

Specification

Customer Name: _____

客户名称:

Customer P/N: _____

客户品号:

Factory P/N: GNL-3528RGBC-CA

公司品号:

Description: _____

产品名称



G-Nor Optoelectronics Co., Limited.

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Client approval 客户审核			G-nor approval 基洛光电审核		
Confirmation 制作	Approval 核准	Audit 确认	Confirmation 制作	Approval 核准	Audit 确认
☐ Qualified 接受		☐ Disqualified 不接受	DATE: 日期:		

注: 1.此规格书以中英文方式书写,若有冲突以中文版本为准文本.

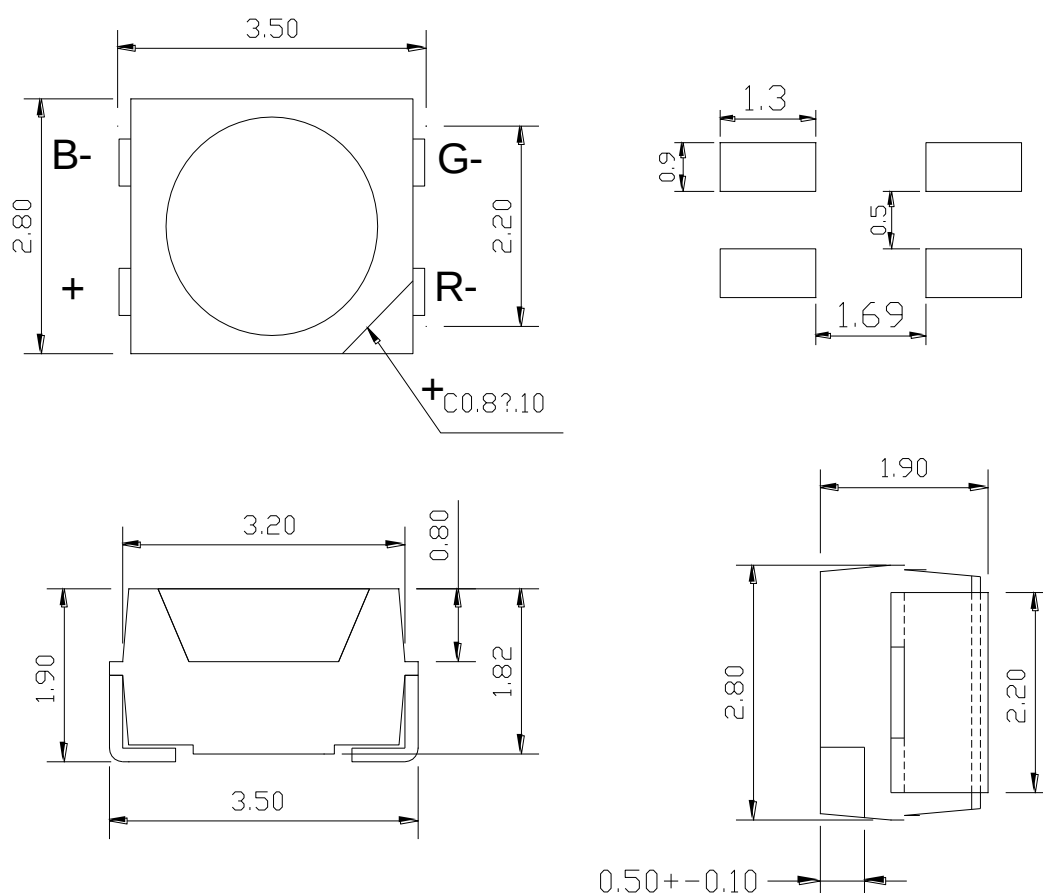
2.此规格书的最终解释权归基洛(宁波)电子有限公司

3.承认签章后请回复一份(或复印件)给我公司,其余由贵司留存存盘.如果在签章的承认书(或复印件)回复我司之前,下了有关此零件的订单且又无特殊说明,那么我司就确定贵司已完全承认.

Please return one specification or one copy of it with your chop and signature of approval and retain the others for your record. In the event of an order being placed for this part number before the chop and signed with specification (or copy) is returned and without special explanation, it will be assumed that full approval has been given.

TYPE NO: GNL-3528RGB-CA

PACKAGE DIMENSIONS (产品尺寸)



Notes: (备注)

1. All Dimensions are in millimeters (所有尺寸都以毫米为单位)

2. Tolerance is $\pm 0.1\text{mm}$ Unless otherwise specified. (公差为 $\pm 0.1\text{mm}$, 除非另有规定)

Device Selection Guide (选择指南)

Emitting Color (发光颜色)	Lens Type (胶体类型)
Red / Blue / Green	Wate clear

Absolute Maximum Ratings at $T_a=25^{\circ}\text{C}$ (绝对最大额定值)

Parameter (参数)	Symbol (符号)	Red	Blue	Green	Unit (单位)
Power Dissipation (功耗)	P_d	40	80	80	mW
Peak Forward Current[4] (峰值电流)	I_{FP}	30	30	30	mA
Forward Current (正向电流)	I_F	20	20	20	mA
Reverse Voltage (反向电压)	V_R	5			V
Operating Temperature (操作温度)	T_{opr}	-40°C to $+100^{\circ}\text{C}$			
Storage Temperature (保存温度)	T_{stg}	-40°C to $+110^{\circ}\text{C}$			
Lead Soldering Temperature 【3mm From Body】(焊接温	T_{sol}	260 $^{\circ}\text{C}$ For 5 Seconds			

Electrical Optical Characteristics at $T_a=25^{\circ}\text{C}$ (电性与光学特性)

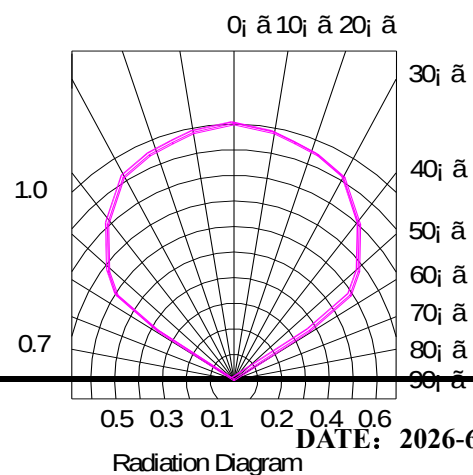
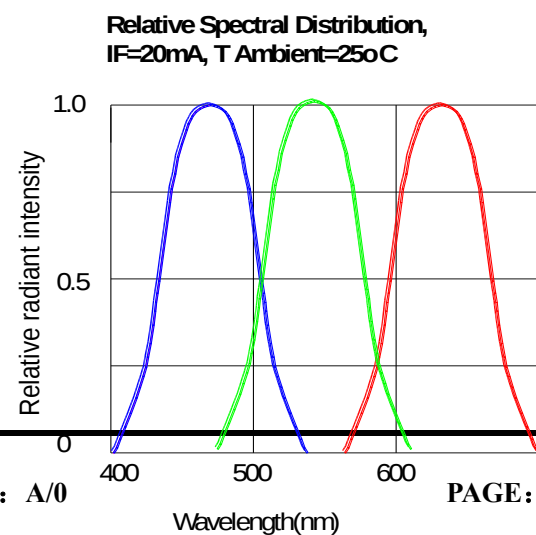
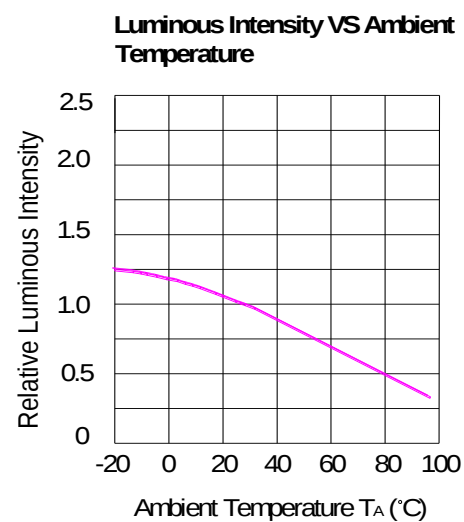
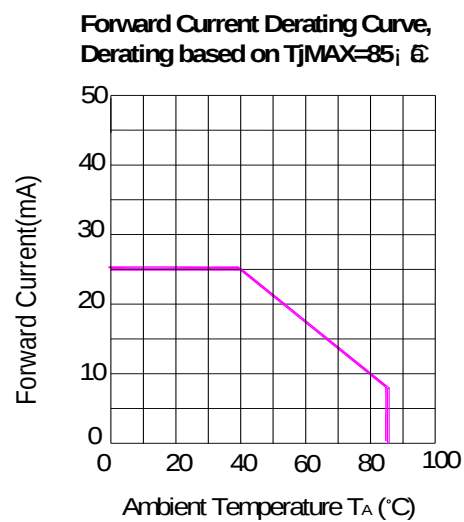
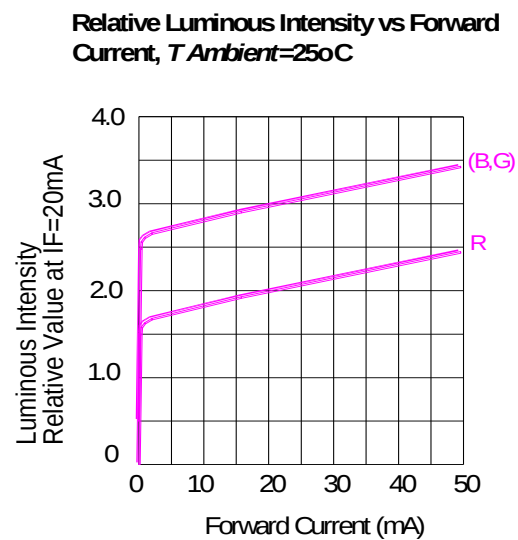
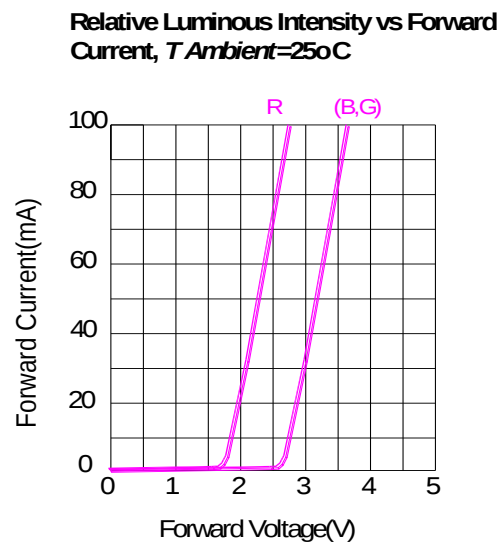
Parameter (参数)	Symbol (符号)		Min (最小)	Typ (平均)	Max (最大)	Unit (单位)	Condition (测试条件)
Forward Voltage (正向电压)	V_F	R	1.8	--	2.4	V	$I_F=20\text{mA}$
		B	2.8	--	3.4		
		G	2.8	--	3.4		
Luminous Intensity (亮度)	I_V	R	200	300	500	mcd	$I_F=20\text{mA}$
		B	200	300	500		
		G	1200	1500	1700		
Dominant Wavelength (主波长)	λ_d	R	620	--	630	nm	$I_F=20\text{mA}$
		B	465	--	475		
		G	520	--	530		
Reverse Current (反向电	I_R	/	--	--	5	μA	$V_R=5\text{V}$
Viewing Angle (角度)	201/2	/	--	120	--	deg	$I_F=20\text{mA}$

Notes. (备注)

1.The above luminous flux measurement allowance tolerance is $\pm 11\%$. (上述发光通量的测试允许公差为 $\pm 11\%$)

- 2.The above dominant wavelength measurement allowance tolerance is $\pm 1\text{NM}$ (以上所示波长测量误差 $\pm 0.1\text{V}$.)
- 3.The above forward voltage measurement allowance tolerance is $\pm 0.1\text{V}$. (以上所示电压测量误差 $\pm 0.1\text{V}$.)
- 4.1/10 Duty cycle, 0.1ms pulse width. (脉宽 0.1ms,周期 1/10)

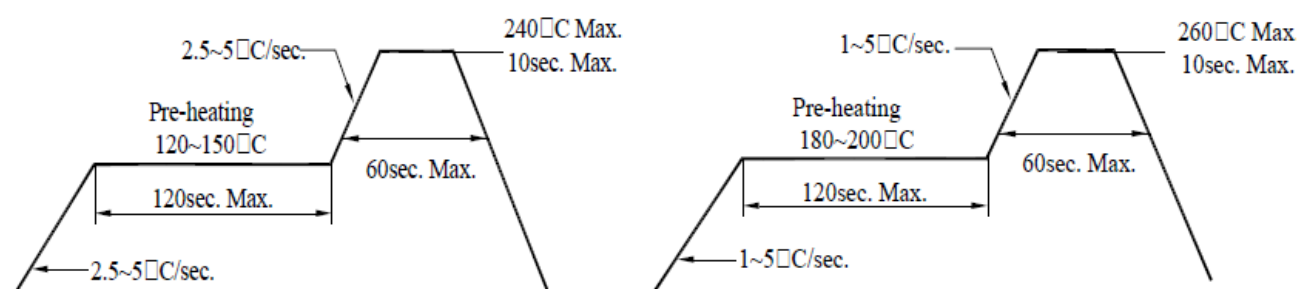
Typical Electro-Optical Characteristics Curves (典型电光特性曲线)



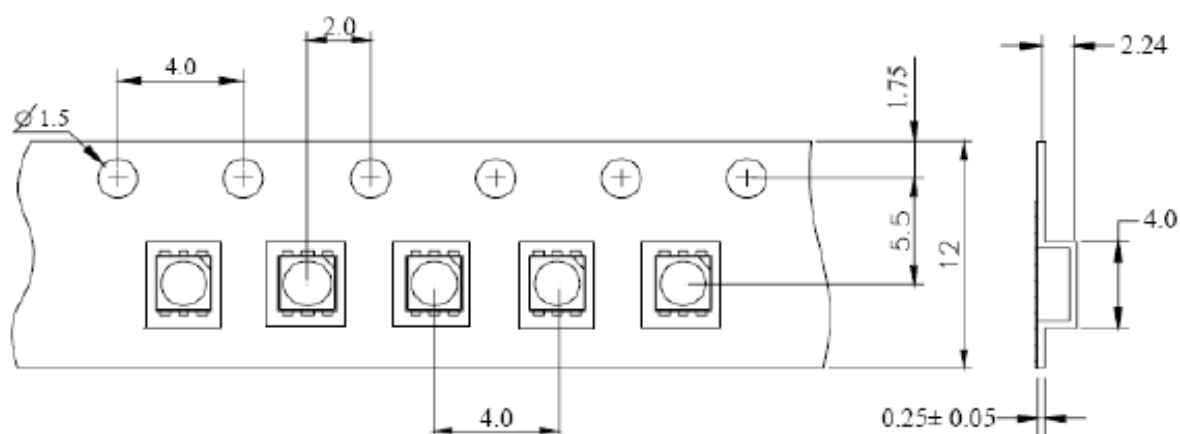
Soldering condition (焊接条件)

Reflow Soldering （回流焊接）			Hand Soldering （手工焊）	
	Lead Solder （铅焊料）	Lead – free Solder （无铅焊料）		
Pre-heat （预热温度）	120~150℃	180~200℃	Temperature	350℃ Max.
Pre-heat time （预热时间）	120sec. Max.	120sec. Max.	Soldering time	3sec. Max. (one time only)
Peak temperature （峰值温度）	240℃ Max.	260℃ Max.		
Soldering time （焊接时间）	10sec. Max.	10sec. Max.		
Condition （状态）	refer to Temperature- Profile 1	refer to Temperature- Profile 2		

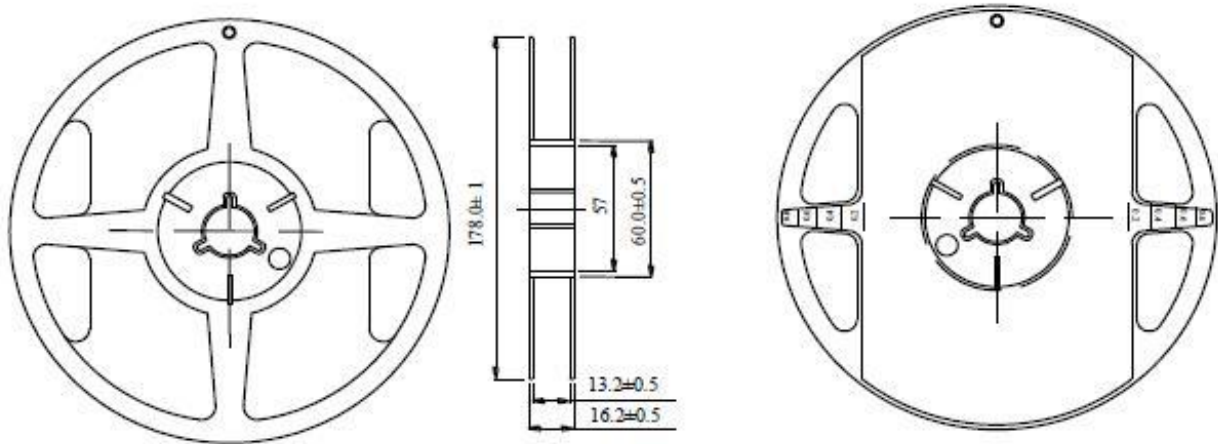
Temperature profile in re-flow machine for lead type and lead free type（铅型和无铅型回流机的温度分布图）



Dimension of carrier tape (載帶尺寸)



Dimension of reel (卷盘尺寸)



Notes: (备注)

1. All dimensions are in mm, tolerance is $\pm 2.0\text{mm}$ unless otherwise noted.
(所有尺寸均为毫米, 公差为 $\pm 2.0\text{mm}$, 除非另有说明。)
2. Specifications are subject to change without notice.
(规格如有更改, 恕不另行通知。)

Packing (包装)

1. 2000 piece of SMD 3528 Products on one reel. The reel will be put in the anti-static bag, then sealed.
(2000 片 SMD 3528 产品在一个卷筒上。卷筒将放在防静电袋中, 然后密封。)
2. 2000 piece of SMD 3528 products on one bag.
(2000 件 SMD 3528 产品在一个袋子上。)

注意事项:

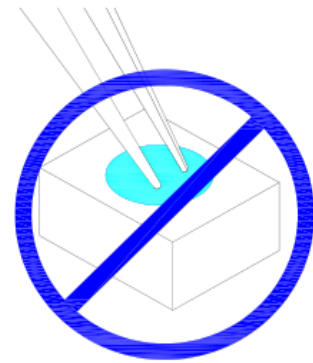
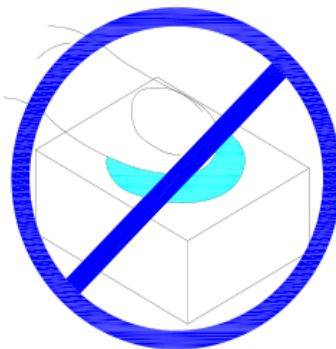
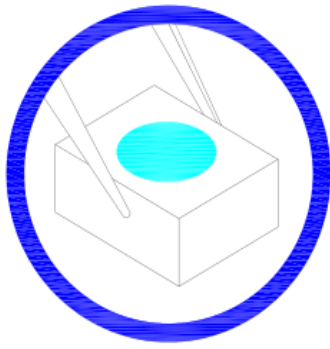
Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more prone to damage by external mechanical force. As a result, Special handling precautions must be observed during assembling using silicone encapsulated LED products, Failure to comply might leads to damage and premature failure of the LED.

相对环氧树脂较脆较硬而言, 硅胶封装较柔软且有弹性, 虽然它的特性大大减少了热应力, 但易受机械外力损坏, 因此在手工处理方面须要对硅胶封装材料做预防措施, 若未按要求操作, 可能会导致 LED 损坏和光衰

注意事项:

1. 通过使用适当的工具从材料侧面夹取, 不可直接用手或尖锐金属压胶体表面, 它可能会损坏内部电路
Through the use of appropriate tools from the material side of the clip, can not be directly used by hand or sharp

metal pressure on the surface, it may damage the internal circuit



2. SMD 吸咀外径不可超过 LED 尺寸, 吸咀内径尺寸应尽可能大, 吸咀顶端材质建议采用柔软材料以防在吸取期间刮伤或损坏 LED 胶体表面, 元件的尺寸必须在取放机里准备的编程好, 以确保精确的吸取和避免生产过中的损害

SMD suction nozzle diameter can not exceed the size of LED, the suction mouth battle size should be as large as possible, ceiling tip top material suggestions made of soft material to prevent absorb during scraping injury or damage the LED colloid surface, the size of the components must be in good pick and place machine to programming to ensure accurate absorption and avoid damage in production



3. 不可将模组材料堆积在一起, 它可能会损坏内部电路
Do not stack together assembled PCBs containing
may scratch the silicone lens or damage
the internal circuitry

4. 不可用在 PH<7 的酸性场所
Not suitable to operate in acidic envi-ronment, PH<7 LEDs. Impact



5. LED 工作环境与 LED 适配的材料中硫元素及化合物不可超过 100PPM

LED working environment is very suitable for the materials of LED and sulfur elements and compounds can not be more than 100PPM

6. 当我们需要使用外封胶涂抹 LED 产品时, 应确保外封胶与 LED 封胶胶水相匹配, 因为大多数 LED 的封装胶水为硅胶, 它有较强的的氧化性和较强的吸湿性.必须防止外封材质进入 LED 内部以造成 LED 的损伤, 单一的溴元素含量要求小于 900PPM, 单一氯元素含量要求小于 900PPM, 在涂抹 LED 产品时要求外封胶溴元素与氯元素总含量必须小于 1500PPM

When we need to use external glue for LED application products, please make sure that the external glue matches the LED packaging glue. Additionally, as most of LED packaging glue is silica gel, and it has strong Oxygen permeability as well as strong moisture permeability; in order to prevent external material from getting into the inside of LED, which may cause the malfunction of LED, the single content of Bromine element is required to be less than 900PPM, the single content of Chlorine element is required to be less than 900PPM, the total content of Bromine element and Chlorine element in the external glue of the application products is required to be less than 1500PPM

7. 在密闭、高温的环境中, 灯具内可能含硫/氯/溴等物质, 这些硫、氯和溴元素会挥发成气体并腐蚀 LED 光源。因为 LED 封密硅胶具有多孔性结构, 与光源镀银层发生硫化反应。LED 光源出现硫化反应后, 产品功能区会黑化, 光通量会逐渐下降直至微亮, 色温出现明显漂移, LED 光源最终会失效。

建议您进行灯具排硫测试, 确保 LED 光源在无硫/氯/溴等物质环境进行工作。

如出现硫化、氯化、溴化等造成的灯具异常, 我司不承担此异常造成的损失。

In a closed, high-temperature environment, the lamp may contain sulfur / chlorine / bromine, and these elements will evaporate into gas and corrode the LED light source. Because LED sealing silica gel has porous structure, sulphization reacts with the light source silver plating layer. After the vulcanization reaction of the LED light source, the product function area will be blackened, the light flux will gradually decline until slightly bright, the color temperature will drift significantly, and the LED light source will eventually fail.

It is recommended that you conduct lamp sulfur removal test to ensure that LED sources work in sulfur / chlorine / bromine.

For abnormal lamps caused by sulfide, chlorination and bromide, we will not bear the loss caused by this abnormality.

8. 本产品不可在以下条件下使用, 如果产品在以下条件下使用, 评估其使用效果和风险是有必要的:

- 直接或间接的打湿或受潮, 比如淋雨等;
- 被海水损害或侵蚀;
- 被暴露于腐蚀性气体(如 Cl_2 , H_2S , NH_3 , SO_x , NO_x 等);
- 被暴露于粉尘、液体或油;

上述原因都会引起硅胶劣质化(如发黑、变色、开裂等)

This product may not be used under the following conditions, and it is necessary to assess its use effectiveness and risk if it is used under:

- Direct or indirectly wet or damp, such as raining rain;
- Damaged or eroded by seawater;
- Exposed to corrosive gases (e. g. Cl_2 , H_2S , NH_3 , SO_x , NO_x , etc.);
- Exposed to dust, liquid, or oil;

The above causes will cause silicone deterioration (such as blackening, discoloration, cracking, etc.)

9. 在开包装之前, 请先检查包装袋有无漏气, 如有漏气现象, 请退回我司重新除湿包装再使用。

Before opening the package, please check the packing bag is free of leakage, if there is leakage phenomenon, please return the division to re - use the packaging and re - use

10. 要在规定环境条件中使用: 温度 30°C 以内, 湿度 60%RH 以下

To be used in the provisions of the environmental conditions

11. 拆包使用前：请用 70°C除湿 24 小时后才可以使用

Please use 70 degrees 24 hours before you can use the10 after the use of the material is more than 24H of the use of time is not used up

12. 材料拆装后使用时间超过 24H 未用完，需烘烤 70°C/24 小时除湿才可使用。

Need to bake 70 degrees /24 hours before the use of the desiccant can be used