



CIEL LIGHT CO.,LTD

## PRODUCT SPECIFICATION

Customer:\_\_\_\_\_

Customer's Model No.:\_\_\_\_\_

Customer's Drawing No.:\_\_\_\_\_

Model No.:\_\_\_\_\_CL-5013PGC-35\_\_\_\_\_

Drawing No.:\_\_\_\_\_

## Features

Low Power Consumption

High Efficiency

Round Type

T1 ( 5mm ) Diameter

With Flange

Solder Leads Without Stand-off

Compliant With RoHS

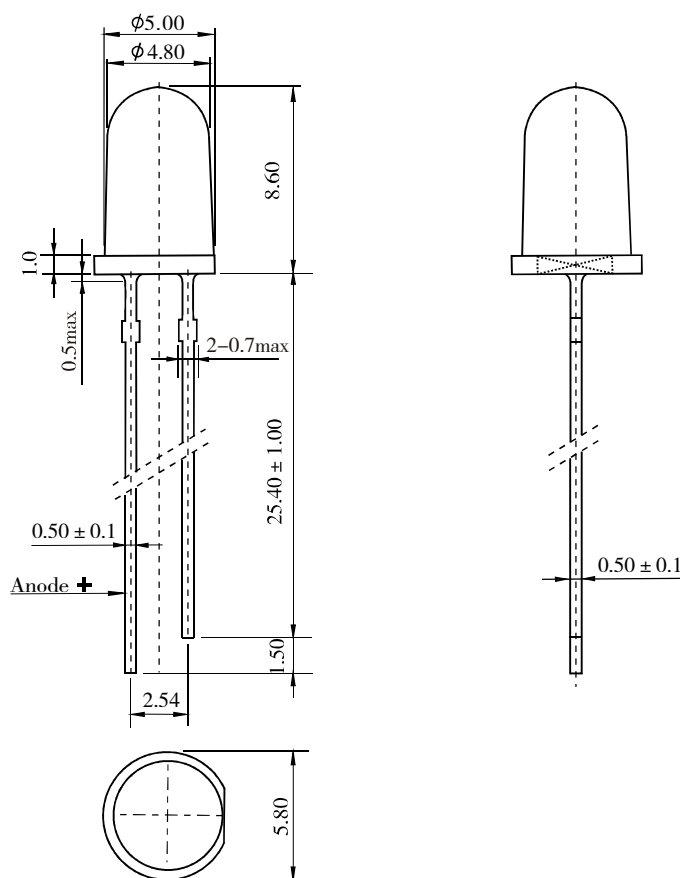
## Descriptions

Chip Material: InGaN/GaN

Emitting Color: Pure Green

Lens Color: Water Clear

## Outline Drawing



## ATTENTION



OBSERVE PRECAUTIONS  
FOR HANDLING  
ELECTROSTATIC  
SENSITIVE DEVICES

Tolerance is  $\pm 0.25$ mm unless otherwise noted, Unit=mm  
Pin bending  $\leq$  length\*1%

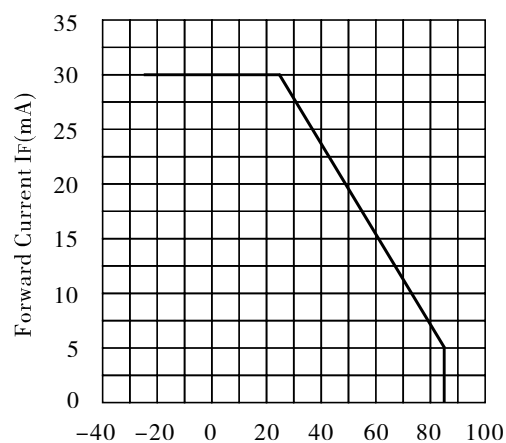
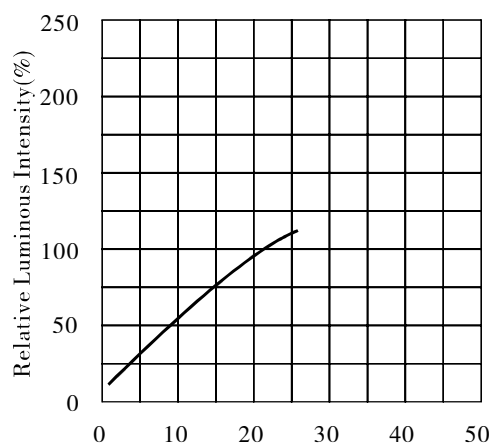
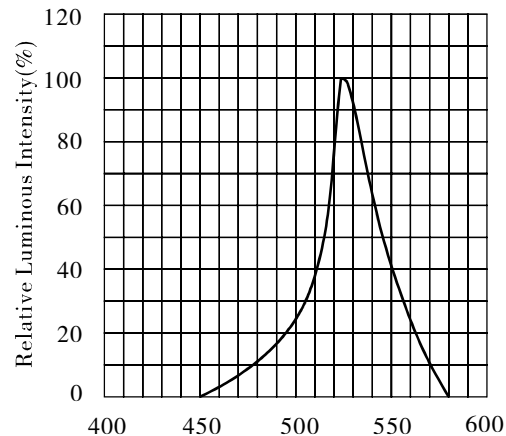
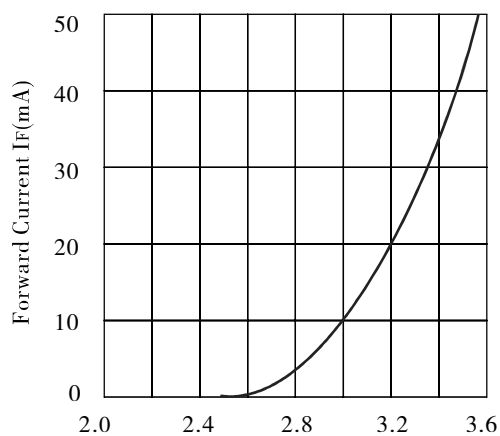
**Electrical Optical Characteristics ( Ta=25°C )**

| Parameter                                   | Symbol           | Pure Green |       |     | Unit    | Test Condition |
|---------------------------------------------|------------------|------------|-------|-----|---------|----------------|
|                                             |                  | Min        | Typ   | Max |         |                |
| Forward Voltage                             | $V_F$            | ---        | 3.1   | 3.4 | V       | IF=20mA        |
| Luminous Intensity                          | $I_V$            | 7770       | 19000 | --- | mcd     | IF=20mA        |
| Peak Wavelength                             | $\lambda_P$      | ---        | 525   | --- | nm      | IF=20mA        |
| Dominant Wavelength                         | $\lambda_d$      | ---        | 515   | --- | nm      | IF=20mA        |
| Spectral Line half-width                    | $\Delta \lambda$ | ---        | 30    | --- | nm      | IF=20mA        |
| Reverse Leakage Current                     | $I_R$            | ---        | ---   | 50  | $\mu A$ | VR=5V          |
| Viewing Angle                               | $2\theta_{1/2}$  | ---        | 35    | --- | Deg     | IF=20mA        |
| Angle measurement error value $\pm 8^\circ$ |                  |            |       |     |         |                |

**Absolute Maximum Parameters ( Ta=25°C )**

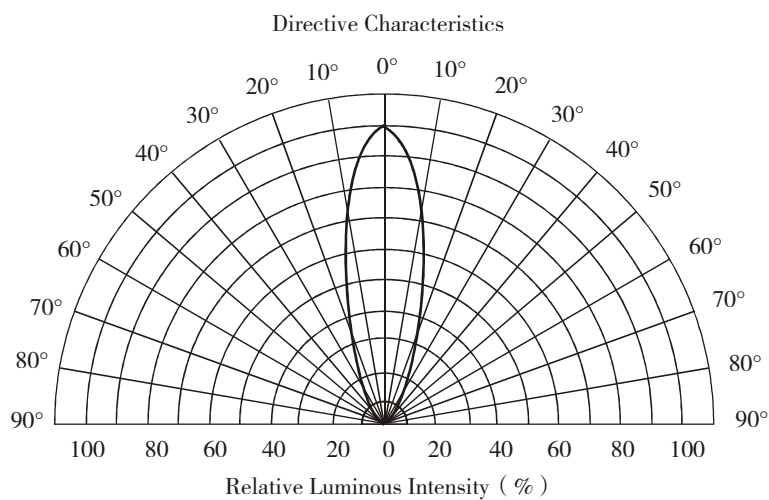
| Parameter                   | Symbol    | Condition      | Rating     | Unit   |
|-----------------------------|-----------|----------------|------------|--------|
| Power Dissipation           | $P_D$     | ---            | 85         | mW     |
| Reverse Voltage             | $V_R$     | ---            | 5          | V      |
| Forward Average Current     | $I_F$     | ---            | 30         | mA     |
| Temperature Coefficient     | I/C       | ---            | 0.4        | mA/ °C |
| Pulse Current               | IFP       | Duty=1/10,1kHz | 100        | mA     |
| Operating Temperature Range | $T_{opr}$ | ---            | -25 ~ +85  | °C     |
| Storage Temperature Range   | $T_{stg}$ | ---            | -30 ~ +100 | °C     |
| Soldering Condition         | $T_{sd}$  | ---            | 260°C/5sec | °C     |

Typical Electro/Optical Characteristic Curves (  $T_a=25^{\circ}\text{C}$  )



Forward Current  $I_f$  (mA)

Ambient Temperature  $T_a$  ( $^{\circ}\text{C}$ )



### Reliability Test Conditions

| Test Item                                   | Test Condition                             | Result | Judgment Criteria                                                                                                                                                                               |
|---------------------------------------------|--------------------------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Consecutive operating life test             | IF=20mA, T=25℃, t=168h                     | 0/100  | Forward Voltage<br>$VF(V) = \text{Upper Limit} \times 1.2$<br>Reverse Leakage Current<br>$IR(\mu A) = \text{Upper Limit} \times 2.0$<br>Luminous Intensity IV<br>(mcd)=Lower Limit $\times 0.7$ |
| High temperature storage life test          | T=100℃, t=168h                             | 0/100  |                                                                                                                                                                                                 |
| Low temperature storage life test           | T=25℃, t=168h                              | 0/100  |                                                                                                                                                                                                 |
| High temperature humidity storage life test | T=85 ± 2℃, RH=85% ± 3, t=168h              | 0/100  |                                                                                                                                                                                                 |
| Temperature cycle test                      | -25℃~25℃~100℃<br>30min 5min 30min 10cycles | 0/100  |                                                                                                                                                                                                 |
| Thermal shock test                          | 100℃ 0℃<br>5min 5min 20cycles              | 0/100  |                                                                                                                                                                                                 |
| Soldering heat test                         | T=260 ± 5℃, t=10s ± 1s                     | 0/100  |                                                                                                                                                                                                 |
| Solderability test                          | T=235 ± 5℃, t=5s ± 0.5s                    | 0/100  | Steeped Part ≥ 95%                                                                                                                                                                              |
| Fall test                                   | h=100cm, 50times                           | 0/100  | Surface Appearance<br>Photoelectric<br>Properties Intact                                                                                                                                        |
| Terminal strength test                      | W=9.8N, t=30 ± 5s                          | 0/100  |                                                                                                                                                                                                 |
| Lead bending test                           | W=4.9N, 2times                             | 0/100  |                                                                                                                                                                                                 |