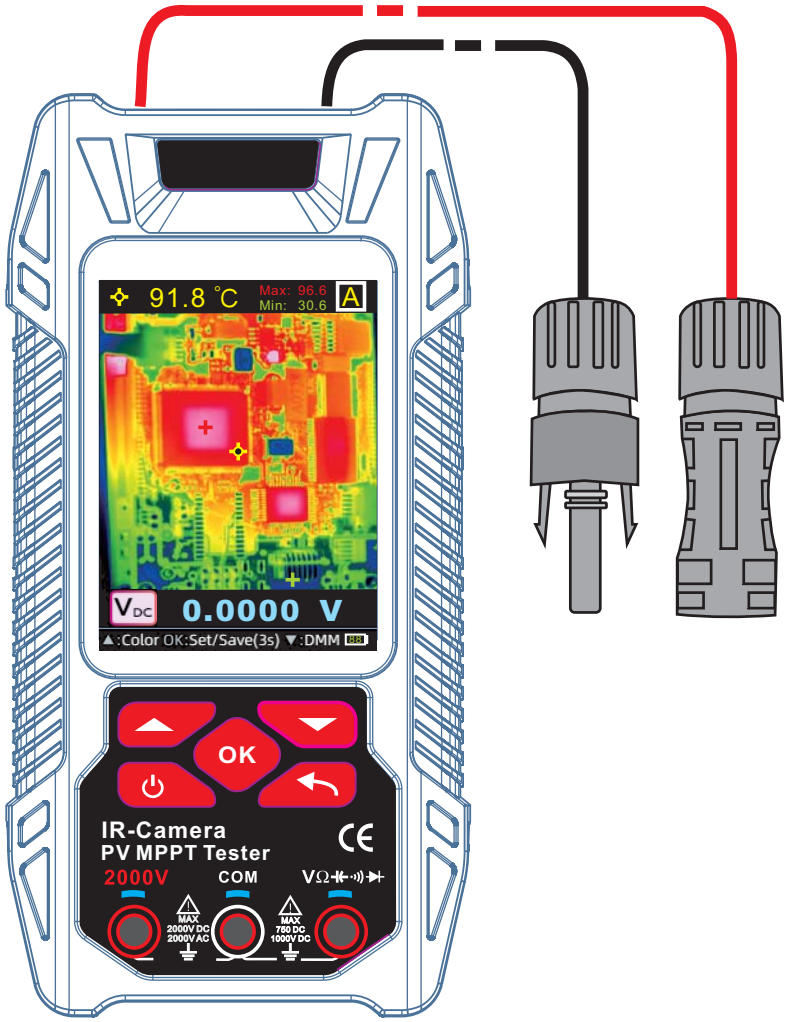
# 光伏热成像测试仪
# IR-Camera PV MPPT Tester

## 产品手册 *Manuals*

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Pn:501592200
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# 安全须知

本产品采用IEC1010条　设计(国际电工委员会颁布的安全标准)，使用之前请先阅读安全注意事项及技术指标

测量大于36V请仔细阅读产品技术指标内容，在遵循安全操作要求的前提下，可以测量超过36V以上的交流/直流电压及电流

1、36V以下的电压为安全电压，在测高于36V直流、25V交流电压时，要检查表笔是否接触可靠，是否正确连接，是否绝缘良好等，以避免被电击；

2、设备测量高压时,必须按说明书从2000V高压测量专用孔连接，避免直接接触裸露导线或连接点。

3、万用表更换功能和量程时，表笔应离开测试点；

4、选择正确的功能和量程，谨防误操作，该系列仪表虽然有全量程保护功能，但为了安全起见，仍请您多加注意；

## ⚠ 警 告 ⚠

1、不要随意拆开机壳、有故障请专业人员维修；

2、产品使用前需要确保无损坏。确保所用的表笔/测试线是完好的状态；

3、光伏板测试连接口最高只能输入90 VDC,高于此电压或输入交流电压会烧坏产品；

4、万用表功能操作需严格遵照万用表使用规程，除万用表笔外，其他接口不能连接强电,否则有人员伤害和设备损坏风险；

5、操作万用表功能时，需按产品输入指示连接，本产品不能测量电流；

6、注意电池使用情况，当出现低电压符号时，应及时充电；

7、不要在高温、高温、易燃和强电磁场环境中存放或使用仪表；

8、热成像功能时,若被测温度剧烈波动时,请手动选择温度量程,从而避免产品频繁切换(自校准)

9、用户长时间不使用，请充满电存储。



# 产品特性

1：光伏板检测三合一设计(MPPT功率/光伏万用表/热成像)

2：搭载热成像功能，可快速定位光伏板发热点与故障区域

3：MPPT功率测量最达2000W,过功率/过压/过流/反接/过温全面保护

4：内置 60000 位高精度光伏万用表，支持 2000V 高压测试

5：配备3.2寸(240×320分辨率)显示屏，机身采用TPR防跌损结构

6：可存储60 组热成像数据与100组光伏测量数据，支持数据导出

7：支持五种语言切换/自动关机/亮度/声音多功能设置

9：提供7种热成像伪彩模式：铁红/熔岩/彩虹/绿热/红热/白热/黑热

10：热成像/MPPT数据手机APP(仅Android/HarmonyOS)

# 简　介

三合一光伏故障诊断仪专为光伏系统运维人员设计，创新集成光伏MPPT功率测量（最高2000W）、高压万用表（支持2000V测量）及红外热成像仪（240×240分辨率）三大功能，通过“扫描-验证”闭环流程快速定位接线盒、保险丝、导线等关键部件过热隐患并实时验证故障点，无需切换设备即可提升50%以上运维效率；其工业级耐用性体现在1500mAh可充电锂电池支持约6小时连续作业、3.2英寸彩色阳光屏强光可视及IP54防护等级，适应户外复杂环境；精准热成像测温范围-20℃~550℃（误差±2℃）结合MPPT算法追踪最大功率点，确保诊断准确性；适用于光伏电站巡检、分布式系统故障排查及组件质检，显著提升效率、节约设备成本并增强操作安全，已通过CE、RoHS认证,是光伏创新工具产品，立即体验让运维更高效安全！

# 产品介绍

A. 显示屏
B. TYPE-C USB充电口
C. 操作按键
D. 光伏万用表输入插孔
E. 光功板MC4测试线连接口



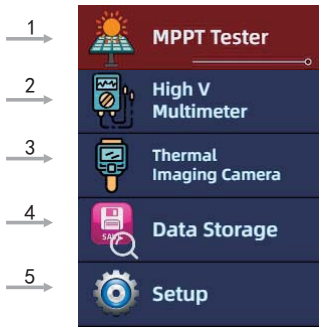

测试夹(红色):正极
测试夹(黑色):负极
连接错误不能测试!
仅可以连接光伏输出(<90VDC)



# 产品介绍

产品具有多功能，开机后将进入主菜单窗口，窗口列出产品功能；
单击或长按▲/▼键选择功能，单击OK键进入功能；
进入功能操作窗口中，点击↖回到主菜单功能选择窗口

## 主菜单显示




1. 光伏板功率
2. 光伏万用表
3. 热成像功能
4. 数据读取
5. 用户设置

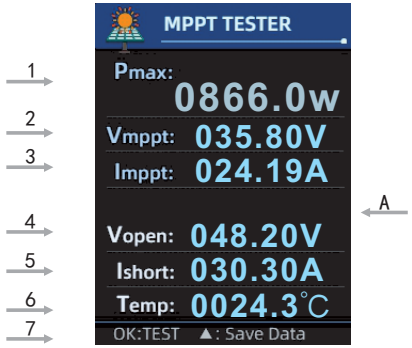
## 光伏板MPPT测量(MPPT TESTER)

产品进入MPPT测量（光伏板最大功率点测量）功能后，如下显示，请按操作指示进入操作，点击↖回到主菜单功能选择窗口；

首先　测试线(MC4)正确连接到顶部输入拖孔，按提示，单击OK键开始测试，测试完成结果　如下显示；

单击 ▲ 键，保存测量结果。本产品可存储100组测量数据。

测量时，若出现保护或未连接好，产品会提示相应的错误信息，客户根据错误信息进行调整测量。




1. 光伏板MPPT最大功率
2. MPPT最大功率点电压
3. MPPT最大功率点电流
4. 光伏板开路电压
5. 光伏板短路电流
6. 产品温度(大于55℃时不能测试)
7. 操作提示(OK:开始测试，向上键：保存当前数据记录)

A. 信息区：(欠电压/测试时间/过温度/过功率/过电压/过电流)

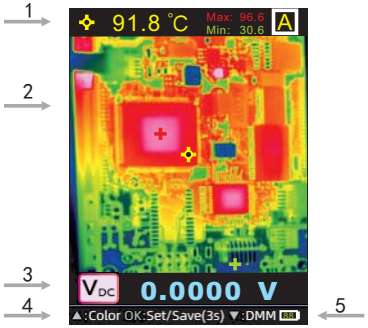




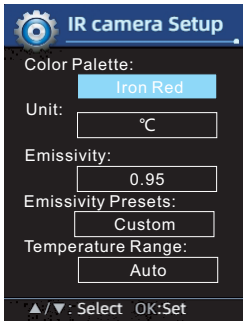
## 热成像(ThermalImaging Camera)

产品进入热成像功能后，如下显示，请按操作指示进入操作，点击↖回到主菜单功能选择窗口；

产品可选配微距镜头，微距镜头用于近距离（约20MM)热成像观察，使用时用户可调整此距离达到最佳效果；微距镜头采用磁吸安装，用户妥善存放，防止磁铁对其他产品的磁吸影响或损坏；




1. 中心温度/最大温度/最小温度/温度量程
   A :自动-20~550℃ / L :低温-20~150℃
   H :高温100~550℃
2. 热成像图像
   红+为最大温度点 / 蓝+为最小温度点
   黄+为图像中心点
3. 万用表功能：万用表读数
4. 操作指示
   ▲：单击切换色板　OK：单击热成像设置
   长按OK键3秒，保存当前热成像数据
   ▼：单击切换万用表功能
5. 电池电量：　低于10%时闪烁，需立即充电




### 热成像设置

单击OK进入热成像设置后，用户可设置热成像色板/单位/发射率/材料发射率预设和温度量程，如下图。

改变温度量程后，产品需要等待约7秒时间后生效。

### 注意事项

温差越大，显示效果越好。

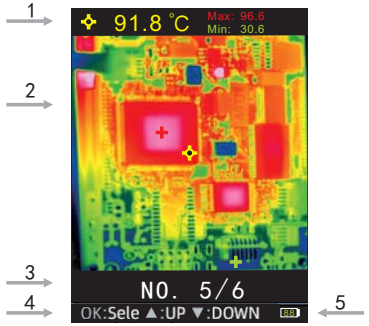
测量时界面会卡顿一下(约1~2秒），并可以听到"咔哒"的机械声音属于正常现象，因为热成像对环境温度的变化比较敏感，内部机芯温度变化会引起测量温度不准确及画面模糊等情况出现，　所以内部会做自动做校准处理。

## 数据存储(Data Storage)

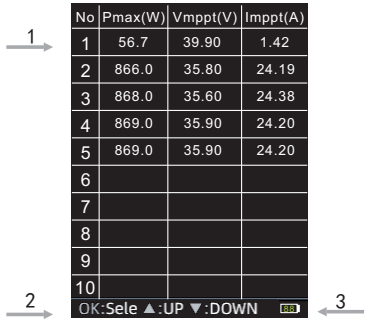
产品开机后，选择数据存储功能进入数据读取功能，此功能可以读取热成像图像和光伏板测试数据，点击OK键切换数据类型（热成像数据/光储伏板测量数据）。点击↖回到主菜单功能选择窗口；

热成像没有存储数据时提示“NO Data",

长按OK键3S，删除当前存储图像。用户设置中恢复出厂设置，存储被清除；




1. 中心温度/最大温度/最小温度；
2. 热成像图像；
   红+为最大温度点；
   兰+为最小温度点；
   黄+为图像中心点；
3. 存储图像的序号/总数量；
4. 操作指示；
5. 电池电量。




| No | Pmax(W) | Vmppt(V) | Imppt(A) |
|---|---|---|---|
| 1 | 56.7 | 39.90 | 1.42 |
| 2 | 866.0 | 35.80 | 24.19 |
| 3 | 868.0 | 35.60 | 24.38 |
| 4 | 869.0 | 35.90 | 24.20 |
| 5 | 869.0 | 35.90 | 24.20 |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |

1. MPPT数据
   序号/MPPT功率值/电压/电流
2. 操作指示；
3. 电池电量。

## 热成像/MPPT数据手机APP

(仅Android/HarmonyOS)

产品存储数据，包括热成像图像和MPPT测量数据可通过手机APP下载，用户请用浏览器扫描以下二维码下载或向经销商获取；

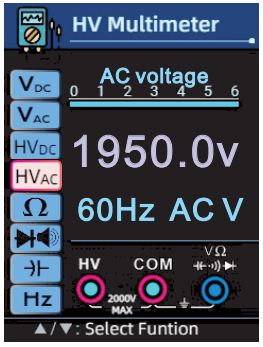




## 光伏万用表（HV Multimeter）

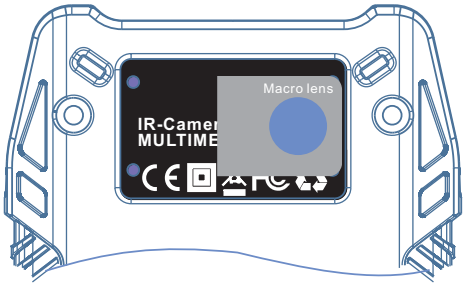
产品光伏万用表具有多功能和60000位读数特点，功能和精度都可媲美专业万用表。 产品具有交流电压、直流电压、通断蜂鸣、二极管、电阻、电容、频率功能；按▲/▼键切换选择功能；

HVDC/HVAC 2000V高压测试功能，光仪工程检测中的实用功能。用户使用万用表时，需严格按提示连接插入万用表，否则可能会烧坏产品；

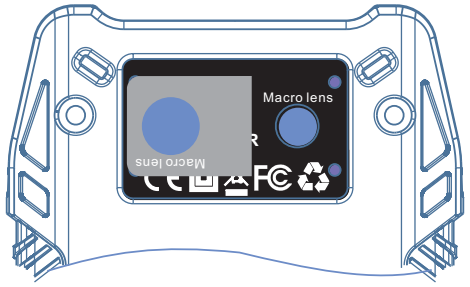



⚠Warning
请按照提示插入测试表笔，
否则将会损坏设备

## 微距镜头安装




微距镜头使用状态




微距镜头备用存放

*微距镜头为选配件

# 常见问题

Q：设备无法开机？
A：请按以下步骤排查：
1.检查电池电量，确认设备已充电。
2.长按电源键至少2秒以上。
3.若仍无反应，请使用原装Type-C数据线连接充电器或电脑充电至少30分钟后再尝试开机。
4.检查工作环境温度是否在-10℃至+60℃之间，极端低温可能导致开机困难。
Q：开机后屏幕无显示或显示异常？
A：1.调整“设置”菜单中的“亮度”级别。
2.尝试长按电源键3秒强制关机，再重新开机。
3.如问题依旧，可能是屏幕硬件故障，请联系售后服务。
Q：测温数据不准确？
A：1.检查发射率设置：确保“设置”中的“发射率”已根据被测物体表面材质正确设置。
2.检查测量距离：在5米内进行测量以获得更准确结果。
3.清洁镜头：确保红　镜头干净，无污渍、指纹或灰尘。
4.避免环境干扰：远离强光源（如阳光、激光），并确保设备在操作温度范围内使用。
Q：无法拍照或保存照片？
A：1.热成像功能中，长按3秒存储当前测量画面。
2.重启设备：尝试关机后重新开机。
3.进入用户设置功能，操作“恢复出厂设置”
Q：热成像微距不清晰？
A：1.请选择正确的温度范围或A自动温度范围设定；
2.正确碰吸安装微距镜头，确保镜头左边两点嵌入到壳体中相应凹孔位；
3.温差越大效果越明显；
Q：万用表电流无读数(仅针对有万用表功能的产品）？
A：
1. 请检测万用表表笔是否正确插入表笔孔,检查表笔是否完好；
Q：设备频繁自动关机？
A：
1.检查自动关机设置：在“设置”->“自动关机”中查看定时设置是否过短。
2.电池电量低：可能是电池电量不足，请及时充电。
3.温度保护：设备在超出工作温度范围（-10℃~+60℃）时会启动保护机制自动关机。
Q：如何恢复出厂设置？
A：进入“用户设置”功能，找到“恢复出厂设置”选项并确认，等待约10s后产品恢复出厂设置，请关机并重新开机即完成操作。请注意，此操作将清除所有个人设置（如发射率、语言、单位存储的图片等）



# 技术指标

| 功能/Functions | |
|---|---|
| 探测器超分分辨率 | 热成像240*240 |
| 测试距离 | 0.2~3米（0.1m*0.1m) |
| 测温规则 | 3点测温（中心点/最高温/最低温） |
| 测温范围 | -20~550℃(L:低温 H:高温 A：自动) |
| 屏幕显示 | 3.2寸点阵屏彩屏（240*320） |
| 存储功能 | 热成像存储(60组)\光伏功率数据100组 |
| 帧频 | 25Hz |
| 微距镜头(选配功能) | 选配微距镜头/可看清1mm元件 |
| 测温精度 | 2℃或2%(计算后取最大值)<br>(检测距离60cm/检测温度：23±2℃） |
| MPPT最大功率点 | |
| 电压测量 | 3~90.00V/±1.5%+5 |
| 电流测量 | 0~40.00A/±1.5%+5 |
| 光伏板功率 | 0~2000.0W/±1%+5 |
| 其他 | 多国语言选择(英中德法西)、屏幕亮度设置、<br>自动关机、低电压检测、表笔连接提示、<br>热成像/MPPT数据手机APP(仅Android/HarmonyOS) |
| 光伏万用表 | (60000位显示) |
| 直流高压 | 2000V(±0.8%+0.8) |
| 交流高压 | 2000V(±1.5%+0.5) |
| 直流电压 | 6.0000V~1000V(±0.5%+0.3) |
| 交流电压 | 6.0000V~750V(±0.8%+0.5) |
| 电　　阻 | 600.00Ω~60 MΩ(±1%+0.6) |
| 电　　容 | 6.0000nF~60 MF(±2%+0.6) |
| 频　　率 | 6.0000Hz~6 MHZ(±1%+0.1) |
| 通断蜂鸣 | ＜50Ω蜂鸣/610Ω以上显OL |
| 二 极 管 | 0.0000~3.3000v,3.3v以上显OL |
| 工作环境 | 温度：0~40℃ / 湿度：0~30℃(≤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线/表笔/太阳能测试夹 |
| 可选配件 | 微距镜头(安装方式：磁吸) |
| 电源规格 | 1500mA.H可充电锂电池(带保护电路) |
| Power | 需要5V/2A/10W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%)

# Safety Precautions

This product is designed according to IEC1010 (safety standards issued by the International Electrotechnical Commission). Please read the safety precautions and technical indicators before use.

Please read the product technical specifications carefully when measuring voltages greater than 36V. Under the premise of following the safety operation requirements, you can measure AC/DC voltages and currents exceeding 36V.

1. Voltages below 36V are safe voltages. When measuring voltages higher than 36V DC or 25V AC, check whether the test leads are in reliable contact, correctly connected, and well insulated to avoid electric shock.

2. When measuring voltage with a multimeter, if the voltage is higher than 1000V, please select the 2000V function input port. The maximum voltage that can be measured is 2000V. This product cannot measure current;

3. When changing the function and range, the test lead should be away from the test point;

4. Select the correct function and range, and be careful to avoid misoperation. Although this series of instruments has full-range protection function, for the sake of safety, please still pay more attention;

## ⚠ Warning ⚠

1. Do not disassemble the casing at will. If there is any fault, please ask a professional to repair it.

2. Before each use, make sure the product is not damaged. Please make sure the test leads are in good condition.

3. The solar panel connection port can only input a maximum of 90 VDC. Inputting a voltage higher than this or an AC voltage will burn the product.

4. The multimeter function operation must strictly follow the multimeter usage regulations. Except for the multimeter probe, other interfaces cannot be connected to strong electricity, otherwise there is a risk of personal injury and equipment damage;

5. When operating the multimeter function, you need to connect according to the product input instructions. This product cannot measure current;

6. Pay attention to the battery usage. When the low voltage symbol appears on the screen, charge it in time.

7. Do not store or use the instrument in high temperature, hot, flammable and strong electromagnetic field environments;

8. If the user does not use it for a long time, please fully charge it for storage.

warn



# Product Features

1. 3-in-1 PV Panel Tester Design (MPPT Power / PV Multimeter / Thermal Imaging)
2. Equipped with thermal imaging function for quickly locating hotspots and fault areas on PV panels
3. MPPT power measurement up to 2000W, with comprehensive protection against overpower, overvoltage, overcurrent, reverse polarity and over-temperature
4. Built-in 60,000-count high-precision PV multimeter, supporting 2000V high-voltage testing
5. 3.2-inch display (240×320 resolution), body with TPR anti-drop structure
6. Stores up to 60 thermal imaging datasets and 100 PV datasets
7. Supports multi-function settings including 5-language switching, auto power-off, brightness and sound
9. Provides 7 thermal imaging false-color modes: Iron Red, Lava, Rainbow, Green Hot, Red Hot, White Hot, Black Hot
10. Thermal Imaging / MPPT Data Mobile APP (Android / HarmonyOS only)

# Product Overview

The 3-in-1 PV Fault Diagnoser is specially designed for photovoltaic system operation and maintenance personnel. It innovatively integrates three core functions: PV MPPT power measurement (up to 2000W), high-voltage multimeter (supports 2000V measurement), and infrared thermal imager (240×240 resolution). Through a closed-loop "scan-verify" process, it quickly locates overheating hazards in key components such as junction boxes, fuses, and cables, and verifies fault points in real time. Without switching devices, O&M efficiency is improved by more than 50%.

Its industrial-grade durability is reflected in the 1500mAh rechargeable lithium battery supporting up to 6 hours of continuous operation, a 3.2-inch color sunlight-readable display visible under strong light, and IP54 protection, adapting to complex outdoor environments. The precise thermal imaging temperature measurement range of -20℃~550℃ (±2℃), combined with the MPPT algorithm for tracking the maximum power point, ensures diagnostic accuracy.

Suitable for PV power station inspection, distributed system troubleshooting, and module quality inspection, it significantly improves efficiency, reduces equipment costs, and enhances operational safety. Certified by CE and RoHS, it is an innovative photovoltaic tool product. Experience it now to make operation and maintenance more efficient and safer!

A.Display
B.TYPE-C USB charging port
C. Operation buttons
D. Multimeter input jack
E. Solar panel connection port



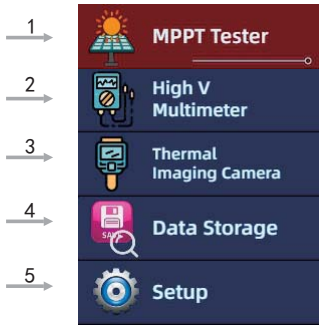

Test clip (red): positive electrode
Test clip (black): negative electrode
Connection error, unable to test!
Only capable of connecting to photovoltaic output (<90VDC)





the multifunctional product enters the main menu at startup, listing all functions. Use ▲/▼ to select, then OK to confirm. Press ↖ to return to the main menu

## Menu Display




1. MPPT Tester
2. PV Multimeter Function
3. Thermal Imaging
4. Data Readback
5. User Settings

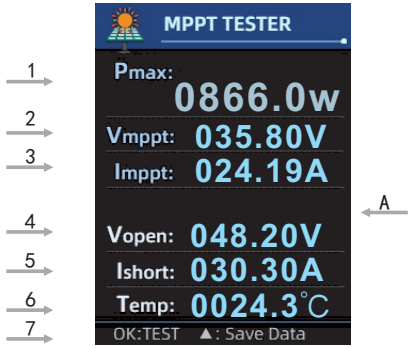
# MPPT TESTER

After the product enters the MPPT measurement (PV panel maximum power point measurement) function, the display is as follows. Please follow the operating instructions to proceed. Press □ to return to the main menu function selection window.

First, correctly connect the test cable (MC4) to the top input socket. Follow the prompts and press the OK key to start the test. The test results will be displayed as follows upon completion.

Press the ▲ key to save the measurement results. This product can store up to 100 sets of measurement data.

During measurement, if protection is triggered or the connection is poor, the product will display corresponding error messages. The user can adjust the measurement according to the error messages.




1. PV Panel MPPT
2. MPPT Voltage
3. MPPT Current
4. PV Panel Open-Circuit Voltage
5. PV Panel Short-Circuit Current
6. Product Temperature
   (Testing disabled when >55℃)
7. Operation Prompt (OK: Start Test, Up Key: Save Current Data Record)

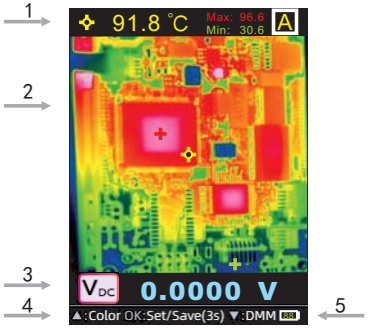
A. Information Area: (Low Voltage / Test Time / Over-Temperature / Over-Power / Over-Voltage / Over-Current)



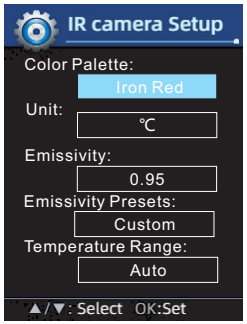


# Thermal Imaging Camera

On entering thermal imaging mode:Press ↖ to return to main menu; The macro lens enables close-range thermal imaging (approx. 20mm). Adjust the distance for optimal results. Features magnetic mounting—store properly to prevent magnetic interference or damage to other devices;




1. Center/Max/Min temperatures & range
   A :Auto-20~550℃ /L :Low-20~150℃
   H:High100~550℃
2. Thermal Image
   Red+: Max temp / Blue+: Min temp / Yellow+: Center point
3. Multimeter: Real-time readings
4. Controls:
   ▲: Toggle color palette
   OK: Enter settings (hold 3s to save image)
   ▼: Toggle multimeter functions
5. Battery: Blinks below 10%—charge immediately.




## Settings Note

Adjust color palette /units /emissivity /temperature range in settings.

Temperature range changes take ~7s to apply.

## Cautions

The greater the temperature difference, the clearer the display effect.

The thermal imager may experience a brief 1-2 second delay and produce a "click" sound during measurement, wh ich is normal as the system performs automatic calibration to compensate for environmental temperature sensitivity.

Inaccurate range selection may cause blurry images. Estimate the target's approximate temperature to set the proper range.

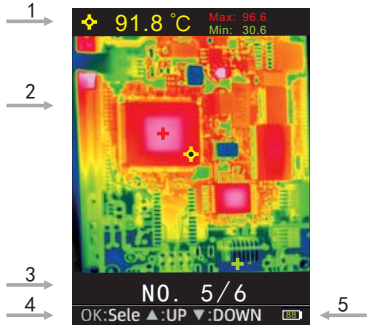
If readings are inaccurate, verify emissivity settings. Note: Polished and oxidized metal surfaces have significantly different emissivity.

## Data Storage

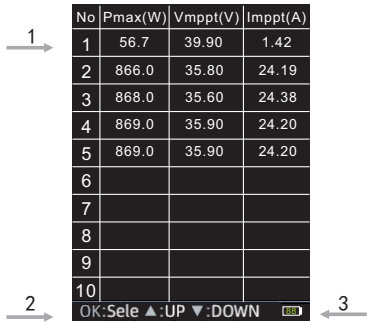
After the product is powered on, select the Data Storage function to enter the Data Reading function. This function can read thermal imaging images and PV panel test data. Press the OK key to switch data types (thermal imaging data / PV panel measurement data). Press ↖ to return to the main menu function selection window.

If no thermal imaging data is stored, "NO Data" will be displayed.

Long press the OK key for 3 seconds to delete the currently stored image. Stored data will be cleared when the factory reset is performed in User Settings.




1.Center/Max/Min temperatures
2.Thermal image
Red+: Max temp
Blue+: Min temp
Yellow+: Center point
3. Image index/total count
Factory reset will erase all stored images
4.Operation prompts
5. Battery level




1. MPPT Data
No. / MPPT Power / Voltage / Current
2. Operation Instructions
3. Battery Level





## HV Multimeter

The HVI multimeter of this product features multi-functionality and 60,000-count readings, with performance and accuracy comparable to professional multimeters.

It supports the following functions: AC voltage, DC voltage, continuity buzzer, diode test, resistance, capacitance, and frequency.

Press the ▲/▼ keys to switch between functions.

The HVDC/HVAC 2000V high-voltage testing function is highly practical for optical and electrical engineering inspections.

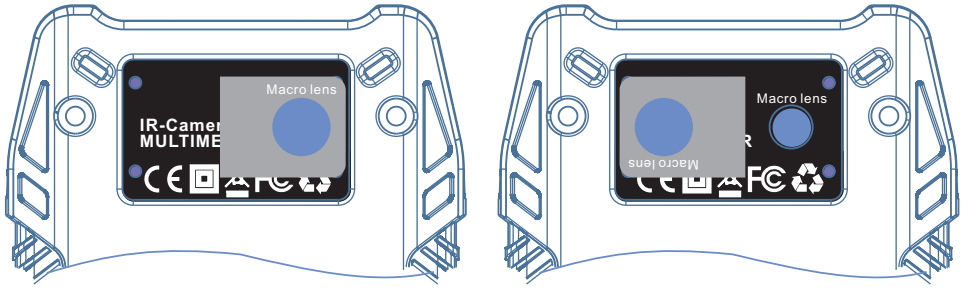
When using the multimeter, users must strictly follow the instructions to connect and insert the test leads properly; otherwise, the product may be burned out.




Incorrect probe connection may damage fuses or the device.

⚠ Warning

## Macro Lens Usage




Usage status

Storage when not in use

*The macro lens is an optional accessory

Q: The device cannot power on?

A: Please troubleshoot by following these steps:

1. Check the battery level and ensure the device is charged.

2. Long press the power button for at least 2 seconds.

3. If there is still no response, charge the device for at least 30 minutes using the original Type-C cable connected to a charger or computer, then try powering on again.

4. Check if the operating ambient temperature is between -10℃ and +60℃; extreme low temperatures may cause difficulty in powering on.

Q: No display or abnormal display after power-on?

A:1. Adjust the brightness level in the "Settings" menu.

2. Try long pressing the power button for 3 seconds to force a shutdown, then restart the device.

3. If the problem persists, it may be a screen hardware fault; please contact after-sales service.

Q: Inaccurate temperature measurement data?

A:1. Check emissivity setting: Ensure the "Emissivity" in "Settings" is correctly set according to the surface material of the measured object.

2. Check measurement distance: Measure within 5 meters for more accurate results.

3. Clean the lens: Ensure the infrared lens is clean, free of stains, fingerprints or dust.

4. Avoid environmental interference: Keep away from strong light sources (such as sunlight, lasers) and ensure the device is used within the operating temperature range.

Q: Unable to take or save photos?

A:1. In thermal imaging mode, long press for 3 seconds to save the current measurement image.

2. Restart the device: Try powering off and then restarting.

3. Enter User Settings and perform "Factory Reset".

Q: Blurry thermal imaging macro?

A: 1. Select the correct temperature range or set to Auto temperature range.

2. Properly attach the macro lens, ensuring the two points on the left side of the lens fit into the corresponding recesses on the housing.

3. The greater the temperature difference, the more obvious the effect.

Q: No current reading on the multimeter (only for products with multimeter function)?

A: 1. Check if the multimeter test leads are correctly inserted into the test lead sockets





and if the test leads are intact.

Q: The device shuts down automatically frequently?

A: 1. Check auto power-off setting: Check if the timer setting in "Settings" > "Auto Power Off" is too short.

2. Low battery: The battery may be insufficient; please charge in time.

3. Temperature protection: The device will activate the protection mechanism and shut down automatically when the operating temperature range (-10℃~+60℃) is exceeded.

Q: How to restore factory settings?

A: Enter the "User Settings" function, select the "Factory Reset" option and confirm. Wait about 10 seconds for the device to restore factory settings, then power off and restart to complete the operation.

Note: This operation will clear all personal settings (such as emissivity, language, units, stored images, etc.).

## Data Mobile APP

(Android / HarmonyOS only)

The stored data of the product, including thermal imaging images and MPPT measurement data, can be downloaded via the mobile APP. Users may scan the QR code below with a browser to download or obtain it from the distributor.

# Technical Specifications

| Functions | |
|---|---|
| Detector Resolution | Thermal imaging pixels: ISR 240x240 |
| Testing Distance | 0.2~3m（0.1m*0.1m) |
| Measurement Principle | 3-point temperature measurement (Center/Max/Min) |
| Measurement Range | -20~550℃(L:Low H:High A:Auto) |
| Display Screen | 3.2-inch Dot Matrix Color Screen（240*320） |
| Photography Function | Storage: 60 data sets |
| Frame Rate | 25Hz |
| Macro Lens (Optional) | With macro lens: Resolves 1mm components |
| Measurement Accuracy | 2℃ or 2%(whichever is greater) |
| MPPT Test | |
| Solar Voltage | 3~90.00V/±1.5%+5 |
| Solar Current | 0~40.00A/±1.5%+5 |
| Solar MPPT power | 0~2000.0W/±1%+5 |
| Other | Automatic shutdown / Low voltage detection / Pen prompt<br>Multi-language menu /Mobile APP (Android / HarmonyOS only) |
| DMM Function | (60000 COUNT) |
| HIGH DCV | 2000V(±0.8%+0.8) |
| HIGH ACV | 2000V(±1.5%+0.5) |
| DC Voltage/DCV | 6.0000V~1000V(±0.5%+0.3) |
| AC Voltage/ACV | 6.0000V~750V(±0.8%+0.5) |
| Resistance/R | 600.00Ω~60 MΩ(±1%+0.6) |
| Capacitance/CAP | 6.0000nF~60 MF(±2%+0.6) |
| Frequency/Hz | 6.0000Hz~6 MHZ(±1%+0.1) |
| Continuity Test | < 50Ω buzzing / >610Ω:OL |
| Diode Test | 0.0000~3.3000v,>3.3v:OL |
| Working ENV | Temperature：0~40℃/Humidity：0~30℃:≤75%,30~40℃:≤50% |
| storage ENV | Temperature:-10~50℃ / Humidity:≤50% |
| Package | Color box/instruction manual/Solar test clip/tool kit<br>Multimeter probe |
| Power | 1500mAh rechargeable lithium battery (with protection circuit)<br>Charging with a charger of 5V/2A/10W or above<br>(not included as standard) |

*The above indicators are the best functional indicators
Test temperature: 23±2℃, humidity <70%