Handling of the thermal imagers testo 875 and testo 881

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- General basic functions testo 881 / testo 875
- Specific functions testo 881

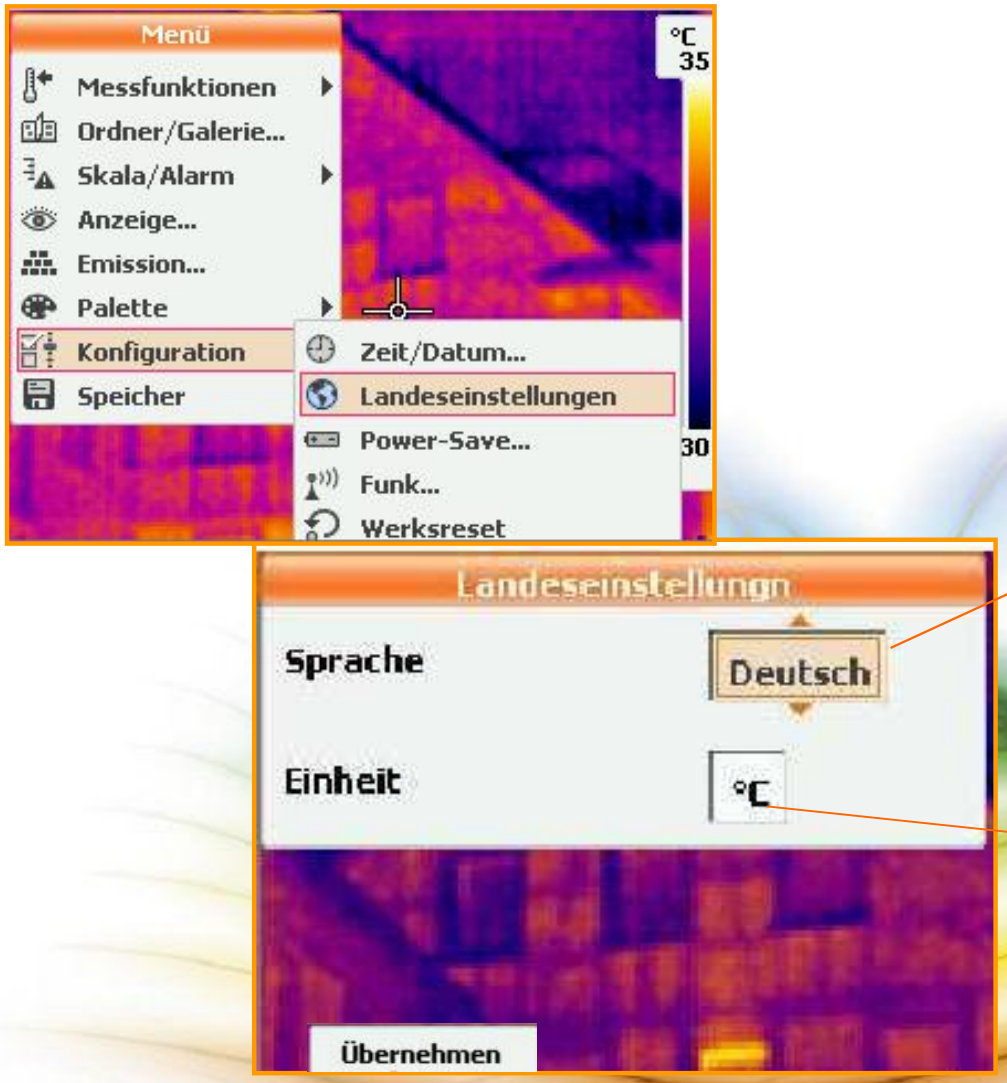
Insert and eject the battery

- Insert the battery into the foot of the camera
- To eject: press eject-button on the back of the foot and pull out the battery

Insert of the SD-card

- Insert the SD-card in the slot on the right side of the instrument
- To eject: push carefully on SD-Card

Temperature scale / language selection



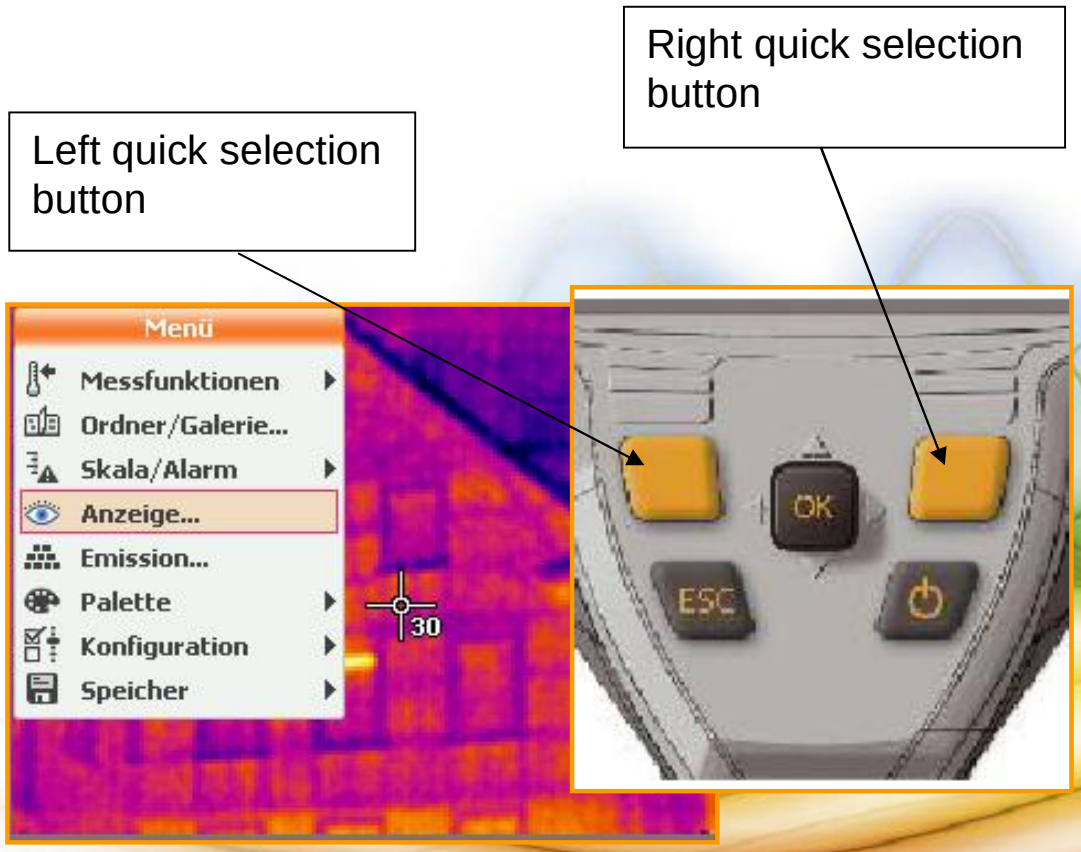
- Via the dialogue “country settings” in the configuration menu temperature unit or language can be changed.
- The dialogue opens automatically when first using the camera.

Change Language Selection: press OK once push joystick up / down.
Select language by pressing OK again.
Press left quick selection button to apply the selection.

Change Temperature Scale

The quick selection buttons

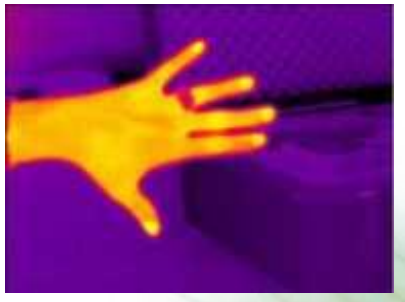
=> the quick selection buttons allow fast access to the most important functions.



- Use the quick selection buttons by pressing the left or right orange button -> the assigned function will be executed.
- Use the buttons by pushing the joystick to the left or right, selecting the desired function in the list and pressing OK.
- In order to hide the quick selection buttons during normal mode, use the dialogue display in the main menu.

Focus

- Similar to visual focus
- Focus where there is *thermal* contrast
- Sharp focus is critical to accurate temperature measurements

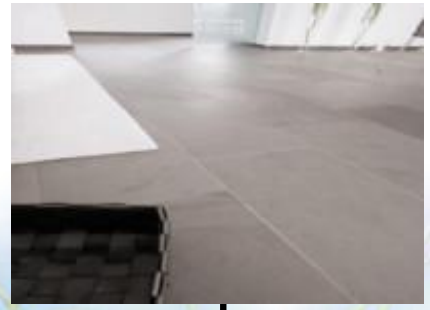


Important: Focus of a stored image cannot be changed any more.

Your thermal image is worthless if it is not correctly adjusted!

Save images

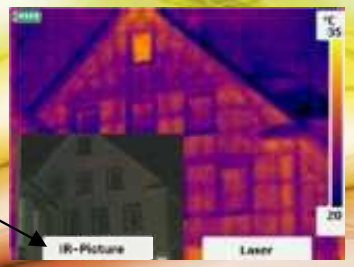
There are three image types for models with integrated digital camera:



Automatically IR-image and VIS image are saved together

Only the visual image is saved

The image type can be changed via the quick selection button.



Save images

- Press trigger once -> image is frozen
- Upper panel shows the current folder
- Save the image via OK button or
- Change the folder by pressing left quick selection button

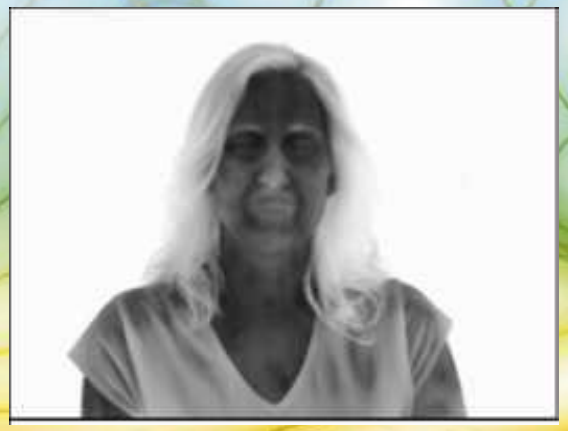
Current folder

Choose another folder to save the image

“Wait, why does the image stop?”

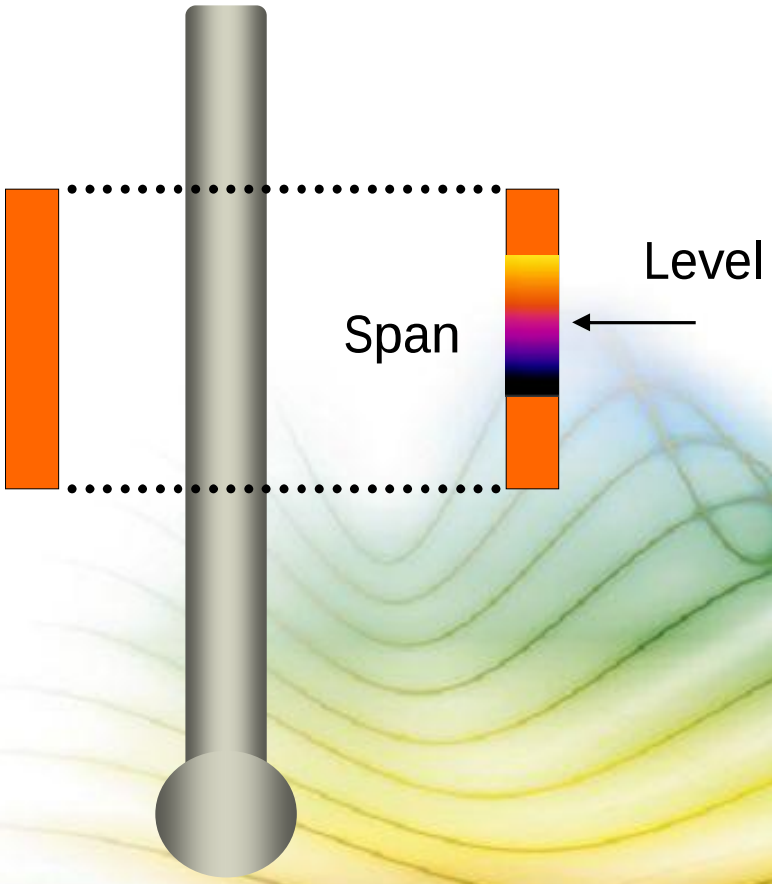
- An internal shutter periodically covers the detector to check its status and calibrate the camera.
- The image “stops” during this two-second period.
- The process execute more frequently when temperatures change.
- In technical jargon this procedure is called “non-uniformity correction” (NUC).

Palette choices



- There are 9 palettes (testo 881) or 4 (testo 875) to choose from.
- Some may work better than others for certain images.
- It can be difficult to work with “Rainbow” palette and to interpret images easily.
- Only testo 881 with high temperature option: the palette “Iron HT” is especially suitable. For scenes with temperatures between room temperature and high temperature (>350°C).
- Change palette via quick selection button or menu.

Level and Span



- **Temperature range** is the measurement range of the camera.
- **”Span”** is the temperature interval that we currently apply in the space of the temperature range.
- **”Level”** is the midpoint of the span.
- Measurement ranges of testo 875:

  -20 ....100 °C and

  0 .....280 °C
- Measurement ranges of testo 881

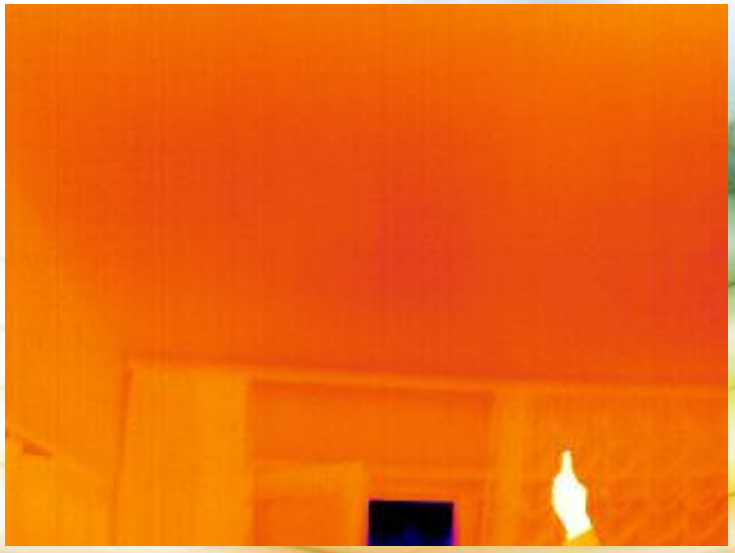
  - 20…100° C and

  0…350° C

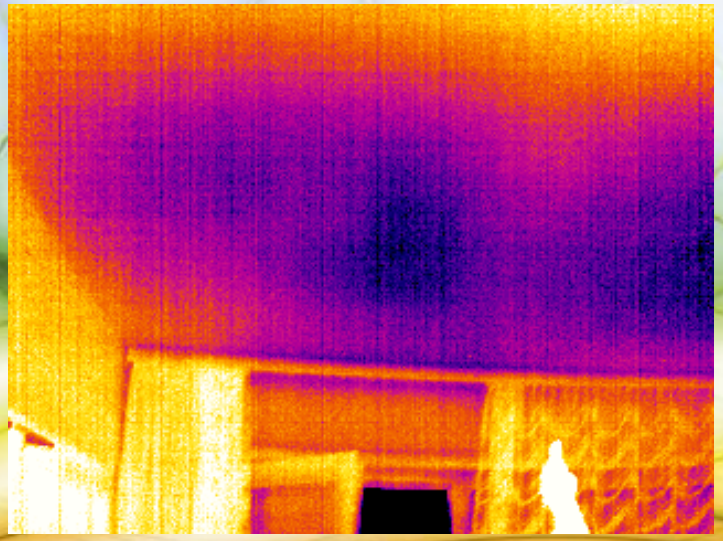
  Optional +350…+550° C (only with high temperature filter)

The scale

- Similar to visual contrast.
- In the automatic mode the temperature scale automatically uses the coldest and hottest object in the image as lowest and highest limit.
- You can choose between automatic and manual adjustment of the scale.

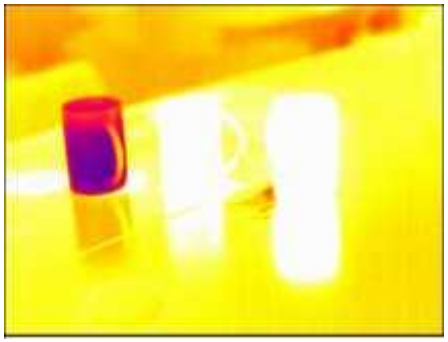


automatic



manual

Change scale



- Crucial for accurate interpretation
- For manual scalation go into scalation mode “scale” via menu or quick selection button: adjust only lower level, only upper level or both at the same time.
- The scale can be post-edited after the image was transferred to a computer.

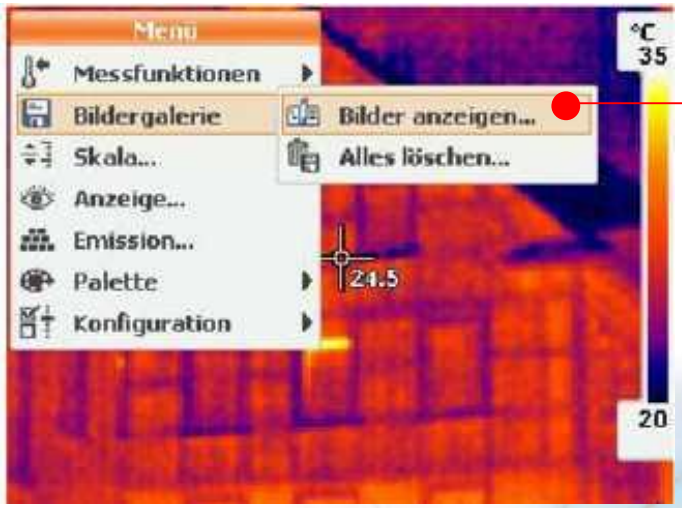
Image recording

Two facts you can never change after freezing or saving:

- **Optical focussing**
- **Image section**

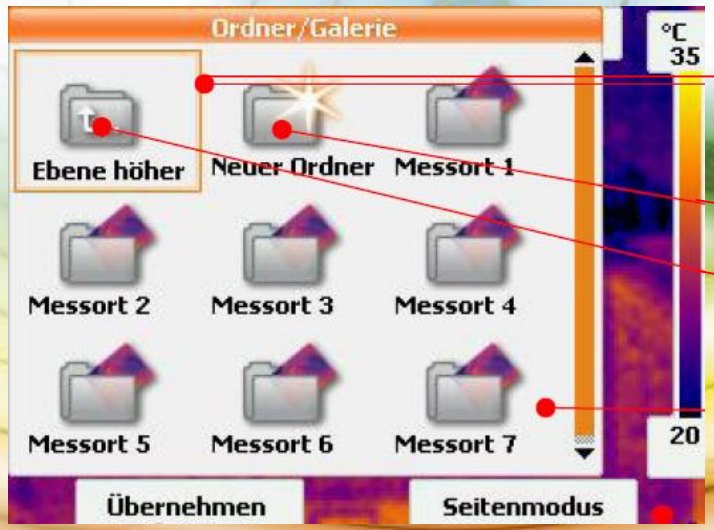
Your thermal image is worthless if it is not correctly adjusted!

Show images



show images

- Select Image gallery from menu.
- Scroll through image gallery with joystick.



Selection

Create new folder

Move up in hierarchy

Changing the lens

- Lens can only be changed in versions testo 881-2 / -3 and testo 875-2.
- Before you change the lens please switch off the camera
- Turn bayonet ring between lens and camera.
- Pull out the old lens.
- Turn new lens to the exact positions (dot on lens and bayonet ring), insert lens and turn bayonet ring backwards until it locks.

This is an optical device!

Handle optics with care and don’t let the camera lay about without a lens!

Lens protection glass

Lens protection glass

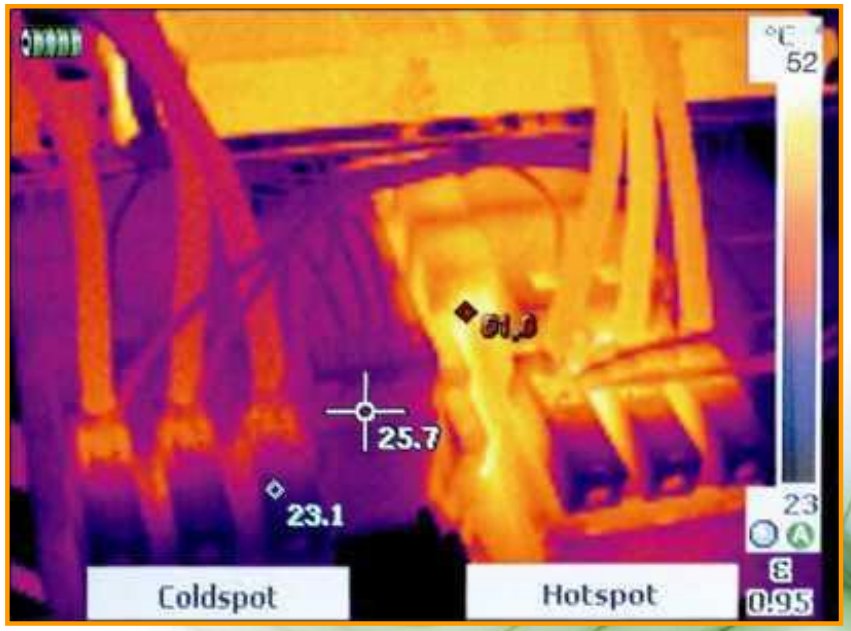
an exchangeable protective glass prevents damage to the valuable optics and protects the lenses from dust and scratches.

The special protective glass is also made of germanium.

Working with and without lens protection

- Use the provided tool to screw or unscrew the lens protection glass
- Even though the transmissivity of the lens protection glass is high, we do need to correct this value in order to avoid measurement errors!
- Use the configuration-menu and activate/ deactivate the option “lens protection use” in the optics dialogue
- Keep lens protection away from dust and dirt when not in use

Measuring function: Automatic Hot/Cold Spot Recognition



Auto Hot/Cold Spot Recognition:

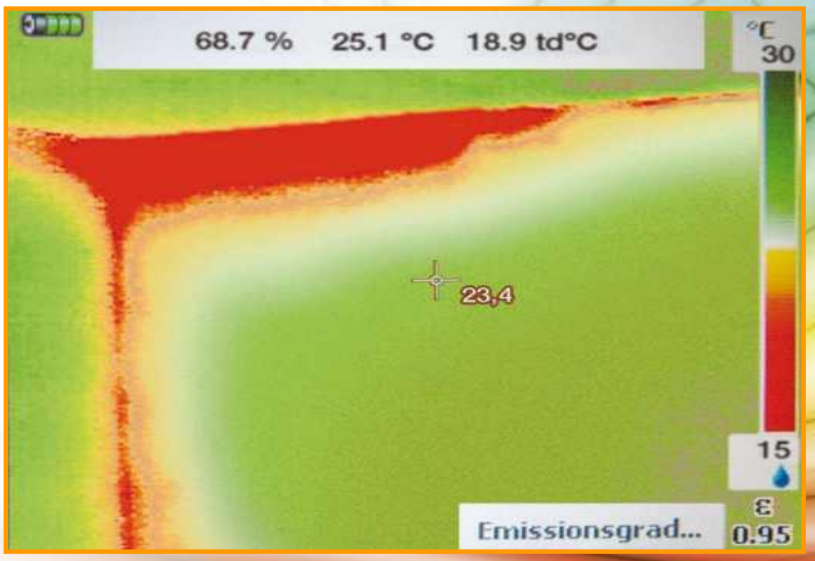
The automatic Hot/Cold Spot Recognition allows fast and direct analysis of weak points – not only on site, but also in detailed evaluation of the measurement on PC.

Surface humidity distribution

For the models testo 875-2 and testo 881-2 / -3 when using the measuring mode humidity enter

- Air temperature
- Air humidity
- Dewpoint

To measure the parameters, we recommend the humidity measurement devices from testo e.g. testo 610



← Uncritical

← 65%

← 80%

The image of surface humidity distribution shows the risk of mold growth.

Transfering pictures to the PC

- Install software on PC with CD out of scope of delivery.
- Start the software.
- Switch on camera.
- Connect camera to the PC using the USB cable.
- The camera is recognized automatically.
- The import assistant starts and assists you to upload images.

Specific functions of testo 881

1. Dynamic motor focus
2. Isotherm
3. Min/Max on area
4. Voice recording
5. High temperature option

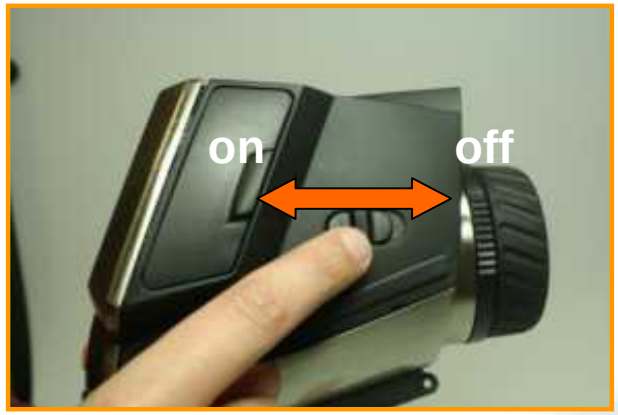
Dynamic motor focus

Dynamic motor focus:

Easy focusing with one hand!

testo 881-3 comes with the choice between manual and motorized focus.

How to use the motor focus?



- Use the focus-selector on the right side of the camera to switch between focus modes
- In motor focus mode use the focus switch with your index finger
- To focus manually put focus switch in manual mode (“off-position”) and turn the lens to the left or right by hand.

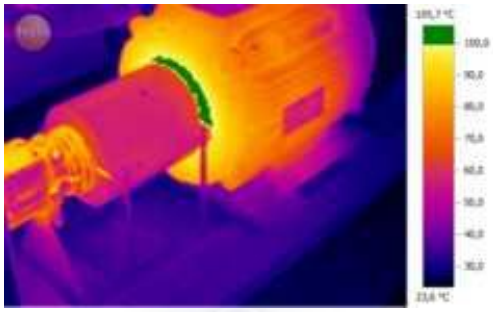
Manual focusing

Motorised focusing

Isotherm

With the measuring function **Isotherm** critical temperature ranges can be highlighted.

- in the menu measuring function choose isotherm and confirm with OK
- open isotherm dialogue with the left quick selection button
- set the upper and lower area limit with the joystick
- choose the colour with joystick



Please note: If Isotherm is activated, the quick selection buttons are fixed with the functions Isotherm and Emissivity and can not be changed.

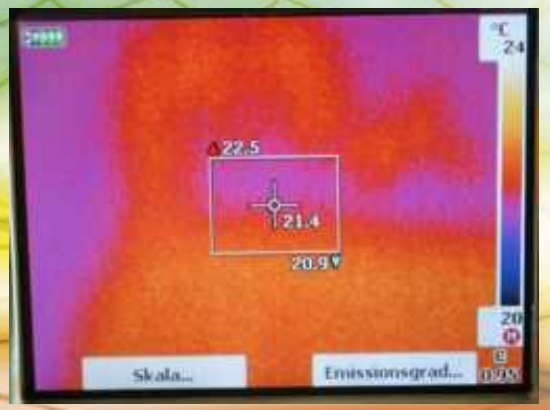
Min / Max on area

With the measuring function Min/Max on area the highest and lowest temperature in a central area of thermal image will be displayed.

- In the menu measuring function choose Min/Max on area and confirm with [OK]

Please note:

- the position of the area can not be adjusted.
- the size of the area can not be changed.
- If Min/Max on area is activated, the quick selection button are fixed with the options scale and emissivity and can not be changed.



The advantage of the function is that the minimal- and maximal temperature of a central area of a thermal image are shown. Disruptive measuring values from border areas can be blinded out like that.

Voice recording

Via head-set a speech comment with a duration of 30 seconds can be recorded to the image on site.

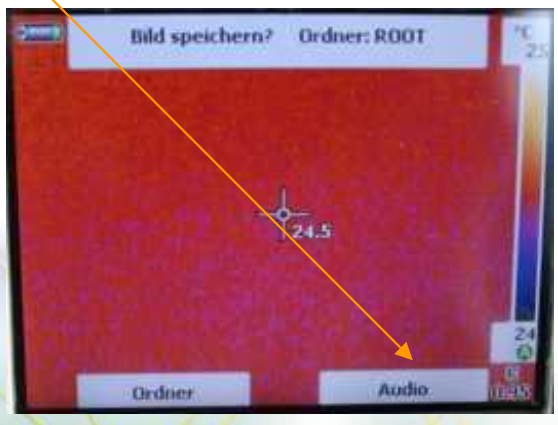
Please note: the speech comment can only be recorded when the image is frozen in and before the image is saved.

- Plug in head-set
  1. Open the cover on the left side of the camera
  2. Insert the stereo jack of the head-set in the head-set bush

Voice recording

Record speech comment

- when image is frozen (freeze image): press right quick selection button **[Audio]**
- the audio-dialogue is opened.



- start recording via [●]
- stop recording via [■]
  - to continue the recording, press [●] again.
  - to listen to the comment, press [■] again and then start replay with [▶]
- When the speech comment is finished, press [Esc] to leave the audio-dialogue. You see the freeze image again.
- finish the saving process via Trigger or button [OK]
- image will be saved including the speech comment.

Voice recording

Change speech comment

A speech comment can only be changed before saving.

- Stop replay of the record at any point with [■]
- Press [●] and state new text from this point on
- Stop recording with [■]
- finish the saving process the same way as when recording with Esc and OK

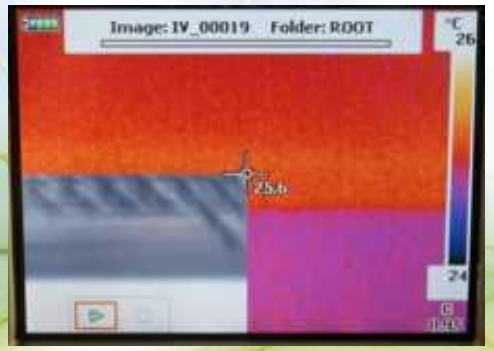
Please note: if the existing comment is broken and a new text is recorded, the rest of the old record will be deleted starting from the point of the break

- to delete the whole speech comment, press [🗑]

Voice recording

Replay speech comment in the image gallery

- images with speech comment are characterized with
- open image in the gallery
- with button [OK] open the menu and choose the audio function
- Audio-Dialogue appears, replay comment with ►



Please note: in the gallery you can only listen to or delete comments. It is impossible to record or to change a comment.

High temperature option

With the high temperature option the measuring range of testo 881-3 can be extended to 550° C. Therefore, however, a high temperature filter has to be screwed onto the lens before measuring .

You can recognize the high-temperature filter due to it`s red mount.

Function principle: the filter works as attenuator that reduces the incoming radiation by a fixed percentage.

This attenuation must be compensated for the calculation of measurement values. This compensation comes into effect by switching to the measuring range of 350°C - 550°C.

Please note:

Before measuring high temperatures switch measuring range to 350°C - 550°C and screw high temperature filter onto the lens.

After the measurement unscrew the high temperature filter **and** switch back to a standard measuring range. If you don`t that you will get wrong measuring values!

High temperature options

The accuracy of the high temperature measurement is ± 3% of m.v.

However, this applies only for the high temperature range of 350°C to 550°C.

Please note:

For measuring values < 350°C the accuracy doesn´t apply!
Especially in scenes < 100°C variations of up to approx. 10 K can appear when working in the high temperature range.

Attention: If you measure scene temperatures that are too high, the detector can be damaged!

- To measure high scene temperature (> 350°C) always mount the high temperature filter.
- When working with filter don´t look at objects with scene temperatures > 800°C.
- Don´t look at scenes with temperatures > 500°C when working without high temperature filter .

High temperature options

With the palette „Iron HT“ lower temperatures are shown in greyscale. This is useful for scenes with large temperature differences. Due to the greyscale objects with lower temperatures are displayed with more contrast.

The palette has to be selected manually.

palette Iron HT

palette Iron