



东莞市成良智能科技有限公司

Dongguan ChengLiang Intelligent Technology Co., Ltd.

产品承认书

SPECIFICATION FOR APPROVAL

Customer: _____

Issued Date: 2018-07-30

Model No.: P500W12V

Description: Power Supply

成良电子			客户	
PREPARED BY 编写	CHECKED BY 审核	APPROVED BY 批准	CHECKED BY 审核	APPROVED BY 批准
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Content 目录

电源选择和使用注意事项: -----	2
1. Overview 概述:-----	3
2. Main Electrical Specification 产品主要电气规格-----	3
3. Reference standards and norms 引用标准及规范-----	3
4. Environmental conditions 环境条件: -----	4
5. Electrical Characteristics 电气特性: -----	5
5.1. Input Electrical characteristics 输入特性-----	5
5.2. Output Electrical Characteristics 输出特性-----	6
5.3. Protection Features 保护特性-----	7
5.4. Other features 其它特性-----	7
6. Safety features 安全特性-----	7
7. . Derating guidline:降额曲线-----	8
7.1 Input voltage derating guidline. 输入电压降额曲线-----	8
7.2 Operate temperature derating guidline. 温度降额曲线-----	8
7.3 Effi & load guidline 效率与负载曲线-----	9
8. The definition of mechanical properties and connectors (Units: mm) 机械特性及接插件定义 (单位: 毫米) -----	9
8.1. Dimensions 尺寸-----	9
8.2. Installation hole size 安装孔位尺寸-----	10
8.3. Pin connection. 连接器脚位定义-----	10
8.3.1 Input connection CON1 输入连接器 CON1-----	10
8.3.2 output connection CON2 输出连接器 CON2-----	10
9. Weight, packaging, transport and storage. 重量, 包装, 运输和储存-----	11

一、 Overview 概述:

The power supply was designed for LED lighting and industrial machine ;,small size, high efficiency, stability, and reliability. Power supply has input undervoltage, output current limiting, output short circuit protection. Power supply will apply with high rectification which greatly improves the power efficiency,can reach 85% above, saving energy consumption, to meet with the European CE standard. 本电源是为 LED 灯设计的专用电源: 具有体积小、效率高、工作稳定、可靠性高等特点。电源具有输入过欠压, 输出限流及输出短路保护; 电源采用高效整流电路极大地提高了电源的效率, 效率高达 85%, 极大地节约了能源, 满足欧洲 CE 标准。



二、 Main Electrical Specification 产品主要电气规格.

Output Power (W) 输出功率	Rated Input Voltage (Vac) 额定输入电压	Output voltage (Vdc) 输出电压	Output Current (A) 输出电流	Regulation accuracy 稳压精度	Ripple & Noise (mVp-p) 纹波及噪音
500	100-120/200-240	+12.0	0-41	±2%	≤220

三、 Reference standards and norms 引用标准及规范.

3.1 GB / T 2423.1-2011 electric and electronic products, environmental testing, Part 2: Test methods / test A: low-temperature GB/T 2423.1-2011 电工电子产品环境试验,第 2 部分: 试验方法/试验 A: 低温

3.2 GB / T 2423.2-2011 electric and electronic products, environmental testing, Part 2: Test Methods / Test B: high-temperature GB/T 2423.2-2011 电工电子产品环境试验,第 2 部分: 试验方法/试验 B: 高温

- 3.3 GB / T 2423.3-1993 electric and electronic products environmental testing procedures - Test Ca: Damp heat test method; GB/T 2423.3-1993 电工电子产品基本环境试验规程—试验 Ca:恒定湿热试验方法;
- 3.4 GB / T 2423.4.1993 electric and electronic products environmental testing procedures - Test Db: Damp heat test method; GB/T 2423.4.1993 电工电子产品基本环境试验规程—试验 Db:交变湿热试验方法
- 3.5 GB / T 2423.5-1995 electric and electronic products, environmental testing, Part 2: Test Methods / Test Ea and guidance: Shock; GB/T 2423.5-1995 电工电子产品环境试验, 第 2 部分: 试验方法/试验 Ea 和导则: 冲击
- 3.6 GB / T 2423.6-1995 electric and electronic products, environmental testing, Part 2: Test Methods / Test Ea and guidance: Bump; GB/T 2423.6-1995 电工电子产品环境试验, 第 2 部分: 试验方法/试验 Ea 和导则: 碰撞
- 3.7 GB / T 2423.8-1995 electric and electronic products, environmental testing, Part 2: Test Methods / Test Ed: Free fall; GB/T 2423.8-1995 电工电子产品环境试验, 第 2 部分: 试验方法/试验 Ed: 自由跌落
- 3.8 GB / T 2423.10-1995 electric and electronic products, environmental testing, Part 2: Test Methods / Test Fc and guidance: Vibration (sinusoidal) ; GB/T 2423.10-1995 电工电子产品环境试验, 第 2 部分: 试验方法/试验 Fc 和导则: 振动 (正弦)
- 3.9 GB / T 2423.11-1997 electric and electronic products, environmental testing, Part 2: Test Methods / Test Fd: Random vibration wide band - General requirements; GB/T 2423.11-1997 电工电子产品环境试验, 第 2 部分: 试验方法/试验 Fd: 宽频带随机振动—一般要求
- 3.10 GB / T 2423.22-2002 electric and electronic products, environmental testing, Part 2: Test N: temperature change; GB/T 2423.22-2002 电工电子产品环境试验, 第 2 部分: 试验 N: 温度变化

四、Environmental conditions 环境条件:

NO. 序号	ITEM 项目	Specifications 技术要求	Units 单位	☒Remarks 备注
4.1	Permanent operating temperature 工作温度	-20-60	℃ 度	
4.2	Storage temperature 存贮温度	-30—80	℃ 度	
4.3	Work Relative Humidity 工作相对湿度	20—90	%	Note 1
4.4	Storage Relative Humidity 存贮相对湿度	10—90	%	

4.5	Cooling mode 散热方式	Fan forced air cooling 风扇散热		
4.6	Atmospheric pressure 大气压力	80—106	Kpa 帕斯卡	
4.7	<input checked="" type="checkbox"/> Altitude 海拔高度	3000	M 米	
4.8	Vibration 振动耐受	10-55Hz 19.6m/S ² (2G),20 minutes each along X,Y and Z axis.		
4.9	Shock 冲击耐受	49m/S ² (5G),20 once each X,Y and Z axis.		

Note 1: Please add the new requirement when the power supply will be used for high humidity condition. 当电源将被用于高湿度的环境下,在下订单时请增加这新的要求。

五、Electrical Characteristics 电气特性:

5.1. Input Electrical characteristics 输入特性:

NO. 序号	ITEM 项目	Specifications 技术要求	Units 单位	Remarks 备注
5.1.1	Rated input voltage 额定输入电压	100-120/200-240	Vac	Note 2
5.1.2	Input voltage range 输入电压范围	90-130/190-264	Vac	
5.1.3	Input frequency range 输入频率	47—63	Hz	
5.1.4	Efficiency 效率	≥85 (Vin=220Vac)	%	Full load (room temperature) Note 3
5.1.5	Maximum input current 最大输入电流	≤10	A	
5.1.6	Inrush current 输入浪涌电流	≤60	A	

Note 2: Meanings of rated input voltage and the input voltage range: the rated input voltage is the international general appellation, the highest voltage of rated input voltage float upwards 10%, is the input voltage upper limit, the maximum value, the minimum voltage of rated input voltage float downward 10%, is the input voltage lower limit, the minimum value. Rated input voltage range of 200-240 is corresponding to 180-264. The two terms are not contradictor, essence is consistent, uniform, only two different terms. 额定输入电压与输入电压范围的含义: 额定输入电压是国际通用的称谓, 额定输入电压的最高电压向上浮动 10%, 就是输入电压的上限, 即最大值, 额定输入电压的最低电压向下浮动 10% 就是输入电压的下限, 即最小值。额定输入电压 200-240 对应的输入电压范围为 180-264. 这两者不是相互矛盾的, 实质是一致的, 统一的。

Note 3: Efficiency: Terminal output voltage multiplied by the output current, and then divided by the AC input voltage, divided by the AC input current, divided by the power factor:

$\text{efficiency} = \text{terminal output voltage} \times \text{output current} / (\text{the AC input voltage} \times \text{AC input current} \times \text{power factor})$. 电源效率：端子口输出电压乘以输出电流，然后除以交流输入电压，除以交流输入电流，除以电源功率因数；效率=端子口输出电压 X 输出电流/(交流输入电压 X 交流输入电流 X 功率因数)。

5.2. Output Electrical Characteristics 输出特性：

NO. 序号	ITEM 项目	Specifications 技术要求	Units 单位	Remarks 备注
5.2.1	Output rating voltage 输出额定电压	+12.0	Vdc	
5.2.2	Output current range 输出电流	0—41	A	
5.2.3	Output voltage range 输出电压范围	11.5—12.5	Vdc	
5.2.4	Voltage regulation accuracy 电压调整率	±1%	V _o	
5.2.5	Load regulation accuracy 负载调整率	±1%	V _o	
5.2.6	Regulation accuracy 稳压精度	±2%	V _o	
5.2.7	Ripple and noise 纹波及噪声	≤220	mVp-p	Full load;20MHz, 104+10uF NOTE 3
5.2.8	Power output delay 开机延迟时间	≤2500	ms	NOTE 4
5.2.9	Hold up time 输出保持时间	≥10	ms	V _{in} =220Vac NOTE5
5.2.10	Output voltage rise time 输出电压上升时间	≤50	ms	NOTE 6
5.2.11	Off overshoot 输出过冲	±5%	V _o	
5.2.12	Output dynamic 输出动态响应	Voltage changes less than ± 5% V _O ; dynamic response time ≤ 250us		LOAD 25%—50% , 50%—75%

Note 3: Ripple & noise test: Ripple & noise bandwidth is set to 20MHz, use a 0.10uF ceramic capacitor in parallel with a 10.0uF electrolytic capacitor at output connector for ripple & noise measurements. 纹波和噪声的测试：纹波和噪声的测试带宽为 20 兆赫兹，在输出端口并联一个 0.10 微法的瓷片电容和一个 10.0 微法的电解电容。

Note 4: The power delay time measured is when AC power on to 90% of specified output voltage observed on the channel. 开机延迟时间为 AC 输入上电到输出电压上升到 90% 间的时间。

Note 5: The hold-up time measured is when AC power off to 90% of specified output voltage observed on the channel. 输出保持时间为从输入 AC 掉电到输出电压下掉到输出电压的 90% 间的时间。

Note 6: The rise time measured is when the output voltage rise from 10% to 90% of specified output V_{out} observed on the channel wave form. 输出上升时间为输出电压从 10% 上升到 90% 间的时间。

5.3. Protection Features 保护特性:

NO. 序号	ITEM 项目	Specifications 技术要求	Units 单位	Remarks 备注
5.3.1	Input undervoltage protection 输入欠压保护	70-80/135-170	VAC	FULL LOAD
5.3.2	Input voltage recovery point 输入欠压恢复	75-85/150-175	VAC	
5.3.3	Output current limit protection point 输出过流保护	45-50	A	Hiccup Model, Auto-recovery 打嗝, 自恢复
5.3.4	Output short circuit protection 输出短路保护	≥ 50	A	

5.4. Other features 其它特性:

NO. 序号	ITEM 项目	Specifications 技术要求	Units 单位	Remarks 备注
5.4.1	MTBF	$\geq 100,000$	H	
5.4.2	Leakage current 输入泄流电流	$< 1.0\text{mA}$ ($V_{in}=220\text{Vac}$)		GB8898-2001 9.1.1

六、Safety features 安全特性:

NO. 序号	ITEM 项目	Test conditions 测试条件	Standard/SPEC 标准、技术要求	
6.1	Isolation voltage 绝缘耐压	Input-Output 输入对输出	1500Vac/10mA/1min	No flashover, no breakdown
		Input-PE 输入对大地	1500Vac/10mA/1min	No flashover, no breakdown
		Output-PE 输出对大地	500Vac/10mA/1min	No flashover, no breakdown
6.2	Insulation Resistance	Input-Output 输入对输出	DC500V	10M Ω Min

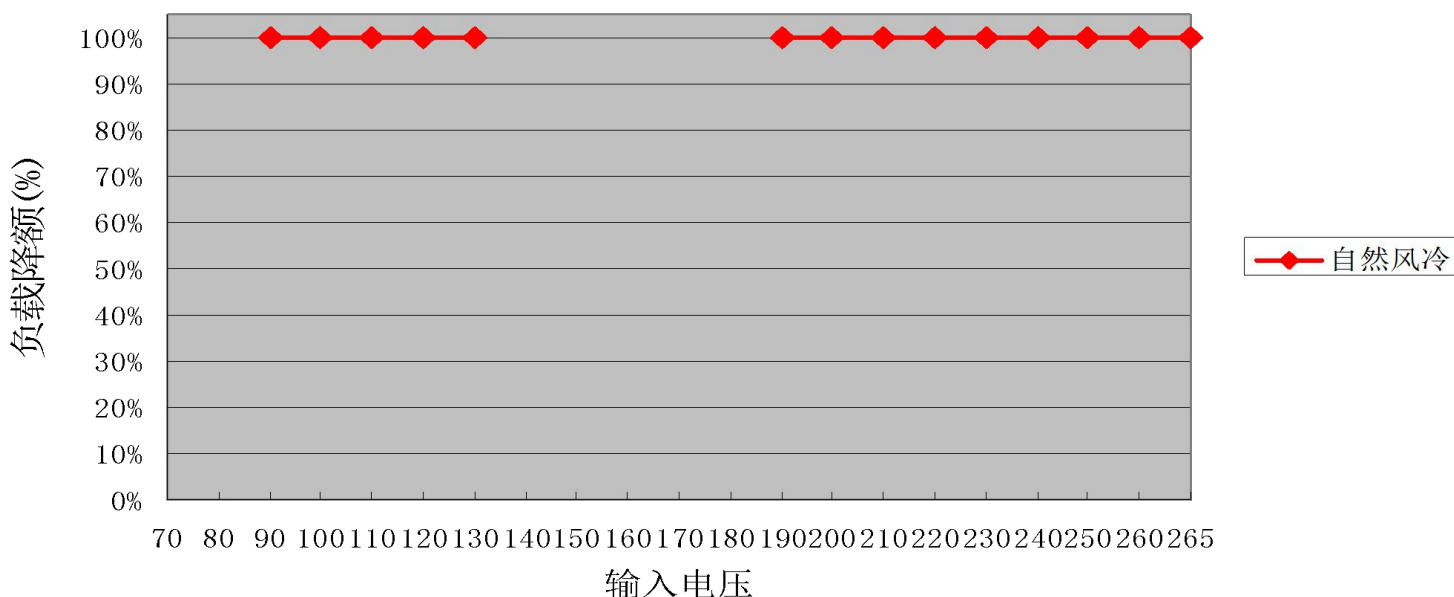
绝缘阻抗	Input-PE 输入对大地	DC500V	10M Ω Min
	Output-PE 输出对大地	DC500V	10M Ω Min

Note: Input line (all L&N) should be shorted; and all output should be shorted.
所有输入线（包括 L 线和 N 线）要短路和所有输出包括正负端要短路。

七. Derating guideline:降额曲线:

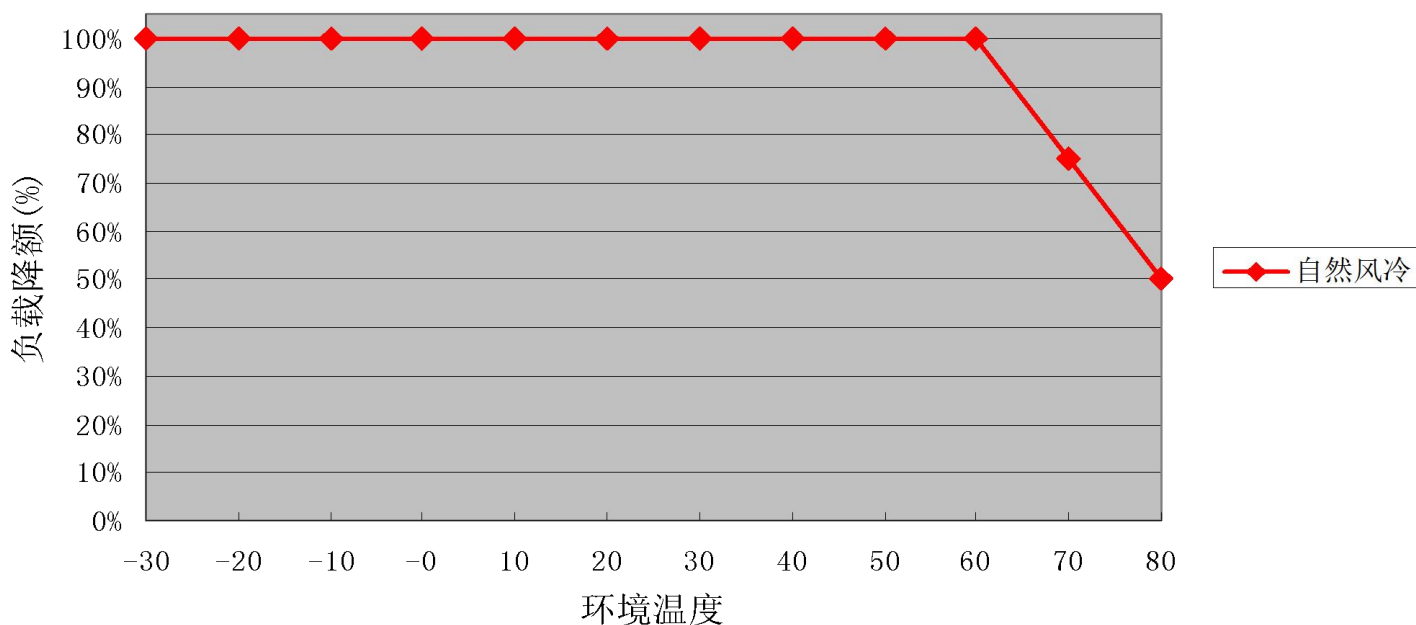
7.1 Input voltage derating guideline.输入电压降额曲线:

输入电压降额曲线图



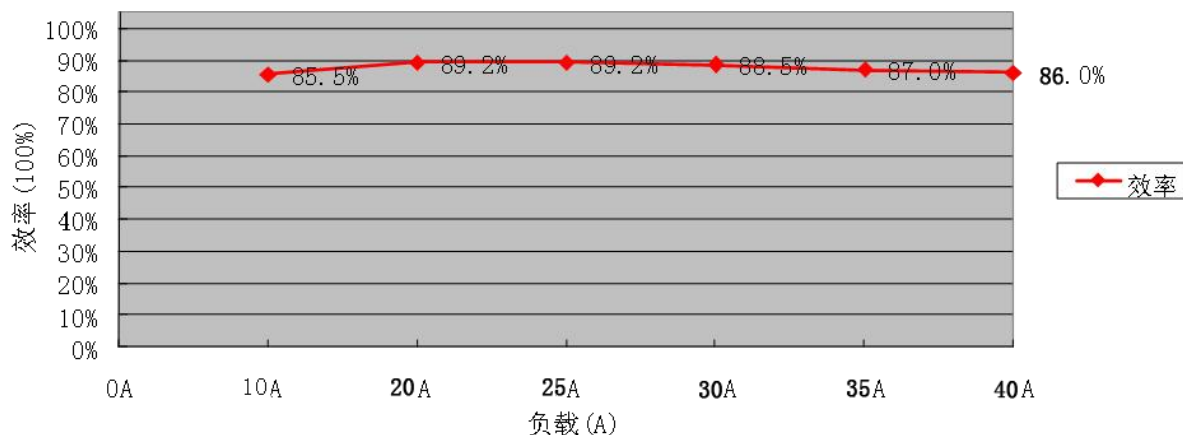
7.2 Operate temperature derating guideline.温度降额曲线:

工作温度降额曲线图



7.3 Effi & load guidline (220vac) : 效率与负载曲线 (220vac):

负载与效率曲线

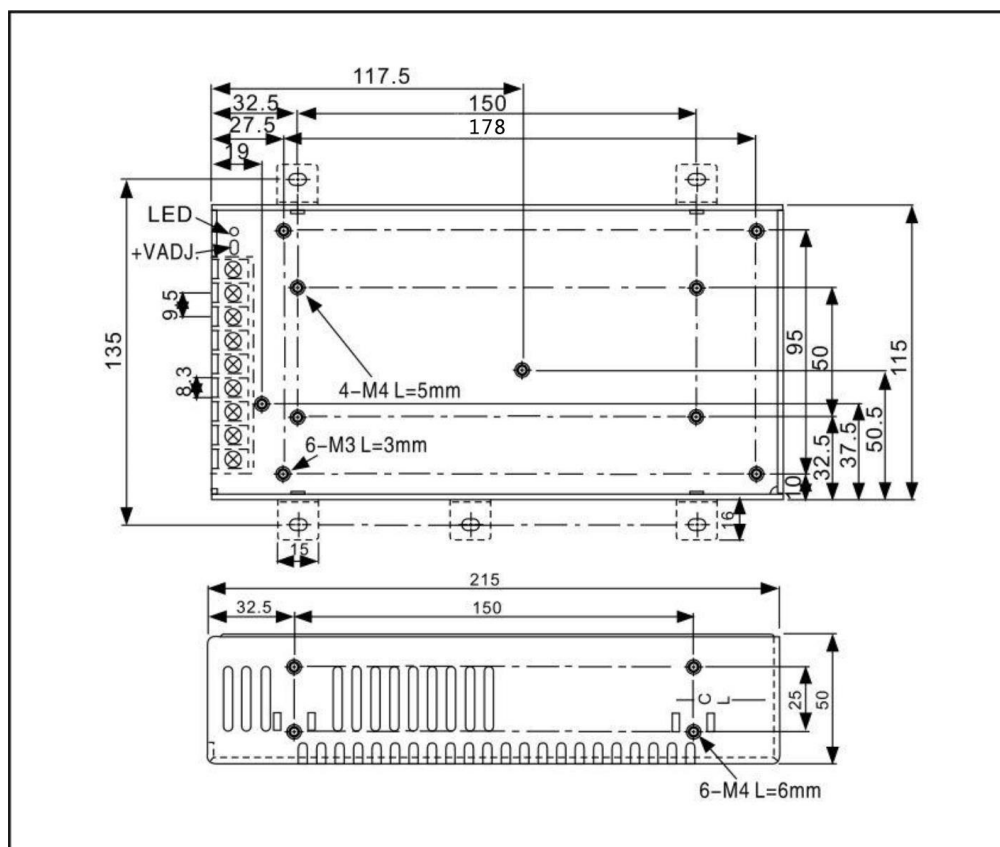


八、The definition of mechanical properties and connectors (Units: mm) 机械特性及接插件定义 (单位: 毫米)

8.1. Dimensions 尺寸:

L215 x W115 x H50 电源尺寸为: 长 215 宽 115 高 50, 单位毫米。

8.2. Installation hole size: 安装孔位尺寸:



8.3. Pin connection. 连接器脚位定义:

8.3.1 Input connection CON1 : 9PIN 9.6mm 输入连接器 CON1, 9.6 毫米间距 9PIN

Input connection model: 300V 20A

NO. 序号	NO. 序号	Define.定义
1	PIN1	+12V
2	PIN2	+12V
3	PIN3	+12V
4	PIN4	GND
5	PIN5	GND
6	PIN6	GND
7	PIN7	EARTH
8	PIN8	NEUTRAL
9	PIN9	LINE

Note: Face the connection from left to right.

九、Weight, packaging, transport and storage. 重量, 包装, 运输和储存:

9.1. Weight. 重量:

9.1.1. Everyone weight is 900G. 单个电源的重量为 900 克。

9.1.2 One box have 20 units, total weight is 19KG. the dimensions of the box :LXWXH (units :cm): 一个箱子装 20 台, 总重量为 19 千克;箱子尺寸为: L45x W29 x H26CM

9.2 Packing

Box has the product name, model number, manufacturer ID, the manufacturers certificate of quality inspection department, manufacturing date; the box with an attachment list. 包装箱上有产品名称、型号、厂家标识、厂家质量部门的检验合格证、制造日期等; 包装箱内有附件清单。

9.3 Transportation

Suitable for cars, boats, aircraft transport, transport should be awnings, sun protection, loading and unloading of civilization. 适应于车、船、飞机运输, 运输中应遮蓬、防晒、文明装卸。

9.4 storage

Product is not used which should be stored in the box, warehouse temperature -20 °C - +80 °C, relative humidity of 10% -90%, the warehouse does not allow any harmful gases, flammable, explosive and corrosive products of chemicals, and strong mechanical vibration, shock and strong magnetic field, package box should



be at least 20cm high from the ground, away from the wall, heat, window or air intake at least 40cm, under specified conditions in the storage period is generally one year, more than one year should be re-tested. 产品未使用时应存放在包装箱内，仓库环境温度为-10℃—+80℃，相对湿度为10%—90%，仓库内不允许有有害气体，易燃，易爆的产品及有腐蚀性的化学物品，并且无强烈的机械振动，冲击和强磁场作用，包装箱应垫离地至少20cm高，距离墙壁、热源、窗口或空气入口至少40cm，在本规定条件下的贮存期一般为1年，超过1年后应重新进行检验。