CHAUVIN®
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快速操作指南

C.A 70N

红外热成像仪

Measure up

TABLE OF CONTENTS

PRODUCT INTRODUCTION

The product is a handheld thermal infrared camera for temperature measurement. It has 10,800 effective IR pixels; is configured with laser, illuminating lights and visible light; can be connected to PCs and TF cards, and meets various use requirements.

IMPORTANT

This is a general manual covering multiple thermal camera of a product line, so some functions and descriptions in the manual may not apply to specific thermal camera.

PRECAUTIONS

Please always follow the following precautions strictly:

1. Keep the device as stable as possible to prevent shaking violently.
2. Do not use the device at operating temperatures not allowed nor place it in an environment at a storage temperature not allowed.
3. Do not align the device with strong thermal emitters, such as the sun, lasers and spot welders.
4. Do not expose the device in a dusty or moist environment. Prevent water from splashing onto the device when using it in an environment with water. Cover the lens when not using the device.
5. Place the device and all its accessories into a special packing box when not using it.
6. Do not block any hole on the device.
7. Do not knock at, throw or vibrate the device or its accessories so as to prevent damages.
8. Please do not disassemble the device so as to prevent it from being damaged possibly and you from losing warranty.
9. Do not use the TF card for other purposes.
10. Do not use the device in an environment exceeding its operating temperature so as to prevent possible damages.
11. Do not apply dissolvable or similar liquid to the device and cables so as to prevent possible damages.
12. The device is powered by a lithium-ion battery so users must follow the following precautions strictly in order to use it

safely:

- Never try to open or dismantle the battery.
- Do not place the battery in a high temperature environment or nearby a high temperature object.
- Do not short-circuit the battery.
- Do not put the battery in a moist environment or in the water.
- Once the liquid leaked from the battery enters eyes, flush the eyes with clear water immediately and take corresponding medical cares.
- Please charge the battery as introduced in the manual and follow the charging steps and precautions. Wrong charging may heat or damage the battery or even cause injuries.
- Pull out the battery if the device will not be used for a long time.

13. Wipe the device as described below:
    - Non-optical surfaces: Use clean and soft cloth to wipe non-optical surfaces of the thermal camera when necessary.
    - Optical surfaces: Please avoid staining the optical surface of lens when using the thermal camera, especially avoid touching the lens with hands since the sweat on the hands may leave traces on the lens and corrode the optical coating on the lens surface. When the optical lens surface is stained, wipe it with special lens wiping paper.

Precautions for use of batteries:

1. The battery can be charged repeatedly. However, the battery is a vulnerable part. If standby time of the device is largely

shortened, please replace its battery with an original one provided by the company.

2. If the device operates for a long time especially at high temperatures, its surface will warm up normally. When it is hot, please stop charging it and move it to the shade. Please avoid touching hot surfaces for a long time.
3. When charging the device, it is suggested to use original batteries and charge cables provided by the company.
4. Battery charging time varies with temperatures and its use.
5. When the battery level is low, the system will give a low battery level prompt.
6. When the battery level is too low, the system will be turned off automatically.
7. If the device gives no response when the power button is pressed, the battery has been run out and the device can be launched only after being charged with an original charger for more than 10 minutes.

CHAPTER 1 LIST OF ITEMS

.TF .card

Thermal camera (including battery)

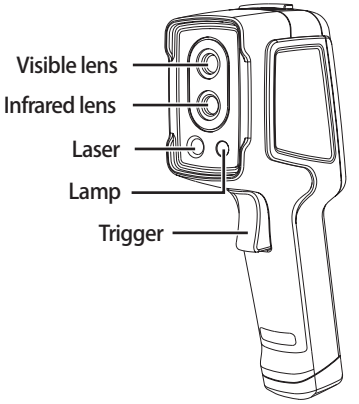
Adapter(X1)

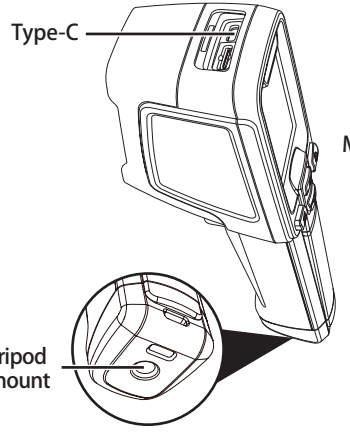
USB .cable

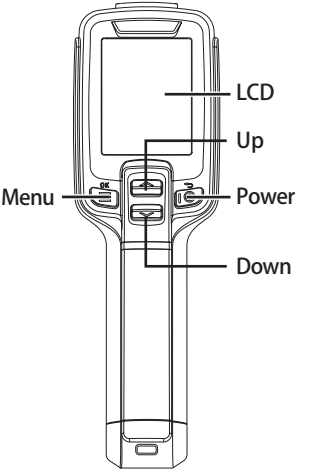
Wristband

Quick .Start .Guide.

CHAPTER 2 PRODU CT COMPONENT DESCRIPTION







CHAPTER 3 BASIC OPERATIONS

3.1 Photo-taking

In the real-time observation interface, short press the "Trigger" Key to take a photo, and then press the " " key to save the photo or the " " key to discard it according to the prompt on the interface.

3.2 View and deletion of pictures

1. Short press the " " key to access the menu interface.
2. Select the photo column by pressing " ." key.
3. Short press the " " key to display the photo file interface.
4. Short press the " " key to view the photos, and display another photo by pressing Up Down key (if necessary).

5. When necessary, short press the " " key in the photo preview interface to delete a photo.

3.3 File export

1. Open the USB cover on the top of the device.
2. Connect the USB cable with the computer.
3. Access the disk folder of the computer, select the photo to be exported, copy it to the computer, and view the photo file through the analysis software.
4. After the copy is done, disconnect the USB cable from the computer.

3.4 Setting temperature measurement parameters

The temperature measurement parameters will affect the accuracy of the measured temperature, so these parameters should be set before the measurement.

1. Emissivity varies with the measured object. User can select a commonly used physical emissivity preset in the machine or customize it.
2. Reflected temperature: The temperature influence of the ambient temperature on the currently observed object.

CHAPTER 4 OTHERS

4.1 Resetting and formatting S D card

1. Access the Setup Menu-Reset and press the " .  . " key to confirm the reset.
2. This function will restore the machine settings to the factory defaults. Please operate carefully.
3. Access the Setup Menu-Formatting SD Card, and press the " .  ." key to confirm the formatting.
4. This function will wipe the SD card, please operate carefully.

4.2 Emissivities of common objects

Material	Emissivity	Material	Emissivity
Wood	0.85	Black paper	0.86
Water	0.96	Polycarbonate	0.8
Brick	0.75	Concrete	0.97
Stainless steel	0.14	Copper oxide	0.78
Adhesive tape	0.96	Cast iron	0.81
Aluminum plate	0.09	Rust	0.8
Copper plate	0.06	Gypsum	0.75
Dark aluminum	0.95	Paint	0.9
Human skin	0.98	Rubber	0.95
Asphalt	0.96	Soil	0.93
PVC plastics	0.93		

CHAPTER 5 FREQUENTLY ASKED QUESTIONS

Symptom	Cause	Measures
Boot failure	Low battery.	Reuse battery after charging.
	Plug of external power source is not inserted properly.	Pull the plug and reinsert it in proper place.
	Battery life expires.	Replace with new battery.
IR image is not clear.	Lens have misted up or been polluted.	Clean lens with specialized equipment.
Visible light image is not clear.	Surrounding environment is too dark.	Provide lighting.
	There is vapor in front of visible light or the visible light is polluted.	Clean the front-end of visible light with specialized equipment.
Temperature measurement is inaccurate.	Set the relevant parameters for temperature measurement incorrectly.	Change parameter setting or restore the default parameters directly.
	Long time no calibration	To ensure accurate temperature measurement result, we recommend you to send back the thermal camera for calibration once a year.

产品简介

本产品是工具型手持测温红外热像仪, 它具有10, 800个有效红外像素点, 配置激光, 照明灯和可见光, 可外接PC机, TF卡, 可满足不同场合下的使用需求。

重要说明

本手册为通用手册, 可能涵盖一个产品线中的多款热像仪, 这意味着某些功能和说明并不适用于您特定型号的热像仪。

注意事项

在任何时候都请严格遵守下列注意事项：

1.. 在使用设备时请尽量保持稳定，避免剧烈晃动。

2.. 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。

3.. 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。

4.. 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。在不使用仪器时应盖上镜头盖。

5.. 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。

6.. 不要堵塞设备上的孔。

7.. 不要敲打，扔掷或震动仪器和配件，以免造成损坏。

8.. 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。

9.. 避免将TF卡挪作他用。

10.. 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。

11.. 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。

12.. 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：

- 在任何时候都不要尝试打开或拆解电池。
- 不要将电池置于高温环境或靠近高温物体。
- 不要使电池的正负极短路。
- 不要将电池置于潮湿环境或水中。

- 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。
- 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。
- 长时间不使用机器时，请拔出电池。

13.. 擦拭本设备时请遵照以下措施：

- 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。
- 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：

1.. 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。
2.. 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。
3.. 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。
4.. 电池充电时间会随温度条件和电池使用状况而变化。
5.. 当电池电量较低时，系统会弹出低电提示。
6.. 当电池电量过低时，系统会自动关机。
7.. 若按下电源键，设备没有任何反应，表明电池电量已耗尽，需要使用原装充电器充电10分钟以才可以启动设备。

第一章 物品清单

TF卡

热像仪(包含电池)

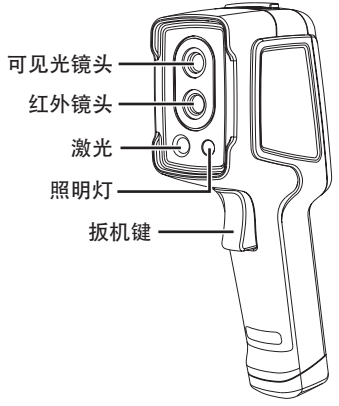
适配器

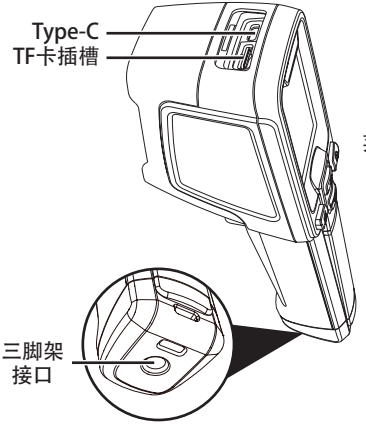
USB数据线

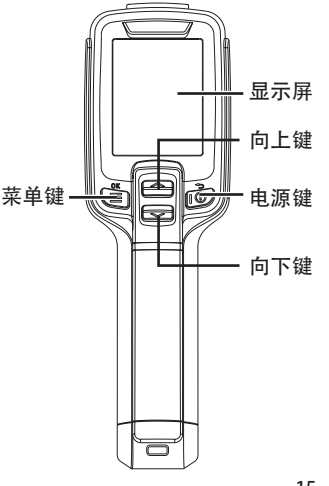
腕带

说明书

第二章 产品部件







第三章 基本操作

3.1 拍照

在实时观测界面，短按“扳机键”获取图片，根据当前界面提示按下“.[菜单].”键以保存图像或按下“.[电源].”键以放弃图像。

3.2 查看及删除图片

1.. 短按“.[菜单].”键，进入菜单界面。
2.. 通过按“.[上].[下].”选择图片栏。
3.. 短按“.[菜单].”键进入图片文件界面。
4.. 短按“.[菜单].”键查看图片，若需切换图片，可通过上下键切换。
5.. 在图片预览界面，短按“.[菜单].”键可删除图片。

3.3 导出文件

1.. 打开设备顶部的usb盖。
2.. 使用usb数据线与电脑连接。

3.. 进入电脑的磁盘文件夹，选择需要导出的图片，拷贝到电脑上，通过分析软件查看图片文件。

4.. 拷贝完成后，断开usb数据线和电脑的连接。

3.4 设置测温参数

测温参数会影响测温结果的准确性，测温前需要提前设置好测温参数：

1.. 发射率：根据被测目标的发射率调节，本机中有常用物理的发射率，也可以自定义。

2.. 反射温度：当前观测的目标环境温度对目标的温度影响。

第四章 其他

4.1 重置设置及格式化SD卡

1.. 进入设置菜单-重置设置, 按“.[≡].”键确认重置。
2.. 此功能会将机器恢复为出厂状态。请谨慎操作。
3.. 进入设置菜单-格式化SD卡, 按“.[≡].”键确认格式化SD卡。
4.. 此功能会将SD卡内容清空, 请谨慎操作。

4.2 常见物体发射率

材质	发射率
木	0.85
水	0.96
砖	0.75
不锈钢	0.14
胶带	0.96
铝板	0.09
铜板	0.06
黑铝	0.95
人体皮肤	0.98
沥青	0.96
PVC塑料	0.93

材质	发射率
黑纸	0.86
聚碳酸	0.8
混凝土	0.97
氧化铜	0.78
铸铁	0.81
锈	0.8
石膏	0.75
油漆	0.9
橡胶	0.95
土壤	0.93

第五章 常见问题汇总

症状	原因	措施
无法开机	电池电量不足	重新充电后再使用电池
	外接电源的插头没插到位	拔出电源插头, 重新插入并推到位
	电池寿命已到	更换新电池
红外图像不清晰	镜头蒙上水气或被污染	使用专业设备清洁镜头
可见光图像不清晰	环境太暗	采取适当照明措施
	可见光前端有水汽或被污染	使用专业设备清洁可见光前端
测温不准	与测温相关的参数设置不对	更改参数设置, 或直接恢复默认参数值
	长时间没有校准	为获取精确的测温结果, 我们建议您每年将热像仪送回校准一次

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