

NEW

D300

Middle Level

High 384x288 resolution detector and laser ranging

DUO-VISION PLUS

D600

Performance level

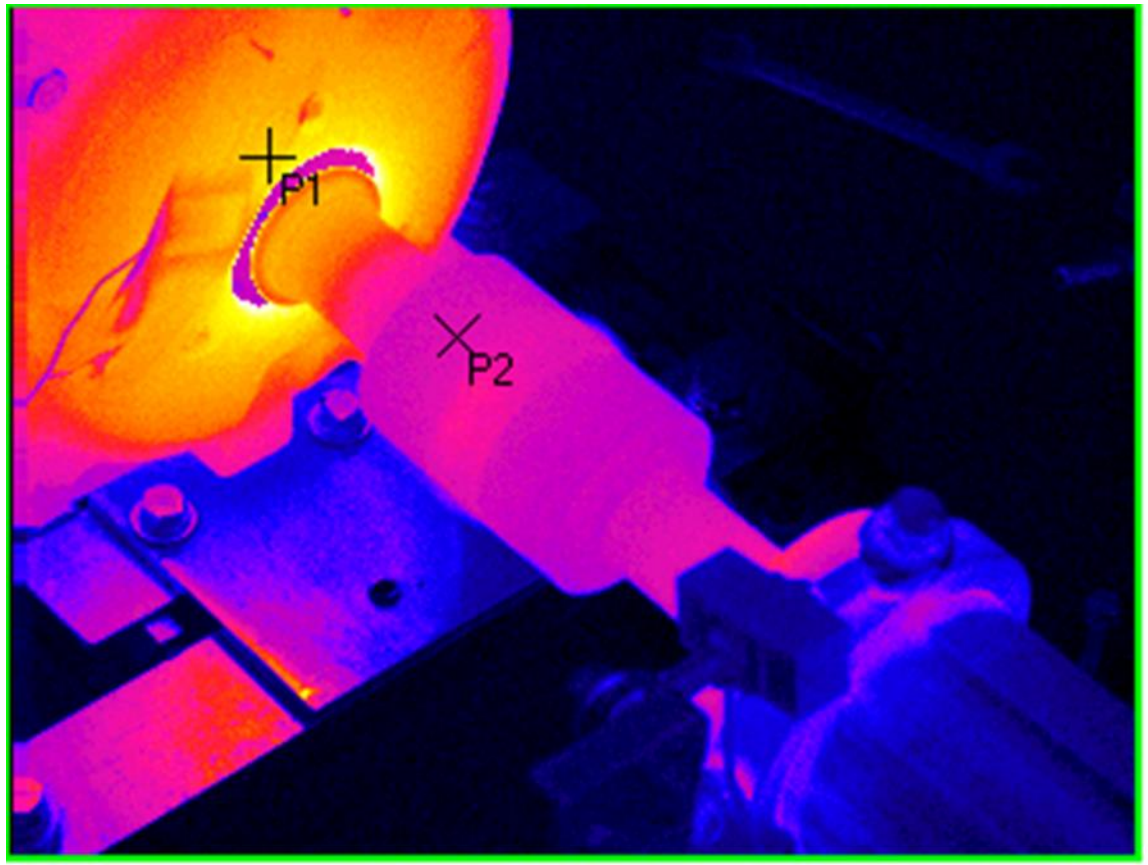
High 640x480 resolution detector and laser ranging

DUO-VISION PLUS

Industrial Thermal Imager

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Infrared Theory



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Heat Transmission

- In Measurement/manufacture:

  Temperature – most measured variable

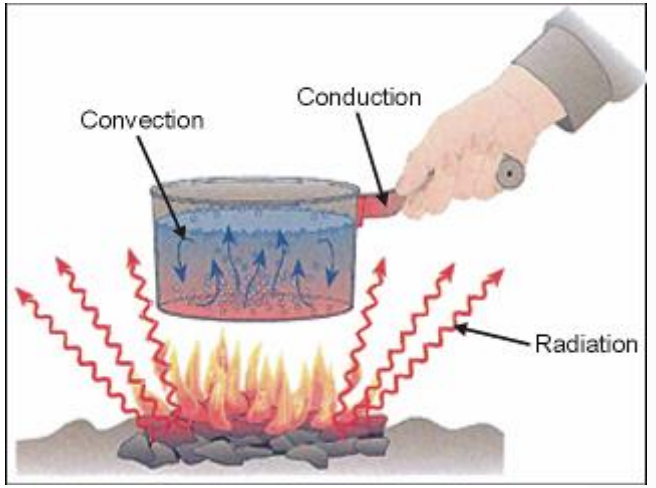
- Heat transmitted by:-

  Conduction

  Convection

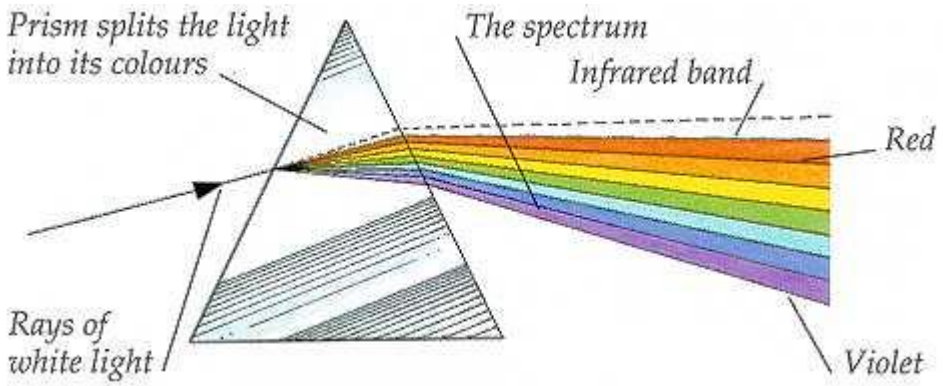
  Radiation

Here we are concerned with radiation



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InfraRed Discovered



In 1800 Sir William Herschel tested the relationship of radiated heat and light.

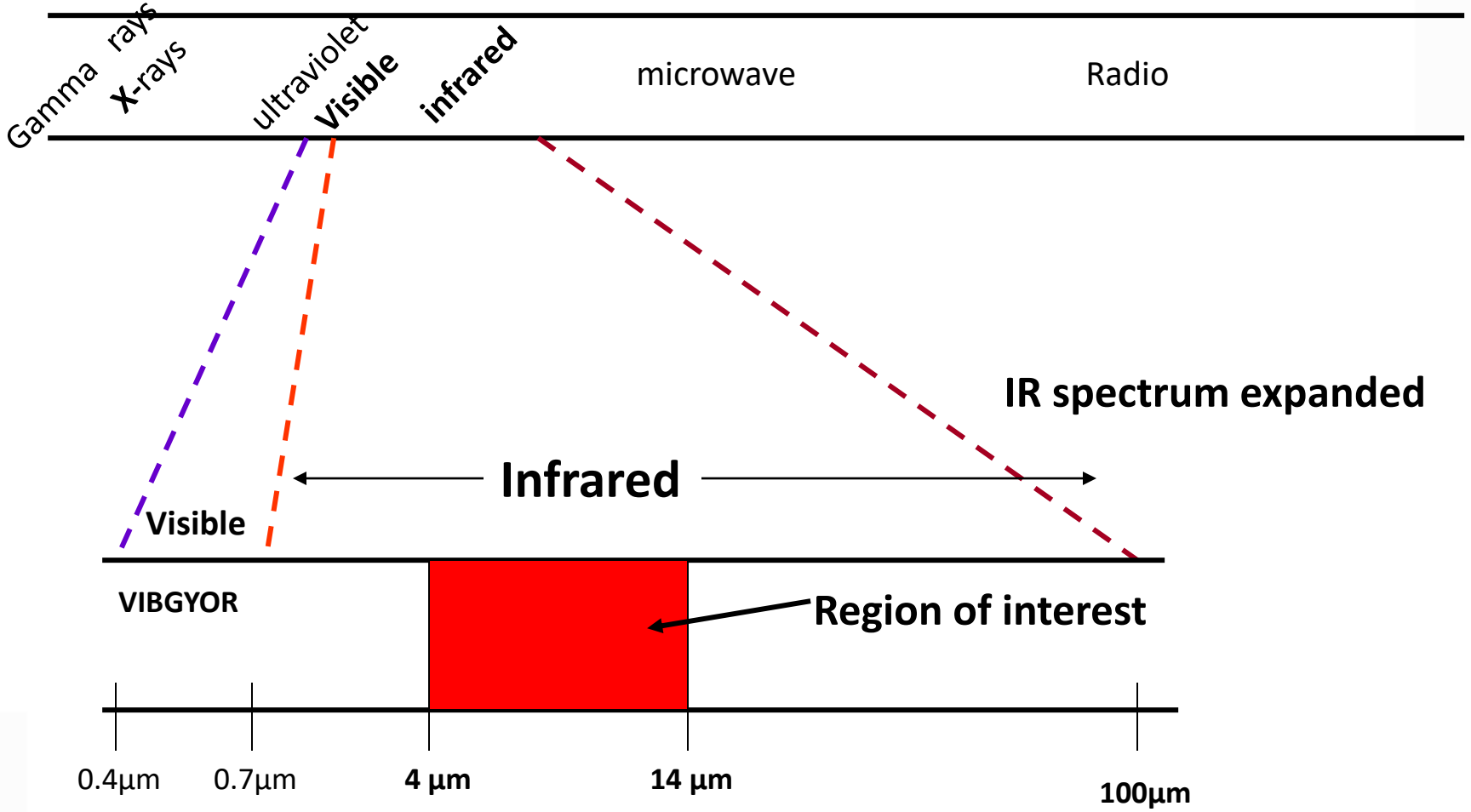
He split white light into a spectrum and, masking all the colours but one, measured the individual temperatures of each color.

He found the red end of the spectrum was hotter than the violet end, but also found that an area where he could see no colour, next to the red end of the spectrum, was hotter than the rest of the spectrum.

He called this invisible area infrared or "below the red".

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Electromagnetic Spectrum



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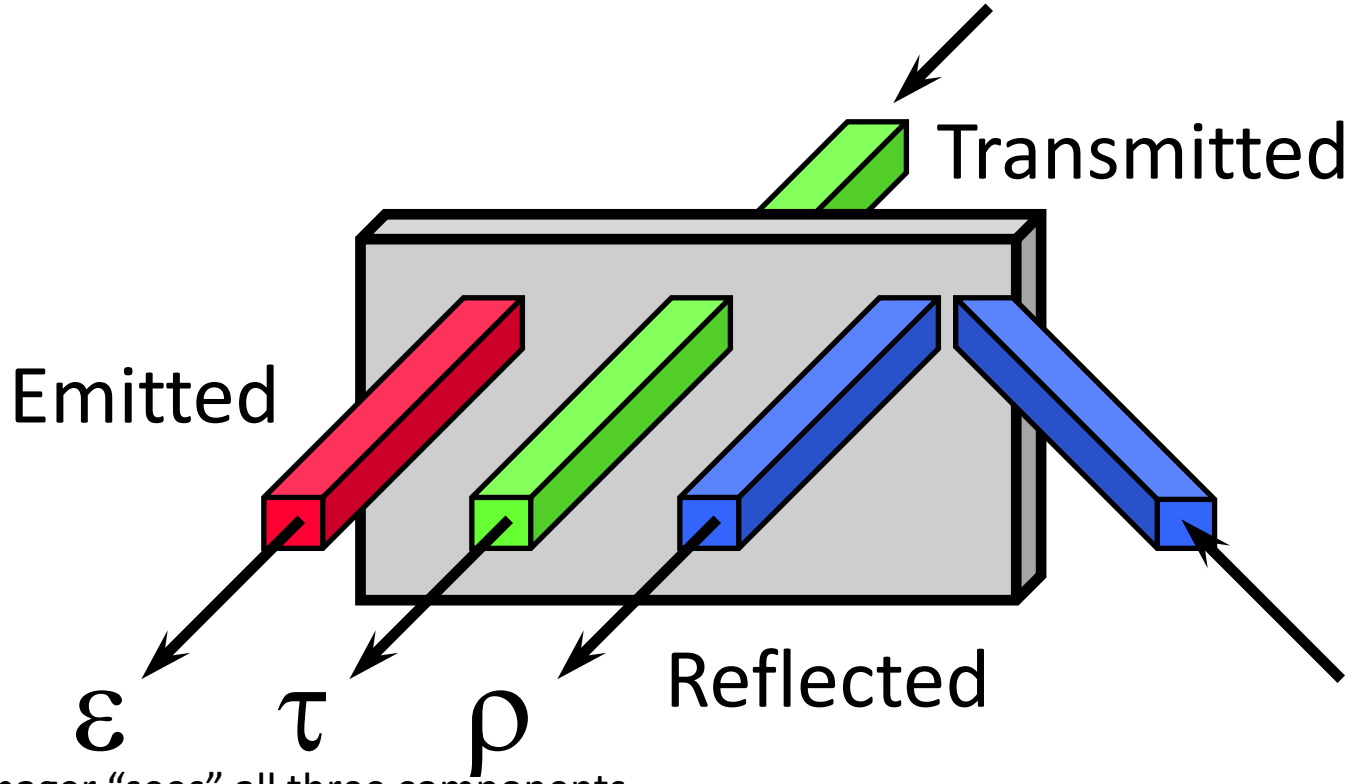
Emissivity - ε

- Emissivity (ε) is the ratio of energy radiated by an object to the energy radiated by a perfect radiator or blackbody.
- A Black Body has an ε of 1.
- Other objects have ε of less than 1.
- All ε values are between 0 and 1.

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Kirchhoff's Law

$$\varepsilon + \tau + \rho = 1$$



- The imager "sees" all three components
- The sum of the radiation leaving the surface of an object = 1

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Rule of Thumb

Emissivity + reflectivity + transmissivity = 1

Objects with

Low emissivity

usually have

High reflectivity

(as few common materials transmit IR)

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Emissivities

Typical emissivities:

- 0.98 = Carbon - filed surface
- 0.64 = Iron - cast oxidised
- 0.05 = Aluminium - polished sheet

- Temperatures of low emissivity objects are difficult to measure accurately

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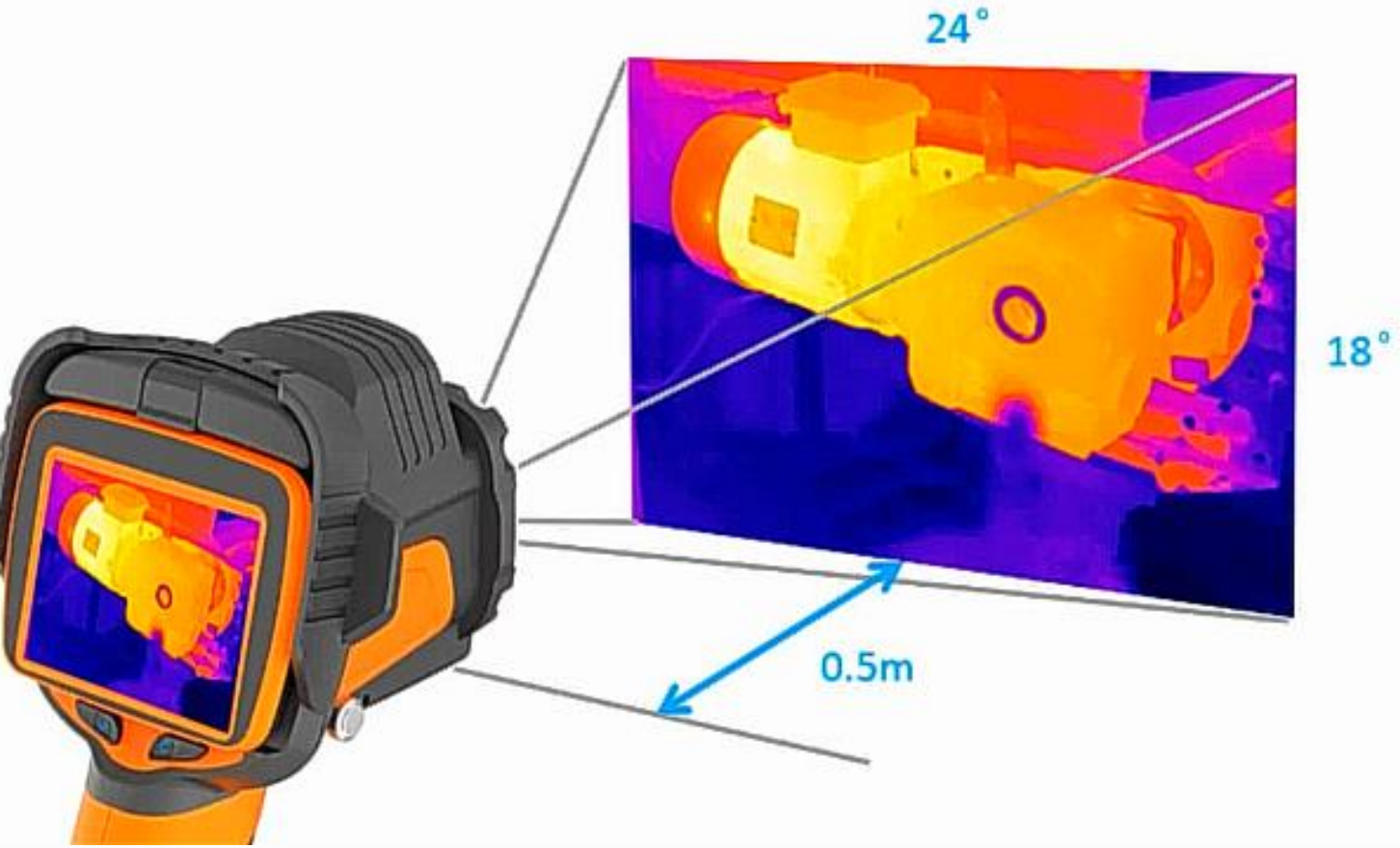


- Unique Duo-vision PLUS Technology
- Comprehensive Upgrade
- Ergonomic Design
- Performance optimization



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Adapt to different scenes



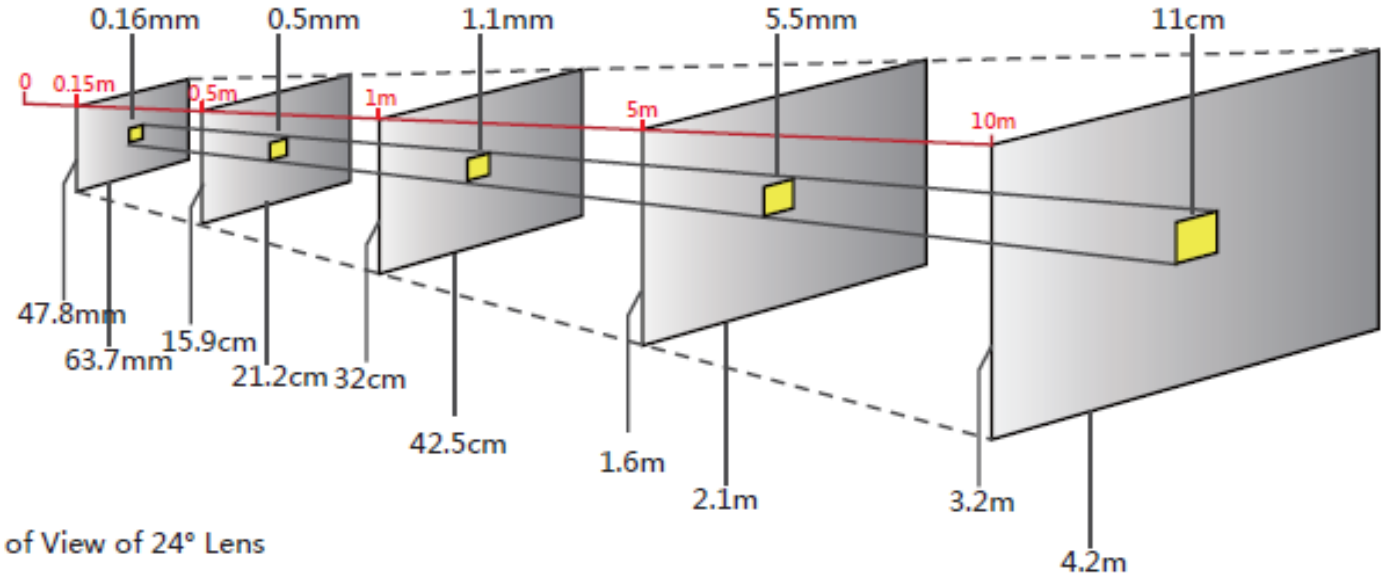
FOV : 24°x 18°(Optional lens available)

Min. Focus distance : 0.5m

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Field of View Diagram



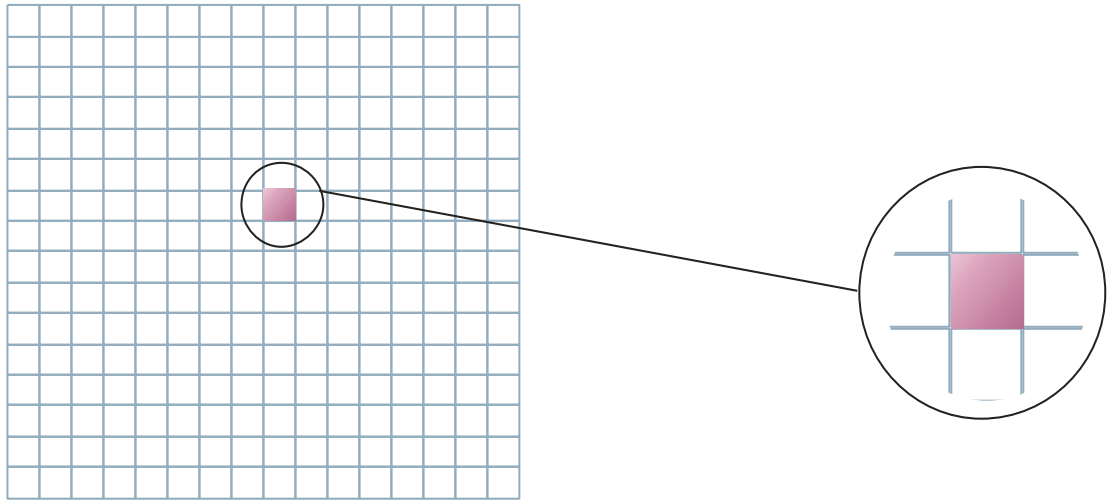


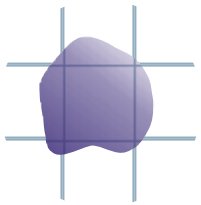
Field of View of 24° Lens

Filed of View of one pixel

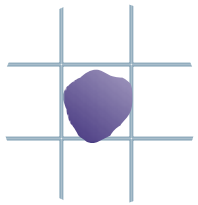
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PIXEL TEMPERATURE MEASUREMENT

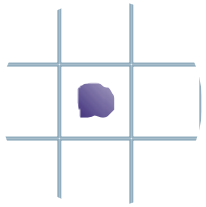




Correct temperature measurement



incorrect temperature measurement



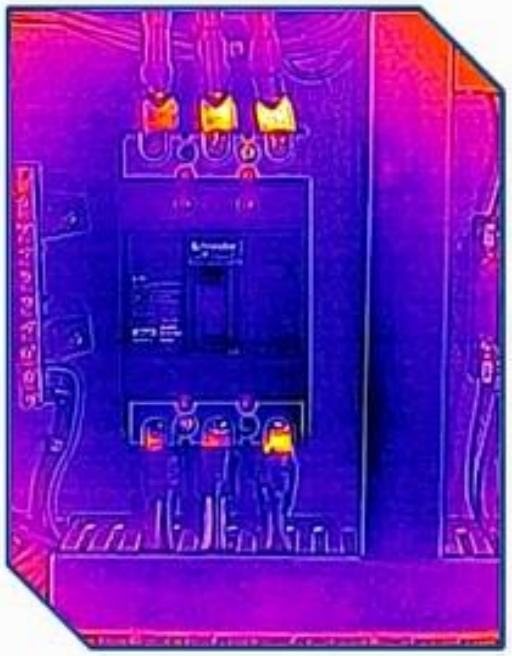
incorrect temperature measurement

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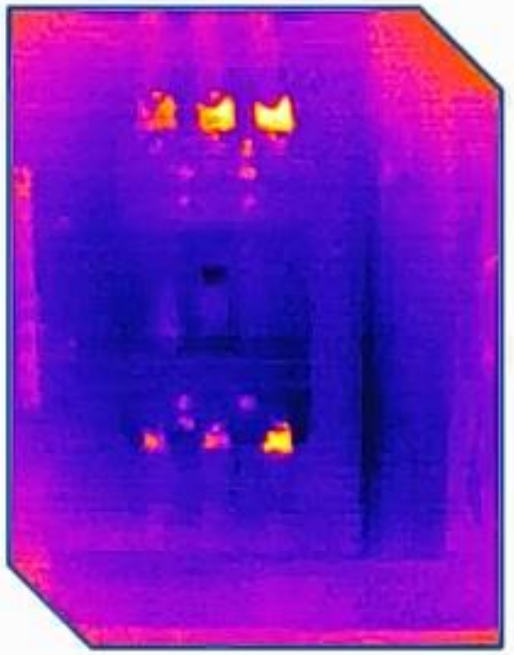
Unique Duo-vision PLUS Technology



CCD



Duo-vision PLUS



Thermal

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Different Color Plate



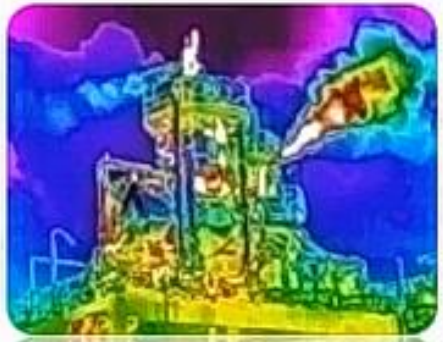
Iron

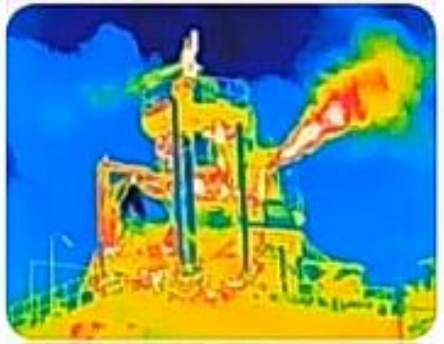


Iron inverted

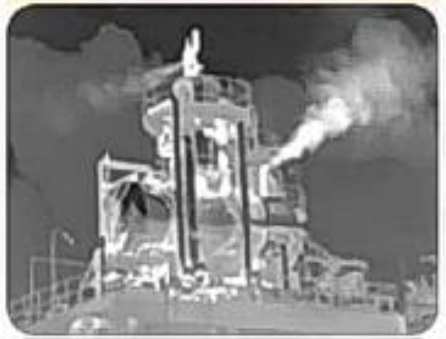


Rainbow





Feather



Grey

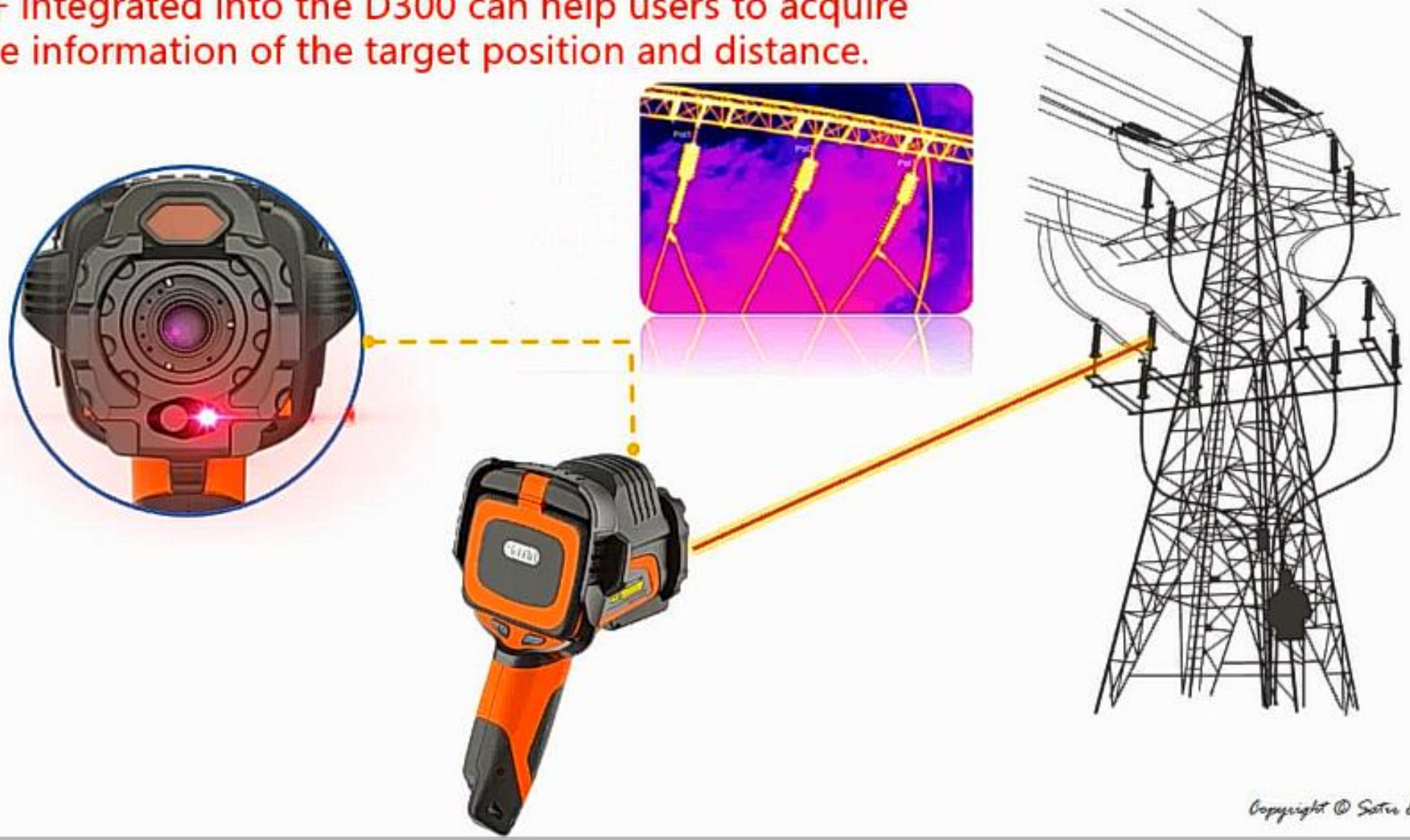


Grey inverted

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Laser Ranger Finder(LRF)

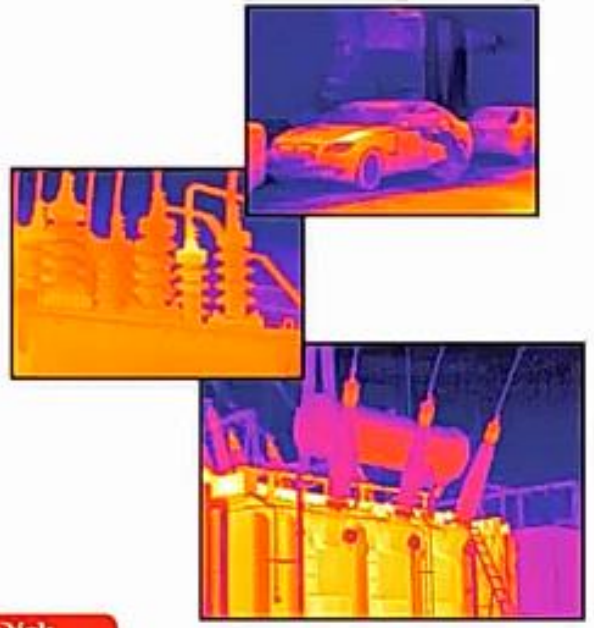
The LRF integrated into the D300 can help users to acquire accurate information of the target position and distance.



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High storage capacity







16GB integrated SD card

Long time video record

Replay function support

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Port Type C

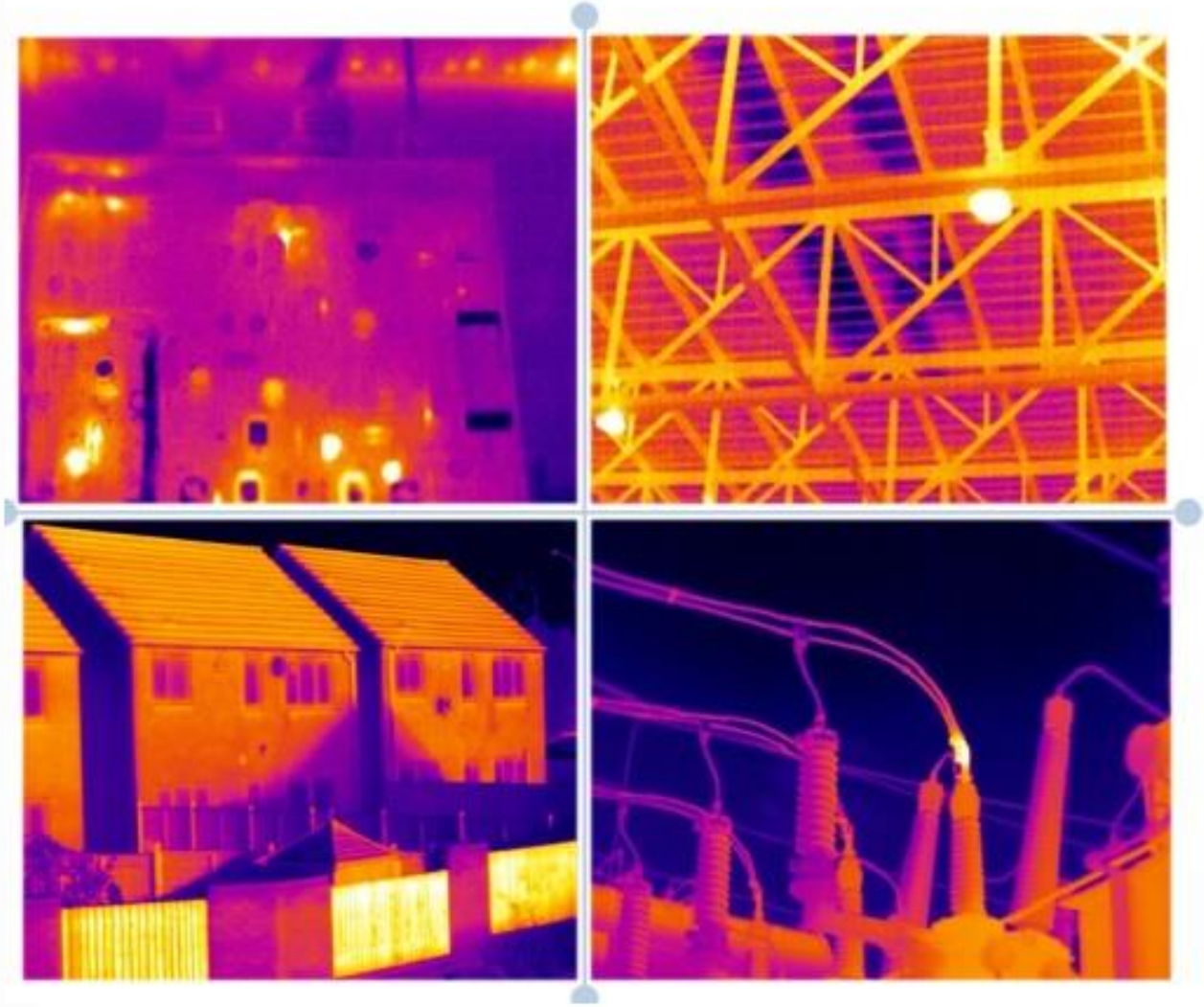






- Faster transfer time
- USB 2.1
  Real time transfer
- Faster charging time
- Front and back side plug in

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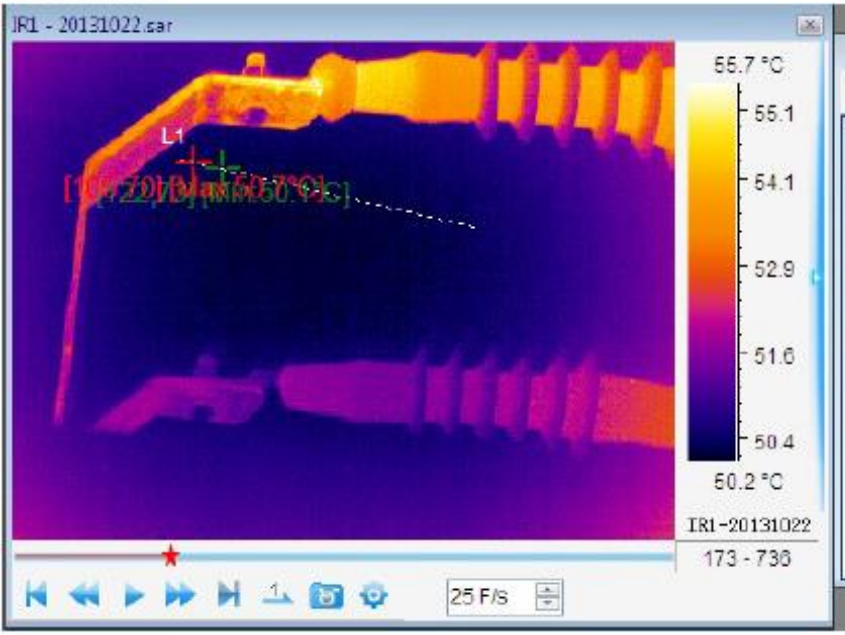


Features

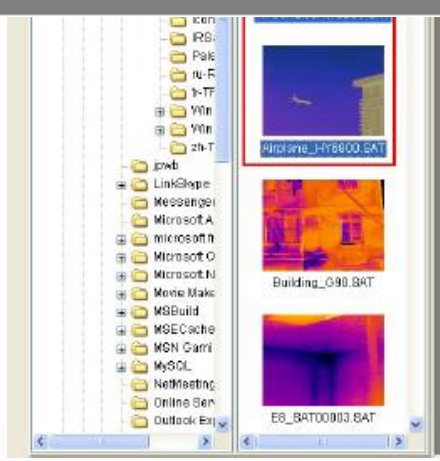
- Newly Designed Platform
- High Speed Processing allows for Quick High Quality image output
- IR/Digital/Duo-Vision/Duo Vision Plus
- Laser Ranging
- Adaptable LCD Display
- Motorised Lens
- Easy to use interface
- 5 MP High Definition Camera
- Thermal Video Recording
- Up to 8 Hours Battery Life

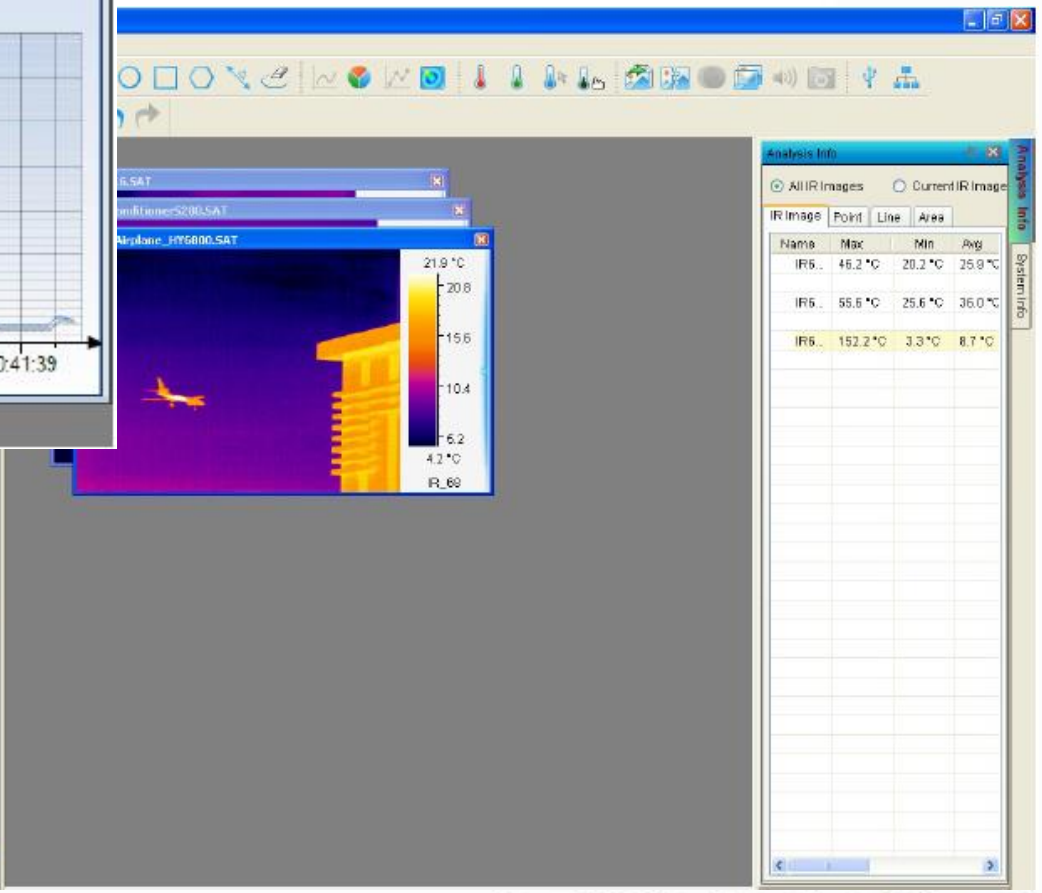
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SATIR Pro Software









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Type	D300
Image performance	
FOV	24° x18°
Spatial resolution	1.3 mrad
Thermal sensitivity	≤0.05°C@30°C
Detector resolution	384 x288
Focus	Motorized/Automatic
Image presentation	
Image mode	IR/CCD/DUO-VISION PLUS
Visible pixels	High Definition CCD
LCD Display	3.5" reversible capacitive touch screen
Image output mode	Analog video output
File format(Thermal/Visual)	.JPG
Temperature measurement	
Measurement range	-20℃ ~ +600℃ (up to 1500°C,optional)
Accuracy	±2°C or ±2% of readings
Laser	
Type	Class 2, 1mW/635nm, red
Laser ranging	Yes
Measurement range	0.05m ~ 30m
Protective Performance	
Encapsulation	IP54
Shock/Vibration resistance	25G/2G
Drop resistance	2 meters
Operating temperature	-20℃~+50℃
Additional features	
Built-in memory	Yes
USB Ports	Type-C
Video record	Yes
Bluetooth	Yes (Optional)
WIFI	Yes (Optional)
Real-time transmission	USB real-time transmission with temperature data (Optional)
Battery life	8 hours

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D600 Specifications

Image Performance	
Detector Resolution	640x480
Thermal Sensitivity (N.E.T.D)	≤0.05°C@30°C
FOV/Min. Focus Distance	24°x18°/0.20m
Spectral Range	8-14μm
Spatial Resolution	0.65 mrad
Focus Mechanism	Manual/Motorised/Auto
Measurement	
Temperature Range	-20°C ~ + 600°C, up to +1500°C (Optional)
Accuracy	±2°C or ± 2% of readings
Measurement Mode	8 Movable Spots, Auto Hot/Cold Spot,profile, 2 area boxes, isotherm, line
Alarm	Yes
Image Presentation	
Image Mode	IR/Digital/Duo-Vision/Duo Vision Plus
Visible Pixels	HD 5MP Digital Camera
LCD Display	3.5" Capacitive Touch Screen
Image Output Mode	NTSC (60Hz) or PAL (50Hz) Composite Video
File Format (Thermal/Visual)	JPEG (Thermal/Visual)
Power System	
Battery Type	Built-in Rechargeable Lithium-ion Battery
Charge Interface	Type-C
Power Manage	Auto Shut Off/Sleep Mode
Environmental	
Encapsulation	IP54
Physical Characteristics	
Weight	0.85KG
Dimensions	232mm×115mm×168mm



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