MEASUREFINE® 慧谱

慧谱仪器产品画册

Huipu instrument product album

专业研发、制造及销售仪器、仪表

服务客户·诚信经营

企业简介

Brief Introduction to Enterprises

中山慧谱仪器有限公司成立于2005年，是一家致力于照明行业检测设备的研究开发生产销售和技术服务为一体的技术型企业，公司严格遵循ISO9001国际质量管理体系。我们的研发团队，光学部的研发人员由浙大光学工程、测试计量技术及仪器专业毕业的博士生、硕士生组成，电学部由本行业从业十数年的高工领携，一批有着丰富的理论及实践经验的电子工程师担纲。我公司的分布光度计及光生物安全设备，技术水平一直处于国内前列，技术服务部由一批才华横溢，古道热肠的知识型人才为客户提供售前体验，售后咨询的全方位服务。

经过十多年的不懈追求，公司产品已得到不断提升和完善。产品包括常用测光测色检测仪器、照明行业专用检测仪器、LED光辐射安全检测量、LED专用检测仪器、灯具专用检测仪器、LED驱动电源检测仪、电磁兼容专用检测仪器、电气安全专用检测仪器、各类电参数检测仪器、检测用高性能交直流电源等。

公司生产的成套照明电器检测设备和LED检测设备已出口至美国、德国、意大利、巴西、玻利维亚、马来西亚、埃及、印度、伊朗、土耳其、越南、韩国、香港、台湾等30余个国家和地区，海外市场的不断拓展使我们得到了越来越多国外照明业的高度关注，以此基础上我们不骄不躁，通过全体员工的不断努力，公司现已走上了一条稳步发展之路。

Zhongshan Huipu Instrument Co., Ltd., established in 2005, is a technical enterprise dedicated to the research, development, production, sales and technical service of testing equipment in the lighting industry. The company strictly follows the ISO9001 international quality management system. Our R & D team and R & D personnel of the optical department are composed of doctoral and master students graduated from optical engineering, test and measurement technology and instruments of Zhejiang University. The electrical department is led by senior engineers who have worked in the industry for more than ten years, and a group of electronic engineers with rich theoretical and practical experience. The technical level of our company's distribution photometer and photobiosafety equipment has always been in the forefront in China. The technical service department consists of a group of talented and enthusiastic knowledge-based talents to provide customers with all-round services of pre-sales experience and after-sales consultation.

After more than ten years of unremitting pursuit, The company's products have been continuously improved and improved. The products include common light and color measuring and testing instruments, special testing instruments for lighting industry, LED light radiation safety testing quantity, led special testing instruments, lamps special testing instruments, LED driving power supply tester, electromagnetic compatibility special testing instruments, electrical safety special testing instruments, various electrical parameter testing instruments,

The complete sets of lighting electrical testing equipment and led testing equipment produced by the company have been exported to more than 30 countries and regions such as the United States, Germany, Italy, Brazil, Bolivia, Malaysia, Egypt, India, Iran, Turkey, Vietnam, South Korea, Hong Kong and Taiwan. The continuous expansion of overseas markets has attracted the high attention of more and more foreign lighting industries, On this basis, we are not arrogant and impetuous. Through the continuous efforts of all employees, the company has embarked on a road of steady development.

企业理念

Enterprise Idea

品质科技 行业领先

High-quality technology leading industry

慧谱公司经过多年发展,已经拥有多项国家专利技术产品，专利产品已被国家灯具检测中心和各地质检机构所携荐。公司现已拥有经验丰富的科研团队，成熟的市场运作流程，成为行业内具有发展潜力的规模企业之一。

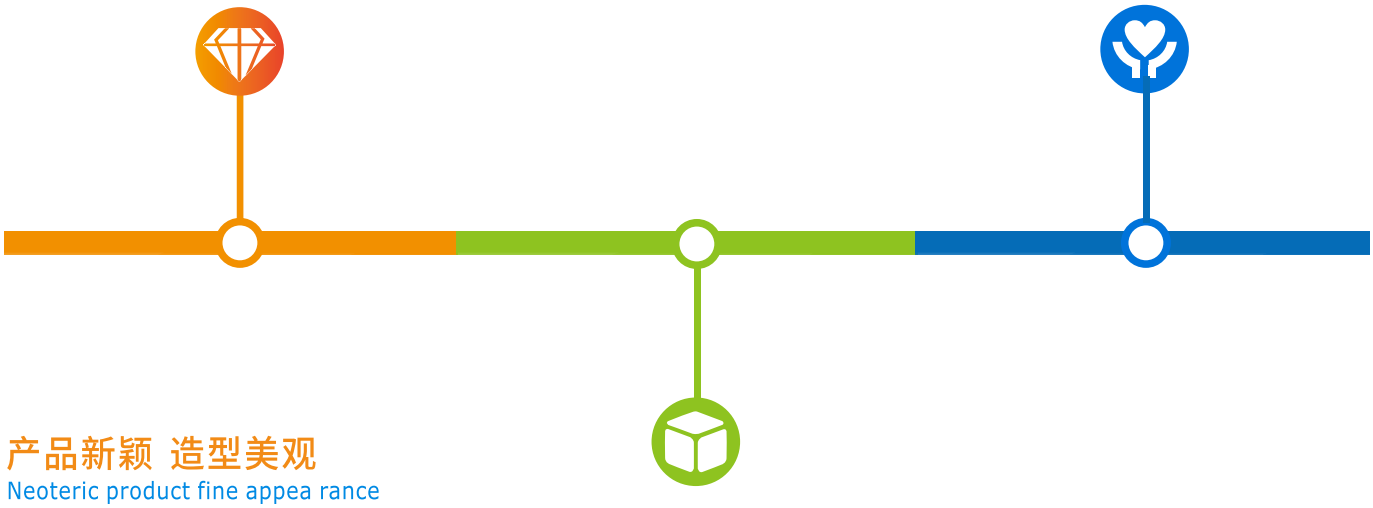
MEASUREFINE after years of development, already has a number of national patent products. patent prod ucts have been recommended by the national quality testing cente and lighting agencies. Company now has a experienced resea rch team, mature market operation procedures and becomes one of the most development potential enterprises.

安装便捷 全程服务

Convenient installation full range service

产品安装快捷，方便操作，简单易学是我们对客户的承诺。慧谱公司拥有专业售后服务团队，全天候为您服务，可提供电话、网络、上门等多种服务方式,切实为客户解决后顾之忧。

Products installed quickly, easy to operate and learn is ourcommitment to customers. MEASUREFINE has aprofessional service team, 24 hourse rvice for you, we are providing telephone, internet door-lo-door serviceand other svrvices hours. In'the real solution for customers to worry about.



产品新颖 造型美观

Neoteric product fine appea rance

慧谱公司拥有一支具备多年专业技术经验的工艺设计人员，从人机工程、美观、新颖、实用的角度为每款产品塑造独特的外形。

MEASUREFINE has a professional process design personnel with many years of expe rience in process design They create a unique appea rance of products from ergonomics, beasutiful, novelty and practical point of view.

资质与荣誉

Qualifications and honors

国家高新技术企业
中山市母机入库企业

THE NATIONAL HIGH AND NEW TECHNOLOGY ENTERPRISE
ZHONGSHAN CITY MOTHER MACHINE STORAGE ENTERPRISE

专业制造　实力认证

Directory

目录 Directory

# LED(半导体发光二极管)
LED(semiconductor light-emitting diode)

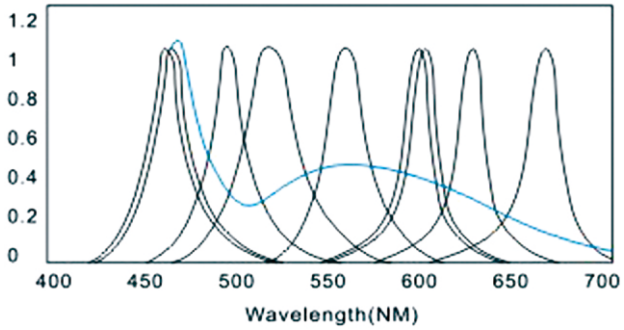
LED作为一种新型光源，具有许多优点，如光效高、寿命长、无辐射、低功耗、体积小和光谱分布独特等。这些特点使得LED在景观照明、汽车、交通信号灯、户外显示屏、特殊场合照明和军事等领域得到广泛应用。由于LED本身存在的特殊性，如何得到精确LED及LED产品的光色电热等数据却是一个复杂的过程。需要用到高精度、高可靠性的检测设备和专业的测量方法。

LED, as a new type of light source, has many advantages, such as high light efficiency, long lifespan, no radiation, low power consumption, small size, and unique spectral distribution. These characteristics make LED widely used in landscape lighting, automobiles, traffic signals, outdoor display screens, special occasion lighting, and military fields. Due to the unique nature of LED itself, obtaining accurate data on LED and LED product's light color, electric heating, etc. is a complex process. High precision and reliability testing equipment and professional measurement methods are required.

LED的发光原理
The luminescence principle of LED

发光二极管的核心部分是由P型半导体和N型半导体组成的晶片，在P型半导体和N型半导体之间一个过渡层，称为P~N结。在某些半导体材料的PN结中，注入的少数载流子与多数载流子复合时会把多余的能量以光的型式释放出来，从而把电能直接转换为光能。PN结加反向电压，少数载流子难以注入，故不发光。这种利用注入式电致发光原理制作的二极管叫发光二极管，通称LED。当它处于正向工作状态时（即两端加上正向电压），电流从LED阳极流向阴极时，半导体晶体就发出从紫外到红外不同颜色的光线，光的强弱与电流有关。

The core part of the led is a chip composed of p-type semiconductor and n-type semiconductor. There is a transition layer between p-type semiconductor and n-type semiconductor, called P~N junction. In the PN junction of some semiconductor materials, the injected few carriers recombine with the majority of carriers to release the excess energy in the form of light And convert electrical energy directly into light energy. PN junction plus reverse voltage, a few carriers difficult to inject, so not luminous. This is made using the principle of injection electroluminescence The diode called LED, general name LED. When it is in a forward working state (i.e., with a forward voltage applied to both ends), the current flows from the LED anode to the cathode,Semiconductor crystals emit light of different colors, from ultraviolet to infrared.

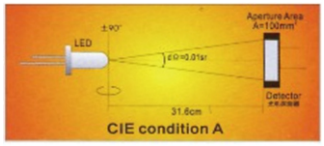


LED发光强度和辐射强度测量要求
LED luminous intensity and Radiant intensity measurement requirements

当被测光源为点光源时，其发光强度值在测量时并不会因为光源与光探测器间的距离会改变，遵循距离平方反比定律特性。然而LED并非点光源，因此其发光强度会因为测量距离而改变，所以CIE127推荐了测量条件A与条件B，用于测量不同辐射空间，分布特性LED的平均光强度，且用于测量的光探测器受光面积为100 MM。（相应直径为11.3 M M），LED 与光探索测器间的距离分别为316MM及100MM。如下表：

When the measured light source is a point light source, its luminous intensity will not change because of the distance between the light source and the light detector during the measurement, which follows the inverse square of distance law.However, LED is not A point light source, so its luminous intensity will be changed according to the measured distance. Therefore, CIE127 recommends measuring conditions A and B for measuring different radiation Spaces.Distribution characteristics the average light intensity of LED and the light receiving area of the light detector used for measurement is 100MM. (the corresponding diameter is 11.3mm), the distance between the LED and the light probe is respectively 316MM and 100MM. The following table:

CIE RECOMMEDED TEST CONDITIONS	THE DISTANCE OF PROBE AND LED	SOLID ANGLE	PLANE ANGLE(SBC CASE)	
CONDITIONA	**316mm**	**0.001m²**	**2°**	
CONDITIONB	**100mm**	**0.01m²**	**0.6°**	



LED的发射光谱和颜色测量原理
Principle of emission spectrum and color measurement of LED

使用积分球光谱辐射计（SPEC系列）是快速、精准的测量LED平均光谱和颜色特性的设备。该方法适用于各种形状和尺寸的LED，通过积分球的光学设计，可以测量LED的光谱和颜色参数。

使用分布光谱辐射计（分布光度计CPM系列+光谱分析仪SPEC系列）分布光谱辐射计能够测量空间光谱和颜色分布，对于LED和LED产品存在颜色分布不均匀的特性，该方法能够更具体、客观地描述LED的光谱和颜色特性。该方法适用于对颜色品质要求较高的应用领域。根据实际需求和应用场景选择合适的方法，，更好地评估LED的光谱和颜色特性。

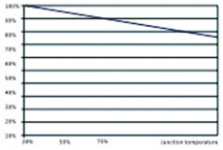
The use of an integrating sphere spectroradiometer (SPEC series) is a fast and accurate device for measuring the average spectrum and color characteristics of LEDs. This method is applicable to various shapes and sizes of LEDs, and through the optical design of the integrating sphere, the spectral and color parameters of LEDs can be measured.The use of a distributed spectral radiometer (CPM series distributed spectrophotometer+SPEC series spectral analyzer) can measure spatial spectrum and color distribution. For LED and LED products with uneven color distribution, this method can more specifically and objectively describe the spectral and color characteristics of LED. This method is suitable for applications that require high color quality. Choose appropriate methods based on actual needs and application scenarios to better evaluate the spectral and color characteristics of LEDs. measure the average spectrum and color of leds by an alternative method Features; Another is to use the distributed spectral radiometer (distributed photometer CPM series + spectral analyzer SPEC series) to measure the spatial spectrum and color distribution due to LED and LED products have the characteristics of uneven color distribution. This method can describe the spectrum and colorcharacteristics of LED more specifically and objectively, and has a higher measurement accuracy.

LED的结温
The LED junction temperature

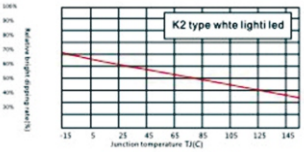
LED的结温是正常工作状态下的LED发光芯片会产生一定的热量，当热量不能及时散出时，LED的结温就会升高。高温会直接影响LED的发光效率下降、寿命缩短，甚至可能发生故障，在设计LED灯具和散热系统时，需要考虑LED的热量产生和散热能力，以保持LED的结温稳定在合理范围内。

The junction temperature of LED is a certain amount of heat generated by LED chips under normal working conditions. When the heat cannot be dissipated in time, the junction temperature of LED will rise. High temperatures can directly affect the luminous efficiency of LEDs, shorten their lifespan, and even cause malfunctions. When designing LED lighting fixtures and cooling systems, it is necessary to consider the heat generation and cooling capacity of LEDs to maintain a stable junction temperature within a reasonable range.

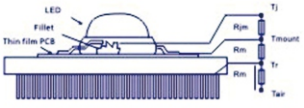
$$\theta'_{JK}=\left[\frac{T_J-T_K}{P_{LED}}\right]$$



The problem of junction temperaturerise



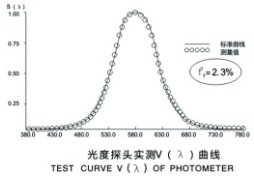
LED junction temperature and relative bright dipping rate

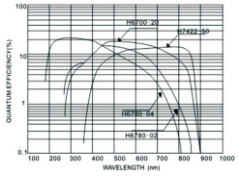


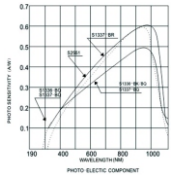
光度探头
Photometric probe

慧谱公司所生产的光度探头达到国家标准级要求，具备高准确度和可靠性，能够为LED等发光器件的光度学参数测量提供准确的测量结果。光度探头的技术指标测试数据能够直接溯源至中国计量院NIM，并通过与德国PTB溯源数据的比较验证。

The photometric probes produced by Huipu Company meet the national standard level requirements, with high accuracy and reliability, and can provide accurate measurement results for the photometric parameters of LED and other light-emitting devices. The technical specifications test data of the photometric probe can be directly traced back to the National Institute of Metrology (NIM) of China, and verified through comparison with the traceability data of PTB in Germany.



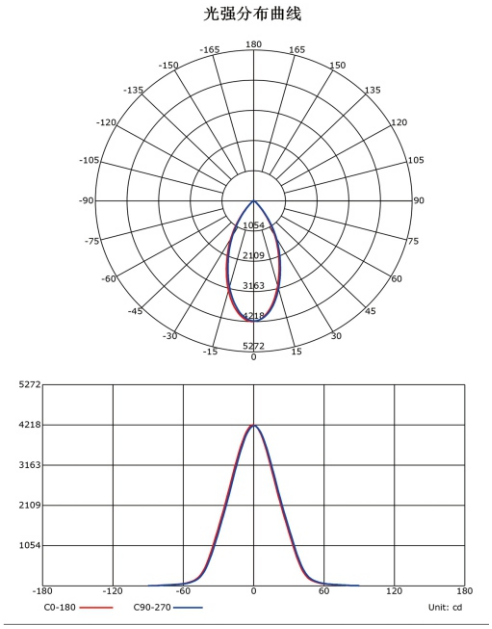




光度探头主要技术要求及分级 Main technical requirements and classification of photometric probes			
SPEC / CLASS ITEM	Standard 标准级	Class1 一级	Class2 二级
V.match f 1′	3.5%	6%	8%
UV response u	0.5%	1.5%	2.5%
IR response r	1%	2%	4%
Cosine response f2′	2%	4%	6%
Linearity f3	±0.3%	±1%	±2.5%
Display unit f4	3%	4.5%	7.5%
Fatique fs	-0.2%	-0.5%	-1%
Temperature dependence f6	±0.2%/℃	±0.5%/°C	±1.0%/°C
Range change f1	±0.2%	±1%	±2%

CPM-3000中心旋转反光镜分布光度计

Center rotating reflector distribution photometer



三维空间光强分布图

Three dimensional spatial light intensity distribution map

产品描述 Product describe

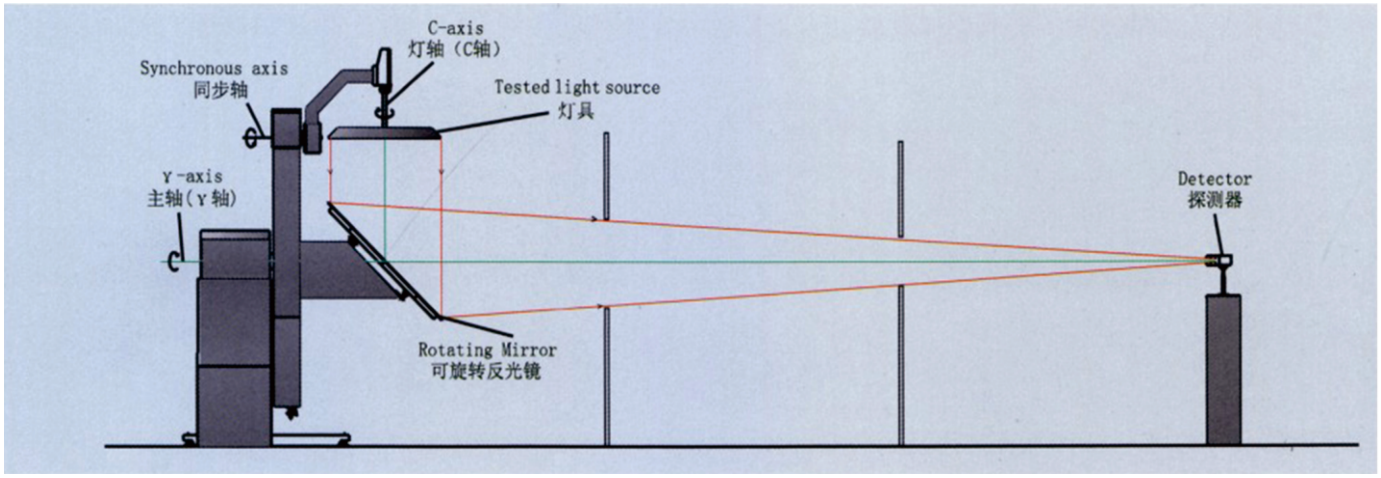
CPM-3000分布光度计是一套高度智能化灯具配光性能测试系统，测试臂长5m~30m可调,可实现C-γA-α和B-β测量方案，测试结果可直接作为国际通用照明设计软件的输入数据，符合CIE、IESNA等国际和国内标准要求。主要用于道路灯具、室内灯具、投光灯具等各类灯（具）的空间光强分布及各种光度参数的测试。国际照明委员会CIENO70中推荐的标准结构。

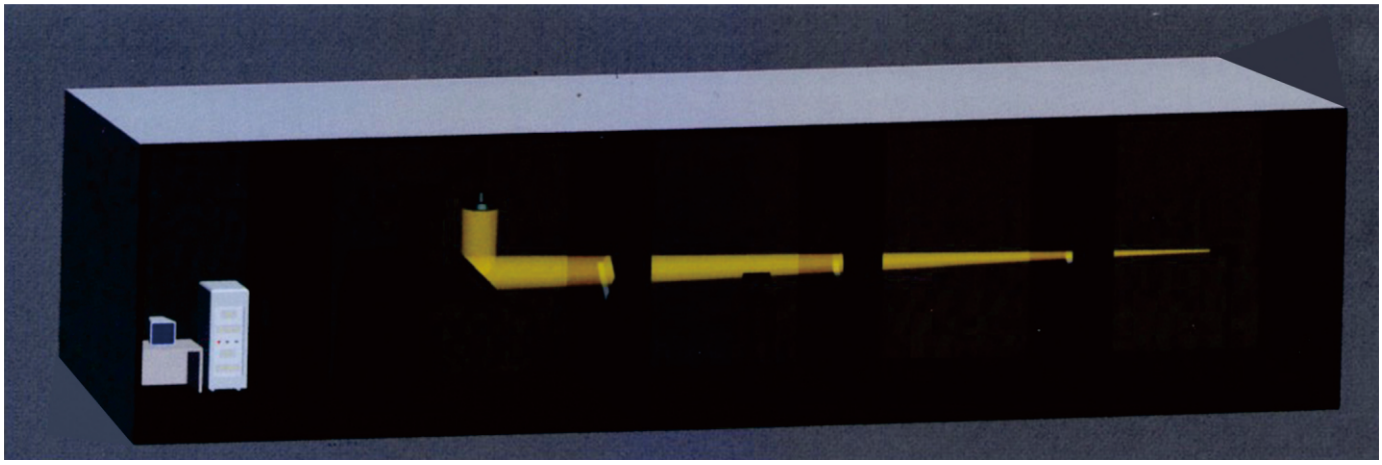
测量灯具的空间光强分布、任意截面上的光强分布曲线、灯具效率、利用系数、亮度限制曲线、环带光通量、灯具总光通量、有效光通量、LED灯具的全空间色度，不均匀度（选项），眩光等级，概算曲线，最大允许距高比，有效发光角，上射光通比、下射光通比、等照顾度曲线、空间等光强曲线等光度参数被测灯具可绕反射镜（γ）±°(或0~360°)转动，被测灯具自身可旋转（C）±180°（或0~360°）采用贵金属光纤点刷技术的高级换向器，实现不间断连续测量，不会绕线，智能启动和停止，转动平稳，低噪声光度测量范围照度：0.01l x-10000lx光强:1CD-10CD(探头)角度精度:0.1°,角度分辨率:0.01°光度测量精度:2%(标准光源下)测量数据符合国际、国内标准要求，IESNA等国际通用文件格式输出，可由其它照明和灯具设计软件直接调用。

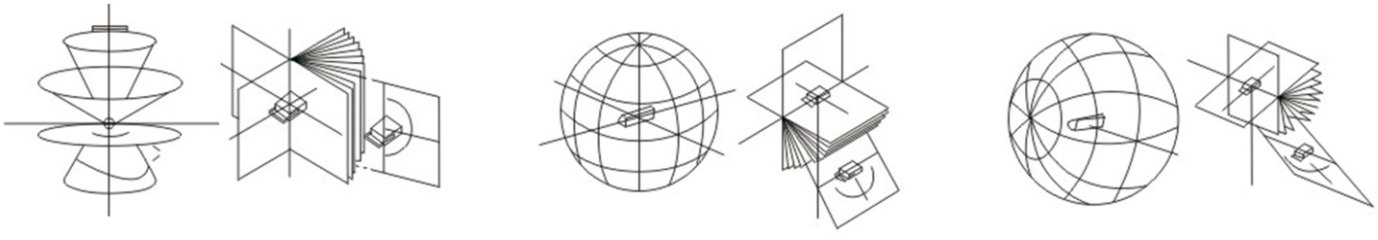
Cpm-3000 distribution photometer is A highly intelligent light distribution performance test system, the test arm length of 5m~30m adjustable, can achieve c-gamma, a-alpha and b-beta The measurement scheme and test results can be directly used as the input data of the international general lighting design software, meeting the requirements of CIE, IESNA and other international and domestic standards. The main It is used to test the distrib ution of light intensity and various luminosity parameters of road lamps, indoor lamps and projection lamps. CIENO, international lighting commission The standard structure recommended in 70.

Measurement of luminaire's spatial intensity distribution, luminaire's intensity distribution curve on any section, luminaire's efficiency, utilization coefficient, luminance limit curve, band luminous flux, luminaire's total luminous flux, Effective luminous flux, full-space chromaticity of LED lamps, non-uniformity (optional), glare level, approximate curve, maximum allowable distance height ratio, effective luminous Angle, up-shot optical flux ratio,The parameters of the optical flux ratio, the curve of equal degree of care, the curve of equal intensity of space The measured luminaire can rotate around the reflector (gamma) ±° (or 0~360°), and the measured luminaire itself can rotate (C) ±180° (or 0~360°).Advanced commutator with noble metal fiber point brush technology, realize continuous measurement without winding, intelligent start and stop, stable rotation and low noise Photometric range Illumination: 0.01lx-10000lx intensity: 1cd-10cd (probe)Angle accuracy :0.1°, Angle resolution :0.01°Photometric measurement accuracy : 2%(under standard light source) Measurement data in line with the requirements of international and domestic standards, IESNA and other international general file format output, can be directly invoked by other lighting and lighting design software.

CPM-3000中心旋转反光镜分布光度计
Center rotating reflector distribution photometer







产品描述 Product describe

本系统有三个旋转轴，灯具绕自身轴（C轴）旋转，主轴（Y轴）驱动反光镜绕其中心点旋转，将灯具的反射光反射到探测器上。与此同时，辅助轴（auxilliary axis）同步逆向旋转，始终保持灯架处于垂直位置，从而保持灯具在测量过程中处于正常的燃点位置，实现灯具在主轴（main axis）方向的测量。

The system has three rotation axes. The lamp rotates around its own axis (C axis), and the main axis (Y axis) drives the reflector to rotate around its center point The reflected light bounces off the detector. At the same time, auxilliary axis rotates synchronously and backward, always keeping the light shelf in the vertical position, so as to keep the lamp in the normal ignition position during the measurement process and realize the measurement of the lamp in the direction of the main axis.

CPM-2000运动反光镜分布光度计
Motion reflector distribution photometer

产品描述 Product describe

CPM-2000分布光度计是一套高度智能化灯具配光性能测试系统,测试臂5m~20m可调,可实现C-y、A-a和B-B测量方案,测试结果可直接作为国际通用照明设计软件的输入数据,符合CIE、IESNA等国际和国内标准要求。主要用于道路灯具、室内灯具、投光灯具等各类灯具的光度性能测试。

测量灯具的空间光强分布、任意截面上的光强分布曲线、灯具效率、利用系数、亮度限制曲线、环带光通量、灯具总光通量、有效光通量、LED灯具的全空间色度、不均匀度(选项),眩光等级、概算曲线、最大允许距高比、有效发光角、上射光通比、下射光通比、等照度曲线、空间等光强曲线等光度参数。

文件输出格式:

CIE,CSV,EXCEL表格格, 技术特性CHARACTERIS TICS 反射镜可绕被测灯具(Y) + 180°(0~360°)转动,被测灯具自身可旋转(C)+ 180°(0~360°)采用贵金属光纤点刷技术的高级换向器,实现不间断连续测量,不会绕线,智能启动和停止,转动平稳,低噪声被测灯具测量位置与际使用状态一致,灯具工作状态不变激光十字线瞄准装置。可方便,准确地安装测试灯具的位置角度精度: 0.1°,角度分辨率: 0.01°,光度测量精度: 2%(标准光源下),测量数据符合国际、国内标准要求, IESNA 等国际通用文件格式输出,可由其它照明和灯具设计软件直接调用。

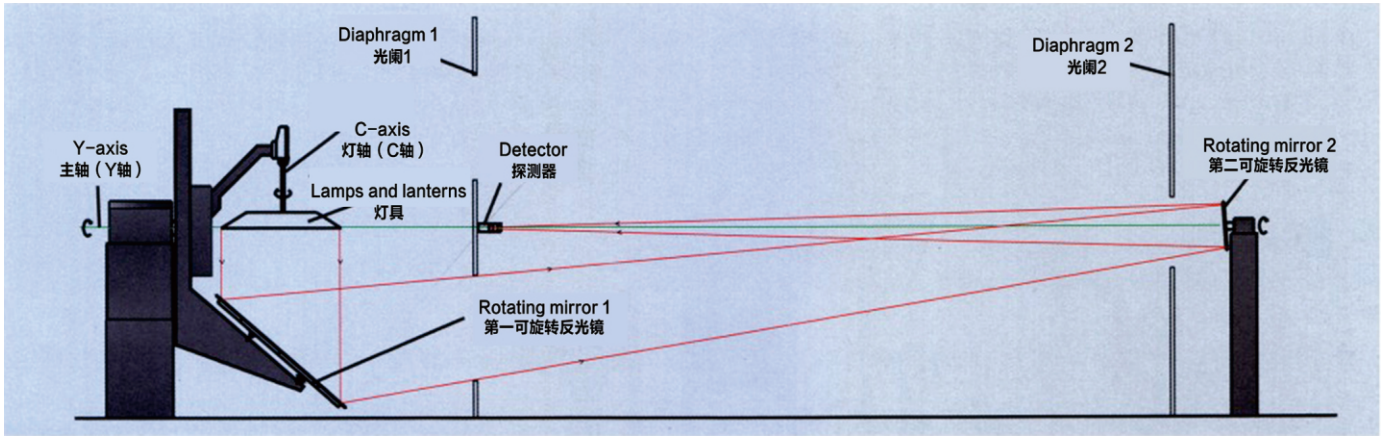
Cpm-2000 distribution photometer is A highly intelligent light distribution performance test system, the test arm 5m~20m adjustable, can achieve c-y, a-a and b-b measurement The test results can be directly used as the input data of the internati onal general lighting design software, meeting the requirements of CIE, IESNA and other international and domestic standards. Mainly used for road lamps, Test the luminosity performance of indoor lamps, projection lamps and other kinds of lamps.

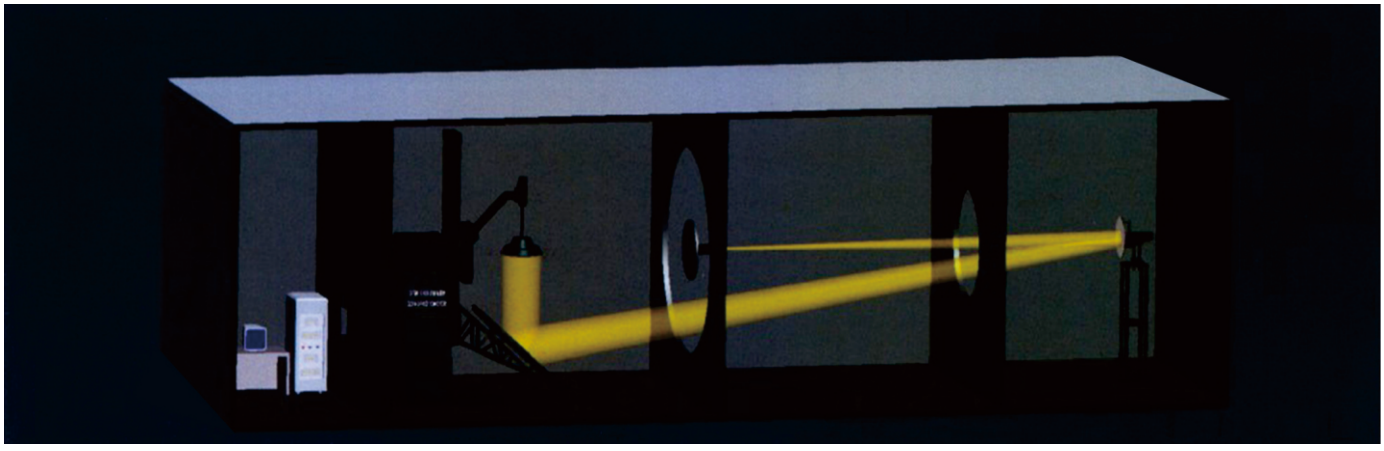
Measure the spatial light intensity distribution of the luminaire, the light intensity distribution curve on any section, Luminance limit curve, band flux, total luminaire Flux, effective luminous flux, full-space chromaticity, non-uniformity of LED lamps (optional), Glare grade, approximate curve, maximum allowable distance height ratio, effective luminescence Angle, upper light Pass ratio, down light pass ratio, isometric curve, spatial isometric curve.

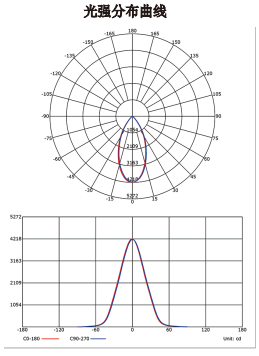
File output format:

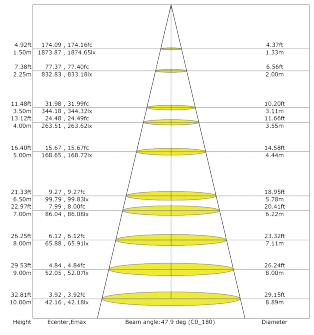
CIE, CSV, excel table format, technical characteristics characteristics tics reflector can rotate around the tested lamp (y) + 180 ° (0 ~ 360 °), and the tested lamp itself can rotate(c)+180°(0~360 °). The advanced commutator of precious metal optical fiber point brush technology is adopted to realize uninterrupted continuous measurement without winding, intelligent start and stop, stable rotation, and the measurement position of low-noise tested lamp is consistent with the international use state, The working state of the lamp remains unchanged, and the laser crosshair aiming device. It can easily and accurately install the position angle accuracy of test lamps:0.1°angle resolution:0.01°photometric measurement accuracy: 2% (under standard light source) the measurement data meet the requirements of international and domestic standards. It can be output in international common file formats such as IESNA, which can be directly called by other lighting and lamp design software.

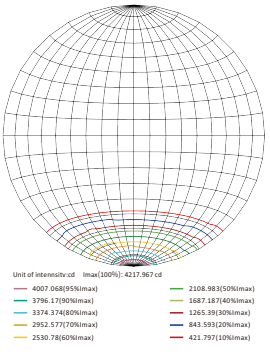
CPM-2000运动反光镜分布光度计
Motion reflector distribution photometer

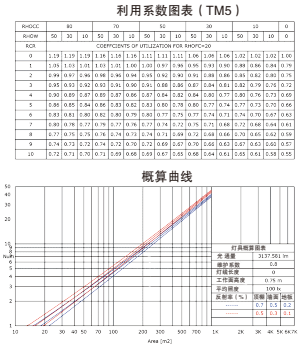












产品描述 Product describe

测量过程中，系统保持被测灯具静止不动，反射镜绕灯具做圆周运动，灯具发出的光经反射镜反射后照射到探测器上，由探测器测得照度值，从而得到灯具在空间各个方向的光强值。

In the process of measurement, the system keeps the tested lamp stationary and the reflector moves around the lamp in a circular motion. The light emitted by the lamp is reflected by the reflector and shines on the detector, and the illuminance value is measured by the detector, so as to obtain the light intensity value of the lamp in all directions of space.

文件输出格式

- CIE CIE文件格式输出格式
- IES IESNA北美标准格式
- Tm14 TM14文件格式（英国标准）
- EUT EULUMDAT文件格式（德国标准）
- CSV EXCEL表格格式

File output format

- CIE CIE file format output format
- IES IESNA north American standard format
- Tm14 Tm14 file format (British standard)
- EUT EULUMDAT file format(German standard)
- CSV EXCEL format

CPM-2000B灯具旋转分布光度计
Luminaire rotation distribution photometer

文件输出格式

- CIE CIE文件格式输出格式
- IES IESNA北美标准格式
- Tm14 TM14文件格式（英国标准）
- EUT EULUMDAT文件格式（德国标准）
- CSV EXCEL表格格式

File output format

- CIE CIE file format output format
- IES IESNA north American standard format
- Tm14 Tm14 file format (British standard)
- EUT EULUMDAT file format(German standard)
- CSV EXCEL format

产品描述 Product describe

高性价比、占用空间小，机械模具，铸件技术主体结构采用一体成型再加上特殊工艺热处理日久不变形。采用国际先进进口17位绝对值光电编码器。

根据CIE、IESNA、国家标准等要求，通过旋转灯具，实现B-B、A-a、和C-y等多种测量方式。用于测量各类LED室内照明灯具、投光灯具、道路照明灯具的空间光强分布及多种光度参数。测量参数包括空间光强分布、任意截面积上的光强分布曲线灯具效率、利用系数、亮度限制曲线、环带光通量、灯具的总光通量，有效光通量、LED灯具的全空间色度、不均匀度（选项）眩光等级、概算曲线、最大允许距高比、有限发光角、上射光通比，下射光通比，等照度曲线、空间等光强曲线等光度参数。

High cost performance, small occupation space, mechanical mold, casting technology main structure using an integral form plus special process heat treatment without deformation. Adoptinternational advanced import 17 bit absolute value optical encoder.

According to CIE, IESNA, national standards and other requirements, through rotating lamps, b-b, a-a, c-y and other measurement methods. Used for measuring Spatial light intensity distribution and various luminosity parameters of all kinds of LED indoor lighting lamps, projection lamps and road lighting lamps. Measurement parameters include spatial light intensity Luminance efficiency, utilization coefficient, luminance limit curve, band luminous flux, total luminous flux of luminaire, Effective luminous flux, full-space chromaticity, non-uniformity of LED lamps (option glare level, approximate curve, maximum allowable distance height ratio, finite luminescence Angle, Upper light pass ratio, lower light pass ratio, isometric curve, spatial isometric curve.

技术特性 Technical characteristics

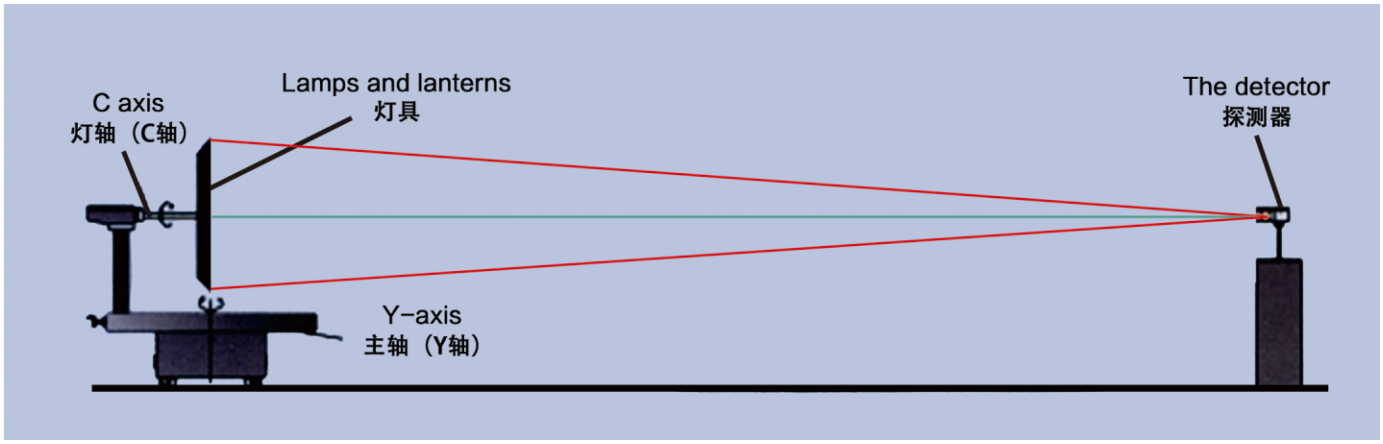
被测灯具可绕垂直轴和水平轴转动，转动范围 The tested lamp can rotate around the vertical axis and horizontal axis, and the rotation range is	±180°(或0~360°)单柱驱动C-y坐标系或双柱驱动B-B坐标测量方式 ± 180 ° (or 0 ~ 360 °) single column driven c-y coordinate system or double column driven B-B coordinate measurement method
光度测量范围照度 Photometric measurement range illuminance	0.001lx-200KIX
光度测量精度 Photometric measurement accuracy	2%(标准光源下) 2% (under standard light source)
杂散光 Stray light	≤0.1%
角度精度 Angle accuracy	0.1°
角度分辨度 Angular resolution	0.01°
光度测量精度 The photometric measurement accuracy	2%(标准光源下）测量数据符合际、国内标准要求，IESNA等国际通用文件格式输出，可由其它照明和灯具设计软件直接用 2% (under standard light source). The measurement data meet the requirements of international and domestic standards. It is output in international common file formats such as IESNA and can be directly used by other lighting and lamp design software

灯具旋转分布光度计
Luminaire rotation distribution photometer

技术特性 Technical characteristics

名称Model	被测量灯具尺寸Tested lamp size		被测量灯具重量Tested lamp weight
	C-y测量measurement	B-p测量measurement	
CPM2000B	1700*850mm	850*850mm	50KG

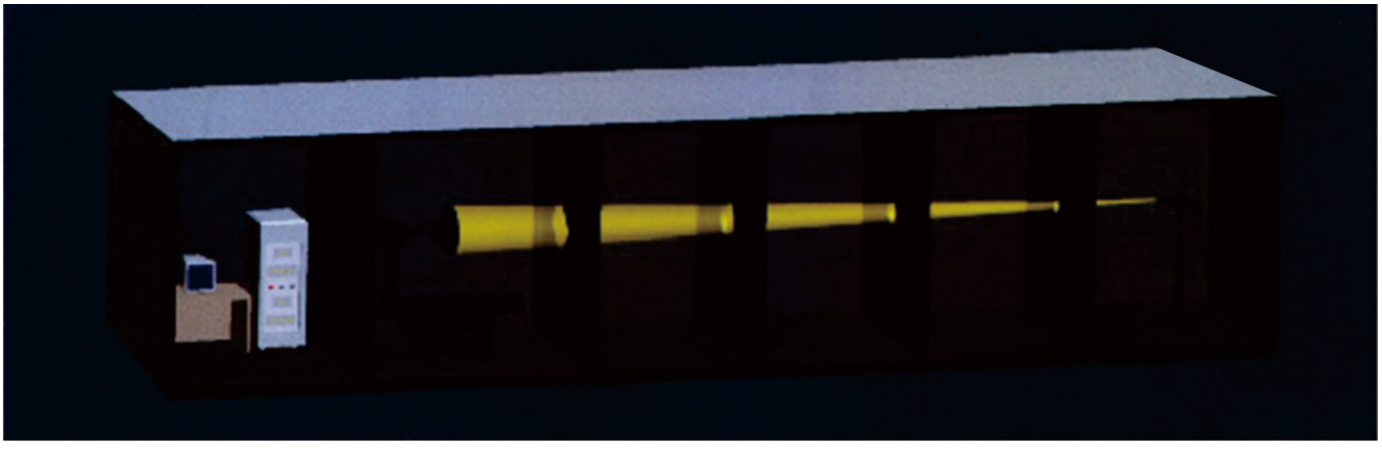
原理图 Schematic diagram



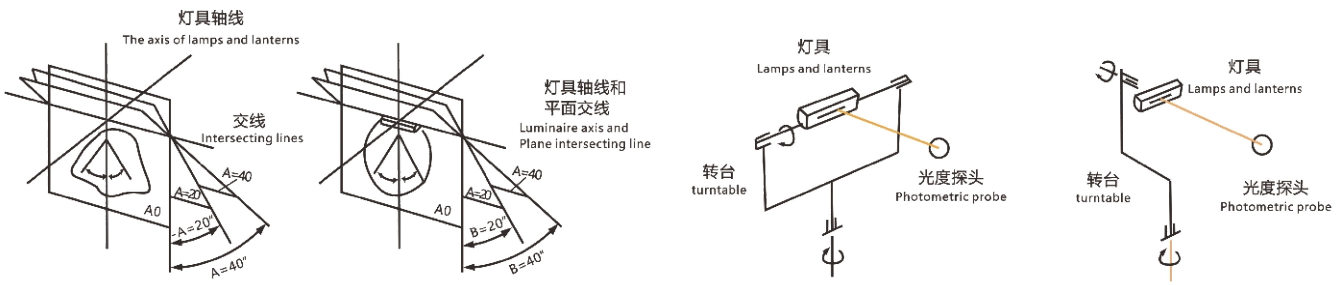
在测试过程中,探头保持静止,灯具绕垂直轴(Y轴)和水平轴(C平面轴)转动, 从而得到整个空间的光强分布。

During the test, the probe remains stationary and the lamp rotates around the vertical axis (Y axis) and the horizontal axis (C plane axis), so as to obtain the light intensity distribution of the whole space.

结构为C-y坐标的单列 Single Columns Structu re C-y coordinates



测量平面 Measuring plane



CPM-1600B/CPM-1600L分布光度计
Goniophoto meter

CPM-1600B

CPM-1600L

产品描述 Product describe

CPM-1600B/CPM-1600L分布光度计系统由主机、控制柜和探测器组成，实现对光源或灯具空间各个方向上的光强，空间颜色分布、平均颜色特性及空间颜色（选项）不均匀性测量，可同时实现CIE标准B-B和C-y测量方案。

高性价比、占用空间小，机械模具，铸件技术主体结构采用一体成型再加上特殊工艺热处理日久不变形。采用国际先进进口17位绝对值光电编码器。

CPM-1600B/CPM-1600L distribution photometer system is composed of host, control cabinet and detector, which can measure the light intensity, spatial color distribution, average color characteristics and spatial color (option) inhomogeneity of the light source or luminance space in all directions. CIE standard b-b and c-y measurement schemes can be realized at the same time.

High cost performance, small space, mechanical mold, casting technology The main body structure adopts one body forming Plus special process heat treatment Time does not change shape.Adopt international advanced import 17Bit absolute value optical encoder.

文件输出格式

- CIE CIE文件格式输出格式
- IES IESNA北美标准格式
- Tm14 TM14文件格式（英国标准）
- EUT EULUMDAT文件格式（德国标准）
- CSV EXCEL表格格式

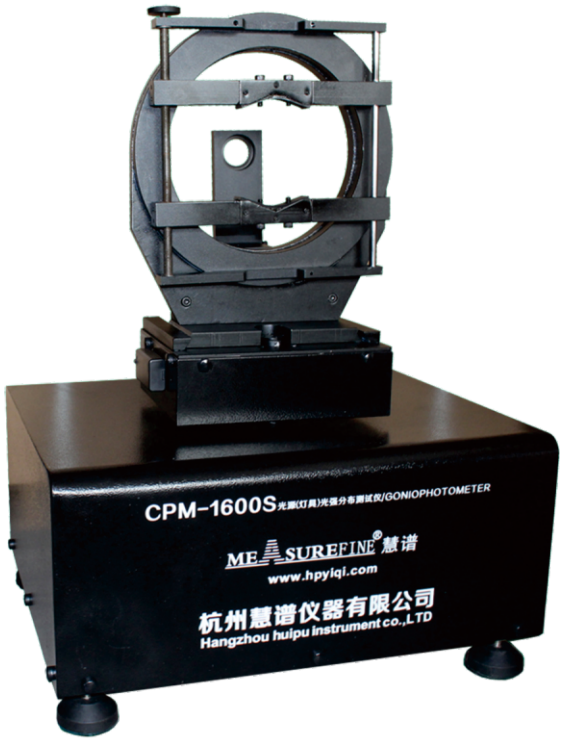
File output format

- CIE CIE file format output format
- IES IESNA north American standard format
- Tm14 Tm14 file format (British standard)
- EUT EULUMDAT file format(German standard)
- CSV EXCEL format

双柱结构re(B-B坐标) Double Columns Structu re(B-B coordinates)

技术特性 Technical characteristics			
名称Model	被测量灯具尺寸Tested lamp size		被测量灯具重量Tested lamp weight
	C-y测量measurement	B-p测量measurement	
CPM1600B CPM1600L	1600*750mm	800*700mm	30KG

CPM-1600S光源(灯具)光强分布测试仪
Light source (lamp) intensity distribution tester



文件输出格式

- CIE CIE文件格式输出格式
- IES IESNA北美标准格式
- Tm14 TM14文件格式（英国标准）
- EUT EULUMDAT文件格式（德国标准）
- CSV EXCEL表格格式

File output format

- CIE CIE file format output format
- IES IESNA north American standard format
- Tm14 Tm14 file format (British standard)
- EUT EULUMDAT file format(German standard)
- CSV EXCEL format

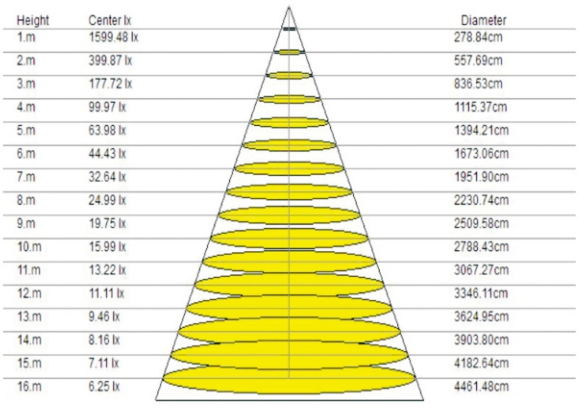
产品描述 Product describe

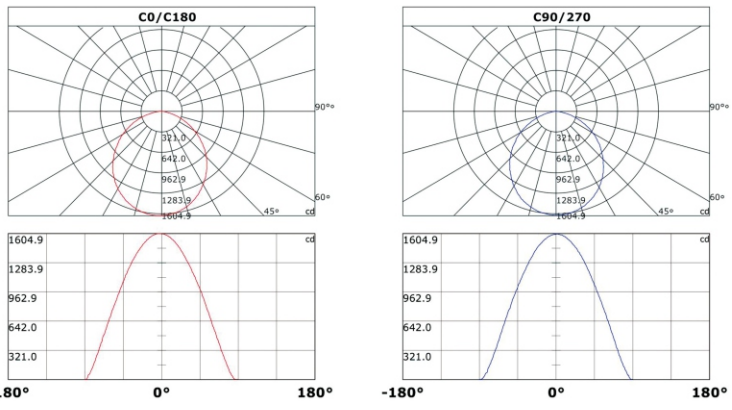
CPM-1600S光源（灯具）光强分布测试仪，测试距离可供选择。主要用于测量单颗LED、组合LED、反射灯的发光强度、空间光强分布曲线、法向光强、光束扩散角等光度参数。同时满足CIE127E11E61341标准对灯具测试的要求，IESNA文件格式输出，可由其他照明或灯具设计软件直接调用。

CPM-1600S light source (luminance) light intensity distribution tester, test distance is optional. It s mainly used to measure the luminescence intensity, spatial light intensity distribution curve, normal light intensity and beam diffusion Angle of single LED, combined LED and reflection lamp.At the same time, it meets the requirements of CIE127E11E61341 standard for lamp testing. The output of IESNA file format can be directly invoked by other lighting or lamp design software.

根据被测光源（灯具）的尺寸大小，可配置不同规格的灯具夹具；用户需自备暗室
According to the size of the measured light source (lamp), fixture of different specifications can be configured; Users need to provide dark

Height	Center lx	Diameter
1.m	1599.48 lx	278.84cm
2.m	399.87 lx	557.69cm
3.m	177.72 lx	836.53cm
4.m	99.97 lx	1115.37cm
5.m	63.98 lx	1394.21cm
6.m	44.43 lx	1673.06cm
7.m	32.64 lx	1951.90cm
8.m	24.99 lx	2230.74cm
9.m	19.75 lx	2509.58cm
10.m	15.99 lx	2788.43cm
11.m	13.22 lx	3067.27cm
12.m	11.11 lx	3346.11cm
13.m	9.46 lx	3624.95cm
14.m	8.16 lx	3903.80cm
15.m	7.11 lx	4182.64cm
16.m	6.25 lx	4461.48cm





HFA-3000 / 3000S (手持) 光源频闪测量仪
Light source stroboscope measuring instrument

HFA-3000S 手持光源频闪测量仪

HFA-3000 光源频闪测量仪

产品描述 Product describe

HFA-3000光源频闪测量仪/3000S 手持光源频闪测量仪，在硬件配置和软件功能上都进行了升级，完全满足包括能源之星Lamps V2.1、NEMA77在内的多个关于光源频闪的测量分析标准。能够提供最为齐全的频闪评价参数，并且能根据标准判别频闪安全等级，不仅适合于实验室测量，也满足现场测量需求。

配备ClasA快速光度探头，采样速度高达 100kHz，完全按照BASIC，Energy Star V2.1，IEC-Pst，CA，CEC ，ASSIST，CIE SVM 和 IEEE Std 1789等标准设计,专用于LED灯及灯具、节能灯等各种光源的频闪测试。根据欧盟指令1194 / 2012、 2009/125/EC及IEC60969《Self-ballasted Lamps for General Lighting Services-Performance Requirements》 等要求。

HFA-3000 light source stroboscopic meter / 3000s handheld light source stroboscopic meter have been upgraded in hardware configuration and software functions, and fully meet multiple measurement and analysis standards on light source stroboscopic, including energy star lamps v2.1 and nema77. It can provide the most complete stroboscopic evaluation parameters and judge the stroboscopic safety level according to the standard. It is not only suitable for laboratory measurement, but also meets the needs of field measurement.

equipped with class a fast photometric probe with sampling speed up to 100kHz, it is designed in full accordance with basic, energy star v2.1, IEC PST, CA, CEC, assist, CIE SVM, IEEE Std 1789 and other standards, and is dedicated to the stroboscopic test of LED lamps, lamps, energy-saving lamps and other light sources. According to EU directives 1194 / 2012, 2009 / 125 / EC and IEC60969 self ballasted lamps for general lighting services - Performance requirements.

主要参数 The main parameters

型号 Model	HFA–3000光源频闪测量仪 Light flicker analyzer		
照度准确度 Illuminance accuracy	一级（±4%） Level I (± 4%)	湿度范围 Humidity range	相对湿度≤80% elative humidity ≤ 80%
照度测量范围 Illuminance measurement range	0.1lk~20,0000lx	储存条件温度 torage condition temperature	（-20~50）℃
采样速率 Sampling rate	100kHz	湿度范围 humidity range	相对湿度≤90% relative humidity ≤ 90%
采样时间 Sampling time	根据标准的测量需求灵活选择 Flexible selection according to standard measurement requirements	屏幕尺寸 Screen size	7寸液晶屏/5寸液晶屏（手持） 7-inch LCD / 5-inch LCD (handheld)
额定工作温度 Rated operating temperature	（18~28）℃	通讯方式 Communication mode	USB通讯 USB communication
湿度范围 Humidity range	相对湿度35%~75% relative humidity 35% ~ 75%	储存容量 storage capacity	大容量 high-capacity
允许工作温度 Allowable operating temperature	（0~35）℃		

SPEC-3000A PLUS高精度快速光谱分析系统
High precision and fast spectral analysis system

产品描述 Product describe

SPEC-3000A PLUS高精度快速光谱分析系统采用世界先进的CCD陈列探测器，实现极低杂散光和宽线性动态测量范围。同时具有高重复性和稳定性，可同时实现毫秒级的测试速度和传统机械式光谱仪的测量精度。它具有快速测量、使用方便、灵敏度较高、寿命长、可靠性高、机械磨损、体积小等优点。主要应用于产品品质控制和批量生产检测，也适合作为实验室研究设备。

SPEC-3000A fast spcetroadiometer adopts the most advanced holographic concaye diffraction grating and hight perfomance electronic shutter controlinear CCD display detector It can realize super low stray light and wide linearity dyamic measuring range. It has high repeatabillty and stabillty, and can also achieve the millsecond measure ment speed and the sme test precision as the traditionalmechancal spectrometer It's mainly applied to the quality control and quantily production as well as the lab research equioment.

产品描述 Product describe

采用阵列探测器替代机械扫描系统，在极短的时间内完成整个光谱测量,不含机械扫描装置，外型精巧美观，无机械磨损，使用寿命长，可靠性高. 可同时实现毫秒级的测量速度和传统机械式光谱仪的测量精度，用于LED及LED灯具等各类光源的光谱、颜色及光通量等光色参数的高精度测量。

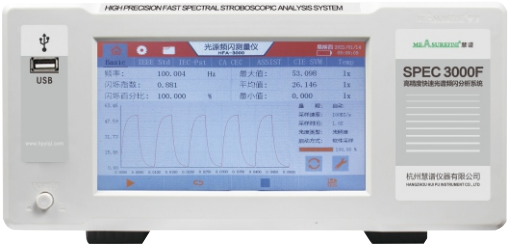
Using array detector instead of mechanical scanning system, complete the whole spectrum measurement in a very short time, without mechanical scanning device, exquisite appearance, no mechanical wear, long service life,High reliability. It can realize the measuring speed of millisecond and the measuring accuracy of traditional mechanical spectrometer at the same time. It is used for spectrum, color and luminous flux of various light sources such as LED and LED lamps High precision measurement of Numbers.

技术参数 technical parameter

规格Specifications 型号Model / 项目Items	可见VIS SPEC3000A PLUS SPEC3000F	紫外可见UV-VIS SPEC3000A /SPEC3000F	可见近红外VIS-nIR SPEC3000A/SPEC3000F
探测器Detector	CCD		
光栅类型Grating type	全息平场凹面光册Holographic grating witn flat-field correction		
	多色仪Spectrograph		
频闪测试Stroboscopic test		（SPEC3000F）	
波长范围Wavelength range	350-800nm	200-800nm	380-1050nm
杂散光Stray light1.	5X10-4	1.5X10-4	15X10-4
带宽Band width	2.5nm	3nm	4nm
采样步长Sampling step	0.2nm	0.3nm	0.35nm
波长精度Wavelength accuracy	±0.3nm	±0.5nm	±0.5nm
狭缝宽度Slit width	100um	100um	100um
	色度学参数Colorimetry parameters		
色品坐标精度Accuracy of chromatic	±0.002	±0.003	±0.003
重复性Reproducibility(blue LED)	±0.0003	±0.0004	±0.0005
相关色温范围TC range	1000K-100000k		
相关色温准确性TC accuracy	±0.3%	±0.4%	±0.5%
显色指数范围Rendering index range	0~100		
显色指数精度Rendering index accuracy	±(0.3%rdg+0.5)		
	光度学参数Photometry parameters		
光度测量线性Photometry linearity	±0.3%		
光度测量范围Photometry range	0.011m~1.999X1051m		
	(配套适合的积分球Comply with suitable sphere)		
光度探头Photometer head	等级A class A		
动态范围Dynamic range	108		
	电学数据Electrical datas		
模数转换器AD converter	16 bits		
积分时间Integration time	0.1ms-60s		
通讯接口PC interface	USB2.0RS-232-C		
	其他Others		
输入电源Power input	AC85~265V		
CCD像素Pixel	3648		
环境温度测量范围 Temperature measurement range	0-80°C		

SPEC-3000F 高精度快速光谱频闪分析系统

High precision and fast spectral stroboscopic analysis system



产品描述 Product describe

SPEC-3000F快速光谱频闪分析仪、专用积分球、精密电流源，校准定标系统等组成快速光谱分析系统。除了测量光谱参数以外，还能测量光源的频闪参数，光谱参数采用世界先进的凹面光栅和滨松高性能带电子快门控制的线CCD陈列探测器，可同时实现毫笔级的测试速度和传统机械式光谱仪的测量精度。它具有快速测量、使用方便、长寿命、高可靠性、体积小等优点。光源频闪参数在硬件配置和软件功能上都进行了升级，完全满足包括能源之星Lamps V2.1、NEMA77在内的多个关于光源频闪的测量分析标准。SPEC-3000F能够提供最为齐全的频闪评价参数，并且能根据标准判别频闪安全等级，不仅适合于实验室测量，也满足现场测量需求。

测量参数：相关色温、光通量、光效、显色指数、色品坐标、色容差、色度图、色纯度、峰值波长、主波长、质心波长、色比：R、G、B，TM 30，色品饱和度指数Rg、色品逼真度指数Rf、全色域指数 GAI、色品质度CQS: Qa、Qf、Qg、 能效指数EEI、能效等级、中间视觉光通量：USP、MOVE、MES1、MES2 和植物生长灯专用测试项目等。

SPEC-3000F fast spectral stroboscopic analyzer, special integrating sphere, precision current source, calibration system, etc. constitute a fast spectral analysis system. In addition to measuring the spectral parameters, it can also measure the stroboscopic parameters of the light source. The spectral parameters adopt the world's advanced concave grating and Hamamatsu's high-performance linear CCD display detector with electronic shutter control, which can realize the millipen level test speed and the measurement accuracy of the traditional mechanical spectrometer at the same time. It has the advantages of fast measurement, convenient use, long service life, high reliability, small volume and so on. The stroboscopic parameters of the light source have been upgraded in terms of hardware configuration and software functions, which fully meet many measurement and analysis standards on the stroboscopic of the light source, including energy star lamps v2.1 and nema77. Spec-3000f can provide the most complete stroboscopic evaluation parameters and judge the stroboscopic safety level according to the standard. It is not only suitable for laboratory measurement, but also meets the needs of field measurement.

Measurement parameters: relevant color temperature, luminous flux, luminous efficiency, color rendering index, chromaticity coordinates, color tolerance, chromaticity diagram, color purity, peak wavelength, dominant wavelength, centroid wavelength, color ratio: R, G, B, tm30, chromaticity saturation index RG, chromaticity Fidelity Index RF, full color gamut index gai, chromaticity quality CQS, QA, QF, QG, energy efficiency index EEI, energy efficiency grade Intermediate vision flux: USP, MOVE, MES1, MES2 and plant growth lamp special test items.

技术参数 technical parameter

通讯方式 Communication mode	USB
测量方式 measurement method	快速 Fast
波长范围 Wavelength range	350nm～800nm
波长精度 Wavelength accuracy	±0.3nm
波长波动 Wavelength fluctuation	0.2nm
测量带宽 Measurement bandwidth	1.6nm
色品精度 Chromaticity accuracy	±0.0008（标准 A 光源）(standard a light source)
光度线性 Photometric linearity	0.5%
杂散光 Stray light	1.00E-03
光通范围 Luminous flux range	0.01lm～6.00×10^5lm （选择相应积分球）(select corresponding integrating sphere)
色温范围 Color temperature range	1000K～100000K
测量速度 Measuring speed	1ms～5000ms
照度准确度 Illumination accuracy	±4%
照度测量范围 Illuminance measurement range	1.1IK 20,0000lx，
采样速率 Sampling rate	100kHz
可测量参数：光波动的时域和频域分析图，基准频率、闪烁百分百、闪烁指数、调制深度，Pst(符合IEC、NEMA77、能源之星Lamps V2.1等标准)，SVM(符合CIE、TN:006、NEMA77、能源之星Lamps V2.1等标准)，调制百分百（发给CEC 法规JA 10），Mp(符合ASSIST 推荐以及能源之星Lamps V2.1 等标准)软件可根据相应标准判别频闪危害等级。 Measurable parameters: time domain and frequency domain analysis diagram of light fluctuation, reference frequency, flicker percentage, flicker index, modulation depth, PST (in accordance with IEC, nema77, energy star lamps v2.1 and other standards), SVM (in accordance with CIE, TN: 006 , Nema77, energy star lamps v2.1 and other standards), modulation percentage (issued to CEC regulation JA 10), MP (in accordance with assist recommendation and Energy Star lamps v2.1 and other standards) software can judge the stroboscopic hazard level according to corresponding standards.	

高精度快速光谱分析系统
High precision and fast spectral analysis system

产品描述 Product describe

快速光谱分析仪、专用积分球、精密电流源，校准定标系统等组成快速光谱分析系统。本系统采用世界先进的凹面光栅和滨松高性能带电子快门控制的线CCD陈列探测器，可同时实现毫笔级的测试速度和传统机械式光谱仪的测量精度。它具有快速测量、使用方便、长寿命、高可靠性、体积小等优点。

可测试参数：相对光谱功率分布; 色品坐标; 相关色温; 显色指数; 色容差(含国际和国内标准); 峰值波长、TM 30:Rg Rf：半宽度；红色比；光度参数: 光通量: 相对亮度；环境温度；主波长、色纯度等。

fast spectrum analyzer, special integrating sphere, precision current source, calibration system, etc. constitute a fast spectrum analysis system. The system adopts the world's advanced concave grating and Hamamatsu's high-performance linear CCD display detector with electronic shutter control, which can realize the test speed of millipen level and the measurement accuracy of traditional mechanical spectrometer at the same time. It has the advantages of fast measurement, convenient use, long service life, high reliability, small volume and so on.

Testable parameters: relative spectral power distribution; Chromaticity coordinates; Relevant color temperature; Color rendering index; Color tolerance (including international and domestic standards); Peak wavelength, TM 30: RG RF: half width; Red ratio; Photometric parameters: luminous flux: relative brightness; Ambient temperature; Main wavelength, color purity, etc.

SPEC-3000A快速光谱分析系统

SPEC-2000A(CP)快速光谱分析系统

SPEC-2000A(LCP)快速光谱分析系统

技术参数 technical parameter

型号 model	SPEC-3000A	SPEC-2000A(CP)	SPEC-2000A(LCP)
通讯方式 Communication mode	USB		
测量方式 measurement method	快速 Fast		
波长范围 Wavelength range	350nm～800nm		
波长精度 Wavelength accuracy	±0.3nm		
波长波动 Wavelength fluctuation	0.2nm		
测量带宽 Measurement bandwidth	1.6nm		
色品精度 Chromaticity accuracy	±0.0003（标准 A 光源） (standard a light source)	±0.0008（标准 A 光源） (standard a light source)	
光度线性 Photometric linearity	0.3%	0.5%	
杂散光 Stray light	1.00E-03		
光通范围 Luminous flux range	0.01lm～6.00×10^5lm （选择相应积分球） (select corresponding integrating sphere)		
色温范围 Color temperature range	1000K～100000K		
测量速度 Measuring speed	1ms～5000ms		

光学光纤
Optical fiber

用于积分球与SPEC系列光谱分析系统之间光信号传输。

Used for optical signal transmission between integrating sphere and SPEC series spectral analysis system.

积分球通用标准光源
Integral sphere universal standard light source

应用范围:
可用于光度色度仪器的光通量、光谱(色温)定标。数据溯源:(中国计量科学研究院), 规格:24V/50W, 24V/ 100W, 12V/20W, 6V/10W不同功率供选择。

Application:
It can be used for the calibration of luminous flux and spectrum (color temperature) of photometric and colorimetric instruments.Data traceability: (China Institute of Metrology), specifications: 24V/50W, 24V/100W, 12V/20W, 6V/10W, different powers for selection.

LED灯珠通用夹具(0.3m积分球夹具)
General fixture for LED lamp beads (0.3m integrating ball fixture)

LED灯珠通用夹具，适用于2835~5730内的灯珠和插式，通用于0.3米积分球光学测试。
夹具采用纯铜模块制作，有良好散热性和导电性能减少电压误差，内置弹簧式结构，经久耐用。

General purpose fixture for LED beads, 2835 ~ 5730It is generally used for optical test of 0.3m integrating sphere.
The fixture is made of pure copper module, which has good heat dissipation and conductivity, reduces voltage error, and has built-in spring structure, which is durable.

积分球
Integrating sphere

光度测量用的中空球体,在球的内表面涂有无波长选择性的(均匀),漫反射性的白色涂料,在球内任一方向上的照度均相等。

A hollow sphere for photometric purposes, The inner surface of the ball is coated with white paint with or without wavelength selective (uniform) diffusivity, The illumination in any direction within the sphere is equal.

LED光、色、电综合测试系统配置清单
Comprehensive test system configuration list

序号 No	仪器名称及型号/Rapid light spectrum test system	数量 number of	备注 note
1	SPEC3000A PLUS高精度快速光谱分析系统 SPEC3000A PLUS Fast Spectroradiometer Test System	1	二选一 A choice
2	SPEC2000A快速光谱分析系统 SPEC2000AFAST Spectroradiometer	1	
3	光电色测试软件（Software）	1	
4	LF-3Y光学光纤（Y型光路转换光纤，标定及测试过程无需转换光纤，无需定标，直接测试） LF-3Y Optical Fiber	1	二选一 A choice
5	LF-15单根导光纤维 LF-15 Optical Fiber	1	
6	SM-15(1.5m)光学积分球（1.5m侧开孔）Optical integrating sphere (1.5m side opening)	1	
7	SM-03(0.3m)光学积分球（0.3m侧开孔）Optical integrating sphere (0.3m side opening)	1	
8	LED灯珠通用夹具 General fixture for LED lamp beads	1	
9	HL-50w标准光源 Standard light source	1	
10	HL-10w标准光源 Standard light source	1	
11	LCP系列精密直流稳压稳流电源/LCPCC&CV DC Power Supply	1	二选一 A choice
12	CP高精度精密直流稳压稳流电源/CPSeries CC&CV DC Power Supply	1	
13	CP105电参数测量仪（通讯型）/CP105Digital Power Meter(RS232)	1	
14	SC-19英寸标准机柜/Standard Cabinet(Blue Grey or Dark)	1	
15	CP系列交流程控精密变频稳压电源/CP Series AC Power Supply	1	

分布式光度计配置清单
Distributed photometer configuration list

序号 No.	仪器名称及型号 Instrument name and model number	数量 number of	备注note
1	CPM-3000中心旋转反光镜分布光度计center rotating reflector distribution photometer 1.精密测试转台壹台1. One precision test turntable a.特制分布光度计专用变速箱,运行速度快,更平稳。 a. Special transmission for special distribution photometer, fast running speed, more stable. 采用德国国际知名品牌精密绝对角度编码器。 Adopt German international famous brand precise absolute Angle encoder. 2.恒温光度探测器壹只 2. One constant temperature photometric detector a. 光度探头(fi<;3%)。a. Photometric probe (Fi <; 3%). b.创新设计了金属电热膜环绕加热恒腔,加热场分布更加均匀, b. Innovative design of metal electric heating film around the heating constant cavity, more uniform distribution of heating field, 提高了分布光度计的精准度。The precision of distributed photometer is improved. 3.精密双通道智能光度计壹台 3. One precision double-channel intelligent photometer 4.采用专为分布式光度计设计和制造的精密智能双通道光度计, 4. Precision intelligent two-channel photometers designed and manufactured for distributed photometers, 低漂移及良好的电路线性保证了更高测试精度; Low drift and good circuit linearity ensure higher test accuracy; 5.光度与角度精密同步步技术,确保了不同角度的光度测试准确性; 5. Luminosity and Angle precision step by step technology, to ensure the accuracy of photometric testing at different angles; a.三维测控软件壹份 a. One copy of 3D measurement and control software 在测试过程和报告中均采用了三维图形技术来形象地表示灯具的光强分布, In both the test process and the report, 3D graphics technology is used to express the intensity distribution of the lamps. 可直观地显示全方位的光强分布。 It can display the full range of light intensity distribution intuitively. b.十字激光对准系统壹台 b. One cross laser alignment system 采用十字精密激光对准系统精确确定灯具的安装光度中心 A cross laser alignment system is used to accurately determine the installation luminosity center of the lamp	1	中心旋转反光镜分布光度计 Center rotation reflector distribution photometer
2	CPM-2000运动反光镜分布光度计 Motion Reflector Distribution Photometer (配置同CPM3000)(same configuration as CPM3000)	1	运动反光镜分布光度计 Motion reflector distribution photometer
3	CPM-2000B灯具旋转分布光度计 luminaire rotation distribution photometer (配置同CPM3000)(same configuration as CPM3000)	1	灯具旋转分布光度计 Lamp rotation distribution photometer
4	CPM-1800B灯具旋转分布光度计 luminaire rotation distribution photometer (配置同CPM3000)(same configuration as CPM3000)	1	灯具旋转分布光度计 Lamp rotation distribution photometer
5	CPM-1800灯具旋转分布光度计 luminaire rotation distribution photometer (配置同CPM3000)(same configuration as CPM3000)	1	灯具旋转分布光度计 Lamp rotation distribution photometer
6	分布式光度计测试软件 Distributed photometer test software	1	
7	HL-150w标准光源 standard light source	1	
8	CP高精度精密直流稳压稳流电源 CP high precision DC voltage and current stabilized power supply	1	
9	CP105电参数测量仪（通讯型） electrical parameter measuring instrument (communication type)		二选一 A choice
10	CP320数字电参数测试仪（高精度交直流谐波分析型3) Digital Electrical Parameter Tester (High Precision AC/DC Harmonic Analysis Type 3)	1	
11	SC-19英寸 标准机柜19-inch standard cabinet	1	
12	CP系列交流程控精密变频稳压电源 CP series AC programmable precision variable frequency regulated power supply	1	

多路温度记录仪
Multichannel temperature recorder

TCP-S手持温度记录仪

TCP-200S手持温度记录仪

TCP-400X

TCP-500XL 5寸高清触摸液晶屏

TCP-500X 5寸高清触摸液晶屏
（曲线和柱形）

TCP-700X 7寸高清触摸液晶屏
（曲线和柱形）

产品描述 Product describe

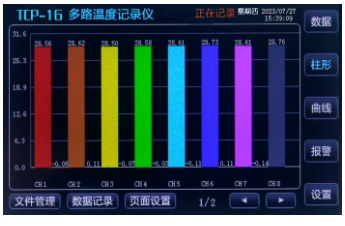
多路温度记录仪是一种适用于多点温度同时实时监控跟踪的仪表。具备测量方便、精度高、热电偶测试点可重复利用的优点、可设定各通道上下限温度值，可同时显示多路温度值具备U盘接口，插入U盘可海量保存温度记录数据。配备软件可将整个升温变化过程全部以曲线方式记录下来，便于保存。

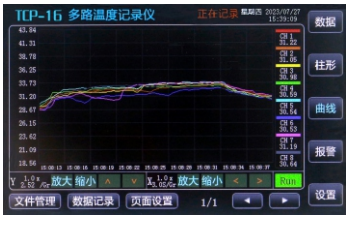
多路温度记录仪以其丰富的显示画面、灵活的操作方式以及强大的记录、运算和管理功能，在各行各业中获得了极其广泛的应用。主要由触控液晶屏、按键、ARM微处理器为核心的主板、主电源、外供变送器电源、智能通道板、大容量FLASH等构成，本产品吸纳了各种国内数据记录仪的优点，应用最新的显示技术、微电子技术、数据存储和通讯技术，是一款功能齐全、操作方便、精确可靠、高性价比的产品。

series multi-channel temperature recorder is an instrument suitable for real-time monitoring and tracking of multi-point temperature at the same time. It has the advantages of convenient measurement, high precision and reusable thermocouple test points. It can set the upper and lower temperature values of each channel, display multi-channel temperature values at the same time, and has a USB flash disk interface. Inserting a USB flash disk can save a large amount of temperature record data. Equipped with software, the whole temperature rise change process can be recorded in the form of curve for easy storage.

Multi channel temperature recorder has been widely used in all walks of life because of its rich display screen, flexible operation mode and powerful recording, operation and management functions. is mainly composed of touch LCD, keys, mainboard with ARM microprocessor as the core, main power supply, external transmitter power supply, intelligent channel board, high-capacity flash, etc,This product absorbs the advantages of various domestic data recorders and applies the latest display technology, microelectronics technology, data storage and communication technology. It is a product with complete functions, convenient operation, accuracy, reliability and high cost performance.

曲线图可用标尺直接测量任意点值 柱形图可测量每一组之间的相差值
The curve chart can be directly measured with a ruler at any point. The column chart can measure the difference value between each group





技术参数 technical parameter

产品系列 Product series	TCP-X系列 (5寸)/TCP-S(手持)				TCP-400X系列（4.3寸）		TCP-200S系列	
测试路数 The test way	8	16	24	32	8	16	4	8
屏幕尺寸 The screen size	5寸屏 5 inch screen				4.3寸屏 4.3 inch screen			
精度 precision	仪表测量、显示基本准确度 0.2%+0.5℃±2个字（不含热电偶精度） Meter measurement and display basic accuracy 0.2%+0.5℃ ±2 words (not including thermocouple accuracy)							
数据表 The data table	实现多路数同步显示和观察测试 Realize multi - channel synchronous display and observation test							
报警功能 Alarm function	可设置上上限、上限、下限、下下限报警，同时支持记录功能 Can set upper limit, upper limit, lower limit, lower limit alarm, while supporting recording function							
产品系列 Product series	TCP-X/S系列 (7寸) TCP-X/S Series (7 inches)							
测试路数 The test way	8	16	24	32	40	48	56	64
屏幕尺寸 The screen size	7寸屏 7 inch screen							
精度 precision	仪表测量、显示基本准确度 0.2%+0.5℃±2个字（不含热电偶精度） Meter measurement and display basic accuracy 0.2%+0.5℃ ±2 words (not including thermocouple accuracy)							
数据表 The data table	采样速度（快0.1s) (中0.5s) (慢1s) Sampling speed (0.1s fast) (0.5s medium) (1s slow)							
柱形图 Bar charts (TCP-400X TCP-200S系列无)	柱形图形式显示实时温度，可任意设置参考点以及可切换8通道和16通道多点显示 he real-time temperature is displayed in bar chart form, and the reference point can be arbitrarily set. The 8-channel and 16-channel multi-point display can be switched							
曲线图 The graph (TCP-XL TCP-400X TCP-200S系列无)	曲线图形式跟踪实时温度，X和Y轴值支持自动和手动设置 Real-time temperature tracking in graph form, X and Y axis values support automatic and manual Settings							
报警功能 Alarm function	有 have							
综合技术配置 (4.3寸屏、5寸屏和7寸屏都具备的技术参数) Comprehensive technical configuration (technical parameters for both 5-inch screen and arbitrarily								
兼容探头 注: 标配K探头其他探头根据自己的需求进行选配，如有疑问请咨询在线客服 Compatible probeNote: Standard K probe, other probes according to their ownNeeds to be selected. If you have any questions, please consult the Online customer service	N -270℃ ~1300℃							
	S -50℃ ~ 1760℃							
	E -270℃ ~840℃							
	J -210℃ ~1100℃							
	T -270℃~400℃							
	R -50℃~1760℃							
	K -270℃~1370℃ 标配 standard							
	B 30℃~1820℃							
	PT100 -200℃~850℃ (TCP-XL TCP-400X TCP-200S系列无)							
	PT1000 -200℃~300℃							
	CU50 -50℃~150℃							
	WRE 5/26 0℃~ 2310℃							
电压 voltage	0~5V、0~10V 压力类型默认为电压（选配) presure type default voltage (optional) (TCP-XL TCP-X 5寸 TCP-400X TCP-200S系列无)							
电流 Current	0~20mA、4~20mA 流量类型默认为电流（选配) flow type default current (optional)							
温度单位 Temperature of the unit	K、F、℃							
界面显示 Interface display	支持中英文界面切换 Support Chinese and English interface switch							
测试性能 Test performance	32位ARM微处理器，画面响应时间<0.5S 32-bit ARM microprocessor, picture response time < 0.5s							
抗高频干抗 Resistant to high frequency dry resistance	各通道相互隔离，抗高频干扰，带电测试电压直流500V, 交流电压380V Each channel is isolated from each other to resist high frequency interference, Live test voltage DC 500V, AC 380V							
存储容里 In the storage capacity	8G大容量 FLASH闪存数据 8 gigabytes of large capacity FLASH data (TCP-400X TCP-200S系列无)							
数据保护 Data protection	掉电数据不丢失，可存储72小时至180天的数据 No loss of power loss data, can store 72 hours to 180 days of data							
U盘功能 U disk function	支持外接U盘导出存储数据 Support union disk to export storage data							
显示量程 Display range	- 999.9~1999.9							
温度补偿 Temperature compensation	各路支持温度补偿并提供多种补偿模式 Each channel supports temperature compensation and provides a variety of compensation modes							
标记注释功能 Mark comment function	每一路温度值可以任意命名 The temperature value of each path can be named arbitrarily							
实时时钟 Real time clock	采用硬件实时时钟，时钟误差±1分/年 Adopt hardware real-time clock, clock error ±1 minute/year							
通讯接口 Communication interface	USB通讯接口 USB communication interface (TCP-200S系列无)							
电源配置 The power configuration	能在交流电源AC85V~265V宽电压范围内正常工作 It can work normally in the wide voltage range of AC power AC85V~265V (TCP-200S系列无)							

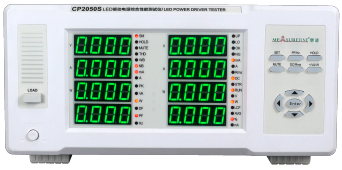
LED驱动电源综合性能测试仪
LED drive power comprehensive performance tester

CP2088E

CP2098(ERP)带谐波标准选判功能

CP2080

CP2080S



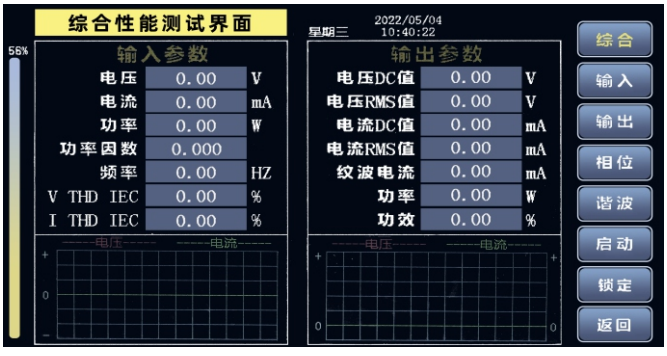
CP2050S

产品描述 Product describe

LED 驱动电源综合测试仪器，采用彩色触摸液晶屏显示输入特性、输出特性、波型、曲线等各项参数，读数直观、便于分析比较，适合于技术开发、生产现场检测。仪器具有通讯功能，可利用提供上位机专用软件对仪器进行远程操作、控制及读数取相应的数据及可在PC上显示所有测量数据和波形,并提供中文或英文操作页面,满足GB/24825~2009及IEC62384:2006等国内、国际标准对LED驱动电源的测试要求,输入、输出电流测试频响1MHZ,能够准确测量各类LED驱动电源的高次谐波电流及纹波电流采用高速MCU及高精度A/D进行控制与测量,准确度高。

LED driving power comprehensive test instrument adopts color touch LCD to display input characteristics, output characteristics, wave shape, curve and other parameters. The reading is intuitive and easy for analysis and comparison. It is suitable for technology development and production site detection. The instrument has the functions of upper and lower limit determination, audible and visual alarm and communication. It can use the special software provided by the upper computer to remotely operate, control and read the instrument, take corresponding data, display all measurement data and waveforms on the PC, and provide Chinese or English operation pages. It meets the requirements of GB / 24825 ~ 2009 and iec62384: 2006 According to the test requirements of international standards for LED driving power supply, the test frequency response of input and output current is 1MHz, which can accurately measure the high-order harmonic current and ripple current of various LED driving power supplies. High speed MCU and high-precision A / D are used for control and measurement, with high accuracy.

7寸TFT触摸高清液晶屏 显示各种参数及波形、测试数据、精准、直观
7 "TFT touch hd LCD display various parameters and waveform test data, accurate and intuitive



技术参数 technical parameter

产品型号 Product model	CP2088E	CP2098(ERP)	CP2080	CP2080S	CP2050S
窗口显示 Window display	触摸高清液晶屏 Touch HD LCD		四位数码管8窗口 Four digit nixie tube 8 window		
输入特性测试 Input characteristic test					
测试功能 Test function	测量输入电压真有效值、电流真有效值、有功功率、功率因数、频率以及电压电流总谐波失真分次谐波真有效值和相对值 Measure input voltage true RMS, current true RMS, active power, power factor, frequency, voltage and current total harmonic distortion sub harmonic true RMS and relative value			测量输入电压真有效值、电流真有效值、有功功率、功率 Measure input voltage true RMS, current true RMSActive power, power	
谐波分析功能 Harmonic analysis function	可分析电压电流的总谐波失真和0~50次各次谐波的有效值和相对值 It can analyze the total harmonic distortion of voltage and current and the effective value and relative value of 0~50 harmonics			无 nothing	
输入特性测量范围 Input characteristic measurement range	电压 3V~600V Voltage				
	电流3mA~8.000A(可定制大电流) Current 3ma~8.000a (large current can be customized)				
	测量准确度±（0.1%+0.1%+1） Measurement accuracy				0.5级 Grade 0.5
输出特性测试 Output characteristic test					
输出稳态特性测试 Output steady state characteristic test	测量输出稳态时的电压真有效值、振荡频率、电流真有效值、有功功率、功率、纹波（注：CP2050S无纹波） Measure the true effective value of voltage, oscillation frequency, true effective value of current, active power, power and ripple at steady state of output (Note: cp2050s has no ripple)				
输出启动特性测试 Output startup characteristic test	测量输出启动过程0~2秒内的电压峰值、电流峰值、电流峰值时间等参数 Measure the voltage peak, current peak, current peak time and other parameters within 0~2 seconds during output startup				无 nothing
输出特性测量范围 Output characteristic measurement range	电压3V~600V Voltage				
	电流3mA~8.000A(可定制大电流) Current 3ma~8.000a (large current can be customized)				
	测量准确度±（0.1%+0.1%+1） Measurement accuracy				0.5级 Grade 0.5
通讯 Communication	RS-232（标配）、485（选配） RS-232 (standard), 485 (optional)				选配 Optional
采样速度 Sampling speed	0.1秒/次 0.1 s / time				0.2秒/次 0.2 s / time
锁存功能 Latch function	有 have				
上位机通讯 Upper computer communication	有 have				无 nothing
DF值测量 DF value measurement	有 have			无 nothing	
相位角测量 Phase angle measurement	有 have			无 nothing	
上下限报警 Upper and lower limit alarm	有 have				
电压纹波 Upper and lower limit alarm	有 have		无 nothing		
电流纹波测试 Current ripple test	有 have				无 nothing
谐波标准选判 Harmonic standard selection and judgment	连接上位机软件（有） Connecting upper computer software (Yes)	有 have	连接上位机软件（有） Connecting upper computer software (Yes)	无 nothing	

CP 系列数字电参数测试仪
Digital electrical parameter tester


CP320交直流宽量程型


CP9811智能谐波分析型
可测量0~50次

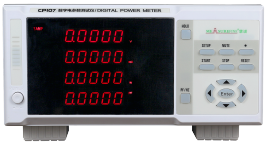

CP100智能型


CP210智能型


CP102交直流型

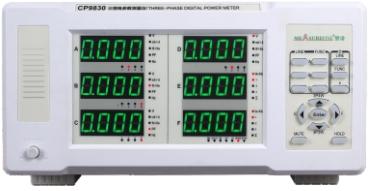

CP105交流通讯型


CP106智能高精度宽量程型


CP107智能高精度宽量程型


CP330交直流宽量程型
高清触摸屏操作


CP350交直流宽量程型(可测量DF值)


CP9830三相智能电参数测试仪

产品描述 Product describe

CP系列数字电参数测试仪(又名数字功率计)内部采用高性能取样部件，并应用了先进的PLL锁相环技术和高精度的32位A/D，对波形数据进行量化分析，保证了仪器的高准确度和高稳定度。现已广泛地应用于家电、电机、电源、变压器及照明电器等领域，是传统式指针表和数字式电工仪表的理想换代产品，它功能强大，机箱小巧的经济型智能电量测量仪，能测试交流、直流电参数如：电压、电流、功率、功率因数/频率都能通过仪器窗口直接读取，方便直观。仪器具有自动量程切换功能，还具备电压、电流、功率/功率因数上下限设定和报警功能，并具备锁存功能，特别适合生产线大批量测试以及对能效产品的空载测试，电流可从0.05 mA～20A（同时可定制0.05mA～40A/60A/80A），可精确测试产品的空载时的微小电流等。

CP series digital electrical parameter tester (also known as digital power meter) adopts high performance sampling components, and applies advanced PLL phase locked loop technology and high precision 32-bit A/D to conduct quantitative analysis of waveform data, ensuring high accuracy and high stability of the instrument. Is now widely used in household appliances, motor, power supply, transformer and lighting appliances, and other fields, is a traditional pointer table and digital electric meter, an ideal version of its powerful, chassis cabinet economical intelligent power meter, test ac, dc parameters such as: voltage, current, power, power factor/frequency can be directly read by instrument window, convenient and intuitive. Instrument has automatic range switching function, also has upper and lower voltage, current, power/power factor set and alarm functions, and have latched function, especially suitable for mass production line test and the no-load test, energy efficiency products from current 0.05 mA ~ 20 a (0.05 mA at the same time can be customized to 40 a/a / 80 a), can accurately test the product of minor when no-load current, etc.

技术参数 technical parameter

型号 Model	CP9830三相智能电参数测试仪（基本型） CP9830 three-phase intelligent electrical parameter tester (basic type)					
显示方式 Display mode	高清数码管显示 HD nixie tube display			频率范围 Frequency range	AC.45Hz-65Hz AC.45Hz-65Hz	
测试方式 Test mode	交流：单相、三相三线、三电压三电流、三相四线 AC: single-phase, three-phase three wire, three voltage three current, three-phase four wire			基本精度 Basic accuracy	0.5级 Class 0.5	
四窗口显示 Four window display	电压、电流、有功功率、无功功率、视在功率、功率因数、频率、相位角 voltage, current, active power, reactive power, apparent power Power factor, frequency, phase angle			谐波分析 Harmonic analysis	不支持 not supported	
电压范围 Voltage range	AC:3V~600V			上下限报警 Upper and lower limit alarm	有此功能 with this function	
电流范围 Current range	AC:10mA~50A(可扩展) AC: 10mA~50A (expandable)			Rs232	无 None	
功率范围 Power range	AC:0.5W~30Kw			标配继电器输出 Standard relay output	可选配 optional	
功率因数范围 Power factor range	-1.000~1.000			锁存功能 Latching function	数据波动时使用，方便读取 used when data fluctuates, easy to read	
型号 model	CP100	CP210	CP105	CP102	CP106	CP107
	智能型 intelligent	智能型 intelligent	交流通讯型 AC communi cation type	智能交直流型 Intelligent AC/DC type	智能宽量程型 Intelligent wide range type	智能宽量程型 Intelligent wide range type
窗口显示 Window display	四位高精度数码管4窗口 Four digit high-precision nixie tube 4 window				五位高精度数码管4窗口 Five digit high-precision nixie tube 4 window	
输入电压 The input voltage	3-600V					
输入电流 Input current	5mA～20A			5mA～10A	0.1mA～20A	0.05mA～20A
	（特殊可定制其他范围的电压及电流） (Specially customizable for other ranges of voltage and current)					
功率因素 Power factor	-1.000～1.000					
频率范围 Frequency range	AC:45Hz～65Hz，带宽：5kHz AC:45Hz ~ 65Hz, bandwidth: 5KHz					
电能积分 Power integral					0～99999Kwh	
电能时间 Electric energy time					0～9999:59:59	
测试精度 Test accuracy	0.5级 0.5 level				0.2级 0.2 level	
量程切换 Switch range	自动 automatic					
测量模式 Measurement mode	AC	AC	AC	AC/DC	AC	AC
测量速度 Measuring speed	0.2秒/次 0.2 seconds/time					
锁存功能 Latch function	数据波动时使用，方便读数 se when the data fluctuates, convenient reading					
声光报警功能 上、下限判定功能 Upper and lower limit determination function Acousto-optic alarm function	/	有 There are	/	有 There are	有 There are	有 There are
通讯方式 Communication methods	选配 Optional	选配 Optional	RS-485/RS232	选配 Optional	选配 Optional	选配 Optional

技术参数 technical parameter

产品型号 Product model	CP9811	CP320	CP330	CP350
	智能谐波分析型 Intelligent harmonic analysis type	交直流宽量程型 AC/DC wide range type		
窗口显示 Window display	五位高精度数码管4窗口 Five high precision digital tube 4 Windows		7英寸TFT高清触摸液晶屏 7-inch TFT HD touch LCD screen	
输入电压 Input voltage	3-600V			
输入电流 Input current	5mA～20A	0.05mA～20A		
（特殊可定制其他范围的电压及电流） (Specially customizable for other ranges of voltage and current)				
功率因素 Power factor	-1.000～1.000			
功率 power		0.15mW-12000W		0.03mW-12000W
参考显示 Reference shows	THD、V、A、W、PF、Hz			
有功功率 Active power				
电压、电流谐波 Voltage and current harmonics	总谐波及0～50次单次谐波 Total harmonics and 0 ~ 50 single harmonics			
频率范围 Frequency range	AC:45Hz～65Hz，带宽：5kHz AC:45Hz ~ 65Hz, bandwidth: 5KHz			
电能积分 Power integral	0～99999Kwh			
电能时间 Electric energy time	0～9999:59:59			
测试精度 Test accuracy	0.5级 0.5 level	0.1级 0.1 level		
量程切换 Switch range	自动 automatic			
测量模式 Measurement mode	AC	AC/DC		
测量速度 Measuring speed	0.2秒/次 0.2 seconds/time			
锁存功能 Latch function	数据波动时使用，方便读数 Use when the data fluctuates, convenient reading			
上、下限判定功能 声光报警功能 Upper and lower limit determination function Acousto-optic alarm function	有 have			
通讯方式 Communication mode	RS-232			
DF值测量 DF values measured	有 have			
相位角: Phase Angle	有 have			
电流THD-40: Current THD-40	有 have			
THD-40-DF:	有 have			

耐电压测试仪
Withstand voltage tester

（单交流型）

（交直流型）

（单交流型）

（交直流型）

产品描述 Product describe

耐电压测试仪是测量耐压强度的仪器,它可以直观、准确、快速、可靠地测试各种被测对象的击穿电压、漏电流等电气安全性能指标，并可以作为高压源用来测试元器件和整机性能。慧谱耐电压测试仪产品系列是按照IEC、CSA、UL、JIS 等国际国内的安全标准要求设计的，适合各种家用电器、电源开关、电线电缆、变压器、接线端子、高压胶木电器、电机、医疗、化工、仪器仪表等，以及强电系统的安全耐压和漏电流的测试、同时也是科研实验室、技术监督部门不可缺少的耐压试验设备。

The withstand voltage tester is an instrument for measuring the withstand voltage strength. It can directly, accurately, quickly and reliably test the electrical safety performance indicators such as breakdown voltage and leakage current of various tested objects, and can be used as a high-voltage source to test the performance of components and the whole machine. The Huipu voltage withstand tester series is designed according to the requirements of international and domestic safety standards such as IEC, CSA, UL, JIS, etc. It is suitable for testing the safe withstand voltage and leakage current of various household appliances, power switches, wires and cables, transformers, terminal blocks, high-voltage bakelite appliances, motors, medical, chemical, instruments and meters, as well as the strong current system, and is also a scientific research laboratory Voltage withstand test equipment indispensable to the technical supervision department.

性能特点 Performance characteristics

- 交直流通用型耐压测试仪
- 输出电压通过MCU数字电路调节输出,具有高可靠性、高耐用性的特点
- 采用高亮度的LED数码管显示测试时间、电压、电流、能实时显示击穿电流值和电压
- 报警电流值可连续任意预置
- 测试时间采用四位数码管显示
- 选配PLC所需的信号输入、输出接口，可方便地与PLC组成综合测试系统

- AC/DC universal withstand voltage tester
- The output voltage is regulated by MCU digital circuit, featuring high reliability and durability
- High brightness LED digital tube is used to display the test time, voltage, current, and breakdown current and voltage in real time
- The alarm current value can be preset continuously and arbitrarily
- The test time is displayed by four digit nixie tube
- The optional signal input and output interfaces required by PLC can easily form a comprehensive test system with PLC

技术参数 technical parameter

型号 model	UC2670A	UC2671B	UC2672AX	UC2672BX	UC2672DX
电压 Voltage	AC 0-5Kv	AC 0-5Kv	AC 0-10Kv	AC 0-10Kv DC 0-10Kv	AC 0-5Kv DC 0-5Kv
漏电流 Leakage current	AC 0~20mA (两档) (Two gears)	AC 0~100mA (三档) (Third gear)	AC 0~20mA (两档) (Two gears)	AC 0~20mA (两档) (Two gears) DC 0~10mA (两档) (Two gears)	AC 0~20mA (三档) (Third gear) DC 0~10mA (两档) (Two gears)
精度 Precision	±5%				
测试时间 Test time	0–9999S				
变压器容量 Transformer capacity	100VA	500VA	200VA	200VA	100VA
电源要求 Power requirements	AC:198V~242V 47.5Hz~52.5Hz				
工作环境 Working environment	环境温度： 0~40°C 湿度：≤75%RH ambient temperature humidity				
外型尺寸(DxWxH) Overall dimensions	315mm*250mm*180mm				
重量 weight	11.5KG				
配件 Accessories	高压棒、接地线、电源线 High voltage rod, grounding wire and power line				
选配 Optional	PLC接口、点检盒 PLC interface, spot check box				

型号 model	UC2671BX	UC2671C	UC2671CX	UC2672C	UC2672CX	UC2672E	UC2674	UC2674A
电压 Voltage	AC 0-5Kv DC 0-5Kv	AC 0-5Kv	AC 0-5Kv DC 0-5Kv	AC 0-10Kv	AC 0-10Kv DC 0-10Kv	AC 0-5Kv	AC 0-20Kv	AC 0-20Kv DC 0-20Kv
漏电流 Leakage current	AC 0~100mA (三档)(Third gear) DC 0~20mA (两档)(Two gears)	AC 0~200mA (三档) (Third gear)	AC 0~200mA (三档) (Third gear) DC 0~20mA (两档) (Two gears)	AC 0~100mA (三档) (Third gear)	AC 0~100mA (三档) (Third gear) DC 0~10mA (两档) (Two gears)	AC 0~500mA (三档) (Third gear)	AC 0~20mA (两档) (Two gears)	AC 0~20mA (三档)(Third gear) DC 0~10mA (两档) (Two gears)
精度 Precision	±5%							
测试时间 Test time	0–9999S							
变压器容量 Transformer capacity	500VA	1000VA				2500VA	400VA	
电源要求 Power requirements	AC:198V~242V 47.5Hz~52.5Hz							
工作环境 Working environment	环境温度： 0~40°C 湿度：≤75%RH ambient temperature humidity							
外型尺寸(DxWxH) Overall dimensions	438mm*396mm*235mm							
配件 Accessories	高压棒、接地线、电源线 High voltage rod, grounding wire and power line							
选配 Optional	PLC接口、点检盒 PLC interface, spot check box							

慧谱耐压仪电流、时间等均采用程控一键调节，具有调节精度高、速度快、操作便捷等优点。
The Huipu withstand voltage tester adopts programmable one click adjustment for current, time, etc., which has the advantages of high adjustment accuracy, fast speed, and convenient operation.

接地电阻测试仪
Ground Resistance Tester

接地电阻测试仪是用来测量电气设备内部的接地电阻，它所反映的是电气设备的各处外露可导电部分与电气设备的总接地端子之间的（接触）电阻。接地电阻测试仪为了消除接触电阻对测试的影响，采用了4端测量法，即在被测电器的外露可导电部分和总接地端子之间加上电流（一般为25A左右），然后再测量这两端的电压，算出其电阻值。接地电阻测试仪是按照GB、IEC、ISO、BS、UL、JIS等国际国内的安全标准要求而设计的，接地电阻的指标是衡量各种电器设备安全性能的重要指标之一。

The grounding resistance tester is used to measure the internal grounding resistance of electrical equipment. It reflects the (contact) resistance between the exposed conductive parts of electrical equipment and the general grounding terminal of electrical equipment. In order to eliminate the impact of contact resistance on the test, the grounding resistance tester adopts the 4-terminal measurement method, that is, add a current (generally about 25A) between the exposed conductive part of the tested electrical appliance and the general grounding terminal, and then measure the voltage at these two ends to calculate the resistance value. The grounding resistance tester is designed according to GB, IEC, ISO, BS, UL, JIS and other international and domestic safety standards. The grounding resistance index is one of the important indexes to measure the safety performance of various electrical equipment.

技术参数 technical parameter

型号 model	UC2678	UC2678BX
电流范围 Current range	5–32A	5–50A
电阻范围 Resistance range	0~600mΩ	0~600mΩ(<10A), 0-200mΩ
精度 Precision	±5%	
测试时间 Test time	0–9999S	
变压器容量 Transformer capacity	350VA	500VA
PLC接口 Pic interface	选配 Optional	
电源 Power Supply	220V±10%, 50Hz	

UC2678

UC2678BX

泄漏电流测试仪
Leakage current tester

UC2675A

UC2675E

泄漏电流测试仪又称接触电流测试仪，用于测量电器的工作电源（或其它电源），通过绝缘或分布参数阻抗产生的与工作无关的泄漏电流，其输入阻抗模拟人体阻抗，满足GB4706.1要求。本产品是按照IEC、ISO、BS、 UL、JIS等国际国内的安全标准要求而设计。本机由于不符带隔离电源，因此原则上可不受被测电器的功率限制，适用范围广。本机内置一个电压表，测量范围0-250V，适合各种家用电器、电源、电机、洗碟机、电磁炉、电烤箱、电风扇、医疗、化工、电子仪器、仪表、整机等。

The leakage current tester, also known as contact current tester, is used to measure the working power supply (or other power supply) of electrical appliances. The input impedance of the non working leakage current generated by insulation or distributed parameter impedance simulates the human impedance and meets the requirements of GB4706.1. This product is designed according to the requirements of international and domestic safety standards such as IEC, ISO, BS, UL, JIS, etc. As the machine does not conform to the isolated power supply, in principle, it can not be limited by the power of the tested electrical appliances, and has a wide range of applications. This machine is equipped with a voltmeter with a measurement range of 0-250V, which is suitable for various household appliances, power supplies, motors, dish washers, induction cookers, electric ovens, electric hotpots, electric fans, medical, chemical, electronic instruments, meters, complete machines, etc., as well as the leakage current testing of strong current systems.

技术参数 technical parameter

型号 model	UC2675A	UC2675E
泄漏测试工作电压 Leakage test operating voltage	AC 50～250V±(5%+1%满度值) AC 50~250V ± (5%+1% full scale value)	
	内置300VA调压器和隔离变压器 Built in 300VA voltage regulator and isolation transformer	
电流测试范围 Current test range	AC 0～2mA/2mA～20mA 二档 ± (5%+1.5%满度值) AC 0 ~2mA/2mA ~20mA second gear ± (5%+1.5% full scale value)	
泄漏电流报警值 Leakage current alarm value	AC 0.1mA～2mA/2mA～20mA ±(5%+1.5%满度值) (可连续任意设置报警值) AC 0.1mA~2mA/2mA~20mA ± (5%+1.5% full scale value) (the alarm value can be set continuously and arbitrarily)	
时间范围 Time range	0～9999s，连续设定和手动 ±1%　　0 ~ 9999S，continuous setting and manual ± 1%	
电源 Power Supply	220V、±10%　50/60 Hz	

程控绝缘电阻测试仪
Programmable insulation resistance tester

UC2679Y

UC2679E

UC2679E/Y系列绝缘电阻测试仪是一种测试电子元件、整机、介质材料等绝缘性能的测试仪器，具有测试速度快、稳定可靠、操作方便等特点。适合于工厂生产线、质检部门和实验室等的测试要求。

UC2679E/Y series insulation resistance tester is a testing instrument for testing the insulation properties of electronic components, complete machines, dielectric materials, etc. It is characterized by fast testing speed, stability and reliability, and easy operation. It is suitable for the testing requirements of factory production lines, quality inspection departments and laboratories.

技术参数 technical parameter

型号 Model	UC2679Y 液晶屏显示 UC2679Y LCD display	UC2679E 数字显示 UC2679E digital display
测试电压 Test voltage	10V-1000V	100V-1000V
电阻范围 Resistance range	1KΩ -10T Ω	100KΩ -100GΩ
电压准确度 Voltage accuracy	± 2%	
量程方式 Range mode	手动/自动 manual/automatic	
电阻准确度 Resistance accuracy	＜ 10G Ω ± 2%　读数± 0.5格，≥ 100G Ω ± 6%　读数± 0.5格 ＞ 10T Ω ± 10%　读数± 0.5格　＜ 10G Ω ± 2%　reading ± 0.5 grid, ≥ 100G Ω ± 6%　reading ± 0.5 grid, ＞ 10T Ω ± 10%　reading ± 0.5 grid	＜ 10G Ω ± 2%　读数± 0.5格, ≥ 100G Ω ± 6%　读数± 0.5格 ＜ 10G Ω ± 2%　reading ± 0.5 grid ≥ 100G Ω ± 6%　reading ± 0.5 grid
显示方式 Display mode	4.3寸液晶屏显示 4.3 "LCD display	高亮数码管显示 highlight nixie tube display
外置接口 External interface	PLC 接口（选配）RS232/485 接口 PLC interface (optional) RS232/485 interface	PLC 接口 （选配）PLC interface (optional)
记忆方式 Memory mode	可记录电压、电阻、时间设定值以及测试值 can record voltage, resistance, time setting value and test value	无
温度/湿度 NoneTemperature/humidity	0 °C-40 °C ≤ 75%RH	
尺寸 size	372mm X 235mm X 105mm	340mm X 215mm X 85mm

高精度程控交流负载
High precision programmable AC load

产品描述 Product describe

高精度程控交流负载是程序控制可调负载箱，也可手动控制。有固定电压下设定不同功率、电流、电阻进行测试。智能运算达到恒功率或恒流或电阻功能。采用24位AD转换，采样周期约8000次/s,电压、电流同时采样。可用于电池组、逆变器、智能开关，户外储能电源，UPS等产品的功率检测。采用新型功耗组件，功率密度高，散热采用强制风冷方式。

High precision programmable AC load is a programmable adjustable load box that can also be manually controlled. Set different power, current, and resistance for testing under fixed voltage. Intelligent computing achieves constant power, constant current, or resistance functions. Adopting 24 bit AD conversion, the sampling cycle is about 8000 times/s, and the voltage and current are sampled simultaneously. It can be used for power detection of battery packs, inverters, intelligent switches, outdoor energy storage power supplies, UPS and other products. Adopting new power consumption components with high power density and forced air cooling for heat dissipation.

性能特点 Performance characteristics

- 输入电压范围： AC 80V-240V，额定功率6KW/12KW
- 定功率，定电流，定电阻，短路测试
- 四位高精度电压电流功率显示
- 7寸电容触摸屏，操作更方便
- 自动补偿功能，电压波动也能稳定测试
- 采用智能温控风扇
- 标配RS232通讯接口

- Input voltage range: AC 80V-240V, rated power 6KW/12KW
- Constant power, constant current, constant resistance, short circuit test
- Four digit high-precision voltage, current, and power display
- 7-inch capacitive touch screen for more convenient operation
- Automatic compensation function, stable testing of voltage fluctuations
- Adopting intelligent temperature controlled fans
- Standard RS232 communication interface

技术参数 technical parameter

型号 model		HL-6K	HL-12K
工作电源 Working power supply	输入电压 input voltage	AC220V±10% 50Hz	
	额定功率 Rated power	100W	
通讯 communicate	RS 232	波特率9600 Baud rate 9600	
负载功能 Load function	输入 电压 Input voltage	AC80-240V; 额定AC110V/AC220V Rated AC110V/AC220V	
	输入频率 Input frequency	50Hz/60Hz	
	额定功率 Rated power	6000W	12000W
	额定电流 Rated current	54A@105-135V 27A@215-240V	108A@105-135V 54A@215-240V
	功率设定精度 Power setting accuracy	20W	
	电流设定精度 Current setting accuracy	0.09A	
	负载返回实际精度 Actual accuracy of load return	3% +1.5% 或 ±20W	
	电阻设定范围及精度 Resistance setting range and accuracy	2-600Ω@110V 7-2400Ω@220V ±5%	
	功率因数 Power factor	PF=1.0	
	散热方式 Heat dissipation method	风冷 air cooling	
	其它功能 Other functions	卸载/短路 uninstalled/short circuited	
量测及误差 Measurement and error	电压 Voltage	±（读数的0.1% +量程的0.2%）± (0.1% of reading+0.2% of range)	
	电流 Current	±（读数的0.1% +量程的0.1%）± (0.1% of reading+0.1% of range)	
	有功功率 Active power	±（读数的0.1% +量程的0.1%）± (0.1% of reading+0.1% of range)	
	频率 Frequency ± 0.1%	± 0.1%	
	功率 因数 Power factor ± 0.1%	± 0.1%	
保护 protect	过压、过功率、过温 Over voltage, over power, over temperature		
工作环境 Working ring mirror	温度 Temperature	0-60℃	
	湿度 Humidity	≤85%RH	
	大气压力 Atmospheric pressure	86-106kPa(海拔4000米及以下） 86-106kPa (altitude 4000 meters and below)	
尺寸 size	宽 X 高 X 深 Width X Height X Depth	480mm x 270mm x 580mm	

精密直流可编程电子负载
Precision DC programmable electronic load

产品描述 Product describe

HEL8500系列电子负载拥有较宽的功率测量范围，同时配有丰富的测试功能与模式。拥有0.1mV/0.1mA 高分辨率，同时具有动态测试和自动测试等多种测试功能，可应用于LED测试，开关电源测试，电池性能检测等多个行业领域，通过SCPI通讯协议，适用于产线单机使用。

The HEL8500 series electronic load has a wide power measurement range and is equipped with rich testing functions and modes. With a high resolution of 0.1mV/0.1mA and multiple testing functions such as dynamic testing and automatic testing, it can be applied to LED testing, switching power supply testing, battery performance testing and other industry fields. Through the SCPI communication protocol, it is suitable for single machine use on production lines.

HEL8511A

性能特点 Performance characteristics

- 测量范围: 150/300/600W，150/360/500V, 10/15/30/60/120A
- CC, CV, CR，CP四种基本测试模式
- 电流远端监视功能，外部触发功能
- 16位高精度电压、电流测量，0.1mV/0.1mA高分辨率
- CR-LED测试，电源上升/下降时间测试
- 动态电流/电压测试，高达5KHz的动态频率
- 远端电压补偿输入
- 具备自动测试功能，提高测试效率
- 恒阻+恒流、恒压+恒阻、恒压+恒流三种组合测试
- OCP、OPP、OVP测试
- 快速恒压、恒流环路响应
- 列表自启电压功能，过电压短路限压功能
- 独立短路测试与测试暂停功能(仅在CC、CV、CR、CP模式下有效)
- 模块化设计，能量密度高，维护方便，扩展方便
- 支持电池电量测试
- 测试结果脉冲 (PASS/FAIL) 输出功能
- 配套上位机软件实现远端操作和监控
- 智能温控风扇、断电记忆功能
- 过电压、过电流、过功率、过热、防反接等基本保护
- 列表模式可存储60组数据
- 支持外挂U盘保存与调用，支持U盘升级系统
- 标配RS232，SCPI协议

- Measurement range: 150/300/600W,150/360/500V, 10/15/30/60/120A
- CC, CV, CR, CP four basic testing modes
- Remote current monitoring function, external triggering function
- 16 bit high-precision voltage and current measurement, 0.1mV/0.1mA high resolution
- CR-LED test, power up/down time test
- Dynamic current/voltage testing, with dynamic frequencies up to 5KHz
- Remote voltage compensation input
- Equipped with automatic testing function to improve testing efficiency
- Three combination tests: constant resistance+constant current, constant voltage+constant resistance, and constant voltage+constant current
- OCP, OPP, OVP testing
- Fast constant voltage and constant current loop response
- List self starting voltage function, overvoltage short circuit voltage limiting function
- Independent short-circuit testing and testing pause function (only available in CC, CV, CR Effective in Cp mode)
- Modular design, high energy density, easy maintenance, and easy expansion
- Support battery level testing
- Test result pulse (PASS/FAIL) output function
- Supporting upper computer software for remote operation and monitoring
- Intelligent temperature controlled fan and power-off memory function
- Basic protection for overvoltage, overcurrent, overpower, overheating, anti reverse connection, etc
- List mode can store 60 sets of data
- Support external USB storage and calling, and support USB upgrade system
- Standard RS232, SCPI protocol

产品描述 Product describe

HEL6500系列电子负载是高性价比电子负载，体积小，多种测量模式，1mV/1mA高分辨率，支持RS232通信接口及配套上位机软件实现远端操作和监控。广泛应用于生产，维修，老化阶段需求。

The HEL6500 series electronic load is a cost-effective electronic load with small size, multiple measurement modes, 1mV/1mA high resolution, supporting RS232 communication interface and supporting upper computer software for

HEL6504

性能特点 Performance characteristics

- 测量范围 0~600W,0~500V,0~40A
- CC、CV、CR、CP 四种基本测试模式
- 1mV/1mA 高分辨率
- 动态电流/电压测试，高达 2KHZ 的动态频率
- 具备自动测试功能，提高测试效率
- 列表模式可存储 60 组数据
- 支持电池电量测试
- 独立的短路测试功能
- 测试结果脉冲(PASS/FAIL) 输出功能(选配)
- 支持外部发输入 (选配)
- 端电压补偿输入 (选配)
- 配套上位机软件实现远端操作和监控
- 智能温控风扇、断电记忆功能
- 过电压、过电流、过功率、过热、防反接、电源启动等多种保护
- 标配 RS232，SCPI协议

- Measurement range: 0-600W, 0-500V, 0-40A
- Four basic testing modes: CC, CV, CR, and CP
- 1mV/1mA high-resolution
- Dynamic current/voltage test, up to 2KHZ dynamic frequency
- Equipped with automatic testing function to improve testing efficiency
- List mode can store 60 sets of data
- Support battery level testing
- Independent short-circuit testing function
- Test result pulse (PASS/FAIL) output function (optional)
- Support external input (optional)
- Terminal voltage compensation input (optional)
- Supporting upper computer software for remote operation and monitoring
- Intelligent temperature controlled fan and power-off memory function
- Overvoltage, overcurrent, overpower, overheating, anti reverse connection multiple protections such as power startup
- Standard RS232, SCPI protocol

HEL8500系列技术参数 technical parameter

负载型号 Load model		HEL8511		HEL8511A		HEL8511L		HEL8512		HEL8512A	
额定值 Rating	电压 Voltage	0~150V		0~500V		0~360V		0~150V		0~500V	
	电流 Current	0~3A	0~30A	0~1A	0~10A	0~3A	0~30A	0~3A	0~30A	0~1.5A	0~15A
	功率 power	150W						300W			
	最小操作电压 Minimum operating voltage	1.4V at 30A		1.4V at 10A		2.4V at 120A		1.4V at 30A		1.6V at 15A	
CV模式 CV mode	量程 Range	0~18V	0~150V	0~50V	0~500V	0~54V	0~360V	0~18V	0~150V	0~50V	0~500V
	分辨率 Resolution	1 mV	10 mV	1 mV	10 mV	1 mV	10mV	1 mV	10 mV	1 mV	10 mV
	精度 Accuracy	±(0.05%+0.025% FS)						±(0.05%+0.025% FS)			
CC模式 CC mode	量程 Range	0~3A	0~30A	0~1A	0~10A	0~3A	0~30A	0~3A	0~30A	0~1.5A	0~15A
	分辨率 Resolution	1mA	10mA	1mA	10mA	1mA	10mA	1mA	10mA	1mA	10mA
	精度 Accuracy	± (0.05% + 0.05%FS)						± (0.05% + 0.05%FS)			
CR模式 CR mode	量程 Range	0.05Ω~7.5KΩ		0.1Ω~25KΩ		0.1Ω~25KΩ		0.05Ω~7.5KΩ		0.1Ω~25KΩ	
	分辨率 Resolution	16 bit						16 bit			
	精度 Accuracy	0.1% + 0.08S						0.01% + 0.08S			
CP模式 CP mode	量程 Range	0~150W						0~300W			
	分辨率 Resolution	10mW						10mW			
	精度 Accuracy	0.1% + 0.1%FS						0.1% + 0.1%FS			
动态电流	Dynamic current										
动态模式 dynamic mode	T1&T2	100 μS~99.999 S / Res:100 μS						100 μS~99.999 S / Res:100 μS			
	精度 Accuracy	5 μS±100 ppm						5 μS±100 ppm			
	上升/下降斜率 Rise/Fall Slope	0.001~0.15A/μS						0.001~0.15A/μS			
电压回读 Voltage readback	量程 Range	0~18V	0~150V	0~50V	0~500V	0~54V	0~360V	0~18V	0~150V	0~50V	0~500V
	分辨率 Resolution	0.1mV	1mV	0.1mV	1mV	0.1mV	1mV	0.1mV	1mV	0.1mV	1mV
	精度 Accuracy	± (0.025% + 0.025%FS)						± (0.025% + 0.025%FS)			
电流回读 Current readback	量程 Range	0~3A	0~30A	0~1A	0~10A	0~3A	0~30A	0~3A	0~30A	0~1.5A	0~15A
	分辨率 Resolution	0.1mA	1mA	0.1mA	1mA	0.1mA	1mA	0.1mA	1mA	0.1mA	1mA
	精度 Accuracy	± (0.025% + 0.05%FS)						± (0.05% + 0.05%FS)			
功率回读 Power read back	量程 Range	0~150W						0~300W			
	分辨率 Resolution	10mW						10mW			
	精度 accuracy	± (0.1% + 0.1%FS)						± (0.1% + 0.1%FS)			
基本保护 Basic protection											
功率保护 Power protection		≥152W延时保护，≥165W立即保护 ≥ 152W delay protection, ≥ 165W immediate protection						≥303W延时保护，≥330W立即保护 ≥ 303W delay protection, ≥ 330W immediate protection			
电流保护 current protect		≥30.3A延时保护 ≥33A立即保护 ≥ 30.3A delay protection ≥ 33A immediate protection		≥10.1A延时保护 ≥11A立即保护 ≥ 10.1A delay protection ≥ 11A immediate protection		≥30.3A延时保护 ≥33A立即保护 ≥ 30.3A delay protection ≥ 33A immediate protection		≥30.3A延时保护 ≥33A立即保护 ≥ 30.3A delay protection ≥33A immediate protection		≥15.2A延时保护 ≥16.5A立即保护 ≥ 15.2A delay protection ≥16.5A immediate protection	
电压保护 Voltage protection		≥152V延时保护 ≥165V立即保护 ≥ 152V delay protection ≥ 165V immediate protection		≥505V延时保护 ≥550V立即保护 ≥ 505V delay protection ≥ 550V immediate protection		≥364V延时保护 ≥396V立即保护 ≥ 364V delay protection ≥ 396V immediate protection		≥152V延时保护 ≥165V立即保护 ≥ 152V delay protection ≥ 165V immediate protection		≥505V延时保护 ≥550V立即保护 ≥ 505V delay protection ≥ 550V immediate protection	
温度保护 Temperature protection		≥85°C						≥85°C			
输入阻抗 Input impedance		300KΩ						300KΩ			
对地阻抗 Ground impedance		40MΩ						40MΩ			
尺寸 size		215 mm* 88.5 mm* 365mm						215 mm* 88.5 mm* 365mm			
重量 weight		4.5Kg						4.5Kg		5.5Kg	

HEL8500系列技术参数 technical parameter

负载型号 Load model		HEL8512B+		HEL8512L		HEL8513		HEL8513A		HEL8513B		HEL8513C	
额定值 Rating	电压 Voltage	0~150V		0~360V		0~150V		0~500V		0~500V		0~150V	
	电流 Current	0~6A	0~60A	0~3A	0~30A	0~12A	0~120A	0~3A	0~30A	0~6A	0~60A	0~6A	0~60A
	功率 power	300W				600W							
	最小操作电压 Minimum operating voltage	3.03V at 60A		2.4V at 30A		2.8V at 120A		2.4V at 30A		3.0V at 60A		3.0V at 60A	
CV模式 CV mode	量程 Range	0~18V	0~150V	0~54V	0~360V	0~18V	0~150V	0~50V	0~500V	0~50V	0~500V	0~18V	0~150V
	分辨率 Resolution	1 mV	10 mV	1 mV	10 mV	1 mV	10mV	1 mV	10 mV	1 mV	10 mV	1 mV	10mV
	精度 Accuracy	±(0.05%+0.025% FS)											
CC模式 CC mode	量程 Range	0~6A	0~60A	0~3A	0~30A	0~12A	0~120A	0~3A	0~30A	0~6A	0~60A	0~6A	0~60A
	分辨率 Resolution	1mA	10mA	1mA	10mA	1mA	10mA	1mA	10mA	1mA	10mA	1mA	10mA
	精度 Accuracy	± (0.05% + 0.05%FS)											
CR模式 CR mode	量程 Range	0.05Ω~7.5KΩ		0.1Ω~7.5KΩ		0.01Ω~7.5KΩ		0.1Ω~25KΩ				0.01Ω~7.5KΩ	
	分辨率 Resolution	16 bit											
	精度 Accuracy	0.1% + 0.08S											
CP模式 CP mode	量程 Range	0~300W				0~600W							
	分辨率 Resolution	10mW											
	精度 Accuracy	0.1% + 0.1%FS											
动态电流 Dynamic current													
动态模式 dynamic mode	T1&T2	100 μS~99.999 S / Res:100 μS											
	精度 Accuracy	5 μS±100 ppm											
	上升/下降斜率 Rise/Fall Slope	0.001~0.15A/μS											
电压回读 Voltage readback	量程 Range	0~18V	0~150V	0~54V	0~360V	0~18V	0~150V	0~50V	0~500V	0~50V	0~500V	0~18V	0~150V
	分辨率 Resolution	0.1mV	1mV	0.1mV	1mV	0.1mV	1mV	0.1mV	1mV	0.1mV	1mV	0.1mV	1mV
	精度 Accuracy	± (0.025% + 0.025%FS)											
电流回读 Current readback	量程 Range	0~6A	0~60A	0~3A	0~30A	0~12A	0~120A	0~3A	0~30A	0~6A	0~60A	0~6A	0~60A
	分辨率 Resolution	0.1mA	1mA	0.1mA	1mA	0.1mA	1mA	0.1mA	1mA	0.1mA	1mA	0.1mA	1mA
	精度 Accuracy	± (0.05% + 0.05%FS)				± (0.025% + 0.05%FS)							
功率回读 Power read back	量程 Range	0~300W				0~600W							
	分辨率 Resolution	10mW											
	精度 accuracy	± (0.1% + 0.1%FS)											
基本保护 Basic protection													
功率保护 Power protection		≥303W延时保护，≥330W立即保护 ≥ 303W delay protection, ≥ 330W immediate protection				≥606W延时保护，≥660W立即保护 ≥ 606W delay protection, ≥ 660W immediate protection							
电流保护 current protect		≥60.0A延时保护 ≥66A立即保护 ≥ 60.0A delay protection ≥ 66A immediate protection		≥30.3A延时保护 ≥33A立即保护 ≥ 30.3A delay protection ≥ 33A immediate protection		≥121.2A延时保护 ≥142A立即保护 ≥ 121.2A delay protection ≥ 142A immediate protection		≥30.3A延时保护 ≥33A立即保护 ≥ 30.3A delay protection ≥ 33A immediate protection		≥60.6A延时保护 ≥66A立即保护 ≥ 60.6A delay protection ≥ 66A immediate protection		≥60.6A延时保护 ≥66A立即保护 ≥ 60.6A delay protection ≥ 66A immediate protection	
电压保护 Voltage protection		≥152V延时保护 ≥165V立即保护 ≥152V delay protection ≥165V immediate protection		≥364V延时保护 ≥369V立即保护 ≥364V delay protection ≥369V immediate protection		≥152V延时保护 ≥165V立即保护 ≥ 152V delay protection ≥ 165V immediate protection		≥505V延时保护 ≥550V立即保护 ≥ 505V delay protection ≥ 550V immediate protection		≥505V延时保护 ≥550V立即保护 ≥ 505V delay protection ≥550V immediate protection		≥152V延时保护 ≥165V立即保护 ≥ 152V delay protection ≥ 165V immediate protection	
温度保护 Temperature protection		≥85°C											
输入阻抗 Input impedance		300KΩ											
对地阻抗 Ground impedance		40MΩ											
尺寸 size		215 mm* 88.5 mm* 365mm				215 mm* 88.5 mm* 465mm							
重量 weight		5.5Kg				8kg		6kg					

HEL6500系列技术参数 technical parameter

负载型号 Load model		HEL6504	HEL6524	HEL6502	HEL6504A	HEL6513
通道数 Number of channels		单通道 Single channel	双通道 Dual channel	单通道 Single channel	单通道 Single channel	单通道 Single channel
额定值 Rating	电压 Voltage	0~150V	0~150V		0~500V	0~150V
	电流 Current	0~4A, 0~40A	0~2A, 0~20A		0~1.5A, 0~15A	0~4A, 0~40A
	功率 power	400W	2×200W	200W	400W	600W
CV模式 CV mode	量程 Range	0~18V, 0~150V			0~50V, 0~500V	0~18V, 0~150V
	分辨率 Resolution	1 mV, 10 mV				
	精度 Accuracy	±(0.05%+0.025% FS)				
CC模式 CC mode	量程 Range	0~4A, 0~40A	0~2A, 0~20A		0~1.5A, 0~15A	0~4A, 0~40A
	分辨率 Resolution	1mA, 10mA				
	精度 Accuracy	± (0.05% + 0.05%FS)				
CR模式 CR mode	量程 Range	0.05Ω~7.5KΩ			0.1Ω~25KΩ	0.05Ω~7.5KΩ
	分辨率 Resolution	16 bit				
	精度 Accuracy	0.1% + 0.5%FS				
CP模式 CP mode	量程 Range	0~400W	0~200W		0~400W	0~600W
	分辨率 Resolution	10mW				
	精度 Accuracy	0.1% + 0.5%FS				
动态电流 Dynamic current						
动态模式 dynamic mode	T1&T2	100uS~99.999S				
	精度 Accuracy	10 μS±100 ppm				
	斜率 Slope	0.001~0.15 A/μS				
电压回读 Voltage readback	量程 Range	0~18V, 0~150V			0~50V, 0~500V	0~18V, 0~150V
	分辨率 Resolution	1mV, 10mV				
	精度 Accuracy	± (0.05% + 0.1%FS)				
电流回读 Current readback	量程 Range	0~4A, 0~40A	0~2A, 0~20A		0~1.5A, 0~15A	0~4A, 0~40A
	分辨率 Resolution	1mA, 10mA				
	精度 Accuracy	± (0.05% + 0.1%FS)				
功率回读 Power read back	量程 Range	0~400W	0~200W		0~400W	0~600W
	分辨率 Resolution	10mW				
	精度 accuracy	± (0.1% + 0.5%FS)				
基本保护 Basic protection						
功率保护 Power protection		≥404W延时保护 ≥440W立即保护 ≥ 404W delay protection ≥ 440W immediate protection	≥202W延时保护 ≥220W立即保护 ≥ 202W delay protection ≥ 220W immediate protection		≥404W延时保护 ≥440W立即保护 ≥ 404W delay protection ≥ 440W immediate protection	≥404W延时保护 ≥440W立即保护 ≥ 404W delay protection ≥ 440W immediate protection
电流保护 current protect		≥40.4A延时保护 ≥44A立即保护 ≥ 40.4A delay protection ≥ 44A immediate protection	≥20.2A延时保护 ≥22A立即保护 ≥ 20.2A delay protection ≥ 22A immediate protection		≥40.4A延时保护 ≥44A立即保护 ≥ 40.4A delay protection ≥ 44A immediate protection	≥40.4A延时保护 ≥44A立即保护 ≥ 40.4A delay protection ≥ 44A immediate protection
电压保护 Voltage protection		≥152V延时保护 ≥165V立即保护 ≥ 152V Delay protection ≥ 165V Immediate protection			≥505V延时保护 ≥550V立即保护 ≥ 505V delay protection ≥ 550V immediate protection	≥152V延时保护 ≥165V立即保护 ≥ 152V delay protection ≥ 165V immediate protection
温度保护 Temperature protection		≥85°C				
尺寸 size		300 X 88 X 174mm				412 X 88 X 174mm
重量 weight		4.3Kg		3.7Kg	4.3Kg	

精密程控变频稳压电源
Precision programmable variable frequency stabilized power supply

产品描述 Product describe

精密变频测试电源是一种大功率、低失真、高稳定度、其输出频率和电压在一定范围内可调。特别适用于照明行业、家用电器、电动马达、电子制造、IT行业等多个领域。电压波形为纯正弦波（无失真）。采用先进的电子技术和控制算法，确保输出电压和频率的高精度和高稳定性。安全保护功能，能够有效避免过电流、过电压等故障对电源设备的损害，确保电源设备的安全和可靠性。

Precision variable frequency testing power supply is a high-power, low distortion, high stability, and its output frequency and voltage can be adjusted within a certain range. Especially suitable for multiple fields such as lighting industry, household appliances, electric motors, electronic manufacturing, IT industry, etc. The voltage waveform is a pure sine wave (without distortion). Adopting advanced electronic technology and control algorithms to ensure high precision and stability of output voltage and frequency. The safety protection function can effectively avoid damage to the power supply equipment caused by faults such as overcurrent and overvoltage, ensuring the safety and reliability of the power supply equipment.

CP系列型号规格 Cp series model specifications

型号 Model	容量 capacity	额定电流 rated current		相数 number of phases	
单相[单进单出] Single phase [single in, single out]		120V	240V	AC输入 AC input	AC输出 AC output
CP70D05	500VA	4.2A	2.1A	单相两线+PE Single phase two wire+PE	单相两线 Single phase two wire
CP70D10	1KVA	8.4A	4.2A		
CP70D20	2KVA	16.66A	8.3A		
CP70D30	3KVA	25A	12.5A		
CP70D50	5KVA	41.66A	20.83A		
CP70D100	10KVA	83.33A	41.6A		
CP70D150	15KVA	125A	62.5A		
CP70D200	20KVA	166.66A	83.33A		
型号 Model	容量 capacity	额定电流 rated current		相数 number of phases	
三进单出 Three in and one out		120V	240V	AC输入 AC input	AC输出 AC output
CP70TD150	15KVA	125A	62.5A	三相四线+PE Three phase four wire+PE	单相两线 Single phase two wire
CP70TD200	20KVA	166.66A	83.33A		
CP70TD300	30KVA	250A	125A		
CP70TD450	45KVA	375A	187.5A		
CP70TD600	60KVA	500A	250A		
CP70TD750	75KVA	625A	312.5A		
CP70TD900	90KVA	750A	375A		
CP70TD1000	100KVA	833.3A	416.6A		
CP70TD1200	120KVA	1000A	500A		
CP70TD1500	150KVA	1250A	625A		
型号 Model	容量 capacity	额定电流 rated current		相数 number of phases	
三进三出 Three in and Three out		120V	240V	AC输入 AC input	AC输出 AC output
CP70TT60	6KVA	16.6A	8.3A	三相四线+PE Three phase four wire+PE	三相两线 Three phase two wire
CP70TT90	9KVA	25A	12.5A		
CP70TT150	15KVA	41.6A	20.8A		
CP70TT200	20KVA	55.5A	27.7A		
CP70TT300	30KVA	83.3A	41.6A		
CP70TT450	45KVA	125A	62.5A		
CP70TT600	60KVA	166A	83A		
CP70TT750	75KVA	208A	104 A		
CP70TT1000	100KVA	275A	138A		
CP70TT1200	120KVA	333.3A	166A		
CP70TT1500	150KVA	416A	208A		

GP系列型号规格 Gp series model specifications

型号 Model 单相[单进单出] Single phase [single in, single out]	容量 capacity	额定电流 ated current		相数 number of phases	
		120V	240V	AC输入 AC input	AC输出 AC output
GP60D03	350VA	3A	1.5A	单相两线+PE Single phase two wire+PE	单相两线 Single phase two wire
GP60D05	500VA	4.2A	2.1A		
GP60D10	1KVA	8.4A	4.2A		
GP60D20	2KVA	16.66A	8.3A		
GP60D30	3KVA	25A	12.5A		
GP60D50	5KVA	41.66A	20.83A		

技术参数 technical parameter

输入电源 Input power supply	10KVA及以下：单相220V±10%;50Hz±5Hz of 10KVA and below: single-phase 220V ± 10%; 50Hz ± 5Hz
	10KVA以上:三相380V+10%，三相四线+地线;50Hz±5Hz Above 10KVA: three-phase 380V+10%, three-phase four wire+ground wire; 50Hz ± 5Hz
输出电压范围 Output voltage range	低档.0.1~150.0V，高档0.1~300.0V Low range: 0.1~150.0V, High range: 0.1~300.0V
输出频率 Output frequency	45-400Hz可调，调整步幅0.1Hz，快捷键:50Hz;60Hz 45-400Hz adjustable, with a stride of 0.1Hz, shortcut key: 50Hz; 60Hz
频率稳定度 Frequency stability	≤0.1%
电压稳定度 Voltage stability	≤1%
失真度 Distortion degree	≤2%(THD)
波峰系数 Peak coefficient	1.41+0.10
源电压效应 Source voltage effect	≤1%
负载效应 Load effect	≤1%
效率 Efficiency	≥90%(3kVA及以下容量为≥80%) ≥ 90% (≥ 80% for capacities of 3kVA and below)
频率显示 Frequency display	0.1%读数，分辨率0.1Hz 0.1% reading, resolution 0.1Hz
电压显示 Voltage display	+(1%读数+0.1%量程)，分辨率0.1V +(1% reading+0.1% range), resolution 0.1V
电流显示 Current display	±1%读数+0.1%量程)，分辨率0.001A/0.1A ±1% soil reading+0.1% range), resolution 0.001A/0.1A
功率显示 Power display	+(1%读数+0.1%量程)，分辨率0.1W/0.1kW +(1% reading+0.1% range), resolution 0.1W/0.1kW
功率因数显示 Power factor display	±0.1，分辨率0.001 ± 0.1, resolution 0.001
预置功能 Preset function	输出电压、输出频率、输出电流上限 Output voltage, output frequency, and upper limit of output current
快捷功能 Quick functions	常用电压、频率转换, M1, M2两组记忆组 Common voltage and frequency conversion, M1 and M2 memory groups
报警功能 Alarm function	保护装置动作后发出报警(声光)信号，显示故障代码 After the protective device is activated, it emits an alarm (sound and light) signal and displays a fault code
过载能力 Overload capacity	1.0Ie＜I输出≤1.1Ie，延时15s切断输出, 1.1Ie≤I输出≤1.2Ie，延时5s切断输出 1.0Ie<I output ≤ 1.1Ie, cut off output after a delay of 15 seconds, 1.1Ie ≤ I output ≤ 1.2Ie, cut off output after a delay of 5 seconds
过热保护 Overheating protection	功率器件温度大于85°C±5°C The temperature of the power device is greater than 85 °C ± 5 °C
通信接口 Communication interface	RS-232C/RS-485(选配) RS-232C/RS-485 (optional)
外壳防护等级 Shell protection level	IP20
机箱结构台式 Desktop chassis structure	台式(3KVA以下)、柜(立)式(带脚轮)（5KVA及5KVA以上）Desktop (below 3KVA), cabinet (upright) (with wheels) (5KVA and above)
工作环境 Working environment	温度:-10°C~40°C湿度: 10%~90%(25°C无凝露)，海拔高度≤2000m Temperature: -10 °C~40 °C Humidity: 10%~90% (no condensation at 25 °C), altitude ≤ 2000m

产品描述 Product describe

eTM线性电源系列是一款单路输出高精度的直流电源供应器，整个系统完全由微处理机（MPU)控制，LED数字显示，可同时显示电压、电流和功率。轻便小巧，电压电流连续可调。可以轻易的利用通讯接口（RS232)与计算机（PC)联机，实现波形和数据的实时显示和数据的采集，具有稳定性强，性价比高等级优势。

The eTM linear power supply series is a high-precision DC power supply with single output. The entire system is completely controlled by a microprocessor (MPU), with LED digital display, which can simultaneously display voltage, current, and power. Lightweight and compact, with continuously adjustable voltage and current. It is easy to use the communication interface (RS232) to connect with a computer (PC), achieve real-time display of waveforms and data, and collect data, with strong stability and high cost performance advantages.Adopting advanced electronic technology and control algorithms to ensure high precision and stability of output voltage and frequency. The safety protection function can effectively avoid damage to the power supply equipment caused by faults such as overcurrent and overvoltage, ensuring the safety and reliability of the power supply equipment.

HEL6504

性能特点 Performance characteristics

- LED数字显示，简单直观显示电源输出的电压，电流和功率、稳压、稳压流自动切换
- 具有输出控制开关, 控制更回灵活
- 过压，过流、过功率、过温度保护并且可通过电脑
- 专用软件设置保护的阀值, 方便且快速的操作界面
- 温控风扇转速使仪器具有低噪声，风扇寿命更长久
- 配备RS232接口，方便数据的采集与监测

- LED digital display, simple and intuitive display of power output voltage, current and power. Automatic switching of voltage stabilization and current stabilization
- With output control switch, the control is more flexible
- Over voltage, over current, over power, over temperature protection and computer
- Special software to set the protection threshold, convenient and fast operation interface
- The speed of the temperature controlled fan makes the instrument have low noise and the fan has longer service life
- Equipped with RS232 interface to facilitate data acquisition and monitoring

CP/LCP系列精密直流稳压恒流电源

precision frequency voltage variable frequency power supply

LCP3005

CP3005

CP/LCP系列电源是针对标准光源的特殊要求而专门设计的高稳定度直流线性功率电源，具有稳定度好、精度高、输出电流连续可调等优点。电源具有高精度电流电压数字显示仪表，可精确测试LED单颗光源反向漏电流三窗口同时显示直流压、电流、功率，特别适用于高精度测试现场用，是标准光源、大功率LED的理想电源。

产品完全数字式控制电路、满量程高解析度10MV/1MA便捷的电特性存、取方式：可预存储5档预设之电压值，可通过快捷键随时调用，也可在任意状态下存储电源当前的输出参数（输出电压、限流值、过流值）,随时调用全面的安全保护：可选择定电流、定电压输出，也可选择过电流/过电压关断便捷的操作界面：可通过数字键盘进行精确的电压/限流/限压/过流保护/过压保护设定，也可使用上下键进行模糊操作。

CP/LCP series power supply is a high stability DC linear power supply specially designed for the special requirements of standard light source. It has the advantages of good stability, high precision and continuous adjustable output current. The power supply has a high-precision digital display instrument of current and voltage, which can accurately measure the DC voltage, current and power at the same time through three Windows of the reverse leakage current of the single LED light source. It is especially suitable for the high-precision test site. It is an ideal power source for the standard light source and high-power LED.

Products fully digital control circuit, high resolution in a full range of 10 mv / 1 ma convenient save, take the way of electrical characteristics: to prestore a 5-speed default voltage value, can call at any time by the shortcut, can also be stored under any state power current output parameters (output voltage and current limit value, the over-current value), feel free to call comprehensive security protection: constant current, constant voltage output options are available, also can choose over current/over voltage off and convenient operating interface: through digital keyboard for precise voltage/current limiting/pressure limiting set / over -current protection, over-voltage protection, also can use the up and down keys for fuzzy operation.

技术参数 technical parameter

型号 Model	CP3005 CP3010 CP6005 CP6010 CP10010 CP10005 Cp3000 LCP3005 LCP3010 LCP6005 LCP6010 LCP10010 LCP10005 LCP30005
输出电压 Voltage output range	0.001V~30.000V 0.001V~60.000V 0.001V~100.00V 0.001V~300.00V
输出电流 Current output range	0.0005A~5.000A 0.0005A~10.00A
电压表量程 Voltage range	30V量程Range:.5V/10V/25V/30V 120V量程Range:20V/40V/90V/120 60V量程Range:.5V/10V/25V/60V 300V量程Range:30V/60V/145V/300
电压表分辨率 Resolution of voltmeter	0.0001V(0.0000V-10.000V1, 0.001V(10.000V-60.000V) , 0.001V(10.000V-100.00V, 100V以上分辩率0.01V
电压、电流测量精度 Accuracy of voltage and current	±(0.02%读数reading+0.01%量程range+1-Byte) / ±(0.1%读数reading+0.01%量程range+1-Byte)
满度时输出电压漂移 Output voltage drift at fu	±0.01%读数reading/3min/ ±0.1%读数reading/3min
满度时输出电流漂移 Output cu rrent d rift at fu	±0.01%读数reading/3min/±0.1%读数reading/3min
最大输出功率 Maximum output power	150VA300VA250VA600VA1200VA600VA750VA
电流表分辨率 Resolution of CUrrent	0.0001A(0.0000A~10.000A);0.001A(10.000A~15.000A)

CP 2018 便携式多功能手提测试箱

Portable multifunctional portable test case

目前对电光源电参数的测量都在实验室的技术水平上，将电参数的测量仪器分别连入各自的测量电路，这种方法对测试的人员、场合、成本及设备等条件都有较高的要求，只适合于生产厂家应用在研制过程的实验室内，却难以满足销售商在商场、销售门市部对节能灯以及相关电光源进行快速测试的要求。

For electric light source electric parameter measurement is now in the laboratory of the technical level, the electrical parameters of the measuring instruments are connected to the respective measurement circuit, the method of testing personnel, occasions, cost, and equipment conditions have higher requirements, the manufacturer only suitable for application in the development process of the laboratory, but it is hard to meet sellers in the market, sales departments of energy-saving lamps and related electric light source for rapid test requirements.

不带调压

带调压

性能特点 Performance characteristics

- 电压：0~300V
- 频率范围：基频45Hz~65Hz,宽带 5KHZ
- 电压、电流、有功功率误差：±(0.4%+0.1%量程+1)
- 功率因数误差： ±(0.004+0.001/读数+1)
- 电参数测量精度：0.5级

- Voltage：0~300V
- Frequency range: basic frequency 45Hz~65Hz, broadband 5KHZ
- Error of voltage, current and active power: ±(0.4%+0.1% range +1)
- Power factor error: ±(0.004+0.001/ reading +1)
- Measurement accuracy of electrical parameters: 0.5 grade

直流低电阻测试仪
DC low resistance tester


产品描述 Product describe

直流低电阻测试仪是一种专门用于测量低直流电阻的仪器，它采用四端测量法，操作界面简洁直观，测量速度快，具有高精度、高灵敏度、广泛的应用范围和简便的操作等特点。该产品主要应用于测量各种电器元件的低电阻，如绕组、接地体、接点、接头、电缆、电气连接件、元件导体、电枢线圈、集电环、接触器、继电器、开关、电阻器等导体连接点的电阻。

提供RS-232/HANDLER接口，方便数据的导出与传输。采用4.3寸24位真彩色液晶屏，提供清晰的显示效果。支持中英文两种操作界面，高采样速率可达约7ms/次，满足快速、实时数据采集的需求。电阻测量精度高达0.01%，确保测量结果的准确性和可靠性。最小分辨率达到1uΩ，满足高精度测量需求。

The DC low resistance tester is a specialized instrument used to measure low DC resistance. It adopts the four terminal measurement method, has a simple and intuitive operation interface, fast measurement speed, high precision, high sensitivity, wide application range, and simple operation. This product is mainly used to measure the low resistance of various electrical components, such as windings, grounding bodies, contacts, joints, cables, electrical connectors, component conductors, armature coils, collector rings, contactors, relays, switches, resistors, and other conductor connection points.Provide RS-232/ANDLER interface for easy data export and transmission. Adopting a 4.3-inch 24 bit true color LCD screen, providing clear display effects. Supports both Chinese and English operation interfaces, with a high sampling rate of about 7ms/time, meeting the needs of fast and real-time data collection. The resistance measurement accuracy is as high as 0.01%, ensuring the accuracy and reliability of the measurement results. The minimum resolution reaches 1u Ω, meeting the requirements of high-precision measurement.

HL2511/HL2512系列性能特点 Performance characteristics

- 高清数码管显示
- 软开关功能
- 快速65ms/次，慢速125ms/次
- 最高电阻精度: 0.1%，最小分辨率: 10uΩ
  （HL2512 精度0.05%，最小分辨率: 1uΩ)
- 用户自校准功能(0 ADJ)
- 直读值与百分比误差显示
- 上超、下超、合格分选及讯响功能
- 内部可保持5组参数文件
- Handler接口用于实现联机操作
- 体积紧凑，接口齐全，可靠性高

- High definition digital tube display
- Soft switch function
- Fast 65ms/time, slow 125ms/time
- Maximum resistance accuracy: 0.1%, minimum resolution: 10u Ω
  (HL2512 accuracy 0.05%, minimum resolution: 1u Ω)
- User self calibration function (0 ADJ)
- Direct reading value and percentage error display
- Upward, downward, qualified sorting and alarm function
- Internally, 5 sets of parameter files can be maintained
- The Handler interface is used to implement online operations
- Compact size, complete interfaces, high reliability

技术参数 technical parameter

产品型号 Product model		HL2511		HL2511A		HL2512			
显示器 Display		高清数码管 high-definition digital tube							
读数位数 Reading digits		4½ 位 4 and a half							
测量范围 Measurement range		10μΩ-20kΩ		10μΩ-300kΩ		1μΩ-2MΩ			
电阻量程 Resistance range		200mΩ	2Ω	20Ω	200Ω	200mΩ	2Ω	20Ω	200Ω
		2kΩ	20kΩ	300kΩ（仅HL2511A)		2kΩ	20kΩ	200kΩ	2MΩ
测量基本准确度 Basic measurement accuracy		0.1%(详细信息参考使用说明书) 0.1% (refer to the user manual for detailed information)				0.05%(详细信息参考使用说明书) 0.05% (refer to the user manual for detailed information)			
电阻测量时间 Resistance measurement time		快速65ms/次，慢速125ms/次 fast 65ms/time, slow 125ms/time							
测试端配置 Test end configuration with		四端 four terminals							
量程方式 Range mode		自动，保持 automatic, maintain							
触发模式 Trigger mode		内部，外部， internal, external,							
清零 Zeroing		可全量程清零 can reset the entire range to zero							
比较器 comparer	信号输出 Signal output	HI/IN/LO HI/IN/LO							
	讯响 Sound	鸣叫模式: OFF，IN，HI/LO mode: OFF, IN , HI/LO							
接口配置 Interface configuration		选配(Optional standard) : RS232/485、HANDLER				标配(standard configuration)HANDLER，选配(Optional standard): RS232/485			
附件 Attachment		电源线，四端低电阻测试线 power cord, four terminal low resistance test wire							

Hl2515系列性能特点 Performance characteristics

- 4.3寸高清液晶触摸屏显示
- 最高采样速率约142次/秒
- 5½ 位高分辨率测量结果显示
- 最高电阻精度: 0.01%，最小分辨率: 0.1uΩ
- 测试范围最高到2GΩ
- 温度基本精度: 0.1°C
- 测试状态故障智能检测
- R，LPR，T等多种测试功能组合
- 支持PT100和PT500两种温度传感器
- 低电压测试模式，有效保护被测件
- 温度补偿功能(TC)
- 失调电压补偿功能(OVC)
- 用户自校准功能(0 ADJ)
- 统计功能，提供CpK，Cp等统计量
- 截屏功能，数据记录和参数保存功能
- 同时输出10档档比较结果 (超限，合格以及讯响)
- Handler接口用于实现联机操作

- 4.3-inch high-definition LCD touch screen display
- The maximum sampling rate is about 142 times per second
- 5 1/2 high-resolution measurement results display
- Maximum resistance accuracy: 0.01%, minimum resolution: 0.1u Ω
- Test range up to 2G Ω
- Basic temperature accuracy: 0.1 ° C
- Intelligent detection of testing status faults
- R. Combination of various testing functions such as LPR and T
- Supports both PT100 and PT500 temperature sensors
- Low voltage testing mode effectively protects the tested component
- Temperature compensation function (TC)
- Offset Voltage Compensation Function (OVC)
- User self calibration function (0 ADJ)
- Statistical function, providing statistical measures such as CpK and Cp
- Screen capture function, data recording and parameter saving function
- Simultaneously output the comparison results of 10 gears (out of limit, qualified, and sounding)
- The Handler interface is used to implement online operations

技术参数 technical parameter

产品型号 Product model		HL2515						2515A					
显示器 display		4.3寸高清液晶触摸屏显示 4.3-inch high-definition LCD touch screen											
读数位数 Number of reading digits		5½ 位 5 and a half positions											
测量范围 Measurement range		0.1μΩ-110MΩ						1μΩ-20MΩ					
电阻量程 Resistance range		20mΩ	200mΩ	2Ω	20Ω	200Ω	2kΩ	20mΩ	200mΩ	2Ω	20Ω	200Ω	2kΩ
		20kΩ	100kΩ	1MΩ	10MΩ	100MΩ		20kΩ	100kΩ	1MΩ	10MΩ	100MΩ	
测量基本准确度 Basic measurement accuracy		0.1%(详细信息参考使用说明书) 0.1% (refer to the user manual for detailed information)											
电阻测量时间 Resistance measurement time		快速：7mS, 中速：42mS, 慢速：150ms fast: 40 times/S, medium speed: 20 times/S, slow speed: 12 times/S											
温度测量时间 Temperature measurement time		50 ± 10ms											
测试端配置 Test end configuration with		四端 four terminals											
低电压测量 Low voltage measurement		开路电压: ≤60mV 有效量程: 2Ω, 20Ω, 200Ω, 2kΩ open circuit voltage: ≤ 40mv Effective range: 2 Ω, 20 Ω, 200 Ω, 2k Ω											
热电势消除 Thermoelectric elimination		✓											
统计功能 Statistical function		合格和不合格 Qualified and unqualified											
测量设置参数保存 Save measurement settings parameters		10组 10 sets											
温度测量 Temperature measurement		传感器: PT1000 -200.0°C~300°C; 显示: -99.9°C~999.9°C sensors: PT1000, -200.0℃~300℃; Display range: -99.9 ℃ -999.9℃											
其他功能 Other functions		温度补偿功能， Temperature compensation function,											
比较器 comparer	信号输出 Signal output	HI/IN/LO											
	讯响 News ringing	鸣叫模式: OFF，IN，HI/LO Call mode: OFF, IN, HI/LO											
	极限设置方式 Limit setting method	3档，绝对值上/下限 3rd gear, absolute upper/lower limit											
接口配置 Interface configuration		标配：RS232/RS485、HANDLER standard: RS232/RS485, Handler											
标配附件 Standard accessories		电源线，四端低电阻测试线 PT1000热电阻 Power cord, four terminal low resistance test line, PT1000 thermal resistance											

Hl2516系列性能特点 Performance characteristics

- 4.3寸高清液晶触摸屏显示
- 中英文可选操作界面
- 最高采样速率约20ms/次
- 最高电阻精度: 0.05%，最小分辨率: 1uΩ
- 温度基本精度: 0.2°C
- R，LPR，T等多种测试功能组合
- 支持PT1000温度传感器
- 低电压测试模式，有效保护被测件
- 温度转换功能(At)
- 温度补偿功能(TC)
- 失调电压补偿功能(OVC)
- 与用户自校准功能(0 ADJ)
- 截屏功能，数据记录和参数保存功能
- 同时输出3档档比较结果(超限，合格以及讯响)
- Handler接口用于实现联机操作

- 4.3-inch high-definition LCD touch screen display
- Chinese and English optional operation interface
- The maximum sampling rate is about 20ms/time
- Maximum resistance accuracy: 0.05%, minimum resolution: 1u Ω
- Basic temperature accuracy: 0.2 ° C
- R. Combination of various testing functions such as LPR and T
- Support PT1000 temperature sensor
- Low voltage testing mode effectively protects the tested component
- Temperature conversion function (At)
- Temperature compensation function (TC)
- Offset Voltage Compensation Function (OVC)
- User self calibration function (0 ADJ)
- Screen capture function, data recording and parameter saving function
- Simultaneously output the comparison results of three levels (over limit, qualified, and audible)
- The Handler interface is used to implement online operations

技术参数 technical parameter

产品型号 Product model		Hl2516				HL2516A				HL2516B		
显示器 display		4.3寸高清液晶触摸屏显示 4.3-inch high-definition LCD touch screen										
读数位数 Number of reading digits		4½ 位 4 and a half positions										
测量范围 Measurement range		1μΩ-2MΩ				1μΩ-300KΩ				1μΩ-20KΩ		
电阻量程 Resistance range		20mΩ	200mΩ	20Ω	200Ω	20mΩ	200mΩ	20Ω	200Ω	20mΩ	200mΩ	20Ω
		2kΩ	20kΩ	200kΩ	2MΩ	2kΩ	20kΩ	300kΩ		200Ω	2kΩ	20kΩ
测量基本准确度 Basic measurement accuracy		0.05%(详细信息参考使用说明书) 0.05% (refer to the user manual for detailed information)										
电阻测量时间 Resistance measurement time		快速：20mS, 慢速：40mS fast: 20mS, slow speed: 40mS										
温度测量时间 Temperature measurement time		100 ± 10ms										
测试端配置 Test end configuration with		四端 four terminals										
低电压测量 Low voltage measurement		开路电压: ≤40mV 有效量程: 2Ω, 20Ω, 200Ω, 2kΩ open circuit voltage: ≤ 40mv Effective range: 2 Ω, 20 Ω, 200 Ω, 2k Ω										
统计功能 Statistical function		合格和不合格 Qualified and unqualified										
测量设置参数保存 Save measurement settings parameters		10组 10 sets										
温度测量 Temperature measurement		传感器: PT1000 -200.0°C~300°C; 显示: -99.9°C~999.9°C （HL2516A、HL2516B无） sensors: PT1000, -200.0℃~300℃; Display range: -99.9 ℃ -999.9℃										
其他功能 Other functions		温度补偿功能，温度转换功能 （HL2516A 、HL2516B无） Temperature compensation function, Temperature conversion function										
比较器 comparer	信号输出 Signal output	HI/IN/LO										
	讯响 News ringing	鸣叫模式: OFF，IN，HI/LO Call mode: OFF, IN, HI/LO										
	极限设置方式 Limit setting method	3档，绝对值上/下限 3rd gear, absolute upper/lower limit										
接口配置 Interface configuration		标配：RS232/RS485、HANDLER standard: RS232/RS485, Handler										
标配附件 Standard accessories		电源线，四端低电阻测试线 PT1000热电阻 （HL2516A 、HL2516B无PT1000 热电阻） Power cord, four terminal low resistance test line, PT1000 thermal resistance										

HL2518-X系列性能特点 Performance characteristics

- 单机模式和扫描模式随意切换，实现一机两用
- 最多支持64通道扫描
- 压接方式的扫描测试端，方便客户操作
- 最高采样速率约25ms/秒通道
- 最高电阻精度:0.05%，最小分辨率:1uΩ
- 温度基本精度: 0.2°C
- R，LPR，T等多种测试功能组合
- 支持PT1000传感器
- 低电压测试模式，有效保护被测件
- 温度补偿功能(TC)
- 失调电压补偿功能(OVC)
- 用户自校准功能(0 ADJ)
- 截屏功能，数据记录和参数保存功能
- 每个通道可独立设置分选边界以及Handler分选结果
- 可通过USB HOST升级仪器固件程序
- Handler接口用于实现联机操作
- 支持内部100组参数文件

- Switch between single machine mode and scanning mode freely, achieving dual use of one machine
- Supports up to 64 channel scanning
- Scanning test end for crimping method, convenient for customer operation
- The maximum sampling rate is about 25ms/second per channel
- Maximum resistance accuracy: 0.05%, minimum resolution: 1u Ω
- Basic temperature accuracy: 0.2 ° C
- R. Combination of various testing functions such as LPR and T
- Support PT1000 sensor
- Low voltage testing mode effectively protects the tested component
- Temperature compensation function (TC)
- Offset Voltage Compensation Function (OVC)
- User self calibration function (0 ADJ)
- Screen capture function, data recording and parameter saving function
- Each channel can independently set sorting boundaries and Handler sorting results
- Instrument firmware program can be upgraded through USB HOST
- The Handler interface is used to implement online operations
- Support 100 sets of internal parameter files

技术参数 technical parameter

产品型号 Product model		HL2518-X								
扫描通道数 Number of scanning channels		4		8		16		32		64
测试模式 Test mode		单机模式，扫描模式 standalone mode, scanning mode								
显示器 display		4.3寸高清液晶触摸屏显示 4.3-inch high-definition LCD touch screen								
读数位数 Number of reading digits		4½ 位 4 and a half positions								
测量范围 Measurement range		10μΩ-300KΩ								
电阻量程 Resistance range		20mΩ	200mΩ	2Ω	20Ω	200Ω	2kΩ	20kΩ	200kΩ	2MΩ
测试电流 Test current		1A	1A	100mA	10mA	1mA	100uA	100uA	10uA	1uA
测量基本准确度 Basic measurement accuracy		0.05%								
电阻测量时间 Resistance measurement time		快速：40次/S, 中速：20次/S 慢速：12次/S fast: 40 times/S, medium speed: 20 times/S, slow speed: 12 times/S								
温度测量时间 Temperature measurement time		30 ± 10ms								
测试端配置 Test end configuration with		四端 four terminals								
低电压测量 Low voltage measurement		开路电压: ≤40mv 有效量程: 2Ω, 20Ω, 200Ω, 2kΩ open circuit voltage: ≤ 40mv Effective range: 2 Ω, 20 Ω, 200 Ω, 2k Ω								
热电势消除 Thermoelectric elimination		✓								
测量设置参数保存 Save measurement settings parameters		100组 100 sets								
温度测量 Temperature measurement		传感器: PT100，PT500；测试范围 -10.0°C-299.9°C; 精度: ±0.2°C ; 显示范围: -999°C-9999°C sensors: PT100, PT500; testing range -10.0 °C -299.9 °C; Accuracy: ± 0.2 °C; Display range: -999 °C -9999°C								
其他功能 Other functions		温度补偿功能， Temperature compensation function,								
比较器 comparer	模式 pattern	单机和64通道单独设置 Single machine and 64 channel are set separately								
	信号输出 Signal output	HI/IN/LO								
	讯响 News ringing	鸣叫模式: OFF，IN，HI/LO Call mode: OFF, IN, HI/LO								
	极限设置方式 Limit setting method	3档，绝对值上/下限 3rd gear, absolute upper/lower limit								
接口配置 Interface configuration		标配：RS232/RS485、HANDLER standard: RS232/RS485, Handler								
标配附件 Standard accessories		电源线，四端低电阻测试线，四端低电阻扫描测试线，PT100温度传感器 Power cord, four terminal low resistance test line, four terminal low resistance scanning test line, PT100 temperature sensor								

EM5080E 数字时域测试接收系统
Digital Time Domain Testing and Receiving System

产品描述 Product describe

EM5080E型EMI测试接收机是全自动的数字时域测试接收机，测试速度极快，仅需几秒钟即可完成整个测试，具有精度测试高、显示采用彩色液晶屏显示，同时具有共差模及EMI滤波器功能，是进行EMI测试的主要工具。EM5080E型接收机频率范围从9kHz～300MHz，配备上功率吸收钳可完全满足电源线骚扰功率测试，而配置上人工电源网络后就可以进行电源端子骚扰电压测试，该仪器具有测试可操纵性强，性能稳定，测试数据处理方便等优点。EM5080E型接收机率先在国内使用数字采集数据及机器直接采用液晶显示，不仅省去另配电脑的烦恼及用户另配电脑的成本，而且大大提高了数据采集的稳定性，仪器采用导电性很强的材料，屏蔽效果极好，由于采用了新技术和新工艺，从根本上解决了自身干抗的问题。接打印无需额外编辑。该测量接收机完全符合国家标准GB/61131-1995和国际标准CISPRl6-1。

EM5080E EMI test receiver is a fully automatic digital time domain test receiver with extremely fast test speed and only a few seconds to complete the whole test, with high accuracy and display It is the main tool for EMI testing with color LCD display and common difference mode and EMI filter. The EM5080E receiver is equipped with a frequency range from 9kHz to 300MHz The upper power absorption pliers can fully meet the power line disturbance power test, and the artificial power network can be configured after the power terminal disturbance voltage test, the instrument has a strong test controllability Stability, test data processing convenience and other advantages. EM5080E receiver takes the lead in the use of digital data acquisition in China and the machine directly adopts liquid crystal display, which not only saves the trouble of matching another computer The cost of the user to mat the computer, and greatly improve the stability of the data collection, the instrument USES the material with strong conductivity, shielding effect is very good, because of the use of new technology and new process, from the fundamental On the solution of their own dry resistance problem. No additional editing is required for printing. The measuring receiver fully conforms to the national standard GB / 61131 - 1995 and the international standard cisprl 6-1.

技术参数 technical parameter

全频率范围 Full frequency range	9KHz-300MHz射频前置放大器关闭30dB(=1W) 9khz-300mhz RF preamplifier off 30dB (= 1W)
最大脉冲电压 Maximum pulse voltage	射频衰减≥10dB; 150V RF attenuation ≥ 10dB; 150V
分辨率带宽 Resolution bandwidth	接收机模式200Hz，9KHz，120KHz(-6dB) receiver mode 200Hz, 9KHz, 120kHz (- 6dB)
预选器 The preselector	在分析仪中可以关闭，15路固定滤波器 can be turned off in the analyzer, with 15 fixed filters
前置放大器 The preamplifier	可以被开启/关闭，9KHz~300MHz，20dB can be turned on / off, 9KHz ~ 300MHz, 20dB
测量时间 Measurement time	接收机模式1MS到15MS 显示平均噪声电平：平均检波器射频衰减0dB, receiver mode 1ms to 15ms shows the average noise level: the average detector RF attenuation is 0dB,
前置放大器关闭 Preamplifier off	30MHz<f<1GHz，带宽120KHz<20dBuv 1GHz<f<3GHz，带宽1MHz<30dBuv, 30MHz < f < 1GHz, bandwidth 120kHz < 20dbuv, 1GHz < f < 3GHz, bandwidth 1MHz < 30dbuv,
前置放大器开启 Preamplifier on	30MHz<f<1GHz，带宽120KHz<0dBuv, 1GHz<f<3GHz, 带宽1MHz<10dBuv 30MHz < f < 1GHz, bandwidth 120kHz < 0dbuv, 1GHz < f < 3GHz, bandwidth 1MHz < 10dbuv
全部的测量不确定度 Total measurement uncertainty	9KHz≤f<300MHz，1.5dB

雷击浪涌发生器
Lightning surge generator

产品描述 Product describe

自然界的雷击（间接雷）以及供电线路中因大型开关切换所引起的电压变化对供电线路和通信线路的影响，其能量特别大，对产品的影响可能是破坏性的。雷击浪涌测试仪用于评估设备在遭受来自电源线端口和其他信号线端口上高能量骚扰时的性能。产品完全满足IEC6100-4-5和GB/ T 17626.5 等新标准要求。

The impact of natural lightning strikes (indirect lightning) and voltage changes caused by large switch switching in power supply lines on power and communication lines is particularly significant, and the impact on products may be destructive. The lightning surge tester is used to evaluate the performance of equipment when subjected to high-energy disturbances from power line ports and other signal line ports. The product fully meets the requirements of new standards such as IEC6100-4-5 and GB/T 17626.5.

性能特点 Performance characteristics

- 7寸彩色触摸屏
- 支持多国语言，方便不同用户使用
- 内置环境自动检测程序，自动检测测试环境并提醒使用者
- 可编程操作，实现一键完成设定功能
- 内置国际标准等级参数，操作方便快捷
- 浪涌电压，浪涌电流监控
- EUT智能检测；内置电压、电流探头
- 自校准功能，自检功能

- 7-inch color touch screen
- Supports multiple languages, making it convenient for different users to use
- Built in environment automatic detection program, automatically detects the testing environment and reminds users
- Programmable operation to achieve one click setting function
- Built in international standard level parameters, convenient and fast operation
- Surge voltage and surge current monitoring
- EUT intelligent detection; Built in voltage and current probes
- Self calibration function, self check function

技术参数 technical parameter

产品型号 Product model	SUT-6K	SUT-8K	SUT-10K
浪涌波形 Surge wave	电压波：1.2/50 μs；电流波：8 /20 μs voltage wave: 1.2/50 μ s; Current wave: 8/20 μ s		
开路电压 Open circuit voltage	0.2~6kV	0.2~8kV	0.2~10kV
短路电流 Short circuit current	0.1~3kA	0.1~4kA	0.1~5kA
浪涌极性 Surge polarity	正、负、先正后负、先负后正 positive, negative, first positive then negative, first negative then positive		
输出阻抗 Output impedance	2 Ω (共模12Ω) 2 Ω (common mode 12 Ω)		
耦合/去耦网络 Coupling / decoupling	内置，单相三线，16A（可根据客户要求定制） network built-in, single-phase three wire, 16a (customized according to customer requirements)		
次数 Times	1~9999 次		
间隔时间 Interval time	10~9999S		
工作 电源 Working power supply	AC220V 50/60Hz		
环境温度 Ambient temperature	15 °C ~ 35 °C		

ESD20K 静电放电发生器
Electrostatic discharge generator

产品描述 Product describe

静电放电是普遍存在的自然现象（当带电的物体靠近或接触一个导体时，电荷就要发生转移，这就是静电放电），静电放电对电气和电子设备、装置或系统的影响无处不在，是一种危害程度极高的电磁能量。只有提高电子产品抗静电能力水平才能保证电子产品的安全使用。ESD测试仪用于评估电气和电子设备、装置或系统遭受静电放电时的性能。产品完全满足IEC61000-4-2 和 GB/T17626.2 等新标准要求。

性能特点 Performance characteristics

- 7寸触摸屏操作
- 支持多国语言，方便不同用户使用
- 内置环境自动检测程序，自动检测测试环境并提醒使用者
- 可编程操作，实现一键完成设定功能
- 内置国际标准等级参数，操作方便快捷
- 可以非常方便地更换放电模块，以满足不同标准的试验要求
- RS232/USB接口，可PC控制操作及打印测试报告

- 7-inch touch screen operation
- Supports multiple languages, making it convenient for different users to use
- Built in environment automatic detection program, automatically detects the testing environment and reminds users
- Programmable operation to achieve one click setting function
- Built in international standard level parameters, convenient and fast operation
- It is very convenient to replace the discharge module to meet the testing requirements of different standards
- RS232/USB interface, capable of PC control operation and printing test reports

技术参数 technical parameter

- 产品型号：ESD 20K
- 输出电压：0.2~±20kV
- 输出电压极性：正、负、先正后负、先负后正
- 储能电容：150pF
- 放电电阻：330Ω
- 放电电流上升时间：0.6~1ns
- 空气放电保持时间：≥5s
- 放电模式：接触放电、空气放电
- 放电方式：单次放电、连续放电
- 触发模式：自动、手动、枪体操控
- 工作模式： IEC等级模式 、编程模式、电压渐升模式
- 放电间隔时间：0.05~9.99s
- 放电次数：1~9999
- 设备工作电源： AC220V ± 10%,50/60Hz
- 环境温度： 15 ℃~35 ℃

- Product model: ESD 20K
- Output voltage: 0.2~± 20kV
- Output voltage polarity: positive, negative, first positive then negative, first negative then positive
- Energy storage capacitor: 150pF
- Discharge resistance: 330 Ω
- Discharge current rise time: 0.6~1ns
- Air discharge holding time: ≥ 5s
- Discharge mode: contact discharge, air discharge
- Discharge method: single discharge, continuous discharge
- Trigger mode: automatic, manual, gun body control
- Working modes: IEC level mode, programming mode, voltage gradually increasing mode
- Discharge interval time: 0.05-9.99s
- Discharge frequency: 1~9999
- Equipment working power supply: AC220V ± 10%, 50/60Hz
- Environmental temperature: 15 ℃~35 ℃

电池综合测试仪
Battery integrated tester

产品描述 Product describe

HTB系列电池综合测试仪是一款融合了高性能ARM微处理器控制的先进测试设备。其全面且卓越的性能，使其在电池检测领域中脱颖而出。这款测试仪专为锂电池、镍氢电池、镍铬电池和铅酸电池的性能检测而设计，具备测量电池开路电压、内阻、充电和放电性能、电池容量以及放电压降等功能，可以全面了解电池的性能状态。搭载的4.3寸高清液晶触摸显示屏。提供了直观且易操作的界面，提升了用户的使用体验。只需轻触屏幕，便可轻松进行参数设置，无需复杂的操作步骤，使得测试过程更为便捷。具备自动静态触发电压和触发延迟时间的测试功能。通过自动静态触发电压测试，可以确保测试结果的准确性和可靠性；而触发延迟时间的测试功能，则能够进一步提升测试的精确度和效率。支持上位机软件查看数据报告并打印。

The HTB series battery comprehensive tester is an advanced testing device that integrates high-performance ARM microprocessor control. Its comprehensive and outstanding performance makes it stand out in the field of battery testing. This tester is designed specifically for performance testing of lithium batteries, nickel hydrogen batteries, nickel chromium batteries, and lead-acid batteries. It has functions such as measuring battery open circuit voltage, internal resistance, charging and discharging performance, battery capacity, and discharge voltage drop, which can comprehensively understand the performance status of the battery. Equipped with a 4.3-inch high-definition LCD touch screen display. Provides an intuitive and easy-to-use interface, enhancing the user experience. Simply tap the screen to easily set parameters, without the need for complex operation steps, making the testing process more convenient. It has the testing function of automatic static triggering voltage and triggering delay time. By conducting automatic static triggering voltage testing, the accuracy and reliability of the test results can be ensured; The testing function that triggers delay time can further improve the accuracy and efficiency of testing. Support the upper computer software to view data reports and print them.

技术参数 technical parameter

型号 Model	HTB-2020	HTB-2060	TB-2060(外接版)
仪器适用环境 Applicable environment of the instrument	1. 温度： 0~40℃ 2. 使用高度：海拔2Km内使用 3. 相对湿度：40~80%湿度 1. Temperature: 0 ~ 40 °C 2. Service height: used within 2km above sea level 3. Relative humidity: 40 ~ 80%		
测量范围 Measuring range			
1. 电池电压测量范围 Battery voltage measurement range	0~20.000V 最小分辨率0.001V 0 ~ 20.000V minimum resolution 0.001V	0~80.000V 最小分辨率0.001V 0 ~ 80.000V minimum resolution 0.001V	
2. 过电流测量范围 Overcurrent measurement range	0~10.000A 最小分辨率0.001A 0 ~ 10.000A minimum resolution 0.001A	0~20.000A 最小分辨率0.001A 0 ~ 20.000A minimum resolution 0.001A	
3. 内阻测量范围 Internal resistance measurement range	0~999.0mΩ 最小分辨率 0.1mΩ 0 ~ 999.0m Ω minimum resolution: 0.1M Ω		
4. 识别电阻测量范围 Measurement range of identification resistance	0.1~999.9KΩ 最小分辨率 0.1KΩ 0.1 ~ 999.9k Ω minimum resolution: 0.1k Ω		
5. 容量测量范围 Capacity measurement range	0~100.0AH 最小分辨率 0.1mAH 0 ~ 100.0AH minimum resolution: 0.1mAH		
测试速度 Test speed			
1. 静态测试(测试所有功能) Static test (test all functions)	1.1~2秒 1.1 ~ 2 seconds		
2. 容量测试(1C 电流充放电) Capacity test (1c current charge and discharge)	3~4小时(取决于不同的电池) 3 ~ 4 hours (depending on different batteries)		
测量精度 Measurement accuracy			
1. 电压测量精度 Voltage measurement accuracy	± (结果×0.5%+3mV) ± (result) × 0.5%+3mV)		
2. 电流测量精度 Current measurement accuracy	± (结果×0.5%+5mA) ± (result) × 0.5%+5mA)		
3. 内阻测量精度 Internal resistance measurement accuracy	± (结果×1%+1mΩ) ± (result) × 1%+1mΩ)		
4. 识别电阻测量精度 Measurement accuracy of identification resistance	10KΩ ± 1%		
5. 电池容量测量精度 Measurement accuracy of battery capacity	10AH ± 2%		
内部数控直流电源指标 Index of internal NC DC power supply			
1. 输出最高电压 Maximum output voltage	20V	60V	
2. 输出最大电流 Maximum output current	2A	5A	
3. 电压源指标 Voltage source index			
(1) 输出最大功率 Maximum output power	40W	200W	
4. 内部数控电子负载指标 Index of internal NC DC power supply			
(1) 最高放电电压 Maximum discharge voltage	20V	60V	
(2) 最大放电电流 Maximum discharge current	5A	10A	
(3) 极限功率 Ultimate power	50W	200W	
5. 纹波电压 Ripple voltage	<20mV		
6. 负载调整率 Load adjustment rate	<10%		
7. 响应时间 Response time	1S		

灯头扭矩测试仪
Lamp cap torque tester

产品描述 Product describe

HG-10灯头扭矩测试仪作为一项光源用灯头的机械强度的安全要求指标，已得到各类光源用灯头生产厂家的重视，而且也是国家强制要求检验的项目，为此公司在参阅国内外标准要求的基础上开发了光源用灯头扭矩仪，以满足各类质检机构及生产厂家对LED球泡、节能灯、白炽灯、直管形荧光灯、高压汞灯、钠灯等不同光源灯头的抗扭矩测量。灯头规格有E27、 E26、 B22d、 E14、E12、 E40 (选项) G5、 G13 的测量夹具。配合不同的夹具可检测灯管与塑件、塑件与塑件盖、塑料与灯头之间的弯距、扳力，组成弯距或扳力仪。

HG - 10 lamp holder torque tester as a light source in a lamp holder of the security requirements of mechanical strength index, has received the attention of the light source in all kinds of lamp holder manufacturer, and is also a national mandatory inspection of the project, for this company in refer to the domestic and foreign standards developed on the basis of the light source with lamp holder torque, to meet all kinds of quality inspection agency and the manufacturer of LED ball bulbs, energy-saving lamps, incandescent lamp, straight tube fluorescent lamp, high pressure mercury lamp, sodium lamp, different light source, lamp holder, such as resistance torque measurement. Lamp holder specifications are E27, E26, B22d, E14, E12, E40(options) G5, G13 measuring fixture. The bending distance and pulling force between the lamp tube and the plastic part, the plastic part and the plastic part cover, the plastic part and the lamp holder can be detected with different fixtures, forming the bending distance or pulling force meter.

性能特点 Performance characteristics

- 采用5寸高清液晶触摸屏显示，外观新颖、各参数一目了然
- 扭矩测量范围：0~10N·m(特殊量程可定制)
- 采用应变片式扭矩传感器，可靠性高，精度高及寿命长最
- 大扭矩值保持功能，上限可设定报警
- 采用夹具固定灯头方式，直接转动光源即可测量灯头的正反扭矩
- 测试方便，特殊灯头夹具可定制
- 符合国际和国内标准要求

- Adopting a 5-inch high-definition LCD touch screen display, the appearance is novel and all parameters are clear at a glance
- Torque measurement range: 0~10N · m (special range can be customized)
- Adopting strain gauge torque sensor, it has high reliability, high accuracy, and the longest lifespan
- High torque value maintenance function, upper limit can be set for alarm
- The fixture is used to fix the lamp head, and the forward and reverse torque of the lamp head can be measured by directly rotating the light source
- Convenient testing, special lamp holder fixtures can be customized
- Meets international and domestic standard requirements

RD-60 热电偶点焊机(常规/带氩气)
Thermocouple spot welder

产品描述 Product describe

RD-60热电偶点焊机为传感器厂商设计，用来生产工业级热电偶接口，也适合于大量敞开式接口热点偶的用户。操作人员无特殊技术要求，只稍作培训，就可以直接操作，同时该焊接机还可用于连接金属丝和金属表面的焊接。采用全新设计架构，在低功耗测量方面进行多项优化，能够持续充电提高效率，可接氩气，焊接精准、可充电、效率快，对细致的直径进行精密焊接,焊接范围：0.01-1mm。该热电偶焊接单元瞬间能促使一般强大的电流通过电路, 能使阴阳两极在强大的电流下结成球状，选择不同能量水平, 可以控制阴阳两极球状大小。电流来自电源(电池), 热电偶焊接单元能把低压电转换为高能量, 转换程序由微处理控制。微处理器可输出一个氩气保护接口, 可满足不同需求。

RD-60 thermocouple spot welding machine is designed for sensor manufacturers to produce industrial grade thermocouple interfaces, and is also suitable for users with a large number of open interface hot couples. The operator has no special technical requirements and can operate directly with only a little training. At the same time, the welding machine can also be used to connect metal wires and metal surfaces for welding. Using a new design architecture, multiple optimizations have been made in low power consumption measurement, which can continuously charge to improve efficiency. It can be connected to argon gas, with accurate, rechargeable, and fast welding efficiency. Precision welding is performed on detailed diameters, with a welding range of 0.01-1mm. The thermocouple welding unit can instantly promote a generally strong current to pass through the circuit, enabling the cathode and anode to form a ball shape under strong current. By selecting different energy levels, the size of the ball shape of the cathode and anode can be controlled. The current comes from a power source (battery). The thermocouple welding unit can convert low voltage electricity into high energy, and the conversion program is controlled by a microprocessor. The microprocessor can output an argon protection interface to meet different needs.

CP 3000 智能老化寿命测试仪
Intelligent aging life tester

产品描述 Product describe

耐久性（寿命）几乎是所有电器产品的重要质量指标，而耐久性试验往往是一项费时费力、效率极低的工作。CP3000智能寿命试验仪采用微电脑控制，是新一代的智能仪器，同时具有快速寿命老化及高、中、低压电压老化冲击功能，同时具备实验室开发寿命检测和生产老化两种功能。

Durability (lifespan) is almost an important quality indicator for all electrical products, and durability testing is often a time-consuming and inefficient task. The CP3000 intelligent lifespan tester adopts microcomputer control,

性能特点 Performance characteristics

- 开关次数范围设置: 1~999999次通电、断电时间
- 设置范围: 1秒~99小时59分59秒, 内部触点寿命大于107次方
- 内部继电器容量 : 250V/2A(可定制大电流）内部三组程序随意设置，可做老化冲击和长点高、中、低压老化试验仪器两个窗口同时监测每一组的电压和开关次数或三组总的开关次数.
- 精度: 0.5级

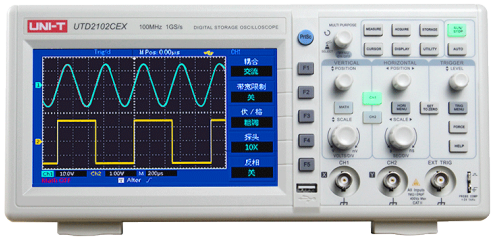
- Setting of switch frequency range: 1~999999 power on/off times
- Setting range: 1 second~99 hours, 59 minutes, and 59 seconds. The internal contact life is greater than 107 times power
- Internal relay capacity: 250V/2A (customizable high current), with three sets of programs available for customization，Set up two windows for aging impact and long point high, medium, and low pressure aging test instruments，Simultaneously monitor the voltage and switching frequency of each group or the total switching frequency of three groups
- Accuracy: 0.5 level

UTD2102CEX / 2102e 数字储存示波器
Digital storage oscilloscope

产品描述 Product describe

200/100/70MHz宽带，40K存储深度1GSa/s的实时采样率和25GSa/s的等效采样率，强大的触发功能: 边沿、脉宽、斜率、视频、交替、超时等。集成USB Host，支持U盘存储、USB接口系统升级32种自动测量功能，并且内置FFT，可以储存超过1000个波形等信息7寸64K色TFT真彩液晶屏, 分辨高达(800×480)，波形显示清晰逼真。

200/100/70MHz broadband, 40K storage depth 1GSa/s real-time sampling rate and 25GSa/s equivalent sampling rate, powerful trigger function: edge, pulse width, slope, video, alternating, timeout, etc. Integrated USB Host, support union disk storage, USB interface system upgrade 32 kinds of automatic measurement functions, and built-in FFT, can store more than 1000 waveform and other information 7 inch 64K color TFT true color LCD screen, resolution up to (800×480), waveform display clear and realistic.



LCR 数字电桥仪
LCR digital bridge instrument


HL2832B


HL2830


HL2812D


HL2811D

型号 model	HL2830	HL2832B
测试参数 Test parameters	Z,C,L,R, X,Y,B,G,ESR,D,Q,	
显示范围 Display range	Ls、LR:0.00001 μH--99.9999kH ESR:0.00001mW--99.9999kW	Cs、Cp:0.00001pF--99.9999mF G、Y、B:0.00001 μS--99.9999S
	R、Rs、Ps、X、Z: 0.00001W--99.9999MW D: 0.00001--99.9999 Q: 3.14159--3.14159	D%: -99.9999%--999.999% Q: 0.00001--99999.9 qd: -180.000--180.000°
测试电平 Test level	10mV— 1 0V， 分辨率 10Mv Resolution 10Mv	10mV— 2 0V， 分辨率 10Mv Resolution 10Mv
测试频率 Test frequency	50Hz -100kHz, 10mHz 步进 Stepping	50Hz -200kHz, 10mHz 步进 Stepping
量程方式 Range mode	自动, 保持 Auto, HoldE	等效方式: 串联、并联 quivalent mode: series, parallel
输出/输入阻抗 Output/input impedance	10Ω, 30Ω, 100Ω	
基本精度 Basic accuracy	0.05%	
测量速度 Measuring speed	快速: 50，中速: 10，慢速: 2.5 (次/秒) Fast: 50，Medium speed: 10，slow speed: 2.5 (times/second)	
触发方式 Trigger mode	内部、手动、 自动 DUT、外部、总线 Internal, manual, automatic DUT, external, bus	
校正功能 Correction function	开路/短路 Open circuit/short circuit	
显示器 Display	480*272，4.3 寸 TFT 彩屏 480 * 272, 4.3 inch TFT color screen	四端测试夹具: 四端开尔文测试电缆 four terminal test fixture: four terminal Kelvin test cable
存储器 Memory	内部 100 组，外部 U 盘 500 组 100 internal groups, 500 external USB flash drives	
比较器 Comparator	5 档分选，BIN1 -BIN3,NG,AUX 5-gear sorting, BIN1-BIN3, NG, AUX	PASS/FAIL LED 显示 PASS/FAIL LED display
接口 Interface	RS232C/USB-HOST/USB-CDC/ RS232C/USB-HOST/USB-CDC/	USB-TMC/HANDLER(选件) USB-TMC/HANDLER (option)
尺寸重量 Dimension and weight	280mm×88mm×320mm 约 2.5kg 280mm × 88mm × 320mm approx. 2.5kg	
型号 model	HL2811D	HL2812D
测试参数 Test parameters	L-Q、C-D、R-Q、Z-D、Z-Q	L/Q、C/D、R/Q
显示范围 Display range	L: 0.0001uH~99999H C: 0.0001pF~99999uF R/Z: 0.0001Ω~99999MΩ Q: 0.0001~99999 Δ%: ±0.01%~±9999% D: 0.0001~99999	L: 0.01uH~99999H C: 0.01pF~99999uF R/Z: 0.0001Ω~99999MΩ D: 0.0001~99999 Q: 0.0001~99999 %: -99.9999%~999.999%
测试频率 Test frequency	100Hz、120HZ、1kHz、10kHz	100Hz、1kHz、10kHz
测试电平 Test level	0.1V、 0.3V、 1.0V	0.3V
测量速度 Measuring speed	5 次/秒、9 次/秒、26 次/秒(频率为 1kHz) 5 times/s, 9 times/s, 26 times/s (frequency is 1kHz)	快：8次/秒、中：5 次/秒、慢：2 次/秒 Fast: 8 times/second, Medium: 5 times/second, Slow: 2 times/second
清零功能 Zero clearing function	开路、短路清零 Open circuit, short circuit zero clearing	等效方式串联、并联 equivalent series and parallel connection
基本精度 Basic accuracy	0.1%	
通讯接口 Communication interface	RS-232 (选配)， HANDLER 接口 RS-232 (optional), HANDLER interface	输出电阻： 30Ω、100Ω Output resistance: 30Ω, 100Ω
分选功能 Sorting function	四档分选 Fourth gear sorting	其它功能：量程锁定功能，设定参数自动保持功能 Other functions: range locking function, automatic parameter keeping function
尺寸重量 Dimension Weight	335×325×105mm 约 4 kg 335 X325X105 mm about 4 kg	360×300×120mm 约 5 kg 360 X300X120 mm about 5 kg
电源要求 Power requirements	220V±10% 50Hz/60Hz±5% 220V ± 10% 50Hz/60Hz ± 5%	工作温湿度 0°C－40°C <90% RH working temperature and humidity 0 ℃–40 ℃ <90% RH

光谱色彩照度计
Spectral color illuminometer

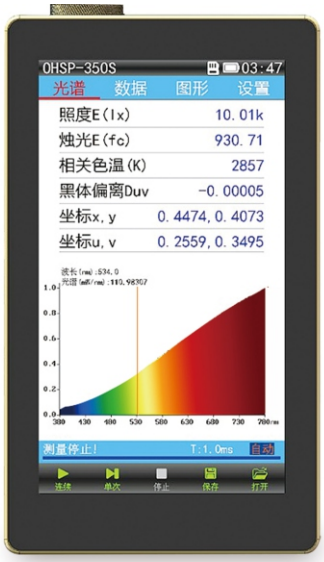
产品描述 Product describe

产品优势

长焦光学系统，2NM的光学分辨率，更宽波长范围，可以测量LED宽光谱光源，也可以测量节能灯CFL、高低压钠灯HID等窄光谱的光源；具有自动校零及零位补偿技术，最大的积分时间可以更长，可以测到更弱的光信号；具有电子快门技术，最小积分时间可以小到50us,可以测量更强的光信号,可以测量更强的光信号，大尺寸高清IPS电容触屏，高显示分辨率，一屏显示更多内容，色彩鲜艳，可户外适用；大电池容量子，超长的测试时间。

Product advantage

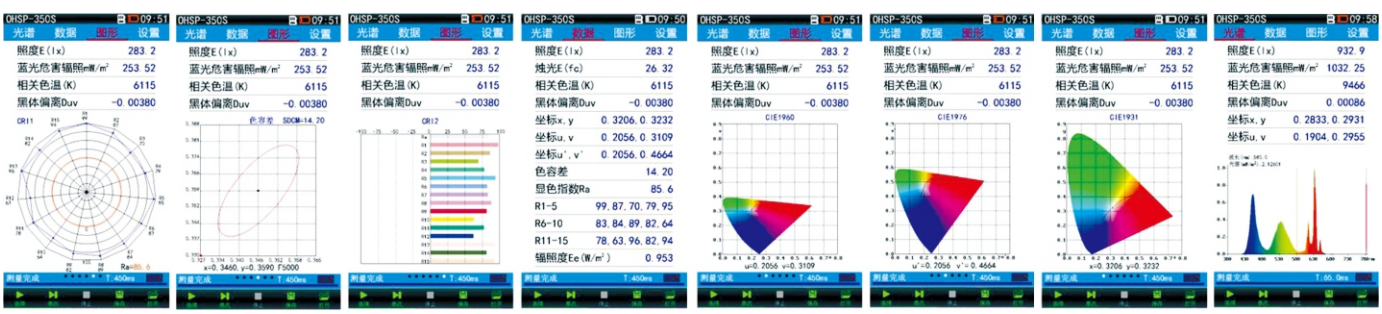
The long focal optical system has an optical resolution of 2nm and a wider wavelength range. It can measure led wide spectrum light sources, as well as narrow spectrum light sources such as energy-saving lamp CFL and high and low pressure sodium lamp hid; With automatic zero calibration and zero position compensation technology, the maximum integration time can be longer and weaker optical signals can be measured; With electronic shutter technology, the minimum integration time can be as small as 50uS, which can measure stronger optical signals and stronger optical signals. Large size high-definition IPS capacitive touch screen, high display resolution, one screen displays more content, bright colors, and can be used outdoors; Large battery capacity, ultra long test time.



技术参数 technical parameter

名称	规格	名称	规格
分光平台	长焦交叉非对称CT分光系统	照度测量范围	5-200000lx
光学带宽	2nm (FWHM)	色温测量范围CCT	1000-100000K
光谱分辨率	0.2nm	x,y准确度	±0.001
传感器	CCD,3648 dots	x,y重复性	±0.0005
积分时间	10μs-10s	照度准确度	±4%(Class 1)
显示屏	5' HD IPS LCD	显色性准确度	±1.5%
分辨率	480X854	波长准确度	±0.5nm
量测模式	单次 Single/ 连续	波长间隔	1nm
曝光模式	自动 / 手动	AD分辨率	16bits,250kSPS
显示模式	光谱分布曲线	文件保存	简体/繁体/English 16GB SD Card
输出格式Output format	Excel表格,jpg图片	数据输出接口Data Interface	SDCard/USB2.0
探头窗口Window size	ϕ10mm	尺寸Dimensions (L x W x H)	163x81x25.8mm

测试界面 Test interface



环境测试设备
Environmental testing equipment

恒温恒湿箱

恒温烤箱

产品描述 Product describe

一、产品概述: 高低温交变试验箱也称恒温恒湿试验机 、恒温恒湿实验箱、恒温机或恒温恒湿箱, 用于检测材料在各种环境下性能的设备及试验各种材料耐热、耐寒、耐干、耐湿性能。

二、产品用途: 适合电子、电器、照明、通讯、仪表、车辆、塑胶制品、金属、食品、化学、建材、医疗、航天等制品检测质量之用。

三、参数：恒温恒湿试验箱(高温+150℃, 湿20% - 98%)。

1、Product overview: high and low temperature alternating test chamber, also known as constant temperature and humidity test machine, constant temperature and humidity test chamber, constant temperature machine or constant temperature and humidity chamber, is used to test the performance of materials in various environments and test the heat, cold, dry and moisture resistance of various materials.

2、Product application: suitable for testing the quality of electronics, electrical appliances, lighting, communication, instruments, vehicles, plastic products, metals, food, chemistry, building materials, medical treatment, aerospace and other products.

3、Parameters: constant temperature and humidity test chamber (high temperature + 150℃, humidity 20% - 98%).

技术参数 technical parameter

恒温烤箱参数 Parameters of constant temperature oven

型号 Model	内胆尺寸 The tank size	外形尺寸 Overall dimensions	电压V The voltage V ≤kw	功率 power	控温范围℃ Temperature control range of ℃	波动温度 Fluctuations in temperature	备注 note
101-0A	350*350*350mm	580*670*510 mm	220	1.2	RT+10-300	±1	智能数显、鼓风循环、镀锌内胆 Intelligent digital display, air blast circulation, galvanized innere
101-1A	450*450*350mm	680*770*510 mm	220	2.0	RT+10-300	±1	同上Same as above
101-2A	550*550*450mm	820*900*670 mm	220	2.4	RT+10-300	±1	同上Same as above
101-3A	750*600*500mm	1020*950*720 mm	220	3.5	RT+10-300	±1	同上Same as above
101-4A	1000*800*800mm	1330*1150*1020mm	380	6.0	RT+10-300	±1	同上Same as above
101-5A	1000*1000*1000mm	1500*1330*1090mm	380	9.0	RT+10-300	±1	同上Same as above

恒温恒湿箱参数 Parameters of constant temperature and humidity box

型号 Model	-20℃ 单价 -20℃ unit price	-40℃ 单价 -40℃ unit price	-60℃单价 -60℃ unit price	内箱尺寸（宽*深*高） inner box size (width * depth * height)	外箱尺寸 Carton size
80L	可选optional	可选optional	可选optional	400*400*500mm	1000*870*1700
100L				500*400*500mm	1030*930*1650
120L				500*400*600mm	1050*870*1750
150L				500*500*600mm	1050*970*1750
225L				600*500*750mm	1150*970*1900
408L				800*600*850mm	1350*1150*1950
800L				1000*800*1000mm	1450*1300*2100
1000L				1000*1000*1000m	1470*1400*2100

60L 盐雾试验箱
Salt spray test chamber

产品描述 Product describe

用于照明元器件防护层以及工业生产的盐雾蚀试验，符合GB/T2423,GB10587,GB6460,GB1771标准技术特性：依照JIS、ASTM、CNS、GB标准参数操作设定。

1. 盐水喷雾试验：NSS 试验箱：35°C± 1°C、压力空气桶：47°C±1°C.
2. 耐腐蚀试验：CASS 试验箱：50°C±1°C、压力空气桶：63°C±1°C.

It is used for salt spray corrosion test of protective layer of lighting components and industrial production, which meets the standards of GB/ t2423, gb10587, gb6460 and gb1771. Technical characteristics: it is set according to the standard parameters of JIS, ASTM, CNS and GB.

1. Brine spray test: NSS test chamber: 35 C ± 1 C, pressure air pail: 47 C ± 1 C.
2. Corrosion resistance test: Cass test chamber: 50 °C ± 1 °C, pressure air barrel: 63 °C ± 1°C.

技术参数 technical parameter

型 号model	工作室 WXDXH(cm)	外箱尺寸WXDXH(cm)
60L	60×45×40	120×70×125
90L	90×60×50	150×90×145
120L	120×100×50	220×135×145
160L	160×100×50	260×145×160
200L	200×120×60	320×165×170

单臂跌落试验机
Single-arm drop tester

产品描述 Product describe

单臂跌落试验机本机专用于测试产品包装受到坠落之受损情况，及评估运输搬运过程时耐冲击强度；符合标准：ISO 2248 JIS Z0202-87 GB/T4857.5-92。机器特点：单臂跌落试验机可对包装件的面、角、棱作自由跌落试验，配备数显高度显示仪及采用译码器进行高度跟踪，从而能精确地给出产品跌落高度，与预设跌落高度误差不超过2%或10 MM 。采用单臂双柱结构，具有电动复位、电控跌落及电动升降装置，使用方便；独有的缓冲装置大大的提高了机器使用寿命、平稳性及安全性。单臂设置，可方便地放置产品。

The single arm drop testing machine is specifically designed to test the damage to product packaging caused by falling, and to evaluate the impact strength during transportation and handling; Compliant with standard: ISO 2248 JIS Z0202-87 GB/T4857.5-92. Machine features: The single arm drop test machine can perform free drop tests on the surface, corners, and edges of packaging. It is equipped with a digital height display and uses a decoder for height tracking, so as to accurately provide the product drop height, with an error of no more than 2% or 10 mm from the preset drop height. Adopting a single arm and double column structure, with electric reset, electric control drop and electric lifting device, convenient to use; The unique buffering device greatly improves the service life, stability, and safety of the machine. Single arm setup allows for easy placement of products.

技术参数 technical parameter

- 跌落高度 mm：300—1500可调
- 试件最大重量 kg：0—80Kg
- 底板厚度: 10mm(实心铁板)
- 件最大尺寸 mm：800 x 800 x 1000
- 衝擊面板尺寸 mm：1700 x 1200
- 跌落高度差: ±10mm
- 试验台外形尺寸 mm：约1700 x 1200x2315
- 净重 kg：约300kg
- 试验方式: 面、角、棱全方位跌落
- 控制方式: 电动
- 落高度误差: 1%
- 击面板平行误差: ≤1度
- 件跌落面在落下过程中与水平夹角误差: ≤1度
- 功率: 1.85KWA

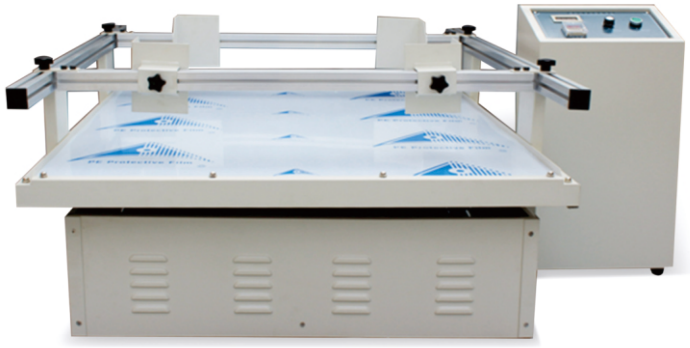
- Drop height mm: 300-1500 adjustable
- Maximum weight of test piece kg: 0-80Kg
- Bottom plate thickness: 10mm (solid iron plate)
- Maximum size of the piece mm: 800 x 800 x 1000
- Quqing panel size mm: 1700 x 1200
- Drop height difference: ± 10mm
- Test bench dimensions mm: approximately 1700 x 1200x2315
- Net weight kg: approximately 300kg
- Test method: drop from all directions of face, angle, and edge
- Control mode: electric
- Falling height error: 1%
- Parallel error of striking panel: ≤ 1 degree
- Error in angle between the falling surface and the horizontal during the falling process: ≤ 1 degree
- Power: 1.85KWA

机台工作环境要求 Machine working environment requirements

- 温度: 5°C~±28°C [1](24小时内平均温度≤28°C)
- 相对湿度: ≤85%RH
- 供电条件三相四线+保护地线
- 电压范围: AC (380±38) V

- Temperature: 5 °C~± 28 °C [1] (average temperature within 24 hours ≤ 28 °C)
- Relative humidity: ≤ 85% RH
- Power supply conditions: three-phase four wire+protective ground wire
- Voltage range: AC (380 ± 38) V

模拟运输振动试验台
Simulated transport vibration test bed



产品描述 Product describe

本机适用于玩具、电子、家具、礼品、陶瓷、包装等产品进行模拟运输测试，符合美国及欧洲运输标准，[适用标准] EN ANSI、UL、ASTM、ISTA 国际运输标准，数字仪表显示振动频率，同步静噪皮带传动，噪声极低，试品装夹采用导轨式，操作方便、安全，机台底座采用重型槽钢配减振胶垫，安装方便，运行平稳，无需安装地脚螺丝，直流电机调速，运行平稳，负载能力强，回转式振动（俗称跑马式），符合欧美运输标准。

This machine is suitable for analog transportation test of toys, electronics, furniture, gifts, ceramics, packaging and other products, which meets the transportation standards of the United States and Europe, [applicable standards] en ANSI, UL, ASTM and ISTA international transportation standards. The digital instrument displays the vibration frequency, synchronous quiet belt transmission, and the noise is very low. The test article clamp adopts guide rail type, which is convenient and safe to operate, The machine base adopts heavy channel steel with vibration damping rubber pad, which is convenient for installation and stable operation. There is no need to install anchor screws. DC motor speed regulation, stable operation, strong load capacity, rotary vibration (commonly known as horse running type), which meets the transportation standards in Europe and America:

技术参数 technical parameter

- 振动方式回转式（跑马式）
- 振幅25.4mm(1吋)
- 台体尺1200×1000×650（mm）
- 显示频率精度1rpm
- 振动频率100~300rpm
- 工作台面尺寸1200x1000mm
- 计时器0~99H99m
- 电源AC220V
- 最大载重100kg
- 电机功率1HP（0.75kw）
- 机台重量:100kg

- Vibration mode: rotary (horse running)
- Amplitude 25.4mm (1 inch)
- Bench scale 1200 X one thousand × 650(mm)
- Display frequency accuracy: 1 rpm
- Vibration frequency: 100 ~ 300rpm
- Worktable size 1200x100mm
- Timer 0 ~ 99h99m
- Power supply AC220V
- Maximum load 100kg
- Motor power 1HP (0.75KW)
- Machine weight: 100kg

标准试验指
Standard test

根据UL1026、UL507、UL1082、UL6500等相应条款制作而成。主要用于检查电器及电器附件的防触电性能。
技术特性: 符合UL1062标准要求, 压力：10、30、50N, 组成部分：指尖、指中、指座三部分。

Made according to UL1026, UL507, UL1082 and UL6500. It is mainly used to check the anti-shock performance of electrical appliances and electrical accessories.
Technical characteristics: Meet the requirements of UL1062 standard, Pressure: 10, 30, 50N, Components: fingertip, middle finger and base.

球压试验装置
Ball pressure test device

本装置满足IEC884、GB2099、GB4706．1 - 99、VDE 等试验标准。适用范围： 适用于考核对所有绝 缘材料制成的电器外壳、外部零件及塑胶的耐热试验。技术特性: 压力: 20N, 球压直径: R=2.5mm

The device meets IEC884, GB2099, gb4706.1-99, VDE and other test standards. Scope of application: it is applicable to the heat-resisting test of all electrical shell, external parts and plastics made of insulating materials. Technical characteristics: Pressure: 20 N, Ball pressure diameter : R=2.5mm

灼热丝试验仪
Glow Wire Tester

产品描述 Product describe

灼热丝温度： 常温 ~ 1000°C，范围内可调；测温热电偶采用标称直径为0.5mm K型铠装细丝热电偶，灼热丝是用直径为4mm±0.04mm的镍 / 铬(80 / 20)丝制成规格尺寸的环，标准。灼热丝与试品之间保持 1N ± 0.2N 的压力，并限制压入深度为7±0.5mm; 灼热丝对试品的施加时间 （Ta）在 0 ~ 99 分 99秒范围内可调; 设定在 30 秒，并有测量起燃持续时间（Ti）和火焰熄灭时间（Te）的计时器; 外形尺寸（长x宽x高）：100cm x 65cm x 110cm; 工作电源：AC 220V / 50H。

Glow wire temperature: normal temperature ~ 1000°C， adjustable; The K-type armored thin wire thermocouple with a nominal diameter of 0.5mm is used as the temperature measuring thermocouple. The glow wire is a ring of specification and size made of nickel / chromium (80 / 20) wire with a diameter of 4mm ± 0.04mm, which is standard. Maintain a pressure of 1n ± 0.2N between the glow wire and the test object, and limit the pressing depth to 7 ± 0.5mm; The application time (TA) of the glow wire to the test object is adjustable within the range of 0 ~ 99 minutes and 99 seconds; It is set at 30 seconds and has a timer for measuring the light off duration (TI) and the flame extinction time (TE); Overall dimension (L x W x H): 100cm x 65cm x 110cm; Working power supply: AC 220V / 50h.

针焰试验仪
Needle flame tester

技术参数 technical parameter

- 施焰时间：0~999S(可调），余焰时间：1~999S(可调)
- 余灼时间：1~999S(可调），施焰次数1~999次（可调）
- 燃燃烧角度：0°——90°(可调)
- 火焰高度：11mm~13mm(可调），长度测量：毫米、单位
- 位置调节：样品夹支架可上下、左右调节，燃烧座可前后调节，调节行程均大于300mm
- 外形尺寸（长x宽x高）：113cm×57cm×120cm
- 工作电源：220V AC 50HZ

- Flame application time: 0 ~ 999s (adjustable), residual flame time: 1 ~ 999s (adjustable)
- Afterburning time: 1 ~ 999s (adjustable), flame application times: 1 ~ 999 (adjustable)
- Combustion angle: 0 ° - 90 ° (adjustable)
- Flame height: 11mm ~ 13mm (adjustable),length measurement: mm, unit
- Position adjustment: the sample holder can be adjusted up and down, left and right, and the combustion seat can be adjusted back and fortha djust, The adjustment stroke is more than 300mm
- Overall dimension(length x width x height): 113cm × 57cm × 120 cm
- Working power supply: 220V AC 50Hz

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