



Features

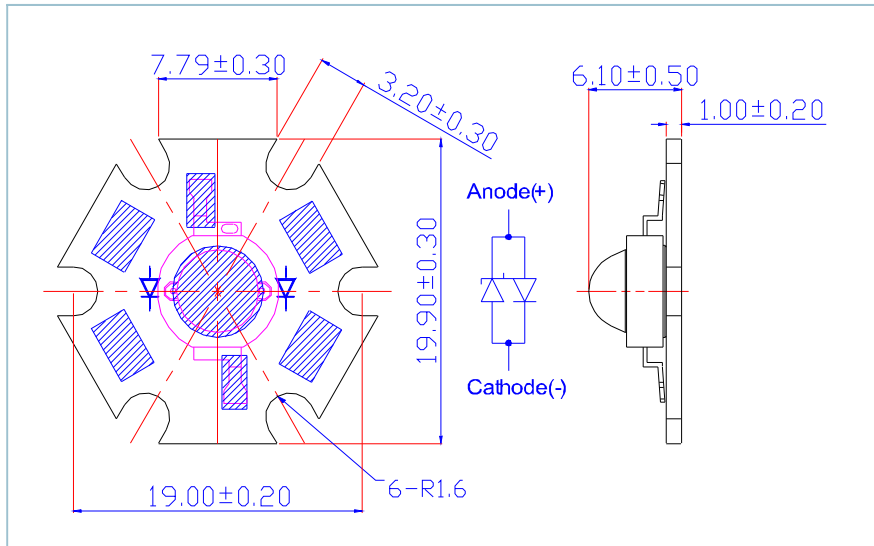
- Various colors
- High energy efficiency
- Low voltage
- Suitable for all SMT assembly methods
- Long operating life

Typical Applications

- Effect and accent lighting: display cases, front panels
- Architectural lighting: flood lights, stairway lighting, garden lighting
- Room lighting: contour lighting, chandeliers, pendants, coves
- Specialty lighting: security lighting, portable flashlight, reading lamps

Package Outlines

Lambertian



Notes:

1. All dimensions are in mm.
2. Drawings are not to scale.
3. It is strongly recommended that the temperature of lead be not higher than 55°C .

Absolute Maximum Ratings

| Parameter | Symbol | Rating | Units |
|---|--------------------|------------|---------|
| DC Forward Current | I _F | 350 | mA |
| Peak pulse current;(t _p ≤ 100 μs, Duty cycle=0.25) | I _{pulse} | 500 | mA |
| Reverse Voltage | V _R | 5 | V |
| Reverse Current(V _R =5V) | I _R | 50 | μA |
| LED junction Temperature (at 350 mA) | T _j | 125 | °C |
| Operating Temperature | T _{opr} | -30 ~ +110 | °C |
| Storage Temperature | T _{stg} | -40 ~ +120 | °C |
| Manual Soldering Time at 260°C(Max.) | T _{sol} | 5 | seconds |

Luminous Flux Characteristics at I_F=350mA(T_a=25°C,T_{opr}=100ms):

| Lens Item | Part Name | Color | Flux | | | Units |
|------------|----------------|------------|------|------|------|-------|
| | | | Min. | Typ. | Max. | |
| Lambertian | VAOL-SW1xAx-SA | White | 70.3 | 90.0 | -- | lm |
| | VAOL-SX1xAx-SA | Warm White | 63.0 | 80.0 | -- | lm |
| | VAOL-SR1xAx-SA | Red | 30.0 | 50.0 | -- | lm |
| | VAOL-SO1xAx-SA | Red Orange | 33.3 | 55.0 | -- | lm |
| | VAOL-SA1xAx-SA | Amber | 30.0 | 50.0 | -- | lm |
| | VAOL-ST1xAx-SA | True Green | 70.3 | 90.0 | -- | lm |
| | VAOL-SB1xAx-SA | Blue | 20.3 | 35.0 | -- | lm |

Forward Voltage Characteristics at $I_F=350mA(T_a=25^\circ C, T_{opr}=100ms)$:

| Lens Item | Part Name | Color | V_F | | | Units |
|-----------|----------------|------------|-------|------|------|-------|
| | | | Min. | Typ. | Max. | |
| | VAOL-SW1xAx-SA | White | 3.1 | -- | 4.3 | V |
| | VAOL-SX1xAx-SA | Warm White | 3.1 | -- | 4.3 | V |
| | VAOL-SR1xAx-SA | Red | 2.0 | -- | 3.0 | V |
| | VAOL-SO1xAx-SA | Red Orange | 2.0 | -- | 3.0 | V |
| | VAOL-SA1xAx-SA | Amber | 2.0 | -- | 3.0 | V |
| | VAOL-ST1xAx-SA | True Green | 2.8 | -- | 4.0 | V |
| | VAOL-SB1xAx-SA | Blue | 3.1 | -- | 4.3 | V |

Wavelength or Color Temperature Characteristics at $I_F=350mA(T_a=25^\circ C, T_{opr}=100ms)$:

| Lens Item | Part Name | Color | λ_d/CCT | | | Units |
|-----------|----------------|------------|-----------------|------|------|-------|
| | | | Min. | Typ. | Max. | |
| | VAOL-SW1xAx-SA | White | 5000 | -- | 8000 | K |
| | VAOL-SX1xAx-SA | Warm White | 2800 | -- | 3800 | K |
| | VAOL-SR1xAx-SA | Red | 620 | -- | 630 | nm |
| | VAOL-SO1xAx-SA | Red Orange | 610 | -- | 620 | nm |
| | VAOL-SA1xAx-SA | Amber | 585 | -- | 595 | nm |
| | VAOL-ST1xAx-SA | True Green | 515 | -- | 535 | nm |
| | VAOL-SB1xAx-SA | Blue | 460 | -- | 475 | nm |

Temperature Coefficient of Forward Voltage & Thermal Resistance Junction to Board Characteristics at $I_F=350mA(T_a=25^\circ C)$:

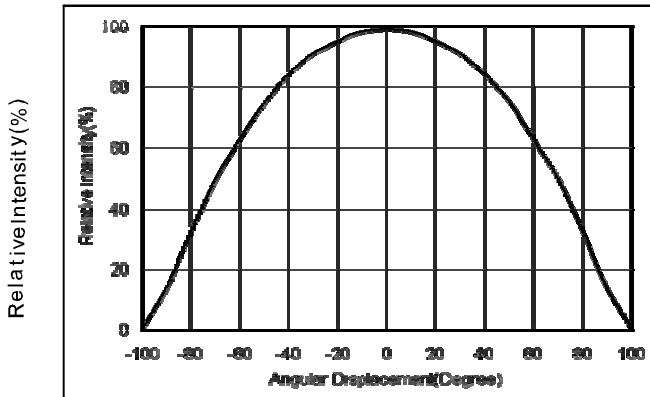
| Lens Item | Part Name | Color | $\Delta V_F/\Delta T$ | | $R\theta_{J-B}$ | |
|-----------|----------------|------------|-----------------------|-------|-----------------|-------|
| | | | Typ. | Units | Typ. | Units |
| | VAOL-SW1xAx-SA | White | -2 | mV/°C | 20 | °C/W |
| | VAOL-SX1xAx-SA | Warm White | -2 | mV/°C | 20 | °C/W |
| | VAOL-SR1xAx-SA | Red | -2 | mV/°C | 20 | °C/W |
| | VAOL-SO1xAx-SA | Red Orange | -2 | mV/°C | 20 | °C/W |
| | VAOL-SA1xAx-SA | Amber | -2 | mV/°C | 20 | °C/W |
| | VAOL-ST1xAx-SA | True Green | -2 | mV/°C | 20 | °C/W |
| | VAOL-SB1xAx-SA | Blue | -2 | mV/°C | 20 | °C/W |

Emission Angle Characteristics at $I_F=350mA(T_a=25^\circ C)$:

| Part Name | Color | 2θ (Typ.) | Units |
|----------------|------------|------------------|---------|
| VAOL-SW1xAx-SA | White | 130 | Degrees |
| VAOL-SX1xAx-SA | Warm White | 130 | Degrees |
| VAOL-SR1xAx-SA | Red | 120 | Degrees |
| VAOL-SO1xAx-SA | Red Orange | 120 | Degrees |
| VAOL-SA1xAx-SA | Amber | 120 | Degrees |
| VAOL-ST1xAx-SA | True Green | 150 | Degrees |
| VAOL-SB1xAx-SA | Blue | 150 | Degrees |

Typical Radiation Pattern for

Lambertian

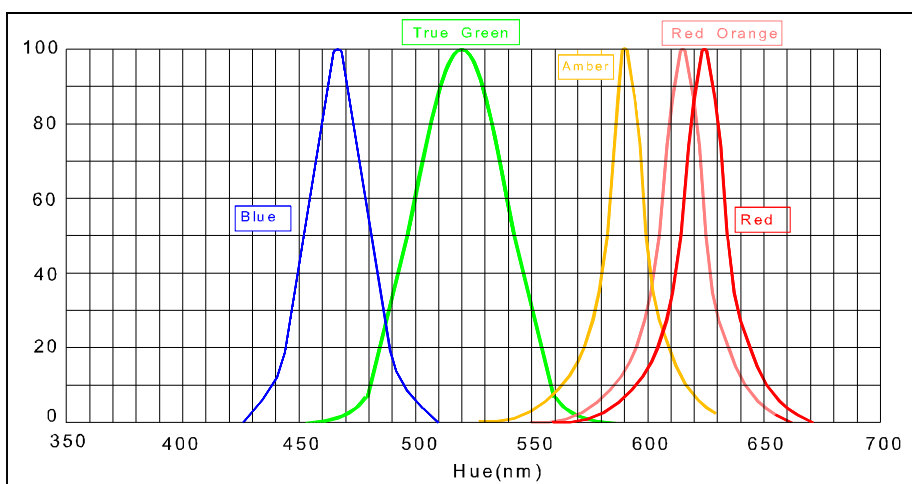
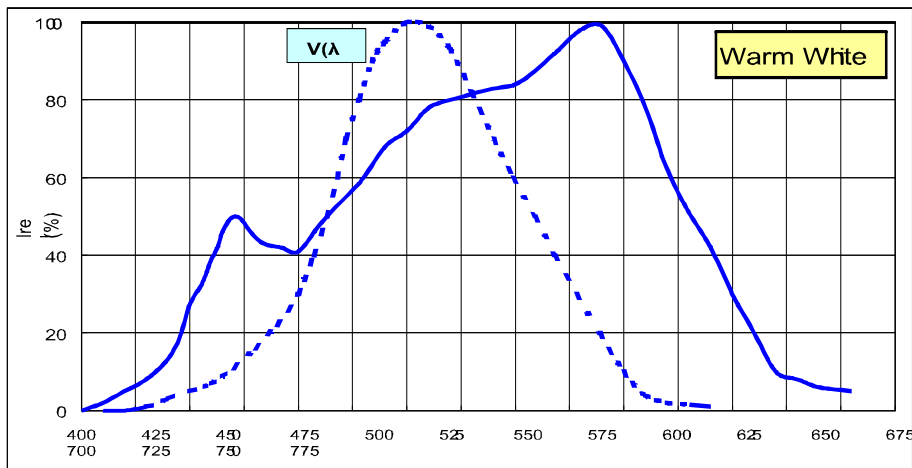
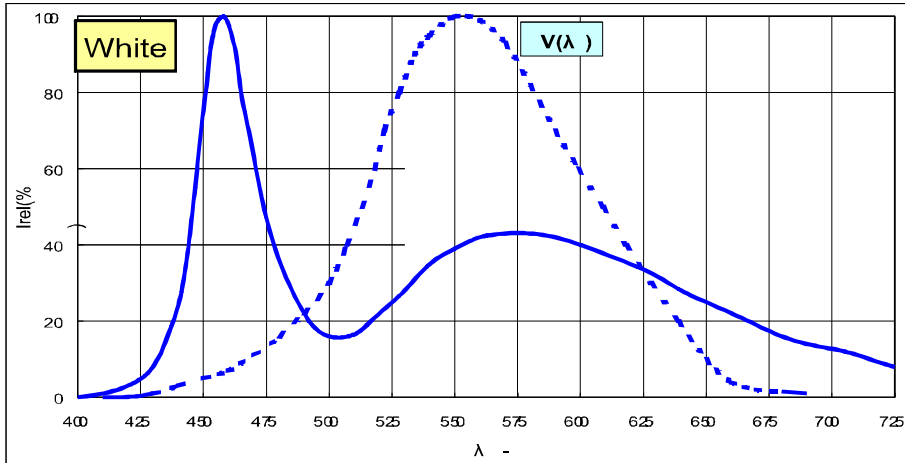


Specific binning requirements- please contact our home office

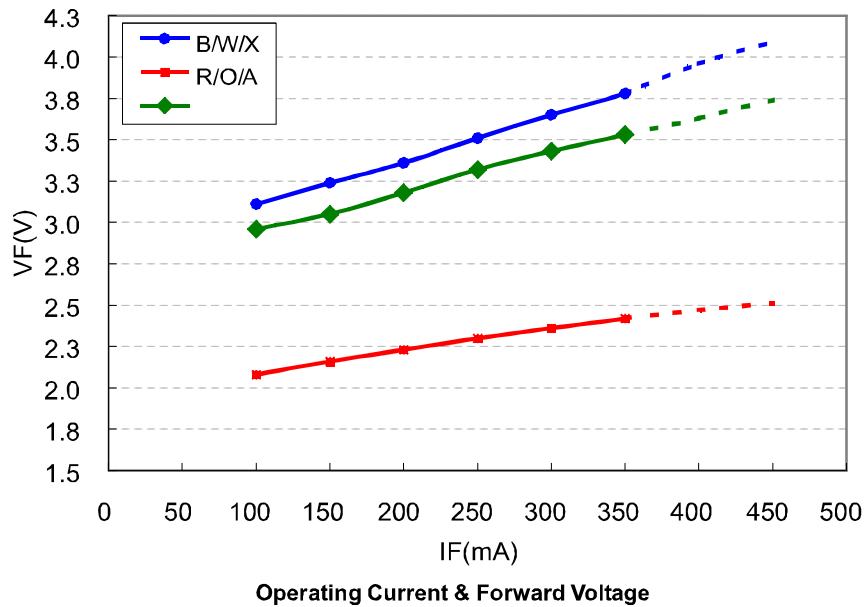
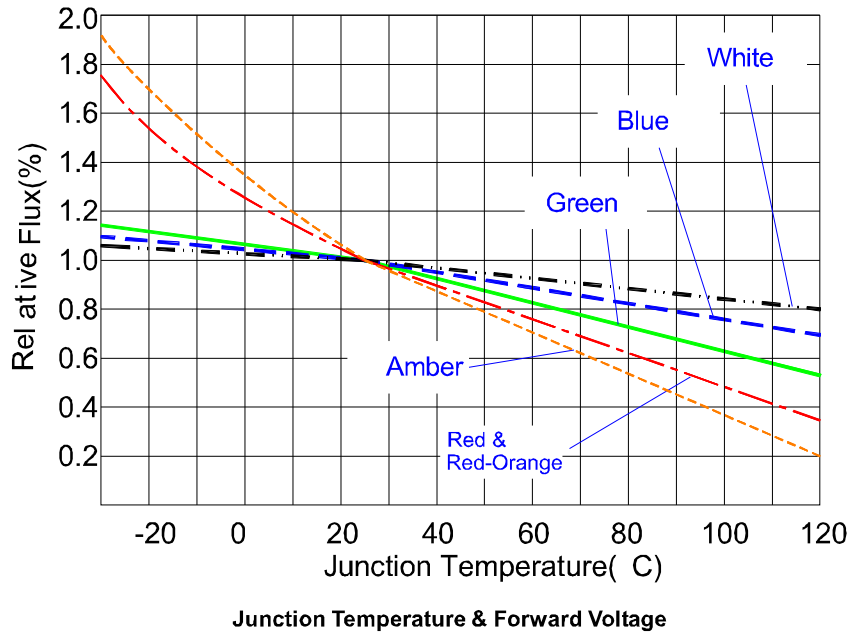
Note

1. Flux is measured with an accuracy of $\pm 10\%$.
2. CCT selection acc. to CCT groups and an accuracy of $\pm 200K$
3. Forward Voltage is measured with an accuracy of $\pm 0.1V$
4. Wavelength is measured with an accuracy of $\pm 0.5nm$
5. All white 、 warm white 、 True green and blue emitters are built with InGaN
6. All red 、 red-orange and amber emitters are built with AlGaInP

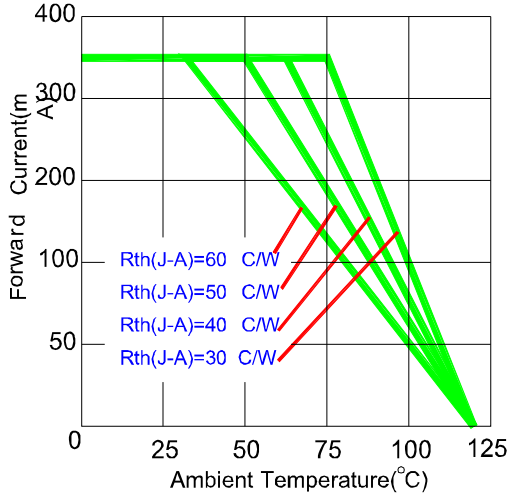
Electrical & Optical Curves-Spectrum



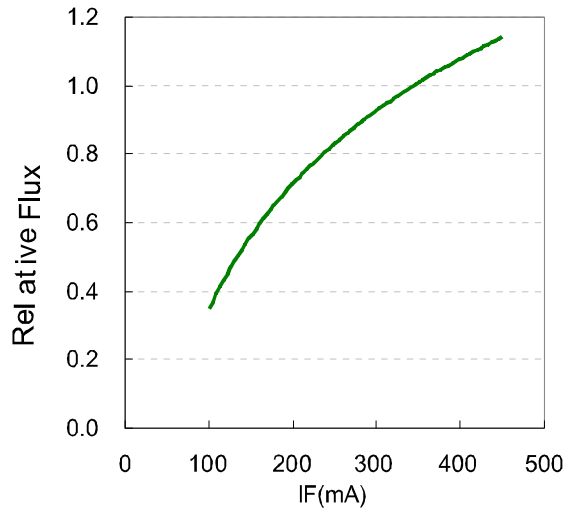
Typical Optical and Electrical Curves



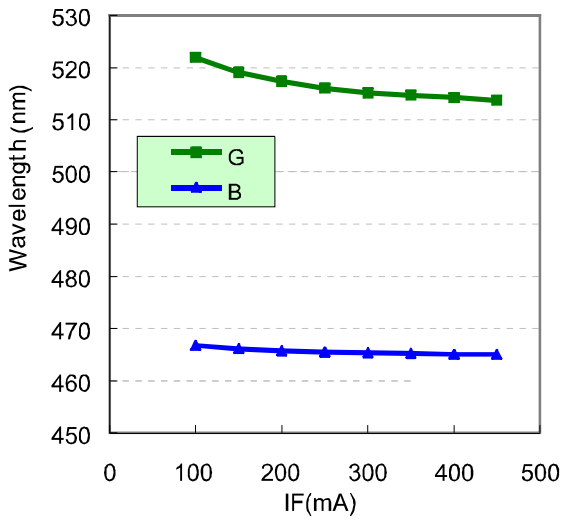
Typical Optical and Electrical Curves



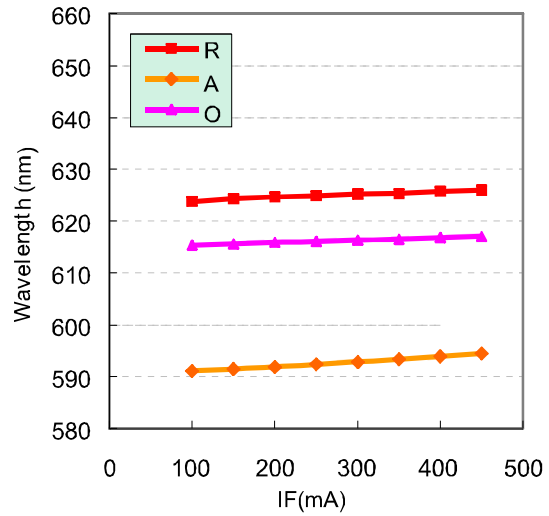
Operating Current & Ambient Temperature



Forward Current & Luminous Flux



Forward Current & Wavelength



Package Specifications

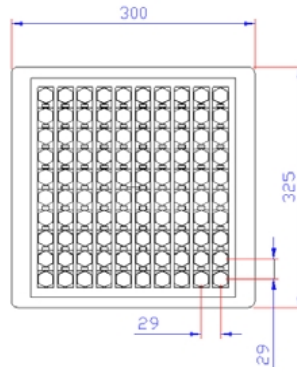
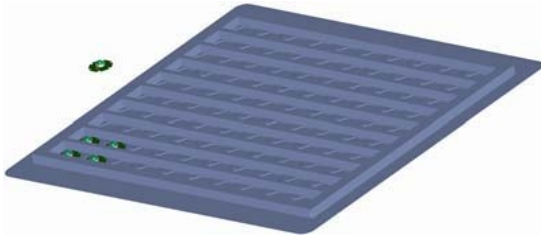


Figure 1: Tray

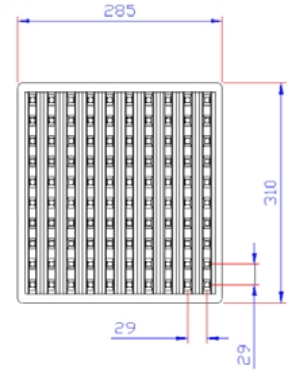


Figure 2: Cover

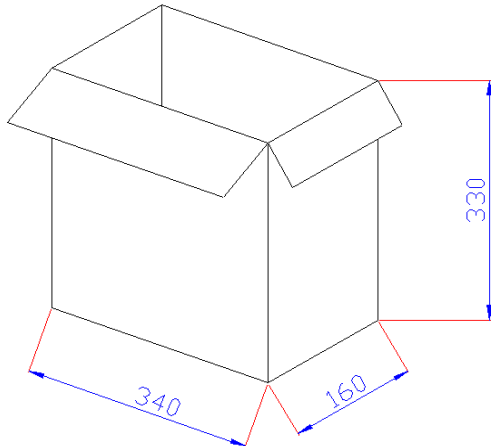


Figure 3: Inner box

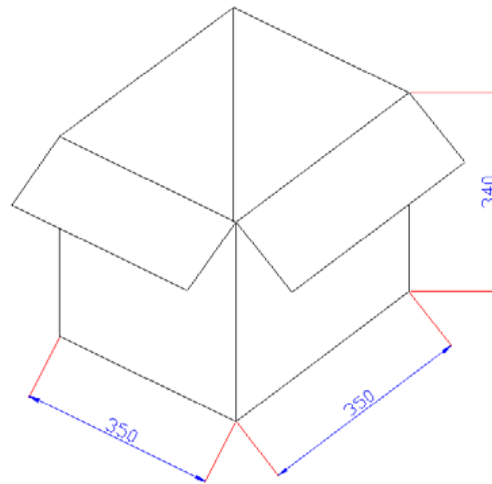


Figure 4: Outer box

Note

1. All dimensions are in mm.
2. There are 100pcs stars in a tray.(Tray+Cover)
3. There are 10 trays in an inner box.
4. There are 2 inner boxes in an outer box.