VCC | OPTOELECTRONICS
lighting:theway

HIGH POWER LIGHT
VAOL-SX1XAX-SA
1W STAR Series



Features

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

Typical Applications

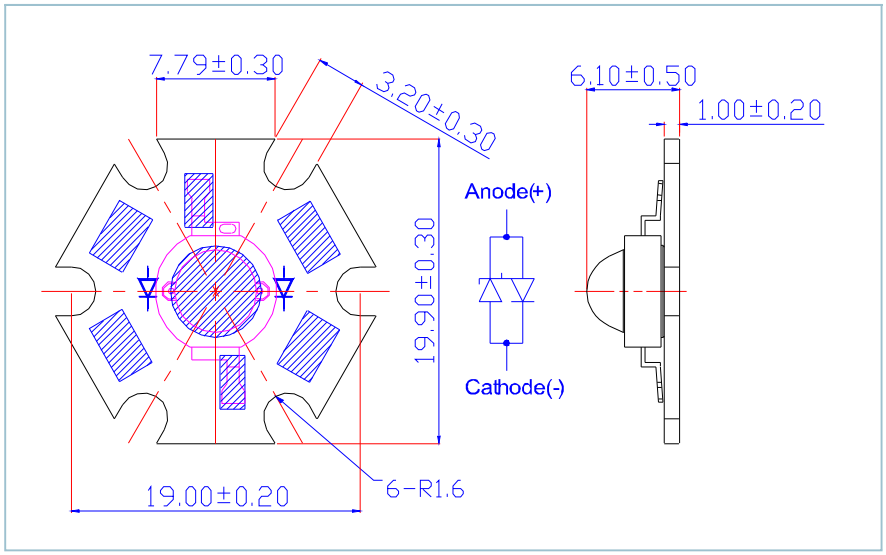
- Effect and accent lighting: display cases, front panels
- Architectural lighting: flood lights, stairway lighting, garden lighting
- Room lighting: contour lighting, chandeliers, pendants, coves
- Specialty lighting: security lighting, portable flashlight, reading lamps

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RoHS
ISO 9001 Registered

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℃.**

Absolute Maximum Ratings

Parameter	Symbol	Rating	Units
DC Forward Current	I_F	350	mA
Peak pulse current;(tp≦100 s, 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	℃
Operating Temperature	T_{opr}	-30 ~ +110	℃
Storage Temperature	T_{stg}	-40 ~ +120	℃
Manual Soldering Time at 260℃(Max.)	T_{sol}	5	*seconds*

Luminous Flux Characteristics at I_F=350mA(Ta=25℃,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(Ta=25℃,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(Ta=25℃,T_{opr}=100ms):

Lens Item	Part Name	Color	λd/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

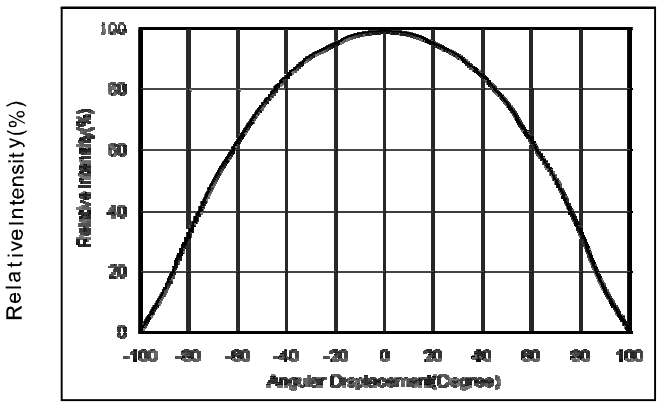
Temperature Coefficient of Forward Voltage & Thermal Resistance Junction to Board Characteristics at I_F=350mA(Ta=25℃):

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

Emission Angle Characteristics at I_F=350mA(Ta=25℃):

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

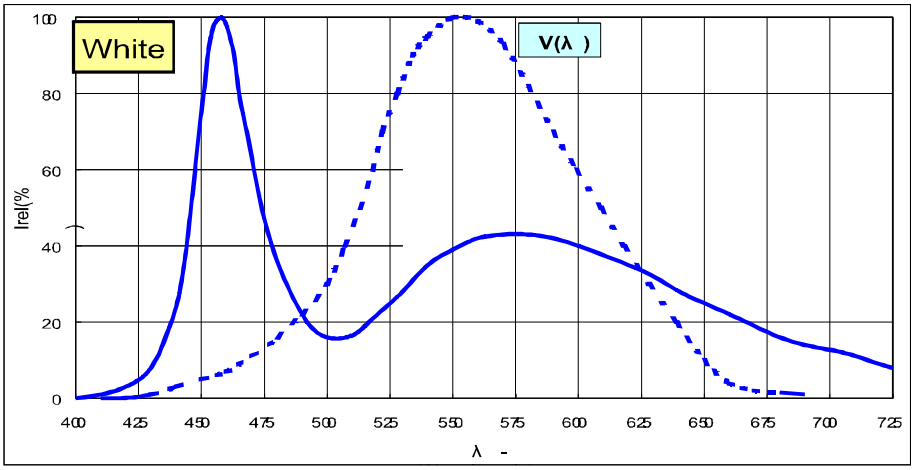


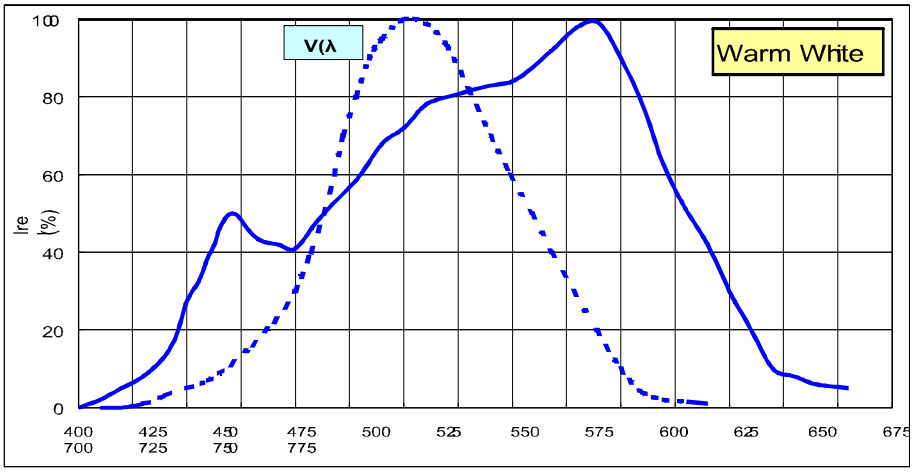
Specific binning requirements- please contact our home office

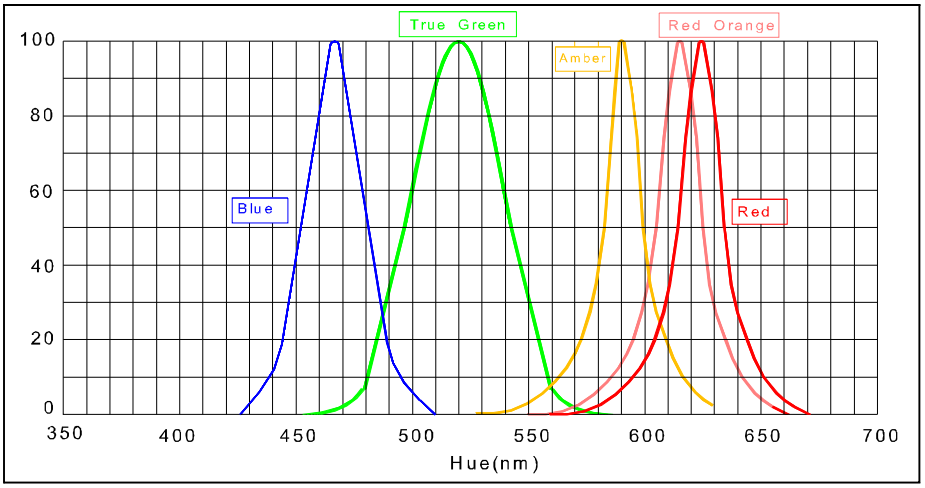
Note

1. **Flux is measured with an accuracy of ±10%.**
2. **CCT selection acc. to CCT groups and an accuracy of± 200K**
3. **Forward Voltage is measured with an accuracy of± 0.1V**
4. **Wavelength is measured with an accuracy of ±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**

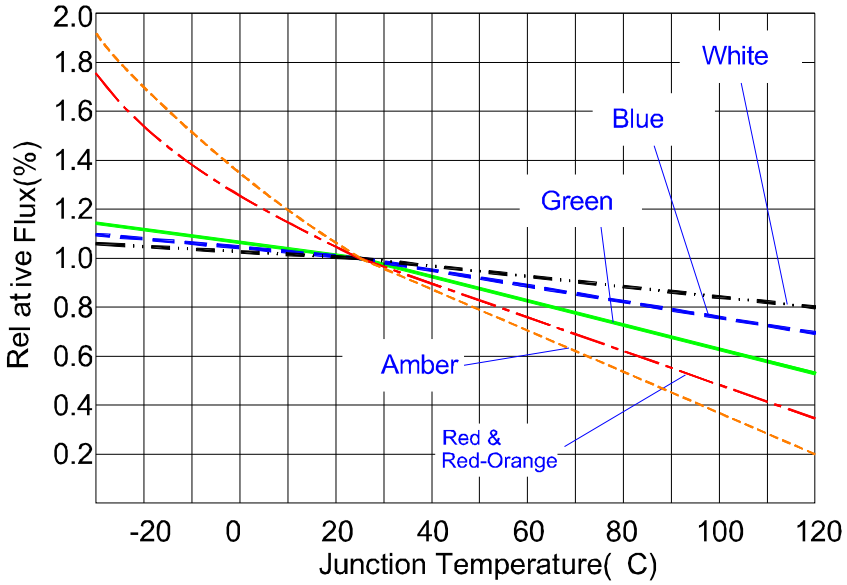
Electrical & Optical Curves-Spectrum



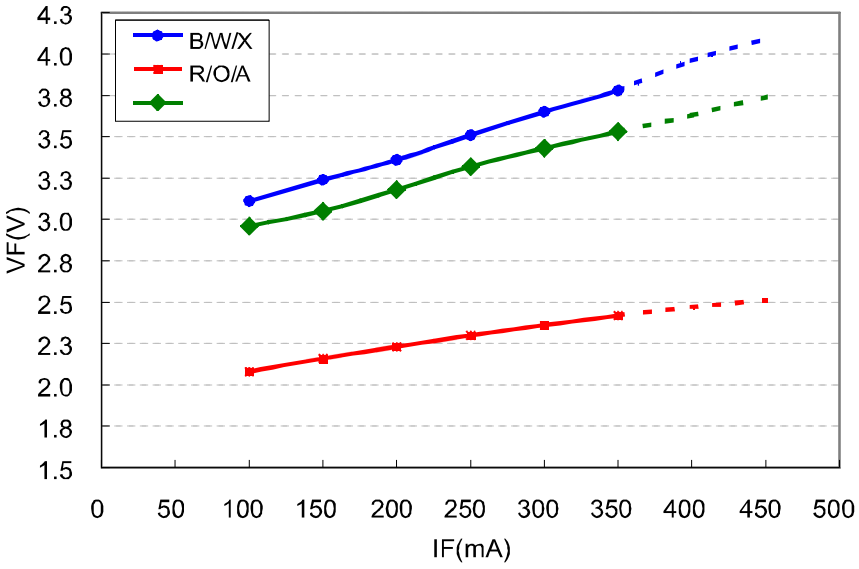




Typical Optical and Electrical Curves

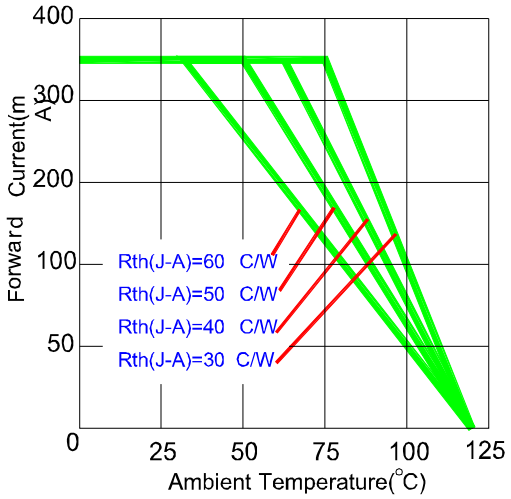


Junction Temperature & Forward Voltage

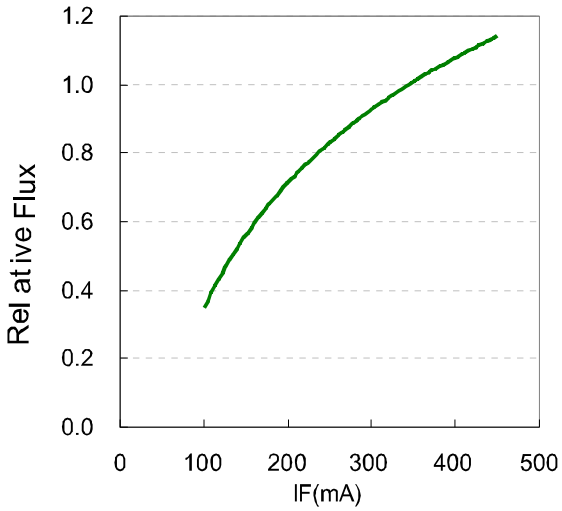


Operating Current & Forward Voltage

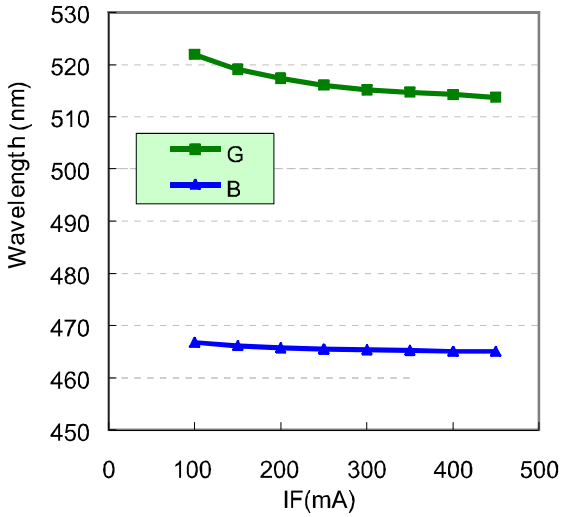
Typical Optical and Electrical Curves

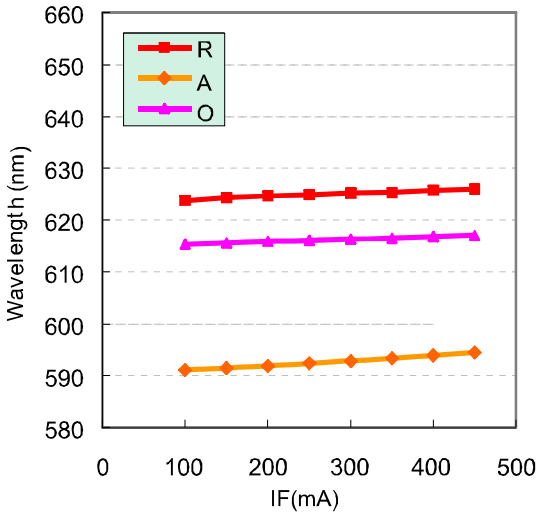


Operating Current & Ambient Temperature



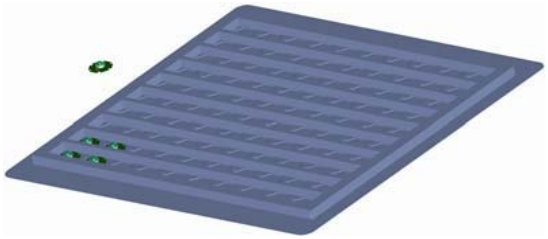
Forward Current & Luminous Flux





Forward Current & Wavelength

Package Specifications



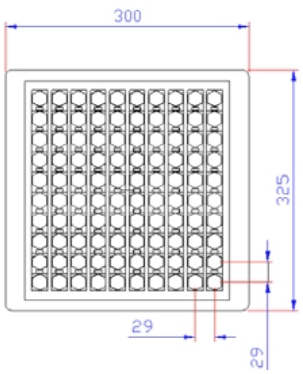


Figure 1: Tray

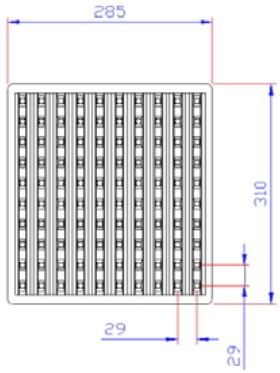


Figure 2: Cover

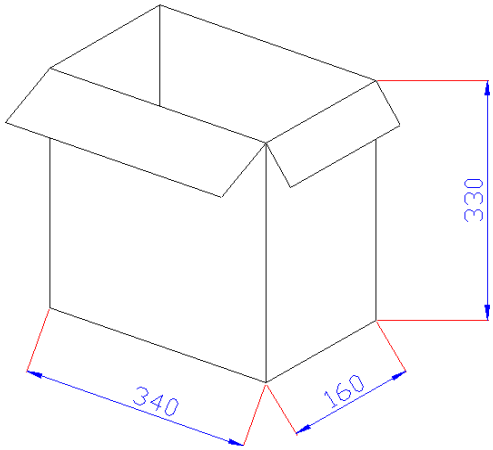


Figure 3: Inner box

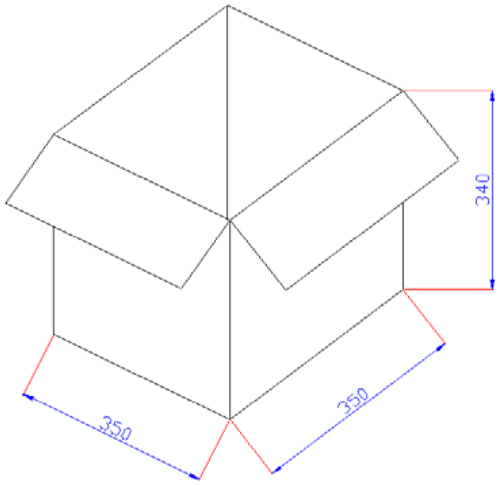


Figure 4: Outer box

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.**