Firecore FI160S-01

Firecore FI160S Thermal Camera User Manual

Model: FI160S-01

1. INTRODUCTION

This manual provides comprehensive instructions for the safe and effective use of your Firecore FI160S Thermal Camera. Please read this manual thoroughly before operating the device and retain it for future reference.

Product Overview

The Firecore FI160S is a high-resolution thermal imager designed for various applications including home inspection, water leak detection, HVAC system analysis, and electrical/mechanical inspections. It features a 320x240 super resolution, 25Hz frame rate, and 32GB internal storage for efficient data capture and analysis.

Image: The Firecore FI160S Thermal Camera, showing its front and back views along with the included USB-C charging cable.

2. SETUP

What's in the Box

- Firecore FI160S Infrared Camera (battery included inside camera)
- Type-C USB Cable
- User Manual

Initial Charging

Before first use, fully charge the thermal camera. Connect the supplied Type-C USB cable to the camera's charging port and to a compatible USB power adapter (not included). The initial charge typically takes approximately 2.5 hours. The device supports USB-C Power Delivery (PD) chargers, allowing for quick charging at up to 5V 1.4A (nearly 7W).

Powering On/Off

To power on the device, press and hold the power button until the screen illuminates. The boot-up process takes approximately 20 seconds. To power off, press and hold the power button until the shutdown prompt appears, then confirm.

3. OPERATING INSTRUCTIONS

Basic Operation and Imaging

The FI160S provides clear and detailed thermal imaging with its 320x240 super resolution and 25Hz high frame rate. This allows for quick and safe diagnosis of electrical and mechanical failures, as well as surveying high-voltage or hazardous targets.

The camera offers accurate temperature measurement within a range of -4°F to 1022°F (-20°C to 550°C). It features 3 customizable alarms (LCD, LED, buzzer) and automatically pinpoints the highest, lowest, and center temperature points, displaying real-time readings for easy detection of hot spots and hidden anomalies.

Image: Display showing real-time point tracking with highest, lowest, and center temperature indicators.

With a thermal sensitivity of <0.06°C/NETD<50 mK, the FI160S can perceive very small temperature differences, aiding in the detection of subtle issues. Emissivity settings are adjustable for accurate readings on various materials and surfaces.
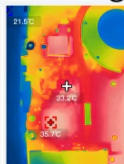
Image Modes

The FI160S offers four distinct image modes to enhance your inspection capabilities:

- **Thermal:** Displays a pure infrared image.
- **Visible Light:** Records actual visual images for easy recording and location identification.
- **Picture-in-Picture:** Places the infrared image in the center of a frame with a visual image around the outside, providing context for better comparison.
- **Thermal Mix:** Adds visible light details to thermal images in real-time for greater clarity, allowing for instant recognition of problematic heat patterns.

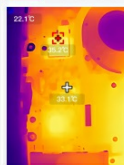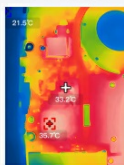**4 Image Modes**

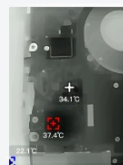| Thermal | Thermal Mix | Visible Light | Picture in Picture |

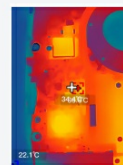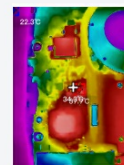**6 Color Palettes**

| Iron | Rainbow | White hot | Black hot | Lava | Rainbow HC |

Image: Visual representation of the four image modes (Thermal, Thermal Mix, Visible Light, Picture-in-Picture) and six color palettes.

Thermal-Visible Mixed Mode

Dual cameras add visible light details to thermal images in real time, providing an integrated thermal picture with visible light for greater clarity.

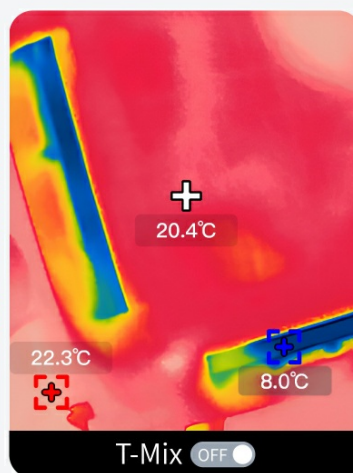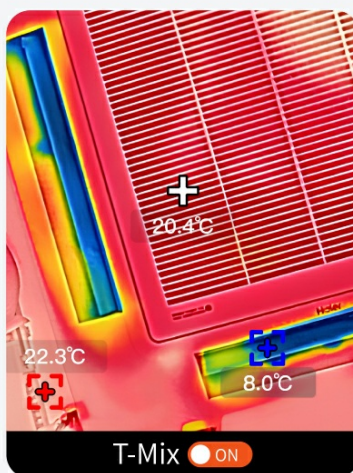⚠ Press ▲ to auto-calibrate for optimized fusion in T-Mix mode

Image: Comparison of Thermal-Visible Mixed Mode (T-Mix ON) versus Thermal Only (T-Mix OFF), showing enhanced detail with visible light overlay.

Color Palettes

The FI160S offers 6 selectable color palettes to optimize the infrared image contrast for different inspection scenarios and applications:

- Iron
- Rainbow
- White hot
- Black hot
- Lava
- Rainbow HC

Built-In Laser Pointer

The integrated laser pointer assists in precisely locating objects in dark environments for targeted measurements. This is a Class II laser (IEC/EN60825-1/2014) with a power output of ≤1mW.

Laser-Assisted Autofocus

Features laser-assisted autofocus to help you locate the object in the dark environment for targeted measurements. Class II (IEC/EN60825-1/2014), ≤ 1mW power output.

Image: A user aiming the thermal camera, demonstrating the laser-assisted autofocus feature.

Image Storage and Transfer

The thermal imager is equipped with 32GB of EMMC memory for storing images. To transfer captured images to a computer, connect the camera using the supplied USB cable. The Firecore software (not compatible with iOS) allows for full inspection and analysis of the images on a PC screen. The software enables toggling of screen elements (high, low, center temperature values), changing color palettes post-capture, and performing temperature annotations, area averages, and comparisons. It also features an HD (Super Resolution) button to upscale images to 960x1280 for detailed analysis.

Easy Transfer and Analysis
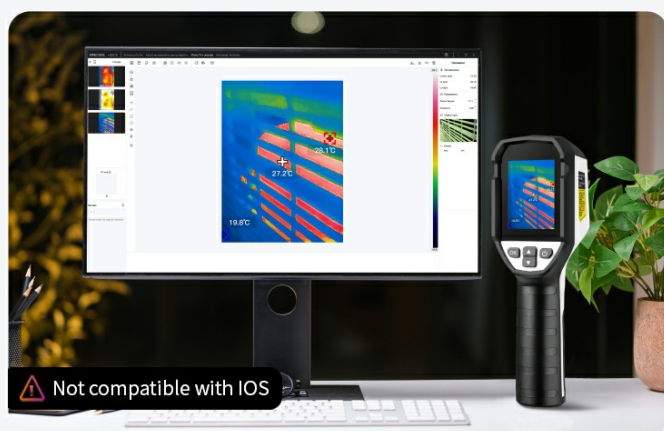
Not compatible with iOS

32GB EMMC Memory

Supporting Software

Picture Recording

Image: The thermal camera connected to a desktop computer, illustrating the easy transfer and analysis of thermal images using the supporting software.

4. MAINTENANCE

Cleaning the Device

To clean the camera body, use a soft, damp cloth. Do not use abrasive cleaners or solvents. Ensure the lens is kept clean for optimal image quality; use a lens cleaning cloth specifically designed for optics.

Battery Care

To prolong battery life, avoid fully discharging the battery frequently. Charge the device regularly, especially if it will
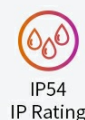
be stored for an extended period. Store the camera in a cool, dry place.

Durability Features

The FI160S is built for demanding environments, featuring a 6.6-feet drop protection and an IP54 rating for dust and splash resistance. It also includes auto shut-off options (5-minute, 10-minute, 30-minute) to conserve battery life during long hours of use.

Built to Last

IP54
IP Rating

6.6 ft
Drop Protection

Auto
Shut-Off

Image: The thermal camera shown with water droplets and in a drop scenario, highlighting its IP54 rating and 6.6 ft drop protection.

5. TROUBLESHOOTING

Common Issues and Solutions

- **Poor Viewing Angles on LCD:** The LCD screen may exhibit poor viewing angles, particularly when viewed from above. Adjust the camera's position or your viewing angle for optimal clarity.

- **Thermal/Visible Image Misalignment:** In some instances, the thermal and visible light images may appear misaligned, especially after a factory reset or storage reformatting. Currently, there is no user-adjustable setting to correct this alignment. If this issue significantly impacts functionality, contact customer support.

- **PC Software Real-Time Projection Not Working:** The real-time screen projection feature in the PC analysis software may not function correctly, potentially causing the program to freeze. If this occurs, end the program via your operating system's task manager. Image analysis features remain functional.

- **Inaccurate Temperature Readings:** Ensure the emissivity setting is correctly adjusted for the material being measured. Refer to standard emissivity tables for common materials.

6. SPECIFICATIONS

Feature	Specification
IR Resolution	160 x 120 pixels
Super Resolution	320 x 240 pixels
Frame Rate	25 Hz
Temperature Measurement Range	-4°F to 1022°F (-20°C to 550°C)

Feature	Specification
Thermal Sensitivity (NETD)	<0.06°C / <50 mK
Storage	32GB EMMC Memory
Field of View (FOV)	40°(H) x 30°(V)
Laser Pointer	Class II (IEC/EN60825-1/2014), ≤1mW
Drop Protection	6.6 feet (2 meters)
IP Rating	IP54
Auto Shut-off	5-minute, 10-minute, 30-minute options
Dimensions	9.88 x 5.79 x 3.62 inches
Weight	1.17 Pounds (0.53 kg)
Battery Type	1 Lithium Ion battery (included)
Model Number	FI160S-01

7. WARRANTY AND SUPPORT

Warranty Information

Specific warranty details for the Firecore FI160S Thermal Camera are typically provided with your purchase documentation or on the manufacturer's official website. Please refer to these resources for comprehensive warranty terms and conditions.

Customer Support

For technical assistance, troubleshooting not covered in this manual, or warranty claims, please contact Firecore customer support through their official website or the contact information provided with your product packaging.

8. APPLICATIONS

The Firecore FI160S Thermal Camera is a versatile tool suitable for a wide range of professional and home applications:

- **Building Inspections:** Identify insulation deficiencies, drafts, and moisture intrusion.
- **Electrical Inspections:** Detect overheating components, loose connections, and overloaded circuits.
- **HVAC Maintenance:** Analyze airflow, identify duct leaks, and assess heating/cooling system performance.
- **Water Leak Detection:** Locate hidden water leaks behind walls or under floors by identifying temperature anomalies.
- **Vehicle Maintenance:** Diagnose automotive issues such as engine overheating, brake problems, or exhaust leaks.
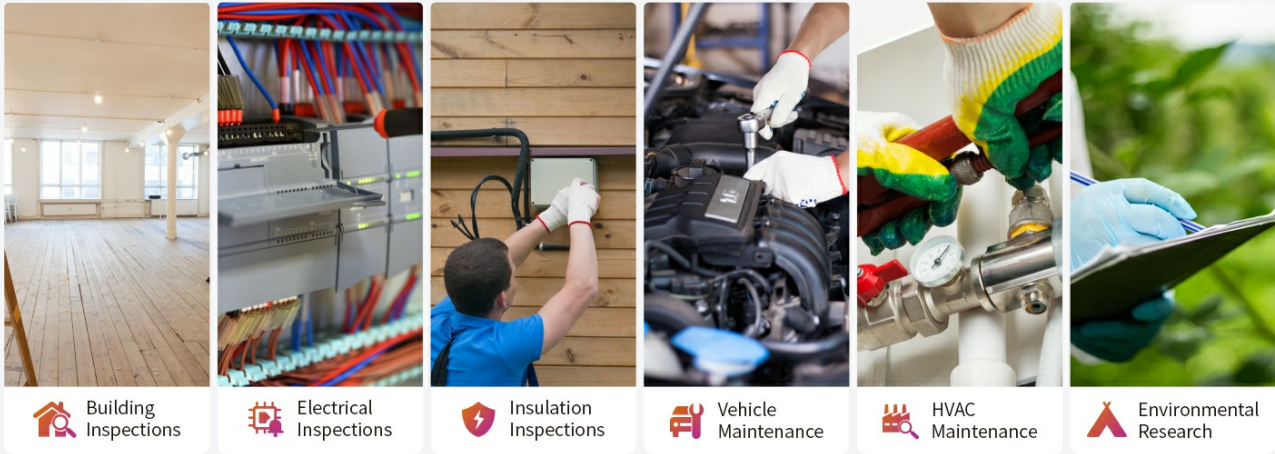- **Environmental Research:** Monitor temperature distributions in various settings.
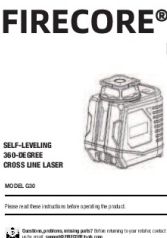
Image: Collage showing the wide range of applications for the thermal camera, including building, electrical, insulation, vehicle, HVAC, and environmental inspections.

Related Documents - FI160S-01

[FIRECORE G50 Green Beam Self-Leveling 3x360 Laser Level User Manual](#)
Comprehensive user manual for the FIRECORE G50 Green Beam Self-Leveling 3x360 Laser Level, covering safety instructions, product overview, operating modes, specifications, maintenance, troubleshooting, and warranty information.

[Firecore 3x360° Line Laser User Manual - F95T-XG](#)
Comprehensive user manual for the Firecore F95T-XG 3x360° Line Laser. Includes safety instructions, product overview, operating modes, specifications, maintenance, troubleshooting, and warranty information.

[FIRECORE G30 Self-Leveling 360-Degree Cross Line Laser User Manual](#)
Comprehensive user manual for the FIRECORE G30 Self-Leveling 360-Degree Cross Line Laser, covering specifications, safety instructions, operation, maintenance, and troubleshooting.

[FIRECORE FLP370C Laser Level Pole with Tripod User Guide](#)

A user guide for the FIRECORE FLP370C Laser Level Pole with Tripod, detailing its specifications, installation steps, and maintenance care.

[FIRECORE FSL201MR 3-in-1 Laser Level with Laser Measure User Manual](#)

Comprehensive user manual for the FIRECORE FSL201MR 3-in-1 Laser Level with Laser Measure, detailing product specifications, operation, charging, maintenance, and safety instructions.

[FIRECORE G60 Green Beam Self-Leveling 4 x 360 Laser Level User Manual](#)

User manual for the FIRECORE G60 Green Beam Self-Leveling 4 x 360 Laser Level. Provides detailed information on product features, operation, safety guidelines, specifications, maintenance, and warranty.