

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

220722013GZU-001

ISSUE DATE

12 August 2022

REVISION DATE

None

NUMBER OF PAGES

13

DOCUMENT CONTROL NUMBER

Report format for LM-79:2008_F

© 2021 INTERTEK



Report No.: 220722013GZU-001

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. 700BCLGSN23x-LED927

RENDERED TO

Visual Comfort and Company

Contact Name: Tess Gallagher

7400 LINDER AVE. SKOKIE, IL, 60077

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: QGZ220719001.

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 700BCLGSN23x-LED927. The sample was received, in undamaged condition. The sample designation was S220722013-004.

DATES OF TESTS: 10 August 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

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

TEST REPORT

SUMMARY

Model Number:	700BCLGSN23x-LED927 (Remark: "X" denote other appearance colors for the characters that change)
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For 700BCLGSN23x-LED927

Criteria	Result
Total Lumen Output	688.27 lm
Total Power	8.50 W
Luminaire Efficacy	81.01 lm/W
S/MH(C0/180)	1.85
S/MH(C90/270)	1.78
Correlated Color Temperature (CCT)	2574 K
Color Rendering Index (CRI)	93
R9	62
Chromaticity Coordinate (x)	0.4714
Chromaticity Coordinate (y)	0.4143
Chromaticity Coordinate (u')	0.2683
Chromaticity Coordinate (v')	0.5305

Remark:

Measurement uncertainty for applicable tests has been established.

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

TEST REPORT

EQUIPMENT LIST

Equipment Used	Model Number	Control Number
Goniophotometer System	Go-R5000	SA063-16
KONICA MINOLTA - Illuminance meter	CX-2B_WL	SA063-16-01
Standard Lamp	DS215S	SA063-16-06
Digital Power Meter	PLM3000	SA063-16-09
AC power source for Goniophotometer	PCR-1000WH	SA063-16-10
Temperature Meter	RC-HT601A	SA047-62

GENERAL REMARK

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

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

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

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

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

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

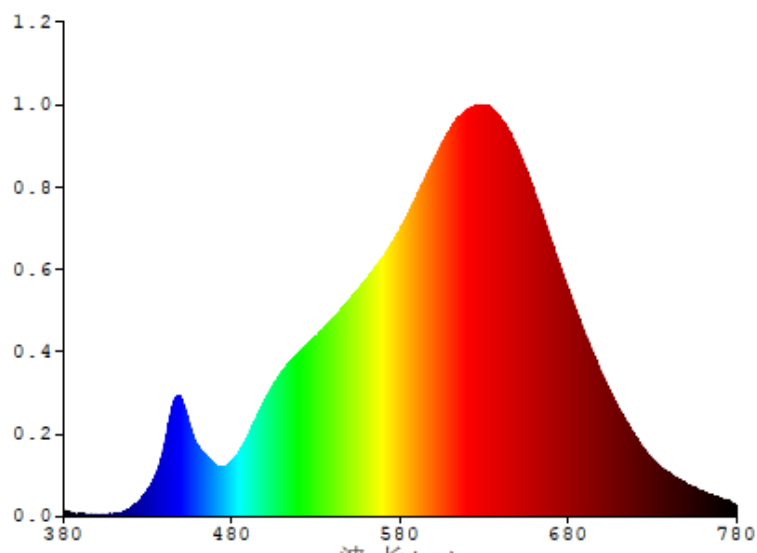
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For 700BCLGSN23x-LED927

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0095	480	0.0701	580	0.3660	680	0.2887	780	0.0125
385	0.0040	485	0.0846	585	0.3867	685	0.2599		
390	0.0019	490	0.1047	590	0.4088	690	0.2317		
395	0.0019	495	0.1281	595	0.4319	695	0.2061		
400	0.0019	500	0.1497	600	0.4543	700	0.1812		
405	0.0016	505	0.1690	605	0.4761	705	0.1589		
410	0.0027	510	0.1851	610	0.4946	710	0.1378		
415	0.0056	515	0.1973	615	0.5104	715	0.1185		
420	0.0106	520	0.2088	620	0.5203	720	0.1014		
425	0.0201	525	0.2193	625	0.5255	725	0.0860		
430	0.0339	530	0.2299	630	0.5245	730	0.0729		
435	0.0535	535	0.2412	635	0.5200	735	0.0632		
440	0.0906	540	0.2526	640	0.5069	740	0.0547		
445	0.1414	545	0.2638	645	0.4912	745	0.0477		
450	0.1501	550	0.2771	650	0.4694	750	0.0418		
455	0.1156	555	0.2896	655	0.4416	755	0.0364		
460	0.0893	560	0.3025	660	0.4135	760	0.0311		
465	0.0765	565	0.3166	665	0.3819	765	0.0272		
470	0.0658	570	0.3317	670	0.3506	770	0.0231		
475	0.0624	575	0.3484	675	0.3145	775	0.0199		



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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700BCLGSN23x-LED927

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

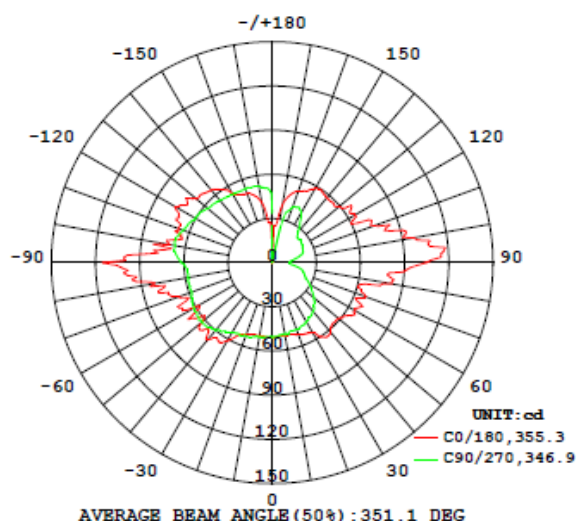
Photometric Measurements at 25°C – Integrating Sphere Method

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')
700BCLGSN23x-LED927								
S2207220 13-004	--	2574	93	62	0.4714	0.4143	0.2683	0.5305

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)
700BCLGSN23x-LED927							
S2207220 13-004	--	120.0	71.9	8.50	0.984	688.27	81.01

Intensity (Candlepower) Summary at 25°C – Candelas



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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700BCLGSN23x-LED927

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	50.7	50.7	50.7	50.7	50.7
5	50.3	50.5	49.9	49.4	49.7
10	50.2	49.7	49.3	49.0	49.7
15	51.0	49.6	48.0	48.5	48.2
20	52.0	49.7	47.6	47.7	48.3
25	53.2	50.6	48.2	47.5	47.3
30	54.8	52.1	48.7	45.9	46.5
35	61.5	54.7	48.7	45.2	45.1
40	61.4	59.1	47.9	43.3	43.0
45	58.3	58.3	48.3	41.7	40.2
50	58.8	59.1	48.1	39.1	37.0
55	62.9	64.8	46.6	37.0	32.6
60	65.3	63.4	51.1	35.1	29.3
65	66.0	57.6	49.4	33.5	25.0
70	67.7	57.9	44.9	31.2	23.4
75	60.9	65.9	46.3	28.2	21.6
80	82.4	60.9	42.4	22.7	17.8
85	80.0	35.9	28.1	16.1	13.1
90	104.5	37.8	25.9	15.7	11.8
95	118.0	51.1	33.3	18.6	12.3
100	97.5	64.6	48.3	24.2	15.8
105	83.7	57.8	49.0	27.7	19.9
110	73.3	59.4	50.2	28.5	22.4
115	64.2	55.2	50.9	29.9	23.0
120	64.8	60.6	46.1	30.7	23.7
125	65.8	63.4	45.9	30.7	24.2
130	59.6	53.4	47.8	30.3	24.4
135	57.9	51.6	44.1	30.1	24.5
140	57.7	55.0	40.9	31.6	27.8
145	59.1	56.0	40.7	34.8	32.8
150	58.3	50.1	39.5	38.0	39.5
155	53.7	47.9	39.3	38.9	41.6
160	51.8	47.4	38.2	37.0	40.0
165	47.7	43.2	35.6	31.5	34.9
170	39.9	28.5	24.5	12.0	8.1
175	25.6	17.3	8.1	2.1	2.5
180	12.6	16.3	6.7	3.3	17.6

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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700BCLGSN23x-LED927

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
700BCLGSN23x-LED927		
0-30	42.95	6.24
0-40	77.26	11.23
0-60	172.02	24.99
0-90	347.96	50.56
60-90	175.94	25.57
0-180	688.27	100

Beam Angle

Total Beam Angle (°)

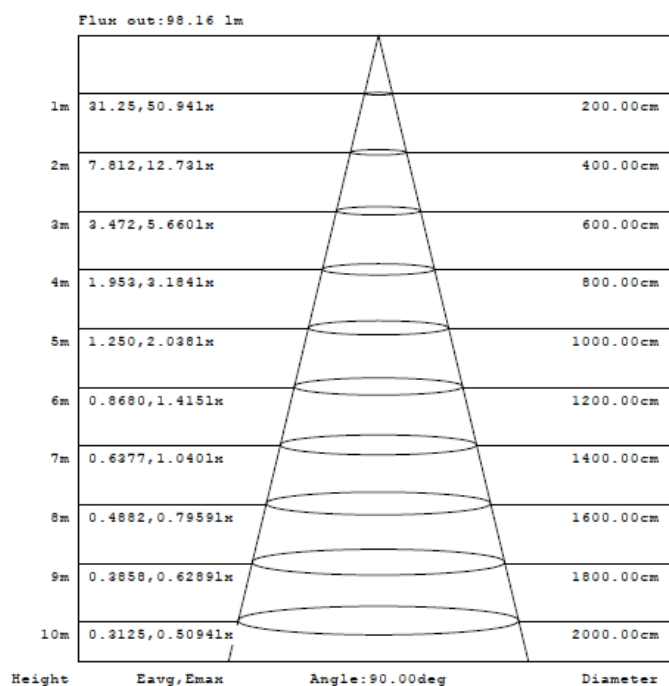
351.1

Illumination Plots

Model No.: 700BCLGSN23x-LED927

Mount Height: 2.5 m

Illuminance - Cone of Light



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

TEST REPORT

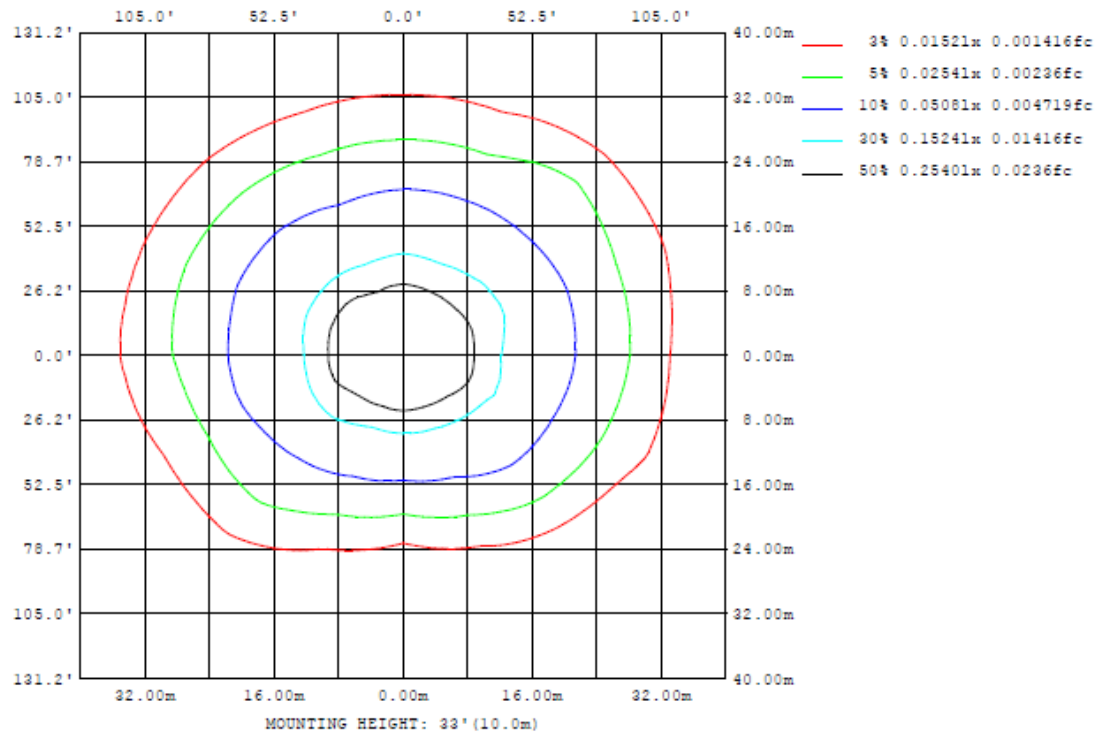
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700BCLGSN23x-LED927

Model No.: 700BCLGSN23x-LED927

Mount Height: 2.5 m

Isoillumination Plot



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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700BCLGSN23x-LED927

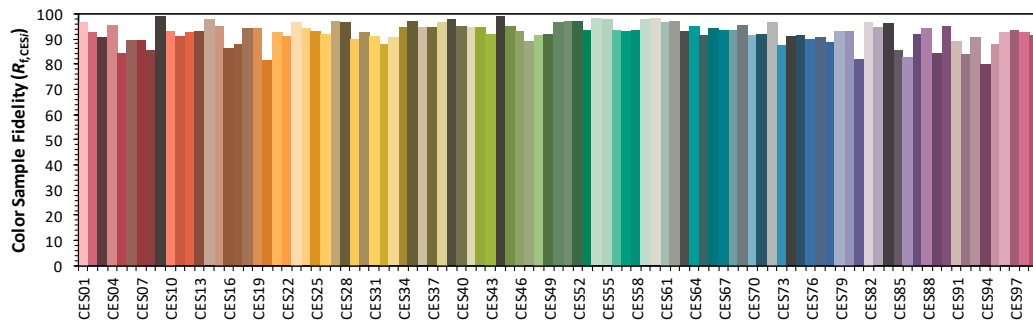
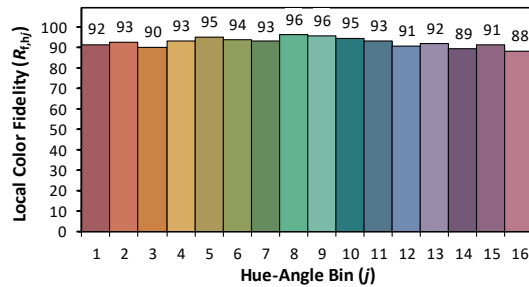
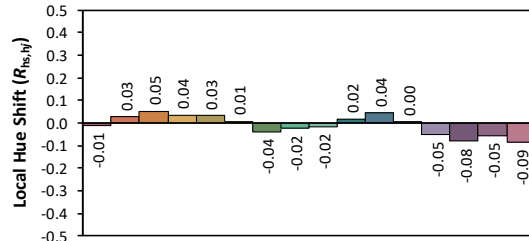
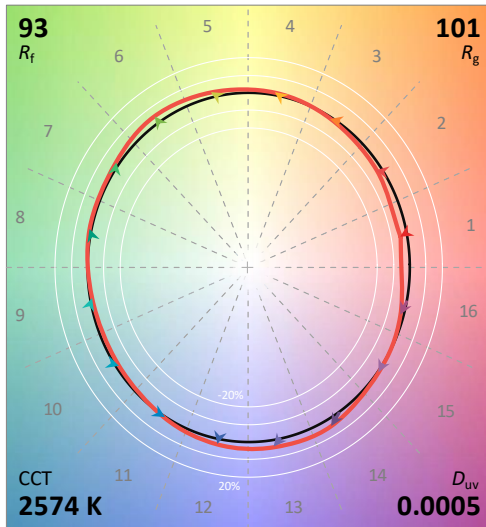
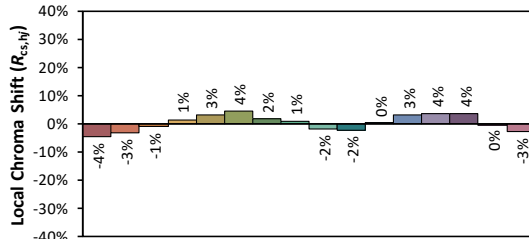
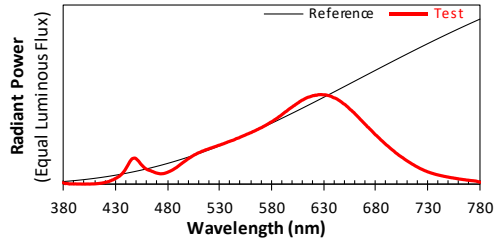
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2022/8/10

Model: 700BCLGSN23x-LED927



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

x 0.4714
 y 0.4143
 u' 0.2683
 v' 0.5305

CIE 13.3-1995
(CRI)

R_a 93

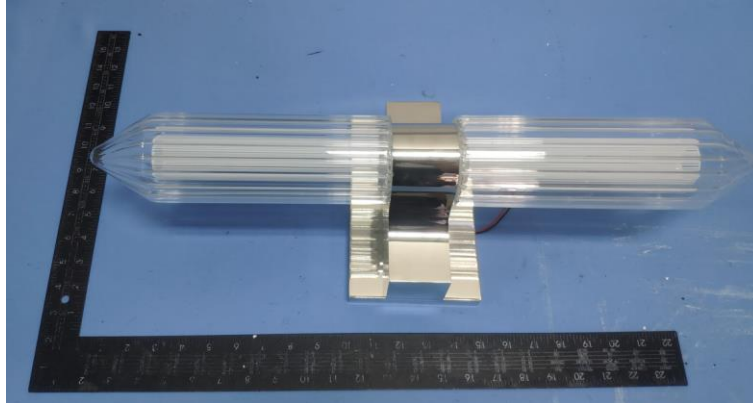
R_g 62

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

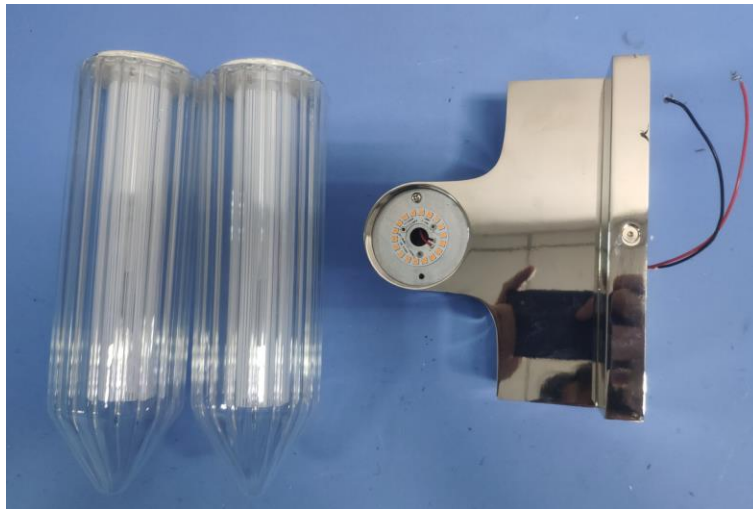
***** End of Page *****

TEST REPORT

PRODUCT PICTURE (not to scale)



External view of 700BCLGSN23x-LED927

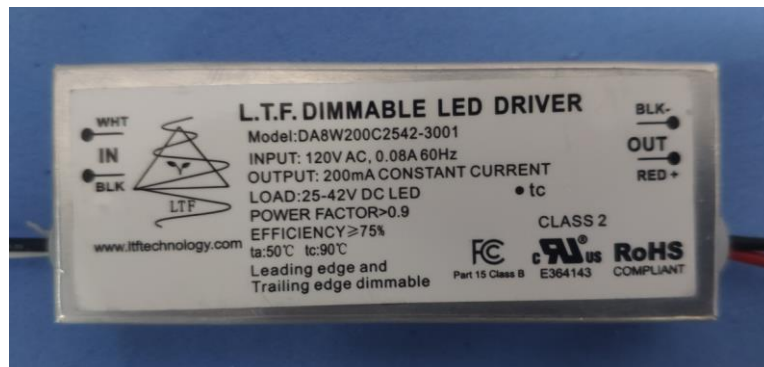


External view of 700BCLGSN23x-LED927

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

TEST REPORT

PRODUCT PICTURE (not to scale)



View of LED Driver DS6W24VMB1UD-0000



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 *****