



Committing to the future

See more with the thermal imagers  
**testo 875 and testo 881**

Now new:

- even better NETD
- Image overlay TwinPix



For the professional  
industrial thermography

## testo 875 and testo 881 for the professional industrial thermography

Thermal imager  
testo 881 now with  
**NETD < 50 mK**



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!**

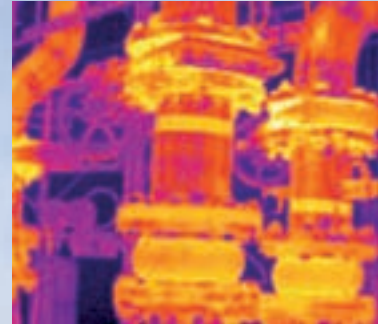
Thermal imager  
testo 875 now with  
**NETD < 80 mK**



## Testo thermal imagers stand out thanks to:

### 1. Highest image quality for high-focus images

Perfectly developed electronics and high-quality Germanium optics make optimum use of the detector, resulting in the best possible thermal resolution. With an NETD < 50 mK in testo 881 and an NETD < 80 mK in testo 875, the thermal imagers from Testo provide highest image quality.



Easy visualization of the smallest temperature differences

### 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

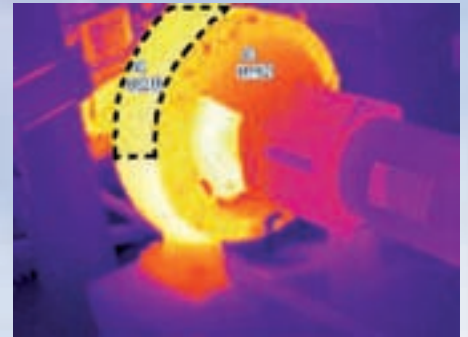
# The PC software IRSoft from Testo for comprehensive analysis and professional thermography reports

IRSoft – the high-performance PC software for professional thermography analysis from Testo. The IRSoft allows comprehensive analysis of thermal images on a PC. It stands out thanks to its clear structure and high user-friendliness. All analysis functions are explained using easily comprehensible symbols. So-called tool tips additionally provide explanations of each function by mouseover. This assistance simplifies image processing and allows intuitive operation. A fully functional version of the PC software IRSoft is included with all Testo thermal imagers.

## IRSoft – Precise analysis of thermal images

Infrared images can be conveniently processed and analyzed on a PC using the IRSoft. Extensive analysis functions are available for professional image processing. For example, the different emissivities of the various materials for image areas can be corrected afterwards, right up to individual pixels.

The histogram function shows the temperature distribution of an image area. A profile line is used to analyze temperature curves. In order to visualize critical temperatures in an image, limit value violations as well as pixels in specific temperature range can be set, hot/cold spots determined, and comments on the analysis made.



Change of emissivity by area for exact temperature analysis.

## Easy creation of professional thermography reports

Infrared and real images are displayed in the screen already during analysis, and automatically taken over into the report. This makes easy and professional documentation of the measurement results possible.

The report assistant guides step by step to a complete and clear report. Different templates are available not only for short and quick reports, but also for more comprehensive documentation. The templates contain all relevant information on measurement site, measurement task and examination results.

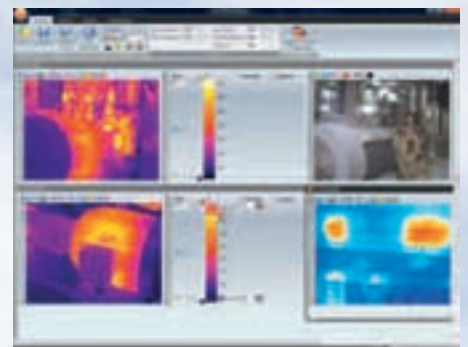
In addition to this, the report designer can be used to create user-defined templates for individual reports.



Multi-page reports for complete documentation

## IRSoft – all important information at a glance

Several infrared images can be opened and analyzed parallel to each other. All analyses in the images are visible at a glance and comparable to each other. Alterations to settings can be carried out either for the whole infrared image or for individual image sections. It is additionally possible to transfer current image corrections to all opened infrared images with a mouse click.



Simultaneous evaluation and comparison of several images

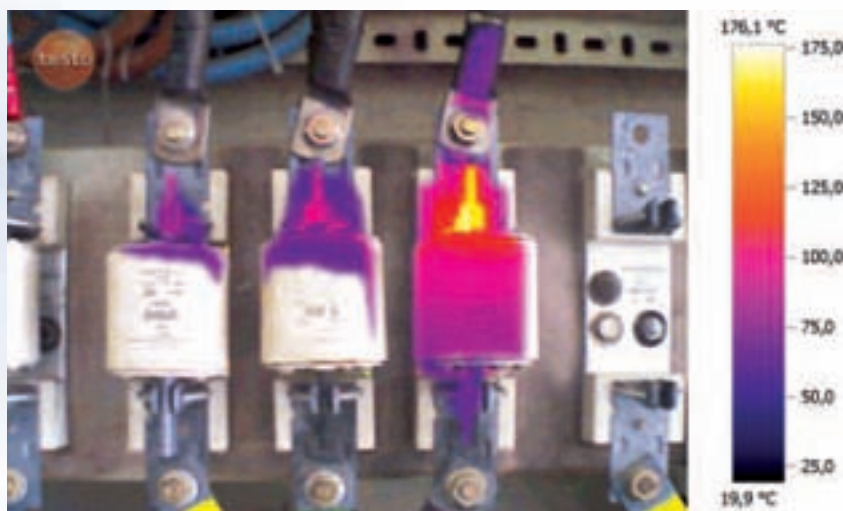
## New: Testo PC software IRSoft – now with the additional analysis function for image overlay: Testo TwinPix

The thermal imagers from Testo with integrated digital camera automatically store an infrared and a real image simultaneously. With the professional image overlay Testo TwinPix, these two images can be superimposed over each other in the PC software IRSoft. The information from the thermal image and the real image are then displayed together in one image.



### Straight to the perfect result with Testo TwinPix...

By setting marking points which correspond in the infrared and the real image, the images are overlaid exactly. Even scenes with measurement objects at different distances can be blended without a problem, and shown simultaneously in one image.



See temperature differences even in the real image, with TwinPix

### Show the customer what's important, with the professional image overlay from Testo...

During the analysis, the image overlay helps orientation in the image and in the exact localization of the damaged area.

Setting the transparency level regulates the intensity of the infrared or the real image component in the overlay. Critical temperature ranges can be marked by inserting infrared limits and the infrared range. Even in the real image, problem areas can be directly emphasized, and the temperature status of the measurement object displayed plastically. The overlaid image is taken over into the report for documentation purposes.



New function of the PC software: Image overlay TwinPix

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

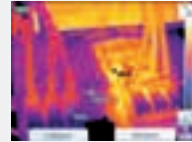
### 1. Good image quality

With the temperature resolution of  $< 80 \text{ mK}$ , 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.



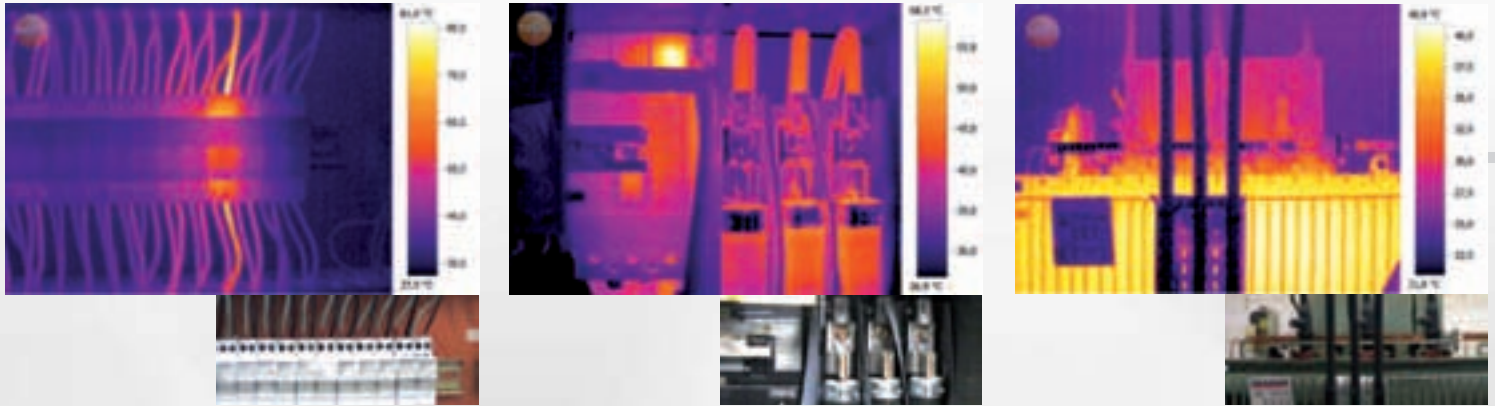
## Thermography in industry

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.



Thermal imager testo 875

Hot/Cold Spot Recognition

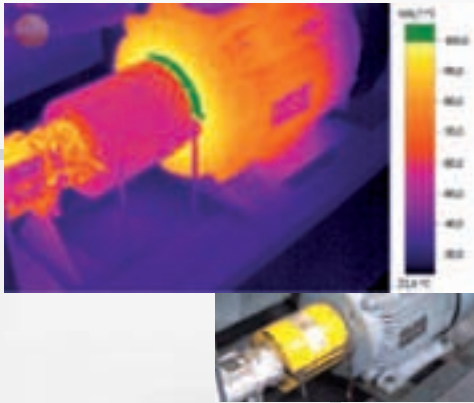


## For support in preventive mechanical maintenance

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 < 50 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

## 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.

Protective glass



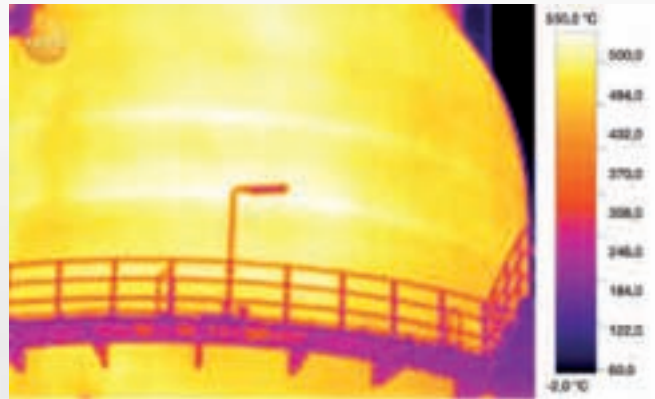
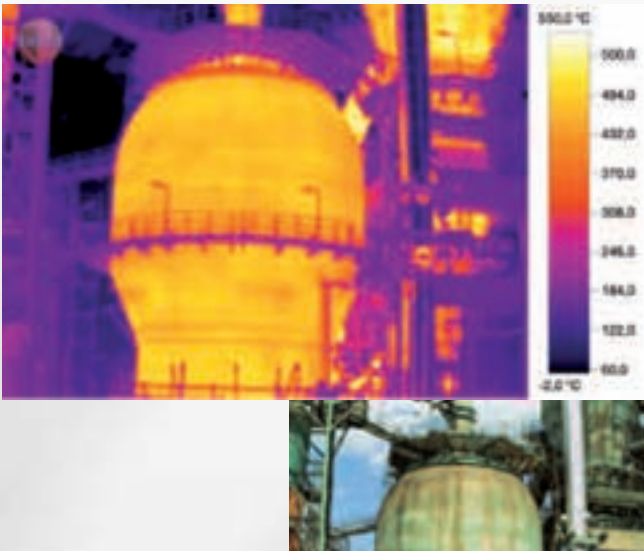


## For reliable high-temperature measurement

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. testo 875 and testo 881 enable adaptation to different conditions by means of exchangeable lenses.

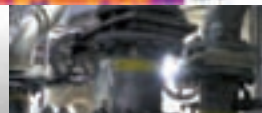
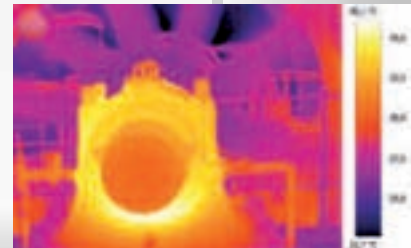
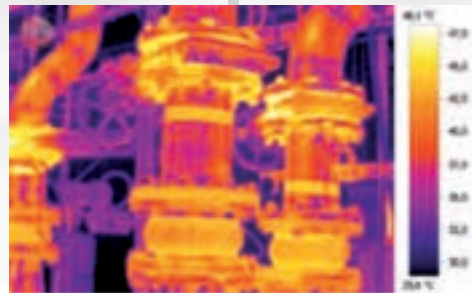
### High temperature option



### Exchangeable lenses

## Ensuring power generation

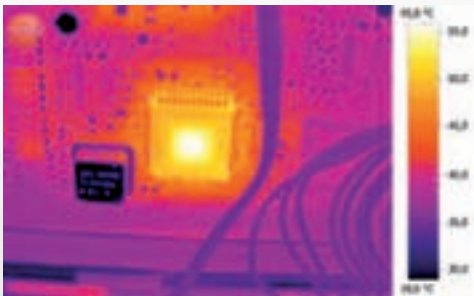
Energy is an important commodity that must always be available in sufficient amounts. Power stations and utilities therefore ensure that failures are prevented from the generation all the way through to the distribution of power. Testo thermal imagers support the preventative maintenance of electrical 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  $< 50 \text{ mK}$ , 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.



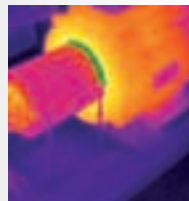
### 3. Built-in digital camera with power LEDs

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.



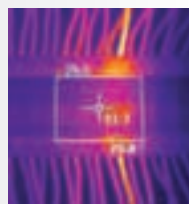
### 4. Isotherm function

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.



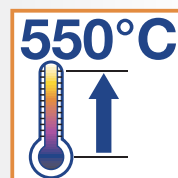
### 6. Motor focus for one-hand operation

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  $550 \text{ }^\circ\text{C}$  can thereby be measured.



## The thermal imager testo 875

### testo 875-2 set

- NETD < 80 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

<b>testo 875-2 set</b>
Order no.: 0563 8752



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

### testo 875-1

- NETD < 80 mK
- High-quality standard lens 32° x 23°
- Auto Hot/Cold Spot Recognition
- Manual focus
- Temperature range -20 to +280 °C

<b>testo 875-1</b>
Order no.: 0560 8751

### testo 875-2

- NETD < 80 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)

<b>testo 875-2</b>
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 for testo 881 and testo 875

#### 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 +250 °C

0554 0051

##### ISO calibration certificates

##### for testo 875 and testo 881

Calibration points at 0 °C, 25 °C, 50 °C

0520 0489

Calibration points at 0 °C, 100 °C, 200 °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)	< 80 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
<b>Infrared image output</b>					
Detector type	FPA 160 x 120 pixels, a.Si		FPA 160 x 120 pixels, a.Si		
Thermal sensitivity (NETD)	< 80 mK at +30 °C		< 50 mK at +30 °C		
Field of vision/min. focusing 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		
<b>Visual image output</b>					
Field of vision/min. focusing 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
<b>Image presentation</b>					
Image display	3.5" LCD with 320 x 240 pixels		3.5" LCD with 320 x 240 pixels		
Display options	IR image only	IR image only / real image only/ IR and real image	IR image only / real image only/ IR and real image	IR image only	IR image only / real image only/ IR and real image
Video output	USB 2.0		USB 2.0		
Colour palettes	4 options (iron, rainbow, blue-red, shades of grey)		9 options (iron, rainbow, cold-hot, blue-red, grey, inverted grey, sepia, Testo, iron HT)		
<b>Measurement</b>					
Temperature range	-20 °C to +100°C / 0 °to +280 °C (switchable)		-20 °C to +100°C / 0 °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 measurement spot diameter	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		
<b>Imager equipment</b>					
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 sighting	-		yes (laser classification 635 nm, Class 2 )		
Speech recording	-		yes (using headset)		
Display of surface moisture distribution	-	yes (using manual input)	-	yes (using 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		
<b>Image storage</b>					
File format	.bmt; export option in .bmp, .jpg, .xls, .png		.bmt; export option in .bmp, .jpg, .xls, .png		
Removable memory	SD card 2GB (approx. 1,000 images)		SD card 2GB (approx. 1,000 images)		
<b>Power supply</b>					
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		
<b>Ambient conditions</b>					
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% non-condensing		20% to 80% non-condensing		
Housing protection class	IP54		IP54		
Vibration (IEC 68-2-6)	2G		2G		
<b>Physical features</b>					
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		
<b>PC software</b>					
System requirements	Windows XP (Service Pack 2) Windows Vista, interface USB 2.0		Windows XP (Service Pack 2) Windows Vista, interface USB 2.0		
<b>Norms, tests, warranty</b>					
EU Directive	2004 / 108 / EC		2004 / 108 / EC		
Warranty	2 years		2 years		

# The thermal imager testo 881

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

## testo 881-3 set

- NETD < 50 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
- Lens protection glass
- 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°
- Additional battery
- Charger
- Soft-Case

<b>testo 881-3 set</b>
Order no.: 0563 0881 V4

	Order no.:	testo 881-1 0563 0881 V1	testo 881-2 0563 0881 V2	testo 881-3 0563 0881 V3	testo 881-3 set 0563 0881 V4
<b>Additionally in case:</b>					
<b>Lens protection glass</b>	C1	●	●	●	●
<b>Telephoto lens</b>	A1	–	●	●	●
<b>Additional battery</b>	D1	●	●	●	●
<b>Fast battery charger</b>	E1	●	●	●	●
<b>Soft-Case</b>	H1	●	●	●	●
<b>High-temperature measurement</b>	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 < 50 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)

<b>testo 881-1</b>
Order no.: 0563 0881 V1

## testo 881-2

- NETD < 50 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
- Lens protection glass
- Isotherm display in instrument
- Min./Max. on area calculation

<b>testo 881-2</b>
Order no.: 0563 0881 V2

## testo 881-3

- NETD < 50 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
- Lens protection glass
- Isotherm display in instrument
- Min./Max. on area calculation
- High-temperature measurement (optional)

<b>testo 881-3</b>
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.



## **ETA Associates**

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