

## UTi120T

### 口袋式红外热成像仪使用说明书 Pocket Thermal Imager User Manual



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**口袋式红外热成像仪  
使用说明书  
(1p-44p)**

**Pocket Thermal Imager  
User Manual  
(46p-76p)**

## 注意事项

### 在任何时候都请严格遵守下列注意事项：

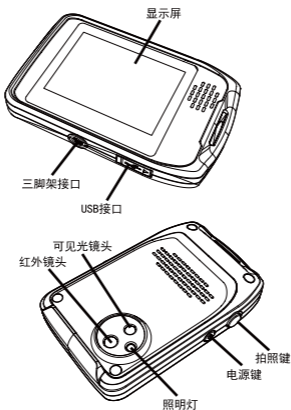
- 在使用设备时请尽量保持稳定，避免剧烈晃动。
- 不要在超出设备许可的工作温度或储存温度环境中使用或存放仪器。
- 不要将设备直接对准很高强度的热辐射源，例如太阳，激光器，点焊机等。
- 不要将设备暴露在灰尘或潮湿的环境中。在有水的环境中使用时，应避免水溅到仪器上。
- 当不使用本设备时，请将仪器和所有配件放置在专用包装箱内。
- 不要堵塞设备上的孔。
- 不要敲打，扔掷或震动仪器和配件，以免造成损坏。
- 请勿自行拆卸本机，这有可能造成设备损坏，并丧失保修权利。
- 请不要在超过设备使用工作温度的环境下使用该设备，这可能会造成设备的损坏。
- 不要将有溶解性或类似的液体用于设备，线缆，这可能会导致设备的损坏。

- 本设备使用锂离子电池，为了安全使用电池，必须严格遵守下列事项：
  - 1) 在任何时候都不要尝试打开或拆解电池。
  - 2) 不要将电池置于高温环境或靠近高温物体。
  - 3) 不要使电池的正负极短路。
  - 4) 不要将电池置于潮湿环境或水中。
  - 5) 一旦电池发生泄露导致液体进入人眼，应该立刻用清水冲洗眼睛，且进行医学护理。
  - 6) 请按照本手册中说明的方法为电池充电，并请遵照充电步骤和注意事项。错误的充电会导致电池变热，损坏甚至造成人体受伤。
  
- 擦拭本设备时请遵照以下措施：
  - 1) 非光学表面：在必要时可以使用干净柔软的布擦拭热像仪的非光学表面。
  - 2) 光学表面：使用热像仪时请避免弄脏镜头的光学表面，特别要避免用手触碰镜头，因手上的汗迹会在镜头玻璃上留下痕迹且可能会腐蚀玻璃表面的光学镀膜层。当光学镜头表面受到污染时，使用专业镜头纸小心的擦拭。

## 电池使用注意事项:

- 电池可以反复充电，但电池属于易损耗品，如发现设备的待机时间大幅度降低，请使用本公司提供的原装电池进行更换。
- 设备长时间工作，尤其在高温环境下，可能出现表面发热的情况，这属于正常现象。感觉发烫时，请停止充电同时将设备移至阴凉处。请避免长时间接触发烫的设备表面。
- 为设备充电时，建议您仅使用本公司提供的原装电池、充电线。
- 电池充电时间会随温度条件和电池使用状况而变化。
- 当电池电量较低时，系统会弹出低电提示。
- 当电池电量过低时，系统会自动关机。
- 若按下电源键，设备没有任何反应，表明电池电量已耗尽，需要充电10分钟以才可以启动设备。

## 一. 产品外观



说明：

1. 固定三脚架螺母孔：标准1/4-20 UNC
2. TYPE-C接口：本机USB充电，PC可充电，可边使用边充电，可连接充电宝充电，可连PC进行传输图片或视频。
3. 电源按键：按住2秒打开热像仪；按住2秒关闭热像仪；快速点按设备处于休眠状态；
4. 拍照键：按住可捕捉图像。
5. LCD触摸屏：3.5吋屏幕分辨率320\*240  
红外分辨率120\*90

## 1. 关机充电屏



说明：热成像仪电源关闭后充电时屏幕上显示充电状态。显示持续5秒钟。短按开机键会再次显示充电状态。

## 2. 首次开机语言选择



选择对应的语言并点击“确定”。

以后更改语言需要进入设置界面进行“语言选择”。

## 3. 屏幕元素



1. 中心温：用户可更改单位 $^{\circ}\text{C}$ 或 $^{\circ}\text{F}$ ；
2. 日期：显示年、月、日，用户可以自由设置格式；
3. 时间：显示时和分，用户可以自由设置格式；
4. 发射率：用户可以自由设置；
5. wifi热点状态：开启即显示，关闭即不显示；
6. 电池使用电量，显示电量级别；
7. 调整Level Span选择：手动和自动；
8. Tmax值和Tmin值；



## 二. 详细技术指标

|        |          |
|--------|----------|
| 产品型号   | UTi120T  |
| 图像和光学  |          |
| 红外分辨率  | 120*90   |
| 视场角    | 50°*38°  |
| 最小成像距离 | 0.5m     |
| 焦距     | 2.28mm   |
| 空间分辨率  | 7.6mrad  |
| 光圈     | F1.13    |
| 红外图像帧频 | 25HZ     |
| 调焦     | 免调焦      |
| 探测器    |          |
| 探测器类型  | 非制冷焦平面   |
| 波长范围   | 7.5~14um |
| 像元尺寸   | 17um     |
| 图像显示   |          |
| 显示器类型  | LCD      |
| 分辨率    | 320*240  |
| 屏幕尺寸   | 3.5吋     |
| 触摸屏    | 电容式触摸屏   |
| 图像模式   |          |
| 红外图像   | 是        |
| 可见光图像  | 是        |

|              |   |
|--------------|---|
| 全屏融合         | 是   |
| 画中画          | 是   |
| <b>测量</b>    |   |
| 测温范围         | -20°C~400°C   |
| 精度           | 环境温度：5°C~30°C距离0.5m~1.2m,<br>目标温度0°C以上精度为±2°C或±2%<br>(取大值)；目标温度0°C以下，精度为±5°C<br>或±5%(取大值) |
| <b>测量分析</b>  |   |
| 测温点          | 除中心点外，还可添加一个点，<br>可移动，可打开关闭   |
| 测温区域         | 矩形区域1个，可移动，可打开关闭  |
| 自动高/<br>低温跟踪 | 1、全屏最高温或最低温跟踪<br>2、分析对象（区域）最高温和最低温跟踪  |
| 数码放大         | 1-8连续变倍   |
| 发射率校正        | 有，材料表+自定义（0.01~1.00）  |
| <b>报警</b>    |   |
| 全屏最<br>高温报警  | 有   |
| 全屏最<br>低温报警  | 有   |

| 设置             |                             |
|----------------|-----------------------------|
| 调色板            | 6条                          |
| 图像调节           | 自动/手动                       |
| 参数修正           | 辐射率（用户自定义或辐射率表），<br>反射温度，距离 |
| 报警设置           | 有                           |
| 图像存储/<br>回放/删除 | 支持（内置存储）                    |
| 时间日期设置         | 是                           |
| 全屏模式           | 是                           |
| 日期和时间格式        | 是                           |
| 屏幕亮度           | 可手动调节滑块                     |
| 恢复出厂设置         | 是                           |
| 删除所有<br>保存图像   | 是                           |
| 本机帮助           | 是                           |
| 距离单位           | 米/英尺                        |
| 温度单位           | °C/°F                       |
| 语言             | 2种, 简体中文、英文（后期可扩展）          |
| 自动关机           | 关, 5分钟, 20分钟                |

|           |   |
|-----------|---|
| 图片存储      |   |
| 存储介质      | 内部存储，至少存储500张（存储空间满了后，提醒用户删除文件以保存更多的文件） |
| 图片格式      | 标准JPG，带温度数据                             |
| 单独保存可见光图片 | 可选择640*480/320*240两种分辨率保存               |
| 可见光       |   |
| 分辨率       | 640*480                                 |
| 视场角       | 68*52                                   |
| 焦距        | 定焦                                      |
| 灯         | 有（开，关，闪光灯）                              |
| 通信接口与按键   |   |
| 数据传输      | Type-C，用于与PC传输本机图片数据                    |
| WIFI      | 有，可连接移动终端传输图片                           |
| 按键        | 电源，拍照                                   |
| 电源系统      |   |
| 电池类型      | 内置可充电锂电池，不可拆卸                           |
| 电池工作时间    | ≥2H（不打开WIFI情况）                          |
| 充电方式      | DC5V电源适配器充电，PC USB端口充电                  |
| 充电时间      | ≤1.5H                                   |
| 电源管理      | 永不/5分钟/20分钟                             |

| 环境参数 |   |
|------|---|
| 工作温度 | -10°C~50°C                                |
| 存储温度 | -40°C~70°C                                |
| 湿度   | 95%                                       |
| 封装   | IP54                                      |
| 跌落   | 1m (裸机) (裸机六面跌落)                          |
| 冲击   | 30g 11ms (IEC 60068-2-27)                 |
| 震动   | 10HZ~150HZ~10HZ 0.15mm<br>(IEC 60068-2-6) |
| 认证   | CE, FCC, ROHS,                            |
| 配件   |   |
| 配件清单 | 软包、彩盒、腕带、说明书、快速指南、<br>数据线、资料下载卡           |

## 三. 观测

### 3.1 主菜单的打开和关闭



说明：点击屏幕任意空白地方都可以调出主菜单；如果用户在选择中不同的菜单项，则该菜单应该保持粘性。



说明：主菜单显示在屏幕底部。

1. 点击其中一个图标以查看菜单
2. 点击图标菜单栏外关闭

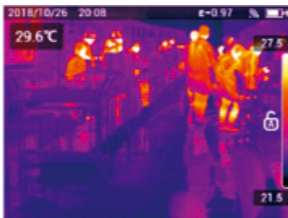
## 3.2 拍照



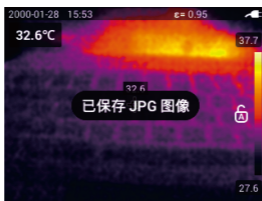
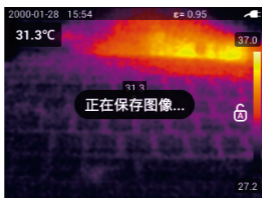
说明：

1. 按下设备拍照按钮进行拍照；
2. 双击屏幕进行拍照；

### ● 3.2.1 保存图像



说明：当用户按下拍照按钮或者通过双击屏幕获取照片后，将自动保存图片。

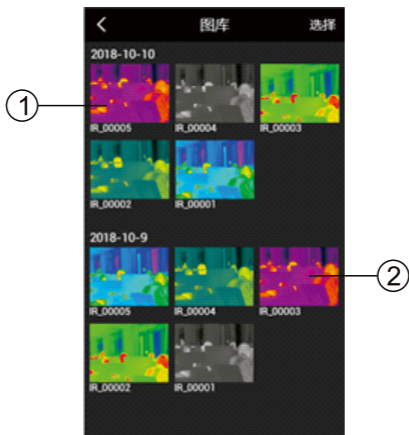


### ● 3.2.2 查看图像



说明：点击屏幕空白地方调出主菜单；选择“相册”图标，进入图库界面。

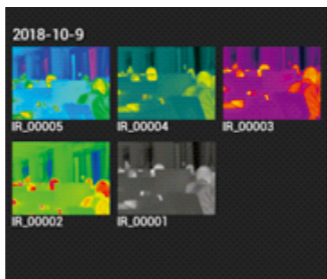




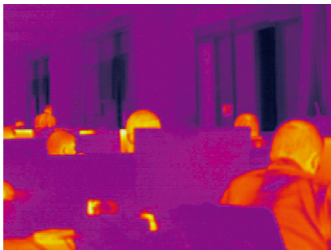
说明：点击"<"图标，关闭图库界面，返回到实时拍摄模式；

点击"选择"图标，进入相片编辑模式；

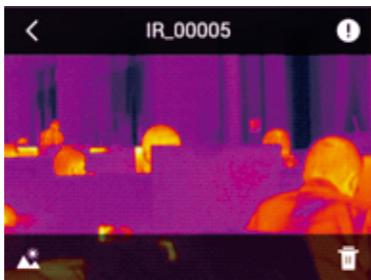
1. 按拍摄日期从近到远排列
2. 图库侧面滚动条图像指示是否还有更多图像，如果滚动条不显示，说明保存图像数少于4张，或更少张；设备内存至少存储500张，存储满后自动提醒用户删除。



说明：点击图库中任意一张图片，进行全屏查看




说明：全屏模式



说明：进入全屏模式后，点击屏幕任意地方，弹出红外图片编辑模式。

点击“”进入相片信息；

点击“”，切换可见光照片；


点击“”删除，删除当前相片；

点击菜单以外屏幕任意地方，即进入全屏模式；

点击“<”退出按钮，退出当前编辑模式，返回到图库界面；

### 3.2.2.1 查看红外图片信息




说明：进入单张图片编辑模式后，选择  图标，查看图片信息。

体现当前拍摄的时间、日期、辐射率、大小、反射温度、距离、镜头和分辨率信息。

点击“<”按钮，返回到上一级目录。

### 3.2.2.2 删除单张照片

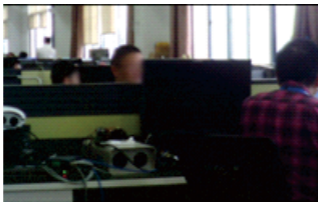



说明：进入单张照片编辑模式后，点击  按钮，屏幕弹出“确定删除”菜单。

点击“删除”按钮，将图像从设备里面永久删除，并返回到内存库；

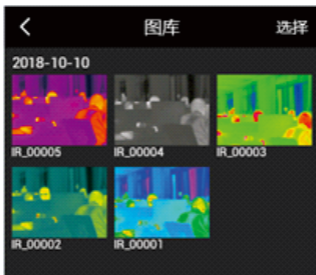
点击“取消”按钮，以取消此对话框消息并返回到先前屏幕；

### 3.2.2.3 查看可见光图片

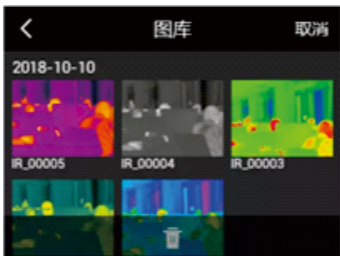


说明：进入单张照片编辑模式后，点击图标，进入查看可见光全屏模式，在可见光模式下点击屏幕切换到红外图片模式

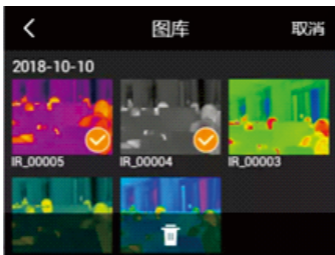
### ● 3.2.3 删除多张照片




说明：进入图库界面，可以进行多张照片删除操作。点击“选择”菜单，“选择”变成“取消”按钮。

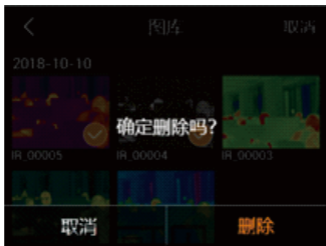



说明：屏幕下方弹出“垃圾桶”标志。



说明：点击所需删除的图片，选中的图像具有  选中标志。如用户在选中的图片中减少一张或几张，轻点照片以取消选中。

点击“<”按钮，返回到上一级目录。

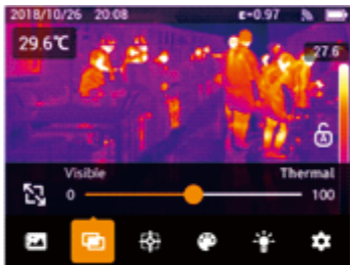


说明：选中将要删除的照片点击“”图标，会弹出确定删除框，

点击“删除”，删除所选照片并返回到图库。点击“取消”返回选择界面。

## 四.测温方式

### 4.1 红外融合滑块



说明：点击屏幕空白地方调出主菜单；  
选择“模式”图标，进入红外融合滑块界面。  
左右移动滑块，调整红外融合百分比（英文：percentage of image blending）

默认设置为100%

说明：红外融合滑块

当滑块一直向左，它显示可见光图像


当滑块向右移动，显示100%的热像图

当滑块显示在中间。红外融合百分比为50%时，进入融合模式。




## 4.2 画中画模式



说明：点击  图标，设备进入画中画模式。

## 五. 分析对象



说明：点击屏幕空白地方调出主菜单；  
点击菜单上的“”调出分析对象菜单。


## 5.1 点分析对象




说明：添加点对象

进入分析菜单，选择“”图标，弹出中心点标记。



说明：点击“”可添加另外一个点。按住该点不放，可任意拖动位置。

点击图标，可使其居中。

点击图标，可以清除分析对象。

## 5.2 矩形分析对象




说明：添加矩形分析对象


进入分析对象菜单，选  图标，可进行添加一个矩形分析对象操作。



说明：长按矩形区域不放，弹出矩形分析对象编辑菜单显示最高温、最低温或者最高温和最低温的状态；


按住矩形区域不放，可任意拖动其位置。

单击“矩形”区域，点击“”，可进行居中操作。

点击  图标，可以清除分析对象。


## 5.3 清除分析对象



说明：进入分析对象菜单，选中“”图标，弹出“删除所有分析对象”对话框。  
 点击“清除”按钮，返回到实时拍摄模式，并且屏幕上已删除所有分析对象；  
 点击“取消”按钮，返回到上一级目录；

## 六. 调色板

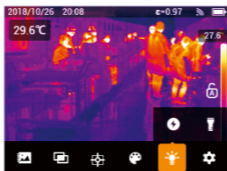



说明：点击屏幕空白地方调出主菜单；  
 点击菜单上的“”调出调色板菜单。




说明：点击调色板的缩略图来改变图像的调色板，点击屏幕空白区域，返回到拍照实时模式  
 默认设置为：铁红

## 七. 照明灯




说明：点击屏幕空白地方调出主菜单；  
点击菜单上的“”调出照明灯菜单。




说明：进入照明灯设置界面，点击“”闪光灯图标，  
开启或关闭闪光灯  
默认设置为：关闭状态



说明：进入照明灯设置，点击图标，开启或关闭照明灯。  
默认设置为：关闭状态

## 八. 设置

点击屏幕空白地方调出主菜单；  
点击菜单上的“”图标，调出设置菜单。



说明：设置列表

用户可按任何项目查看，并配置该项目的设置  
右边是长链表的滚动指示器

点击“<”返回图标，设备返回至实时拍摄模式。

## 8.1 测量参数

### ● 8.1.1 辐射率

| <   | 辐射率  |
|-----|------|
|     | 0.96 |
|     | 0.97 |
| 自定义 | 0.98 |
| 材料  | 0.99 |
|     | 1    |

说明：进入设置菜单，选择“辐射率”选项，进入设置值界面。范围为：0.01-1.00

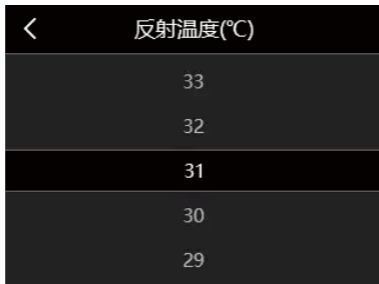
分别有材料清单和自定义辐射率选项

进入自定义辐射率设置值页面，用手指向上或向下滑动右边数值增加或减少辐射率，数值设置步进为：0.01，数值范围为：0.01-1.00。

默认设置值为：0.95

点击“<”返回图标，返回到上一级目录。

## ● 8.1.2 反射温度



说明：进入设置菜单，选择“反射温度”选项，进入设置值界面

范围为：-20°C~400°C

用手指向上或向下滑动数值，可以减少或增加反射温度，数值设置步进为：1°C

默认设置为：23°C

点击“<”返回图标，返回到上一级目录。



### ● 8.1.3 距离



说明：进入设置菜单，选择“距离”选项，进入设置值界面

范围为0.5-3m,

用手指向上或向下滑动数值，可以减少或增加距离，  
数值设置步进为：0.1m；

默认设置为：1m

点击“<”返回图标，返回到上一级目录。

## 8.2 设备设置

### ● 8.2.1 测温范围



说明：测温范围有三个选项。

-20°C~150°C，100°C~400°C，自动切档

当用户选择“自动切档”时，设备会根据目标的温度选择温度区间。

### ● 8.2.2 保存可见光



说明：进入设置菜单，选择“保存可见光”选项，分别有640\*480、320\*240选项。

默认值：320\*240

### ● 8.2.3 自动关机



说明：进入设置菜单，选择“自动关机”选项  
分别有“永不”、“5分钟”、“20分钟”三个菜单。

默认设置为：永不

点击“<”返回图标，返回到上一级目录。

## ● 8.2.4 时间日期



## 说明：

显示设备的不同日期格式

选择日期样式及时间样式。

点击"设置日期"行来调整日期

时-----用手指滑动将数值增加或减少1，

一旦数字达到12或24，它将从1开始循环

分-----用手指滑动将数值增加或减少1，

一旦数字达到59，它将从00开始循环

月-----用手指滑动将数字增加或减少1，

一旦数字达到12. 它将从1开始循环

日-----用手指滑动将数字增加或减少1，

一旦数字达到31（或30或28，取决于当

前选择的月份），它将从1开始循环

年-----用手指滑动将数值增加或减少1。

默认时间样式为设置为：24H

默认日期样式为设置为：YYYY-MM-DD

## ● 8.2.5 全图温度标记



说明：进入设置菜单，选择“全图温度标记”选项  
点击“最高温”或者“最低温”行，选择打开或关闭  
工厂默认设置为：关闭状态  
点击“<”图标，返回到上一级目录



说明：设置全图温度标记以后返回到拍照模式，屏幕上弹出最高温、最低温标记

## ● 8.2.6 报警设置



说明：进入设置菜单，选择“报警设置”选项，进入报警设置菜单点击“高温报警”或“低温报警”行，选择打开或关闭高温或低温报警

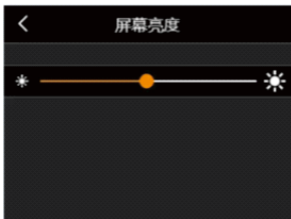
打开报警后，可以点击相应的“报警参数”行，进入报警温度参数设置，手指向上或向下滑动可以减小或增加温度，数值设置步进为：1°C

默认设置为：关闭状态

点击“<”图标，返回到上一级目录

如果打开“高温报警”或“低温报警”，返回到实时图像界面后，当测量目标温度高于高温报警温度点或低于低温报警温度点时，会弹出报警

## ● 8.2.7 屏幕亮度



说明：进入设置菜单，选择"屏幕亮度"选项，进入亮度设置菜单左右移动滑块，调整屏幕背景亮度（向左=low 向右=High）工厂默认设置为50%  
点击"<"图标，返回到上一级目录

## ● 8.2.8 语言选择



说明：点击语言，显示语言信息列表，选择对应的语言  
默认语言：中文（简体）  
点击“<”图标，返回到上一级目录



### ● 8.2.9 温度单位



说明：点击温度单位, 显示温度单位信息, °C和°F  
默认设置为：°C  
点击“<”按钮, 返回到上一级目录。

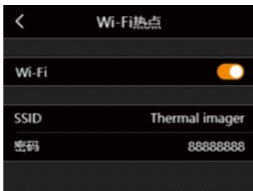
### ● 8.2.10 距离单位



说明：点击距离单位, 显示距离单位信息, 分别为：米和英尺  
默认设置为：米  
点击“<”按钮, 返回到上一级目录。

## ● 8.2.11 wifi热点

名称: Thermal imager 密码: 88888888



说明: 点击wifi热点设置菜单, 进入wifi热点设置  
点击wifi开启或关闭图标, 已打开wifi热点名称  
开启wifi设置菜单, 显示热点名称及密码。  
点击“<”图标, 返回到上一级目录。

## 8.3 系统

### ● 8.3.1 升级



说明:

点击升级设置菜单, 进入升级界面。选择“程序升级”

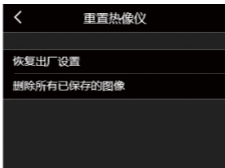
注意:

请把最新安装包放在/GCameraExt/Update/目录下,  
点击开始安装。



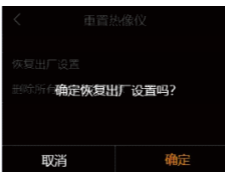
说明：点击确定，即进入升级界面。

### ● 8.3.2 重置热像仪



说明：点击“重置热像仪”设置菜单, 分别有“恢复出厂设置”及“删除所有已保存的图像”两个选项。

点击<图标，返回到上一级目录



说明：点击“恢复出厂设置”弹出“恢复确认对话框”

### ● 8.3.3 版本信息



说明：点击“版本信息”设置菜单  
分别有：设备的软件版本、内核版本、固件版本、存储  
信息点击“<”返回图标，返回到上一级目录。

### ● 8.3.4 帮助

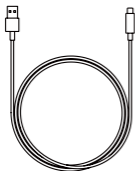


说明：选择“帮助”菜单  
分别有“分析对象”、区域最高温最低温设置、  
level span功能设置

## 九. 恢复默认值参数

|                              |            |
|------------------------------|------------|
| percentage of image blending | 100%       |
| 调色板                          | 铁红         |
| 辐射率                          | 0.95       |
| 反射温度                         | 23°C       |
| 湿度                           | 60%        |
| 距离                           | 1m         |
| 保存可见光分辨率                     | 320*240    |
| 自动关机                         | Off        |
| 时间                           | 24H        |
| 日期格式                         | YYYY-MM-DD |
| 全图温度标记                       | Off        |
| 报警设置                         | Off        |
| 屏幕亮度                         | 50%        |
| 语言                           | 中文         |
| 温度单位                         | °C         |
| 距离单位                         | m          |
| Wifi 热点                      | 关闭         |

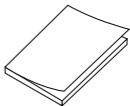
## 十. 配件



USB数据线



腕带



说明书



软包



资料下载卡

**优利德<sup>®</sup>**

**优利德科技(中国)股份有限公司**

地址:中国广东省东莞松山湖高新技术产业  
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## Preface

Thank you for purchasing the new UTi120T thermal imager. In order to use this product safely and correctly, please read this manual thoroughly, especially the *Precautions* part.

After reading this manual, it is recommended to keep the manual at an easily accessible place, preferably close to the device, for future reference.

## Limited Warranty and Liability

Uni-Trend guarantees that the product is free from any defect in material and workmanship within one year from the purchase date. This warranty does not apply to damages caused by accident, negligence, misuse, modification, contamination or improper handling. The dealer shall not be entitled to give any other warranty on behalf of Uni-Trend. If you need warranty service within the warranty period, please contact your seller directly.

Uni-Trend will not be responsible for any special, indirect, incidental or subsequent damage or loss caused by using this device.

## 1.Precautions

**Please strictly observe the following precautions at any time.**

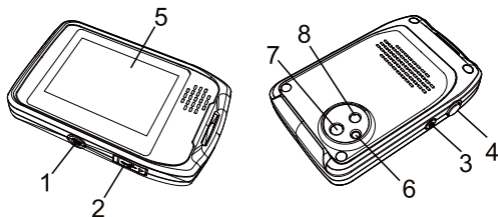
- When using the device, please keep it as stable as possible to avoid violent shaking.
- Do not use or store the device in an environment that exceeds the operating/storage temperature.
- Do not point the device directly at high-intensity sources of thermal radiation, such as the sun, lasers, spot welders, etc.
- Do not expose the device to dust or moisture. When using it in a humid environment, avoid splashing water on the device.
- When the device is not in use, place it and all the accessories in a special packing box.
- Do not block the holes in the device.
- Do not knock, throw or shake the device or accessories to avoid damage.
- Do not disassemble the device by yourself, as this may result in device damage and loss of warranty.
- Do not use solvents or similar liquids for the device or cable to avoid damage.
- This device is powered by a Li-ion battery. To use the battery safely, observe the following issues strictly:
  - 1) Do not attempt to open or disassemble the battery at any time.
  - 2) Do not expose the battery to high temperatures or near high temperature objects.
  - 3) Do not short the positive or negative pole of the battery.
  - 4) Do not expose the battery to moisture or water.
  - 5) If the battery leaks and the liquid enters the human eye, flush the eye with clean water immediately and perform medical care.

- 6) Charge the battery as described in this manual, and follow the charging procedures and precautions. Incorrect charging can cause the battery to become hot, damaged or even cause injury.
- Please follow the measures below to wipe the device:
    - 1) Non-optical surface: Wipe the non-optical surface of the device with a clean, soft cloth if necessary.
    - 2) Optical surface: When using the device, please avoid smudging the optical surface of the lens. In particular, avoid touching the lens with your hand, as the sweat will leave marks on the lens glass and may corrode the optical coating on the glass surface. When the optical surface of the lens is contaminated, use professional lens paper to wipe it carefully.

#### **Precautions for battery use:**

- The battery can be recharged repeatedly, but it is a consumable product. If the standby time of the device is found to be greatly reduced, please replace it with the original battery provided by Uni-Trend.
- It is normal for the surface to get hot if the device works for a long time, especially in high temperature environments. In this case, stop charging and move the device to a cool place. Avoid prolonged contact with the hot surface.
- When charging the device, it is recommended to use only the original battery and USB cable provided by Uni-Trend.
- Battery charging time varies with temperature conditions and battery usage.
- When the battery is low, the device will pop up low battery indication.
- When the battery is too low, the device will automatically shut down.
- If the device does not respond when the power button is pressed, It indicates that the battery is exhausted. Charge the device for 10 minutes before starting it.

## 2. Appearance



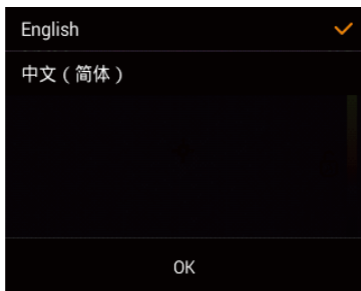
| Item | Description  |
|------|--|
| 1    | Tripod mounting hole: Standard 1/4-20 UNC  |
| 2    | USB (Type-C) port: The device can be charged by a PC and power bank during use and transfer pictures or videos to a PC via the USB cable.  |
| 3    | Power button: Press and hold the button for 2s to turn on/off the device. Press the button to keep the device on and turn the display off. |
| 4    | Picture capture button: Press to capture an image.   |
| 5    | LCD touch screen: 3.5 inches (display resolution: 320x240 pixels; IR resolution: 120×90 pixels)  |
| 6    | LED light  |
| 7    | Infrared camera lens   |
| 8    | Visible light camera lens  |

## ● 2.1 Charging Screen



When the device is being charged in the power off state, the screen will display the charging status for 5s. Press the power button to display the charging status again.

## ● 2.2 Language Selection at First Startup



Select the desired language and tap “OK” to confirm. Future language changes need to be made in the settings menu.

## ● 2.3 Screen Description



| Item | Description   |
|------|---|
| 1    | Center point temperature: The unit can be switched between °C and °F. |
| 2    | Date: Displays year, month, and day. The format can be set.           |
| 3    | Time: Displays hour and minute. The format can be set.                |
| 4    | Emissivity: The value can be set.                                     |
| 5    | Wi-Fi hotspot status: It is displayed when the Wi-Fi hotspot is on.   |
| 6    | Battery status: Displays the battery level.                           |
| 7    | Selection for adjusting level span: Auto or manual                    |
| 8    | T Max (maximum temperature) and T Min (minimum temperature)           |

## 3. Observation

### ● 3.1 Open/Close the Main Menu



Tap on any blank space on the screen to open/close the main menu.

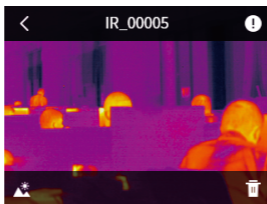
### ● 3.2 Capture Image







Press the picture capture button or double click on the screen to capture the current image, and the image will be saved automatically.

### ● 3.3 View Image

The device can store 500 images at least. The images are organized by the date they were captured with the newest images at the top. The scroll bar on the side of the gallery indicates if there are more images. If it is not displayed, the number of saved images is less than 4. When the memory is full, the device will automatically remind users to delete.



#### To open an image in full screen mode:



1. Open the main menu.
2. Tap the  icon to enter the gallery interface.
3. If needed, touch the screen and slide up or down to view all the images.
4. Tap on a thumbnail to view the image in full screen mode.  
The ,  and  icons briefly appear on the screen. Tap on the image to make them appear or disappear.



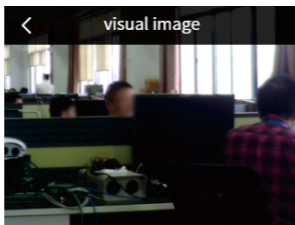
### 3.3.1 View Information of an Image




| IR_00005              |            |
|-----------------------|------------|
| Date                  | 2018-10-10 |
| Time                  | 18:30      |
| Emissivity            | 0.98       |
| Volume                | 20kb       |
| Reflected Temperature | 30°C       |
| Distance              | 10m        |
| Lens                  | xx         |
| Resolution            | 320*240    |

1. Open an image in full screen mode.
2. Tap  to view detailed information of the image.
3. Tap  to return to the previous directory.

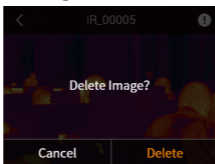
### 3.3.2 View an Image in Visible Light Mode




1. Open an image in full screen mode.
2. Tap  to view the image in visible light mode.
3. Tap on the image to return to the full screen mode.

## ● 3.4 Delete Images



### 3.4.1 Delete an Image



1. Open an image in full screen mode.
2. Tap  and "Delete Image?" will pop up on the screen.
3. Tap "Delete" to delete the image.
4. Tap "Cancel" to return to the full screen mode.

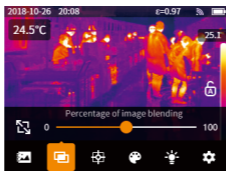
### 3.4.2 Delete Multiple Images




1. Enter the gallery interface.
2. Tap "Select" and the "Select" becomes "Cancel".
3.  pops up at the bottom of the screen.
4. Tap the images to select them and the selected images has a check mark.
5. If needed, tap an image again to clear the selection.
6. Tap  and the dialog box asking whether to delete the images will pop up.
7. Tap "Delete" to delete the images.
8. Tap "Cancel" to return to the selection interface.

## 4. Temperature Measurement Method

### ● 4.1 Image Blending Slider



1. Open the main menu.
2. Tap the  icon to enter the image blending slider interface.
3. Move the slider left or right to adjust the percentage of image blending (100% by default).

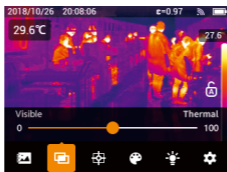
#### Note:


When the percentage of image blending is 0%, pure visible light image is displayed.

When the percentage of image blending is 100%, pure infrared image is displayed.

When the percentage of image blending is 50%, the device enters the blending mode.

### ● 4.2 Picture in Picture Mode



Tap the  icon and the device will enter the picture in picture mode.





## 5. Analysis Object



Open the main menu and tap the  icon to bring up the analysis object menu.


### ● 5.1 Point Analysis Object




1. Tap the  icon in the analysis object menu and the center point marker will pop up.
2. If needed, tap  again to add another point. Hold down the point to drag its position at will. Tap the  icon to center the point. Tap the  icon to clear the analysis object.

## ● 5.2 Rectangular Analysis Object



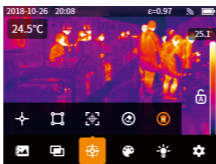
1. Tap the  icon in the analysis object menu to add a rectangular analysis object.
2. Tap on the rectangular area without release to turn on/off the maximum/minimum temperature indicator for the rectangular analysis object.


Hold down the rectangular area to drag its position at will.

Tap on the rectangular area and tap  to center the rectangular analysis object.

Tap  to clear the analysis object.


## ● 5.3 Clear All Analysis Objects



1. Tap the  icon in the analysis object menu and the dialog box asking whether to clear all analysis objects will pop up.
2. Tap "Clear" to clear all analysis objects.
3. Tap "Cancel" to return to the previous interface.


## 6. Palette




1. Open the main menu.
2. Tap the  icon to bring up the palette menu.
3. Tap on a palette thumbnail to change the palette of the image (iron red by default).
4. Tap on the blank area of the screen to exit.

## 7. Light




Open the main menu and tap the  icon to bring up the light menu.



Tap the  icon in the light menu to turn on/off the flash (off by default).



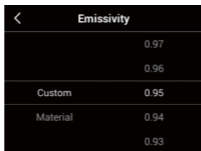
Tap the  icon in the light menu to turn on/off the lamp (off by default).

## 8. Settings


Open the main menu and tap the  icon to bring up the Settings menu.

### ● 8.1 Measurement Parameters

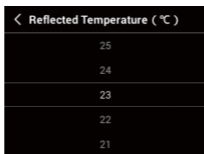
#### 8.1.1 Emissivity




| Emissivity |      |
|------------|------|
|            | 0.97 |
|            | 0.96 |
| Custom     | 0.95 |
| Material   | 0.94 |
|            | 0.93 |

1. Tap the Emissivity option in the Settings menu to enter its setting interface. The Custom and Material options are provided.
2. When Custom is selected, slide the value on the right up or down with your finger to increase or decrease the emissivity (step: 0.01; range: 0.01~1.00; default: 0.95).
3. Tap  to return to the previous directory.

#### 8.1.2 Reflected Temperature

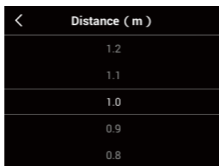



| Reflected Temperature (°C) |    |
|----------------------------|----|
|                            | 25 |
|                            | 24 |
|                            | 23 |
|                            | 22 |
|                            | 21 |

1. Tap the Reflected Temperature option in the Settings menu to enter its setting interface.
2. Slide the value up or down with your finger to increase or decrease the reflected temperature (step: 1°C; range: -20°C~400°C; default: 23°C).
3. Tap  to return to the previous directory.



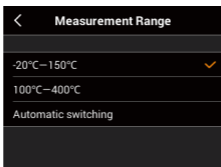
### 8.1.3 Distance




1. Tap the Distance option in the Settings menu to enter its setting interface.
2. Slide the value up or down with your finger to increase or decrease the distance (step: 0.1m; range: 0.5m~3m; default:1m).
3. Tap  to return to the previous directory.

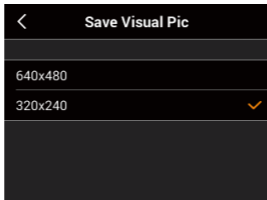
## ● 8.2 Device Settings


### 8.2.1 Measurement Range



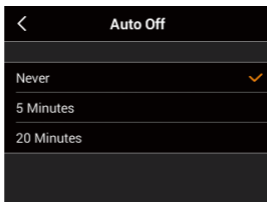
1. Tap the Measurement Range option in the Settings menu to enter its setting interface.
2. Tap to select the desired option from -20°C~150°C, 100°C~400°C and Automatic Switching.
3. When Automatic Switching is selected, the device will select the temperature range according to the target temperature.
4. Tap  to return to the previous directory.


## 8.2.2 Save Visible Light Image



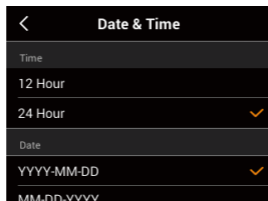
1. Tap the Save Visual Pic option in the Settings menu to enter its setting interface.
2. Tap to select the desired option from 640×480 and 320×240 (default: 320×240).
3. Tap  to return to the previous directory.


## 8.2.3 Auto Power Off



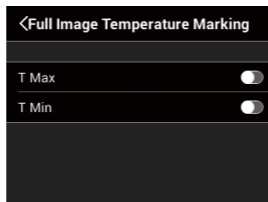
1. Tap the Auto Off option in the Settings menu to enter its setting interface.
2. Tap to select the desired option from Never, 5 Minutes and 20 Minutes (default: Never).
3. Tap  to return to the previous directory.

## 8.2.4 Date and Time




1. Tap the Date & Time option in the Settings menu to enter its setting interface.
2. Tap to select the desired time format from 12 Hour and 24 Hour (default: 24 Hour).
3. Tap to select the desired date format from YYYY-MM-DD, MM-DD-YYYY and DD-MM-YYYY (default: YYYY-MM-DD).
4. Tap the Set Time line to adjust the date and time.
5. Slide the values up or down with your finger to increase or decrease them by 1.
6. Tap  to return to the previous directory.

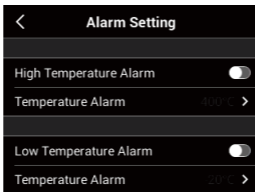
## 8.2.5 Full Image Temperature Marking






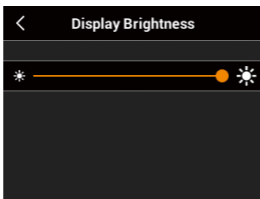
1. Tap the Full Image Temperature Marking option in the Settings menu to enter its setting interface.
2. Tap the T Max/T Min line to turn on/off the maximum/minimum temperature indicator for the full image (default: off).
3. Tap  to return to the previous directory.


## 8.2.6 Alarm Setting



1. Tap the Alarm Setting option in the Settings menu to enter its setting interface.
2. Tap the High/Low Temperature Alarm line to turn on/off the high/low temperature alarm (default: off).
3. Tap the corresponding Temperature Alarm line after turning on the alarm to set the alarm temperature.
4. Slide the value up or down with your finger to increase or decrease the temperature by 1°C.
5. Tap  to return to the previous directory.


## 8.2.7 Display Brightness



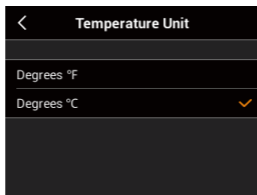
1. Tap the Display Brightness option in the Settings menu to enter its setting interface.
2. Move the slider left (low) or right (high) to adjust the display brightness (default: 50%).
3. Tap  to return to the previous directory.


## 8.2.8 Language



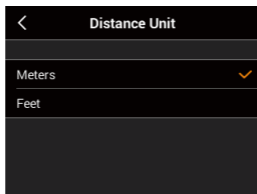
1. Tap the Language option in the Settings menu to enter its setting interface.
2. Tap to select the desired language (default: Simplified Chinese).
3. Tap  to return to the previous directory.


## 8.2.9 Temperature Unit



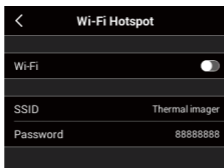
1. Tap the Temperature Unit option in the Settings menu to enter its setting interface.
2. Tap to select °C or °F (default: °C).
3. Tap  to return to the previous directory.


## 8.2.10 Distance Unit



1. Tap the Distance Unit option in the Settings menu to enter its setting interface.
2. Tap to select Meters or Feet (default: Meters).
3. Tap  to return to the previous directory.

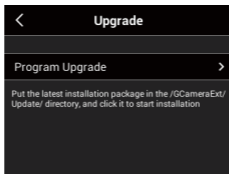
## 8.2.11 Wi-Fi Hotspot



1. Tap the Wi-Fi Hotspot option in the Settings menu to enter its setting interface. The SSID (Thermal imager) and Password (88888888) are displayed.
2. Tap the Wi-Fi line to turn on/off the Wi-Fi hotspot (default: off).
3. Tap  to return to the previous directory.

## ● 8.3 System

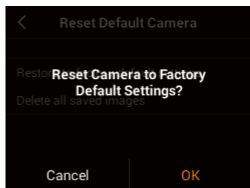
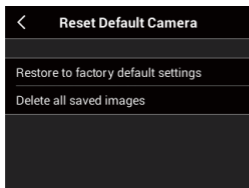
### 8.3.1 Upgrade



1. Tap the Upgrade option in the Settings menu to enter the upgrade interface.
2. Tap the Program Upgrade line and the dialog box asking whether to upgrade the program will pop up.
3. Tap “OK” to perform the upgrade.

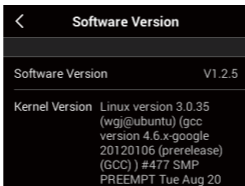
**Note:** Put the latest installation package in the /GCameraExt/Update/ directory, and click on it to start installation.


### 8.3.2 Reset the Thermal Imager



1. Tap the Reset Default Camera option in the Settings menu to enter its setting interface. The Restore to factory default settings and Delete all saved images options are provided.
2. When Restore to factory default settings is selected, the dialog box asking whether to restore factory settings will pop up.
3. Tap “OK” to perform the restore.

### 8.3.3 Version Information



1. Tap the Software Version option in the Settings menu to view the software/kernel/firmware version and storage information of the device.
2. Tap  to return to the previous directory.



### 8.3.4 Help



Tap the Help option in the Settings menu to view the help information about the analysis object menu and level span setting.

## 9. Specifications

| Model                     | UTi120T       |
|---------------------------|---------------|
| Image and optics          |               |
| IR resolution             | 120×90 pixels |
| Field of view (FOV)       | 50°×38°       |
| Minimum imaging distance  | 0.5m          |
| Focal distance            | 2.28mm        |
| Spatial resolution (IFOV) | 7.6 mrad      |

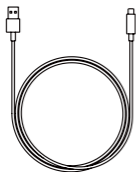
|                           |  |
|---------------------------|--|
| Aperture                  | F1.13  |
| Infrared image frame rate | 25Hz   |
| Focus                     | Focus free   |
| Detector                  |  |
| Detector type             | UFPA   |
| Wavelength range          | 7.5 $\mu$ m~14 $\mu$ m   |
| Pixel size                | 17 $\mu$ m   |
| Image display             |  |
| Display type              | LCD  |
| Display resolution        | 320x240 pixels   |
| Screen size               | 3.5"   |
| Touch screen              | Capacitive touch screen  |
| Image mode                |  |
| Infrared image            | Yes  |
| Visible light image       | Yes  |
| Full image blending       | Yes  |
| Picture in picture        | Yes  |
| Measurement               |  |
| Temperature range         | -20°C~150°C, 100°C~400°C<br>(automatic switching)  |
| Accuracy                  | $\geq 0^{\circ}\text{C}$ : $\pm 2^{\circ}\text{C}$ or $\pm 2\%$ of reading,<br>whichever is greater<br>$< 0^{\circ}\text{C}$ : $\pm 5^{\circ}\text{C}$ or $\pm 5\%$ of reading,<br>whichever is greater<br>(operating temperature:<br>5°C~30°C; distance: 0.5m~3m) |

| Measurement analysis                      |  |
|---|--|
| Measurement point                         | In addition to the center point, another point can be added, moved and cleared.    |
| Measurement area                          | A rectangular area can be added, moved and cleared.                                |
| Auto tracking of high/low temperature     | 1. Maximum/minimum temperature tracking for the full image                         |
|   | 2. Maximum/minimum temperature tracking for the rectangular analysis object (area) |
| Digital zoom                              | 1~8 continuous zoom  |
| Emissivity correction                     | Yes, Material and Custom (0.01~1.00)   |
| Alarm                                     |  |
| High temperature alarm for the full image | Yes  |
| Low temperature alarm for the full image  | Yes  |
| Settings                                  |  |
| Standard palettes                         | 6  |
| Image adjustment                          | Auto/Manual (level span)   |
| Parameters correction                     | Emissivity, reflected temperature, distance  |
| Alarm setting                             | Yes  |
| Image saving, viewing and deleting        | Yes (internal storage)   |

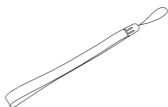
|                                     |   |
|-------------------------------------|---|
| Date and time setting               | Yes   |
| Full screen mode                    | Yes   |
| Date and time formats               | Yes   |
| Display brightness                  | Manually adjustable                             |
| Factory reset                       | Yes   |
| Delete all saved images             | Yes   |
| Help information                    | Yes   |
| Distance unit                       | m/ft  |
| Temperature unit                    | °C/°F   |
| Language                            | Simplified Chinese, English                     |
| Auto power off                      | Never, 5 minutes, 20 minutes                    |
| Picture storage                     |   |
| Storage medium                      | Internal storage for 500 images minimum         |
| Picture format                      | Standard JPG with temperature data              |
| Visible light image saving          | At 640×480/320×240 pixels                       |
| Visible light                       |   |
| Resolution                          | 640×480 pixels                                  |
| Field of view (FOV)                 | 68°×52°   |
| Focus                               | Fixed focus                                     |
| Light                               | Yes (on, off, photoflash)                       |
| Communication interface and buttons |   |
| Data transmission                   | Type-C port used to transfer image to PC        |
| Wi-Fi                               | Yes (used to transfer image to mobile terminal) |

|                                 |   |
|---------------------------------|---|
| Buttons                         | Power button, picture capture button  |
| <b>Battery</b>                  |   |
| Battery type                    | Internal rechargeable Li-ion battery (non-removable)                        |
| Battery life                    | ≥ 2 hours (without Wi-Fi)   |
| Charging mode                   | Charged by DC 5V power adapter/USB interface of PC                          |
| Charging time                   | ≤ 1.5 hours   |
| <b>Environmental parameters</b> |   |
| Operating temperature           | -10°C~50°C  |
| Storage temperature             | -40°C~70°C  |
| Humidity                        | 95%   |
| Enclosure rating                | IP54  |
| Drop                            | 1m  |
| Shock                           | 30g 11ms (IEC 60068-2-27)   |
| Vibration                       | 10Hz~150Hz~10Hz 0.15mm (IEC 60068-2-6)                                      |
| Certification                   | CE, FCC, ROHS   |
| <b>Accessories</b>              |   |
| Standard accessories            | Soft case, gift box, hand strap, user manual, USB cable, data download card |

## 10. Accessories



USB cable



Hand strap



User manual



Soft case



Data download card

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