EDIT HISTORY

Version A : Mar. 14, 2024

Preliminary Spec.

Opto Plus LED Corp. 7F-3, No.496 , Bannan Road, Jhonghe Dist., New Taipei City 235, Taiwan (R.O.C)
Website: www.opledtw.com E-mail: sales@opledtw.com Tel: 886-2-2222-5698 Fax: 886-2-2222-2566

www.opledtw.com

Opto Plus LED Corp.
0.39” Case Mold Type LED Display
OPD-S3910W2 | OPD-S3911W2

FEATURES

- 0.39 inch (9.9 mm) Digit Height.
- Low current operation.
- Case mold type.
- RoHS compliant, Pb Free.

DESCRIPTION

The device are 0.39 inch (9.9 mm) height single digit 7-segment displays.

The device is Opto Plus LED Corp standard LED Display.

This device utilizes Super Bright White SMD type LED chip which are made from InGaN on a transparent GaN substrate.

The device has face and segment option, please refer to **PRODUCT APPEARANCE**.

DEVICE

PART NO.		DESCRIPTION
	OPD-S3910W2-GW	Common Anode ｜Gray face ｜White segment
	OPD-S3911W2-GW	Common Cathode ｜Gray face ｜White segment
	OPD-S3910W2-BW	Common Anode ｜Black face ｜White segment
	OPD-S3911W2-BW	Common Cathode ｜Black face ｜White segment

RoHS Compliance **Pb Free.**

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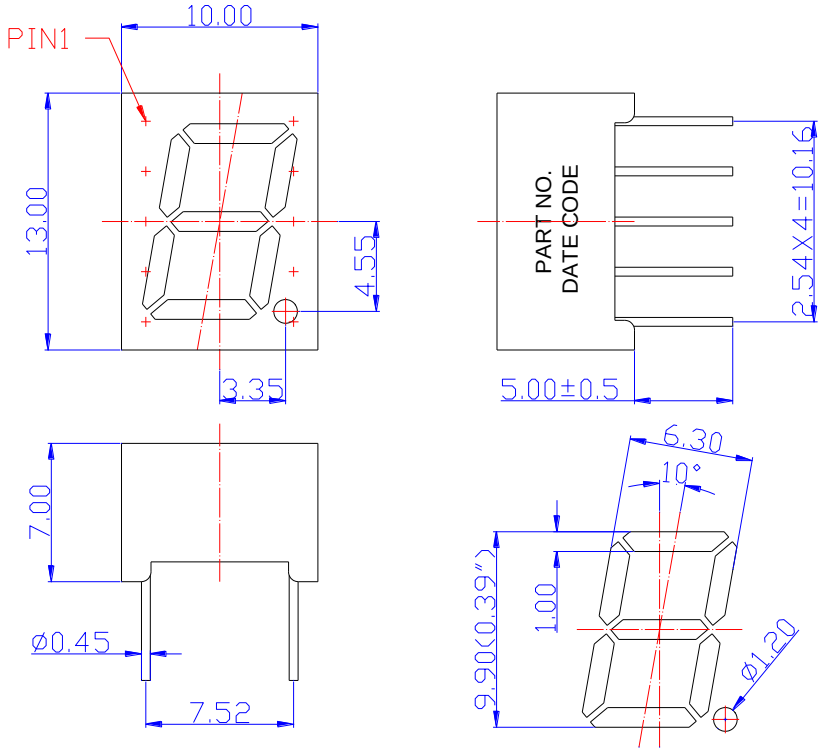
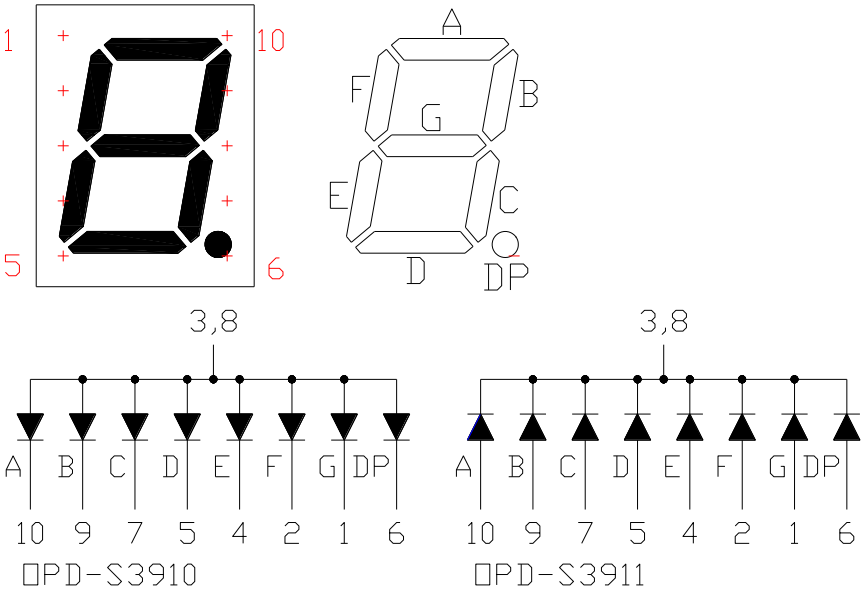
● MECHANICAL DIMENSIONS



NOTES: Dimension is in millimeters. Tolerance is ± 0.25 mm unless otherwise noted.

● TYPICAL INTERNAL EQUIVALENT CIRCUIT

Turn On Color



※EMITTED COLOR：SUPER BRIGHT WHITE

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● SUPER BRIGHT WHITE (InGaN/GaN)

ABSOLUTE MAXIMUM RATING AT Ta=25ºC

Parameter	Symbol	Maximum Rating	Unit
Power dissipation per SMD	P_{AD}	78	mW
Continuous forward current per SMD	I_{AF}	20	mA
Peak current per dice (duty cycle 1/10, 1kHz)	I_{PF}	60	mA
Reverse voltage per SMD	V_R	5	V
Operating temperature	T_{OPR}	-25 to +85	°C
Storage temperature	T_{STG}	-25 to +85	°C

ELECTRICAL - OPTICAL CHARACTERISTICS AT Ta=25ºC

Characteristic	Symbol	Condition		Min.	Typ.	Max.	Unit
Forward Voltage per SMD	V_F	I_F =5mA		-	2.8	3.1	V
Reverse Current	I_R	V_R =5V		-	-	10	μA
Peak Wavelength per SMD	λ_P	I_F =5mA	X	-	0.265	-	nm
			Y	-	0.250	-	
Average Luminous Intensity per SMD	I_V	I_F =5mA		-	370	-	mcd
Spectrum Radiation Bandwidth	$\Delta\lambda$	I_F =5mA		-	30	-	nm

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WHITE: BIN GRADE (Unit : mcd / I_V=5mA)

Super Bright White (SMD BIN 5 mA)	1	2	3
	280~336	336~405	405~490
	FS2	FT1	FT2

COLOR BIN

AL		A1		A2	
X	Y	X	Y	X	Y
0.25	0.22	0.26	0.23	0.27	0.24
0.25	0.23	0.26	0.24	0.27	0.25
0.26	0.24	0.27	0.25	0.28	0.26
0.26	0.23	0.27	0.24	0.28	0.25
AAL		AA1		AA2	

CL		C1		C2	
X	Y	X	Y	X	Y
0.25	0.23	0.26	0.24	0.27	0.25
0.25	0.24	0.26	0.25	0.27	0.26
0.26	0.25	0.27	0.26	0.28	0.27
0.26	0.24	0.27	0.25	0.28	0.26
CCL		CC1		CC2	

EL		E1		E2	
X	Y	X	Y	X	Y
0.25	0.24	0.26	0.25	0.27	0.26
0.25	0.25	0.26	0.26	0.27	0.27
0.26	0.26	0.27	0.27	0.28	0.28
0.26	0.25	0.27	0.26	0.28	0.27
EEL		EE1		EE2	

AVAILABLE BIN / HUE TABLE

1AL	1A1	1A2	1CL	1C1	1C2	1EL	1E1	1E2
2AL	2A1	2A2	2CL	2C1	2C2	2EL	2E1	2E2
3AL	3A1	3A2	3CL	3C1	3C2	3EL	3E1	3E2

Note: It maintains a tolerance of x,y ±0.007

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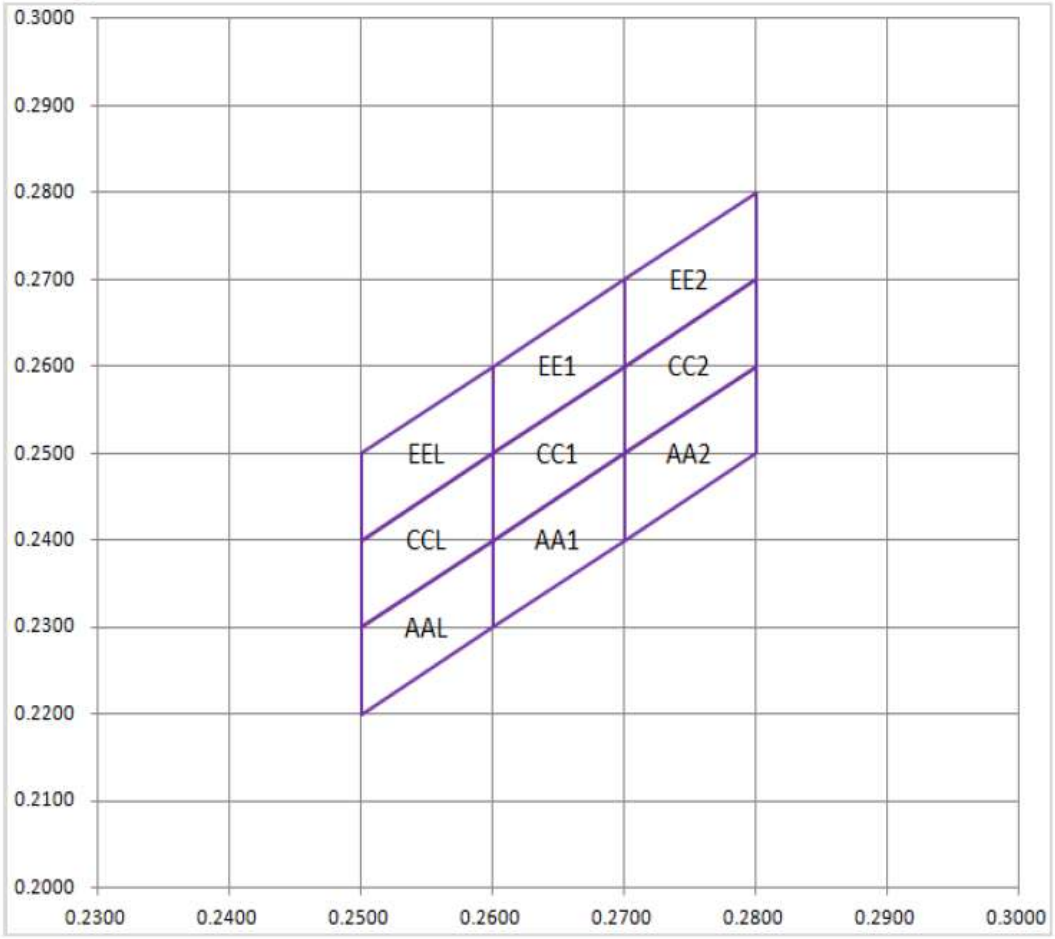
Chromaticity Coordinate



Forward Voltage (Vf) Bin:

Bin Code	G2	G3	G4	H1	H2	H3
Spec. Range	2.5-2.6	2.6-2.7	2.7-2.8	2.8-2.9	2.9-3.0	3.0-3.1

Note: It maintains a tolerance of ±0.05V on forward voltage measurements

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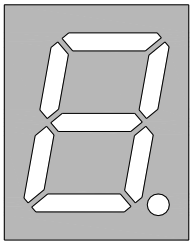
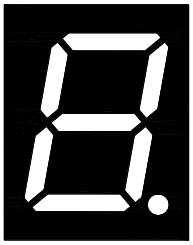
PRODUCT APPEARANCE

The most common reflector color and segment color are show in below diagram.

-GW	-BW
	
※ REFLECTOR COLOR: Gray ※ SEGMENT COLOR: White	※ REFLECTOR COLOR: Black ※ SEGMENT COLOR: White

Opto Plus can customize reflector and segment colors by customer’s request. If you have these request please visit www.opledtw.com or contact sales@opledtw.com for more **Standard Product Customization** information.

Part NO. related to reflector and segment colors show as table below.

PART NO.	DESCRIPTION
OPD-S3910W2-GW	Common Anode｜Gray face｜White segment
OPD-S3911W2-GW	Common Cathode｜Gray face｜White segment
OPD-S3910W2-BW	Common Anode｜Black face｜White segment
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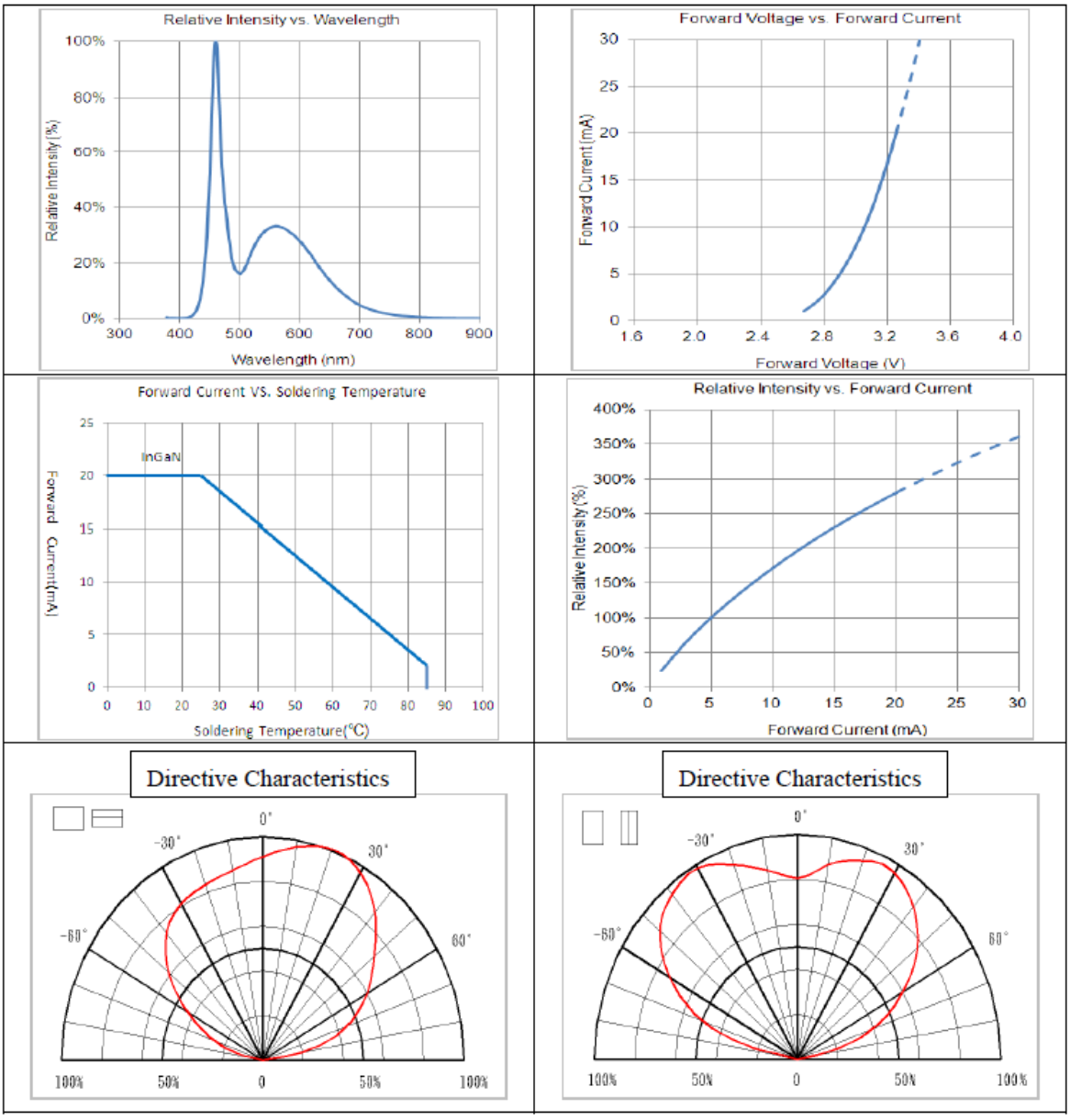
● W: SUPER BRIGHT WHITE (InGaN/GaN) CURVE

Typical Electro-optical Characteristic Curves

(25℃ Free Air Temperature Unless Otherwise Specified)



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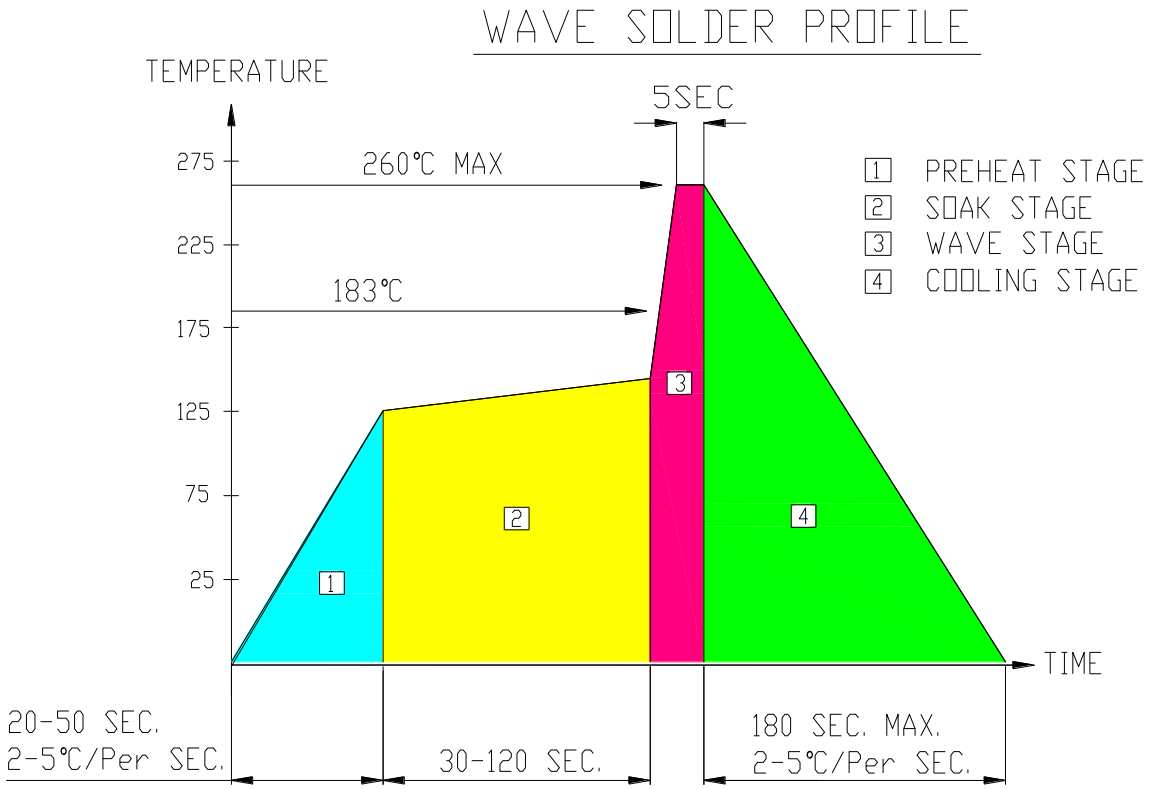
RECOMMEND SOLDERING PROFILE



Note:

- Recommend pre-heat temperature of 105°C or less (as measured with a thermocouple attached to the LED pins) prior to immersion in the solder wave with a maximum solder bath temperature of 260°C
- Peak wave soldering temperature between 245°C ~ 225°C for 3 sec (5 sec max)
- No more than one wave soldering pass

SOLDERING IRON

Basic spec is ≦4 sec when 260℃. If temperature is higher, time should be shorter (+10℃→1 sec). Power dissipation of Iron should be smaller than 15W, and temperature should be controllable. Surface temperature of the device should be under 230℃.

REWORK

Customer must finish rework within ≦3 sec under 350℃.
The head of soldering iron cannot touch copper foil.

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