

IRD700

Highest resolution and accuracy with low cost



Temperature ranges up to 2000 °C with an uncooled microbolometer and optional remote LCD screens.

IRD700

Handheld thermal imaging camera

amperis

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Handheld infrared camera with an uncooled 384x288 microbolometer, a colour LCD screen and temperature ranges up to 2000 °C.

Overview



Single-button operation with rotatable LCD display



Optional remote LCD units, wired or clipped onto the handle

High image quality at low cost

The IRDL700 camera offers outstanding image quality and temperature measurement performance in an affordable, rugged and easy-to-use body. It is a professional tool suited to applications such as transformation centres, petrochemical plants, scientific research, the metallurgical industry and building inspection.

Detector and image

- Uncooled FPA microbolometer, 384x288 pixels, with a 16 degrees by 12 degrees field of view and a minimum focus distance of 0.5 m.
- Spatial resolution (IFOV) of 0.88 mrad and thermal sensitivity of 0.06 °C or better at 30 °C, with a 50/60 Hz frame rate.
- Manual or automatic focus, 1 to 8x continuous electronic zoom and a built-in 300,000-pixel visible-light camera.
- Built-in high-resolution colour LCD (640x480) with 9 interchangeable colour palettes.

Temperature ranges

The standard measurement range runs from -20 °C to +500 °C, optionally extendable up to 1200 °C or 2000 °C, with an accuracy of +/-2 °C or +/-2 % of the reading, whichever is greater.



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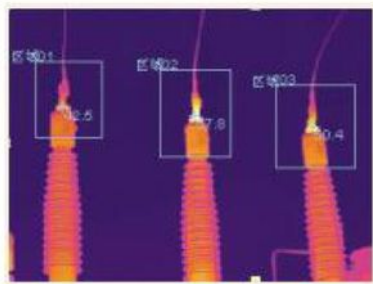
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Up to 10 movable measurement points and 5 movable areas, automatic corrections and optional lenses that extend the field of view.

Measurement and accessories



Simultaneous measurement on several points of an insulator string



Optional wide-angle and telephoto lenses

Measurement modes

- Up to 10 movable points and up to 5 movable areas, capturing maximum, minimum and average temperature.
- Temperature line profile, isotherm analysis, temperature difference measurement and sound or colour alarm.
- Automatic or manual measurement correction, with date, time, temperature unit and language settings.

Measurement corrections

Emissivity is adjustable from 0.01 to 1.0 or selected from a predefined list of materials; background temperature and atmospheric transmission corrections are calculated automatically from the object distance, relative humidity and ambient temperature entered by the user.

Laser pointer and optional lenses

- Class 2 laser pointer, 1 mW at 635 nm (red), to mark the measurement point.
- Optional lenses that widen or narrow the camera's standard field of view.
- Audio output and a DC power connector built into the camera body.



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Image analysis and report generation software

Analysing images on a PC

Thermal images, with their 14-bit temperature data per pixel and the voice notes recorded on site, are transferred to a PC through the USB port for a calmer, more detailed analysis than the camera screen allows.

- Reviewing and adjusting the measurement points, areas and lines, and the isotherms already defined on site.
- Changing the colour palette and the emissivity, reflected temperature and atmospheric transmission parameters on the stored image.
- Playing back the voice notes attached to each stored image.

Generating reports

From the analysed images, inspection reports are produced with the temperature data, the notes and the visible and infrared images of every point reviewed, ready to be filed or sent to the client.



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Detector and image characteristics

Detector type	Uncooled FPA microbolometer
Array size / format	384 x 288
Field of view / min. focus distance	16° x 12° / 0.5 m
Spatial resolution (IFOV)	0.88 mrad
Thermal sensitivity	<= 0.06 °C @ 30 °C
Frame rate	50/60 Hz
Focus	Manual / automatic
Electronic zoom	1-8X continuous
Spectral range	8-14 µm
Built-in visible-light camera	300,000 pixels



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Display and measurement

Viewfinder / image display	Built-in high-resolution colour LCD, picture in picture or full screen
LCD display	High-resolution colour LCD, 640x480
Image adjustment	Automatic / manual gain and brightness
Colour palette	9 interchangeable palettes (iron, rainbow, grey and inverted grey, etc.)
Temperature range	-20 °C to +500 °C, optional up to +1200 °C or +2000 °C
Accuracy	+/-2 °C or +/-2 % of reading, whichever is greater
Measurement correction	Automatic / manual
Measurement mode	Up to 10 movable points; up to 5 movable areas (max., min. and average temperatures); line profile; isotherms; temperature difference; alarm (sound, colour)
Setup functions	Date/time, temperature unit and language
Emissivity correction	Adjustable from 0.01 to 1.0 or selectable from a predefined list of materials
Background temperature correction	Automatic correction from user input
Atmospheric transmission correction	Automatic correction from the object distance, relative humidity and ambient temperature entered by the user



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Storage, laser and power supply

Storage card	Built-in flash memory, SD card (2 GB), up to 5000 images
Storage mode	Automatic / manual
File format (thermal)	JPEG, 14-bit thermal data included
Voice annotation	Via built-in microphone, up to 40 seconds of digital voice per stored image
Image improvement	Spatial filter; averaging (S2, S4, S8, S16)
Laser pointer	Class 2, 1 mW / 635 nm (red)
Battery type	Li-Ion, rechargeable
Battery operating time	2 hours of continuous operation
Charging system	Intelligent charger or optional power adaptor for direct charging
Power saving	Yes
External power	10-15 V DC



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Environment, physical characteristics and interface

Operating temperature	-15 °C to +50 °C
Encapsulation	IP54
Humidity	<= 90 % non-condensing
Weight	1.69 kg
Dimensions	305 x 130 x 135 mm
External DC input	Yes
Audio output	Yes
Video output	PAL/NTSC/VGA
USB	Image, measurement data and voice transferable to PC