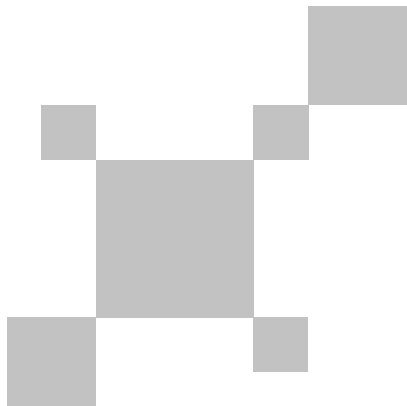


UNI-T®



P/N:110401111181X



UTi260M

红外热成像手机模组说明书
Thermal Imager User Manual

UTi260M
红外热成像手机模组说明书
(4p-16p)

UTi260M
Thermal Imager
User Manual
(18p-30p)

序言

尊敬的用户：

您好！感谢您选购全新的UTi260M红外热成像手机模组，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，建议您将此说明书妥善保管，与红外热成像仪配件一同放置或者放在您随时可以查阅的地方，以便在将来的使用过程中查阅。

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1. 性能指标

传感器	非制冷氧化钒
测温档位	低温档 (-20°C~150°C) 高温档 (0°C~550°C) (自动切挡)
测温模式	工业测温 人体测温
发射率	0.95 (默认) 0.01~1.00
热成像像素	256*192 (49152)
热成像像素大小	12μm
红外光谱带宽	8~14μm
伪彩(色板)	铁红、彩虹、黑热、白热、红热、熔岩、高对比度彩虹
视场角(热成像)	56.0° (H) × 42.2° (V)
IFOV	3.8mrad
镜头焦距	3.2mm
调焦模式	定焦(免调焦)
灵敏度	<50mK @25°C
帧频率	25Hz
测温范围	-20°C~550°C (-4°F~1022°F)
测温精度	工业测温: 0°C~550°C, ±2°C/±2%取大值
	人体测温: 30°C~40°C, ±0.5°C (常温无风环境)
温度分析	点、线、矩形(每类最多添加3个)
测温显示	中心点温度、高/低温追踪
测温单位	摄氏度(默认)、华氏度
高低温报警	有
图像模式	热成像、融合(与手机端数码相机图像融合)、画中画
图像抓取模式	拍照、录像
图像保存格式	JPG
图像浏览	可旋转、涂鸦标记、温度分析、删除、保存
图像存储	手机端存储

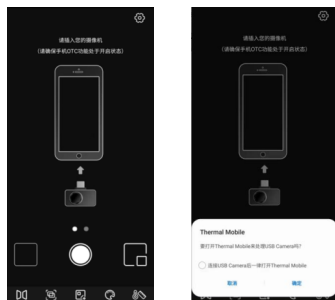
设备通讯	Type-C USB (公头)
语言	中文/English
手机APP	有 (支持Google Play)
手机系统	Android 6.0以上
认证	FCC CE (EN61326-1)
工作温度	-10°C~50°C (14°F~122°F)
存储温度	-20°C~60°C (-4°F~140°F)
工作湿度	10%~95%RH (非冷凝)
工作功耗	<350mW (常温 典型值)

2. 连接说明

打开APP, 若未检测到设备时, 则弹出“选择型号”的界面。

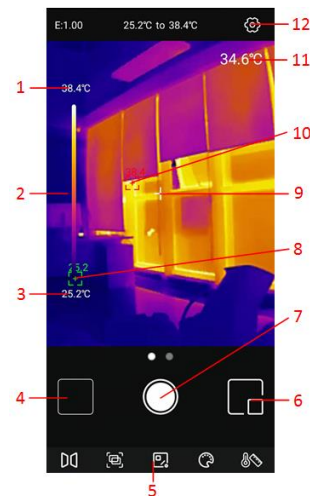


选择设备型号“UTi260M”后, 进入如下图页面, 此时可进入“相册”、“设置”页面, 其余功能不可用。插入设备, 弹出提示, 点击确定连接设备。




3. 显示说明

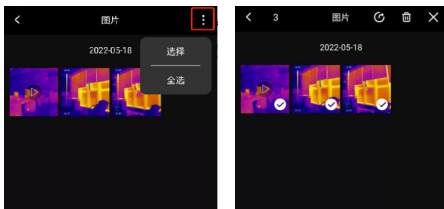
设备启动后初始状态如下图所示, 色板默认为铁红, 主页面分为以下部分。



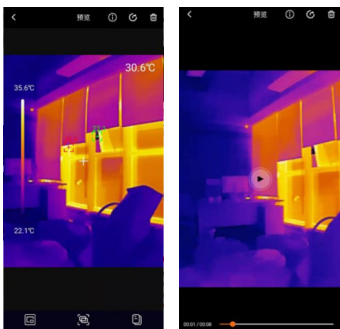
序号	描述	序号	描述
1	温度上限	7	拍照/录像开始/录像结束
2	温度分布色条	8	当前温度最小点
3	温度下限	9	中心点
4	图片	10	当前温度最大点
5	菜单栏	11	当前中心点温度值
6	画中画	12	设置



4. 图片

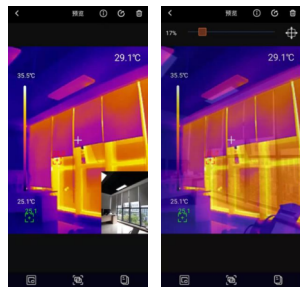
打开APP之后，点击“图片”进入图片/视频界面，可以对图片/视频进行查看，点击选择图标 ，可以选择所需要的图片图片进行分享和删除操作。



点击图片，可以进入图片查看界面，可以对图片/视频进行查看信息（包括图片的文件名、日期、时间、分辨率）/分享/删除/画中画/融合/预览以及编辑等操作（注意：视频不可进行编辑，只可进行播放）。








若要操作的图片在拍摄时打开了画中画或融合，在图片查看界面查看该图片时，点击画中画图标 ，会在右下角出现画中画的小窗口；点击融合图标 ，可查看融合情况，拖动上方滑块，可以调节可见光与红外光的融合比例（界面上与可见光融合功能相似，功能上保持一致）。

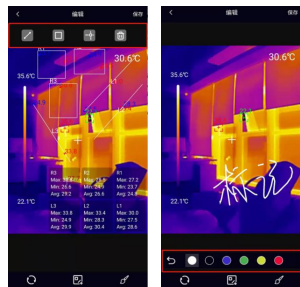


若要操作的图片在拍摄时没有打开画中画和融合，点击画中画的图标或融合的图标，会弹出提示“没有可见光！”。



在图片查看界面，点击编辑图标 进入编辑界面，可以对当前图片进行编辑操作。具体编辑项目为：

- 1) 旋转图片，点击图标 即可改变图片方向。
- 2) 添加分析对象，点击图标 出现如左下图界面，界面上与添加分析对象相似，功能上保持一致，可以对图片进行分析对象的移动/添加/删除等功能的操作。
- 3) 画笔，点击图标 ，出现如右下图界面，可以对图片进行不同颜色的标记，点击图标 可以撤回上一条标记（保存后的图片，点击图标 依然可以撤回上一条标记）。




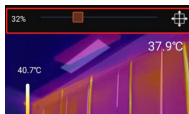
5. 主页面功能

5.1 镜头转换


点击图标, 可见光部分会转换手机的前/后置摄像头, 红外光部分会进行镜像切换。

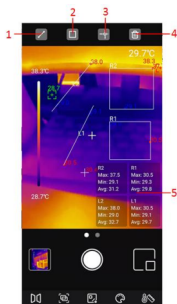
5.2 融合

当点击图标, 上方会出现调节融合的滑块, 拖动上方滑块, 可调节可见光与红外光的融合比例。拖动画面, 可以手动调节融合距离。




5.3 分析对象

点击图标, 进入添加分析对象的界面, 可以进行线/矩形/点的测温分析对象的添加/移动/删除的操作, (注意: 若需要删除已添加的所有测温分析对象, 点击删除, 若只需要删除单个测温分析对象, 则拖动测温分析对象到边缘直至消失即可), 每类测温分析对象最多可添加三个。在主页面添加的测温分析对象, 在编辑页面依然可以进行删除处理。




序号	描述
1	添加线测温
2	添加矩形区域测温
3	添加点测温
4	删除
5	测温分析栏


5.3.1 线测温

点击图标, 在主页面可任意画一条线测温分析对象, 并在界面下面展开一个半透明的信息栏, 用于显示添加的分析对象的温度信息。若拖动变换线的位置, 温度信息栏中该线的温度信息同步更新。


5.3.2 区域测温

点击图标, 可任意画一条矩形区域测温分析对象, 并在界面下面展开一个半透明的信息栏, 用于显示添加的分析对象的温度信息。若拖动变换区域的位置, 温度信息栏中该区域的温度信息同步更新。


5.3.3 点测温

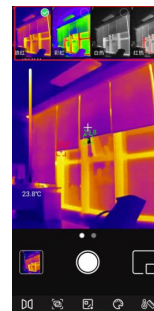
点击图标, 可任意画一个点测温分析对象, 并在其旁边显示该点的温度值。若拖动变换点的位置, 该点的温度值同步更新。

5.3.4 删除


点击图标, 弹出提示“确认清除全部目标?”, 选择“是”, 可以删除当前画面的全部测温分析对象。

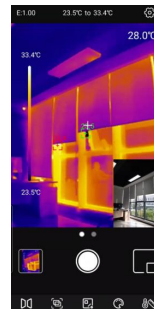
5.4 色板

在主界面, 点击图标, 会在上方显示可选择的色板, 包括铁红、彩虹、白热、红热、黑热、熔岩、高对比度彩虹等7种不同的色板。



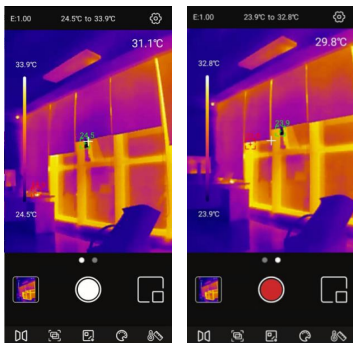
5.5 画中画

点击主界面图标, APP将打开手机摄像头, 并且显示在画中画的小窗口, 再次点击图标, 可取消画中画。

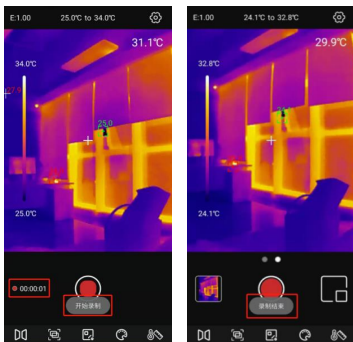


5.6 拍照/录像使能切换

左/右滑动拍照键，可实现拍照/录像的切换，照片与录像都会自动保存到图片中。




左右滑动进入录像模式后，点击录像按钮，开始录像，下方提示“开始录制”，左下方显示录像时长。再次点击，结束录像，提示“录制结束”。



5.7 自动打快门

运行状态，设备会根据使用环境变化或测量目标温度不同，自动进行打快门校正。

6. 设置

点击图标可以进入设置界面，可以进行语言选择、测温模式、温度单位、温度标记、高低温报警、发射率、测温距离（M），环境温度、帮助、关于等功能的操作。



一级菜单	二级菜单
语言选择	可切换语言：中文、English
测温模式	可选两种测温模式： 工业测温模式、人体测温模式
温度单位	可切换单位：℃、℉
温度标记	可打开或关闭温度标记： 最高温度标记（开关） 最低温度标记（开关） 中心点标记（开关）
高低温报警	可打开或关闭高低温报警（开关） 打开报警开关后可调节报警值： 温度预警最大值、温度预警最小值
发射率	0.01~1.00可调
测温距离	0.05~5.00可调
环境温度	0~50℃可调
帮助	可查看说明书
关于	展示当前APP版本及产品型号

7. 注意事项

- 请勿将有溶解性或类似的液体用于设备，这可能会导致设备的损坏。
- 在使用设备时请尽量保持稳定，避免剧烈晃动。
- 请勿暴力拆卸产品，以免造成不可逆的损坏。
- 请避免硬物接触设备的镜头，以免对镜头造成损伤。
- 请勿将产品镜头指向高强度能量源（包括太阳、激光发射设备以及这些设备的反射源），否则可能对产品的测温精度产生不利影响，并可能损害或永久损坏产品的红外探测器。
- 请在不使用时，将产品装入携行盒中。
- 该产品介绍所使用的商品图文信息，实际产品因批次不同，材质和细节上偶有微小差异，敬请谅解，请以收到具体实物为准；
- 页面中提供的实验数据为理论值，均来自优利德公司内部实验室，仅供参考；客户不可将其作为下单购物的参考依据。特此说明！如有任何疑问可联系客服，进行详细咨询，谢谢！

本说明书内容若有变更，恕不另行通知

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邮编：523 808

<http://www.uni-trend.com.cn>

Preface

Thank you for purchasing this brand new UTi260M thermal imager. In order to use this product safely and correctly, please read this manual thoroughly, especially the safety notes. 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.

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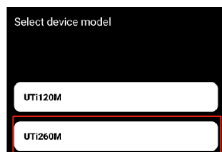
1. Specifications

Sensor	Uncooled vanadium oxide
Range switching	Low temperature (-20°C~150°C), high temperature (0°C~550°C) (auto switching)
Modes	Industrial, human body
Emissivity	0.95 (default) 0.01~1.00
IR resolution	256*192 (49152)
Pixel size	12um
Infrared spectral bandwidth	8~14um
Palettes	Iron Red, Rainbow, Gray Scale, Red Hot, Black White, Lava, High-Contrast Rainbow
Field of view (FOV)	56.0° (H) X 42.2° (V)
I FOV	3.8mrad
Lens focal length	3.2mm
Focusing mode	Focus-free
Thermal sensitivity	<50mK @25°C
Frame rate	25Hz
Range	-20°C~550°C (-4°F~1022°F)
Accuracy	Industrial: 0°C~550°C, ±2°C/±2% (whichever is greater)
	Human body: 30°C~40°C, ±0.5°C (room temperature without wind)
Analysis objects	Point, line, rectangle (up to three figures can be added for each type)
Temperature display	Center point temperature, high/low temperature tracking
Unit	°C (default)/°F
High/low temperature alarm	√
Image modes	Thermal, PiP, blending
Image capture	Take photos or videos
Image format	JPG

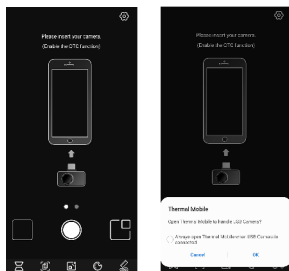
Image viewing	Rotate/brush/temperature analysis/delete/save
Image storage	Store in the smartphone
Data communication	Type-C USB (male connector)
Language	English/Chinese
Smartphone APP	√ (support Google Play)
Smartphone system	Android 6.0 or newer version
Certifications	FCC CE (EN61326-1)
Operating temperature	-10°C~50°C (14°F~ 122°F)
Storage temperature	-20°C~60°C (-4°F~ 140°F)
Operating humidity	10%~95%RH (non-condensing)
Power consumption	<350mW (room temperature, typical value)

2. Connection

Open the APP. If the device is not detected, the device selection interface will pop up.

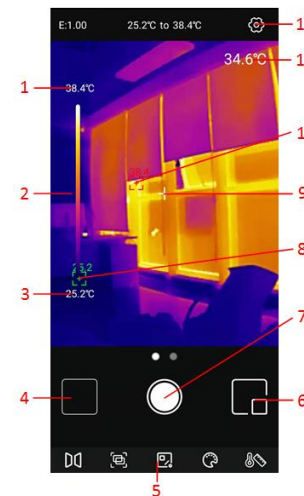


Select "UTi260M" to enter the following interface. At this time, users can still enter the "Photos" and "Setting" pages, but other functions are unavailable. Insert the device into the phone interface, and the screen will pop up a dialog box. Select "OK" to connect the device.




3. Indicators/Icons

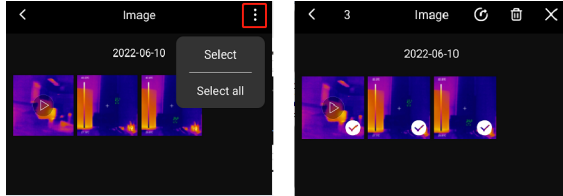
The initial state of the device after startup is shown in the figure below. The palette is Iron Red by default, and the main page is divided into the following sections.



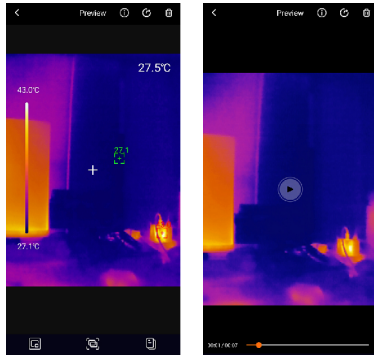
No.	Description	No.	Description
1	Upper limit	7	Start taking photos/videos/finish taking videos
2	Range bar	8	Lowest temperature spot
3	Lower limit	9	Center point
4	Photos	10	Highest temperature spot
5	Menu bar	11	Center point temperature
6	PiP	12	Settings



4. Photos

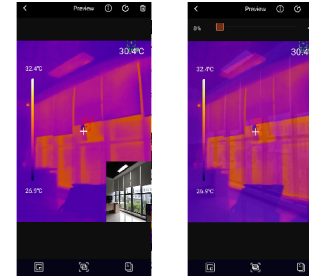
After opening the APP, tap "Photos" to enter the photos/videos interface. Tap  to select photos/videos for sharing or deleting.



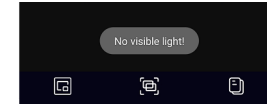
Tap a photo to enter the photo viewing interface. Users can view the photos/videos information (filename, date, time, resolution) or share/delete/ PiP/blending/ preview/edit the photos/videos in this interface. (Note: Videos cannot be edited.)









If the PiP or blending function is turned on when capturing a photo, when viewing this photo, tap the icon , a small PiP window will appear in the lower right corner. Users can tap  to check the blending situation, and drag the upper slider to adjust the blending ratio of visible light and infrared light.

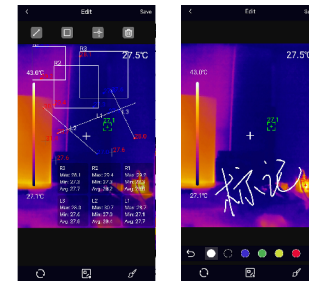


If the PiP or blending function is not turned on when capturing a photo, when users tap the PiP or blending icon, a prompt "No visible light!" will pop up.




Tap the edit icon  in the photo viewing interface to enter the editing interface. Users can edit the current photo. The specific editing operations are as follows:

- 1) Rotate the photo: Tap the icon  to change the photo direction.
- 2) Add an analysis object: Tap the icon  to display the interface as shown in the lower left. These analysis objects can be moved/added/deleted.
- 3) Brush: Tap the icon  to display the interface as shown in the lower right. Users can mark a photo in different colors. Tap  to withdraw the previous operation. (After saving a photo, Tap  can still withdraw the previous operation.)




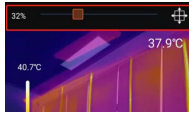
5. Main Interface Operations

5.1 Switch Camera


Tap the icon  to switch the front/rear camera of the mobile phone, and the infrared light image will be mirrored.

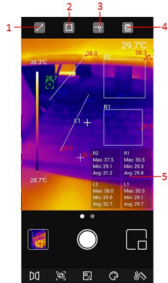
5.2 Blending

When users tap the icon , a slider for adjusting blending will appear at the top. Dragging the slider can adjust the blending ratio of visible light and infrared light. Drag the screen to manually adjust the blending distance.




5.3 Analysis Objects

Tap the icon  to enter the interface for adding analysis objects, as shown in the figure below. Users can add/move/delete analysis objects (point/line/rectangle). (Note: Tap the delete icon to delete all added analysis objects. To delete a single analysis object, drag the object to the edge until it disappears.) Up to three figures can be added for each type. Analysis objects added in the main interface can be deleted in the edit interface.




NO.	Description
1	Add a line
2	Add a rectangle
3	Add a point
4	Delete
5	Temperature analysis area


5.3.1 Line

Tapping the icon  can add a line analysis object and expand a semi-transparent information bar at the bottom of the interface to display the temperature information of the added object. If users drag a line to change its position, the temperature information of the line will be updated synchronously.


5.3.2 Area

Tapping the icon  can add a rectangle analysis object and expand a semi-transparent information bar at the bottom of the interface to display the temperature information of the added object. If users drag a rectangle to change its position, the temperature information of the rectangle will be updated synchronously.


5.3.3 Point

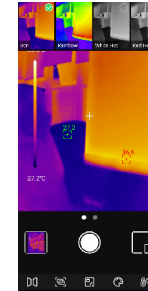
Tapping the icon  can add a point analysis object and its temperature will show next to it. If users drag a point to change its position, the temperature of the point will be updated synchronously.

5.3.4 Delete


Tap the delete icon  and select "Yes" to delete all added analysis objects.

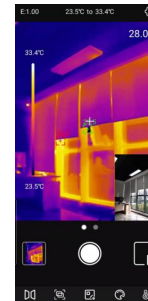
5.4 Palettes

In the main interface, tap the icon , and the optional palettes will show on the top of the screen. This APP provides Iron Red, Rainbow, Gray Scale, Red Hot, Black White, Lava, High-Contrast Rainbow palettes for users to choose according to different scenes or preferences.



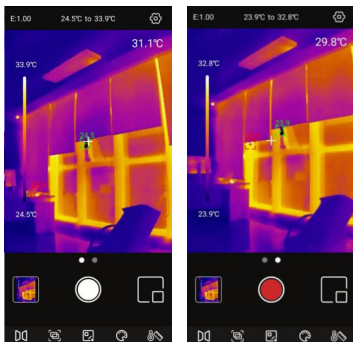
5.5 PiP

Tap the icon  on the main interface, the APP will open the phone camera and display a small PiP window. Tap the icon again to cancel the PiP.

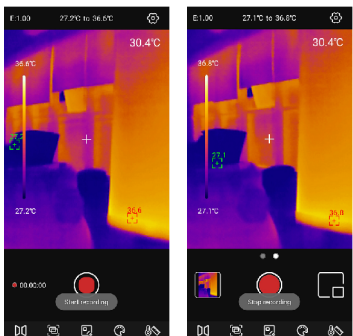


5.6 Switch Photo/Video Function

Slide the camera button left/right to switch between taking photos/videos. Both photos and videos will be automatically saved in Photo.




Slide the camera button left/right to enter the recording mode. Click the recording button to start recording, and the recording duration will be displayed in the lower left corner. Click the button again to end the recording.

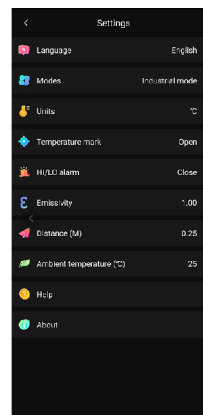


5.7 Auto Call Shutter

The device will automatically call the shutter according to the changing environment or the different temperature of the measured target.

6. Settings

Tap the icon  to enter the setting interface. Users can perform functions such as selecting language/mode/temperature unit/temperature mark, setting high and low temperature alarm/emissivity/measurement distance (M)/ ambient temperature, and viewing help/about.



Main menu	Submenu
Language	English/Chinese
Mode	Industrial/human body mode
Temperature unit	°C/°F
Temperature mark	The following temperature marks can be turned on or off: HI temperature LO temperature Centre point
HI/LO alarm	The HI/LO alarm can be turned on or off. After turning on the alarm, the HI/LO value can be adjusted.
Emissivity	0.01~1.00
Measurement distance	0.05~5.00
Ambient temperature	0~50°C
Help	View the user manual
About	Display current APP version and product model

7. Cautions

- Do not use soluble liquids on the device, as this may cause device damage.
- When using the device, please try to keep it stable and avoid violent shaking.
- Please do not violently disassemble the product to avoid irreversible damage.
- Please avoid hard objects contacting the device lens.
- Please do not point the product lens at high-intensity energy sources (including the sun, laser emission equipment and the reflection sources of these equipment), otherwise it may affect the measurement accuracy, and damage the infrared detector of the product.
- Please put the product into the carrying box when it is not used.
- Due to different batches, the materials and details of actual products may be slightly different from the graphic information. Please refer to the goods received.
- The experimental data in the manual are theoretical values and all from Uni-Trend's internal laboratories, for reference only. Customers cannot use them as bases for placing orders. If users have any questions, please contact customer service.

The contents of this manual are subject to change without prior notice.

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