

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

220601200GZU-002

ISSUE DATE

23 June 2022

REVISION DATE

None

NUMBER OF PAGES

13

DOCUMENT CONTROL NUMBER

Report format for LM-79:2008_F
© 2021 INTERTEK



Report No.: 220601200GZU-002

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. 700WSBMT13xx-LED930

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: QGZ211208009.

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 700WSBMT13xx-LED930. The sample was received, in undamaged condition. The sample designation was S220601200-002.

DATES OF TESTS: 10 June 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:	700WSBMT13xx-LED930 (Remark: "XX" denote other appearance colors for the characters that change)
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For 700WSBMT13xx-LED930

Criteria	Result
Total Lumen Output	899.79 lm
Total Power	20.49 W
Luminaire Efficacy	43.91 lm/W
S/MH(C0/180)	1.49
S/MH(C90/270)	33.73
Correlated Color Temperature (CCT)	2761 K
Color Rendering Index (CRI)	91
R9	59
Chromaticity Coordinate (x)	0.4556
Chromaticity Coordinate (y)	0.4106
Chromaticity Coordinate (u')	0.2597
Chromaticity Coordinate (v')	0.5267

Remark:

Measurement uncertainty for applicable tests has been established.

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

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

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 *****

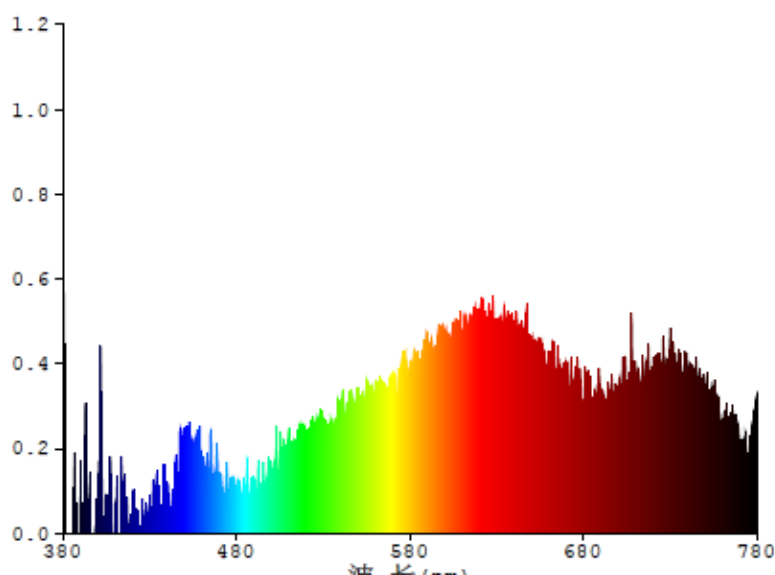
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For 700WSBMT13xx-LED930

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0095	480	0.0012	580	0.0036	680	0.0029	780	0.0031
385	0.0000	485	0.0010	585	0.0037	685	0.0030		
390	0.0015	490	0.0007	590	0.0042	690	0.0027		
395	0.0010	495	0.0011	595	0.0039	695	0.0032		
400	0.0000	500	0.0013	600	0.0044	700	0.0032		
405	0.0008	505	0.0021	605	0.0047	705	0.0033		
410	0.0005	510	0.0022	610	0.0044	710	0.0036		
415	0.0013	515	0.0018	615	0.0047	715	0.0034		
420	0.0000	520	0.0021	620	0.0047	720	0.0032		
425	0.0000	525	0.0025	625	0.0048	725	0.0037		
430	0.0000	530	0.0025	630	0.0048	730	0.0046		
435	0.0006	535	0.0021	635	0.0047	735	0.0039		
440	0.0008	540	0.0024	640	0.0044	740	0.0035		
445	0.0006	545	0.0028	645	0.0042	745	0.0038		
450	0.0019	550	0.0031	650	0.0044	750	0.0025		
455	0.0014	555	0.0034	655	0.0042	755	0.0028		
460	0.0011	560	0.0034	660	0.0040	760	0.0021		
465	0.0022	565	0.0033	665	0.0042	765	0.0026		
470	0.0014	570	0.0035	670	0.0037	770	0.0019		
475	0.0005	575	0.0038	675	0.0036	775	0.0016		



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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700WSBMT13xx-LED930

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

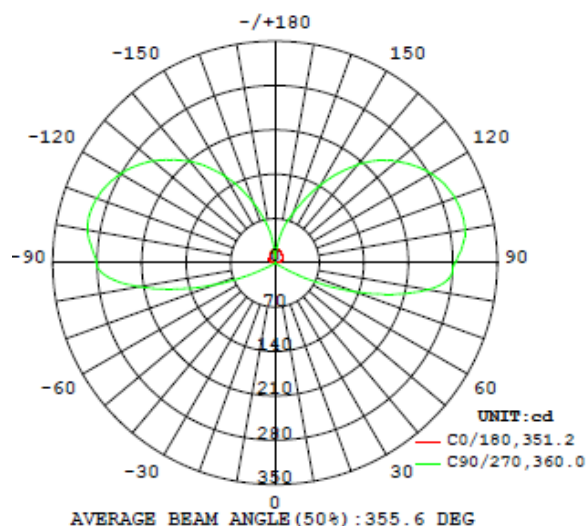
Photometric Measurements at 25°C – Integrating Sphere Method

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')
700WSBMT13xx-LED930								
S2206012 00-002	--	2761	91	59	0.4556	0.4106	0.2597	0.5267

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)
700WSBMT13xx-LED930							
S2206012 00-002	--	120.0	172.1	20.49	0.992	899.79	43.91

Intensity (Candlepower) Summary at 25°C – Candelas



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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700WSBMT13xx-LED930

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	0.05	0.05	0.03	0.02	0.02
5	0.05	0.05	0.03	0.02	0.02
10	0.05	0.05	0.03	0.02	0.02
15	0.05	0.05	0.04	0.03	0.02
20	0.05	0.05	0.04	0.03	0.03
25	0.05	0.05	0.05	0.04	0.03
30	0.05	0.05	0.06	0.05	0.04
35	0.05	0.06	0.07	0.07	0.05
40	0.04	0.06	0.10	0.11	0.06
45	0.04	0.07	0.14	0.18	0.09
50	0.04	0.08	0.20	0.29	0.11
55	0.04	0.10	0.33	0.52	0.60
60	0.03	0.13	0.57	2.38	5.27
65	0.03	0.19	1.10	7.87	15.16
70	0.03	0.28	2.60	16.01	27.06
75	0.03	0.41	4.89	24.46	39.03
80	0.02	0.59	7.29	32.16	49.74
85	0.02	0.80	9.21	37.07	56.22
90	0.03	0.97	10.17	38.32	57.83
95	0.25	1.36	10.97	40.31	60.28
100	0.67	2.20	12.27	41.75	61.89
105	1.24	3.72	14.70	42.78	62.06
110	1.85	5.57	17.68	43.64	61.39
115	2.41	7.19	20.48	44.11	59.97
120	2.80	8.34	22.19	43.99	57.69
125	2.94	8.89	23.03	42.97	54.62
130	3.15	9.18	23.05	41.12	50.84
135	3.37	9.24	22.28	38.43	46.59
140	3.59	9.07	20.89	34.71	41.34
145	3.81	8.67	18.90	30.33	35.13
150	4.01	8.05	16.64	25.42	28.98
155	4.19	7.24	14.37	20.45	22.71
160	4.31	6.27	11.70	15.98	17.25
165	4.42	5.27	8.92	11.90	12.83
170	4.46	4.46	6.21	7.71	8.23
175	2.89	2.84	2.88	3.38	3.69
180	0.00	0.00	0.09	1.20	1.66

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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700WSBMT13xx-LED930

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
700WSBMT13xx-LED930		
0-30	0.18	0.02
0-40	0.42	0.05
0-60	3.10	0.34
0-90	191.73	21.31
60-90	188.63	20.97
0-180	899.79	100

Beam Angle

Total Beam Angle (°)

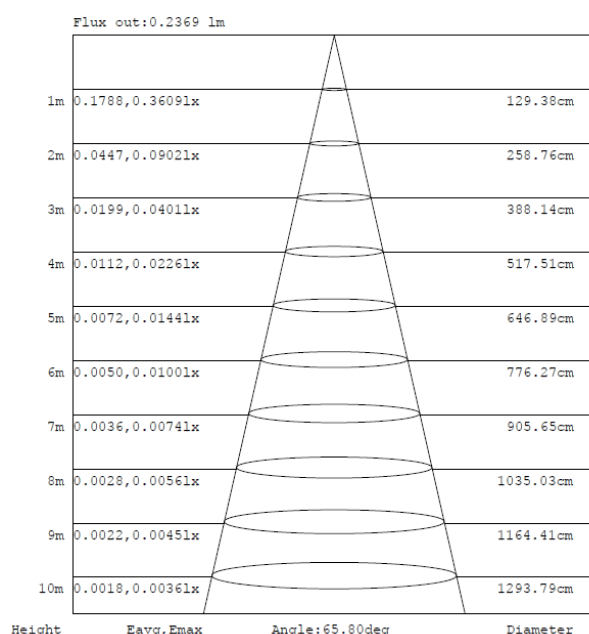
355.6

Illumination Plots

Model No.: 700WSBMT13xx-LED930

Mount Height: 2.5 m

Illuminance - Cone of Light



Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

TEST REPORT

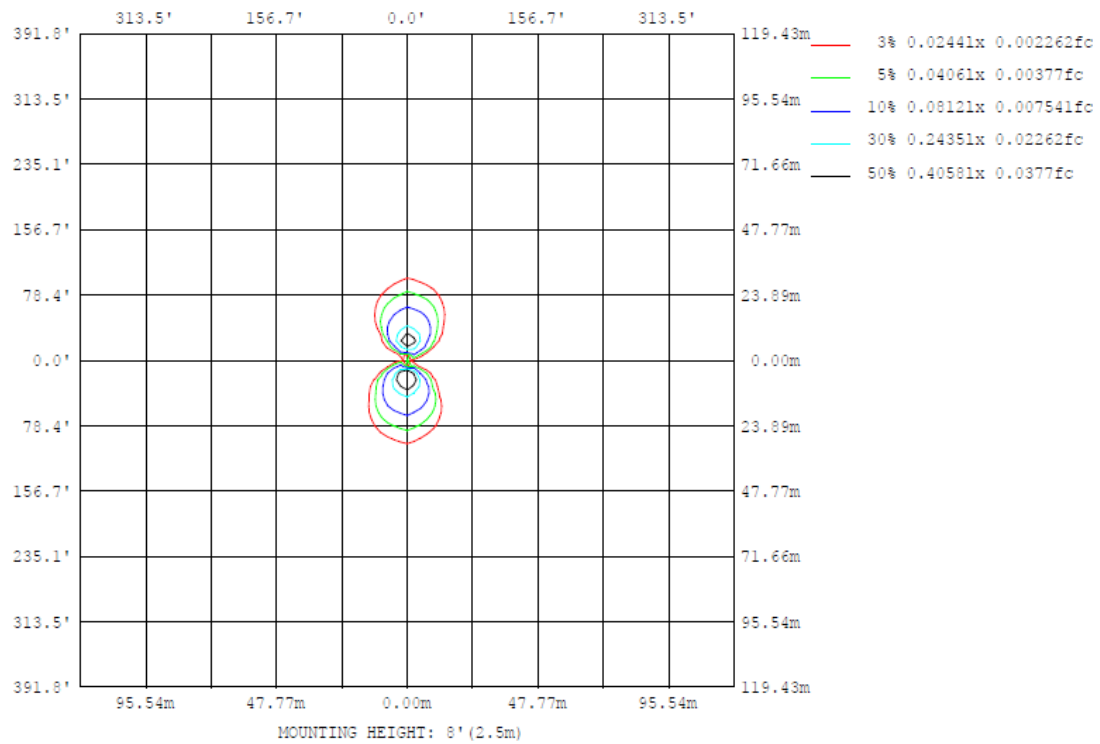
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700WSBMT13xx-LED930

Model No.: 700WSBMT13xx-LED930

Mount Height: 2.5 m

Isoillumination Plot



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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700WSBMT13xx-LED930

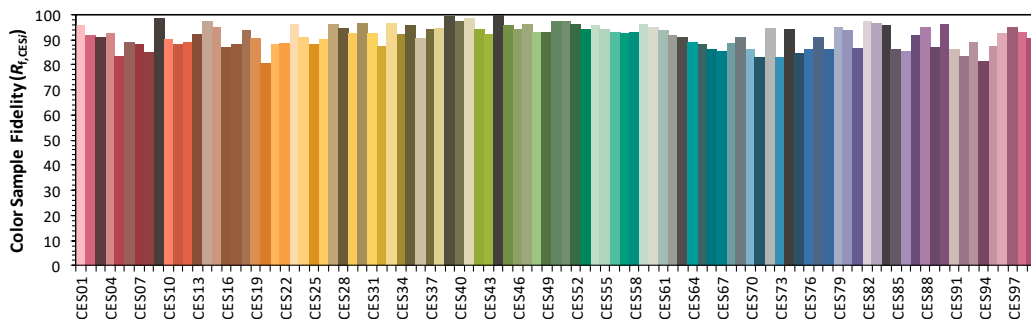
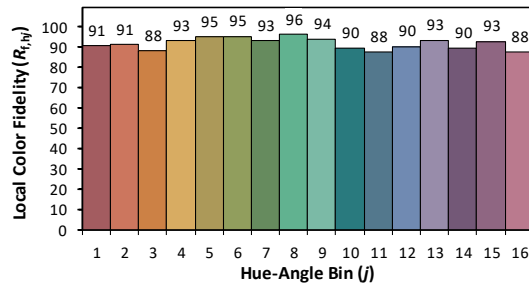
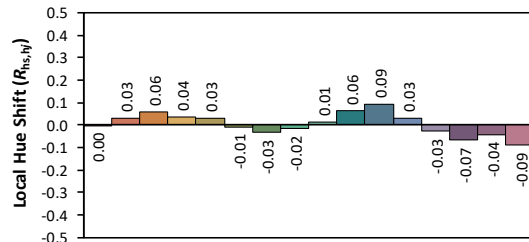
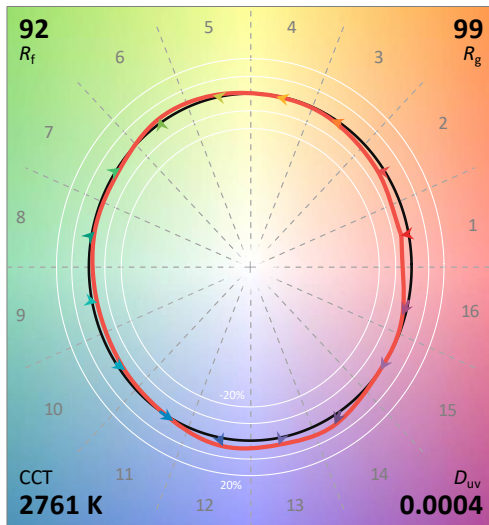
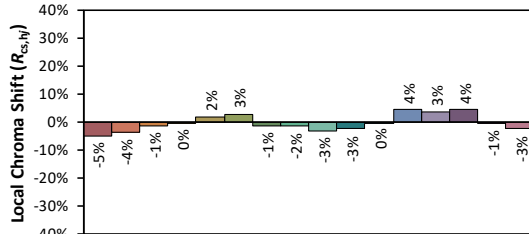
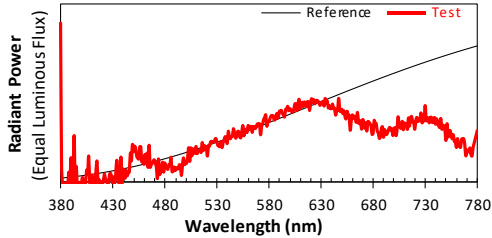
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2022/6/10

Model: 700WSBMT13xx-LED930



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

x 0.4556
 y 0.4106
 u' 0.2597
 v' 0.5267

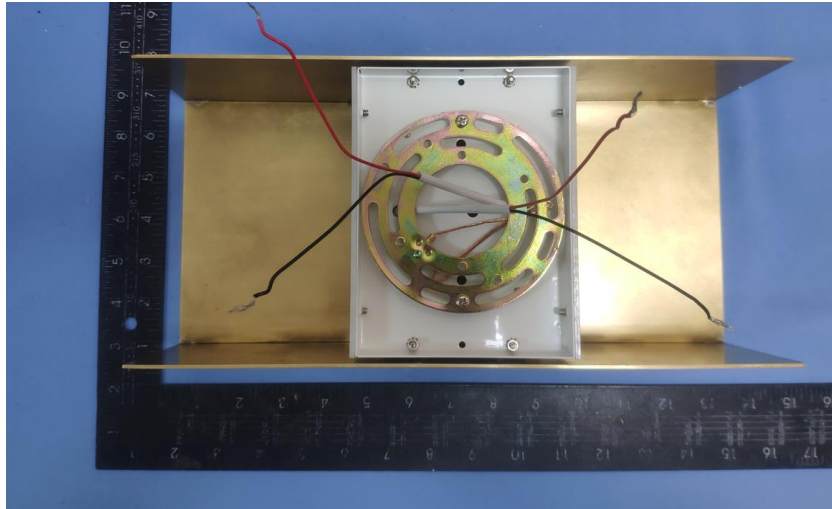
CIE 13.3-1995
(CRI)
 R_a 91
 R_g 59

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

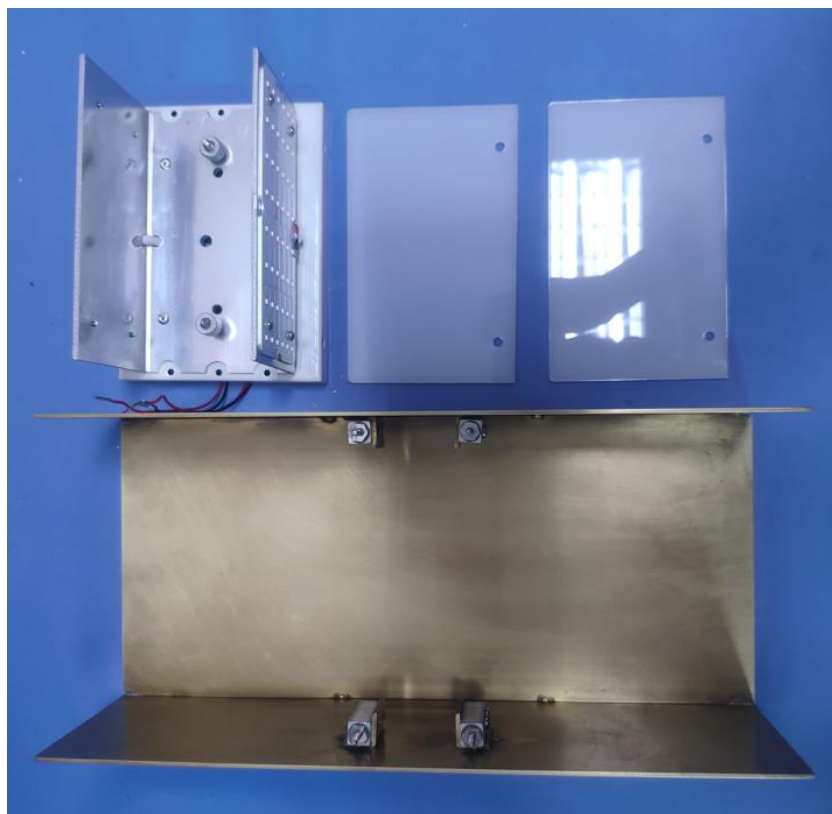
***** End of Page *****

TEST REPORT

PRODUCT PICTURE (not to scale)



External view of 700WSBMT13xx-LED930

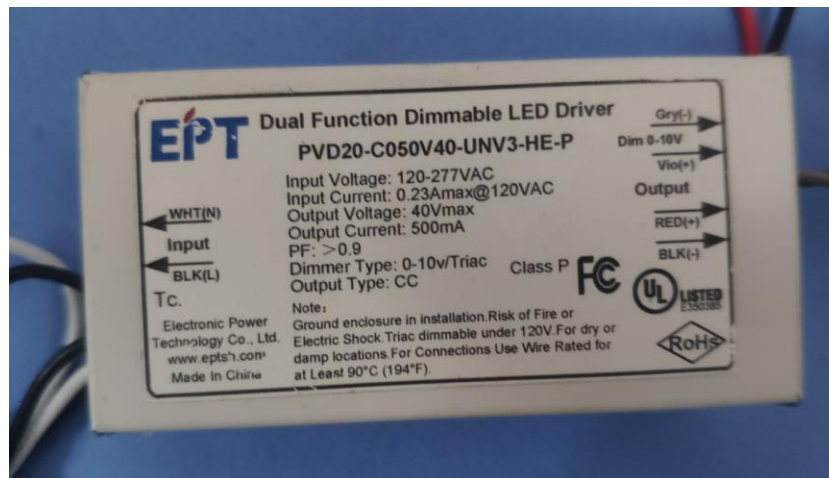


External view of 700WSBMT13xx-LED930

***** 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 *****