

# VC BRANDS LLC

## TEST REPORT

### SCOPE OF WORK

LM-79 testing report

### REPORT NUMBER

210830078GZU-004

### ISSUE DATE

14 September 2021

### REVISION DATE

None

### NUMBER OF PAGES

13

### DOCUMENT CONTROL NUMBER

Report format for LM-79:2008\_F

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Report No.: 210830078GZU-004

## TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. 700CRBY9\*-LED927

RENDERED TO

VC BRANDS LLC

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: QGZ210826104.

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 700CRBY9\*-LED927. The sample was received, in undamaged condition. The sample designation was S210830078-004.

DATES OF TESTS: 06 September 2021

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:	700CRBY9*-LED927 (Remark: "*" denote other colors for the characters that change.)
Description:	LED Luminaries
Brand Name:	--

### Test Condition: 120V, 60Hz For 700CRBY9\*-LED927

Criteria	Result
Total Lumen Output	3368.4 lm
Total Power	42.78 W
Luminaire Efficacy	78.74 lm/W
S/MH(C0/180)	1.35
S/MH(C90/270)	1.33
Correlated Color Temperature (CCT)	2607
Color Rendering Index (CRI)	92
R9	70
Chromaticity Coordinate (x)	0.4671
Chromaticity Coordinate (y)	0.4113
Chromaticity Coordinate (u')	0.2669
Chromaticity Coordinate (v')	0.5287

### Remark:

Measurement uncertainty for applicable tests has been established.

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## **EQUIPMENT LIST**

<b>Equipment Used</b>	<b>Model Number</b>	<b>Control Number</b>
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 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

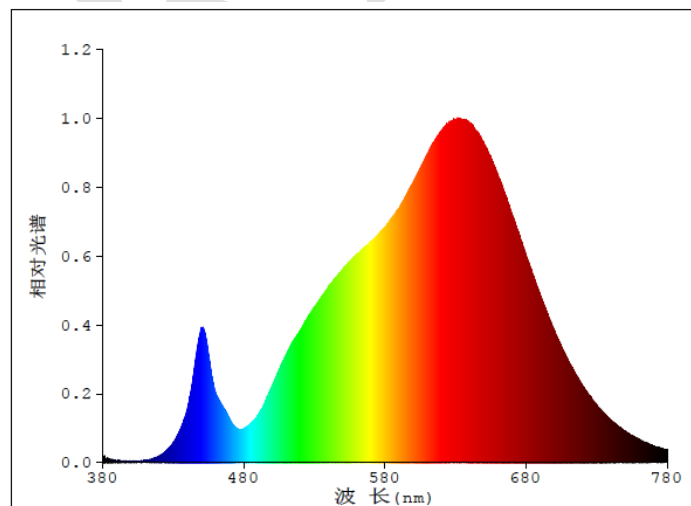
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## RESULTS OF TESTS

Test Condition: 120V, 60Hz For 700CRBY9\*-LED927

### Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.24	480	1.74	580	12.08	680	10.62	780	0.68
385	0.19	485	1.99	585	12.53	685	9.59		
390	0.1	490	2.43	590	13.03	690	8.58		
395	0.07	495	3.11	595	13.69	695	7.64		
400	0.07	500	3.94	600	14.34	700	6.77		
405	0.08	505	4.76	605	15.08	705	5.97		
410	0.11	510	5.53	610	15.81	710	5.22		
415	0.19	515	6.23	615	16.45	715	4.56		
420	0.35	520	6.76	620	17	720	3.96		
425	0.62	525	7.39	625	17.37	725	3.44		
430	1.03	530	7.98	630	17.56	730	2.97		
435	1.7	535	8.49	635	17.58	735	2.55		
440	2.79	540	9.02	640	17.37	740	2.18		
445	4.87	545	9.48	645	16.95	745	1.89		
450	6.86	550	9.9	650	16.38	750	1.63		
455	5.51	555	10.31	655	15.61	755	1.39		
460	3.57	560	10.65	660	14.74	760	1.2		
465	2.88	565	11.01	665	13.78	765	1.02		
470	2.24	570	11.33	670	12.74	770	0.88		
475	1.75	575	11.65	675	11.71	775	0.75		



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## RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700CRBY9\*-LED927

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

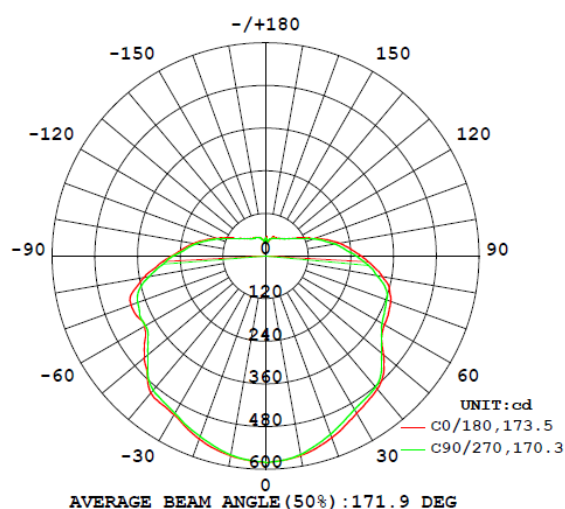
### Photometric Measurements at 25°C – Integrating Sphere Method

Intertek Sample No.	Base Orientation	Correlated Color Temperatur e (K)	CRI	R9	CIE 31'	CIE 31'	CIE 76'	CIE 76'
					Chromaticit y Coordinate	Chromaticit y Coordinate	Chromaticit y Coordinate	Chromaticit y Coordinate
					(x)	(y)	(u')	(v')
700CRBY9*-LED927								
S2108300 78-004	--	2607	92	70	0.4671	0.4133	0.2669	0.5287

### 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)
700CRBY9*-LED927							
S2108300 78-004	--	120.0	358.3	42.78	0.995	3368.4	78.74

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



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## RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700CRBY9\*-LED927

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	579.5	579.9	579.6	579.5	579.6
5	576.4	575.9	575.3	575.7	576.2
10	569.8	568.6	567.5	566.0	566.4
15	558.2	556.2	552.7	550.2	550.3
20	544.0	540.0	534.0	532.1	533.0
25	527.1	520.9	514.3	511.8	515.0
30	511.1	502.2	496.9	494.6	498.8
35	499.7	495.6	487.1	486.2	489.2
40	488.1	489.7	482.6	477.4	481.2
45	468.8	461.6	469.7	450.4	460.0
50	432.4	434.4	432.3	417.5	424.1
55	398.1	407.2	400.3	391.5	397.9
60	385.6	381.1	384.0	369.6	377.5
65	381.0	382.2	379.7	372.4	369.1
70	374.4	383.8	375.1	373.2	361.6
75	359.7	382.1	367.9	366.2	349.0
80	332.9	350.7	337.7	338.0	317.3
85	301.3	310.6	306.2	299.7	288.6
90	269.5	271.9	271.6	265.1	256.1
95	238.8	237.5	239.4	231.5	223.8
100	211.1	210.2	211.3	203.7	197.9
105	179.5	174.0	180.0	174.7	168.6
110	148.1	145.9	150.5	147.3	143.6
115	122.8	129.0	122.7	123.8	120.7
120	103.1	109.4	102.9	103.8	101.6
125	87.4	93.0	89.8	88.6	86.9
130	76.1	79.1	79.8	76.4	76.4
135	70.4	69.3	72.1	71.3	69.6
140	64.9	64.9	66.9	66.4	65.6
145	61.9	61.2	63.2	62.8	61.8
150	60.2	58.4	58.9	60.0	58.8
155	59.3	56.9	58.1	56.8	55.8
160	56.8	53.1	55.1	53.7	53.3
165	48.4	48.6	49.8	47.8	50.3
170	41.6	46.0	42.1	44.8	45.5
175	46.8	45.5	46.2	44.3	45.6
180	50.2	53.3	47.5	54.6	49.2

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## RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700CRBY9\*-LED927

### Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
700CRBY9*-LED927		
0-30	454.6	13.50
0-40	768.6	22.82
0-60	1496.2	44.42
0-90	2593.1	76.98
60-90	1096.9	32.56
0-180	3368.3	100

### Beam Angle

Total Beam Angle(°)

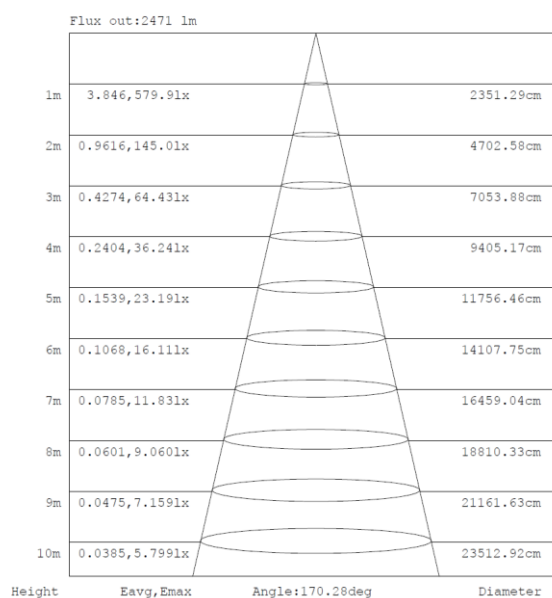
171.9

### Illumination Plots

Model No.: 700CRBY9\*-LED927

Mount Height: 2.5 m

#### Illuminance - Cone of Light



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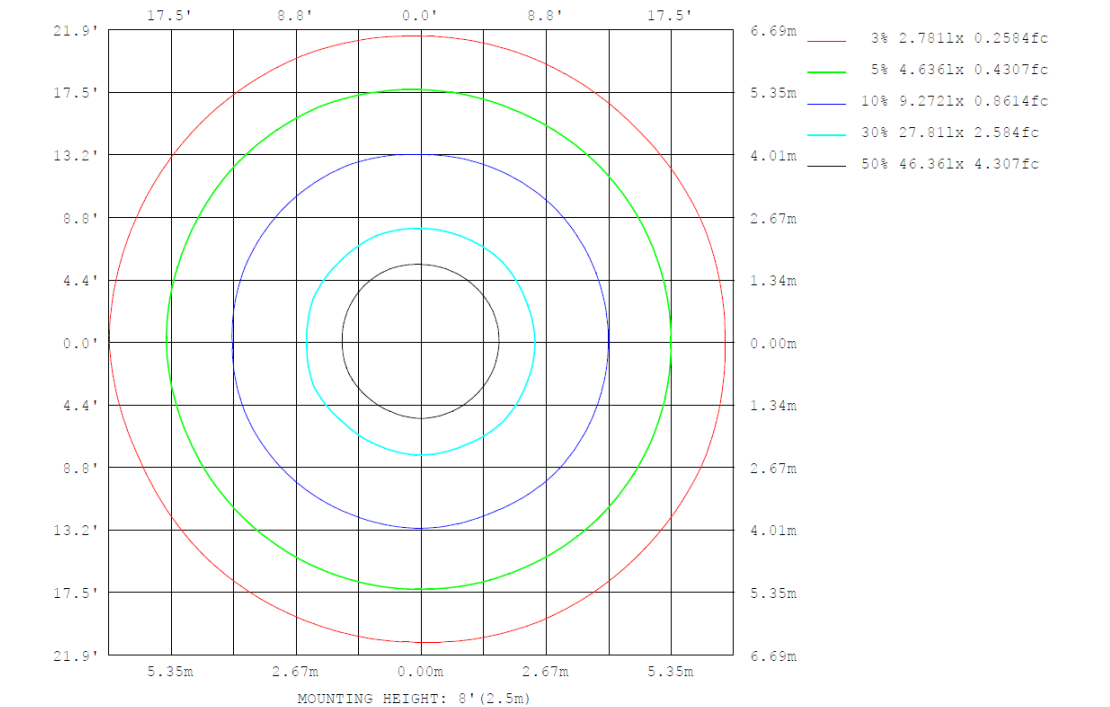
## RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700CRBY9\*-LED927

Model No.: 700CRBY9\*-LED927

Mount Height: 2.5 m

### Isoillumination Plot



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## RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700CRBY9\*-LED927

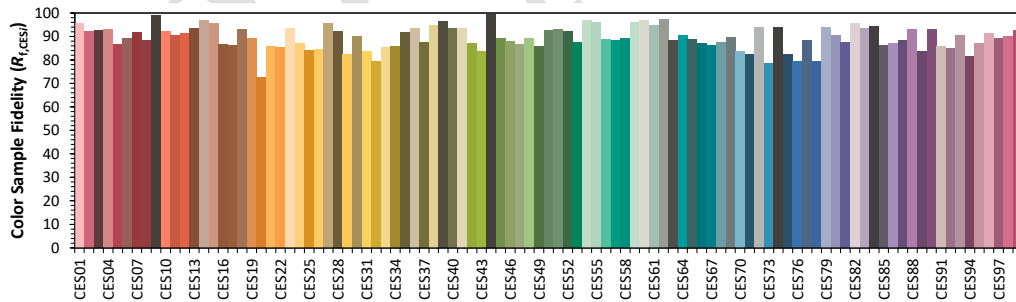
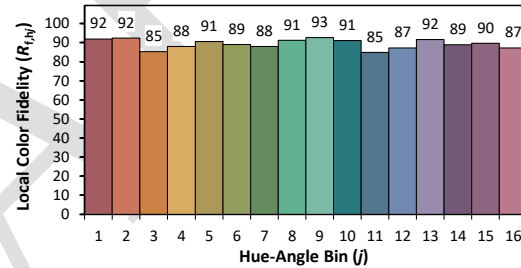
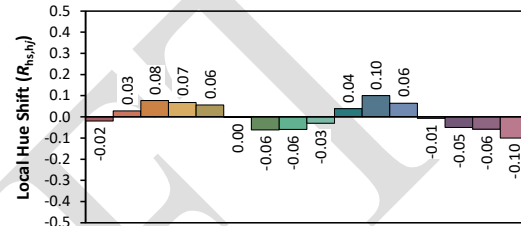
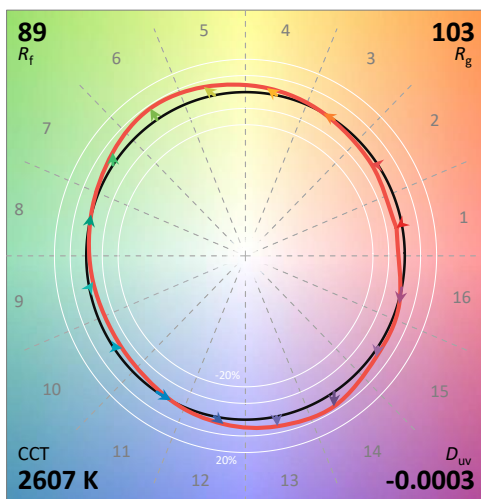
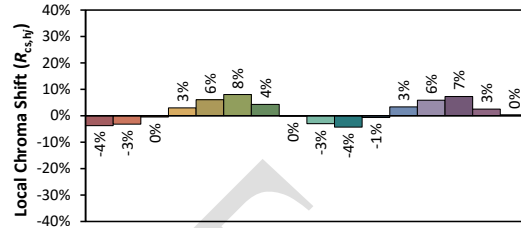
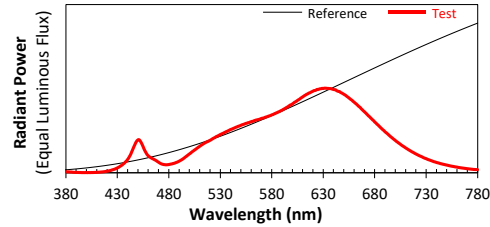
### ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: VC BRANDS LLC

Date: 2021/9/3

Model: 700CRBY9\*-LED927



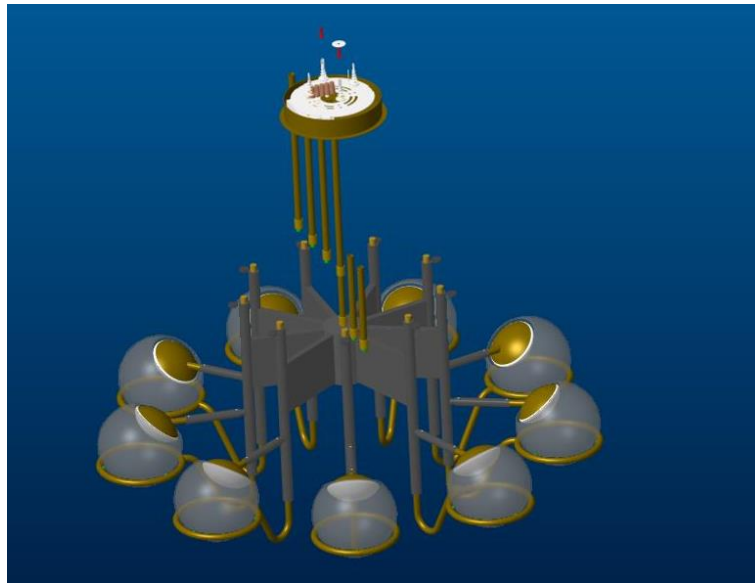
Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

$x$  0.4671  
 $y$  0.4113  
 $u'$  0.2669  
 $v'$  0.5287

CIE 13.3-1995  
(CRI)  
 $R_a$  92  
 $R_9$  70

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**PRODUCT PICTURE (not to scale)**



**External view of 700CRBY9\*-LED927**



**External view of 700CRBY9\*-LED927**

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**PRODUCT PICTURE (not to scale)**



**View of LED Driver DA45W1200C2036-3001**

In Charge Of Tests:

Report Reviewed By

Duffe Zhong  
Engineer

Shelley Ying  
Reviewer

Attachment: None

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