



CIEL LIGHT CO., LTD.

PRODUCT SPECIFICATION

Customer: _____

Customer's Model No.: _____

Customer's Drawing No.: _____

Model No.: CL-3019SGC1A-001-CA

Drawing No.: _____

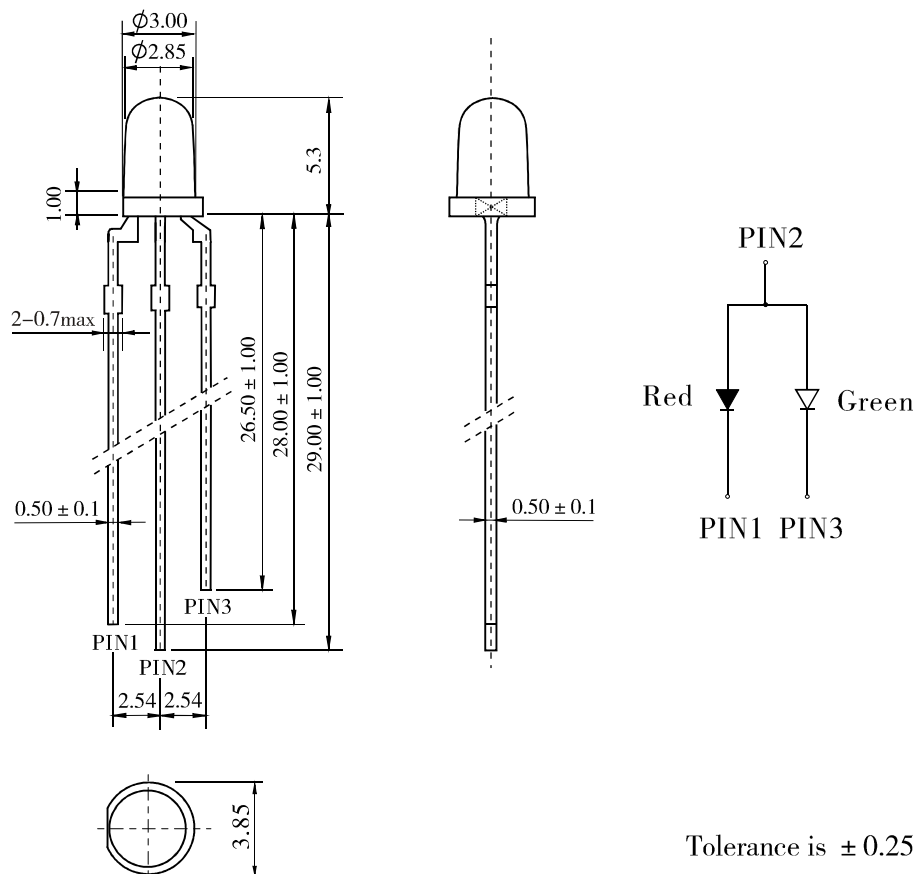
Features

- Low power consumption
- High Efficiency
- Round type
- T1 (3mm) diameter
- With Flange
- Solder leads without stand-off
- Compliant with RoHS

Descriptions

- Chip Material: AlGaAs/GaP GaP/GaP
- Emitting Color: Red/Green
- Lens Color: Water Clear

Outline Drawing



Tolerance is $\pm 0.25\text{mm}$
 Unless Otherwise Specified.

Electrical Optical Characteristics (Ta=25°C)

| Parameter | Symbol | Red | | | Unit | Test Condition |
|--------------------------|-------------------|------|------|-----|------|----------------|
| | | Min | Typ | Max | | |
| Forward Voltage | V _F | --- | 1.8 | 2.3 | V | IF=20mA |
| Luminous Intensity | I _v | 26.6 | 52.0 | --- | mcd | IF=20mA |
| Peak Wavelength | λ _p | --- | 660 | --- | nm | IF=20mA |
| Dominant Wavelength | λ _d | --- | 644 | --- | nm | IF=20mA |
| Spectral Line half-width | Δλ | --- | 20 | --- | nm | IF=20mA |
| Reverse Leakage Current | I _R | --- | --- | 50 | μA | VR=5V |
| Viewing Angle | 2θ _{1/2} | --- | 60 | --- | Deg | IF=20mA |

Absolute Maximum Parameters (Ta=25°C)

| Parameter | Symbol | Condition | Rating | Unit |
|-----------------------------|------------------|----------------|------------|--------|
| Power Dissipation | P _D | --- | 57.5 | mW |
| Reverse Voltage | V _R | --- | 5 | V |
| Forward Average Current | I _F | --- | 25 | mA |
| Temperature Coefficient | I/C | --- | 0.33 | mA/ °C |
| Pulse Current | I _{FP} | 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 |

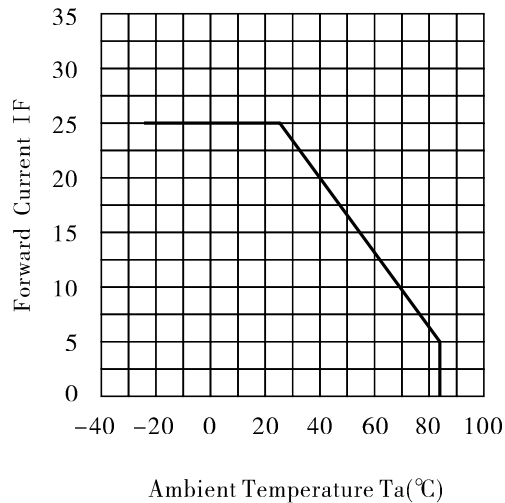
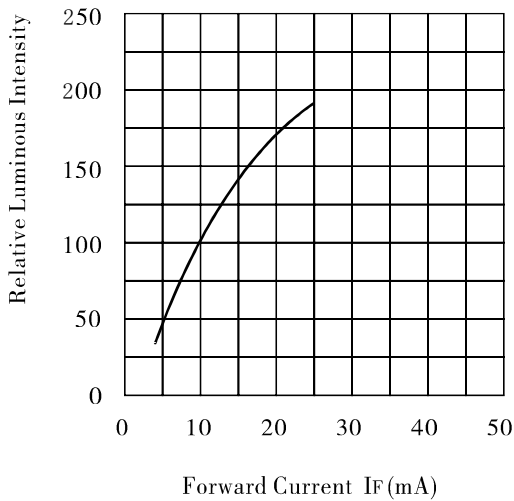
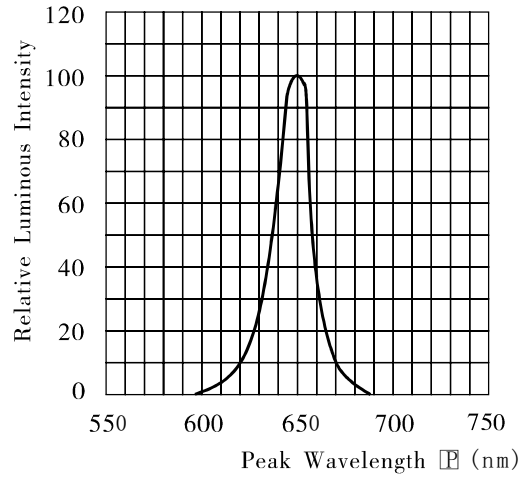
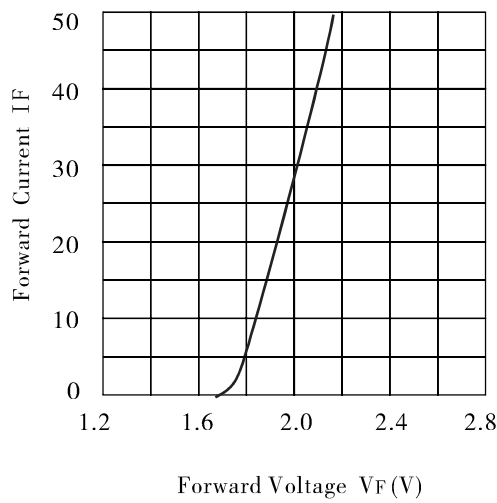
NOTE:

Luminous Intensity Measurement allowance is ± 10%.

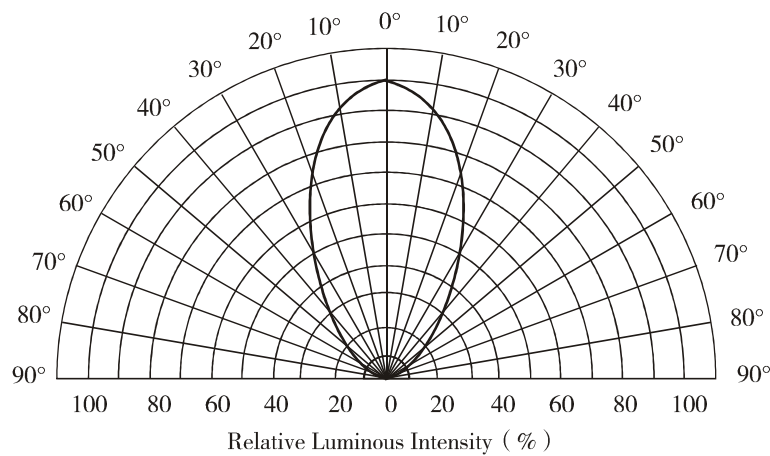
2θ_{1/2} is the off-axis angle at which the luminous intensity is half the axial luminous intensity.

The dominant wavelength is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.

Typical Electro-Optical Characteristic Curves (Ta=25°C) (Red)



Directive Characteristics



Electrical Optical Characteristics (Ta=25°C)

| Parameter | Symbol | Green | | | Unit | Test Condition |
|--------------------------|--------------------|-------|------|-----|------|----------------|
| | | Min | Typ | Max | | |
| Forward Voltage | V _F | --- | 2.2 | 2.6 | V | IF=20mA |
| Luminous Intensity | I _v | 13.7 | 26.6 | --- | mcd | IF=20mA |
| Peak Wavelength | λ _p | --- | 568 | --- | nm | IF=20mA |
| Dominant Wavelength | λ _d | --- | 572 | --- | nm | IF=20mA |
| Spectral Line half-width | Δλ | --- | 30 | --- | nm | IF=20mA |
| Reverse Leakage Current | I _R | --- | --- | 50 | μA | VR=5V |
| Viewing Angle | 2 θ _{1/2} | --- | 60 | --- | Deg | IF=20mA |

Absolute Maximum Parameters (Ta=25°C)

| Parameter | Symbol | Condition | Rating | Unit |
|-----------------------------|------------------|----------------|------------|--------|
| Power Dissipation | P _D | --- | 65 | mW |
| Reverse Voltage | V _R | --- | 5 | V |
| Forward Average Current | I _F | --- | 25 | mA |
| Temperature Coefficient | I/C | --- | 0.33 | mA/ °C |
| Pulse Current | I _{FP} | 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 |

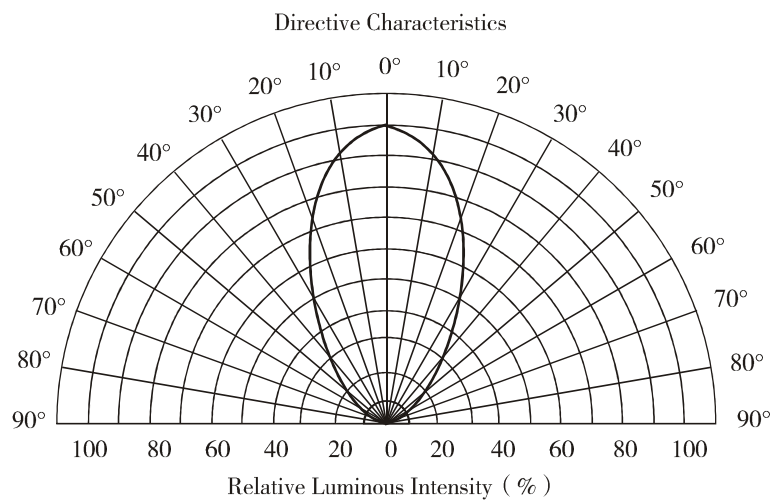
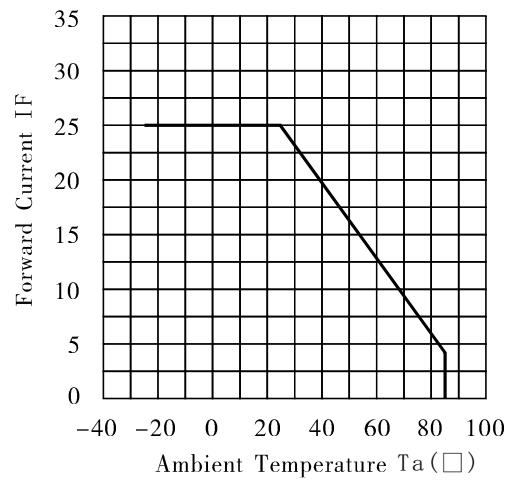
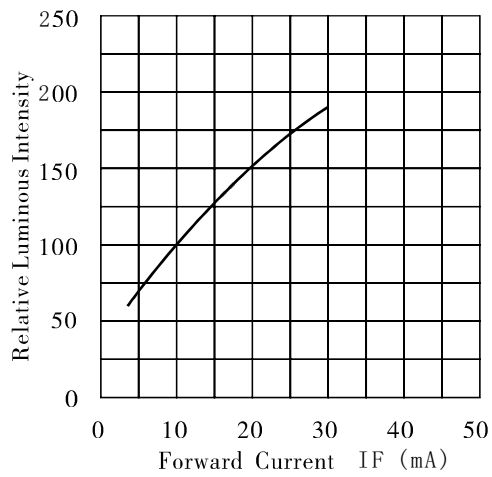
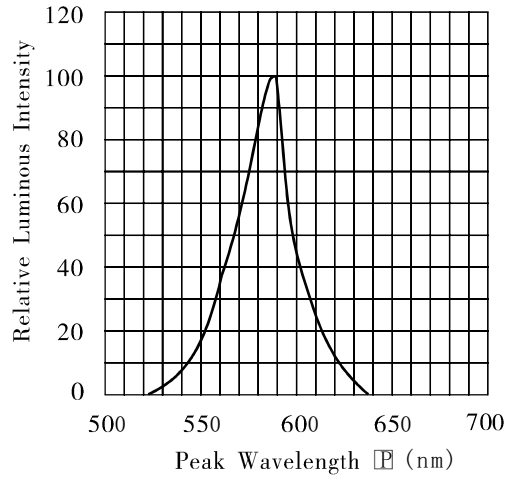
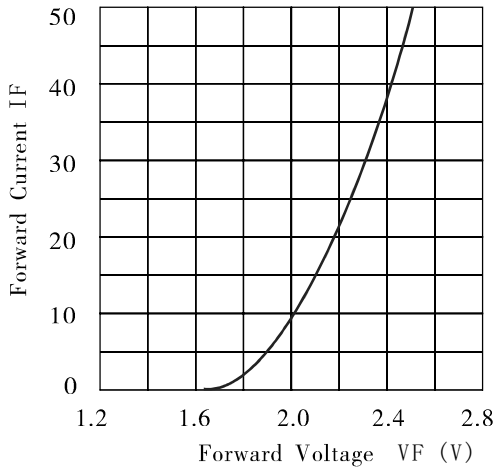
NOTE:

Luminous Intensity Measurement allowance is ± 10%.

2 θ_{1/2} is the off-axis angle at which the luminous intensity is half the axial luminous intensity.

The dominant wavelength is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.

Typical Electro-Optical Characteristic Curves (Ta=25°C) (Green)



Reliability Test Conditions

| Test Item | Test Condition | Result | Judgment Criteria |
|---|--|--------|--|
| Consecutive operating life test | IF=20mA, T=25℃, t=168h | 0/100 | Forward Voltage VF(V)= Upper Limit × 1.2 Reverse Leakage Current IR(μA)=Upper Limit × 2.0 Luminous Intensity IV (mcd)=Lower Limit × 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℃ 30min 5min 30min 10cycles | 0/100 | |
| Thermal shock test | 100℃ 0℃ 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 Photoelectric Properties Intact |
| Terminal strength test | W=9.8N, t=30 ± 5s | 0/100 | |
| Lead bending test | W=4.9N, 2times | 0/100 | |