RX-350

Generic RX-350 Infrared Thermal Imager User Manual

Model: RX-350

1. Introduction

The RX-350 Infrared Thermal Imager is a high-performance device designed for precise temperature measurements using infrared technology. It is ideal for monitoring areas where identifying temperature variations is crucial. The RX-350 offers excellent thermal resolution, allowing detection of even small temperature differences on objects and surfaces.

This manual provides essential information for the safe and effective operation of your thermal imager. Please read it thoroughly before use and keep it for future reference.

The RX-350 Infrared Thermal Imager in operation, displaying temperature readings and thermal imaging capabilities. This image highlights its ability to automatically capture high and low temperatures within a range of -20°C to 400°C, with an infrared thermal image resolution of 80x60 pixels.

2. Safety Information

Always observe the following safety precautions to prevent injury and avoid damage to the device:

- Do not point the camera directly at high-intensity light sources (e.g., sun, lasers) as this may damage the infrared sensor.
- Avoid exposing the device to extreme temperatures, humidity, or corrosive environments.
- Do not attempt to disassemble or modify the device. Refer all servicing to qualified personnel.
- Use only the provided charger and battery type.
- Keep the device out of reach of children.

3. Product Overview

3.1. Components and Controls

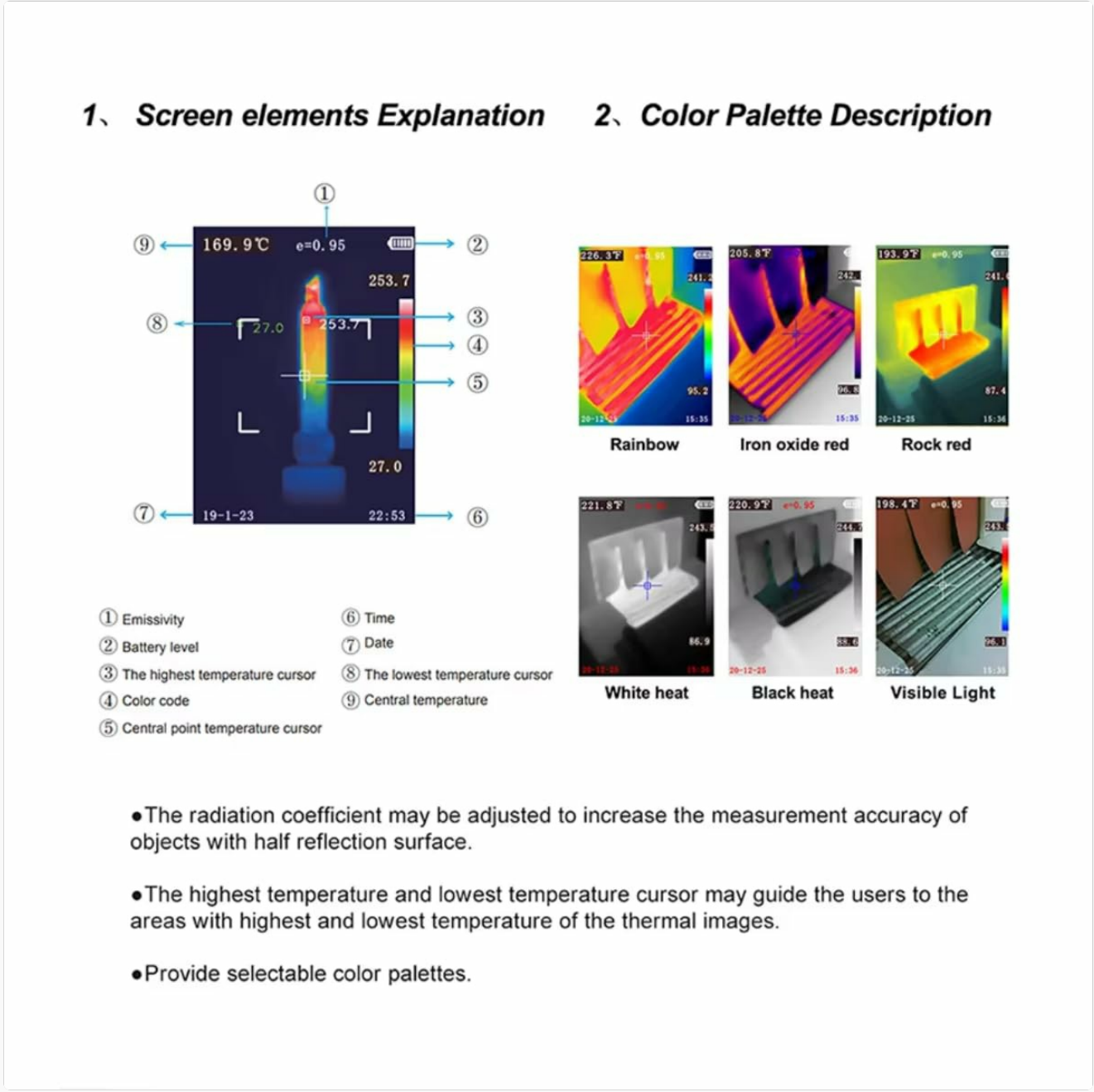
This diagram illustrates the key components and controls of the RX-350 Thermal Imager. It shows the Micro USB port, infrared lens, digital camera lens, LED light, camera screen, Power ON/OFF key, Menu key, Selection/Enter key, Navigation keys (Up, Down, Left, Right), Trigger, and Wrist Strap. The dimensions are also indicated as 8.7 inches in height, 1.8 inches in width, and 1.7 inches in depth.

Familiarize yourself with the following parts:

- **Infrared Lens:** Captures thermal radiation.
- **Digital Camera Lens:** Captures visible light images for fusion mode.
- **LED Light:** Provides illumination for visible light photography in dark environments.
- **Camera Screen:** Displays thermal and visible images, menu, and data.
- **Power ON/OFF Key:** Turns the device on or off.
- **Menu Key:** Accesses the device's settings and options.
- **Selection/Enter Key:** Confirms selections in the menu.
- **Navigation Keys (Up, Down, Left, Right):** Navigates through menu options.
- **Trigger:** Used to capture images or videos.

- **Micro USB Port:** For charging and data export to a computer.
- **Wrist Strap:** For secure handling.

3.2. Screen Elements Explanation



This image provides an explanation of the screen elements and available color palettes on the RX-350 Thermal Imager. Key screen indicators include Emissivity, Battery level, Highest temperature cursor, Color code, Central point temperature cursor, Time, Date, Lowest temperature cursor, and Central temperature. The image also displays examples of various color palettes: Rainbow, Iron oxide red, Rock red, White heat, Black heat, and Visible Light.

The screen displays various information during operation:

1. **Emissivity:** Current emissivity setting.
2. **Battery Level:** Indicates remaining battery charge.
3. **Highest Temperature Cursor:** Marks the hottest point in the image.
4. **Color Code:** Represents the temperature scale.
5. **Central Point Temperature Cursor:** Displays temperature at the center of the screen.
6. **Time:** Current time.
7. **Date:** Current date.

8. **Lowest Temperature Cursor:** Marks the coldest point in the image.
9. **Central Temperature:** Numerical value of the central point temperature.

3.3. Color Palette Description

The device offers several color palettes to visualize temperature differences:

- **Rainbow:** A common palette showing a full spectrum of colors for temperature variations.
- **Iron Oxide Red:** Highlights hotter areas in red/yellow tones.
- **Rock Red:** Similar to Iron Oxide Red, with slightly different color mapping.
- **White Heat:** Displays hotter areas as white and colder areas as black.
- **Black Heat:** Displays hotter areas as black and colder areas as white.
- **Cold Color:** Emphasizes colder temperatures.

The radiation coefficient (emissivity) can be adjusted to increase the measurement accuracy of objects with half-reflection surfaces. The highest and lowest temperature cursors guide users to areas with the highest and lowest temperatures in the thermal images. Selectable color palettes are provided to meet various imaging needs.

4. Setup

4.1. Unboxing and Initial Inspection

Upon receiving your RX-350 Thermal Imager, carefully unpack all components and inspect them for any signs of damage. The package should contain:

- 1x RX-350 Thermal Imager
- 1x Protective Case
- 1x Charger (Power Adapter)
- 1x USB Cable (Micro USB)
- 1x User Manual (this document)

This image displays the accessories included with the RX-350 Thermal Imager: the thermal camera unit, a protective carrying case, a USB charging cable, and a power adapter. A printed instruction manual is also shown.

4.2. Charging the Battery

Before first use, fully charge the device's removable 18650 Lithium Battery. Connect the Micro USB cable to the camera's USB port and the other end to the charger. Plug the charger into a power outlet. The charging indicator on the screen will show the charging status. A full charge typically takes 2 to 3 hours.

The RX-350 Thermal Imager is shown connected to a laptop via its Micro USB port. This connection is used for charging the battery and for moving images from the camera to a computer. The camera's screen displays a charging icon.

4.3. Powering On/Off

- **To Power On:** Press and hold the Power ON/OFF key until the screen illuminates.
- **To Power Off:** Press and hold the Power ON/OFF key until the device shuts down.

The device features an automatic shutdown function, configurable for 5 minutes, 20 minutes, or disabled.

5. Operating Instructions

5.1. Basic Temperature Measurement

Once powered on, the camera will display a thermal image. Point the infrared lens towards the object or area you wish to measure. The screen will show real-time temperature readings, including the central point temperature, and the highest and lowest temperatures detected within the field of view.

5.2. Adjusting Emissivity

Emissivity is a crucial setting for accurate temperature measurement. Different materials have different emissivities. To adjust:

1. Press the **Menu** key.
2. Navigate to the 'Emissivity' setting using the Navigation keys.
3. Press the **Selection/Enter** key.
4. Adjust the value between 0.01 and 1.00 using the Navigation keys.
5. Press the **Selection/Enter** key to confirm.

Consult a reference table for common material emissivities if precise measurements are required.

5.3. Changing Color Palettes

To change the visual representation of temperature:

1. Press the **Menu** key.
2. Navigate to the 'Color Palette' setting.
3. Press the **Selection/Enter** key.
4. Select your desired palette (e.g., Rainbow, Iron, Cold Color, White Hot, Black Hot) using the Navigation keys.
5. Press the **Selection/Enter** key to confirm.

5.4. Image/Video Capture and Storage

The device supports image (JPG) and video (MP4) storage on its built-in 4GB eMMC memory (approximately 3GB user available space).

- **To Capture an Image:** Aim the camera and press the **Trigger** button briefly.
- **To Record a Video:** Press and hold the **Trigger** button to start recording, and press it again to stop.

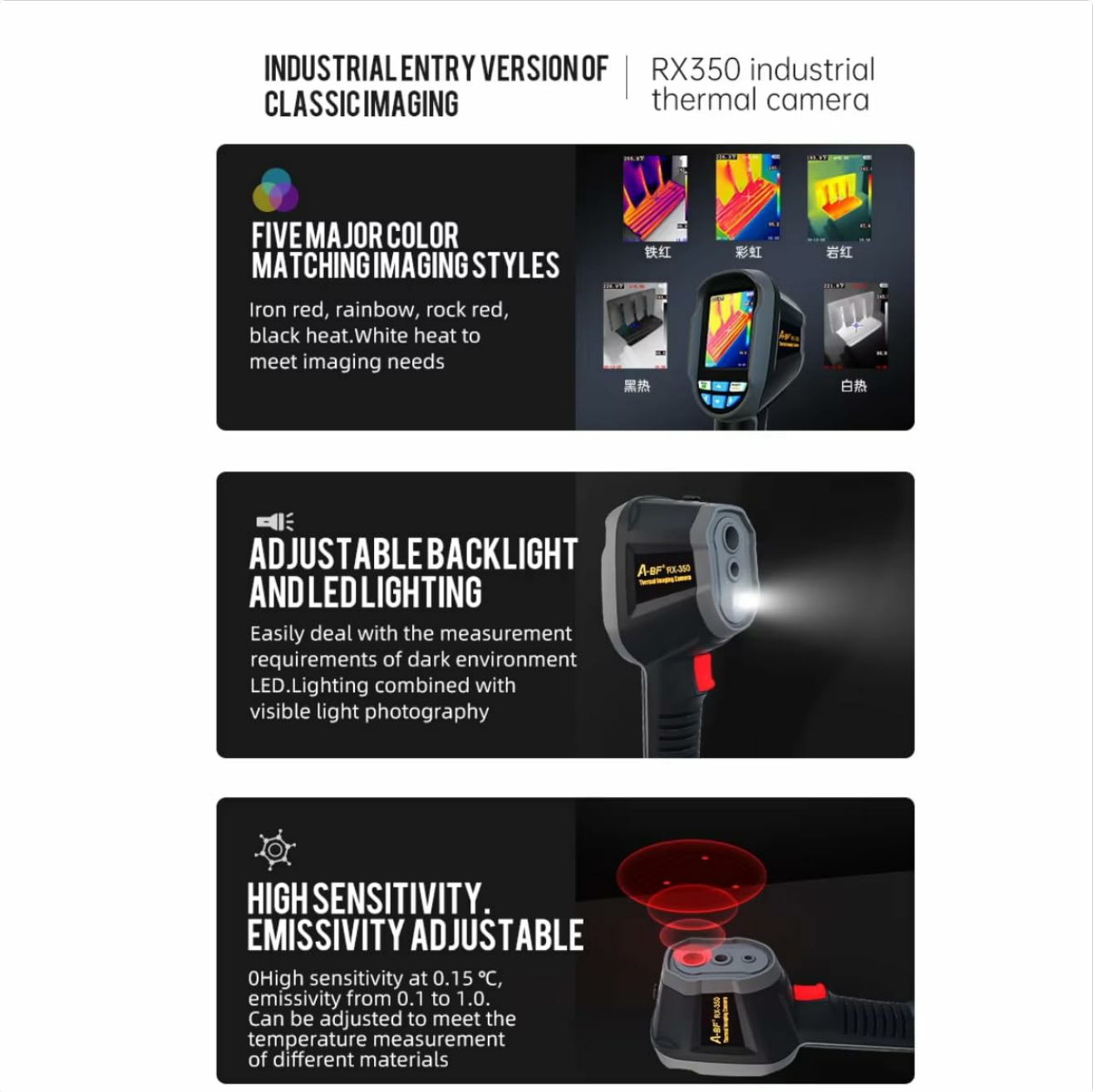
5.5. Connecting to PC for Data Export

To export captured images and videos:

1. Connect the camera to your computer using the provided Micro USB cable.
2. The camera will appear as a removable storage device on your computer.
3. You can then copy the JPG images and MP4 videos to your computer.

The device also supports standalone image analysis on a PC.

This image demonstrates various applications of the RX-350 Thermal Imager, highlighting its ability to quickly identify invisible problems. It shows examples of image display for facility maintenance, accurate temperature measurement with a crosshair indicator, and visible light combined with thermal imaging for comprehensive analysis.



This image details key features of the RX-350 industrial thermal camera. It highlights five major color matching imaging styles (Iron red, Rainbow, Rock red, Black heat, White heat) to meet diverse imaging needs. It also shows the adjustable backlight and LED lighting for measurements in dark environments, and emphasizes high sensitivity (0.15°C) with adjustable emissivity from 0.01 to 1.0 for accurate temperature measurement of different materials.

Your browser does not support the video tag.

This video demonstrates the RX-350 Thermal Imager in various practical applications. It shows the device being used for automotive repair inspection, machine room inspection, and refrigerator cooling detection, illustrating its versatility in identifying thermal anomalies across different scenarios.

6. Maintenance

6.1. Cleaning

- Use a soft, dry cloth to clean the device's body.
- For the lens, use a specialized lens cleaning cloth and solution to avoid scratches.
- Do not use abrasive cleaners or solvents.

6.2. Battery Care

- Charge the battery regularly, even if the device is not in use, to maintain battery health.
- Store the device with a partially charged battery (around 50%) if it will not be used for an extended period.
- Avoid fully discharging the battery frequently.

7. Troubleshooting

If you encounter issues with your RX-350 Thermal Imager, try the following:

- **Device does not power on:** Ensure the battery is fully charged. Try connecting the charger and powering on.
- **Inaccurate temperature readings:** Check the emissivity setting for the material being measured. Ensure the lens is clean.
- **Screen is blank or frozen:** Try restarting the device by holding the power button. If unresponsive, allow the battery to fully discharge and then recharge.
- **Cannot connect to PC:** Ensure the USB cable is securely connected to both the camera and the computer. Try a different USB port or cable.

If problems persist, contact customer support for assistance.

8. Specifications

Feature	Specification
Model	RX-350
Infrared Resolution	160x120 (19200 pixels)
Field of View (FOV)	35°(H) × 27°(V)
Spectral Response Band	8 ~ 14um
Pixel Size	12um
NETD (Noise Equivalent Temperature Difference)	≤ 50 mK
Frame Rate	25Hz
Temperature Measurement Range	-20 ℃ ~ +550 ℃ (-4 ℉ ~ +1022 ℉)
Measurement Accuracy	(-15 ℃ ~ +550 ℃) ± 2 ℃ or ± 2%; (-20 ℃ ~ -15 ℃) ± 4 ℃ or ± 4%
Measurement Units	℃ / ℉
Lens Focal Length	3.2mm
Emissivity Setting	Adjustable from 0.01 ~ 1.00
Measurable Distance	0m ~ 3m
Optimal Measurable Distance	0.5 ~ 1.2m
Focus Mode	Free Focus
Temperature Measurement Points	Center point / Hot spot and Cold spot

Feature	Specification
Color Palettes	Rainbow, Iron, Cold Color, White Hot, Black Hot
Screen Size	2.8 inches (240 × 320)
Image Display Mode	Infrared / Visible Light / Dual Fusion
Illumination System	LED Fill Light
Device Storage	4GB built-in eMMC (approx. 3GB user available)
Image/Video Format	JPG / MP4
Image/Video Export Method	USB connection to computer
Image Analysis Function	Supports standalone analysis on PC
Menu Language	English, German, Italian, Chinese
Battery Type	Removable Rechargeable Lithium Battery (18650)
Battery Capacity	2000mAh
Usage Time	2 to 3 hours
Power Interface	Micro USB
Auto Power Off Settings	5 minutes / 20 minutes / None
Operating Temperature	-10 ℃ ~ +45 ℃ (-14 ℉ ~ +122 ℉)
Storage Temperature	-20 ℃ ~ +60 ℃ (-4 ℉ ~ +140 ℉)
Relative Humidity	10% ~ 85% RH (non-condensing)
Product Weight	375g
Product Dimensions	9.6 × 7.2 × 22.6cm

9. Warranty and Support

For warranty information and technical support, please refer to the documentation provided with your purchase or contact the seller directly. Keep your proof of purchase for any warranty claims.