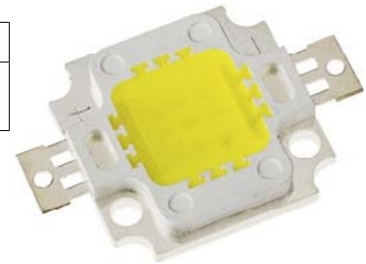


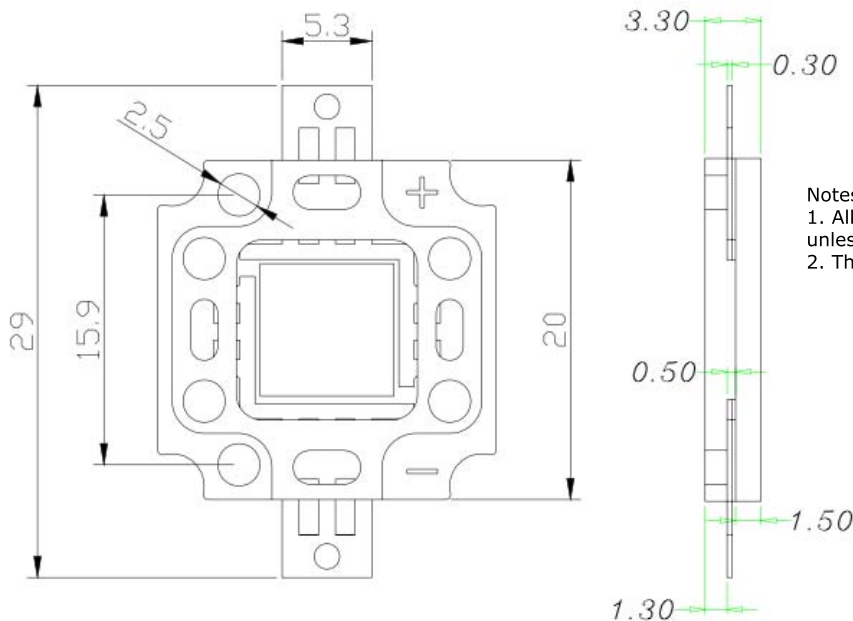
ARPL-10W White 6000K (LMA009)

Description

Part No.	Material	Dimensions	Viewing angle
ARPL-10W White 6000K (LMA009)	InGaN/GaN	20x20x3.3mm	120°



Package Dimensions



Notes:

1. All dimensions area in mm tolerance is ± 0.25 mm unless otherwise noted.
2. Thermoelectric separation type high power LED

Absolute Maximum Rating at $T_a=25^\circ\text{C}$

Parameter	Symbol	Maximum	Units
Forward Current	I_F	350	mA
Maximum forward current	I_{FP}	700	mA
Reverse Voltage	V_R	5	V
Power consumption	P_D	10000	mW
Operation Temperature	T_{opr}	-40~+100	$^\circ\text{C}$
Storage Temperature	T_{stg}	-40~+100	$^\circ\text{C}$

Pulse width ≤ 0.1 msec duty $\leq 1/10$

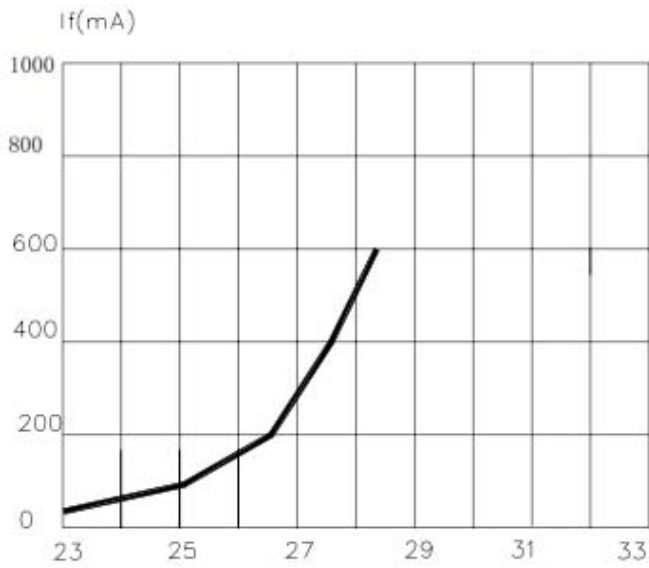
Product Optical Properties at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Min.	Average	Max	Units
Forward Voltage	V_F	$I_F=350\text{mA}$	28	---	36	V
Reverse current	I_R	$V_R=5\text{V}$	--	---	10	μA
Chromaticity	CCT	$I_F=350\text{mA}$	5500	---	6500	K
Color coordinates	X	$I_F=350\text{mA}$	---	0.33	---	---
	Y	$I_F=350\text{mA}$	---	0.33	---	---
Luminous flux	Φ_v	$I_F=350\text{mA}$	700	--	800	lm
Half Power Angle	$2\theta_{1/2}$	$I_F=350\text{mA}$	--	120	---	deg

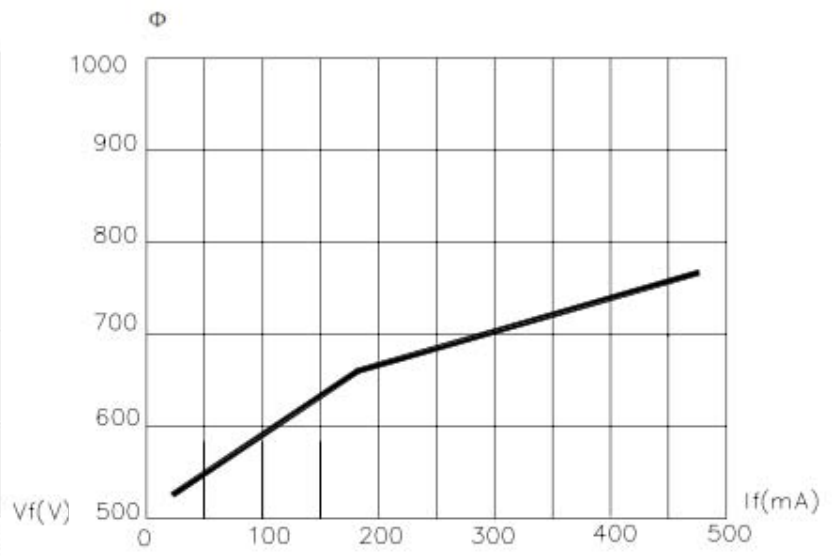
Important Notes:

- 1) All ranks will be included per delivery rank ratio will be determined by Yusing.
- 2) Tolerance of measurement of V_f is $\pm 0.7\text{V}$.
- 3) Tolerance of measurement of the color coordinates X, Y is ± 0.015 .
- 4) Tolerance of measurement of luminous intensity is $\pm 15\%$.
- 5) For how to use Yusing LED product safely, Please refer to "Application Notes" section on page 5 to 6.
- 6) As we are making continuous efforts to improve the performance of LED, Specifications are subject to change without notice.
- 7) Information is tentative and subject to change without notice.

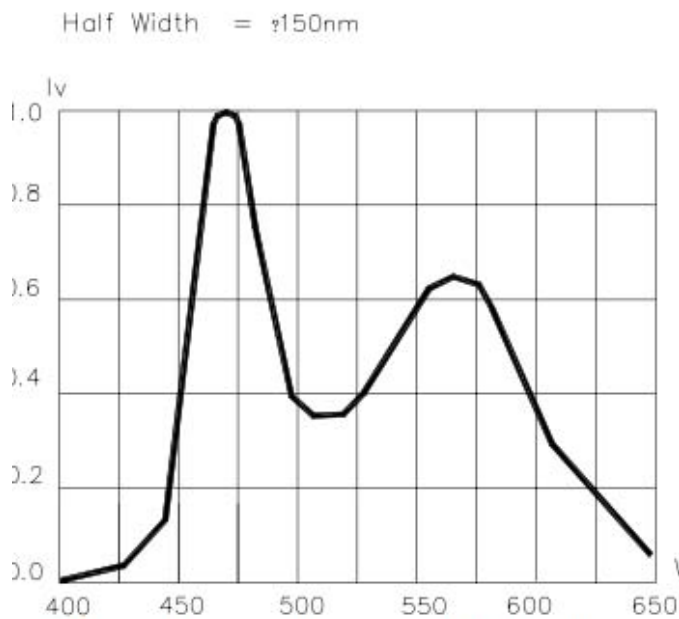
Typical optical characteristics curves



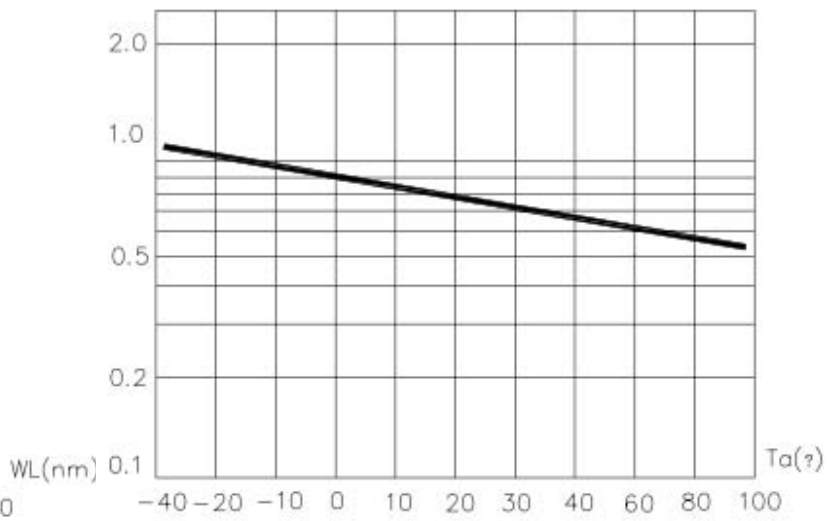
Forward Current vs. Forward Voltage



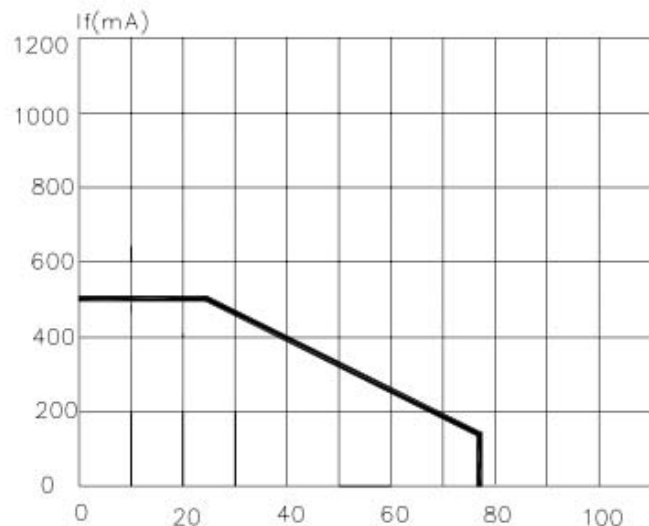
Relative Luminous Intensity vs. Forward Current



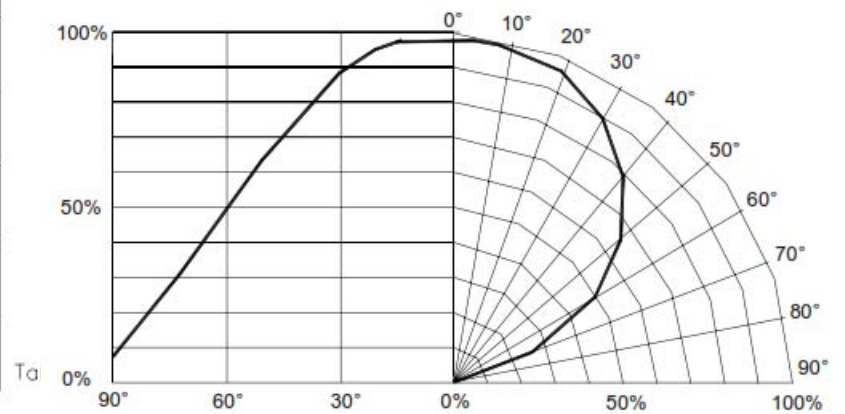
Relative Luminous Intensity vs. Wavelength



Relative Luminous Intensity vs. Ambient Temperature



Maximum Forward Current vs. Ambient Temperature



Relative Luminous Intensity vs. Radiation Angle

Application Notes

Storage

1. Before opening the package, the LEDs should be kept under the condition $< 30^{\circ}\text{C}$ and $< 90\% \text{RH}$.
After opening the package, the LEDs should be stored under the condition $< 30^{\circ}\text{C}$ and $< 70\% \text{RH}$.
2. The LEDs should be used within a year. And after opening the package, The LEDs should be used within 168 hours (7 days).
3. If the desiccant is faded or the LEDs have exceeded the storage time, Re-baking is required under the condition $60 \pm 6^{\circ}\text{C}$ for 24 hours.
4. The lens of LEDs is prone to attract dust so the relevant steps should be taken to keep the emitter free of dust.

Handling

Handle the component along the side surfaces by using forceps or appropriate tools. The forceps or other appropriate tools should not put any pressure on the lens, it's also strictly forbidden to poke and press the lens.

Thermal Management

When the LED is driven by large current, the T_J (junction temperature) will exceed its limit, which will shorten the lifetime of LEDs seriously. The thermal management should effectively reduce the thermal resistance of products.

The general way for the thermal management is to mount the LED on a metal core printed circuit board (MCPCB). It is recommended that the surface area of the MCPCB is at least 30 cm^2 for 1W LED (and 80 cm^2 for 3W LED), and the MCPCB material with a thermal conductivity greater than 2.0 W/mK . The thermal glue or paste should have a thermal conductivity greater than 1.0 W/mK and its thickness must be less than $100 \mu\text{m}$.

Soldering/Reflow Soldering

1. Soldering Iron

It is recommended to solder by soldering iron with the soldering iron tip temperature less than 350°C and with the time less than 3 seconds. The power of soldering iron should be less than 60W. After finishing one lead soldering, wait 2 seconds or more for another lead soldering.

Do not press the lens while soldering, the problems often start at the time of soldering, so be careful for the soldering.

2. Reflow Soldering Conditions

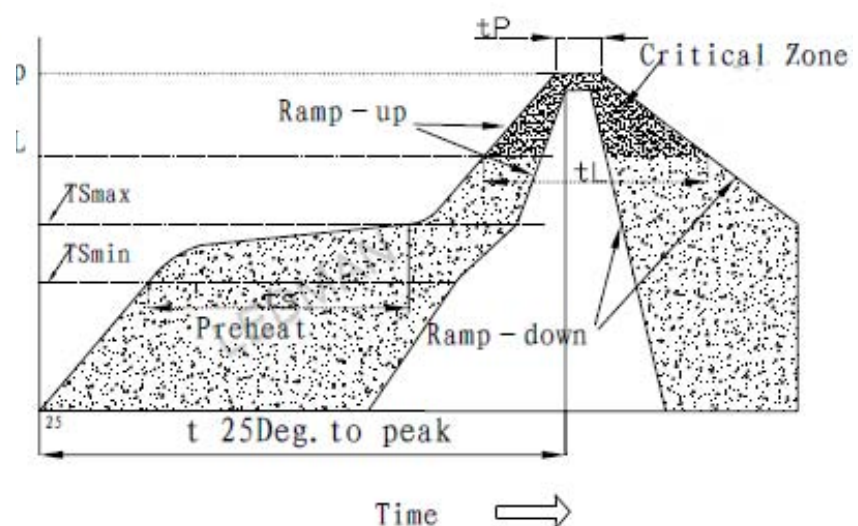


Table of Classification Reflow Profiles:

Profile Feature	Sn-Bi Electric Assembly	Sn-Free Electric Assembly
Average ramp-up rate (TL to TP)	3°C/second max.	3°C/second max.
Preheat	60-120seconds	60-180seconds
-Temperature Min.(T _{min})	100°C	150°C
-Temperature Min.(T _{max})	130°C	200°C
T _{max} to TL		
-Ramp-up Rate	3°C/second	3°C/second
Time maintained above TL	160°C/60-150seconds	210°C/60-150seconds
Peak Temperature(TP)	190+0/-5°C	250+0/-5°C
Time within 5°C of Actual Peak Temperature(TP)	10 seconds	10 seconds
Ramp-down Rate	6°C/Seconds max.	6°C/Seconds max.
Time 25°C to Peak Temperature	6 minutes max.	8 minutes max.

Notes:

- (a) Reflow soldering should not be done more than two times.
- (b) While soldering, do not put stress on the LEDs during heating.
- (c) After soldering, do not warp the circuit board

Cleaning

When cleaning is necessary, using the clean soft cloth and dipping the isopropyl alcohol to erase the dirt gently. Do not clean it with the solvents such as Acetone, lest erode or destroy the LEDs.

Electrical Notes

1. The LED can not be driven reversely.
2. It's necessary to have the measures to limit the current. Otherwise slight voltage shift may cause enormous current change and results in the failure of LEDs.
3. It is recommended that the drive current should be lower when the light output is enough for applying. It would be helpful to improve the product's reliability.

Antistatic

The LEDs are electrostatic sensitive devices, so antistatic steps should be taken during the processing.