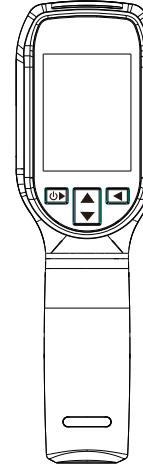


红外热成像仪



1. 序言

尊敬的用户:
您好!感谢您选购全新的热成像仪,为了正确使用本产品,请您在使用之前仔细阅读本说明书全文,特别是有关“安全注意事项”的部分。如果您已经阅读完本说明书全文,建议您将本说明书妥善保管,与热成像仪一同放置或者放在您随时可以查阅的地方,以便在未来的使用过程中查阅。

2. 有限担保和有限责任

公司担保本产品自购买之日起一年内,在材料和工艺上均无任何缺陷,本担保不适用于由于意外、疏忽、误用、改装、污染及非正常操作或处理引起的损坏。经销商无权以公司的名义给予其它任何担保,如在保修期内需要维修服务,请您与最近的授权服务中心联系,获得产品返修授权信息;然后将产品寄至该服务中心,并附上产品问题描述。
本项担保是您能获得的唯一担保。除此以外,公司不提供任何明示或隐含的担保,例如适用于某一特殊目的的隐含担保。同时,公司不对基于任何原因或推测而导致的任何特殊、间接、附带或连带的损坏或损失负责,由于某些州或国家不允许对默示担保及附带或连带的损坏加以限制,故上述的责任限制与规定或许对您不适用。

3. 性能指标

传感器类型	氧化钒(V ₂ O ₅)微测辐射热计
响应波段	8~14μm
热图像分辨率	240x240 像素
噪声等效温差(NETD)	≤60 mK(@25 °C,F#1.0)
视场角(FOV)	50.0°(H)×50°(V)/72.1°(D)
空间分辨率(IFOV)	8.89 mrad
帧频	25Hz
成像镜头焦距	1.35 mm
测温焦距	0.3m~3m可调
测温范围	-20°C~550°C
测温精度	±2°C或读数的±2% (取读数较大值)
测温单位	摄氏度、华氏度、开尔文
测温分辨率	0.1°C
发射率	0.01~1.00可调
测温显示	中心点测温、高低温追踪
色板	白热、黑热、融合1、彩虹、融合2、铁红1、铁红2、深褐色、浅褐色、色彩2、冰火、雨、绿热、红热、深蓝
显示屏	2.4寸 TFT LCD
显示屏分辨率	320 × 240
按键	电源键、上键、下键、返回键、扳机键
激光指示	有
温度报警	屏幕字体颜色报警
图像存储	内置闪存卡
图像文件数量	30000
图像格式	BMP图片

4. 产品外观描述

冲击/震动	GB/T 2423.5-2019;GB/T 2423.10-2008
电磁兼容性(EMC)	GB/T 17799.2,GB 17799.3-2012
防护等级	IP54
安装方式	三脚架安装UNC-20
调焦方式	免调焦
硬件接口	Type-C USB
电池类型	可充电电池(3.7V/2500mAh)
电池工作时长	>7h@25°C
充电时间	<3h@25°C
充电电压/电流	5V/2A
开机速度	约9秒开机
自动关机	关闭(默认) 可选 10分钟、20分钟、30分钟、40分钟、50分钟、60分钟、关闭
工作温度	-10°C~50°C
存储温度	-40°C~70°C
工作湿度	≤85%RH (非冷凝)
跌落	1.5m
产品尺寸	193.4*59.4*77.4mm
产品重量	277g

5. 显示与说明

序号	说明
1	测量温度中心点
2	当前自动追踪温度最大点
3	当前自动追踪温度最小点
4	测量距离
5	最大温度
6	调色板
7	最小温度
8	温度单位符号
9	发射率
10	时间
11	电池电量
12	USB连接符号

6. 使用及操作说明

- 1. 开关机**
当仪器处于关机状态时,长按电源键3秒钟,热像仪开机;当仪器处于开机状态时,长按电源键3秒钟屏幕显示“正在关机”热像仪进入关机状态。
- 2. 设置菜单说明**
短按菜单键可进入主菜单界面进行内容设置。短按返回键可返回上一级菜单。短按扳机键可在任意界面直接返回热成像界面。
- 3. 图片浏览**
在主菜单界面短按上下键选中相册,短按确认键进入相册中的图片浏览。在此浏览中,可按上下键选中某一张图片,进入该图片,短按确认键确认删除按钮,短按上下键选择是否删除该图片按钮,短按扳机键确认该选择。
- 4. 距离**
在主菜单界面短按上下键选中距离,短按确认键进入距离调整,短按上下键可调整数值(0.3m~3m),短按返回键返回,调整完成。
- 5. 伪彩**
在主菜单界面短按上下键选中伪彩,短按确认键进入伪彩样式选择界面。在此界面中,可以短按上下键选择白热、黑热、融合1、彩虹、融合2、铁红1、铁红2、深褐色、浅褐色、色彩2、冰火、雨、绿热、红热、深蓝等多个样式,短按确认键确定选中样式,短按扳机键可直接退出主菜单,此时可以看到热像仪界面呈现出所选的样式。
- 6. 显示设置**
在主菜单界面短按上下键选中显示设置,短按确认键进入设置界面,短按上下键可选择需要显示的显示温度、最低温度、中心温度、参数和水印。短按确认键选中选项,短按扳机键退出。
- 7. 报警**
在主菜单界面短按上下键选中报警设置,短按确认键确认启用,短按上下键可选择,短按确认键调整规则:大于/小于,短按确认键选中选项报警阈值/报警阈值,短按上下键可调整自己需要设置的数值,短按扳机键退出。
- 8. 档位**
在主菜单界面短按上下键选中档位,短按确认键进入档位选项,短按上下键可选择-20°C~150°C,100°C~550°C,自动切换三个档位,短按确认键确定选择,短按扳机键退出。
- 9. 更多设置**
在主菜单界面短按上下键选中更多设置,短按确认键进入设置,短按上下键可选择需要设置的选项。
单位:短按确认键进行°C,°F,°K单位切换。
语言:短按上下键选择语言设置选项,短按确认键进入中英文切换,短按上下键选择,短按确认键确认选择。
时间与日期:短按上下键选择时间与日期设置选项,短按确认键进入时间与日期调整,可选择12/24小时制选项,短按确认键确认选择,短按上下键调整时间和日期。
激光:短按上下键选择激光选项,短按确认键可开启或关闭激光。
自动关机:短按上下键选择自动关机选项,短按确认键可调整自动关机设置(可选10分钟,20分钟,30分钟,40分钟,50分钟,60分钟,关闭)。
关机设置:短按上下键选择关于设备选项,短按确认键可查看设备信息。
格式化存储:短按上下键选择格式化存储选项,短按确认键可选择是否格式化存储卡(注意:格式化存储卡会清空内存)。
恢复出厂设置:短按上下键选择恢复出厂设置选项,短按确认键可选择是否恢复出厂设置(注意:恢复出厂设置后会清除所有设置,此时得到的是出厂时的新机设置)。

7. 保养与维护

1. 用户须知:
用户应避免碰撞、重尘、高温、潮湿、强磁场等过度恶劣条件下使用本仪器;需存放于干燥无腐蚀性气体环境,电池请勿放置在热源或火源附近,避免阳光直射,否则将损坏仪器。如仪器在使用过程中测量值偏差大,请先检查是否电池电量不足,尝试重新开机,如果不能排除故障,请联系购买设备的商店或最近的服务中心,不要以任何方式拆卸或修改设备,否则影响保修服务。(对未经认可的修改或维修导致的问题,本公司不承担任何责任)。
*定期使用湿布和少量洗涤剂清洁仪器外壳,请勿用研磨剂或化学溶剂。

2. 电池充电
如果屏上出现低电量符号,应充电后再使用,否则会影响测量精度。取下电池盖,使用USB充电,充电过程中,红色指示灯亮起,充满后为绿色指示灯。

8. 常用发射率

材质	发射率	材质	发射率
木	0.85	蔗纸	0.86
水	0.96	聚碳酸酯	0.8
砖	0.75	混凝土	0.97
不锈钢	0.14	氧化铜	0.78
胶带	0.96	铸铁	0.81
铝板	0.09	铜	0.8
钢板	0.06	石膏	0.75
黑铝	0.95	油漆	0.9
人体皮肤	0.98	橡胶	0.95
沥青	0.96	土壤	0.93
PVC 塑胶	0.93		

9. 使用注意事项

- 使用前务必查看说明书,熟悉仪器的使用方法和性能参数。
- 应在温度:0~40°C (32~104°F);湿度:20%~90%RH;无强磁场的室温下工作。
- 使用时应小心轻放,避免碰撞、掉落或其他损伤。
- 使用过程中,如果出现异常现象或故障,应停止使用并联系维修人员维修。
- 避免在高温、潮湿或易受干扰的环境下使用。
- 使用完毕后,应将仪器放在干燥、避免阳光直射或雨淋的地方。

10. 保养与维护

1. 用户须知:
用户应避免碰撞、重尘、高温、潮湿、强磁场等过度恶劣条件下使用本仪器;需存放于干燥无腐蚀性气体环境,电池请勿放置在热源或火源附近,避免阳光直射,否则将损坏仪器。如仪器在使用过程中测量值偏差大,请先检查是否电池电量不足,尝试重新开机,如果不能排除故障,请联系购买设备的商店或最近的服务中心,不要以任何方式拆卸或修改设备,否则影响保修服务。(对未经认可的修改或维修导致的问题,本公司不承担任何责任)。
*定期使用湿布和少量洗涤剂清洁仪器外壳,请勿用研磨剂或化学溶剂。

2. 电池充电
如果屏上出现低电量符号,应充电后再使用,否则会影响测量精度。取下电池盖,使用USB充电,充电过程中,红色指示灯亮起,充满后为绿色指示灯。

11. 常用发射率

材质	发射率	材质	发射率
木	0.85	蔗纸	0.86
水	0.96	聚碳酸酯	0.8
砖	0.75	混凝土	0.97
不锈钢	0.14	氧化铜	0.78
胶带	0.96	铸铁	0.81
铝板	0.09	铜	0.8
钢板	0.06	石膏	0.75
黑铝	0.95	油漆	0.9
人体皮肤	0.98	橡胶	0.95
沥青	0.96	土壤	0.93
PVC 塑胶	0.93		

12. 使用注意事项

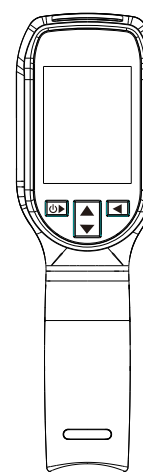
- 使用前务必查看说明书,熟悉仪器的使用方法和性能参数。
- 应在温度:0~40°C (32~104°F);湿度:20%~90%RH;无强磁场的室温下工作。
- 使用时应小心轻放,避免碰撞、掉落或其他损伤。
- 使用过程中,如果出现异常现象或故障,应停止使用并联系维修人员维修。
- 避免在高温、潮湿或易受干扰的环境下使用。
- 使用完毕后,应将仪器放在干燥、避免阳光直射或雨淋的地方。

13. 保养与维护

1. 用户须知:
用户应避免碰撞、重尘、高温、潮湿、强磁场等过度恶劣条件下使用本仪器;需存放于干燥无腐蚀性气体环境,电池请勿放置在热源或火源附近,避免阳光直射,否则将损坏仪器。如仪器在使用过程中测量值偏差大,请先检查是否电池电量不足,尝试重新开机,如果不能排除故障,请联系购买设备的商店或最近的服务中心,不要以任何方式拆卸或修改设备,否则影响保修服务。(对未经认可的修改或维修导致的问题,本公司不承担任何责任)。
*定期使用湿布和少量洗涤剂清洁仪器外壳,请勿用研磨剂或化学溶剂。

2. 电池充电
如果屏上出现低电量符号,应充电后再使用,否则会影响测量精度。取下电池盖,使用USB充电,充电过程中,红色指示灯亮起,充满后为绿色指示灯。

Infrared Thermal Imager



1. Preface

Dear user:
Hello! Thank you for purchasing a new thermal imager. In order to use this product correctly, please read the full text of this manual carefully before using, especially the section on "Safety precautions". If you have read this manual in full, it is recommended that you keep it in a safe place with thermal imaging or in a place where you can refer to it at any time for future use.

2. Limited Warranty and Limited Tenure

The Company guarantees that this product will be free from any defects in material and workmanship for one year from the date of purchase. This warranty does not apply to for damage caused by accident, negligence, misuse, alteration, contamination or improper operation or handling. The Distributor shall not be entitled to give any other guarantee in the name of. If you need warranty service during the warranty period, please contact your nearest authorized service center to obtain product return authorization information; Then send the product to the service center with a description of the product problem.
This guarantee is the only compensation you can receive. In addition, the company does not provide any express or implied warranties, such as the implied warranties for a particular purpose. In addition, the Company shall not be liable for any special, indirect, incidental or consequential damage or loss of any kind arising out of any cause or presumption, and because some states or countries do not allow limitations on implied warranties and incidental or consequential damage, the above limitations and provisions of liability may not apply to you.

3. Performance Indicators

Sensor type	Vanadium oxide (VO _x) microcalorimeter
Response Band	8~14μm
Thermal image resolution	240x240 Pixels
Noise equivalent temperature difference (NETD)	≤60 mK(@25 °C,F#1.0)
Angle of view (FOV)	50.0°(H)×50°(V)/72.1°(D)
Spatial resolution (IFOV)	8.89 mrad
Frame rate	25Hz
The focal length of the imaging lens	1.35 mm
Temperature measuring focal length	0.3m~3m Adjustable
Temperature range	-20°C~550°C
Accuracy of temperature measurement	± 2 °C or ± 2% of the reading (take the larger value of the reading)
Unit of temperature measurement	Celsius, Fahrenheit, Kelvin
Temperature resolution	0.1°C
Emissivity	0.01~1.00 Adjustable
Temperature measurement shows	Center point temperature measurement, high and low temperature tracking
Swatches	White Hot, Black hot, Fusion 1, Rainbow, Fusion 2, Iron Red 1, Iron Red 2, Bark brown, Color 1, Color 2, Ice fire, Rain, Green hot, Red Hot, Dark Blue
Display screen	2.4 inches TFT LCD
Display resolution	320 × 240
Key	Power Key, up key, Down Key, Return key, Trigger key
Laser Pointer	Yes
Temperature Alarm	Screen font color alarm
Image storage	Built-in memory card

4. Appearance Description

Number of image files	30000
Image format	BMP
Shock/vibration	GB/T 2423.5-2019;GB/T 2423.10-2008
Electromagnetic compatibility (EMC)	GB/T 17799.2,GB 17799.3-2012
Protection level	IP54
Installation mode	Tripod mount UNC-20
Focus mode	Auto focusing
Hardware interface	Type-C USB
Battery type	Rechargeable lithium battery (3.7V/2500mAh)
The working hours of the battery	>7h@25°C
Charging time	<3h@25°C
Charging voltage/current	5V/2A
Boot speed	~8 seconds
Automatic shutdown	Disable (default) (optional 10 Min, 20 Min, 30 Min, 40 Min, 50 Min, 60 Min, Disable)
Operating temperature	-10°C~50°C
Storage temperature	-40°C~70°C
Working humidity	≤85%RH (Non-condensing)
Drop	1.5m
Product dimensions	193.4*59.4*77.4mm
Product weight	277g

5. Display and Description

Number	Description
1	Center temperature
2	Current automatic tracking of maximum temperature point
3	Current automatic tracking of minimum temperature point
4	Maximum temperature
5	Measure distance
6	Colorize
7	Minimum temperature
8	Temperature unit
9	Emissivity
10	Time
11	Battery level
12	USB connection symbol

6. Operating Instructions

- 1. Power on and off**
When the meter is power off, long press the power button 3 seconds to power on; when the meter is power on long press the power button 3 seconds to power off.
- 2. Menu**
Short press the menu button to enter the main menu interface for content settings. Short press the return button to return to the previous menu. Short press the trigger button to directly return to the thermal imaging interface at any interface.
- 3. Album**
Select the album from the main menu and press the confirm button to browse the pictures in the album. In this option, press up or down to select a picture. After entering the picture, press the confirm button to delete the picture. Press the up or down button to delete or not to delete the picture. Press the confirm button to confirm the selection.
- 4. Emissivity**
In the main menu, press up or down to select emissivity, press confirm button to enter the emissivity style selection menu, press up or down to select emissivity, or press up or down to select custom emissivity. You can edit the emissivity value by yourself.
- 5. Colorize**
In the main menu, press the up or down button to select the colorize, and press the Power button to enter the colorize style selection menu. In this menu, you can press up or down to select White/Hot, Black/Hot, Fusion 1, Rainbow, Fusion 2, Ironbow 1, Ironbow 2, Sepia, color 1, color 2, Ice/Fire, Rain, Green/Hot, Red/Hot, DeepBlue multiple samples, press the confirm button to confirm the selected style, and press the trigger key to exit the main menu directly, at this time, you can see that the thermal camera interface will display the selected style.
- 6. Display Settings**
Press Up/Down in the main menu to select Display Settings, press the confirm button to enter the setting menu, and press up or down to select to display the Highest Temp Point, Lowest Temp Point, Center Temp Point, Parameter, and Watermark. Press the confirm button to select the option and press the trigger button to exit.
- 7. Alarm**
In the main menu, press Up/Down to select Alarm, press up/down to select, press confirm to adjust the rule - greater than/less than, press confirm to select alarm threshold/warning threshold, press up/down to adjust the value you need to set, press trigger button to exit.
- 8. Gear Position**
Press the up/down key to select the gear on the main menu, press the confirm button to enter the gear option, press the up/down key to select -20°C~150°C, 100°C~550°C, Auto switch three gears, press the confirm button to confirm the selection, press the trigger key to exit.
- 9. More settings**
In the main menu, press the up/down button to select more Settings, press the Confirm button to enter Settings, and press the up/down key to select the options you want to set.
Unit: Press the confirm button to switch °C, °F, and K units.
Language: Press the up/down button to select the language setting option, press the Confirm button to switch between Chinese and English, press the up/down button to select, and press the Confirm button to confirm the selection.

7. Maintenance and Repair

1. **User notes:**
Users should avoid collision, heavy dust, high temperature, humidity, strong magnetic field and other excessive harsh conditions to use the instrument. Store the battery in a dry, non-corrosive gas environment. Do not place the battery near a heat source or fire source, and avoid direct sunlight. Otherwise, the instrument will be damaged. If the measurement deviation in the use of the instrument is large, please first check whether the battery is insufficient, try to restart, if you can not eliminate the fault, please contact the store where you purchased the equipment or the nearest service center, do not disassemble or modify the equipment in any way, otherwise the warranty service will be affected. (The Company does not assume any responsibility for problems caused by unauthorized modifications or repairs).
* Clean the instrument housing regularly with a damp cloth and a small amount of detergent, do not use abrasive or chemical solvents.

2. **Charge the battery**
If the low battery symbol appears on the screen, it should be use after charging; otherwise it will affect the measurement accuracy. Take off the battery cover and use the USB cable to charge. During the charging process, the red indicator lights up and the green indicator lights up after being filled.

8. Common Emissivity

Material	Emissivity	Material	Emissivity
Wood	0.85	Black paper	0.86
Water	0.96	Polycarbonate	0.8
Bricks	0.75	Concrete	0.97
Stainless steel	0.14	Copper oxide	0.78
Tape	0.96	Cast iron	0.81
Aluminum Sheet	0.09	Rust	0.8
Acoin	0.06	Plaster	0.75
Black aluminum	0.95	Paint	0.9
Human Skin	0.98	Rubber	0.95
Asphalt	0.96	Soil	0.93
PVC Plastic	0.93		

9. Useage Considerations

- Be sure to check the instruction manual before use, and be familiar with the use method and performance parameters of the instrument.
- Temperature: 0~40°C (32~104°F); Humidity: 20%~90%RH; It works at room temperature without strong magnetic field.
- Use with care to avoid collisions, falls or other injuries.
- During use, if there is any abnormal phenomenon or fault, stop using and contact maintenance personnel for repair.
- Avoid use in hot, humid or disturbed environments.
- After use, the instrument should be placed in a dry place, away from direct sun or rain.

10. Common Emissivity

Material	Emissivity	Material	Emissivity
Wood	0.85	Black paper	0.86
Water	0.96	Polycarbonate	0.8
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- Use with care to avoid collisions, falls or other injuries.
- During use, if there is any abnormal phenomenon or fault, stop using and contact maintenance personnel for repair.
- Avoid use in hot, humid or disturbed environments.
- After use, the instrument should be placed in a dry place, away from direct sun or rain.

12. Maintenance and Repair

1. **User notes:**
Users should avoid collision, heavy dust, high temperature, humidity, strong magnetic field and other excessive harsh conditions to use the instrument. Store the battery in a dry, non-corrosive gas environment. Do not place the battery near a heat source or fire source, and avoid direct sunlight. Otherwise, the instrument will be damaged. If the measurement deviation in the use of the instrument is large, please first check whether the battery is insufficient, try to restart, if you can not eliminate the fault, please contact the store where you purchased the equipment or the nearest service center, do not disassemble or modify the equipment in any way, otherwise the warranty service will be affected. (The Company does not assume any responsibility for problems caused by unauthorized modifications or repairs).
* Clean the instrument housing regularly with a damp cloth and a small amount of detergent, do not use abrasive or chemical solvents.

2. **Charge the battery**
If the low battery symbol appears on the screen, it should be use after charging; otherwise it will affect the measurement accuracy. Take off the battery cover and use the USB cable to charge. During the charging process, the red indicator lights up and the green indicator lights up after being filled.

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