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**Opto Plus LED Corp.**  
**0.39" SMD Type LED Display**  
**OPS-D3910W | OPS-D3911W**

● **EDIT HISTORY**

Version A: Oct. 30, 2020

Preliminary Spec.

Version B: Feb. 11, 2026

Modify electrical optical characteristics.

Confidential Document



# Opto Plus LED Corp.

## 0.39" SMD Type LED Display

### OPS-D3910W | OPS-D3911W

#### ● FEATURES

- 0.39 inch (10.0 mm) digit height.
- SMD type.
- Low current operation.
- RoHS Compliant, Pb Free.

#### ● DESCRIPTION

The device are 0.39 inch (10.0 mm) height dual digit 7-segment displays.

The device is Opto Plus LED Corp standard LED Display.

This device utilizes Super Bright White SMD 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                                 |
|----------|---------------|---------------------------------------------|
|          | OPS-D3910W-GW | Common Anode   Gray face   White segment    |
|          | OPS-D3911W-GW | Common Cathode   Gray face   White segment  |
|          | OPS-D3910W-BW | Common Anode   Black face   White segment   |
|          | OPS-D3911W-BW | Common Cathode   Black face   White segment |

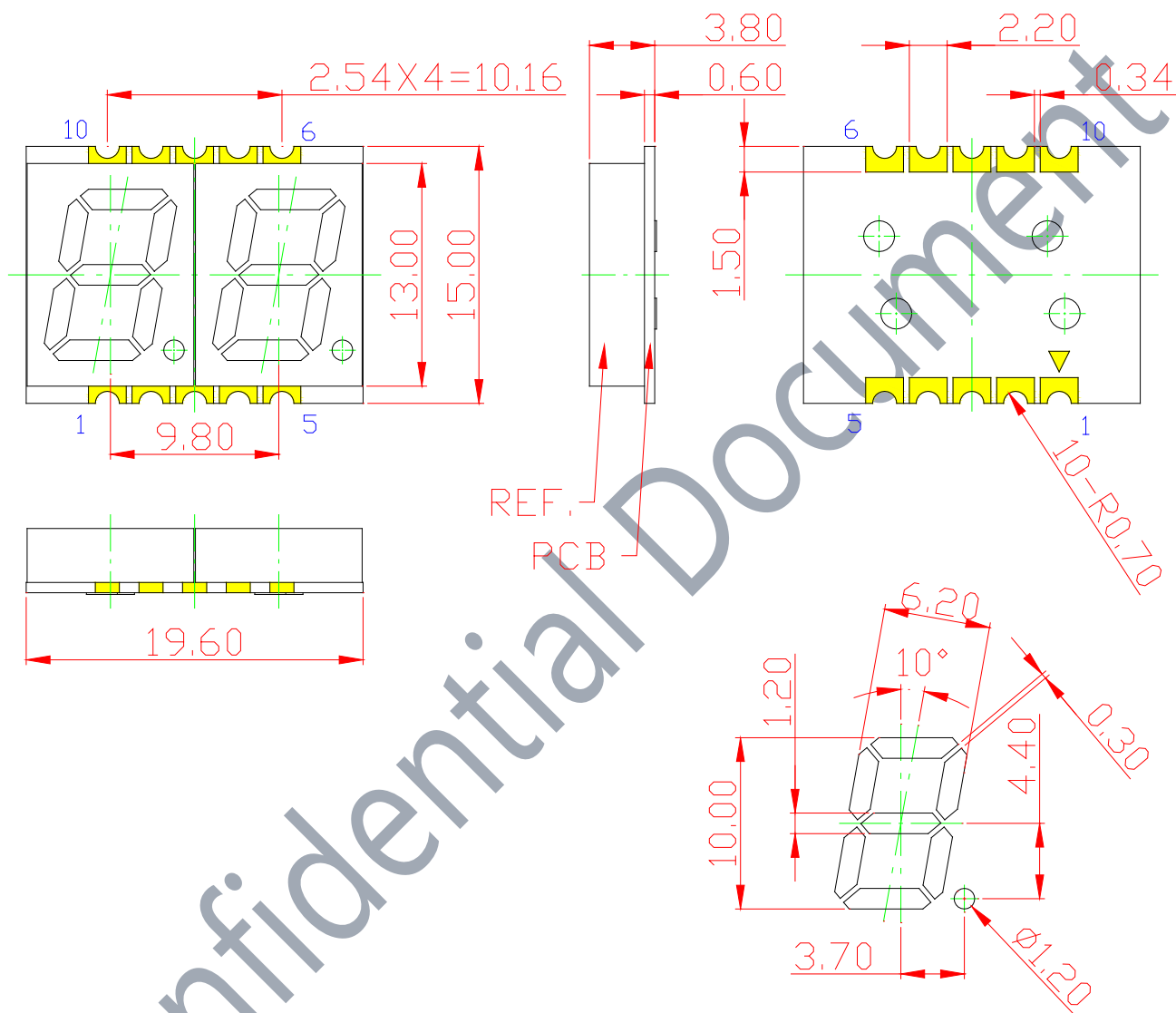
**RoHS Compliance**



**Pb Free.**



## ● MECHANICAL DIMENSIONS



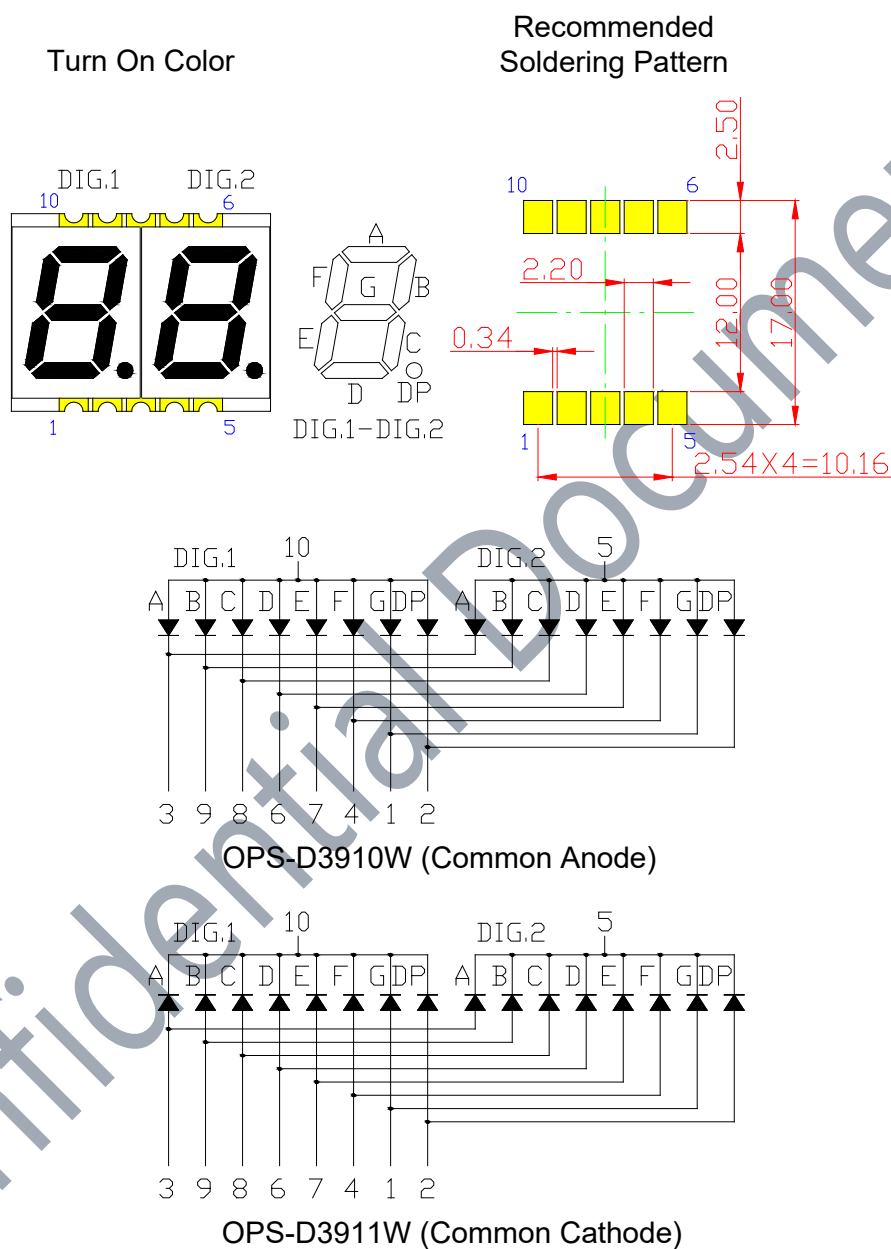
NOTES: All dimensions are in millimeters. Tolerances are  $\pm 0.25$  mm unless otherwise noted.

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## 0.39" SMD Type LED Display

### OPS-D3910W | OPS-D3911W

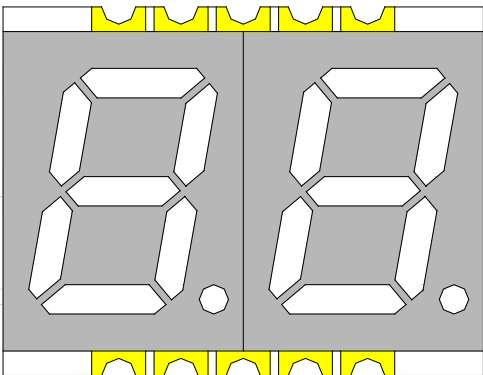
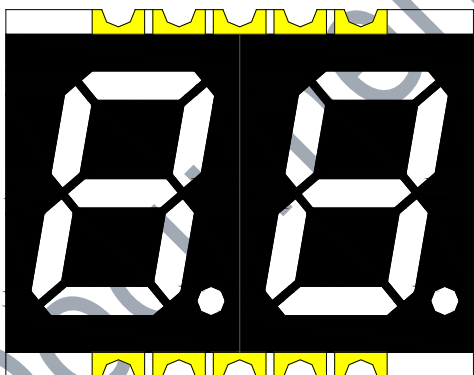
#### ● TYPICAL INTERNAL EQUIVALENT CIRCUIT



※EMITTED COLOR : SUPER BRIGHT WHITE

## ● PRODUCT APPEARANCE

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

| -GW                                                                                | -BW                                                                                 |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |
| ※ REFLECTOR COLOR: Gray<br>※ SEGMENT COLOR: White                                  | ※ REFLECTOR COLOR: Black<br>※ 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                                 |
|---------------|---------------------------------------------|
| OPS-D3910W-GW | Common Anode   Gray face   White segment    |
| OPS-D3911W-GW | Common Cathode   Gray face   White segment  |
| OPS-D3910W-BW | Common Anode   Black face   White segment   |
| OPS-D3911W-BW | Common Cathode   Black face   White segment |

# Opto Plus LED Corp.

## 0.39" SMD Type LED Display

### OPS-D3910W | OPS-D3911W

#### ● W: SUPER BRIGHT WHITE (InGaN/GaN)

ABSOLUTE MAXIMUM RATING AT Ta=25° (Per SMD Chip)

| Parameter             | Symbol          | Maximum Rating | Unit |
|-----------------------|-----------------|----------------|------|
| Power Dissipation     | P <sub>D</sub>  | 33             | mW   |
| Forward Current       | I <sub>F</sub>  | 10             | mA   |
| Pulse Forward Current | I <sub>FP</sub> | 60             | mA   |
| In-rush current       | I <sub>IR</sub> | 60             | mA   |
| Supply voltage        | V <sub>DD</sub> | 5              | V    |
| Operating temperature | T <sub>OP</sub> | -40 to + 85    | °C   |
| Storage temperature   | T <sub>ST</sub> | -40 to + 100   | °C   |

ELECTRICAL - OPTICAL CHARACTERISTICS AT Ta=25°C (Per SMD Chip)

| Characteristic                         | Symbol         | Condition           | Min.  | Type  | Max. | Unit |
|----------------------------------------|----------------|---------------------|-------|-------|------|------|
| Forward Voltage                        | V <sub>F</sub> | I <sub>F</sub> =5mA | -     | 2.9   | 3.2  | V    |
| Reverse Current                        | I <sub>R</sub> | V <sub>R</sub> =5V  | -     | -     | 10   | μA   |
| Luminous Intensity                     | I <sub>V</sub> | I <sub>F</sub> =5mA | -     | 60    | -    | mcd  |
|                                        |                |                     | 112.5 | 200   | 285  |      |
| Chromaticity Coordinate (Per SMD Chip) |                | X                   | -     | 0.285 | -    |      |
|                                        |                | Y                   | -     | 0.275 |      |      |



# Opto Plus LED Corp.

## 0.39" SMD Type LED Display

### OPS-D3910W | OPS-D3911W

#### ● LUMINOUS INTENSITY (IV) BIN: (PER SMD CHIP)

| Super Bright White   | 1                 | 2                 | 3                 |
|----------------------|-------------------|-------------------|-------------------|
| Reference BIN (Chip) | (R11) 112.5-126.0 | (R12) 126.0-140.0 | (R21) 140.0-160.0 |

| Super Bright White   | 4                 | 5                 | 6                 |
|----------------------|-------------------|-------------------|-------------------|
| Reference BIN (Chip) | (R22) 160.0-180.0 | (S11) 180.0-202.0 | (S12) 202.0-226.0 |

| Super Bright White   | 7                 | 8                 |
|----------------------|-------------------|-------------------|
| Reference BIN (Chip) | (S21) 226.0-255.5 | (S22) 255.5-285.0 |

Note: It maintains a tolerance of  $\pm 10\%$  on Luminous Intensity.

# Opto Plus LED Corp.

## 0.39" SMD Type LED Display

### OPS-D3910W | OPS-D3911W

#### ● COLOR BIN: (PER SMD CHIP)

| Color | AA2    |        | BB1    |        | BB2    |        |
|-------|--------|--------|--------|--------|--------|--------|
| TW    | 0.2700 | 0.2400 | 0.2800 | 0.2500 | 0.2900 | 0.2600 |
|       | 0.2700 | 0.2500 | 0.2800 | 0.2600 | 0.2900 | 0.2700 |
|       | 0.2800 | 0.2600 | 0.2900 | 0.2700 | 0.3000 | 0.2800 |
|       | 0.2800 | 0.2500 | 0.2900 | 0.2600 | 0.3000 | 0.2700 |
|       | CC2    |        | DD1    |        | DD2    |        |
|       | 0.2700 | 0.2500 | 0.2800 | 0.2600 | 0.2900 | 0.2700 |
|       | 0.2700 | 0.2600 | 0.2800 | 0.2700 | 0.2900 | 0.2800 |
|       | 0.2800 | 0.2700 | 0.2900 | 0.2800 | 0.3000 | 0.2900 |
|       | 0.2800 | 0.2600 | 0.2900 | 0.2700 | 0.3000 | 0.2800 |
|       | EE2    |        | FF1    |        | FF2    |        |
|       | 0.2700 | 0.2600 | 0.2800 | 0.2700 | 0.2900 | 0.2800 |
|       | 0.2700 | 0.2700 | 0.2800 | 0.2800 | 0.2900 | 0.2900 |
|       | 0.2800 | 0.2800 | 0.2900 | 0.2900 | 0.3000 | 0.3000 |
|       | 0.2800 | 0.2700 | 0.2900 | 0.2800 | 0.3000 | 0.2900 |
|       | GG2    |        | HH1    |        | HH2    |        |
|       | 0.2700 | 0.2700 | 0.2800 | 0.2800 | 0.2900 | 0.2900 |
|       | 0.2700 | 0.2800 | 0.2800 | 0.2900 | 0.2900 | 0.3000 |
|       | 0.2800 | 0.2900 | 0.2900 | 0.3000 | 0.3000 | 0.3100 |
|       | 0.2800 | 0.2800 | 0.2900 | 0.2900 | 0.3000 | 0.3000 |

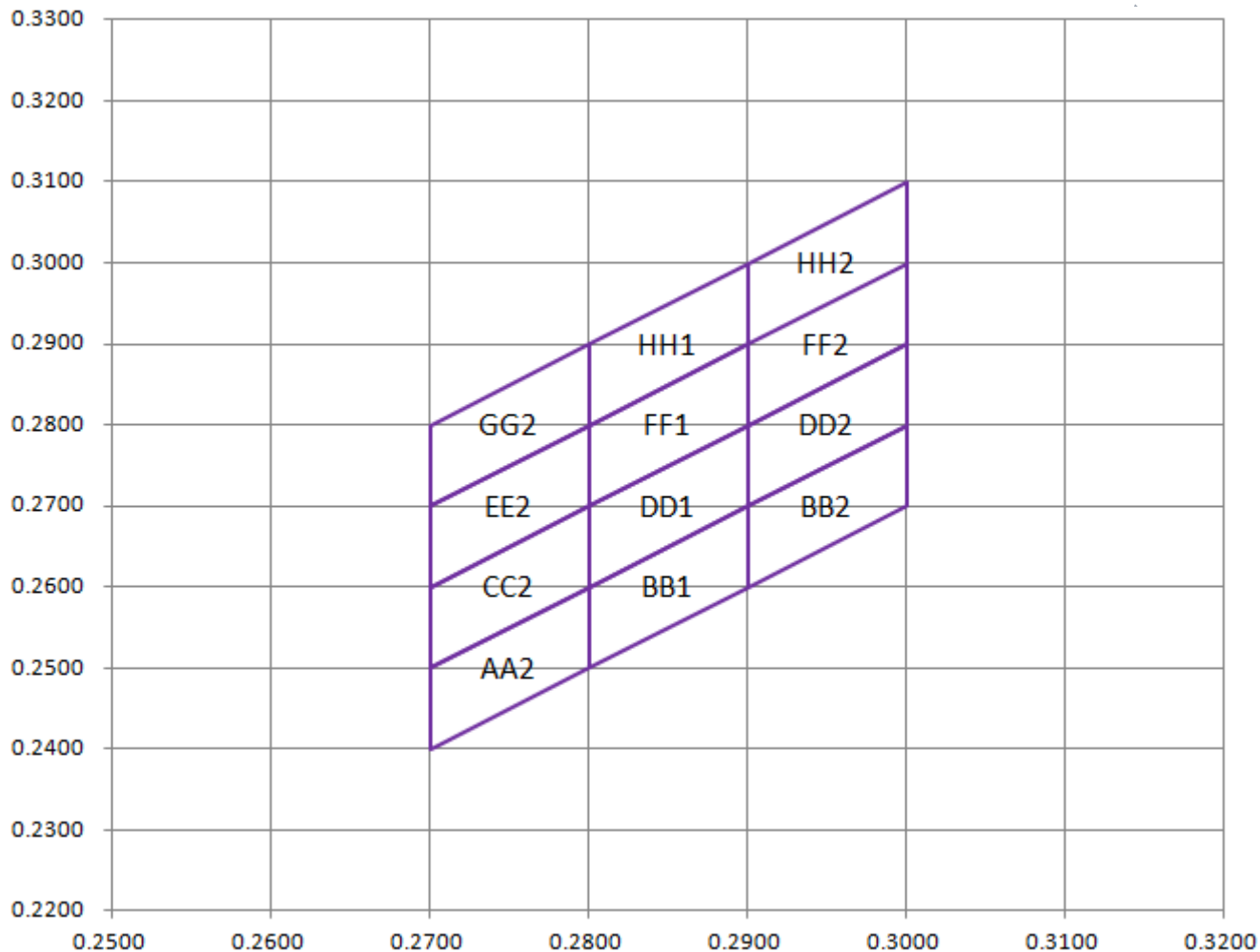
Note: It maintains a tolerance of X,Y  $\pm 0.007$ .



● **AVAILABLE BIN / HUE TABLE**

|      |      |      |      |      |      |
|------|------|------|------|------|------|
| 1AA2 | 1BB1 | 1BB2 | 1CC2 | 1DD1 | 1DD2 |
| 1EE2 | 1FF1 | 1FF2 | 1GG2 | 1HH1 | 1HH2 |
| 2AA2 | 2BB1 | 2BB2 | 2CC2 | 2DD1 | 2DD2 |
| 2EE2 | 2FF1 | 2FF2 | 2GG2 | 2HH1 | 2HH2 |
| 3AA2 | 3BB1 | 3BB2 | 3CC2 | 3DD1 | 3DD2 |
| 3EE2 | 3FF1 | 3FF2 | 3GG2 | 3HH1 | 3HH2 |
| 4AA2 | 4BB1 | 4BB2 | 4CC2 | 4DD1 | 4DD2 |
| 4EE2 | 4FF1 | 4FF2 | 4GG2 | 4HH1 | 4HH2 |
| 5AA2 | 5BB1 | 5BB2 | 5CC2 | 5DD1 | 5DD2 |
| 5EE2 | 5FF1 | 5FF2 | 5GG2 | 5HH1 | 5HH2 |
| 6AA2 | 6BB1 | 6BB2 | 6CC2 | 6DD1 | 6DD2 |
| 6EE2 | 6FF1 | 6FF2 | 6GG2 | 6HH1 | 6HH2 |
| 7AA2 | 7BB1 | 7BB2 | 7CC2 | 7DD1 | 7DD2 |
| 7EE2 | 7FF1 | 7FF2 | 7GG2 | 7HH1 | 7HH2 |
| 8AA2 | 8BB1 | 8BB2 | 8CC2 | 8DD1 | 8DD2 |
| 8EE2 | 8FF1 | 8FF2 | 8GG2 | 8HH1 | 8HH2 |

● **CHROMATICITY COORDINATE: (PER SMD CHIP)**



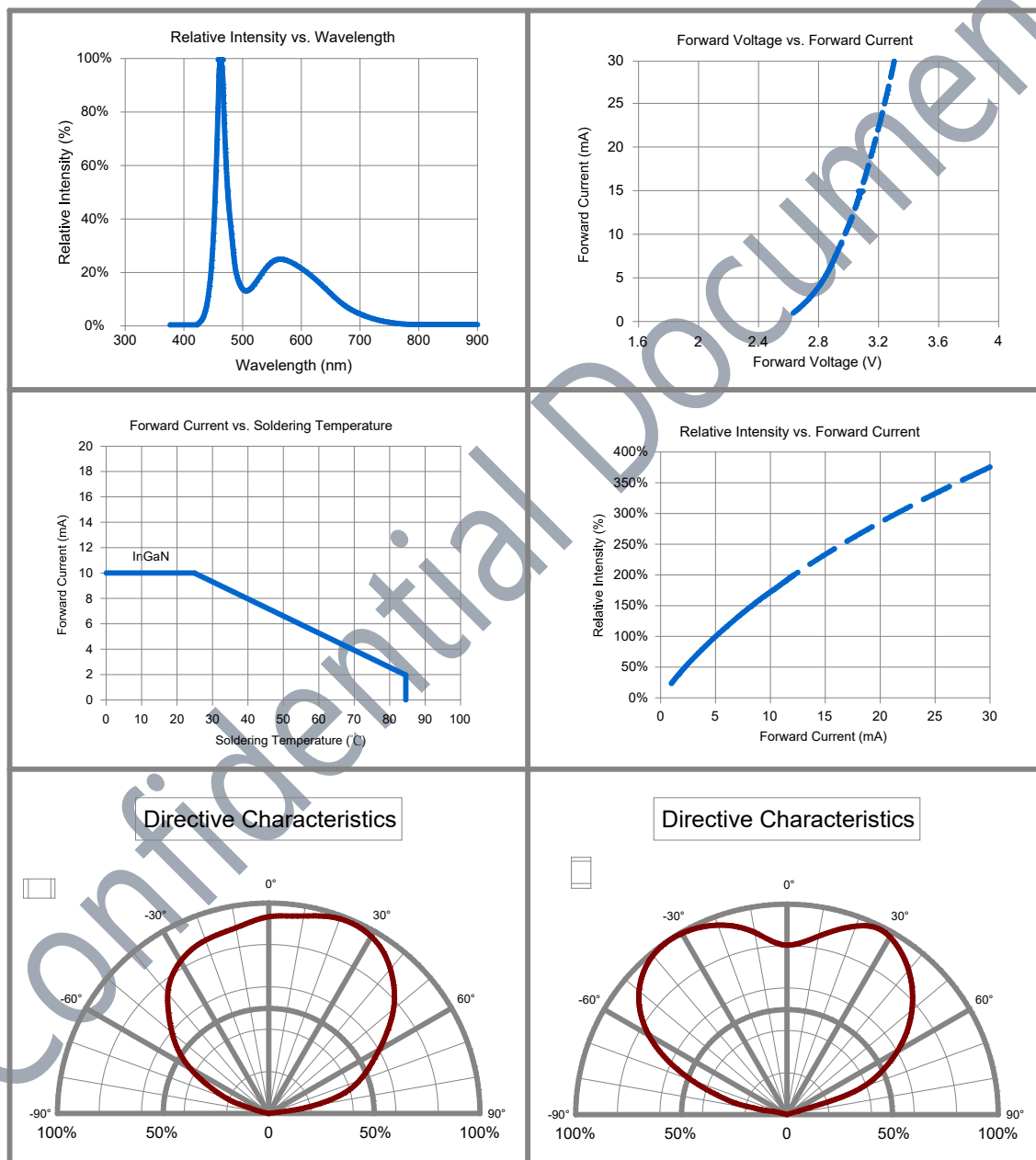
# Opto Plus LED Corp.

## 0.39" SMD Type LED Display

### OPS-D3910W | OPS-D3911W

#### ● W: SUPER BRIGHT WHITE (InGaN/GaN) CURVE (Per SMD Chip)

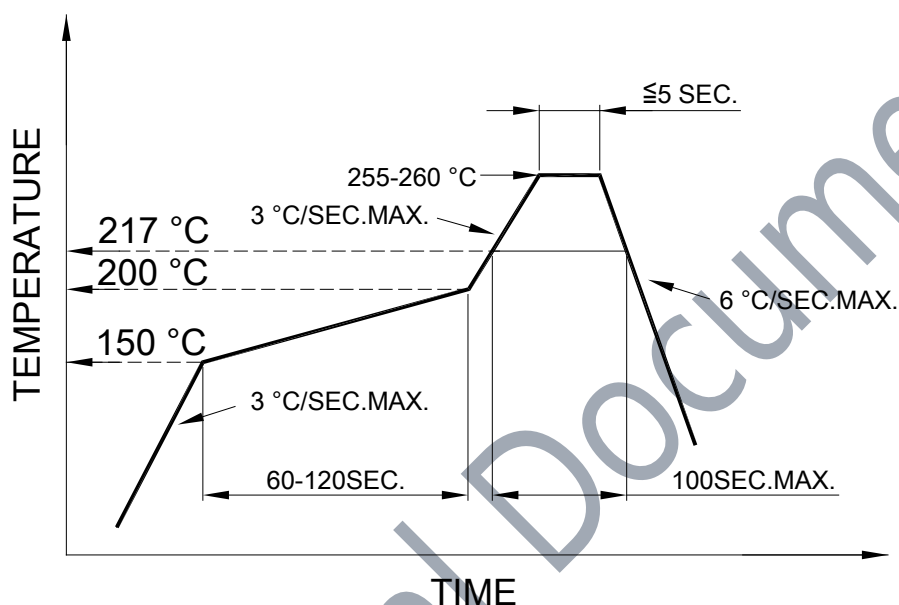
Typical Electro-optical Characteristic Curves  
(25 °C Free Air Temperature Unless Otherwise Specified)



## ● 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.

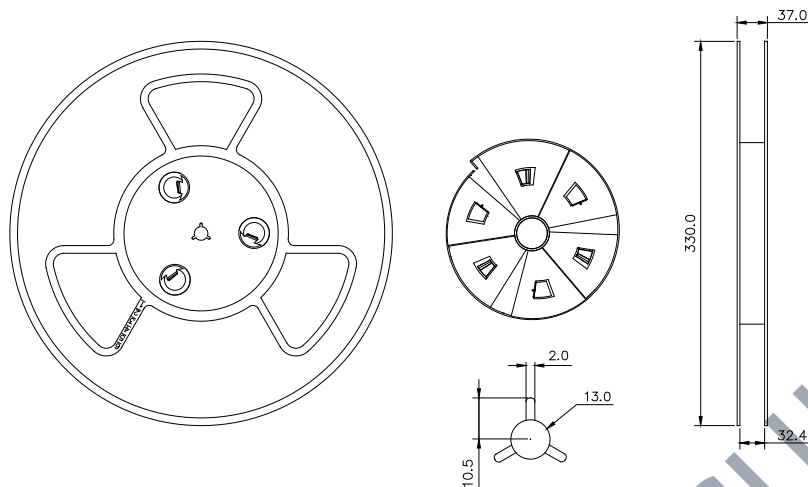
## ● SOLDERING IRON

Basic spec is ≤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.

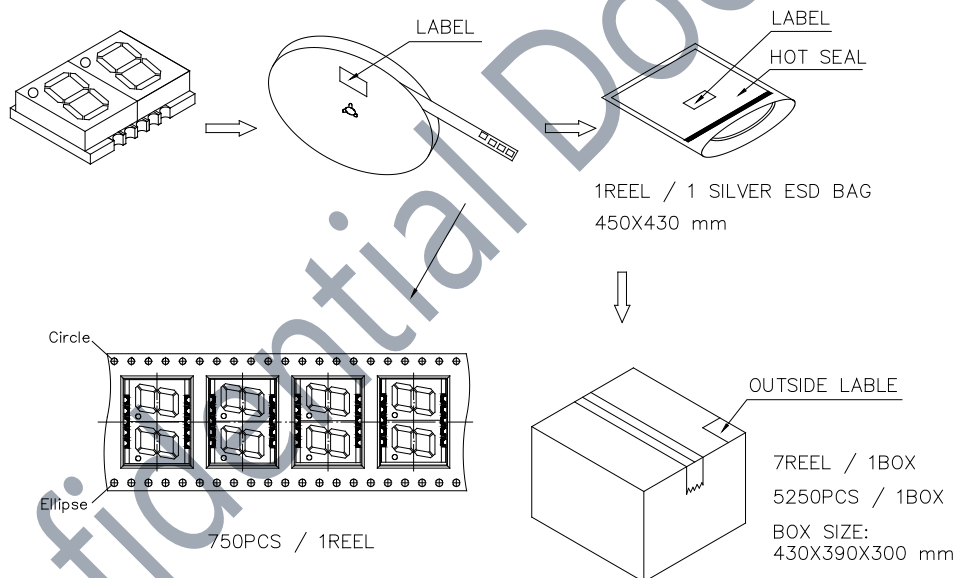
## ● REWORK

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

#### ● 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) |