The thermal imager testo 881

SAVE NOW!
with the testo 881-3
in a set

testo 881-3 set

- NETD < 80 mK
- High-quality standard lens 32° x 23°
- Integrated digital camera with power LEDs
- Display of surface moisture distribution
- Auto Hot/Cold Spot Recognition
- Dynamic motor focus
- Temperature range -20 to +350 °C
- 33 Hz (inside the EU, outside 9 Hz)
- Headset for voice recording
- Isotherm display in instrument
- Min./Max. on area calculation
- High-temperature measurement (optional)

In addition to the equipment of the testo 881-3, the set also includes:

- Telephoto lens 9° x 7°
- Protective glass
- Additional battery
- Charger
- Soft-Case

testo 881-3 set
Order no.: 0563 0881 V4

		testo 881-1	testo 881-2	testo 881-3	testo 881-3 set
	Order no.:	0563 0881 V1	0563 0881 V2	0563 0881 V3	0563 0881 V4
Additionally in case:					
Lens protection glass	C1	●	●	●	●
Telephoto lens	A1	–	○	○	●
Additional battery	D1	○	○	○	●
Fast battery charger	E1	○	○	○	●
Soft-Case	H1	○	○	○	●
High-temperature measurement	G1	–	–	○	○

All imagers are delivered in a robust case incl. professional software, SD card, USB cable, mains unit, Li-ion rechargeable battery and tripod adapter.

● Standard ○ Optional – Not available

testo 881-1

- NETD < 80 mK
- High-quality standard lens 32° x 23°
- Integrated digital camera
- Auto Hot/Cold Spot Recognition
- Manual focus
- Temperature range -20 to +350 °C
- 33 Hz (inside the EU, outside 9 Hz)

testo 881-1
Order no.: 0563 0881 V1

testo 881-2

- NETD < 80 mK
- High-quality standard lens 32° x 23°
- Telephoto lens (optional)
- Auto Hot/Cold Spot Recognition
- Display of surface moisture distribution
- Manual focus
- Temperature range -20 to +350 °C
- 33 Hz (inside the EU, outside 9 Hz)
- Headset for voice recording
- Isotherm display in instrument
- Min./Max. on area calculation

testo 881-2
Order no.: 0563 0881 V2

testo 881-3

- NETD < 80 mK
- High-quality standard lens 32° x 23°
- Telephoto lens (optional)
- Integrated digital camera with power LEDs
- Display of surface moisture distribution
- Auto Hot/Cold Spot Recognition
- Dynamic motor focus
- Temperature range -20 to +350 °C
- 33 Hz (inside the EU, outside 9 Hz)
- Headset for voice recording
- Isotherm display in instrument
- Min./Max. on area calculation
- High-temperature measurement (optional)

testo 881-3
Order no.: 0563 0881 V3

All imagers are delivered in a robust case incl. professional software, SD card, USB cable, mains unit, Li-ion rechargeable battery and tripod adapter.

testo AG · Postfach 1140 · D-79849 Lenzkirch
Testo-Strasse 1 · D-79853 Lenzkirch · Telephone +49-7653 681-700 · Fax +49-7653 681-701
e-mail: info@testo.de · Internet: www.testo.de

0981 7374/dk/Si/Q/08.2009

Committing to the future

See more with the thermal imagers
testo 875 and testo 881

NEW

For professional
industrial thermography

testo 875 and testo 881 for professional industrial thermography

Thermal imager testo 881

Thermal imager testo 875

Infrared radiation cannot be seen by the human eye. However, all objects with a temperature above absolute zero, approximately - 273 degrees Celsius, emit infrared thermal radiation.

Thermal imagers can convert infrared radiation into electrical signals and thus render it visible. The testo 875 and testo 881 thermal imagers quickly and reliably discover anomalies and weak spots in industrial maintenance and production monitoring. Materials and components are checked completely damage-free. Problematic areas are detected before a malfunction occurs or fire risks occur. Whereas with other methods you have to stop production processes or dismantle cable or pipeline systems, with a Testo thermal imager, a single glance is enough.

Industrial thermography with Testo saves time, energy and money and ensures more security allround.

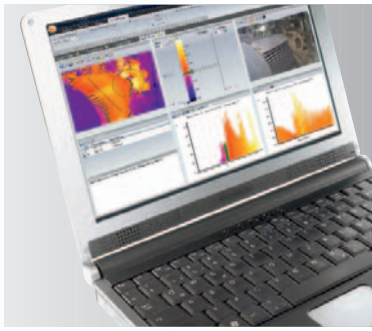
Even the smallest temperature differences can be identified with the high temperature resolution of the new Testo thermal imagers. Highly flexible and application-oriented, exchangeable lenses ensure that the right image section is always visible in the imager display. The additionally integrated digital camera considerably facilitates documentation.

Testo thermal imagers for day-to-day applications in industry. Provide security and prevent damage!

Testo thermal imagers stand out thanks to:

1. Professional analysis software

The clearly structured and user-friendly PC software allows the comprehensive analysis and evaluation of thermograms. You can now process and analyze several infrared images at the same time and document them in a report together with their respective real images. In order to achieve precise analysis results, it is possible to correct the different emissivities of the various materials by area in the thermal image, right up to individual pixels. **The professional software is included in delivery with all Testo thermal imagers.**



Easy and precise analysis

2. Soft-Case for your thermal imager

Your thermal imager is always securely transported in the practical Soft-Case. It is no longer necessary to hold it in your hand or store it in the case between measurements, but can be toted easily using the shoulder strap – **day-to-day work is more flexible, both hands are free.**

Just take it with you in the Soft-Case

3. Exchangeable lenses for more flexibility

A wide-angle and a telephoto lens allow adaptation to the different sizes of and distances from measurement objects. The 32° standard lens shows a large image section and thereby ensures a quick overview. The 9° telephoto lens offers the option of reliably detecting more details, even at greater distances. **The Testo exchangeable lenses for individual thermography.**

Simply change the lens

4. Intuitive menu

The one-hand operation with motor focus and 5-way joystick offers a fast and exact limitation of possible damage and thereby supports targeted maintenance. With the simple addition of folder structures, the administrative efforts for planning and managing the images as well as locations and tours are reduced to a minimum.

Easy operation

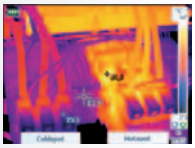
testo 875:
The 4 most important advantages of a thermal imager and the typical applications...

1. Good image quality

With the temperature resolution of < 110 mK, even minimal temperature differences are shown.

2. Automatic Hot/Cold Spot Recognition

Critical temperature conditions are shown with the Automatic Hot/ Cold Spot Recognition. Uninterrupted error localization on site is therefore ensured. The Auto Hot/Cold Spot Recognition also helps you with analysis and documentation when evaluating the details later on a PC.

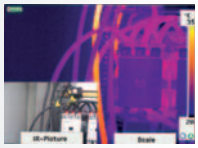


3. Lens protection glass

The lens protection glass, made of germanium, is permeable to infrared radiation and is simple to attach to the lens. It thereby protects the valuable optics from soiling and scratches.

4. Integrated digital camera

The testo 875 with integrated digital camera links real and infrared images for your fast, reliable and simple documentation of the measurement.



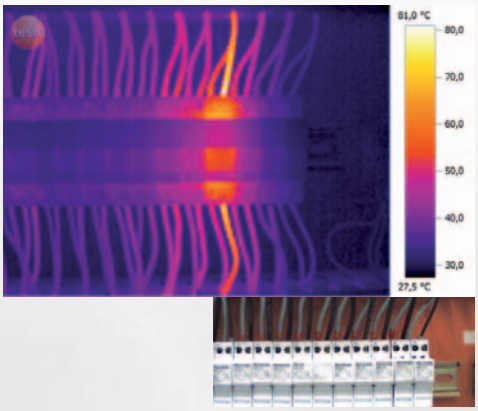
Thermography in industry

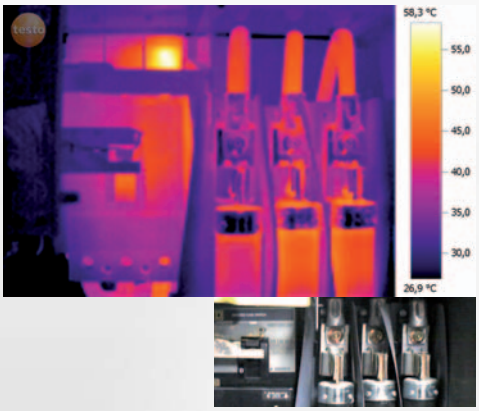
Thermography has proven its worth as a tool for preventative maintenance for monitoring both mechanical and electrical systems or production processes. In the Research and Development sector, thermal imagers are also used in the inspection of heat distribution on circuit boards.

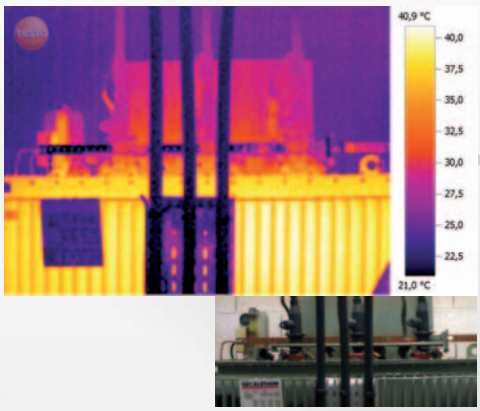
For regular checks in electrical maintenance

Infrared thermography allows an evaluation of the heat status in low, middle and high-voltage systems. Thermographic images allow early recognition of defective components or connections. Often, damages make themselves known early on by means of an increased generation of heat at the defective component. The thermal imager visualizes this temperature increase. Preventative measures can therefore be taken early on, before costly production downtimes occur, and risks of fire are minimized.

Documentation of results plays a particularly important part in preventive maintenance. The testo 875 and the testo 881 offer integrated location management for the structuring of inspection routes. In addition to the infrared recording, a real image of the location can be recorded with the integrated digital camera. The power LEDs also illuminate the dark areas here. The professional software automatically allocates the real image to the infrared image.







Hot/Cold Spot Recognition

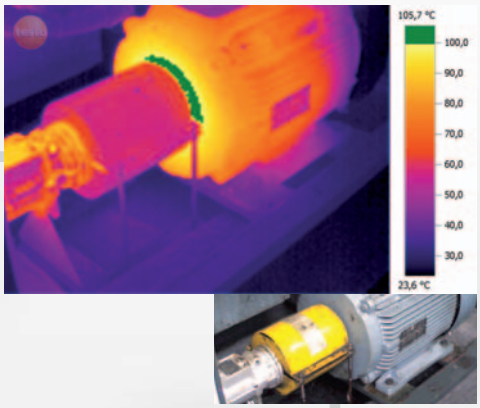
Thermal imager testo 875

For support in preventive mechanical maintenance

A reliable early recognition of developing damage to process-relevant system components is important in order to guarantee high security and reliability of the machines. A high level of heat emissions, especially from mechanical components may indicate an elevated level of stress. This is caused, for example, by friction, faulty adjustment, component tolerances or a lack of lubricant.

With its high temperature resolution of < 80 mK, the testo 881 provides an exact diagnosis. Critical heat statuses can be identified directly in the instrument using the isotherm function and preventative measures taken.

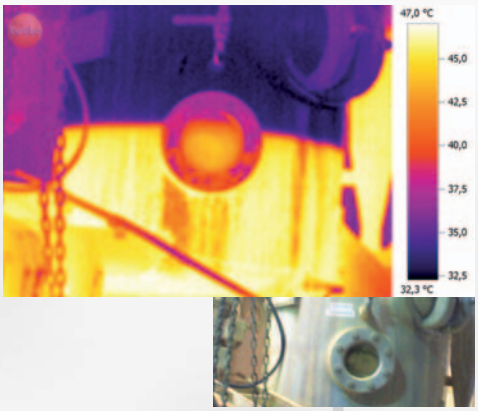
Isotherm function



For fast and easy monitoring of filling levels

Level control in sealed fluid tanks has proved to be a useful tool for avoiding machine damage and therefore production losses. If, for example, the fluid in coolant tanks falls to a dangerously low level, machines may no longer be cooled correctly. They run hot and may fail. Often, an automatic level control regulates the level of coolant and issues an alarm if the level is too low. However, this automatic control can also fail. In this case, a regular look through a thermal imager will also help.

Motor focus

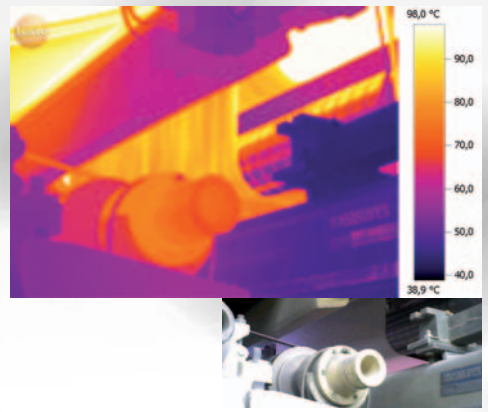


Min./Max. on area

Digital camera

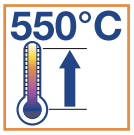
Good

Protective glass



More reliability in quality assurance and production monitoring

The testo 875 and testo 881 thermal imagers ensure precise situation analyses and thereby offer support during process monitoring and quality assurance at the product. With one glance, anomalies in the distribution of heat in components are detected quickly and without contact, as are foreign bodies in the production processes.

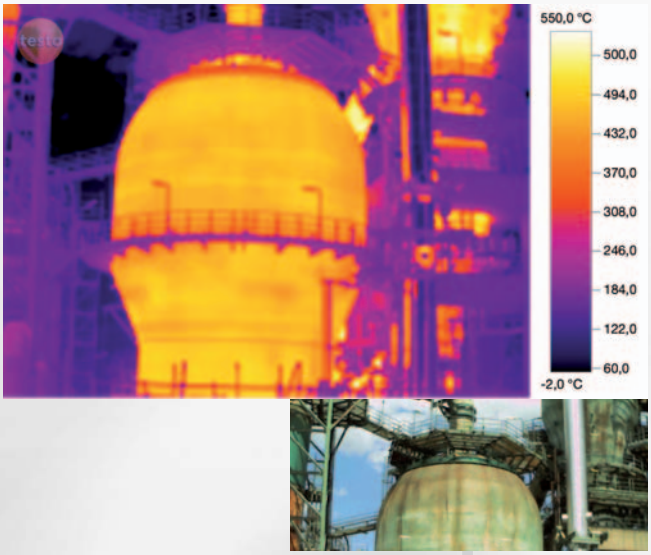


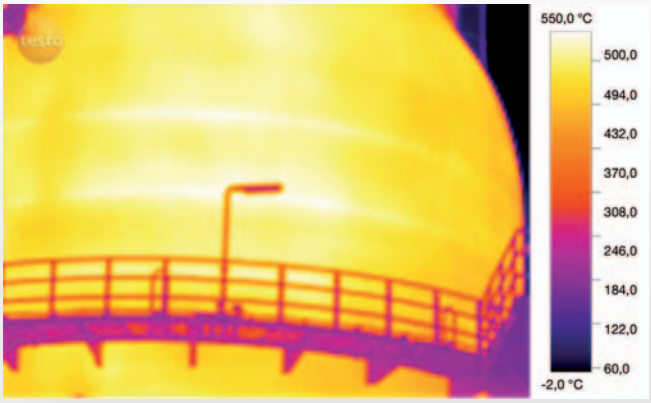
For reliable high-temperature measurement

The testo 881 flexibly adapts to the industrial requirements. With the high-temperature option, the measuring range can be extended up to 550 °C.

High temperatures are generally accompanied by a greater distance from the measurement object. The testo 875 and testo 881 enable adaptation to different conditions by means of exchangeable lenses.

High temperature option



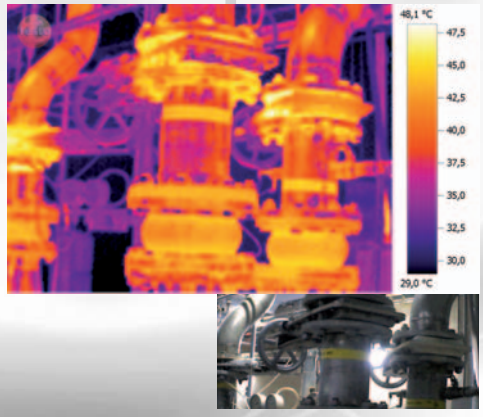


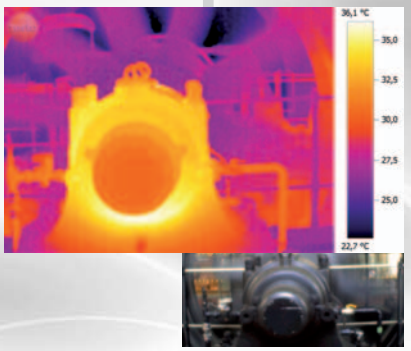
Exchangeable lenses

d image quality

Ensuring power generation

Energy is an important commodity that must always be available in sufficient amounts. Power stations and utilities therefore ensure that failures are prevented from the generation all the way through to the distribution of power. Testo thermal imagers support the preventative maintenance of electrical and mechanical components. Developing damage is thereby detected early on.

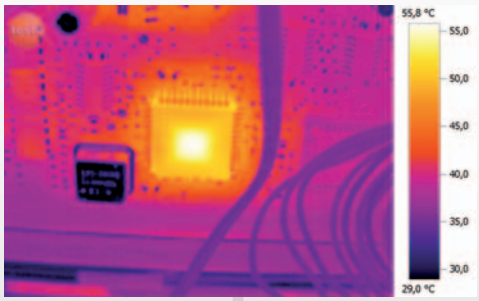




Analyzing the superheating of circuit boards in a targeted manner

In the Research and Development sector, thermal imagers are used for the targeted analysis of heat distribution, e.g. on circuit boards. The components are inspected quickly and without contact. The particular advantage of testo 875 and testo 881 is in the combination of a 32° standard lens with a minimum focus distance of 10 cm. Small details can thereby be detected on a large image section.

Minimum focus distance of 10 cm



Voice recording

Thermal imager testo 881

testo 881:
The 7 most important advantages of a thermal imager and the typical applications...

1. Highest image quality

With a thermal resolution of < 80 mK, the testo 881 delivers high-resolution images in which even the smallest temperature differences are emphasized and visualized.

2. Voice recording

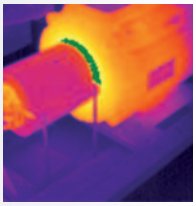
The practical headset and the integrated voice recording function facilitate the documentation of the measurement results. Comments can be made on every recording on site. This valuable additional information is stored together with the thermal image.

3. Built-in digital camera with power LEDs

In addition to the infrared recording, the testo 881 creates a parallel real image of the location with the integrated digital camera. The integrated power LEDs guarantee you optimum illumination of dark areas when recording real images.

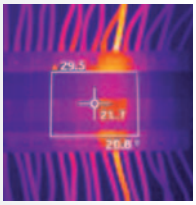
4. Isotherm function

With the optical colour alarm, areas of critical temperature on the measurement object are immediately emphasized in colour.



5. Min/Max on Area

The minimum and maximum values of an image section can be provided at a glance live directly on site.

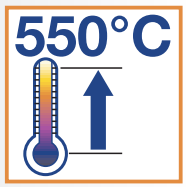


6. Motor focus for one-hand operation

The motor focus enables you to focus the image using a focus rocker switch. This enables operation of the thermal imager with just one hand.

7. High temperature option

With the high-temperature option, the measuring range of the testo 881 can be flexibly extended. If required, simply fit a high-temperature filter onto the camera lens. Temperatures up to 550 °C can thereby be measured.



The thermal imager testo 875

SAVE NOW!
with the testo 875-2
in a set

testo 875-2 set

- NETD < 110 mK
- High-quality standard lens 32° x 23°
- Integrated digital camera
- Display of surface moisture distribution
- Auto Hot/Cold Spot Recognition
- Manual focus
- Temperature range -20 to +280 °C

In addition to the equipment of the testo 875-2, the set also includes:

- Telephoto lens 9° x 7°
- Protective glass
- Additional battery
- Charger
- Sun Shield

testo 875-2 set
Order no.: 0563 8752

testo 875-1

- NETD < 110 mK
- High-quality standard lens 32° x 23°
- Auto Hot/Cold Spot Recognition
- Manual focus
- Temperature range -20 to +280 °C

testo 875-1
Order no.: 0560 8751

testo 875-2

- NETD < 110 mK
- High-quality standard lens 32° x 23°
- Integrated digital camera
- Display of surface moisture distribution
- Auto Hot/Cold Spot Recognition
- Manual focus
- Temperature range -20 to +280 °C
- Telephoto lens (optional)

testo 875-2
Order no.: 0560 8752

All imagers are delivered in a robust case incl. professional software, SD card, USB cable, mains unit, Li-ion rechargeable battery and tripod adapter.

Accessories	Order no.
Aluminium tripod Professional, extremely light and stable aluminium tripod with quick-release legs and a 3-way tripod head	0554 8804
Lens protection glass Special protective glass made of germanium for optimum protection of the lens against dust and scratches	0554 8805
Additional battery Additional lithium-ion battery for extending the operating time	0554 8802
Fast battery charger Desktop fast battery charger for two batteries for optimizing the charging time	0554 8801
Sun Shield Special sun protection for the display of the testo 881 and testo 875 in bright environments	0554 8806
Soft-Case Practical carrying option for testo 881 and testo 875 (incl. shoulder strap)	0554 8814
Retrofit telephoto lens (only with testo 881-2 and -3 and with testo 875-2); please contact our customer service.	
Retrofit high-temperature measurement (only with testo 881-3); please contact our customer service.	
Emissivity adhesive tape Adhesive tape, e.g. for reflective surfaces (roll, L.: 10 m, W.: 25 mm), E=0.95 heatproof up to +300 °C	0554 0051
ISO calibration certificates for testo 880	
Calibration points at 0 °C, 25 °C, 50 °C in measuring range -20 °C to 100 °C	0520 0489
Calibration points at 0 °C, 100 °C, 200 °C in measuring range 0 °C to 350 °C	0520 0490
Freely selectable calibration points in the range between -18 °C to 250 °C	0520 0495

What is the purpose of these features in thermography?

Feature	testo 875-1	testo 875-2	testo 881-1	testo 881-2	testo 881-3	
High thermal sensitivity (NETD)	< 110 mK		< 80 mK			The NETD indicates the smallest possible temperature difference that can be resolved by the imager. A low NETD guarantees the resolution of the smallest temperature differences. The following rule of thumb applies: The smaller this value is, the better the measurement resolution of the imager and the better the image quality.
Temperature measuring range	-20 to +280 °C		-20 to +350 °C			The temperature range indicates up to which temperatures the imager is able to record and measure the heat radiation of objects.
Refresh rate	9 Hz		33 Hz*			The refresh rate indicates how often the thermal image is refreshed in a second.
Standard lens 32° x 23°	✓	✓	✓	✓	✓	The 32° lens quickly records a large image section and thereby supplies a good overview of the temperature distribution of the measurement object – at one glance, you have more in the picture.
Exchangeable telephoto lens 9° x 7° (optional)		✓		✓	✓	The exchangeable telephoto lens assists in the measurement of smaller details and visualizes details in the thermal image, even at greater distances.
High temperature up to 550 °C (optional)					✓	With the high-temperature option, the measuring range can be flexibly extended. With a high-temperature filter, measurement of temperatures up to 550 °C is possible.
Automatic Hot/Cold Spot Recognition	✓	✓	✓	✓	✓	The coldest and warmest spot of the measurement object are automatically shown directly in the thermal image in the imager display – critical heat conditions can be detected at a glance.
Min./Max. on area calculation				✓	✓	The minimum and maximum values of an image section can be provided at a glance live directly on site.
Isotherm function				✓	✓	The optical colour alarm localizes critical areas easily and directly in the thermal image on site. All spots in the thermal image with a temperature value within a defined range are marked in colour and emphasized.
Display of surface moisture distribution via manual input		✓		✓	✓	Via the manual input of ambient temperature, air humidity and dewpoint in the room, mould risk spots are visualized in the thermal image at a glance.
Voice recording				✓	✓	Identified weak spots can be commented on by means of voice recording. Valuable additional information can thereby be documented on site.
Integrated digital camera		✓	✓		✓	Quick and simple object inspection thanks to the display of infrared and real image. The digital real image is automatically stored simultaneously with each infrared image.
Integrated LEDs					✓	The integrated power LEDs guarantee you optimum illumination of dark areas when recording real images.
Motor focus					✓	The dynamic motor focus allows you to focus the infrared image with just one hand.

*inside the EU, outside 9 Hz

Technical data, testo 875 and testo 881

	testo 875-1	testo 875-2	testo 881-1	testo 881-2	testo 881-3
Infrared image output					
Detector type	FPA 160 x 120 pixels, a.Si		FPA 160 x 120 pixels, a.Si		
Thermal sensitivity (NETD)	< 110 mK at +30 °C		< 80 mK at +30 °C		
Field of view/min. focus distance	32° x 23° / 0.1 m (standard lens), 9° x 7° / 0.5 m (telephoto lens)		32° x 23° / 0.1 m (standard lens) 9° x 7° / 0.5 m (telephoto lens)		
Geometric resolution (IFOV)	3.3 mrad (standard lens), 1.0 mrad (telephoto lens)		3.3 mrad (standard lens), 1.0 mrad (telephoto lens)		
Image refresh rate	9 Hz		33 Hz for EU, otherwise 9 Hz		
Focus	manual		manual		manual and motor focus
Spectral range	8 to 14 µm		8 to 14 µm		
Visual					
Optical field/min. focus distance	–	33° x 25° / 0.4 m	33° x 25° / 0.4 m	–	33° x 25° / 0.4 m
Image size	–	640 x 480 pixels	640 x 480 pixels	–	640 x 480 pixels
Image presentation					
Image display	3.5” LCD with 320 x 240 pixels		3.5” LCD with 320 x 240 pixels		
Display options	only IR image	only IR image/ only real image/ IR and real image	only IR image/ only real image/ IR and real image	only IR image	only IR image/ only real image/ IR and real image
Video output	USB 2.0		USB 2.0		
Colour palettes	4 options (ironbow, rainbow, blue/red, greyscale)		9 options (ironbow, rainbow, cold/hot, blue/red, grey, inverted grey, sepia, Testo, ironbow HT)		
Measurement					
Temperature range	-20 °C to +100 °C/ 0 °C to +280 °C (switchable)		-20 °C to +100 °C/ 0 °C to +350 °C (switchable)		
High-temperature measurement (optional)	–		–		+350 °C to +550 °C
Accuracy	±2 °C, ±2 % of mv (-20 °C to +280 °C)		±2 °C, ±2 % of mv (-20 °C to +350 °C)		
	–		–		±3 % of mv (+350 °C to +550 °C)
Minimum diameter measurement point	10 mm at 1 m (standard lens), 3 mm at 1 m (telephoto lens)		10 mm at 1 m (standard lens), 3 mm at 1 m (telephoto lens)		
Setting emissivity	0.01 to 1		0.01 to 1		
Reflected temperature compensation	manual		manual		
Imager equipment					
Digital camera	–	Yes	Yes	–	Yes
Power LEDs	–		–		Yes
Motor focus	–		–		Yes
Standard lens (32° x 23°)	Yes		Yes		
Telephoto lens (9° x 7°)	–	optional	–	optional	
Laser measuring spot marking	–		yes (laser classification 635 nm, class 2)		
Voice recording	–		–	yes (by means of headset)	
Display of surface moisture distribution	–	yes (by means of manual input)	–	yes (by means of manual input)	
Measuring functions	Centre point	Standard measurement (1-point)	Standard measurement (1-point)		
	Hot/Cold Spot Recognition		Hot/Cold Spot Recognition		
	–		Two-point measurement		
	–		–	Isotherms	
	–		–	Min./Max. on area	
Image storage					
File format	.bmt; export options in .bmp, .jpg, .csv		.bmt; export options in .bmp, .jpg, .csv		
Data storage device	2 GB SD card (approx. 1000 images)		2 GB SD card (approx. 1000 images)		
Power supply					
Battery type	Fast-charging, Li-ion battery can be changed on site		Fast-charging, Li-ion battery can be changed on site		
Operating time	4 hours		4 hours		
Charging options	In instrument/in charging station (optional)		In instrument/in charging station (optional)		
Mains operation	Yes		Yes		
Ambient conditions					
Operating temperature range	-15 °C to +40 °C		-15 °C to +40 °C		
Storage temperature range	-30 °C to +60 °C		-30 °C to +60 °C		
Air humidity	20 % to 80 % not condensing		20 % to 80 % not condensing		
Protection class of housing	IP54		IP54		
Vibration (IEC 68-2-6)	2G		2G		
Physical features					
Weight	approx. 900 g		approx. 900 g		
Dimensions (L x W x H)	152 x 108 x 262 mm		152 x 108 x 262 mm		
Tripod mounting	Yes		Yes		
Housing	ABS		ABS		
PC software					
System requirements	Windows XP (Service Pack 2), Windows Vista, USB 2.0 interface		Windows XP (Service Pack 2), Windows Vista, USB 2.0 interface		
Norms, tests, warranty					
EU guideline	2004/108/EC		2004/108/EC		
Warranty	2 years		2 years		