.3839	745	0.0412		
450	0.1720	550	0.2331	650	0.3719	750	0.0369		
455	0.1338	555	0.2408	655	0.3556	755	0.0315		
460	0.0860	560	0.2476	660	0.3364	760	0.0279		
465	0.0724	565	0.2552	665	0.3161	765	0.0242		
470	0.0549	570	0.2588	670	0.2931	770	0.0205		
475	0.0420	575	0.2663	675	0.2630	775	0.0177		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700PHB36xx-LED927

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

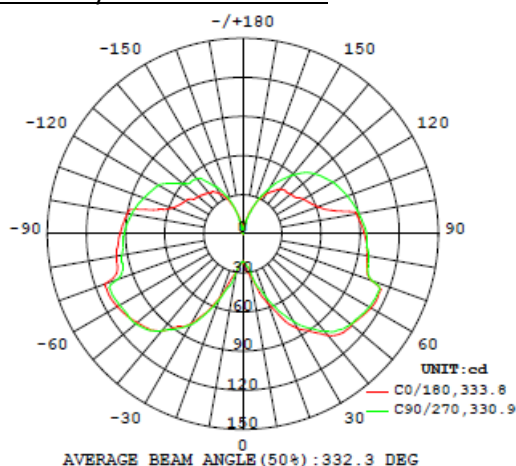
Photometric Measurements at 25°C – Integrating Sphere Method

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')
700PHB36xx-LED927								
S2204011 00-004	--	2715	92	74	0.4587	0.4104	0.2618	0.5271

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)
700PHB36xx-LED927							
S2204011 00-004	--	120.0	188.9	22.3	0.982	1107.8	49.76

Intensity (Candlepower) Summary at 25°C - Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700PHB36xx-LED927

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	21.7	21.7	21.7	21.7	21.6
5	25.5	24.9	22.3	23.4	23.5
10	32.4	31.7	28.8	30.9	27.0
15	44.1	42.9	40.6	38.7	40.8
20	57.0	57.0	56.9	54.2	51.3
25	71.4	70.5	69.1	66.5	65.4
30	83.6	83.4	83.0	80.9	77.5
35	91.4	92.7	94.6	89.8	88.3
40	101.8	98.8	101.7	99.0	98.0
45	107.6	104.5	106.8	104.3	104.0
50	108.4	108.6	107.5	106.9	107.9
55	110.9	110.5	110.4	109.9	109.8
60	113.5	110.6	111.9	109.7	112.3
65	114.3	110.2	112.3	110.0	113.1
70	105.2	110.4	113.3	110.0	105.7
75	98.3	110.4	112.8	110.0	99.3
80	96.9	109.9	112.3	109.8	97.9
85	95.0	109.1	111.6	109.5	95.8
90	93.3	108.0	111.3	107.8	94.8
95	91.0	103.0	104.3	105.6	92.8
100	88.5	86.3	89.4	101.0	90.4
105	70.3	95.5	87.9	90.3	87.8
110	61.2	95.8	95.6	89.7	85.4
115	56.7	93.9	95.7	93.0	82.5
120	53.6	93.0	91.9	92.3	79.6
125	49.1	87.9	90.6	89.1	75.6
130	47.6	83.1	88.7	82.3	71.8
135	46.6	77.2	83.8	75.7	66.6
140	44.9	69.1	77.2	69.6	58.9
145	39.8	59.8	65.8	59.3	50.1
150	35.3	48.5	52.9	49.2	40.3
155	29.1	37.0	39.2	36.7	30.7
160	21.0	25.2	26.2	25.4	20.1
165	13.1	15.5	13.2	11.0	11.3
170	7.6	6.7	5.3	5.4	4.7
175	3.4	1.7	1.4	1.9	2.2
180	0.1	0.1	0.1	0.0	0.0

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700PHB36xx-LED927

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
700PHB36xx-LED927		
0-30	46.0	4.2
0-40	103.1	9.3
0-60	281.7	25.4
0-90	625.8	56.5
60-90	344.1	31.1
0-180	1107.8	100

Beam Angle

Total Beam Angle (°)

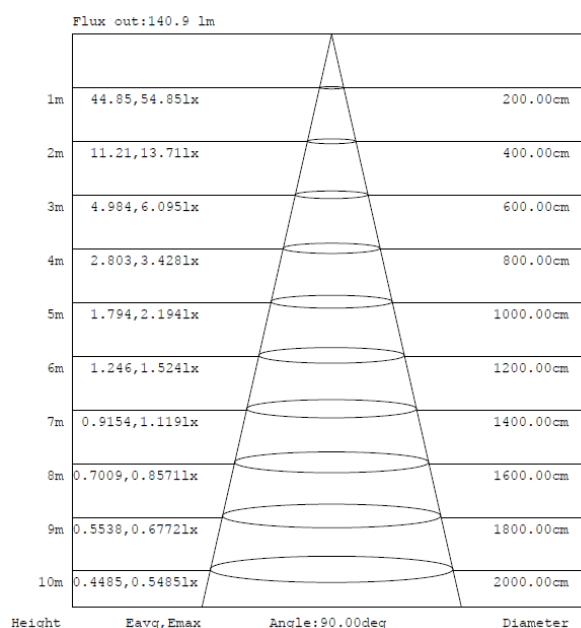
332.3

Illumination Plots

Model No.: 700PHB36xx-LED927

Mount Height: 2.5 m

Illuminance - Cone of Light



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TEST REPORT

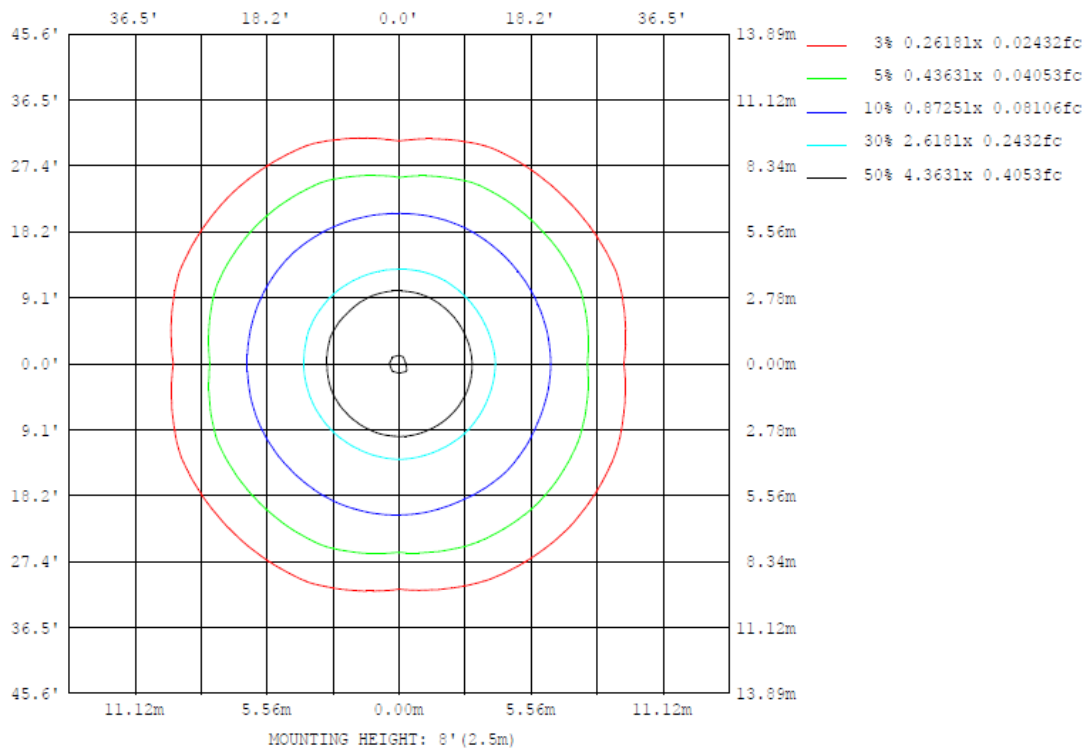
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700PHB36xx-LED927

Model No.: 700PHB36xx-LED927

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700PHB36xx-LED927

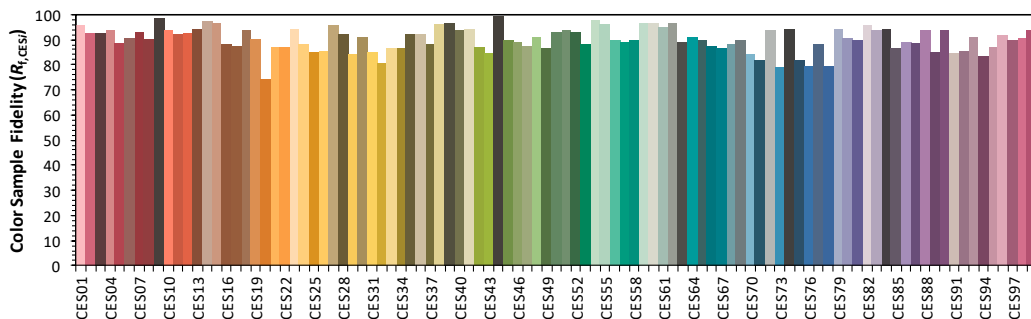
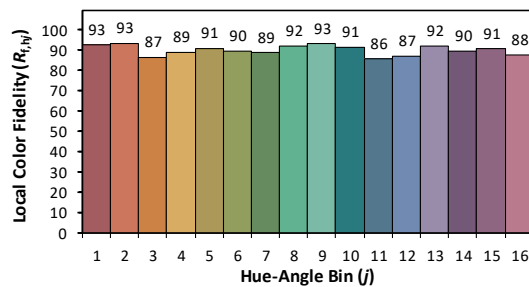
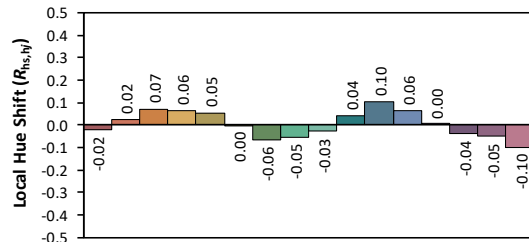
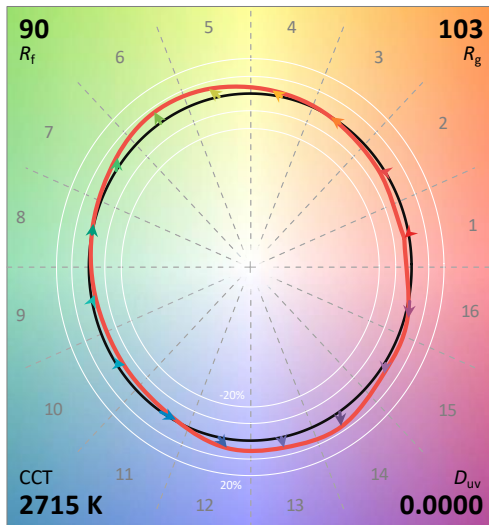
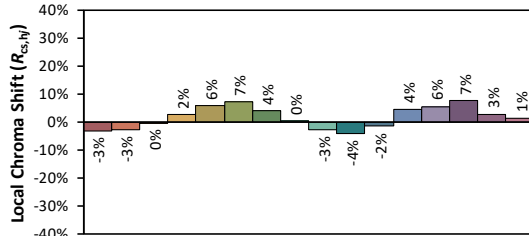
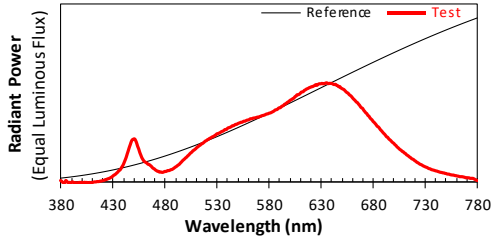
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2022/4/2

Model: 700PHB36xx-LED927



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

x 0.4587
 y 0.4104
 u' 0.2618
 v' 0.5271

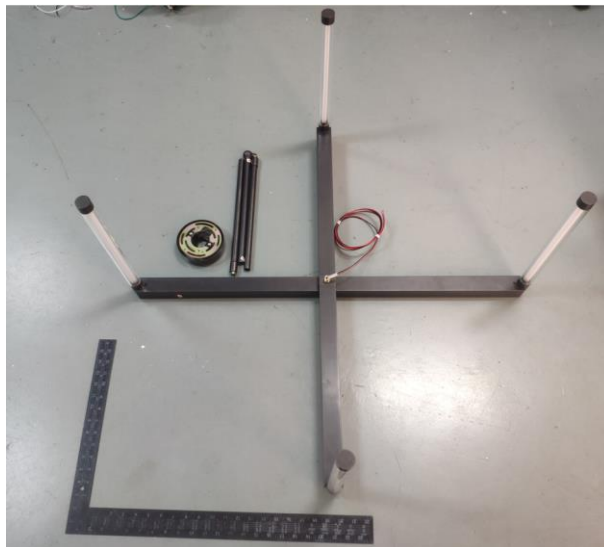
CIE 13.3-1995
(CRI)
 R_a 92
 R_g 74

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 700PHB36xx-LED927



External view of 700PHB36xx-LED927

***** End of Page *****

TEST REPORT

PRODUCT PICTURE (not to scale)



View of LED Driver DA25W600C2742BF1-3001



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 *****