

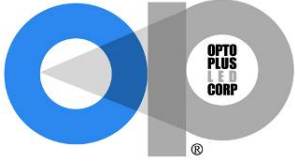
[www.opledtw.com](http://www.opledtw.com)

**Opto Plus LED Corp.**  
**0.70" SMD Type LED Display**  
**OPA-701LA-ST-1.5 | OPC-701LA-ST-1.5**

● **EDIT HISTORY**

Version A: Dec. 17, 2020

Preliminary Spec.



[www.opledtw.com](http://www.opledtw.com)

# Opto Plus LED Corp.

## 0.70" SMD Type LED Display

### OPA-701LA-ST-1.5 | OPC-701LA-ST-1.5

#### ● FEATURES

- 0.70 inch (17.78 mm) Digit Height.
- Low current operation.
- Excellent character appearance.
- Super thin SMD type.
- RoHS compliant, Pb Free.

#### ● DESCRIPTION

The device are 0.70 inch (17.78 mm) height single digit 7-segment displays.

The device is Opto Plus LED Corp standard LED Display.

This device utilizes Super Bright Amber LED chip which are made from AlGaInP on a Transparent GaAs, substrate.

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

#### ● DEVICE

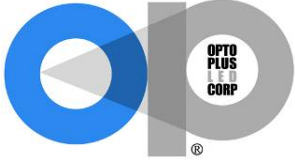
PART NO.	DESCRIPTION
OPA-701LA-ST-1.5 G/W	Common Anode   Gray face   White segment
OPC-701LA-ST-1.5 G/W	Common Cathode   Gray face   White segment
OPA-701LA-ST-1.5 B/W	Common Anode   Black face   White segment
OPC-701LA-ST-1.5 B/W	Common Cathode   Black face   White segment

### RoHS Compliance



### Pb Free.

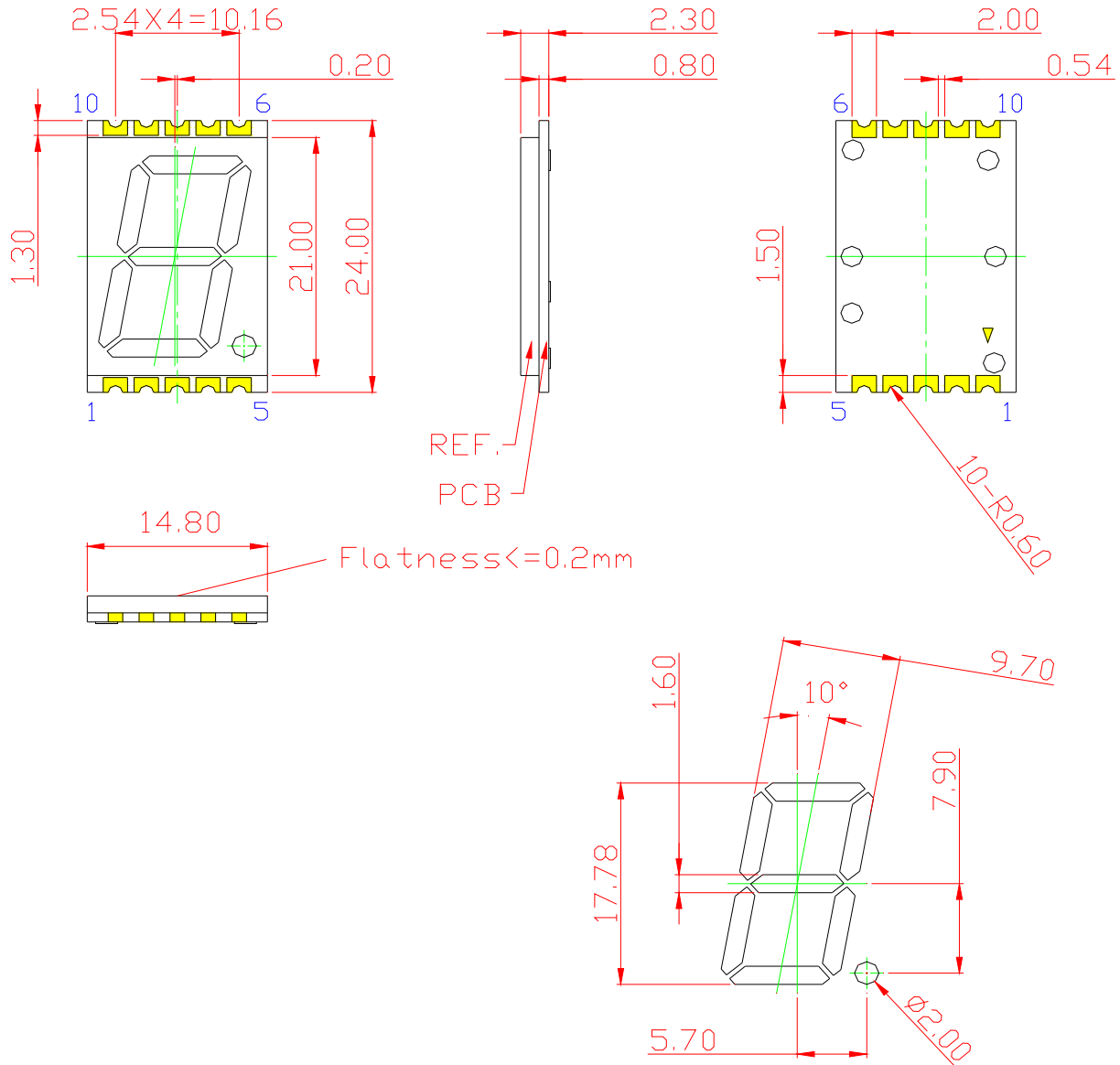




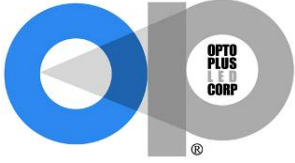
[www.opledtw.com](http://www.opledtw.com)

# Opto Plus LED Corp. 0.70" SMD Type LED Display OPA-701LA-ST-1.5 | OPC-701LA-ST-1.5

## MECHANICAL DIMENSIONS



NOTES: All dimensions are in millimeters. Tolerances are  $\pm 0.25$  mm unless otherwise noted.



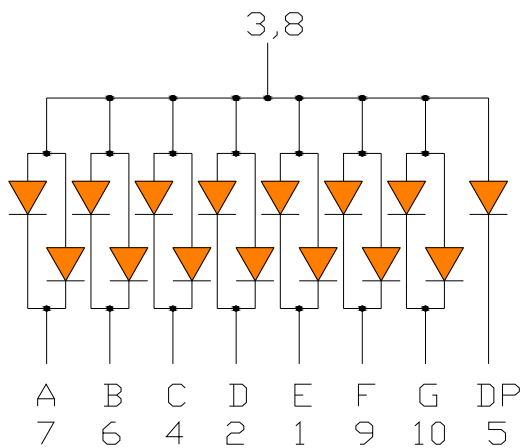
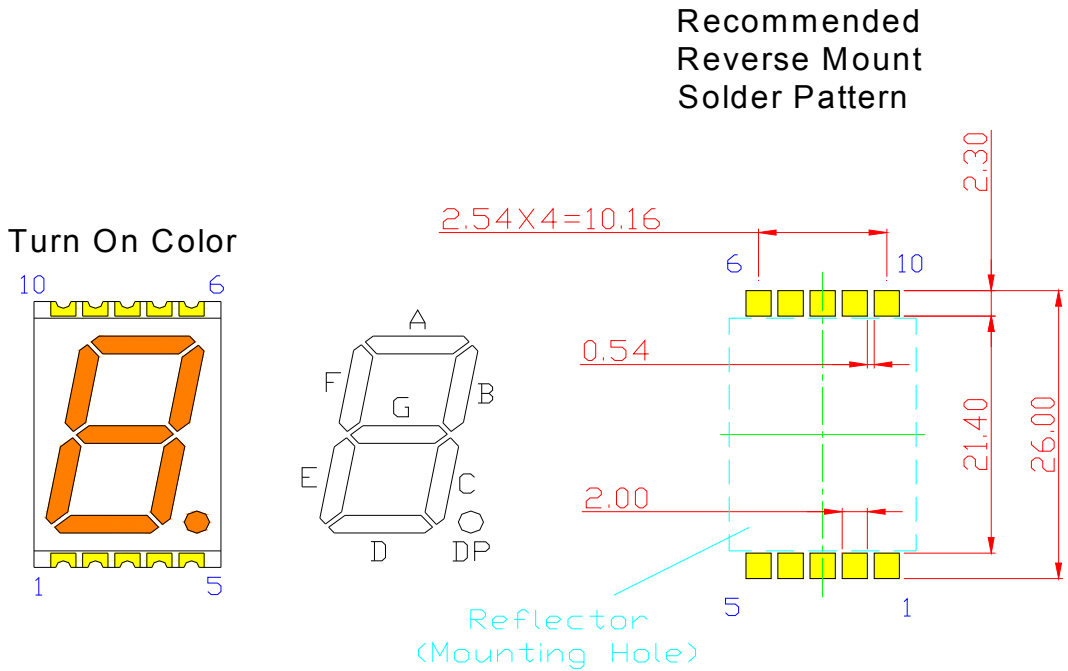
[www.opledtw.com](http://www.opledtw.com)

# Opto Plus LED Corp.

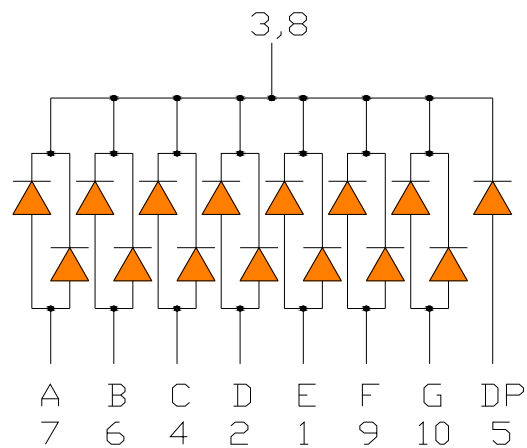
## 0.70" SMD Type LED Display

### OPA-701LA-ST-1.5 | OPC-701LA-ST-1.5

#### ● TYPICAL INTERNAL EQUIVALENT CIRCUIT



OPA-701-ST-1.5  
(Common Anode)



OPC-701-ST-1.5  
(Common Cathode)

※EMITTED COLOR : SUPER BRIGHT AMBER



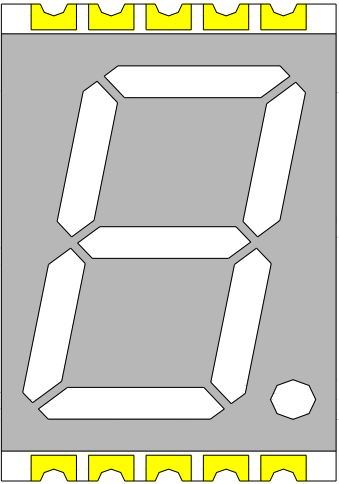
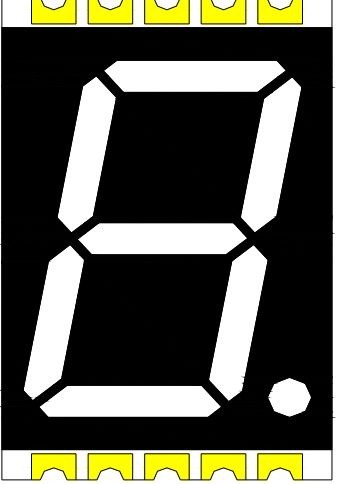
# Opto Plus LED Corp.

## 0.70" SMD Type LED Display

### OPA-701LA-ST-1.5 | OPC-701LA-ST-1.5

#### ● 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](http://www.opledtw.com) or contact [sales@opledtw.com](mailto:sales@opledtw.com) for more **Standard Product Customization** information.

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

PART NO.	DESCRIPTION
OPA-701LA-ST-1.5 G/W	Common Anode   Gray face   White segment
OPC-701LA-ST-1.5 G/W	Common Cathode   Gray face   White segment
OPA-701LA-ST-1.5 B/W	Common Anode   Black face   White segment
OPC-701LA-ST-1.5 B/W	Common Cathode   Black face   White segment



**Opto Plus LED Corp.**  
**0.70'' SMD Type LED Display**  
**OPA-701LA-ST-1.5 | OPC-701LA-ST-1.5**

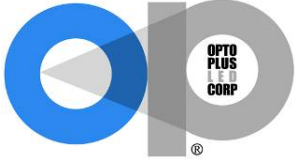
● **LA: SUPER BRIGHT AMBER (AlGaInP/GaAs)**

ABSOLUTE MAXIMUM RATING AT Ta=25°C

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	$P_{AD}$	48	mW
Continuous forward current	$I_{AF}$	20	mA
Peak current (duty cycle 1/10, 1kHz)	$I_{PF}$	40	mA
Reverse voltage	$V_R$	5	V
Operating temperature	$T_{OPR}$	-40 to +105	°C
Storage temperature	$T_{STG}$	-40 to +105	°C

ELECTRICAL - OPTICAL CHARACTERISTICS AT Ta=25°C

Characteristic	Symbol	Condition	Min.	Type.	Max.	Unit
Forward Voltage, (Per Dice)	$V_F$	$I_F = 20\text{mA}$	-	2.0	2.4	V
Reverse Current, (Per Dice)	$I_R$	$V_R = 5\text{V}$	-	-	10	$\mu\text{A}$
Peak Wavelength	$\lambda_P$	$I_F = 20\text{mA}$	-	612	-	nm
Dominant Wavelength	$\lambda_D$	$I_F = 20\text{mA}$	601	-	613	nm
Luminous Intensity	$I_v$	$I_F = 20\text{mA}$	25	51.5	80	mcd
Spectral Line Half-Bandwidth	$\Delta\lambda$	$I_F = 20\text{mA}$	-	20	-	nm



[www.opledtw.com](http://www.opledtw.com)

**Opto Plus LED Corp.**  
**0.70” SMD Type LED Display**  
**OPA-701LA-ST-1.5 | OPC-701LA-ST-1.5**

● **LA: BIN GRADE (Unit : mcd) 20mA**

Super Bright Amber	I	J	K
	25.0 – 43.0	43.1 – 60.0	60.1 – 80.0

● **LA: HUE GRADE ( $\lambda_D$  : nm)**

1	2	3
601.0 – 604.0	604.1 – 607.0	607.1 – 613.0

● **AVAILABLE BIN / HUE TABLE**

I1	J1	K1
I2	J2	K2
I3	J3	K3



# Opto Plus LED Corp.

## 0.70" SMD Type LED Display

### OPA-701LA-ST-1.5 | OPC-701LA-ST-1.5

#### ● LA: SUPER BRIGHT AMBER (AlGaInP/GaAs) CURVE

Typical Electro-optical Characteristic Curves  
(25 °C Free Air Temperature Unless Otherwise Specified)

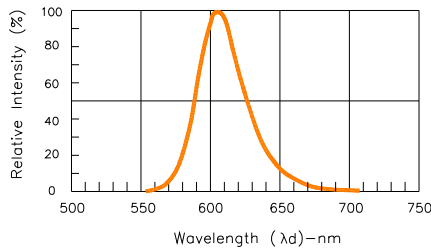


Fig.1-Relative Intensity VS. Wavelength

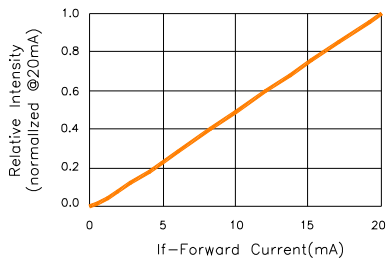


Fig.2-Relative Luminous Intensity vs. Forward Current

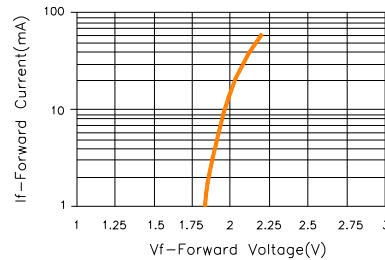


Fig.3-Forward Current vs. Forward Voltage

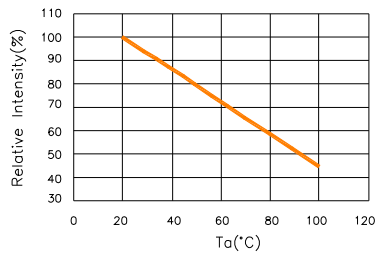


Fig.4-Relative Intensity(@20mA)VS. Ambient Temperature

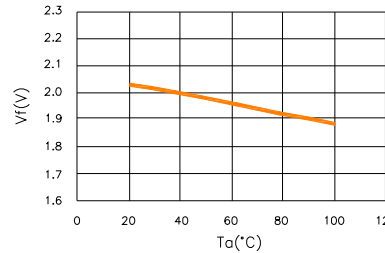


Fig.5-Forward Voltage(@20mA)VS. Ambient Temperature

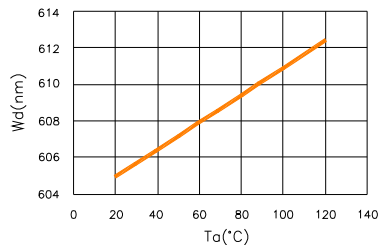


Fig.6-Dominant Wavelength(@20mA) VS. Ambient Temperature

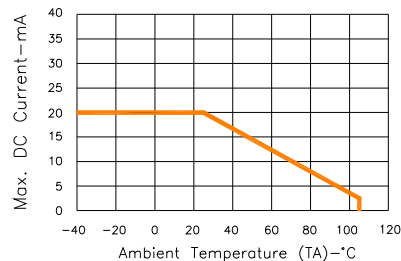
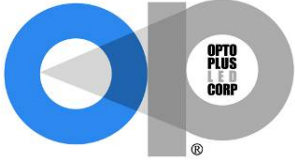


Fig.7-Max. Allowable DC Current VS. Ambient Temperature





[www.opledtw.com](http://www.opledtw.com)

# Opto Plus LED Corp.

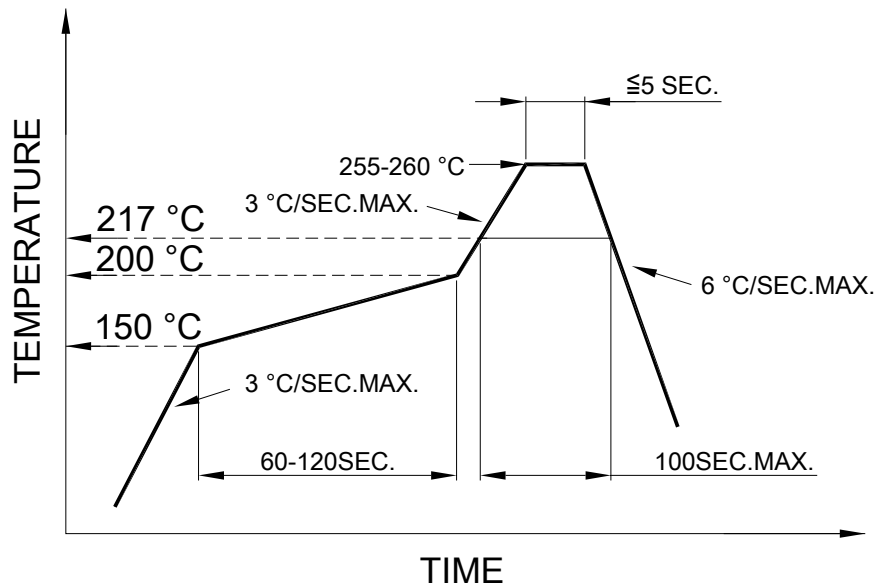
## 0.70" SMD Type LED Display

### OPA-701LA-ST-1.5 | OPC-701LA-ST-1.5

#### ● SMT REFLOW SOLDERING INSTRUCTIONS

SMT Soldering Profile

Pb free reflow soldering Profile



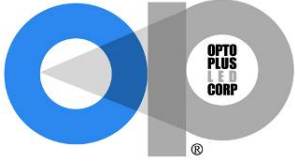
- We recommend the reflow temperature 245°C (+/- 5°C).  
The maximum soldering temperature should be limited to 260°C.
- Number of reflow process shall be 2 times or less.

#### ● SOLDERING IRON

Basic spec is  $\leq 4$  sec when 260°C. If temperature is higher, time should be shorter (+10°C → 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°C.

#### ● REWORK

- Customer must finish rework within 3 sec. under 350°C.
- The head of soldering iron cannot touch copper foil.



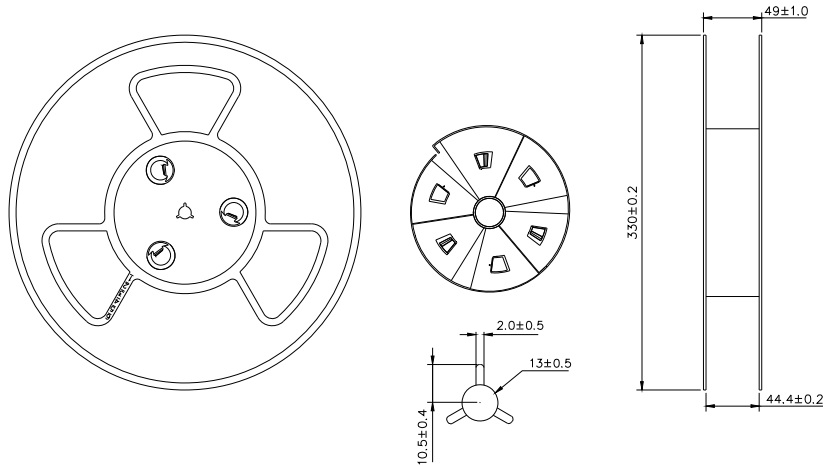
[www.opledtw.com](http://www.opledtw.com)

# Opto Plus LED Corp.

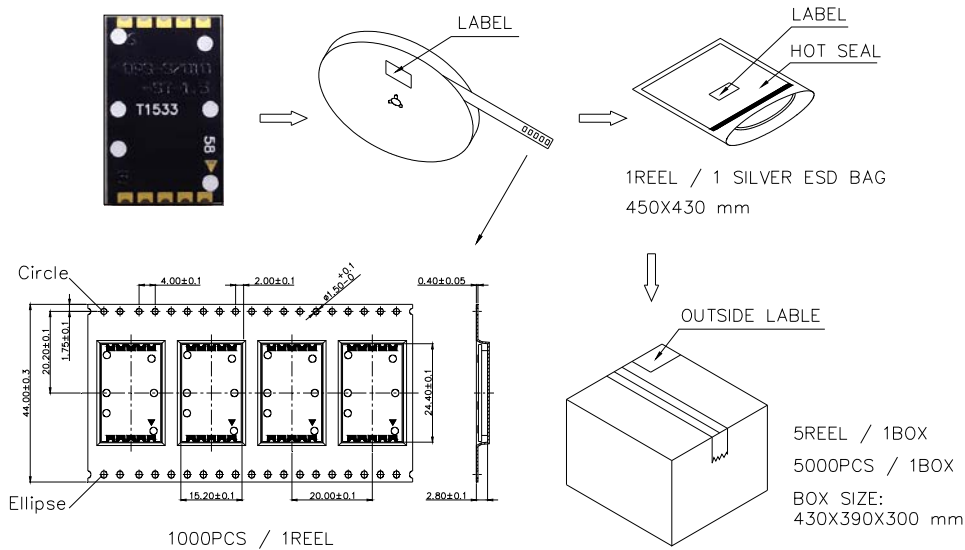
## 0.70" SMD Type LED Display

### OPA-701LA-ST-1.5 | OPC-701LA-ST-1.5

### ● REEL DIMENSIONS



### ● PACKING & LABEL SPECIFICATIONS



### ● STORAGE CONDITION

In factory original sealed bag package

TEMPERATURE CONDITION	HUMIDITY CONDITION
5°C ~ 30°C	Below 60%RH

After opened and not in factory original sealed bag package

TEMPERATURE CONDITION	HUMIDITY CONDITION	STORAGE TIME
5°C ~ 30°C	Below 60%RH	Within 4 weeks (MSL as level 2a)