

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

220601200GZU-001

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REVISION DATE

None

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Report No.: 220601200GZU-001

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. 700WSBMT5xx-LED930

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: 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 700WSBMT5xx-LED930. The sample was received, in undamaged condition. The sample designation was S220601200-001.

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

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TEST REPORT

SUMMARY

Model Number:	700WSBMT5xx-LED930 (Remark: "XX" denote other appearance colors for the characters that change)
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For 700WSBMT5xx-LED930

Criteria	Result
Total Lumen Output	1389.6 lm
Total Power	20.34 W
Luminaire Efficacy	68.32 lm/W
S/MH(C0/180)	1.35
S/MH(C90/270)	26.11
Correlated Color Temperature (CCT)	1896 K
Color Rendering Index (CRI)	86
R9	70
Chromaticity Coordinate (x)	0.5129
Chromaticity Coordinate (y)	0.3788
Chromaticity Coordinate (u')	0.3146
Chromaticity Coordinate (v')	0.5229

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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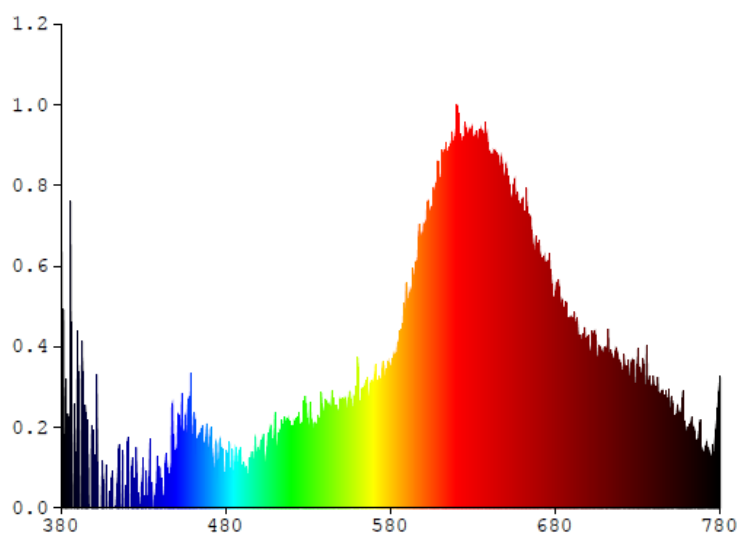
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For 700WSBMT5xx-LED930

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0067	480	0.0012	580	0.0033	680	0.0051	780	0.0031
385	0.0000	485	0.0008	585	0.0039	685	0.0045		
390	0.0035	490	0.0010	590	0.0051	690	0.0045		
395	0.0017	495	0.0008	595	0.0055	695	0.0038		
400	0.0000	500	0.0011	600	0.0067	700	0.0039		
405	0.0011	505	0.0014	605	0.0071	705	0.0037		
410	0.0000	510	0.0021	610	0.0078	710	0.0036		
415	0.0015	515	0.0018	615	0.0083	715	0.0034		
420	0.0000	520	0.0018	620	0.0091	720	0.0033		
425	0.0000	525	0.0020	625	0.0091	725	0.0031		
430	0.0000	530	0.0020	630	0.0087	730	0.0038		
435	0.0004	535	0.0019	635	0.0089	735	0.0029		
440	0.0005	540	0.0023	640	0.0084	740	0.0027		
445	0.0003	545	0.0023	645	0.0082	745	0.0027		
450	0.0013	550	0.0024	650	0.0081	750	0.0022		
455	0.0014	555	0.0028	655	0.0077	755	0.0020		
460	0.0015	560	0.0036	660	0.0073	760	0.0019		
465	0.0017	565	0.0027	665	0.0069	765	0.0014		
470	0.0014	570	0.0031	670	0.0063	770	0.0013		
475	0.0005	575	0.0033	675	0.0057	775	0.0012		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700WSBMT5xx-LED930

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

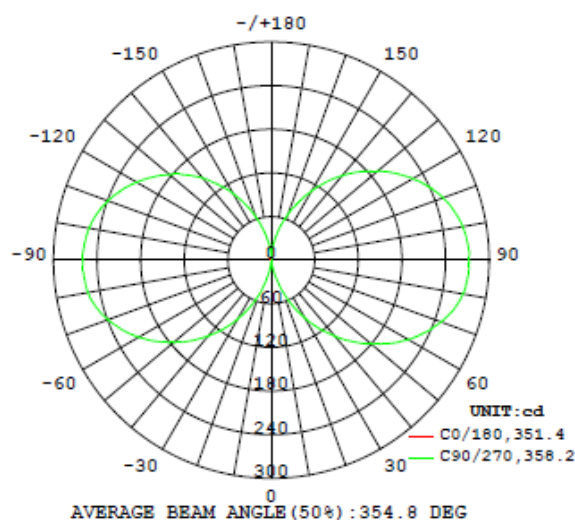
Photometric Measurements at 25°C – Integrating Sphere Method

Intertek Sample No.	Base Orientation	Correlated Color Temperature (K)	CRI	R9	CIE 31'	CIE 31'	CIE 76'	CIE 76'
					Chromaticit	Chromaticit	Chromaticit	Chromaticit
					y	y	y	y
700WSBMT5xx-LED930								
S2206012 00-001	--	1896	86	70	0.5129	0.3788	0.3146	0.5229

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)
700WSBMT5xx-LED930							
S2206012 00-001	--	120.0	170.9	20.34	0.992	1389.6	68.32

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700WSBMT5xx-LED930

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	0.3	0.3	0.3	0.2	0.2
5	0.3	0.3	0.3	0.2	0.2
10	0.3	0.3	0.3	2.9	5.0
15	0.3	0.3	7.2	19.7	24.3
20	0.3	0.6	20.9	39.4	46.0
25	0.3	4.2	35.6	59.9	68.5
30	0.3	10.5	50.9	80.9	91.3
35	0.3	17.5	66.0	101.6	114.0
40	0.3	24.7	80.9	122.0	136.5
45	0.3	31.8	95.1	142.1	158.6
50	0.2	38.6	108.7	161.2	179.7
55	0.2	45.1	121.4	179.0	199.8
60	0.2	50.9	132.8	195.5	218.2
65	0.2	56.0	143.1	210.2	234.5
70	0.2	60.3	151.6	222.6	248.5
75	0.2	63.9	158.5	232.8	260.2
80	0.2	66.6	163.5	239.9	268.0
85	0.1	68.2	165.8	242.9	271.5
90	0.1	68.6	166.5	243.9	272.5
95	0.2	69.2	166.3	243.1	271.4
100	0.4	68.8	164.8	240.1	267.6
105	0.8	67.3	161.5	234.5	261.0
110	1.1	65.2	156.0	226.2	251.7
115	1.3	61.9	149.1	215.3	239.4
120	1.4	58.0	140.8	202.8	225.0
125	1.5	53.4	131.3	188.4	208.7
130	1.6	48.1	120.4	172.8	190.9
135	1.8	42.9	108.0	156.1	172.2
140	2.1	38.0	93.8	137.9	152.4
145	2.3	33.0	79.1	118.1	131.2
150	2.6	28.3	65.6	97.2	109.6
155	3.0	23.4	53.8	76.6	88.1
160	3.5	18.8	42.3	59.3	67.8
165	3.9	14.3	31.0	43.0	48.7
170	4.3	9.2	19.5	27.1	30.6
175	3.1	3.8	8.3	11.9	13.3
180	0.0	0.0	0.0	0.0	0.0

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700WSBMT5xx-LED930

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
700WSBMT5xx-LED930		
0-30	20.5	1.5
0-40	59.8	4.3
0-60	227.7	16.4
0-90	674.2	48.5
60-90	446.5	32.1
0-180	1389.6	100

Beam Angle

Total Beam Angle (°)

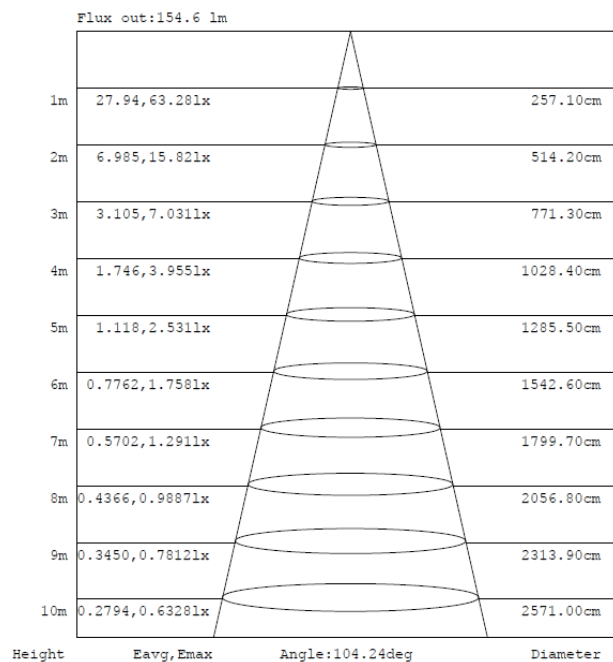
354.8

Illumination Plots

Model No.: 700WSBMT5xx-LED930

Mount Height: 2.5 m

Illuminance - Cone of Light



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TEST REPORT

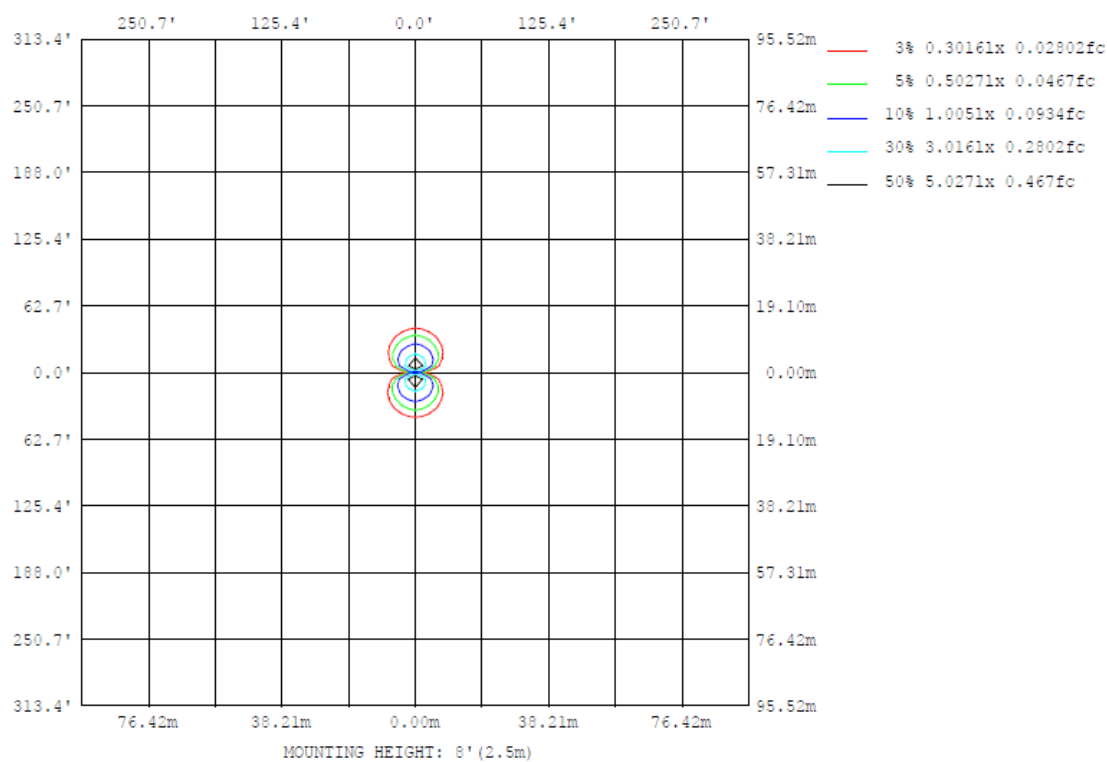
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700WSBMT5xx-LED930

Model No.: 700WSBMT5xx-LED930

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700WSBMT5xx-LED930

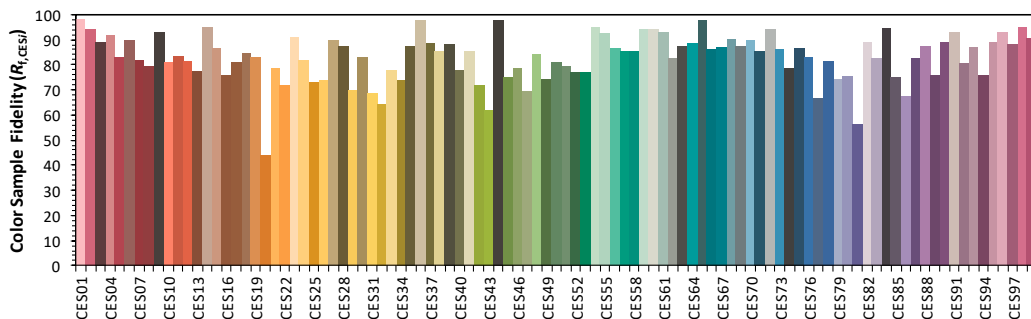
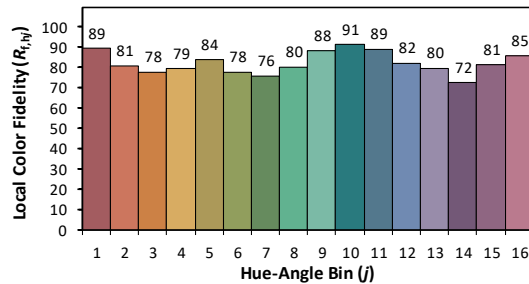
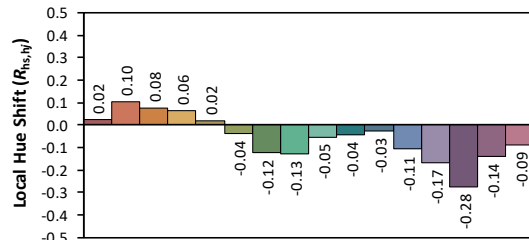
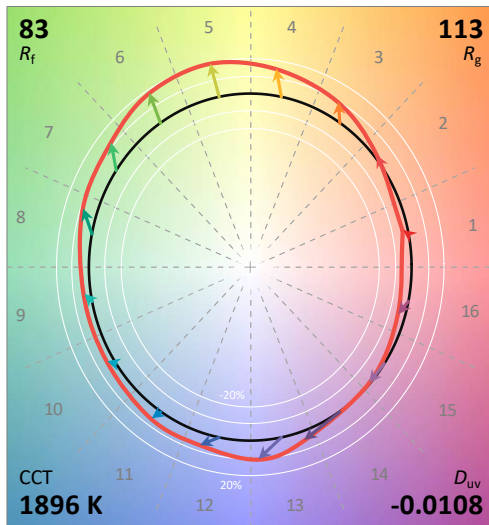
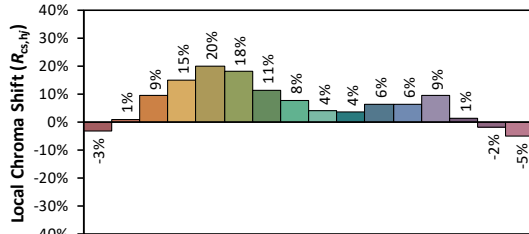
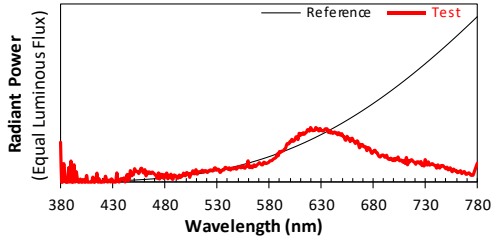
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2022/6/10

Model: 700WSBMT5xx-LED930



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

x 0.5129
 y 0.3788
 u' 0.3146
 v' 0.5229

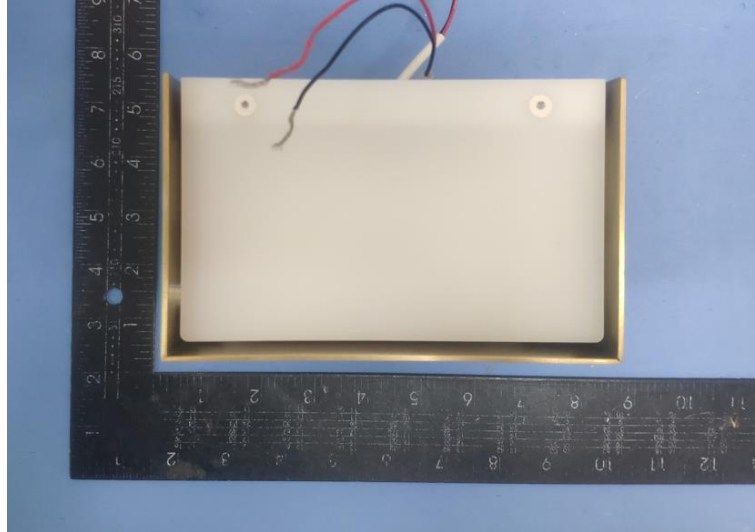
CIE 13.3-1995
(CRI)
 R_a 86
 R_g 70

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

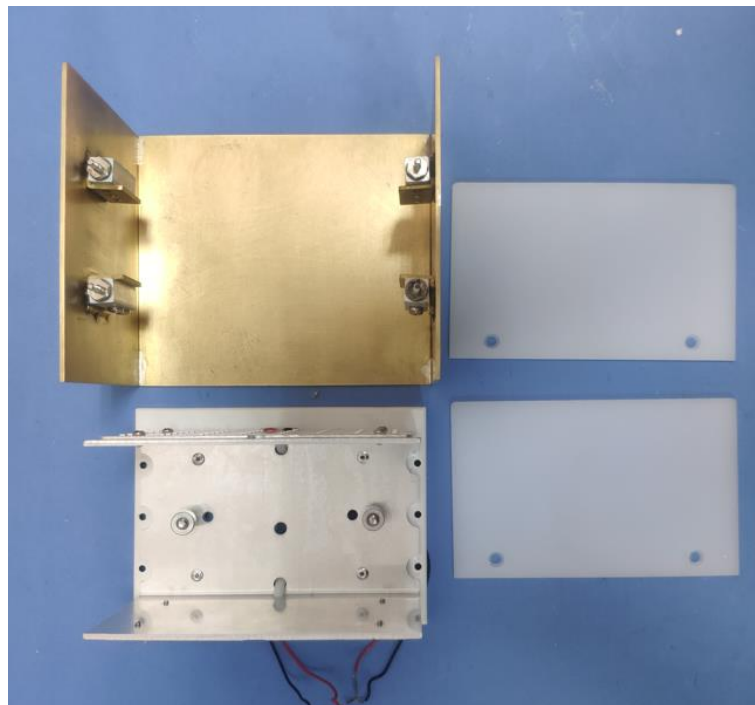
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of 700WSBMT5xx-LED930

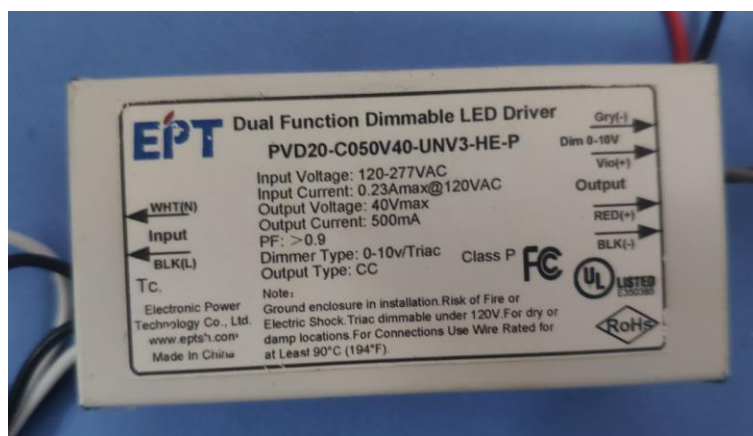


External view of 700WSBMT5xx-LED930

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TEST REPORT

PRODUCT PICTURE (not to scale)



View of LED Driver DA25W600C2742BF1-3001



View of LED

In Charge Of Tests:

Done Ye

Report Reviewed By

Shelley Ying

Done Ye
Engineer

Shelley Ying
Reviewer

Attachment: None

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