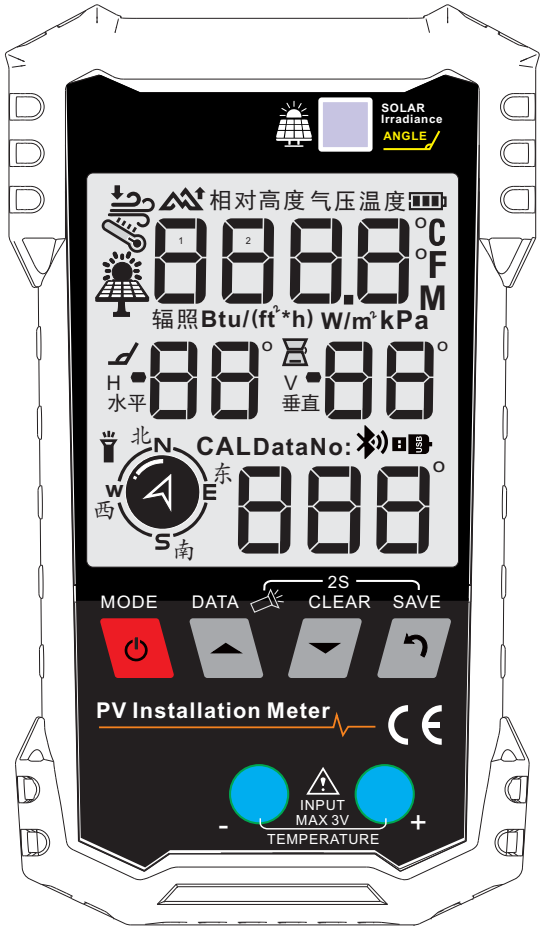
光伏安装检测仪
Multifunction PV analyzer

产品手册 Manual



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Pn:501592500
Made in China.

产品特性

1：6合1多功能光伏安装测试工具
2：辐照测量量程20~2000W/m²
3：倾角测量范围-90° ~90°
4：超大屏幕显示54*56mm,各种测量结果一屏显示
5：集成气压、温度、相对高度、指南针全方位测量
6：数据存储可达100条
7：内置可充电锂电池
8：配备 LED 手电、中英文语言切换、自动关机功能

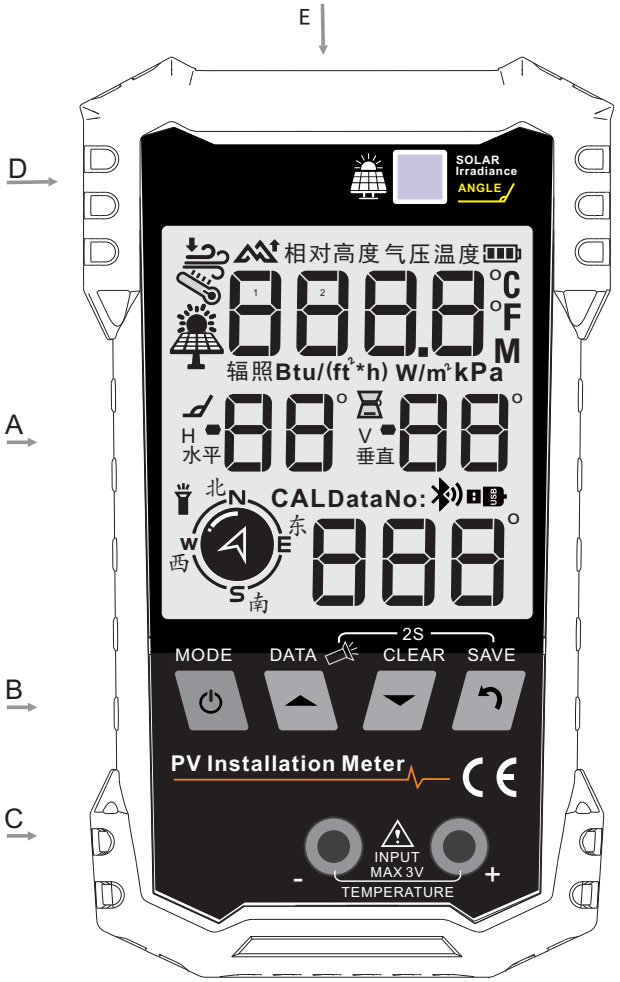
简　介

这款专为光伏施工场景打造的6合1多功能安装测试仪，集辐照、倾角、气压、温度、相对高度、指南针测量于一体，彻底告别多设备切换的繁琐。它支持 20~2000W/m² 宽量程辐照检测、-90° ~90° 倾角精准测量，可同步采集温度、气压、相对高度与方位等关键数据，满足光伏组件安装的全流程检测需求。配备 54×56mm大屏，所有测量结果一屏清晰呈现，户外强光下也能轻松读取；支持100 条数据本地存储，方便后续溯源分析与验收归档。内置大容量锂电池，搭配 LED 照明、中英双语设置与自动关机功能，兼顾户外施工的实用性与续航能力，是光伏安装、调试与验收环节的高效辅助工具，能显著提升施工效率与数据可靠性。

本手册介绍产品全部功能，两款机型配置存在区别：
增强款搭载全部功能。
基础款仅拥有规格表标注的配置，未列明功能本机不具备。

产品介绍

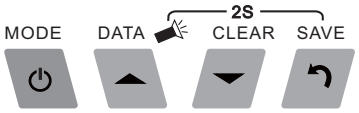
A. 显示屏
B. 操作按键
C. 温度探头输入接口
D. 辐照度传感器
E. LED照明灯和USB充电接口



本手册介绍产品全部功能，两款机型配置存在区别：
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产品介绍

辐照	辐照度检测，支持 W/m² 和 Btu/(ft²*h) 双单位切换
V 垂直	垂直倾角测量功能
H 水平	倾角测试功能（水平角）
气压	大气压检测，单位：kPa
温度	温度测试功能，单位：C° 未连接温度探头时显示环境温度
高度	相对高度功能,开机位置为参考(0米)。(基于大气压测试方式)
北 N 东 E 西 W 南 S	指南针，测算被测方向与正北的夹角偏移量
DataNo:	数据存储序号,除指南针数据外,其余测量参数均可存档记录
CAL	校准标识，指南针、温度校准作业时，屏幕弹出此提示符
	设备前端 LED 照明开启时的屏幕标识



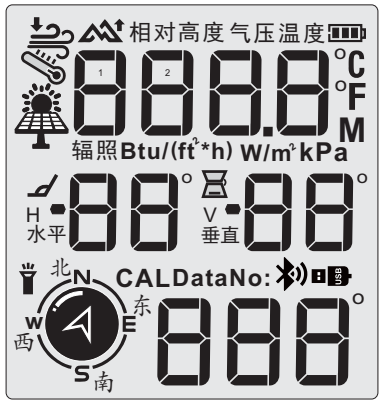
MODE	长按开机/关机，短按切换各项测量功能
DATA	常规测量模式：短按进入历史数据回看，长按开启 / 关闭 LED； 数据回看模式：短按调取上一条存储记录。
CLEAR	数据回读模式：短按调取下一条存储记录；长按 2 秒进入数据清除页面，长按至倒计时结束完成全部记录清空。
SAVE	数据回读模式：短按退出回看、返回测量界面；长按 2 秒保存当前测量数据，屏幕闪烁提示存储编号。
+	关机状态,按下 键(保持)，按电源键开机后，松开电源键,2秒再松开 键，即切换打开/关闭中文显示。

测 量

长按电源键开机，仪器自动进入测量模式，默认同步采集辐照、倾角与指南针数据。

单击MODE键切换辐照 W/m² – 辐照 Btu/(ft²*h) – 气压KPa – 温度℃ – 温度℉ – 相对高度M – 辐照W/m² ；

测量温度时，需连接K型温度探头，产品显示探头温度；



辐照/气压/温度/高度结果数据区

倾角显示
(H = 水平倾角、V = 垂直倾角)

指南针，显示当前方位相对正北的偏移角度

** 辐照强度＜20W/m² 时，显示”----”

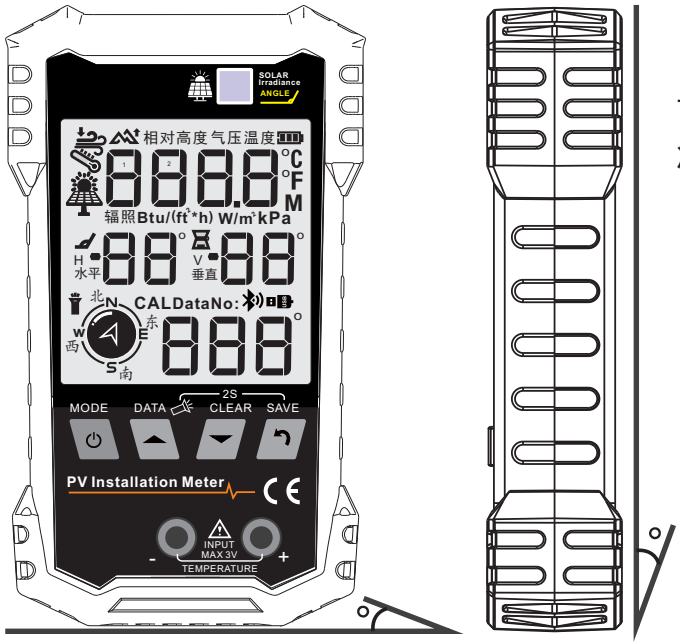
数据记录(DATA)

正常测量状态下，长按 SAVE 键 2 秒，保存当前测量参数（指南针数据不存入记录）；

短按DATA进入数据回看，屏幕弹出DataNo:记录编号，上下方向键翻阅历史数据，短按 ↩ 退出回看，返回测量界面；

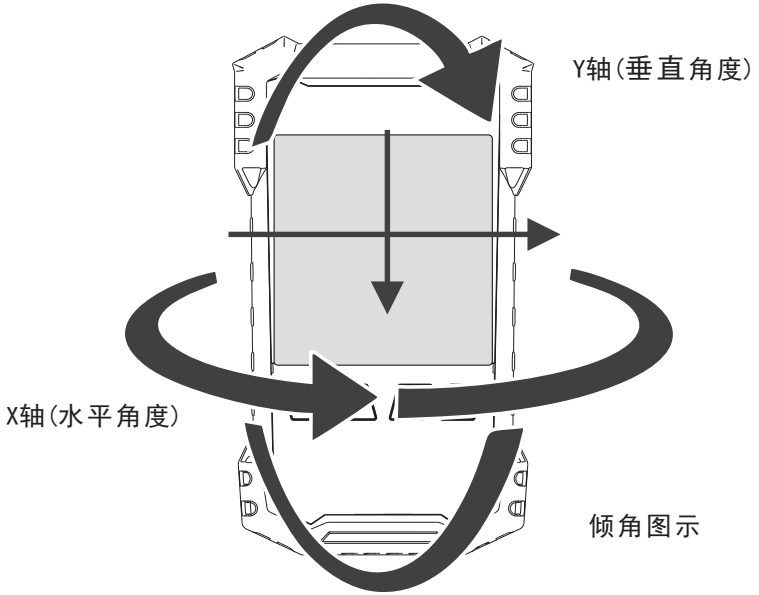
长按 CLEAR 键 2 秒，进入数据清除倒计时，保持按键到倒计时为0则，执行全部存储数据清空。

倾角测试基准



测量倾角时，以下面位置为参考基准，测量倾角。

X轴(水平角度)基准　　Y轴(垂直角度)基准



倾角图示

产品功能

指南针校准

一、校准目的

指南针传感元件易受硬磁物料干扰（固定磁钢、PCB 铜皮、电机磁铁、机身磁吸配件等），在地磁场畸变影响下会出现指针乱跳、指向偏移、南北反向故障，指向异常时需执行校准。

二、校准前环境要求

校准场地远离钢架建筑、变压器、线缆、手机、磁铁、铁制机具、金属箱体（间距≥2M）；避开电机、喇叭、USB 电源线等带磁元器件走线。

三、校准方式

设备开机时，按下电源键关机(保持按下),按一下  键，LCD显示CAL,同时手电筒自动开启，开始校准;

校准操作：手持设备空中连续画∞（8字）5～8 圈，全方位俯仰、翻滚、旋转，三轴全角度遍历，约10秒后校准完成/手电筒关闭。

安全须知

一：严禁电压信号进温度探头输入孔，防止设备击穿和触电。

二：禁止在易燃易爆环境使用，远离明　与高温；强光直射时做好眼部防护，勿直视辐照光源。

三：使用合格充电器，避免锂电池过充；长期存放请取出电池，置于干燥通风处，防止漏液腐蚀。

四：非专业人员请勿拆卸设备，以免影响安全性能与测量精度。

技术指标

功能	基础款	增强款
辐照度	20~1800W/m²(Btu/(ft²*h))/5%+20	
倾角	量程：-90～90° 精度：±1.5°（-50° 至+50° 范围内)/±3°（其余角度范围）	
指南针	/	0～360° /分辨率1°
温度	/	-20～400℃/-4℉～752℉ 分辨力1°
气压(绝对压力)	/	30~110KPa/0.1KPa
相对高度	/	相应高度 0~2000米(0.1)
数据记录	100条	
显　　示	LCD(54*56mm)	
供电电池	可充锂电池	
其　　他	自动关机、低电压检测	
工作环境	温度：0~40℃ / 湿度：0~30℃以下≤75%,30~40℃≤50%	
存储环境	温度：-10~50℃ / 湿度：≤50%	
包装	彩盒/说明书/工具包/USB充电线 K型温度探头(仅增强款)	
电源规格	锂电池(带保护电路) 需要5V/1A/5W或以上充电器充电(不标配)	

*上述指标是功能最佳指标/检测温度：23±2℃湿度<70%)

常见问题

一：无法开机：

连接充电器充足电量后重试开机。

二：指南针失准：

参照上文流程重新校准指南针。

三：温度读数异常：

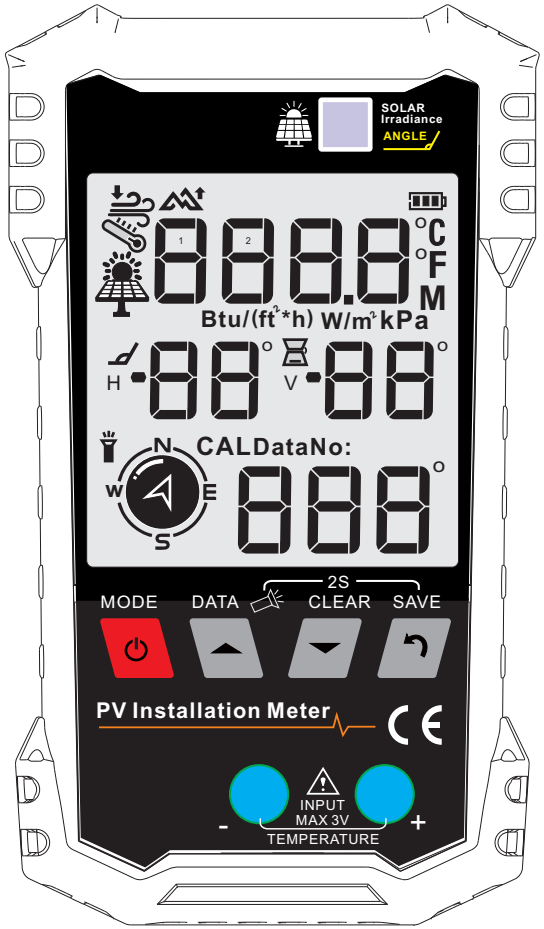
更换标准 K 型测温探头，检查探头接线；环境温度骤变时静置仪器 30 分钟再复测。

四：辐照读数----：

现场辐照强度＜20W/m² 时，显----属正常现象。

Multifunction PV analyzer

USERS Manual



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Pn:501592500
Made in China.

Product Features

1. 6-in-1 Multifunctional PV Installation Tester
2. Irradiance Measuring Range: 20~2000W/m²
3. Tilt Angle Measuring Range: -90°~90°
4. Large LCD Screen (54×56mm), all measurement data displayed on a single screen
5. Integrated all-round measurement functions: barometric pressure, temperature, relative altitude and compass
6. Supports up to 100 groups of data storage
7. Built-in rechargeable lithium battery
8. Equipped with LED flashlight, Chinese/English language switching function and auto power-off function

Introduction

This 6-in-1 multifunctional tester is customized for PV construction, integrating irradiance, tilt angle, air pressure, temperature, relative altitude and compass functions to avoid frequent device switching.

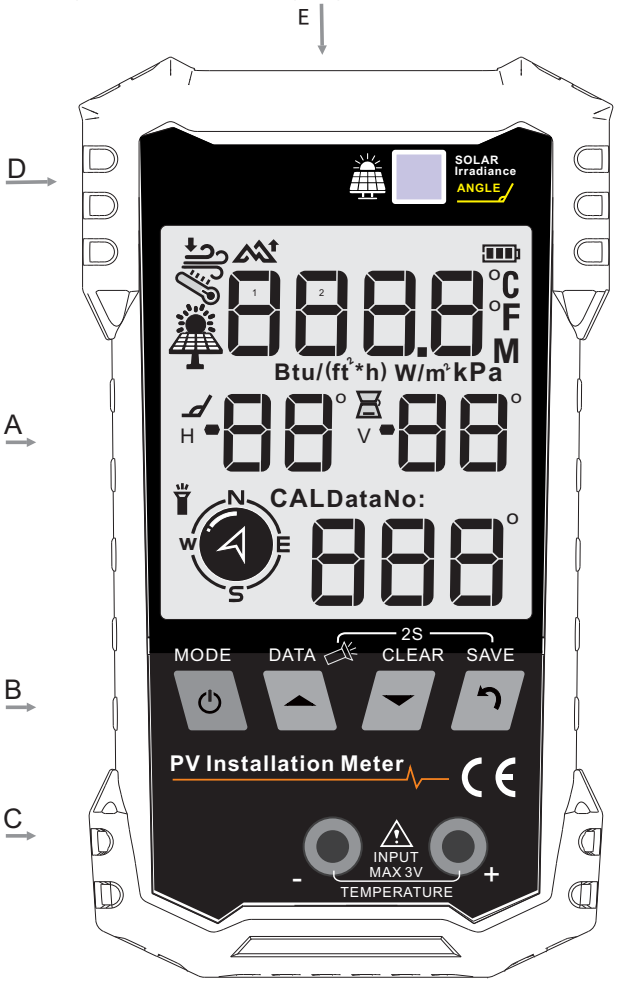
It supports Irradiance measurement from 20 to 2000W/m² and tilt angle detection ranging from -90° to 90°, to collect comprehensive data for PV installation inspection & acceptance.

The 54×56mm large screen displays all readings clearly even in strong sunlight. It can store 100 groups of test data for inspection filing.

Built-in rechargeable lithium battery, LED flashlight, Chinese-English switch and auto power-off design ensure great usability outdoors. Ideal for PV installation, commissioning and acceptance to improve work efficiency and data accuracy.

Product Introduction

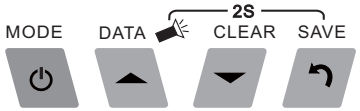
A. Display Screen
B. Operation Buttons
C. Temperature Probe Input Port
D. Irradiance Sensor
E. LED Flashlight & USB Charging Port



** This manual covers all product functions. There are configuration differences between the two models:
- The enhanced model is equipped with all functions.
- The basic model only features configurations specified in the specification sheet; it does not support any functions not listed therein.

Product Introduction

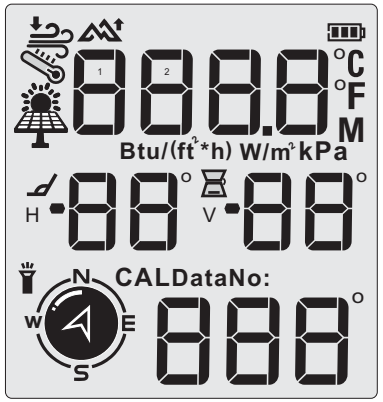
Irradiance	Irradiance detection, supports dual-unit switching for: **W/m²** / **Btu/(ft²*h)**
Vertical	Vertical Tilt Measurement
Horizontal	Tilt Angle Test Function (Horizontal Angle)
Air Pressure	Barometric Pressure Detection, Unit: kPa
Temp	Temprature Test Function, Unit: ℃ Shows ambient temperature without temperature probe connection.
Altitude	Relative Altitude Function: The startup position is set as the reference zero point (0 m). (Based on Atmospheric Pressure Test)
	Compass, calculate the angular offset between the measured direction and true north.
DataNo:	Storage No: All data except compass readings are storable
CAL	Calibration Icon – Triggered for compass & temperature calibration prompts
	Screen indicator for front-end LED lighting activation



MODE	Long press to power on/off, short press to switch measurement functions.
DATA	Normal Measurement Mode: Short press to view historical data, long press to turn LED on/off;Data Review Mode: Short press to call up the previous stored record.
CLEAR	Data Read Mode: Press to retrieve the next stored record.Press and hold for 2 seconds to enter the data erase interface. Continue holding until the countdown expires to fully clear all stored records.
SAVE	Data Read Mode: Press to exit readback mode and return to the measurement interface.Press and hold for 2 seconds to save the current measurement data; the screen flashes to display the storage index number.
+	Power off the unit, press and hold the key, then press the power button to power on. Release the power button, wait 2 seconds, then release the key to toggle Chinese display on or off.

Measurement

Press and hold the power key to power on the device. The meter automatically enters measurement mode, and synchronously collects irradiation, inclination angle and compass data by default.Single press the MODE key to cycle modes: Irradiance W/m² Irradiance Btu/(ft²*h)→ Atmospheric Pressure (kPa) → Temperature ℃ → Temperature °F → Relative Altitude (m) → Irradiation W/m².For temperature measurement, connect a K-type thermocouple probe; the device will display the probe temperature.



Irradiance / Pressure / Temp / Altitude

Inclination Angle Display
(H = Horizontal Inclination,
V = Vertical Inclination)

Compass: Displays the deviation angle of the current bearing relative to true north.

** Irradiance < 20W/m²: Display "----"

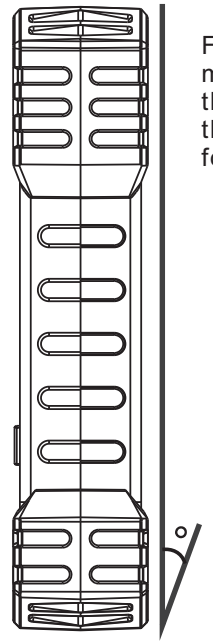
DATA

Under normal measurement status:Press and hold the SAVE key for 2 seconds to save the current measurement parameters (compass data will not be saved to records).Short press the DATA key to enter data review mode. The screen will pop up DataNo: followed by the record number. Use the up and down arrow keys to browse historical data. Short press the exit key ↩ to quit review mode and return to the measurement interface.Press and hold the CLEAR key for 2 seconds to trigger the data clearing countdown. Keep holding the key until the countdown reaches zero to erase all saved data completely.

Inclination Test Reference

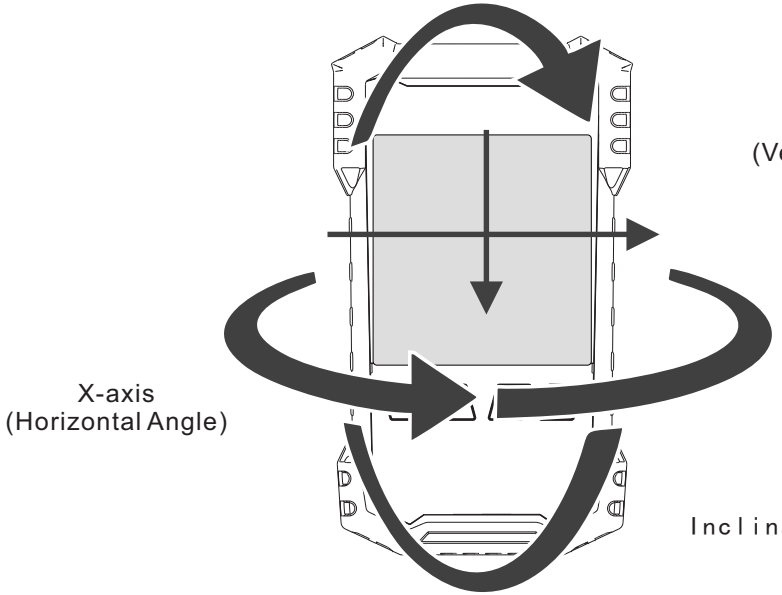


X-axis (Horizontal Angle) Reference



Y-axis (Vertical Angle) Reference

For inclination measurement, take the below position as the reference datum for tilt detection.



Inclination Diagram

Product Introduction

Compass Calibration

1. Calibration Purpose

The compass sensor is vulnerable to interference from hard magnetic substances (fixed magnets, PCB copper foil, motor magnets, built-in magnetic attachments, etc.). Distorted geomagnetic field will result in compass needle flickering, bearing deviation and north-south reversal. Calibration shall be carried out when abnormal pointing occurs.

2. Pre-Calibration Environmental Requirements

Complete calibration at a location over 2 meters away from steel frame buildings, transformers, wires, mobile phones, magnets, iron equipment and metal cabinets. Stay clear of wiring for magnetic components including motors, speakers and USB power cords.

3. Calibration Method

While the device is powered on, press and hold the power button to shut down the unit, then short-press the  key. The LCD will display "CAL", the flashlight will turn on automatically, and calibration will start.

Calibration operation: Hold the device and draw continuous figure-8 patterns in the air for 5 to 8 cycles. Perform comprehensive pitching, rolling and rotating motions to cover all angles of the three axes. Calibration will be finished and the flashlight will power off after roughly 10 seconds.

Safety Instructions

Do not feed voltage signals into the temperature probe input port to avoid equipment breakdown and electric shock hazards.

Do not operate the device in flammable and explosive environments. Keep away from open flames and high-temperature sources. Wear eye protection under strong direct sunlight; do not stare directly at irradiation light sources.

Only use certified chargers to prevent overcharging of the lithium battery. Remove the battery for long-term storage and place it in a dry and well-ventilated area to prevent liquid leakage and corrosion damage.

Disassembly by non-professional personnel is prohibited, otherwise the safety performance and measurement accuracy will be impaired.

Technical Specifications

Function	Basic	Enhanced
Irradiance	20~1800W/m²(Btu/(ft²*h))/5%+20	
Inclination Angle	Range：-90～90° Accuracy: ±1.5°(within -50° to +50°) / ±3° (Other)	
Compass	/	0～360°/Resolution1°
Temperature	/	-20～400℃/-4℉～752℉ Resolution 1°
Atmospheric Pressure (Absolute Pressure)	/	30~110kPa/0.1kPa
Relative Altitude	/	Corresponding altitude: 0~2000 m (0.1)
Data Logging	100	
Display	LCD(54*56mm)	
Power Supply Battery	Rechargeable Li-ion Battery	
Others	Auto Power Off、Low Voltage Detection	
Operating Environment	Temperature:0~40℃/RH:0~30℃≤75%,30~40℃≤50%	
Storage Environment	Temperature:-10~50℃/RH:≤50%	
Packaging	Color Box, User Manual, Tool Kit, USB Charging Cable K-Type Temperature Probe (Enhanced Version Only)	
Power Specifications	Lithium Battery (with protection circuit) Charger requirement: 5V/1A/5W or higher (Not Included)	

The above specifications are typical optimal performance values.
Test condition: 23±2℃, Humidity＜70%

FAQ

1. Cannot Power On

Recharge the device fully via the charger, then attempt to power on again.

2. Inaccurate Compass Reading

Recalibrate the compass following the calibration procedure described above.

3. Abnormal Temperature Readout

Replace with a standard K-type thermocouple probe and inspect the probe wiring. If the ambient temperature changes sharply, let the instrument stand for 30 minutes before re-measurement.

4. Irradiance Display Shows ----

It is normal for the screen to display ---- when the on-site irradiation intensity is lower than 20W/m².