

Tianxuan Series

Professional Handheld Thermal Camera M320



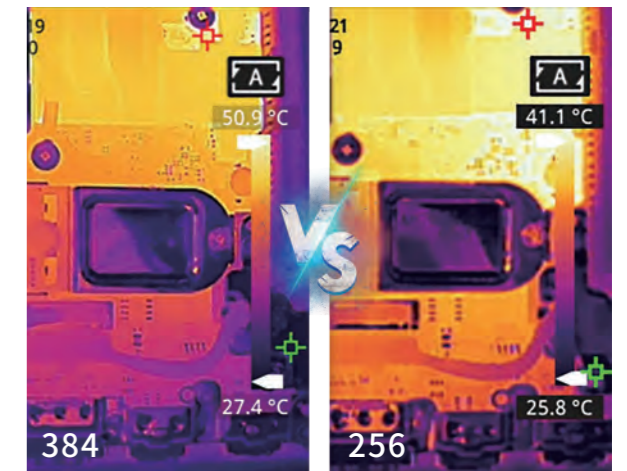
384-Pixel, Clear, Smart, Professional

IRay Tianxuan M320 has a small 27° long-focus lens with a spatial resolution reduced by 50% to 1.31mrad for capturing farther and smaller hot spots. IRay's self-developed 12μm advanced detector features a resolution of up to 384 pixels and a sensitivity as high as +35mK, suitable for professional infrared heat map applications. The temperature measurement range has been expanded to 650°C to apply to a broader range of industrial fields involving high-temperature environments: material R&D, metal forming, petrochemical, and more. Enhanced analysis functions, including trends for line-based temperature measurement, enhanced isotherms, thermal radiation videos that support secondary analysis with PC software, and so forth, bring a more intelligent working experience for scientific R&D, fault analysis, building analysis, and other purposes.



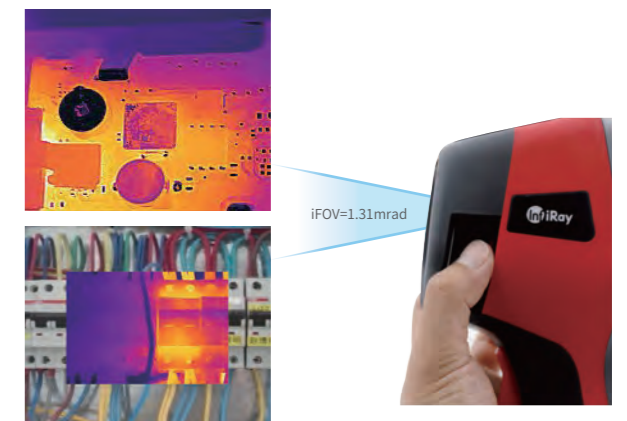
1 "Smart" Imaging for Hot Spot Hazards

- The cutting-edge IRay 12μm 384-pixel detector has a sensitivity as high as 35mk for capturing small and intractable hot spot hazards.
- The infrared detector has a refresh rate of 30Hz, which ensures that heat map information can be easily captured even in motion.



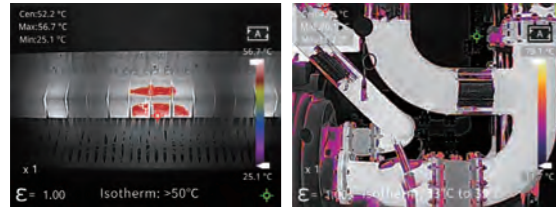
2 Farther and More Subtle Hot Spot Capture with Lower Spatial Resolution

- A small 27° long-focus lens is provided with a spatial resolution reduced by 50% to as low as 1.31mrad and supports 8× digital zoom.
- Farther and subtler targets can be measured more easily.



3 Smart Upgrades: Less Is More

- **Enhanced Isotherm:** The upper and lower limits of the isotherm temperature or the full-frame threshold can be customized to highlight key temperature ranges or areas.



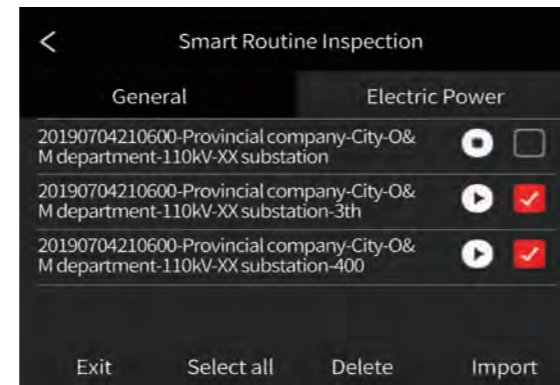
- **Emissivity Check:** The most appropriate emissivity settings can be quickly viewed on the screen, dispensing with the need to look through the manual.



- **Line Temperature Measurement Trend Display:** Above the line temperature measurement tool, the relative temperature trend of each point on the line is displayed in real time, which helps users to observe the distribution and change of temperature in real time.

- **Intelligent Temperature Video:** Thermal radiation videos (.irv) with temperature data are available for secondary analysis using PC software (including UVC real-time screen projection), enabling flexible data analysis and study.

- **Smart Routine Inspection:** Routine inspection task packages can be defined, imported, and distributed, which not only improves the routine inspection efficiency for engineers but also streamlines the task distribution process to bring more efficiency for team management without missing any routine inspection details.



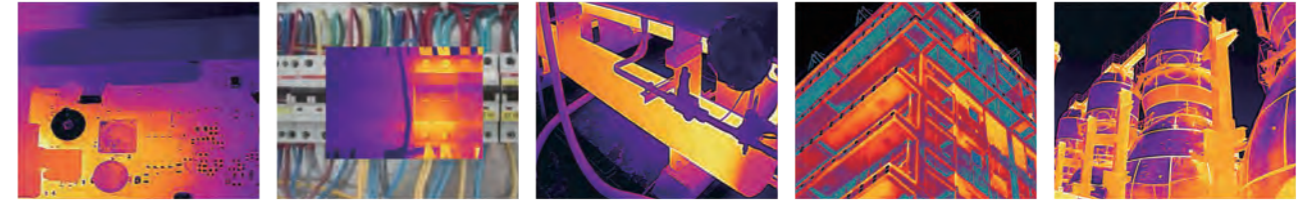
4 Upgraded Performance for More Application Scenarios

- A wider temperature range of -20°C to 650°C is applicable to more purposes, such as die steel temperature monitoring.
- Standard 32GB MicroSD card, extendable to 512GB, supports long-time video recording and field troubleshooting, with sufficient memory to help you work confidently.
- Light package truly! Thanks to the cutting-edge 12μm detector, a compact design has been made available with a weight as light as about 680g. (Under the same specifications of 2m drop protection and IP54)
- The 5000mAh battery and brand-new fast charger save up to about 26% of time*

(*Data source: Test with M300 10W charger in IRay lab)



Application Fields



Application Fields

Routine power distribution/
transmission inspection

Industrial manufacturing

Construction monitoring

Petrochemical

Main Specifications

Model	M320
Thermal Imaging Parameters	
Detector Type	Uncooled Vox
Resolution of Detector	384×288
Infrared Spectral Band	8-14μm
Pixel Size	12μm
Thermal Sensitivity/NETD	35mK
Spatial Resolution/IFOV	1.31mrad
Minimum Imaging Distance	0.3m
Frame Rate	30Hz
Focal Length	9.1mm
FOV	27°×20°
Focusing Mode	Manual focusing
Measurement Range	-20°C to 150°C, 100°C to 650°C
Measurement Accuracy	±2% or ±2°C
Camera Functions	
Custom Temperature Measurement	Movable point/line/area temperature measurement; supporting up to 10 points, 10 areas, 10 lines; temperature trend available for line-based measurement.
Temperature Measuring Unit	Celsius, Fahrenheit, Kelvin
Emissivity Settings	Adjustable between 0.01 and 1.00 with a step size of 0.01
Ambient Temperature Settings	-10°C to +50°C with a step size of 1°C
Distance Settings	1-20m with a step size of 1m
Digital Zoom	×1, ×2, ×4, ×8
Image Mode	Infrared, dual-spectrum fusion, visible light, PIP
Palettes	10
Temperature Alarm	Available
Alarm Type	Image alarm
Temperature Scale	Manual/Auto temperature range
Isotherm	Customizable picture palettes within a certain temperature range
Temperature Video Recording	Available, supporting frame rate setting with a range between 0.05s and 100s
Video Transmission	UVC, supporting temperature data
Smart Routine Inspection	Available, customizable
Laser Pointer	Available
Visible Light Camera	5 megapixels
Video/Photo Storage	XX-IR.jpg (Infrared images with temperature data) and XX-DC.jpg (visible-light images); H.264 videos without temperature data and .irv videos with temperature data
Annotation Function	Available
Language	English, Japanese, Polish, Russian, Korean, Hungarian, Brazilian Portuguese, German, French, Spanish, Italian, Turkish, Traditional Chinese
Display	3.5-inch touch screen (480 × 640)
Image Naming	Auto/manual naming, naming by scanning QR code
Memory Card	32GB MicroSD card, extendable to 512GB
Battery	Rechargeable and detachable lithium-ion battery
Power Interface	USB Type-C
Connecting Methods	USB, WiFi
Charging Time	About 3 hours
Operating Time	About 4 hours
Cloud Services	/
Power Management	Automatic shutdown: 5 minutes, 10 minutes, 20 minutes, never
Others	
Analysis Software	PC (infrared analysis software) & mobile device (iOS/Android APP)
Tripod Mounting	1/4"-20-UNC
Operating Temperature	-10°C to +50°C
Storage Temperature	-20°C to +60°C
Relative Humidity	10% to 95%, non-condensing
Drop Protection	2m
IP Grade	IP54(IEC 60529)
Shock and Vibration	Shock: 25g (IEC 60068-2-27); vibration: 2.5g (IEC60068-2-6)
Dimensions (H×W×D)	258.4 × 105.1 × 102.3mm
Weight	About 680g
Accessories	5V 3A power adaptor compatible with plugs from multiple countries, USB cable, SD card, battery ×2, QSG, desktop charger, calibration certificate, package list, safety box