InfiRay P2 Pro

InfiRay P2 Pro Thermal Camera for Android User Manual

Model: P2 Pro | Brand: InfiRay

1. Introduction

The InfiRay P2 Pro is an ultra-small, professional-grade thermal camera designed for use with Android smartphones and tablets. It features a high-resolution 256x192 infrared detector, a wide temperature measurement range, and a fast 25Hz frame rate for smooth thermal imaging. This manual provides essential information for setting up, operating, and maintaining your device.

2. Package Contents

Upon unpacking your InfiRay P2 Pro, please verify that all the following items are included:

- InfiRay P2 Pro Thermal Camera (Android version)
- 50cm Adapter Cable (USB-C to USB-C)
- Macro Lens (P2 Pro Micro Teleconverter)
- Protective Pouch
- Card Package (Documentation)

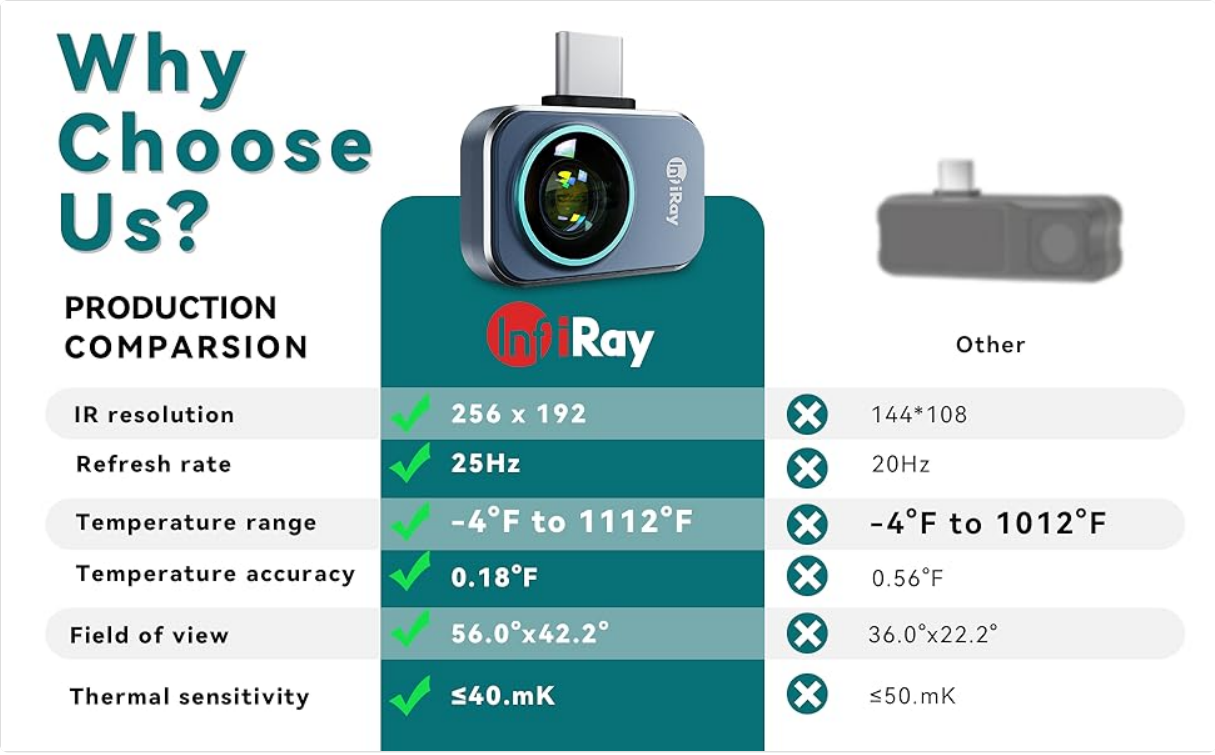

Image: InfiRay P2 Pro Thermal Camera, 50cm adapter cable, and macro lens.

3. Setup

3.1 App Installation

Before using the InfiRay P2 Pro, you must install the companion application on your Android device (Android 9.0 or above required).

1. Open the Google Play Store on your smartphone or tablet.
2. Search for "Thermal P2" or "InfiRay P2 Pro".
3. Download and install the official InfiRay P2 Pro application.

3.2 Device Connection

Once the app is installed, connect the thermal camera to your device:

1. Ensure your Android device has OTG (On-The-Go) functionality enabled. This setting is usually found in your device's system settings under 'Connected devices' or 'OTG connection'.
2. Plug the InfiRay P2 Pro Thermal Camera directly into your smartphone's USB-C port.
3. Alternatively, use the provided 50cm extension cable to connect the camera to your device, offering more flexibility for hard-to-reach areas.
4. The InfiRay P2 Pro application should automatically launch and display the thermal image.

Video: Demonstrates the quick setup and connection of the InfiRay P2 Pro Thermal Camera to an Android smartphone, including app installation and initial use.

4. Operating Modes and Features

The InfiRay P2 Pro app offers various modes and settings to enhance your thermal imaging experience.

4.1 Simple Mode

In Simple Mode, the app automatically displays the hottest, coldest, and average temperatures within the frame. You can easily capture photos and videos.

4.2 Professional Mode

Professional Mode unlocks advanced measurement and analysis tools, providing greater control over your thermal data.

- **Point Measurement:** Tap on the screen to add up to three arbitrary points and display their exact temperatures.
- **Line Measurement:** Draw a line on the screen to display the highest, lowest, and average temperatures along that line. Up to three lines can be drawn.
- **Area Measurement (Frame):** Draw a square or rectangular frame to detect the highest, lowest, and average temperatures within that specific area. Multiple frames can be added.
- **Scale Bar (DIY Bar):** When enabled, you can slide your finger on the side of the screen to set the highest and lowest temperature range for the displayed palette. Objects outside this range will appear grey/black. (Note: This function does not work in White-hot and Black-hot palette modes).

Video: A detailed guide on how to use the InfiRay P2 Pro, demonstrating both Simple and Professional modes, including various measurement tools.

4.3 Palette Options

The app offers 12 different color palettes to visualize thermal data, allowing you to choose the most suitable representation for various scenarios and preferences. Examples include White-hot, Black-hot, Rainbow, Iron-red, Jungle, Aurora, Golden Red, Medical, and Dim Light.

Image: The InfiRay P2 Pro app interface displaying multiple color palettes and measurement options.

4.4 Image and Measurement Settings

Access the settings menu to customize your experience:

- **Temperature Unit:** Switch between Celsius (°C), Fahrenheit (°F), and Kelvin (K).
- **Temperature Alarm:** Set high and low temperature thresholds. The phone will sound an alarm if the image temperature exceeds or falls below these thresholds.
- **Burn Prevention:** This crucial feature automatically cuts off the sensor if it detects exposure to extremely high-temperature radiation sources (e.g., direct sunlight, very hot objects) to prevent damage. A warning will prompt on the screen.
- **Image Settings:** Adjust brightness and contrast for clearer thermal images. Enable/disable Automatic Shutter Switch and Continuous Image Capture.
- **Variable Correction (Emissivity):** Modify settings for emissivity, ambient temperature, and target distance based on the material being measured (e.g., default, wet soil, glass, red brick, skin, white paper, black cloth, wood, water surface, or custom).
- **Image Flip:** Flip and rotate the image by any angle (0°, 90°, 180°, 270°).
- **Measurement Mode:** Select between High Image Quality, Wide Range, or Automatic Switching for optimal performance.

5. Media Capture and Analysis

5.1 Photo and Video Recording

The InfiRay P2 Pro allows you to capture both thermal photos and videos directly within the app. Videos are recorded at a smooth 25Hz frame rate and can include audio from your device's microphone.

5.2 Gallery and Secondary Analysis

All captured images and videos are stored in a dedicated gallery within the app. From here, you can perform secondary analysis on saved thermal images, adding or modifying measurement points, lines, and frames. You can also generate reports and easily share your results.

5.3 Visible Light Image Overlay

The app supports a picture-in-picture function, allowing you to view a real-time visible light image from your phone's camera alongside the thermal image. This helps in better contextualizing the thermal data.

Video: Demonstrates the app's interface, including palette selection, settings, photo/video capture, gallery access, and the picture-in-picture visible light overlay.

6. Versatile Applications

The InfiRay P2 Pro Thermal Camera is a versatile tool suitable for a wide range of applications:

- **Home Inspections:** Detect insulation gaps, drafts, moisture issues, and plumbing leaks.
- **Energy Efficiency:** Identify heat loss/gain in buildings, optimize HVAC systems.
- **Electrical Systems:** Pinpoint overheating components in circuit boards, fuse boxes, and electrical panels.
- **Machinery Maintenance:** Monitor temperature of mechanical components to prevent failures.
- **Outdoor Exploration & Wildlife Observation:** Locate animals in low-light conditions.
- **Building & Construction:** Verify proper installation and identify structural anomalies.
- **Security & Surveillance:** Enhance visibility in dark environments.

Image: Examples of InfiRay P2 Pro applications, including detailed circuit inspection and general thermal sensing.

Video: Demonstrates the InfiRay P2 Pro's thermal imaging capabilities in various real-world scenarios, such as home inspections, electrical checks, and vehicle diagnostics.

7. Specifications

Feature	Specification
IR Resolution	256x192
Temperature Range	-4°F to 1112°F (-20°C to 600°C)
Temperature Accuracy	±3.6°F (±2°C) or 2% of reading (whichever is greater)
NETD (Thermal Sensitivity)	≤50mK
Frame Rate	25Hz
Pixel Size	12μm
Spectral Range	8-14μm
Field of View (FOV)	56.0°×42.2°

Feature	Specification
Focusing Mode	Athermalized Prime Lens
Power Consumption	0.35W
Compatibility	Android 9.0 or above (USB-C)
Dimensions	6.3 x 4.17 x 1.34 inches
Weight	2.2 pounds (device only: 9g)

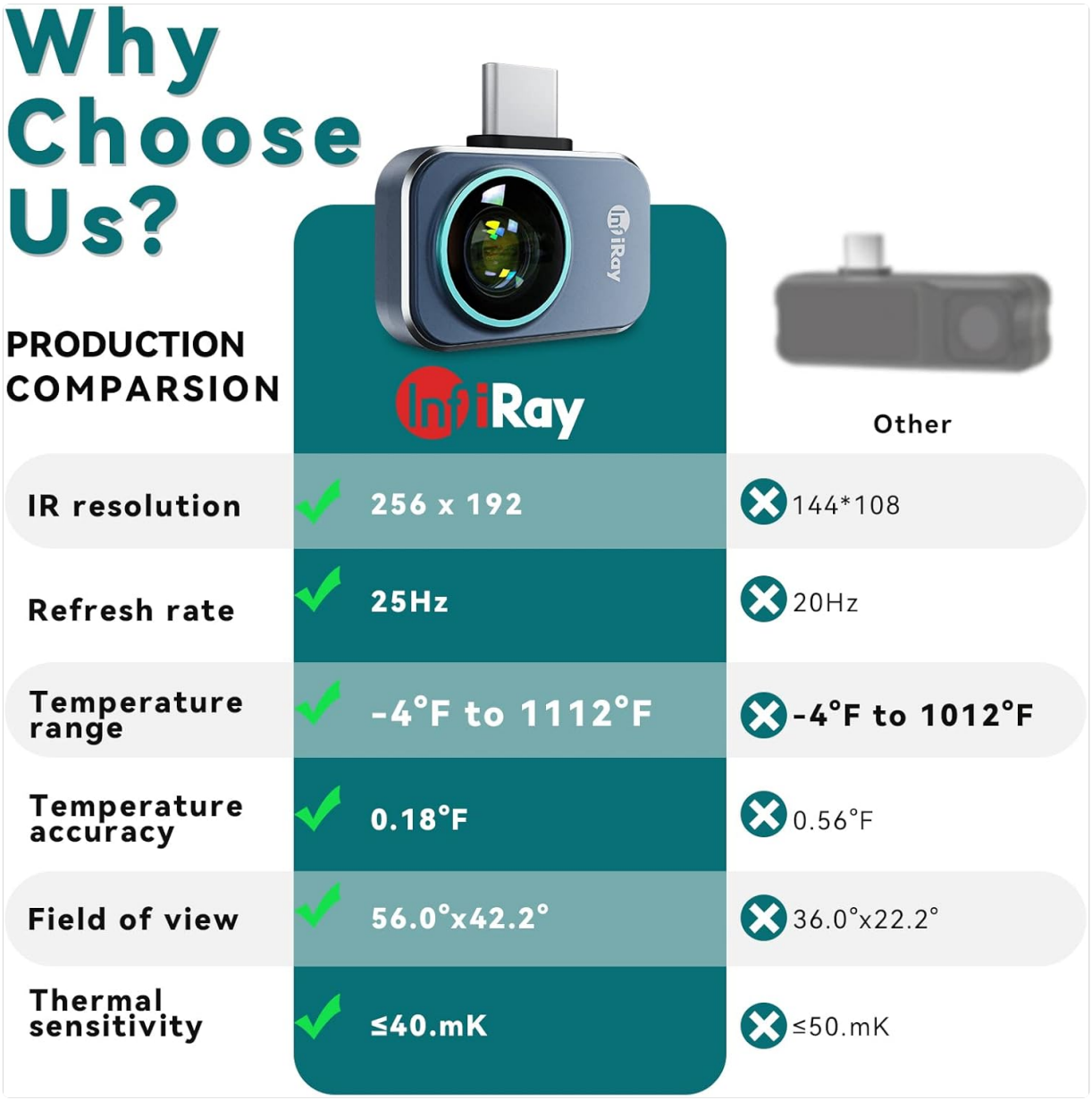

Image: Comparison of InfiRay P2 Pro specifications against other thermal imagers.

8. Maintenance and Care

- Keep the thermal camera clean. Use a soft, dry cloth to wipe the lens and body. Avoid abrasive materials or harsh chemicals.
- Store the camera in its protective pouch when not in use to prevent scratches and damage.
- Avoid exposing the camera to extreme temperatures or direct sunlight for prolonged periods, especially when not in use.
- Do not attempt to disassemble or repair the device yourself. Contact customer support for assistance.

9. Troubleshooting

- **Camera not connecting:** Ensure OTG is enabled on your Android device. Check the USB-C connection for proper seating. Try restarting the app or your phone.
- **Image blurry or unclear:** Adjust brightness and contrast settings in the app. Ensure the lens is clean.
- **Burn Prevention warning:** If this warning appears, immediately move the camera away from the high-temperature source to prevent sensor damage.
- **App not responding:** Close and restart the application. If the issue persists, restart your Android device.

10. Warranty and Support

InfiRay offers a 365-day after-sale service for the P2 Pro Thermal Camera. For warranty claims, technical support, or any inquiries, please contact the PerDream Authorized Store or visit the official InfiRay website. Keep your purchase receipt as proof of purchase.

Related Documents - P2 Pro

	InfiRay Clip CH50 V2 Thermal Imaging Attachment User Manual Explore the InfiRay Clip CH50 V2, a versatile thermal imaging attachment designed to enhance day-light sights for superior night vision. Discover its applications in hunting, observation, and search & rescue operations, along with detailed user guidance.
	InfiRay FINDER II Thermal Imaging Monocular Operating Manual Discover the InfiRay FINDER II Thermal Imaging Monocular (FL35R/FH35R) with this comprehensive operating manual. Learn about its advanced features, specifications, and how to use it for outdoor exploration, nature observation, and hunting.
	InfiRay FINDER Thermal Imaging Monocular Operating Manual This operating manual provides comprehensive instructions for the InfiRay FINDER series thermal imaging monoculars, including models FL25, FL25R, FH25, and FH25R. It covers product specifications, package contents, features, detailed operation, button functions, menu navigation, calibration procedures, photography and video recording, connectivity, maintenance, and troubleshooting.
	InfiRay TUBE Thermal Imaging Scope User Manual: TH35 V2 & TH50 V2 Comprehensive user manual for the InfiRay TUBE TH35 V2 and TH50 V2 thermal imaging scopes. Learn about features, operation, safety guidelines, specifications, and mounting for outdoor hunting and observation.
	InfiRay GEMINI Multi-spectral Thermal Imaging Binocular User Manual V1.0 Comprehensive user manual for the InfiRay GEMINI Multi-spectral Thermal Imaging Binocular, covering safety, specifications, package contents, product overview, main functions, product appearance, button descriptions, power supply, mounting, quick start guide, status bar, image calibration, photography and video recording, digital zoom, fusion settings, DMC settings, quick menu, system menu, media management, location settings, Wi-Fi and time settings, system settings, about information, Wi-Fi function, firmware update, InfiRay Outdoor app, technical inspection, maintenance, legal and regulatory information, and body-worn operation.

	[InfiRay EYE III Series Thermal Imaging Monocular User Manual] Comprehensive user manual for the InfiRay EYE III series thermal imaging monocular, covering specifications, operation, features, safety, and maintenance for models EL25, EL35, and EH35.