



testo 883 - thermal imager

0560 8830

Instruction manual



Contents

1	About this document	7
2	Safety and disposal.....	8
2.1	General safety instructions	8
2.2	Product-specific information	9
2.3	Disposal	9
2.4	Cleaning	9
2.5	Products with wireless technology.....	9
2.6	Storage.....	10
2.7	Approvals	10
2.8	EU declaration of conformity	10
3	Support	10
4	Scope of delivery.....	10
5	Product description	11
5.1	Use.....	11
5.2	Instrument / operating elements overview.....	11
5.3	Displays overview.....	13
5.4	Power supply.....	14
6	Commissioning	15
6.1	Touchscreen operating concept	15
6.2	Operation via joystick	15
6.3	Rechargeable battery	16
6.4	Switching the instrument on and off	18
6.5	Getting to know the menu	19
6.6	Quick select button.....	19
6.7	Changing the lens	22
6.7.1	Removing the lens.....	22
6.7.2	Attaching a new lens	23
7	WLAN connection – using the App.....	25
7.1	Activating/disabling the connection	25
7.2	Using the App.....	26
7.2.1	Establishing a connection.....	26
7.2.2	Select display	27
8	Bluetooth® connection.....	28
9	Performing the measurement.....	31
9.1	Saving an image.....	31

Contents

9.2	Setting measuring functions	32
9.2.1	Pixel mark	34
9.2.2	New Min/Max on area	35
9.2.3	Differential temperature	36
9.2.4	External values	38
9.2.5	SiteRecognition.....	39
9.2.6	IFOV	39
9.2.7	Isotherm.....	40
9.2.8	Alarm	42
9.2.9	Zoom	43
9.3	Image gallery	44
9.4	Scale.....	46
9.5	Emissivity.....	49
9.5.1	Selecting the emissivity	51
9.5.2	Customizing the emissivity	52
9.5.3	Setting RTC	52
9.5.4	Setting ϵ -Assist	53
9.6	Palette	54
9.7	Image type.....	55
9.8	SiteRecognition.....	56
9.9	Voice annotation.....	57
9.10	Configuration	58
9.10.1	Settings.....	58
9.10.2	No preview image	64
9.10.3	SuperResolution	64
9.10.4	Save JPEG	66
9.10.5	Connectivity	67
9.10.6	Protective glass	69
9.10.7	Lens.....	70
9.10.8	Quick select button	72
9.10.9	Ambient conditions	72
9.10.10	Color selection	73
9.10.11	Info.....	75
9.10.12	Certificates.....	76
9.10.13	Fullscreen mode	77

9.10.14	Reset options	78
9.10.14.1	Reset counter	78
9.10.14.2	Factory settings	80
9.10.14.3	Formatting	81
10	Maintenance.....	83
10.1	Charging the rechargeable battery	83
10.2	Changing the rechargeable battery	83
10.3	Cleaning the instrument	85
10.4	Firmware update	86
10.4.1	Performing an update using IRSofT	86
10.4.1.1	Preparing the camera	86
10.4.1.2	Performing an update	86
10.4.2	Performing an update with the camera.....	87
10.4.2.1	Preparing the camera	87
10.4.2.2	Performing an update	87
11	Technical data	89
11.1	Optical data	89
11.2	Image presentation.....	90
11.3	Data interfaces	90
11.4	Measuring functions	90
11.5	Imager features	91
11.6	Image storage	92
11.7	Audio functions.....	92
11.8	Power supply.....	92
11.9	Ambient conditions	92
11.10	Physical features	93
11.11	Standards, tests	93
12	Questions and answers	93
13	Accessories	94

1 About this document

- The instruction manual is an integral part of the instrument.
- Keep this documentation to hand so that you can refer to it when necessary.
- Always use the complete original instruction manual.
- Please read this instruction manual through carefully and familiarize yourself with the product before putting it to use.
- Hand this instruction manual on to any subsequent users of the product.
- Pay particular attention to the safety instructions and warning advice in order to prevent injury and damage to the product.
- Familiarity with a PC as well as the Microsoft® products is assumed in this documentation.

Symbols and writing standards

Display	Explanation
	Note: basic or further information.
1. ... 2. ...	Action: several steps, the sequence must be followed.
• ...	List
> ...	Action: one step or optional step.
- ...	Result of an action.
✓ ...	Requirement
1... 2...	Position numbers for the clarification of the relationship between text and picture.
Menu	Elements of the instrument, the instrument display or the program interface.
[OK]	Control keys of the instrument or buttons of the program interface.
... ...	Functions/paths within a menu.
“ ... ”	Example entries

2 Safety and disposal

2.1 General safety instructions

- Only operate the product properly, for its intended purpose, and within the parameters specified in the technical data.
- Do not apply any force.
- Do not operate the product if there are signs of damage on the housing, mains unit or connected cables.
- The product must be checked for any visible damage before commissioning.
- Dangers may also arise from objects to be measured or the measuring environment. Always comply with the locally valid safety regulations when carrying out measurements.
- Only perform maintenance and repair work on this instrument that is described in this documentation. Follow the prescribed steps exactly when doing the work.
- Any additional work must only be carried out by authorized, qualified personnel. Otherwise, Testo will refuse to accept responsibility for the proper functioning of the product after repair and for the validity of approvals.
- Maintenance work that is not described in this documentation must only be carried out by trained service engineers.
- Use only original spare parts from Testo.
- The product must not be used in potentially explosive atmospheres, if it is not explicitly approved for these areas.
- Protect the product from dust and dirt. Make sure that it is not exposed to an environment with dust, dirt, sand, etc.
- Prevent the product from falling.
- If operator safety can no longer be guaranteed, the product is to be taken out of service and secured against inadvertent use. This is the case if the product:
 - is obviously damaged
 - has fractures on the housing
 - has faulty measuring cables
 - has leaking batteries
 - no longer performs the required measurements
 - has been stored for too long in unfavourable conditions
 - has been exposed to mechanical stresses in transit

2.2 Product-specific information

ATTENTION

Damage to the detector!

During operation, this instrument must not be pointed at the sun or other intensive sources of radiation (e.g. objects with temperatures exceeding 650 °C). This can cause serious damage to the detector. The manufacturer does not provide any warranty for any such damage to the microbolometer detector.

2.3 Disposal

- Dispose of faulty energy storage units in accordance with the valid legal specifications.
- At the end of its useful life, deliver the product to the separate collection point for electric and electronic devices (observe local regulations) or return the product to Testo for disposal.



-  WEEE Reg. no. DE 75334352

2.4 Cleaning

- Clean the product with a dry, soft cloth. Do not use any alcohol, aggressive cleaning agents and solvents or other washing liquids to clean the product.
- Do not use any desiccants.
- Use distilled water, or alternatively mild solvents or degreasers.
- Store solvents and degreasers separately from the product, because leaking solvents and degreasers may cause damage to the product.
- The use of strong or harsh alcohol or brake cleaner may result in damage to the product.

2.5 Products with wireless technology

Changes or modifications that have been made without the explicit consent of the competent approval authority may lead to cancellation of the type approval.

Data transfer may be disturbed by equipment that uses the same ISM band.

Places where the use of radio communication links is not permitted include aeroplanes and hospitals. For this reason, the following points must be ensured before entering:

- Switch the instrument off.
- Disconnect the instrument from any external power sources (mains cable, external energy storage units, etc.).

2.6 Storage

- Keep the product away from any liquids and do not put it into water. Protect it from rain and humidity.
- Do not store the product together with solvents.

2.7 Approvals

Please find the current country approvals in the attached document.

2.8 EU declaration of conformity

Testo SE & Co. KGaA hereby declares that the testo 883 (0560 8830) comply with Directive 2014/53/EU.

The full text of the EU Declaration of Conformity can be found on the following website: <https://www.testo.com/eu-conformity>.

3 Support

You can find up-to-date information on products, downloads and links to contact addresses for support queries on the Testo website at: www.testo.com.

4 Scope of delivery

testo 883 Individual unit in a case	testo 883 Kit in a case
testo 883	testo 883
USB-C cable	USB-C cable
Mains unit (USB)	Mains unit (USB)
Rechargeable battery	Rechargeable battery
Technical documentation	Technical documentation
Calibration protocol	Calibration protocol
Carrying strap	Carrying strap
Bluetooth® headset (country-specific radio authorization)	Bluetooth® headset (country-specific radio authorization)
	Spare rechargeable battery
	Telephoto lens
	Charging cradle (with cable)

5 Product description

5.1 Use

The testo 883 is a handy, robust thermal imager. You can use it to undertake the non-contact measurement and display of surface temperature distribution.

Areas of application

- Preventive maintenance / servicing: Electrical and mechanical inspection of systems and machines
- Building inspection: Energy efficiency rating of buildings (heating, ventilation, air-conditioning trade, building engineers, engineering firms, experts)
- Production monitoring / quality assurance: monitoring of production processes

5.2 Instrument / operating elements overview



Element	Function
1 Touchscreen monitor	Displays infrared and real images, menus and functions
2 Interface terminal	Contains USB-C port for power supply and connection to the computer
3 -  key - Esc key	- Switch camera on and off - Cancel action

5 Product description

Element	Function
4 - OK key - Joystick	- Open menu, select function, confirm setting - Navigate within the menu, highlight function, select colour palette
5 Quick select button 	Opens the function assigned to the quick select button; the icon for the selected function is displayed bottom right
6 Infrared camera lens; protective cap	Takes infrared images; protects the lens  Lens is interchangeable
7 Digital camera	Takes real images
8 Laser	Marking of the measuring point
9 Trigger	Saves the displayed image
10 Battery compartment	Contains the rechargeable battery

CAUTION



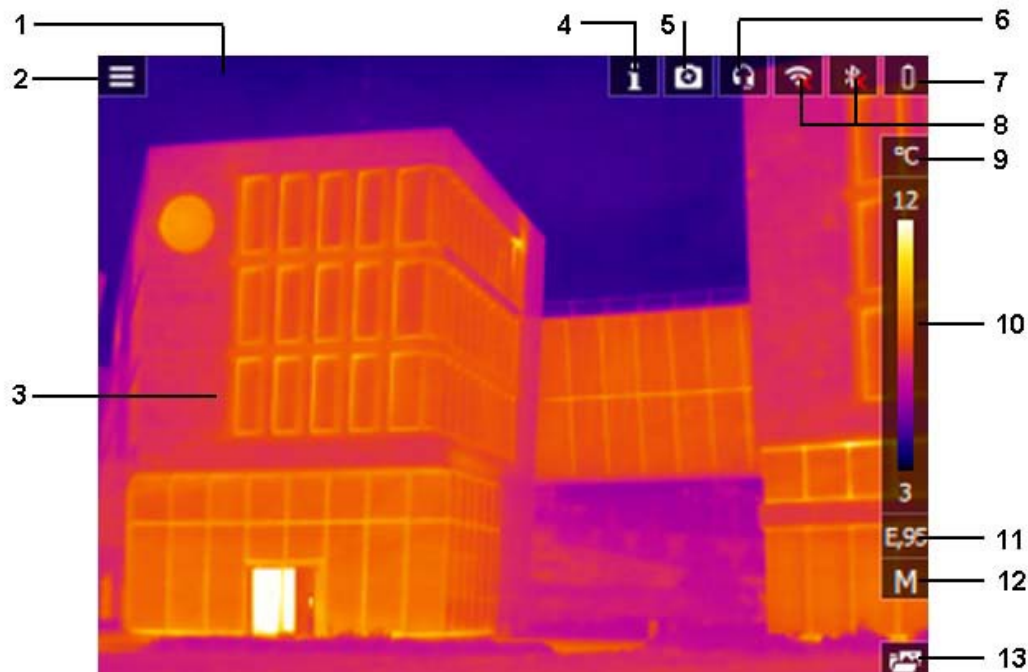
Laser radiation! Class 2 laser

- **Do not look into the laser beam**



Laser can be activated with the Remote function, also via smartphone or tablet.

5.3 Displays overview



Element	Function
1 Status bar	The following values are displayed in the status bar depending on the setting: • Humidity and ambient temperature • Current, voltage, solar radiation and power • Differential temperature • Zoom level (2 x, 4 x)
2 	Open menu.
3 Image display	IR image or real image display
4 	Camera is in the warm-up phase
5 	Protective glass enabled
6 	Headset connected
7 	Battery capacity / charge status: : Battery operation, capacity 50-75% : Battery operation, capacity 25-50% : Battery operation, capacity 10-25% : Battery operation, capacity 0-10% : Mains operation, battery is charging.

	Element	Function
8	 and 	WiFi and BT enabled
9	°C or °F	Unit set for reading and scale displays.
10	Scale	- Temperature unit - White characters: temperature margin of the image displayed, showing the minimum/maximum reading (with automatic scale adjustment) or the set minimum/maximum display value (with manual scale adjustment).
11	E ...	Set emissivity.
12	A, M or S	A - automatic scale adjustment M - manual scale adjustment S - ScaleAssist is enabled
13	Quick select button	The set function is displayed.

5.4 Power supply

The power is supplied to the instrument via a replaceable rechargeable battery or the mains unit provided (battery must be inserted).

With an attached mains unit, power is supplied automatically via the mains unit and the rechargeable battery is charged (only at ambient temperatures from 0 to 35 °C).

It is also possible to charge the battery using a charging station (accessory).

To maintain system data during a power interruption (e.g. when changing the battery), the data is stored temporarily.

6 Commissioning

6.1 Touchscreen operating concept

Familiarize yourself with the touchscreen operating concept before you use the measuring instrument.

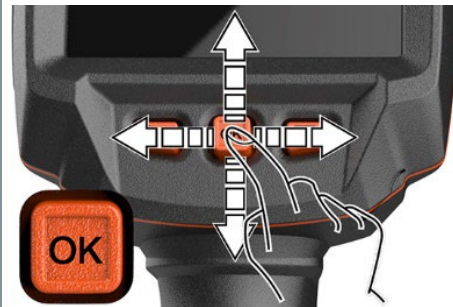
Actions are carried out by:

Description	
Tapping To open applications, select menu icons or press buttons on the display, in each case tap these with your finger.	

6.2 Operation via joystick

Move the joystick up/down and right/left to select the individual menus.

- 1 Move joystick up/down or to the left/right.
- 2 Press joystick **[OK]** to confirm the selection.



Please read the testo 883 1st steps commissioning instructions supplied (0972 8830).

6.3 Rechargeable battery



The camera is delivered without a battery inserted. The rechargeable battery is supplied separately and must first be unpacked and inserted in the camera.

- 1 Pull back the unlocking button to open the battery compartment cover on the bottom of the handle.



- 2 Push the battery all the way into the rechargeable battery slot until this is flush with the bottom of the handle.



- 3 Close the battery compartment cover and secure with the unlocking button.



► The thermal imager starts automatically.

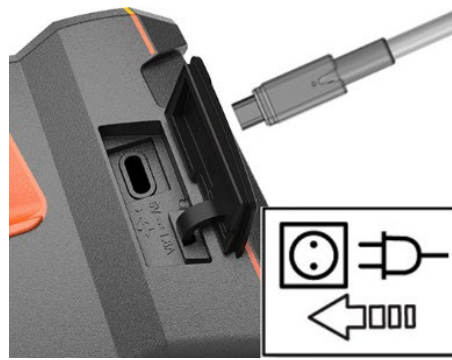
Initial charging of the battery

The imager is supplied with a partially charged battery. Charge the battery fully before using it for the first time.



With rechargeable batteries, never use chargers which are not suitable for the battery type. Suitable chargers for Testo products are to be found in the list of accessories.

- 1 Connect the country-specific adapter required for the existing mains to the mains unit.
- 2 Open the cover on the left side of the thermal imager.
- 3 Connect the mains unit to the USB-C jack.
- 4 Connect the USB cable to the USB mains unit.
- ▶ The thermal imager starts automatically.



The battery can be recharged with the imager switched on or off. This has no effect on the time required to charge the battery.

- ▶ Battery charging starts.
- 5 Fully charge the battery, then disconnect the instrument from the mains unit.
- ▶ After initial charging of the battery, the imager is ready for use.



A desktop charging station (order no. 0554 8801) can also be used to charge the battery.

Rechargeable battery care

- Do not fully exhaust rechargeable batteries.
- Store rechargeable batteries only when charged and at low temperatures, but not below 0 °C (best storage conditions are 50-80% charge, at an ambient temperature of 10-20 °C, recharge completely before using again).

- For longer breaks, you should discharge and recharge the batteries every 3-4 months. Trickle charging should not exceed 2 days.

6.4 Switching the instrument on and off

Switching on the camera

- 1 Remove protective cap from the lens.



- 2 Press .
- ▶ The camera starts.
- ▶ The start screen appears on the display.



To ensure measuring accuracy, the camera performs automatic zeroing approx. every 60 s. A “click” is heard when this happens. The image freezes briefly when this occurs. Zeroing is carried out more frequently during the camera warm-up period (takes approx. 90 seconds).

During the warm-up period, the display shows  and no measuring accuracy is guaranteed. The image can already be used for indication purposes and saved.

Switching off the camera

- 1 Press and hold down  until the progress bar on the display is complete.



- ▶ The display goes off.
- ▶ The camera is switched off.

6.5 Getting to know the menu

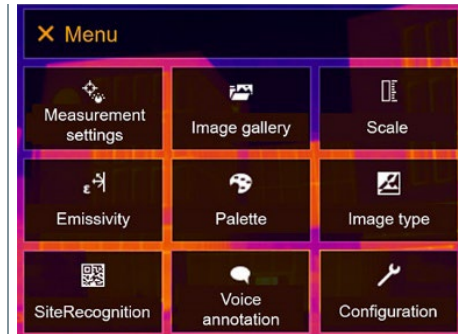


testo 883 can also be operated via the monitor's touchscreen feature.

- 1 Press **OK** or tap to open the menu.



- ▶ Menu opens.



- 2 Select the submenu (joystick or touchscreen).
- ▶ Submenu opens.
- 3 To exit the submenu again:
 - Tap or or
 - Move the joystick to the left or move the joystick to the menu bar and confirm with **OK**.

6.6 Quick select button

The quick select button is another navigation option that allows you to access certain functions by pressing or tapping the icon of the quick select button on the screen.

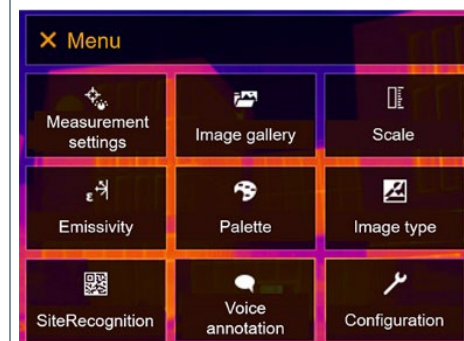
Quick select menu items

Menu item	Function
Image gallery	Opens an overview of saved images.
Scale (This function is only available if the Image type is set to infrared)	Set scale limits.
Emissivity (This function is only available if the Image type is set to infrared)	Set the emissivity (E), reflected temperature (RTC) and ϵ -Assist (ϵ-Assist).
Palette	Toggles the palette selection.
Adjustment (This function is only available if the Image type is set to infrared)	Carries out manual zeroing.
Image type	Alternately switches the image display between infrared and real image.
Laser	Activates the laser pointer.
Zoom	Enlarges the image section (2 x, 4 x)
SiteRecognition	Site recognition

Changing assignment

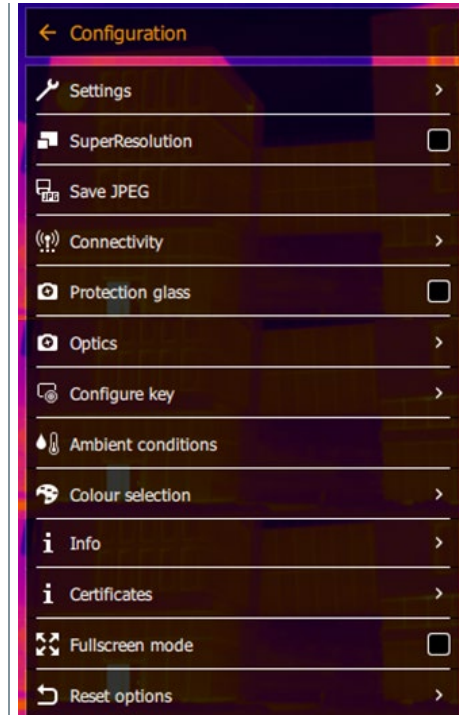
1 Move the **joystick** to the right.

1.1 Open the **Menu**.



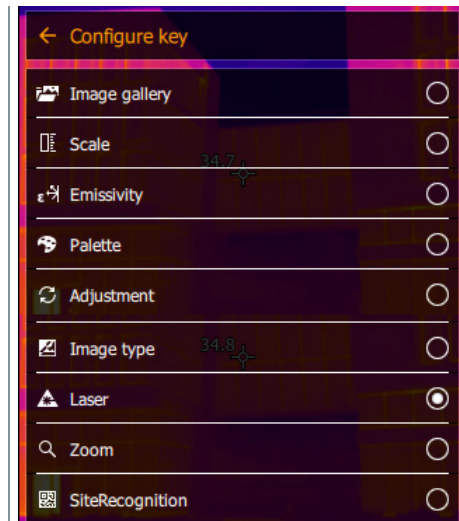
1.2 Select **Configuration** (joystick or touchscreen).

- **Configuration** opens.



1.3 Select **Configure key** (joystick or touchscreen).

- The **Configure key** selection menu opens. The activated function is marked with a dot (●).



- 2 Select the required menu item (joystick or touchscreen).
- The quick select button is assigned to the selected menu item.
 - The icon for the selected function is displayed bottom right.

Using the quick select button

- 1 Press .



- ▶ The function assigned to the quick select button is carried out.

6.7 Changing the lens

Only lenses that have been adjusted to the respective thermal imager can be used. The serial number on the lens must match the serial number displayed in the imager, .



The lens can be changed while the imager is running. The imager automatically detects which lens is fitted and makes the information readily available in the menu.

- ✓ The imager must be placed on a stable surface.

6.7.1 Removing the lens

- 1 Turn the lens fixing ring anti-clockwise as far as it will go.
- 2 Turn the lens anti-clockwise as far as it will go.



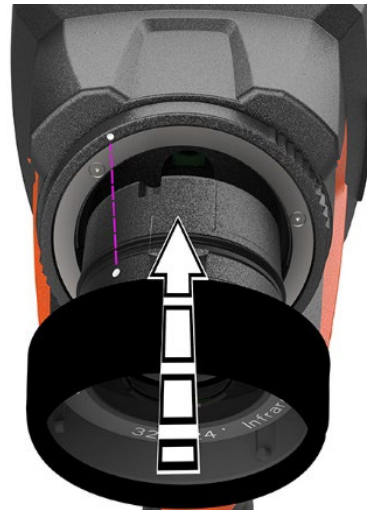
- 3 Remove lens.



Always store unused lenses in the lens box (supplied with the interchangeable lens).

6.7.2 Attaching a new lens

- 1 Attach a new lens.



- 2 Align the markings on the lens and handle.



- 3 Turn the lens fixing ring clockwise as far as it will go.



7 WLAN connection – using the App

7.1 Activating/disabling the connection



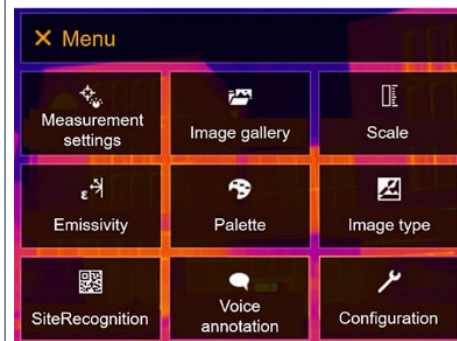
To connect via WLAN, you need a tablet or smartphone with the **testo Thermography App** already installed on it.

You can get the App from the App Store for iOS devices or from the Play Store for Android devices.

Compatibility:

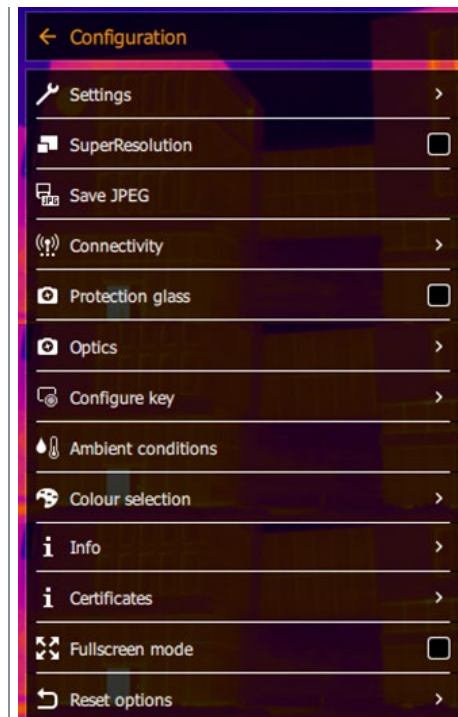
Requires iOS 8.3 or later / Android 4.3 or later.

- 1 Open the **Menu**.



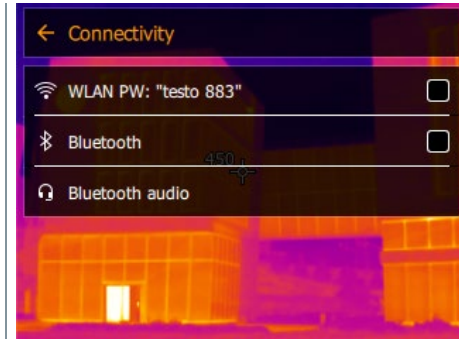
- 2 Select **Configuration** (joystick or touchscreen).

- **Configuration** opens.



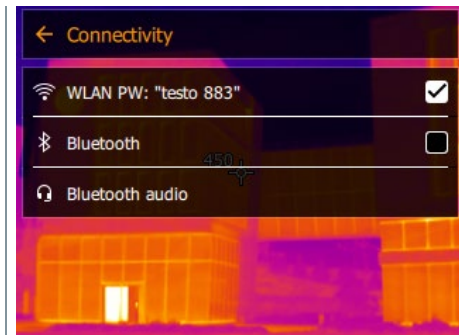
- 3 Select **Connectivity** (joystick or touchscreen).

- ▶ **Connectivity** opens.



- 4 Select **WLAN** (joystick or touchscreen).

- ▶ A check mark appears when WLAN is enabled.



While WLAN is activated, the image gallery cannot be accessed.

Explanation of WLAN icons

Symbol	Function
	App is connected
	No connection to the App

7.2 Using the App

7.2.1 Establishing a connection

- ✓ WLAN is activated in the thermal imager.
- 1 Smartphone/tablet -> **Settings** -> **WLAN settings** -> camera is shown with serial number (testo 883 (12345678)) and can be selected.
- 2 Select testo 883 in the WLAN settings.
- 3 Enter password: testo 883



The password must be entered once.

4 Press **Connect**.

▶ The WLAN connection to the thermal imager is established.

7.2.2 Select display

Second display

✓ The WLAN connection to the thermal imager is established.

1 **Selection -> 2nd display.**

▶ The display on the thermal imager is shown on your mobile end device.

Remote

✓ The WLAN connection to the thermal imager is established.

1 **Selection -> Remote.**

▶ The display on the thermal imager is shown on your mobile end device. The image is saved in the gallery on the device as soon as the trigger is pressed. The thermal imager can be controlled and settings made via the mobile terminal device.

Gallery

✓ The WLAN connection to the thermal imager is established.

1 **Selection -> Gallery.**

▶ The saved images are displayed and can be managed.

8 Bluetooth® connection

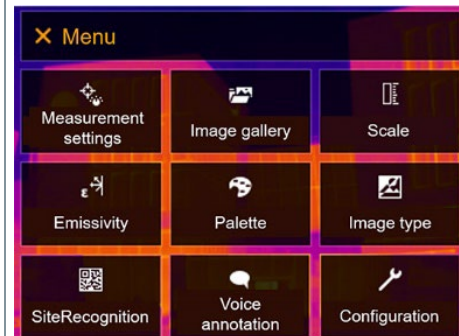
A connection between the thermal imager and the testo 605i humidity probe or testo 770-3 clamp meter can be established via Bluetooth®.

Via the Bluetooth radio interface, a link to a Bluetooth headset can be established for voice recording. Please follow the instruction manual for the Bluetooth headset.



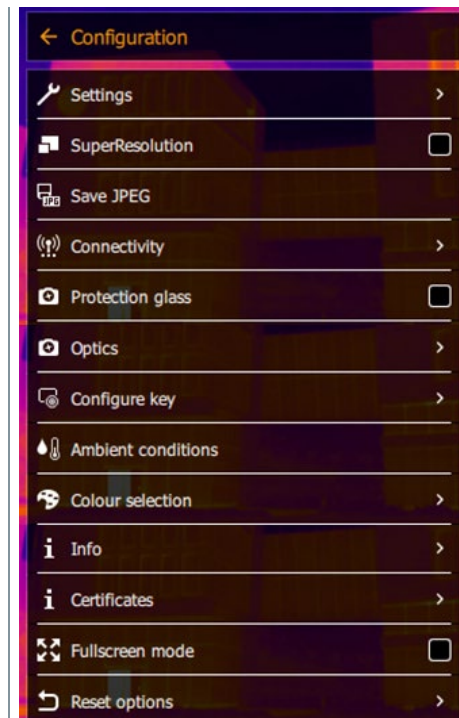
Bluetooth® 4.0 required.

- 1 Open the **Menu**.



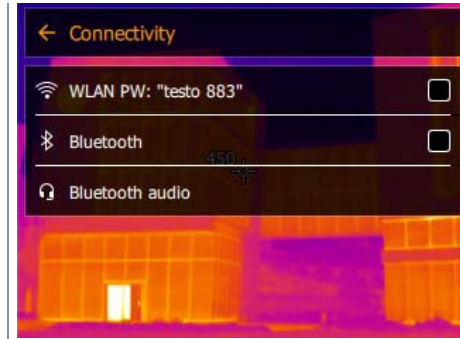
- 2 Select **Configuration** (joystick or touchscreen).

- **Configuration** opens.



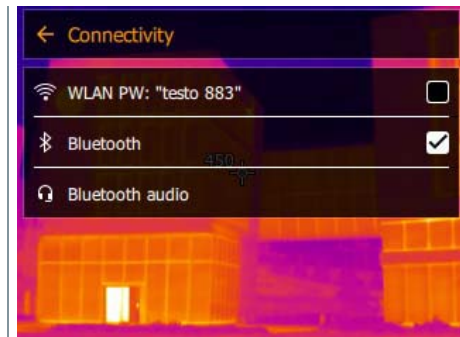
- 3 Select **Connectivity** (joystick or touchscreen).

- ▶ **Connectivity** opens.



- 4 Select **Bluetooth®** (joystick or touchscreen).

- ▶ A check mark appears if Bluetooth® is enabled.

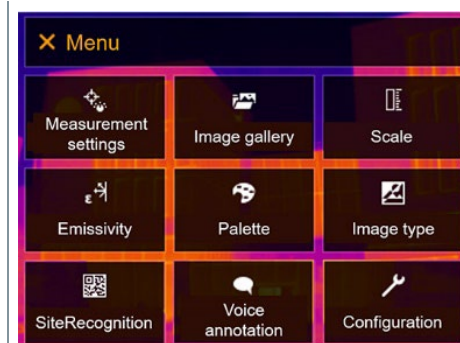


Explanation of Bluetooth® icons

Symbol	Function
	No connection to the humidity probe, testo 605i or testo 770-3
	Searching for humidity probe.
	Humidity probe readings are being transmitted.

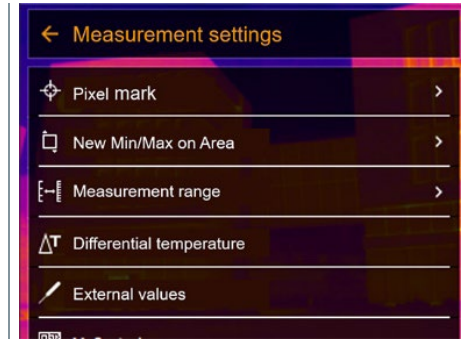
When connected to the clamp meter

- 1 Open the **Menu**.



- 2 Select **Measurement settings** (joystick or touchscreen).

- ▶ **Measurement settings** opens.



- 3 Select **External values** (joystick or touchscreen).

- ▶ **External values** opens.



- 4 Select the required size (joystick or touchscreen).
- 5 Confirm selection with ✓ or exit the menu with X.
- ▶ Clamp meter readings are displayed in the header.



Readings are only transferred if the current, voltage or power is set on the clamp meter.

When connected to the humidity probe

- ✓ Bluetooth® connection is activated and the humidity probe is switched on.
- ✓ In the **Measurement settings** -> **External values** menu, the **Humidity** measurement function is selected.
- ▶ The thermal imager switches automatically to humidity measurement.
- ▶ Humidity probe readings are displayed in the header.



If a WLAN connection is enabled in addition, the Bluetooth data transfer is continued. However, it is not possible to establish a new connection to a humidity probe.

9 Performing the measurement



The testo 883 can be operated both by joystick and by touchscreen on the monitor.

ATTENTION

**High thermal radiation (e.g. due to sun, fire, furnaces)
Detector may be damaged!**

- Do not point the camera at objects with temperatures > 650 °C.

Ideal framework conditions

- Building thermography, investigating the building shell:
Considerable temperature difference between inside and outside required (ideal: $\geq 15\text{ °C}$ / $\geq 27\text{ °F}$).
- Constant weather conditions, no intensive sunlight, no precipitation, no snow, no strong wind.
- To ensure maximum accuracy, the camera requires an adjustment time of 10 minutes after it is switched on.

Important camera settings

- Emissivity and reflected temperature must be set correctly in order to precisely determine the temperature. Subsequent adjustment is possible via the PC software, if required.
- When auto-scaling is activated, the colour scale is continuously adjusted to the min./max. values of the current measurement image. This means that the colour assigned to a specific temperature is changing constantly! To be able to compare multiple images based on the assigned colour, scaling must be set manually to fixed values, or must be subsequently adjusted to uniform values using the PC software.

9.1 Saving an image

1 | Press **Trigger**.

▶ | The image is automatically saved.

▶ | Regardless of the image type set, an infrared image is saved with an attached real image.

1.1 | To save an image with preview, press **Trigger** again.

Action	Description	Result
Trigger operation	Aim at any subject. Press trigger.	The targeted subject remains frozen on the camera display for checking purposes only when the preview image is activated.
Cancel recording	Press - left key or - touch bottom left corner	Live image is displayed. Image is not saved.
Recording	Aim at any subject. Press trigger Press trigger again.	Live image is displayed. Image is saved.
Recording with audio (preview image must be activated.)	Aim at any subject. Select the Audio commentary menu Press trigger In the Voice annotation menu, select Recording with audio Audio commentary is made with (connected) headset. Press trigger again.	Live image is displayed. Image is saved with audio commentary.



For a higher resolution, in the **Configuration** menu, select the **SiteRecognition** submenu.

9.2 Setting measuring functions

- 1 Open the **Measurement settings** submenu (joystick or touchscreen).
- ▶ The **Measurement settings** submenu opens with the measurement settings:
 - **Pixel mark:**
 - **New measuring spot:** A new measuring point can be added, moved or removed.
 - **Edit/Remove measurement point...**
 - **Measurement point 1**
 - **Measurement point 2**
 - ...

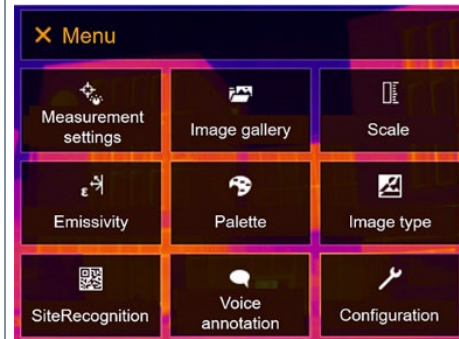
- **Center spot:** the temperature measuring point in the centre of the image is marked with white crosshairs and the value is displayed.
- **Hotspot:** the highest temperature measuring point is marked with red crosshairs and the value is displayed.
- **Coldspot:** the lowest temperature measuring point is marked with blue crosshairs and the value is displayed.
- **Show all / Hide all:** Show or hide the centre point, hotspot and coldspot.
- **New Min/Max on area:**
 - **Min/Max on area:** Area in the centre of the image is shown. The minimum, maximum, and average values for the area are displayed.
 - **Hotspot:** the highest temperature measuring point within the range selection is marked with red crosshairs and the value is displayed.
 - **Coldspot:** the lowest temperature measuring point within the range selection is marked with blue crosshairs and the value is displayed.
 - **Show all / Hide all:** Show or hide the selected area.
- **Measurement range:** Choose between the measuring ranges - 30 to 100 °C, 0 to 650 °C or **Autorange**.
- **Autorange:** Camera detects the temperature and automatically switches to the suitable measuring range.
- **Differential temperature:** identifies the difference between two temperatures.
 - Difference between two measuring points
 - Difference between measuring point and input value
 - Difference between measuring point and value of an external probe
 - Difference between measuring point and the reflected temperature (RTC)
- **External values:** in various measuring modes, values can be determined either manually or with a Bluetooth® measuring instrument.
- **iFOV:** the IFOV warner shows what can be measured accurately from a specific distance.
- **Isotherm:** limit values can be set. All readings within the set limits are displayed uniformly in one colour.
- **Alarm:** Temperatures below or above a limit value are also visualized.
- **Zoom:** enlarges the image section (2x and 4x).
- **SiteRecognition:** testo SiteRecognition recognizes markers, the recorded images are assigned to the corresponding

measuring location by the IRSoft PC software and stored in the database.

- 2 Select the required function (joystick or touchscreen).

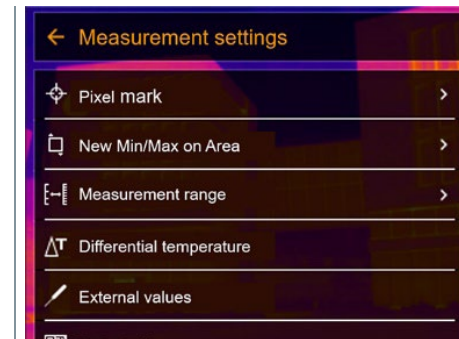
9.2.1 Pixel mark

- 1 Open the **Menu**.



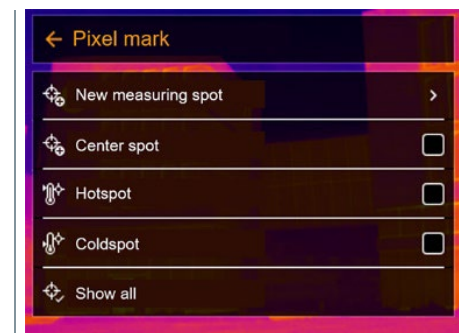
- 2 Select **Measurement settings** (joystick or touchscreen).

- ▶ **Measurement settings** opens.



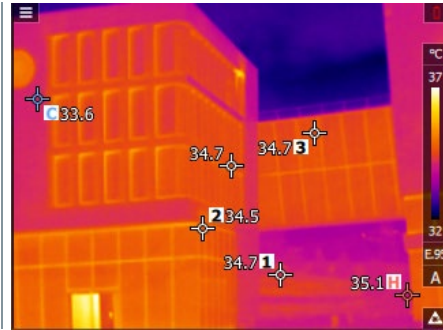
- 3 Select **Pixel mark** (joystick or touchscreen).

- ▶ The **Pixel mark** submenu opens.



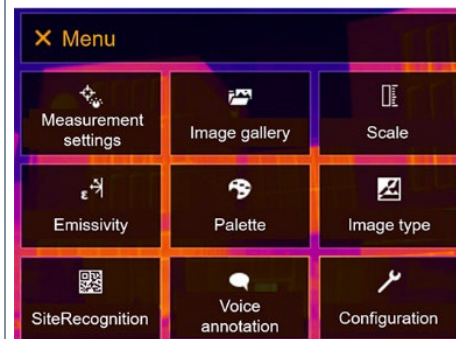
- 4 Select Settings (joystick or touchscreen).

- ▶ Measurement view is displayed.



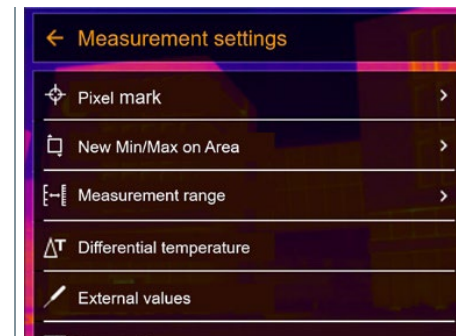
9.2.2 New Min/Max on area

- 1 Open the **Menu**.



- 2 Select **Measurement settings** (joystick or touchscreen).

- ▶ **Measurement settings** opens.



- 3 Select **New Min/Max on area** (joystick or touchscreen).

- ▶ **New Min/Max on area** submenu opens.



- 4 Select Settings (joystick or touchscreen).

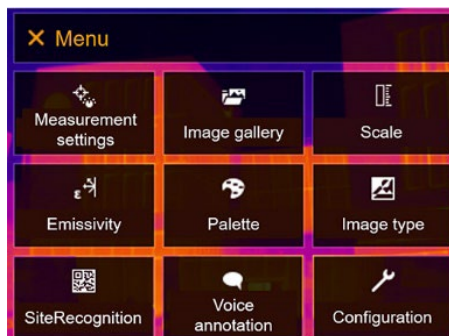
- ▶ Measurement view is displayed.



9.2.3 Differential temperature

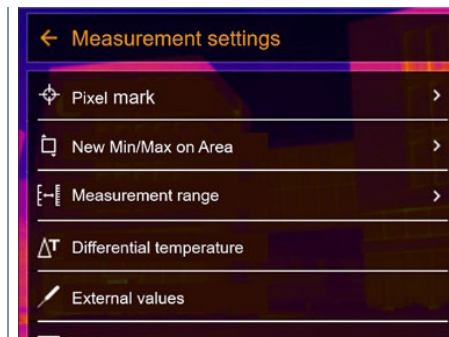
Differential temperature enables the calculation of the temperatures between two readings.

- 1 Open the **Menu**.



- 2 Select **Measurement settings** (joystick or touchscreen).

- ▶ **Measurement settings** opens.



- 3 Select **Differential temperature** (joystick or touchscreen).

- ▶ **Differential temperature** opens.



4 Enable **Active**.

▶ ✓ appears.

5 Select the differential temperature to be calculated (joystick or touchscreen) (**PA vs. PB**, **PA vs. Probe**, **PA vs. Value**, **PA vs. RTC**).

5.1 PA vs. PB selection:

- Move the **joystick** to the right (or via touchscreen) -> select measuring point **A** -> press **OK** -> move the measuring point to the live image using the **joystick** -> press **OK**.
- Move the **joystick** to the right (or via touchscreen) -> select measuring point **B** -> press **OK** -> move the measuring point to the live image using the **joystick** -> press **OK**.
- End measurement: Move the **joystick** to the right (or via touchscreen), confirm with ✓.

5.2 PA vs. Probe selection:

- Move the **joystick** to the right (or via touchscreen) -> select measuring point **A** -> press **OK** -> move the measuring point to the live image using the **joystick** -> press **OK**.
- End measurement: Move the **joystick** to the right (or via touchscreen), confirm with ✓.

5.3 PA vs. Value selection:

- Move the **joystick** to the right (or via touchscreen) -> select measuring point **A** -> press **OK** -> move the measuring point to the live image using the **joystick** -> press **OK**.
- Move the **joystick** to the right (or via touchscreen), set the value manually.
- End measurement: Move the **joystick** to the right (or via touchscreen), confirm with ✓.

5.4 PA vs. RTC selection:

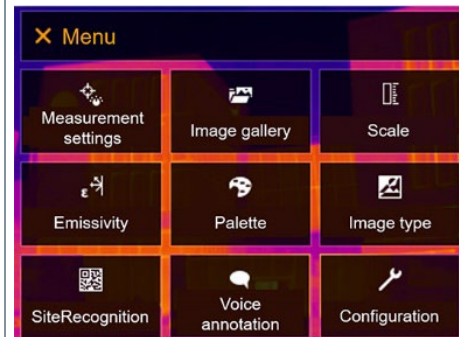
- Move the **joystick** to the right (or via touchscreen) -> select measuring point **A** -> press **OK** -> move the measuring point to the live image using the **joystick** -> press **OK**.
- Move the **joystick** to the right (or via touchscreen), set the value manually.
- End measurement: Move the **joystick** to the right (or via touchscreen), confirm with ✓.

6 Confirm with ✓.

▶ The settings remain visible or retained in the measurement view.

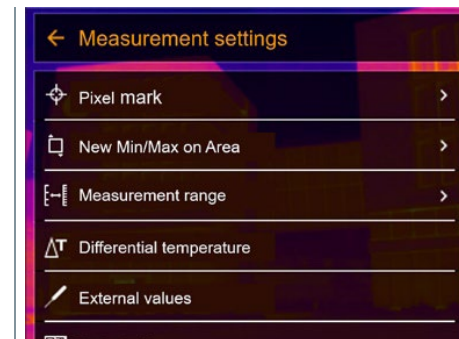
9.2.4 External values

- 1 Open the **Menu**.



- 2 Select **Measurement settings** (joystick or touchscreen).

- ▶ **Measurement settings** opens.



- 3 Select **External values** (joystick or touchscreen).

- ▶ **External values** opens.



- 4 Activate **humidity, current, voltage, solar or power**.



If no **radio probe** is connected, **values** must be entered manually.

If a **radio probe** is connected, **values** are transferred automatically.



The probe or the radio link to the probe must be activated in the **Configuration -> Connectivity** menu. See Section 11.10.4 **Connectivity**.

-
- 5 | Confirm with ✓.



Values for current, voltage and power can be transferred from the testo 770-3 clamp meter.

9.2.5 SiteRecognition

With the PC software testo IIRSoft QR Codes, markers can be set to clearly identify a measuring location. By setting a marker with the built-in digital imager, the images, which are then saved, are automatically allocated to the relevant site (allocation is saved with this image). For the creation of markers, transferring of measuring site data to the imager and copying of images to the PC software, see instruction manual for the PC software.

- 1 | Open the **Menu**.
- 2 | Select **SiteRecognition** function (joystick or touchscreen).
- ▶ | The real image is displayed and a position frame is shown.



To quickly change the measuring locations, SiteRecognition can be assigned to the quick select button.

Enter measuring site marker

- 1 | Position the imager so that the marker is inside the position frame.
- 2 | After recognition of the marker ID: confirm transfer of measuring site data.
- ▶ | The thermographic image that is taken next is assigned to the measuring location.



Several images can be saved for the same measuring location.

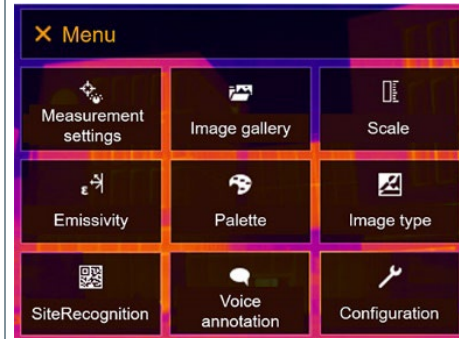


To exit the measuring location, press **Esc** or touch the bottom left corner. Run **SiteRecognition** again.

9.2.6 IFOV

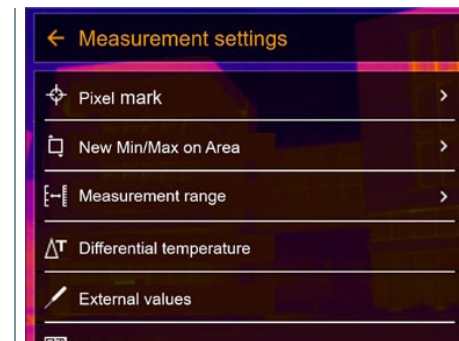
Enabling IFOV causes the shape of the crosshairs to change from round to square. Everything that fits into this square crosshairs can be measured correctly. The smallest object that can still be measured correctly becomes detectable.

- 1 Open the **Menu**.

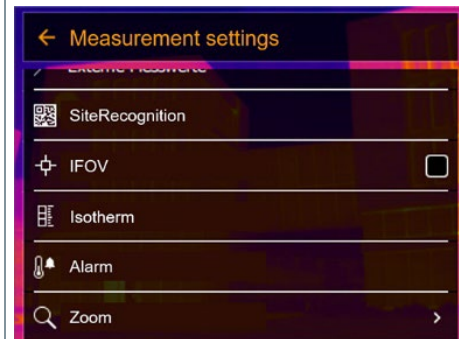


- 2 Select **Measurement settings** (joystick or touchscreen).

- ▶ **Measurement settings** opens.



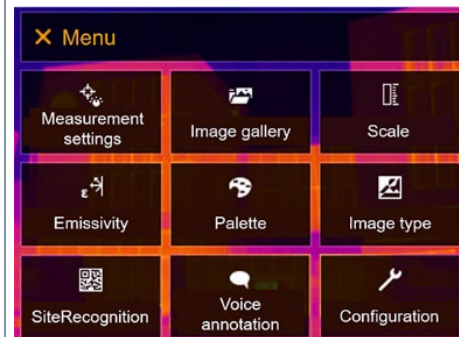
- 3 Select **IFOV** (joystick or touchscreen).



- ▶ IFOV is enabled or disabled.

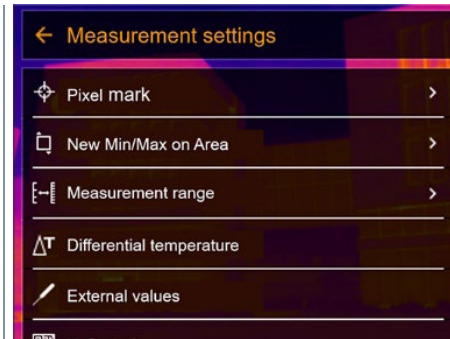
9.2.7 Isotherm

- 1 Open the **Menu**.



2 Select **Measurement settings** (joystick or touchscreen).

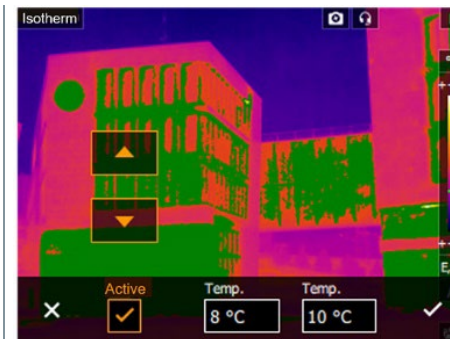
► **Measurement settings** opens.



3 Select **Isotherm** (joystick or touchscreen).



► **Isotherm** opens.



4 Limit values can be set.

► Everything within the limit values is displayed in colour.

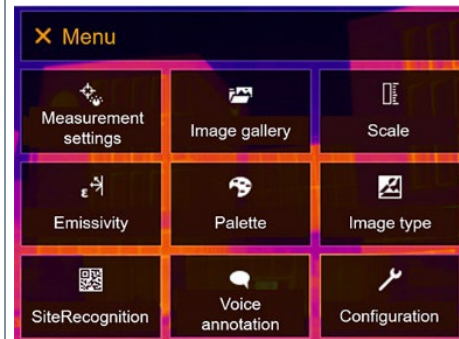
5 Confirm with ✓.



The colours for the markings can be specified in the **Configuration** -> **Color selection** menu.

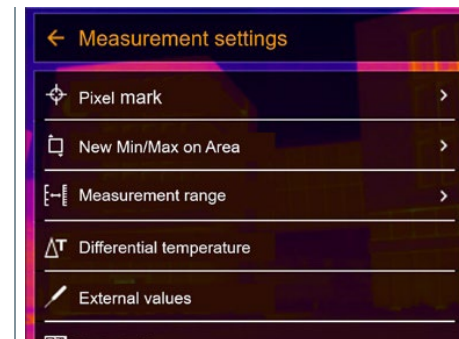
9.2.8 Alarm

- 1 Open the **Menu**.



- 2 Select **Measurement settings** (joystick or touchscreen).

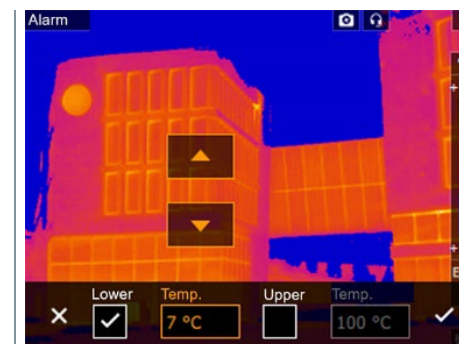
- ▶ **Measurement settings** opens.



- 3 Select **Alarm** (joystick or touchscreen).



- ▶ **Alarm** opens.



- 4 Upper and lower alarm limits can be set and activated individually.

- ▶ Everything above the upper alarm is highlighted in colour. Everything below the lower alarm is highlighted in colour.

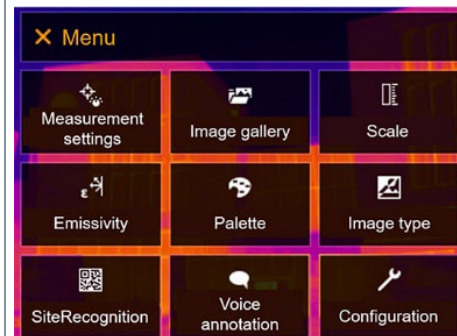
5 Confirm with ✓.



The colours for the markings can be specified in the **Configuration** -> **Color selection** menu.

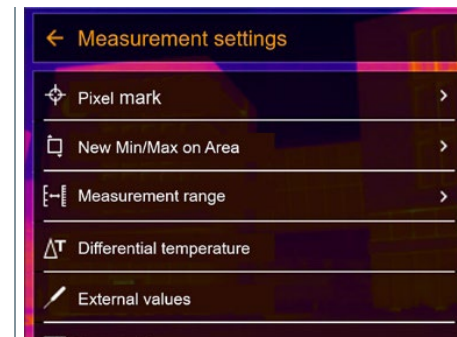
9.2.9 Zoom

1 Open the **Menu**.



2 Select **Measurement settings** (joystick or touchscreen).

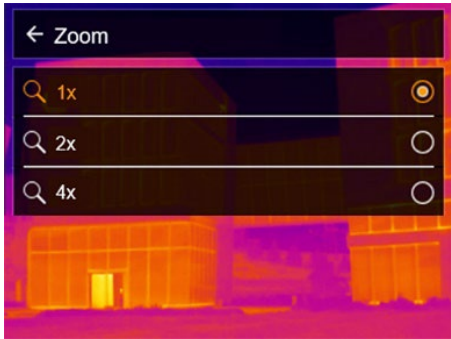
▶ **Measurement settings** opens.



3 Select **Zoom** (joystick or touchscreen).



► **Zoom** opens.

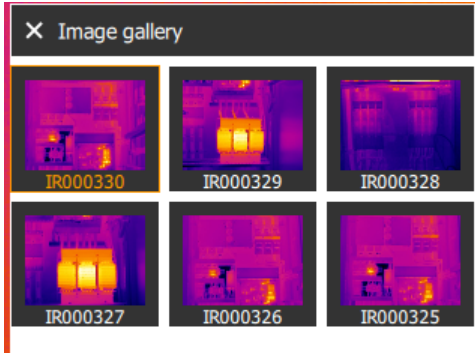


4 Select the required zoom factor (joystick or touchscreen).

9.3 Image gallery

Saved images can be displayed, analyzed or deleted. You can listen to and also record a voice annotation subsequently or do it again.

File name

	
Element	Function
IR	Infrared image with attached real image
000000	Consecutive number
SR	Images captured with SuperResolution



File names can be changed via the PC (not in the imager), e.g. in Windows Explorer.

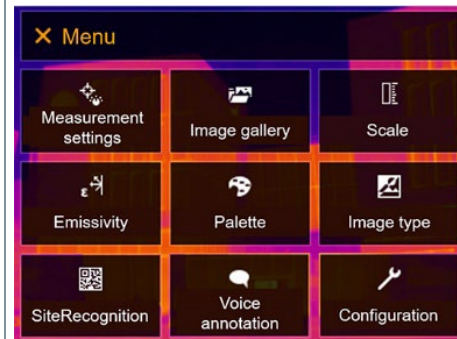
Displaying a saved image

Saved images can be viewed and analyzed in the image gallery.



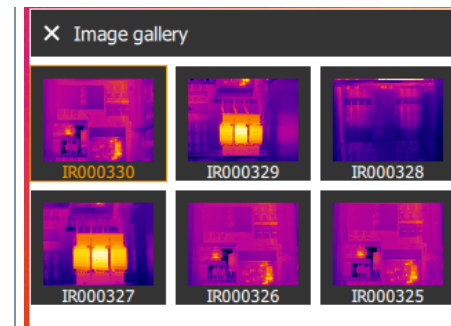
When SuperResolution is enabled, 2 images are saved in the image gallery (an **IR** image, and an **SR** image). The high-resolution SuperResolution image is saved in the background. In the status bar, the number of SuperResolution images to be saved is displayed (for example: **SR(1)**). A maximum 5 SuperResolution images can be processed simultaneously.

- 1 Open the **Menu**.



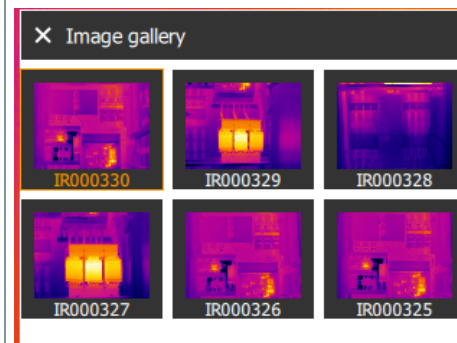
- 2 Select **Image gallery** (joystick or touchscreen).

- ▶ **Image gallery** opens.



- ▶ All saved images are displayed in the form of an infrared image preview.

- 3 Select image (joystick or touchscreen).



- ▶ The image is displayed.

Analyzing an image



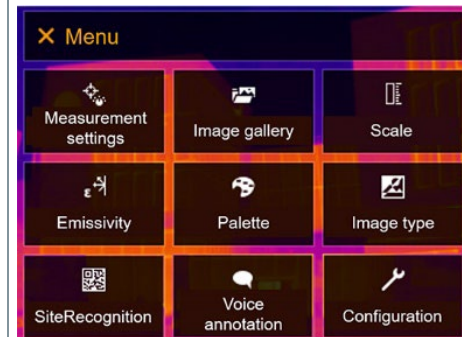
If an image is saved with SuperResolution, the image gallery contains an (IR) image and a high-resolution image (SR). The images show the same image section. They can be displayed and analyzed in the image gallery.

Analyze stored images using the measurement functions **Pixel mark / New measuring spot**, **Center spot**, **Hotspot**, **Coldspot**, **Min/max on area**, **Differential temperature**, **Isotherm** and **Alarm**.

For a description of the individual functions, please read the information in the relevant sections.

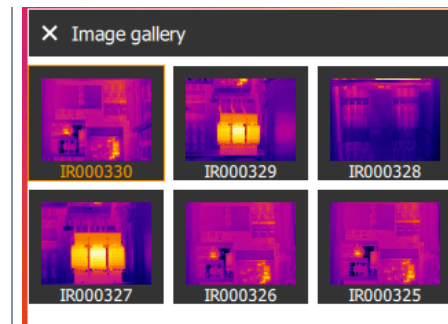
Delete image

- 1 Open the **Menu**.



- 2 Select **Image gallery** (joystick or touchscreen).

- ▶ **Image gallery** opens.



- ▶ All saved images are displayed in the form of an infrared image preview.

- 3 Move **joystick** to select an image.

- 4 Press **Ok** to open an image.

- 5 Press  or  at bottom right.

- ▶ **Delete image?** is displayed.

- 6 Confirm selection with **✓** or exit the menu with **X**.

9.4 Scale

Manual scaling can be activated instead of automatic scaling (continuous automatic adjustment to the current min./max. values). The scale limits can be set within the measurement range.

The activated mode is displayed bottom right: **A** automatic scaling, **M** manual scaling and **S** ScaleAssist.

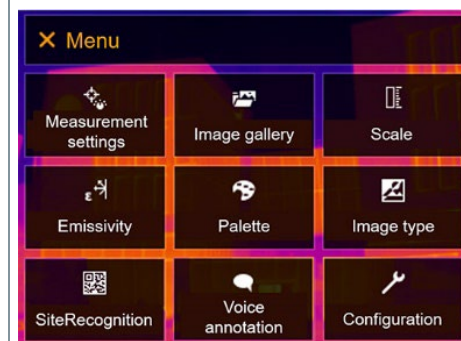


Auto-scaling continuously adjusts the scale to the readings presented, and the colour assigned to a temperature value changes. In manual scaling fixed limit values are defined, and the colour assigned to a temperature value is fixed (important for visual image comparisons). Scaling influences the way the infrared image is shown on the display but does not affect the recorded measuring values.

With ScaleAssist, a standardized scale is set depending on the inside and outside temperature.

Setting automatic scaling

- 1 Open the **Menu**.



- 2 Select **Scale** (joystick or touchscreen).

- ▶ **Scale** opens.

- 3 Select **Auto**.



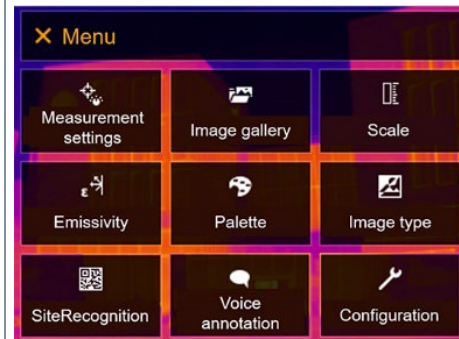
- 4 Confirm selection with ✓ or exit the menu with X.

- ▶ Automatic scaling is activated. **A** is displayed bottom right.

Setting manual scaling

The lower limit value, the temperature range (upper and lower limit value simultaneously) and the upper limit value can be set.

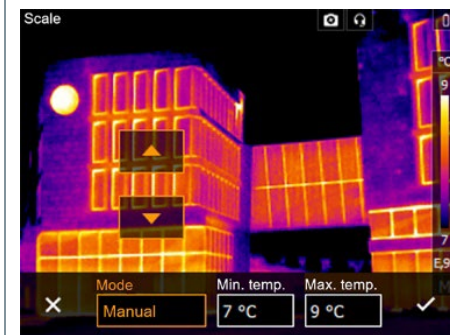
- 1 Open the **Menu**.



- 2 Select **Scale** (joystick or touchscreen).

► **Scale** opens.

- 3 Select **Manual**.



- 4 Move the **joystick** to the right, select **Min.Temp.** (lower limit value).

- 4.1 Move the **joystick** to the right, select **Min.Temp.** (lower limit value) and **Max.Temp.** (upper limit value).

Move the **joystick** up/down to set the values.

- 4.2 Move the **joystick** to the right, select **Max.Temp.** (upper limit value).

Move the **joystick** up/down to set the value.

- 4.3 If necessary, move the **joystick** to the left, back to the mode menu.

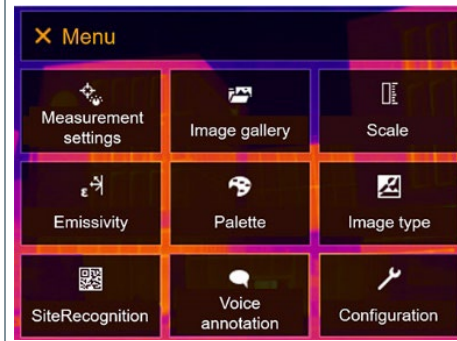
- 5 Confirm selection with ✓ or exit the menu with X.

► Manual scaling is activated. **M** is displayed bottom right.

Setting up ScaleAssist

The ScaleAssist function calculates a display-neutral scale depending on the inside and outside temperature. This scale graduation can be used to detect structural defects in buildings.

- 1 Open the **Menu**.



- 2 Select **Scale** (joystick or touchscreen).

► **Scale** opens.

- 3 Select **ScaleAssist**.



- 4 Move the **joystick** to the right, select **Temp. In** (indoor temperature).

Move the **joystick** up/down to set the value.

- 5 Move the **joystick** to the right, select **Temp. Out** (outdoor temperature).

Move the **joystick** up/down to set the value.

- 6 If necessary, move the **joystick** to the left, back to the mode menu.

- 7 Confirm selection with **✓** or exit the menu with **X**.

► Manual scaling is activated. **S** is displayed at bottom right.

9.5 Emissivity

You can choose between user-defined emissivity and 8 materials with permanently set emissivity. The reflected temperature (RTC) can be set individually.



Other materials can be imported into the instrument from an existing list using the PC software. For more detailed information, please refer to the IRSOFT instruction manual.

Emissivity information:

The emissivity describes the capability of a body to emit electromagnetic radiation. This is material-specific and must be adapted for correct measurement results.

Non-metals (paper, ceramic, gypsum, wood, paints and coatings), plastics and food have high emissivity, which means that the surface temperature can be easily measured using infrared.

Because of their low or non-uniform emissivity, bright metals and metal oxides only have limited suitability for infrared measurement. Highly inaccurate measurements should be expected. A remedy for this is coatings that increase emissivity, e.g. paint or emission adhesive (accessory: 0554 0051), which must be applied to the object to be measured.

The following table gives typical emissivities of important materials. These values can be used as a guide for user-defined settings.

Material (material temperature)	Emissivity
Aluminium, bright rolled (170 °C)	0.04
Cotton (20 °C)	0.77
Concrete (25 °C)	0.93
Ice, smooth (0 °C)	0.97
Iron, emery-ground (20 °C)	0.24
Iron with casting skin (100 °C)	0.80
Iron with rolling skin (20 °C)	0.77
Gypsum (20 °C)	0.90
Glass (90 °C)	0.94
Rubber, hard (23 °C)	0.94
Rubber, soft grey (23 °C)	0.89
Wood (70 °C)	0.94
Cork (20 °C)	0.70
Radiator, black anodised (50 °C)	0.98
Copper, slightly tarnished (20 °C)	0.04
Copper, oxidised (130 °C)	0.76
Plastics: PE, PP, PVC (20 °C)	0.94
Brass, oxidised (200 °C)	0.61
Paper (20 °C)	0.97
Porcelain (20 °C)	0.92
Black paint, matt (80 °C)	0.97
Steel, heat-treated surface (200 °C)	0.52

Material (material temperature)	Emissivity
Steel, oxidised (200 °C)	0.79
Clay, burnt (70 °C)	0.91
Transformer paint (70 °C)	0.94
Brick, mortar, plaster (20 °C)	0.93

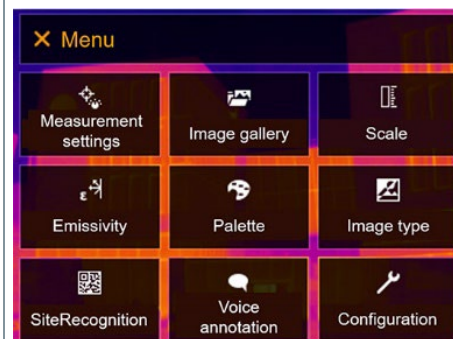
Reflected temperature information:

Using this offset factor, the reflection is calculated out based on the low emissivity, and the accuracy of the temperature measurement with infrared measuring instruments is improved. In most cases, the reflected temperature is identical to the ambient air temperature. Only when objects with strong emissions at much lower temperatures (such as cloudless skies during outdoor readings) or much higher temperatures (such as ovens or machines) are in proximity to the object being measured should the radiation temperature of these sources be determined and used. The reflected temperature has little effect on objects with high emissivity.

@ Further information can be found in the Pocket Guide.

9.5.1 Selecting the emissivity

- 1 Open the **Menu**.



- 2 Select **Emissivity** (joystick or touchscreen).

► **Emissivity** opens.

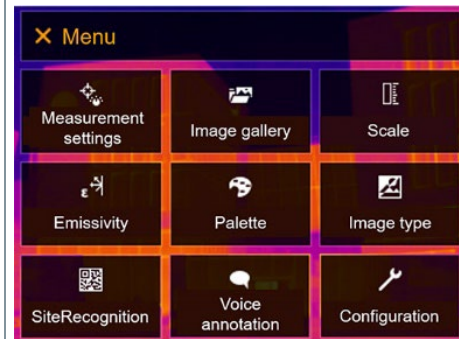
- 3 Select **Substance**.



- 4 Confirm selection with ✓ or exit the menu with X.

9.5.2 Customizing the emissivity

- 1 Open the **Menu**.



- 2 Select **Emissivity** (joystick or touchscreen).

► **Emissivity** opens.

- 3 Under **Substance**, select **User defined**.

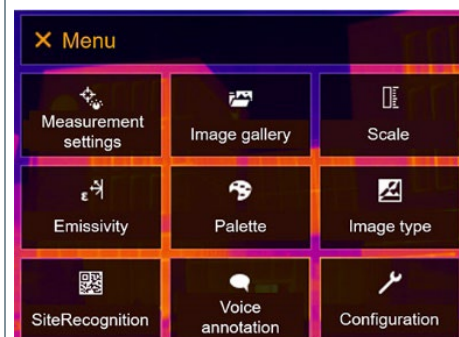


- 4 Select **E** and set the value.

- 5 Confirm selection with ✓ or exit the menu with X.

9.5.3 Setting RTC

- 1 Open the **Menu**.



- 2 Select **Emissivity** (joystick or touchscreen).

► **Emissivity** opens.

3 Select **Substance**.



4 Select **RTC** and set the value.



5 Confirm selection with ✓ or exit the menu with X.

9.5.4 Setting ϵ -Assist



An additional marker for the ϵ -assist function is required for this function. Additional markers for the ϵ -assist function are available as accessories.

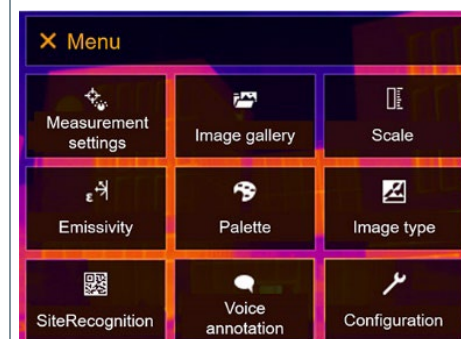


This function is not active when using a telephoto lens. The VIS camera is then not close enough to recognise the ϵ -Marker.



It is not possible to use this function while WLAN is activated.

1 Open the **Menu**.



2 Select **Emissivity** (joystick or touchscreen).

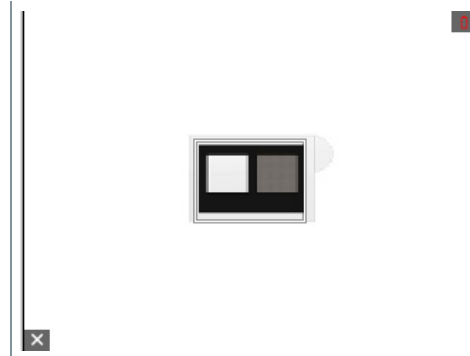
► **Emissivity** opens.

3 Select **Substance**.



4 Select **ε-Assist**.

5 Attach the ε-marker to the object.



► RTC and emissivity are automatically adjusted.

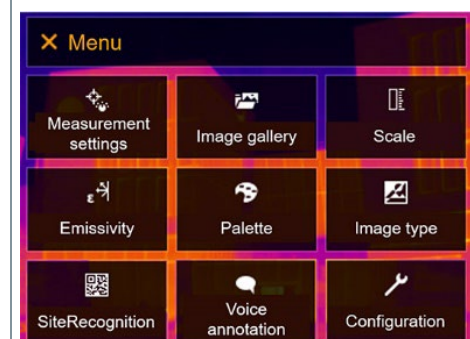
6 Confirm selection with ✓ or exit the menu with X.



If it is not physically possible to determine the emissivity due to the same object temperature and reflected temperature, the input field opens again. The emission value must be input manually.

9.6 Palette

1 Open the **Menu**.



2 Select **Palette** (joystick or touchscreen).

- ▶ **Palette** opens.
- 3 Select the required colour palette (joystick or touchscreen).



- ▶ The colour palette is marked ✓.

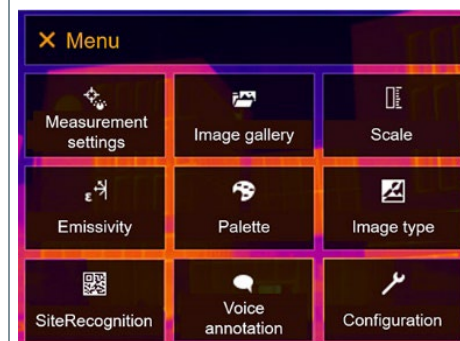


In the live image, the palette can be changed by moving the joystick up or down.

9.7 Image type

The display can be switched between infrared image and real image (digital camera).

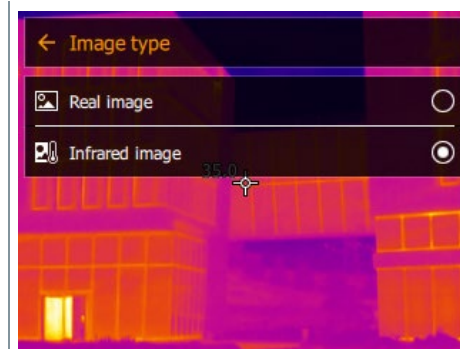
- 1 Open the **Menu**.



- 2 Select **Image type** (joystick or touchscreen).

- ▶ **Image type** opens.

- 3 Select the required image type (joystick or touchscreen).

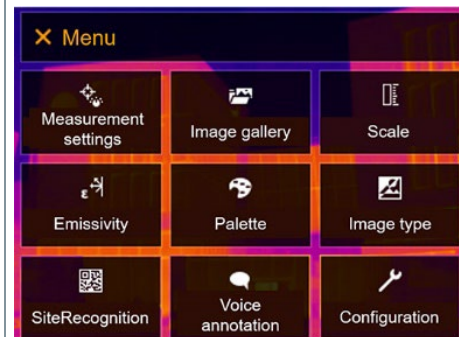


- ▶ The activated image type is marked with a dot (●).

9.8 SiteRecognition

With the PC software testo IIRSoft QR Codes, markers can be set to clearly identify a measuring location. By setting a marker with the built-in digital imager, the images, which are then saved, are automatically allocated to the relevant site (allocation is saved with this image). For the creation of markers, transferring of measuring site data to the imager and copying of images to the PC software, see instruction manual for the PC software.

- 1 Open the **Menu**.



- 2 Select **SiteRecognition** (joystick or touchscreen).

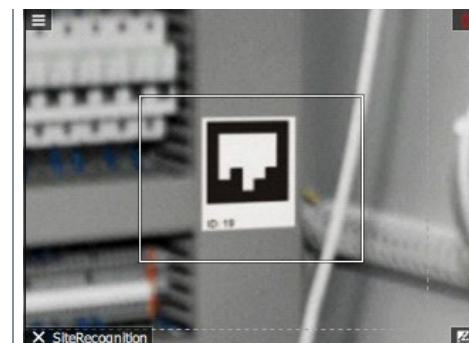
- ▶ **SiteRecognition** opens.
- ▶ The real image is displayed and a position frame is shown.



To quickly change the measuring locations, SiteRecognition can be assigned to the quick select button.

Enter measuring site marker

- 1 Position the imager so that the marker is inside the position frame.
 - 2 After recognition of the marker ID: confirm transfer of measuring site data.
- ▶ The thermographic image that is taken next is assigned to the measuring location.





Several images can be saved for the same measuring location.



To exit the measuring location, press **Esc** or touch the bottom left corner. Run **SiteRecognition** again.

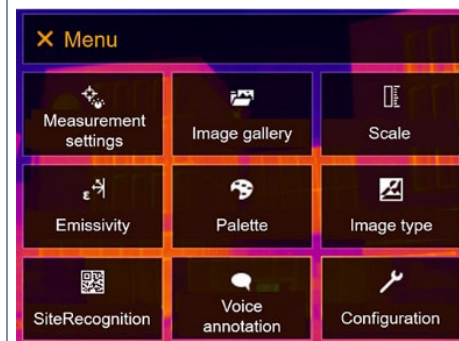
9.9 Voice annotation



Voice annotation can only be used if an image is active on the display and a BT audio connection has been established with the headset.

- ✓ A preview image must be enabled in the settings.
- ✓ An image has just been created or selected from the image gallery.

1 Open the **Menu**.



2 Select **Voice annotation** (joystick or touchscreen).

▶ **Voice annotation** opens.

3 Click on recording .



▶ Recording timer starts running.

9 Performing the measurement

- 4 Click on stop recording .



- 5 The recording can be played back , stopped, re-recorded or deleted.



- 6 Press  to confirm the recording.
- The voice annotation is stored in the image.

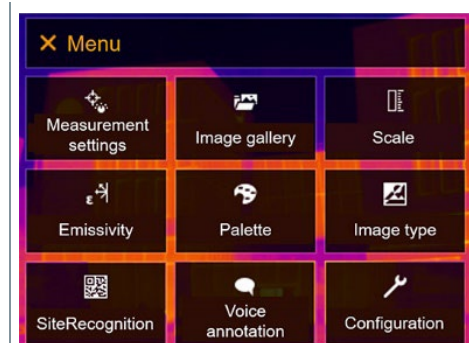
9.10 Configuration

9.10.1 Settings

Country settings

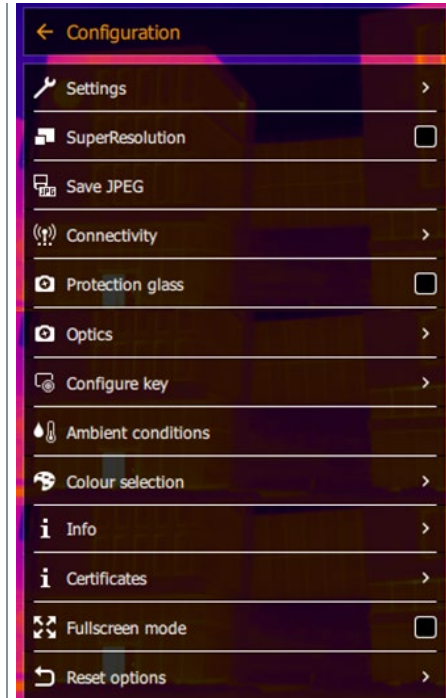
The user interface language can be set.

- 1 Open the **Menu**.



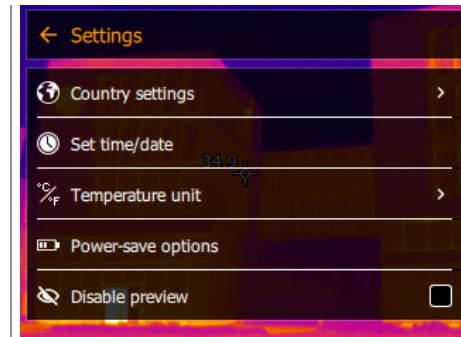
- 2 Select **Configuration** (joystick or touchscreen).

- **Configuration** opens.



- 3 Select **Settings** (joystick or touchscreen).

- **Settings** opens.



- 4 Select **Country settings**.

- **[Country settings]** opens.

- 5 Select the required language (joystick or touchscreen).

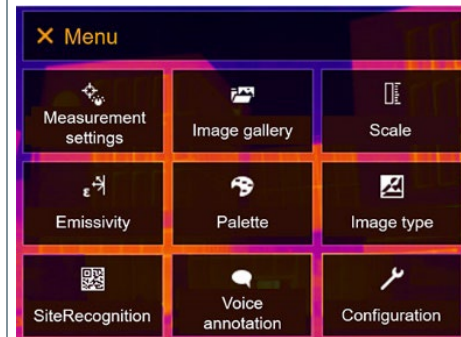


- The activated language is marked with a dot (●).

Set time/date

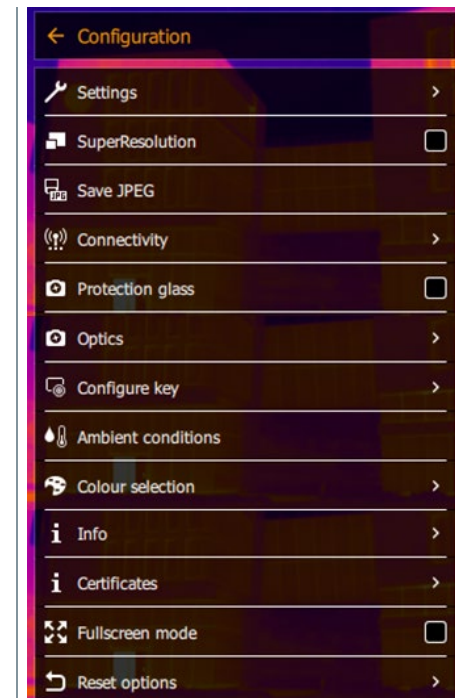
Time and date can be set. The time and date format are set automatically based on the selected user interface language.

- 1 Open the **Menu**.



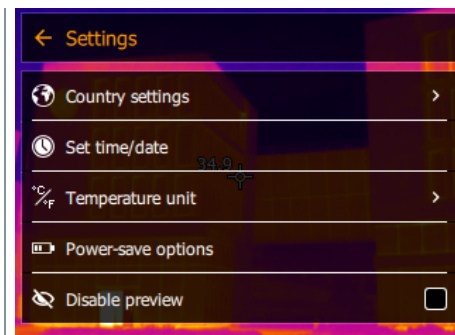
- 2 Select **Configuration** (joystick or touchscreen).

- **Configuration** opens.



- 3 Select **Settings** (joystick or touchscreen).

- **Settings** opens.



4 Select **[Set time/date]** (joystick or touchscreen).

► **[Set time/date]** opens.

5 Set the time and date (joystick or touchscreen).

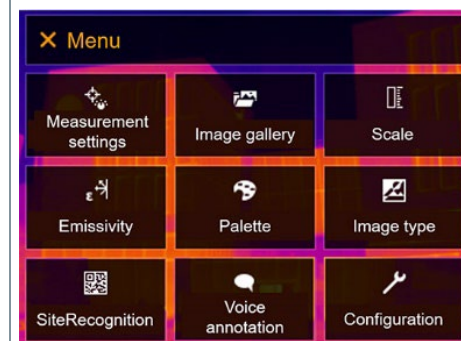


6 Confirm selection with ✓ or exit the menu with X.

Temperature unit

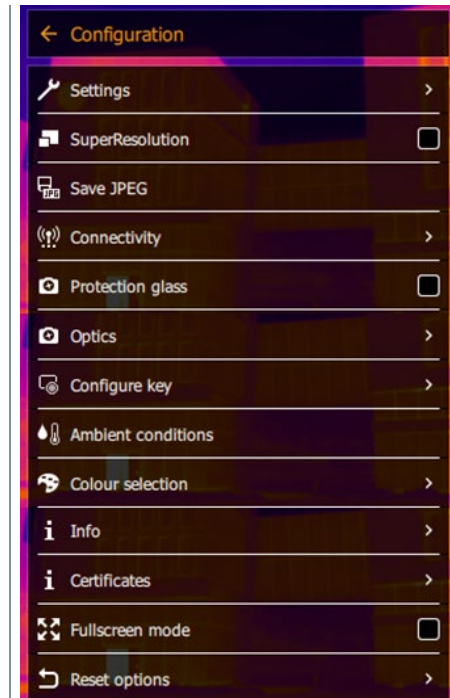
The temperature unit can be set.

1 Open the **Menu**.



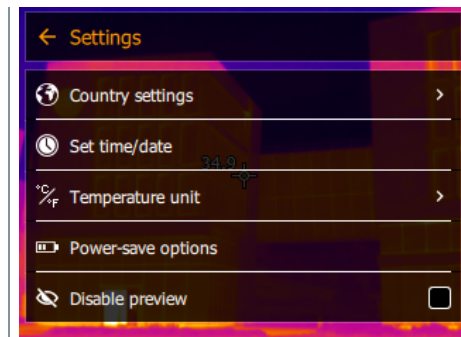
2 Select **Configuration** (joystick or touchscreen).

- **Configuration** opens.



- 3 Select **Settings** (joystick or touchscreen).

- **Settings** opens.



- 4 Select **[Temperature unit]** (joystick or touchscreen).

- **[Temperature unit]** opens.

- 5 Set the temperature unit (joystick or touchscreen).



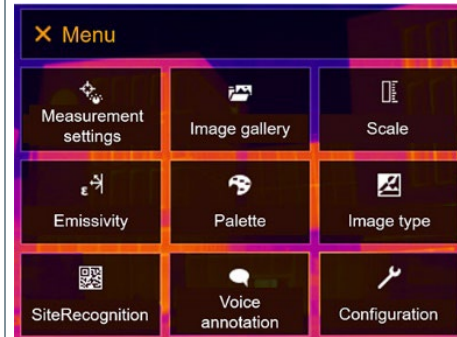
- The activated temperature unit is marked with a dot (●).

Power-save options

The illumination intensity of the display can be set. A lower intensity increases the battery life.

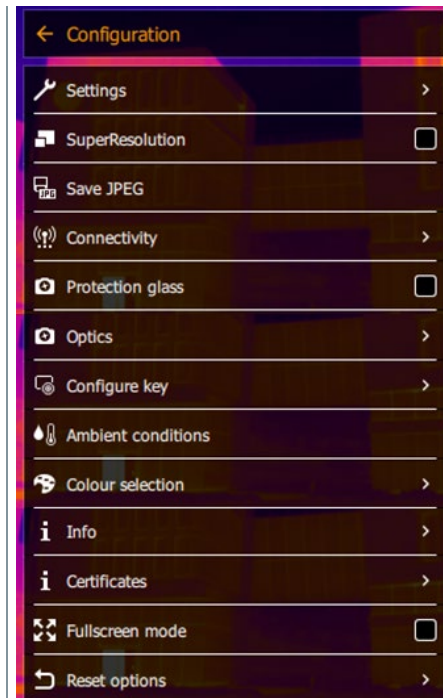
The time until automatic switch-off can be set between 5 min and 30 min.

- 1 Open the **Menu**.



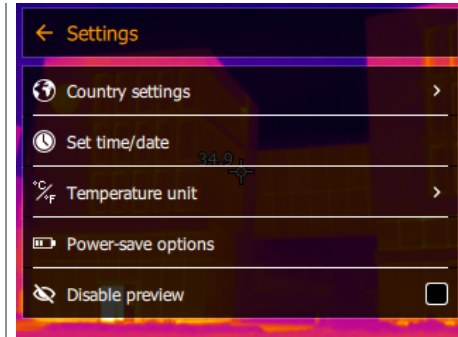
- 2 Select **Configuration** (joystick or touchscreen).

- **Configuration** opens.



- 3 Select **Settings** (joystick or touchscreen).

- ▶ **Settings** opens.



- 4 Select **[Power-save options]** (joystick or touchscreen).

- ▶ **[Power-save options]** opens.

- 5 Set the power-save options (joystick or touchscreen).



- 6 Confirm selection with ✓ or exit the menu with X.

9.10.2 No preview image



If the box is not activated, the image freezes on the screen when the trigger is pressed once. It is now possible to record a voice annotation for this image. Press the trigger again to save the image.

If the box is activated, the image is saved by pressing the trigger once.

9.10.3 SuperResolution

SuperResolution is a technology to improve image quality. For each shot a sequence of images is saved in the thermal imager. Using the camera, App, or PC software, an image is recorded with four times more measurement values (no interpolation). The geometric resolution (IFOV) is improved by a factor of 1.6.

- ✓ To use the function, the following conditions must be fulfilled:
- The camera is hand-held.
 - The objects to be imaged do not move.

1 Open the **Menu**.

2 Select **Configuration** (joystick or touchscreen).

▶ **Configuration** opens.

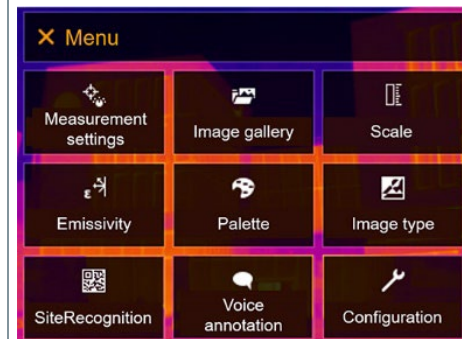
3 Select **SuperResolution**.

▶ **SuperResolution** is enabled (

9.10.4 Save JPEG

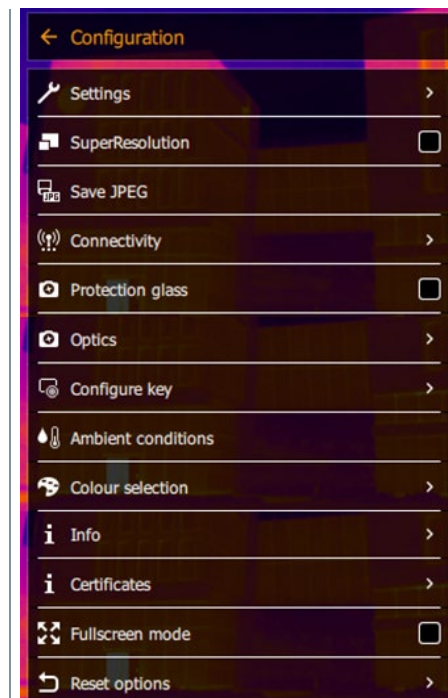
Infrared images are saved in BMT (image with all temperature data) format. The image can also be saved in JPEG format (without temperature data) at the same time. The image content corresponds to the infrared image shown on the display, including scale display and image marks for the selected measuring functions. The JPEG file is saved under the same file name as the associated BMT file and can be opened on the PC, even without using the IRSOFT PC software.

- 1 Open the **Menu**.



- 2 Select **Configuration** (joystick or touchscreen).

- **Configuration** opens.



- 3 Select **Save JPEG** (joystick or touchscreen).

- **Save JPEG** opens.

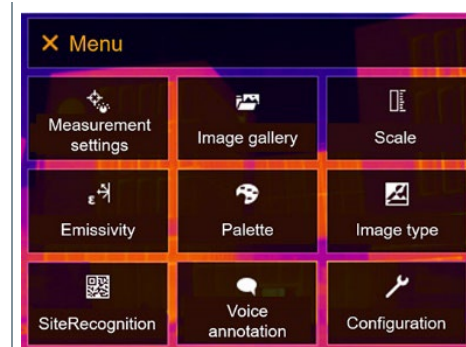


- 4 Select the required setting (joystick or touchscreen)..
- 5 Confirm selection with ✓ or exit the menu with X.

9.10.5 Connectivity

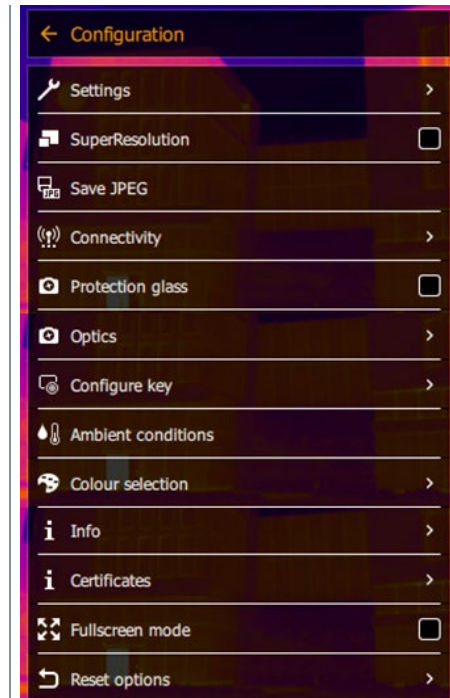
Enable/disable WLAN or Bluetooth®.

- 1 Open the **Menu**.



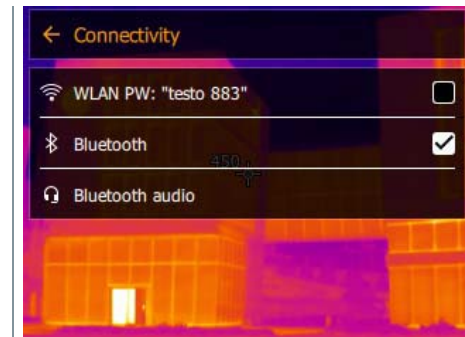
- 2 Select **Configuration** (joystick or touchscreen).

- ▶ **Configuration** opens.



- 3 Select **Connectivity** (joystick or touchscreen).

- ▶ **Connectivity** opens.



- 4 Select the required setting (joystick or touchscreen)..

- ▶ The activated connection is marked with ✓.

- 5 Confirm selection with ✓ or exit the menu with X.



If there is an active Bluetooth connection and a WLAN connection is activated in addition, the Bluetooth data transfer is continued. However, it is not possible to establish a new connection to a humidity probe.

9.10.6 Protective glass

Mounting the IR protective glass

- 1 Place the protective glass (with black mount) attached to the red mounting ring onto the lens and turn the mounting ring clockwise until it stops.
- 2 Remove the red mounting ring from the protection glass.

Removing the IR protective glass

- 1 Attach the red mounting ring to the protection glass.
- 2 Turn the mounting ring anti-clockwise and remove the protective glass.

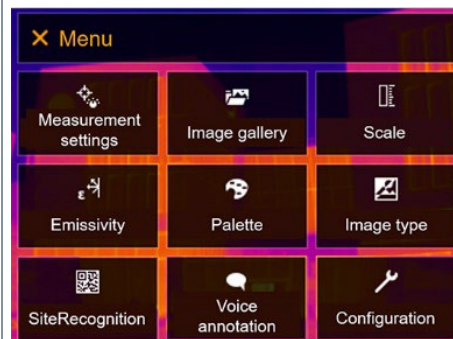
Enable/disable protective glass option

Use the **Protective glass** option to select whether or not to use an IR protective glass.



Ensure the correct setting to prevent corruption of the measurement results.
If this option is set incorrectly, the specified measuring accuracy is not guaranteed

- 1 Open the **Menu**.



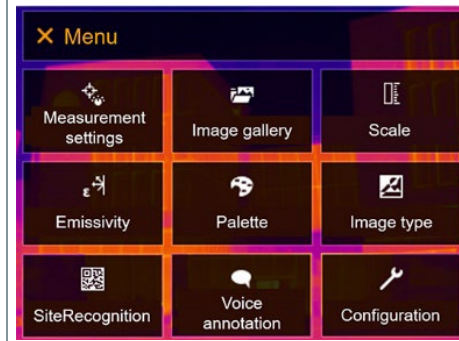
- 2 Select **Configuration** (joystick or touchscreen).

► **Configuration** opens.

3 Select **Protective glass** (joystick or touchscreen).

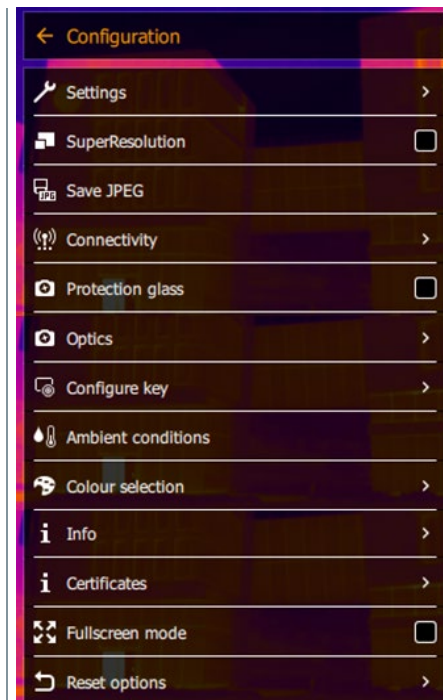
► **Protective glass** is enabled (

1 Open the **Menu**.



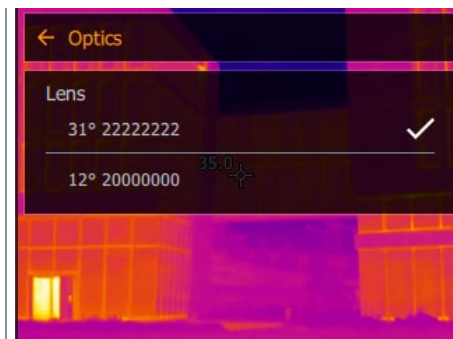
2 Select **Configuration** (joystick or touchscreen).

► **Configuration** opens.



3 Select **Optics** (joystick or touchscreen).

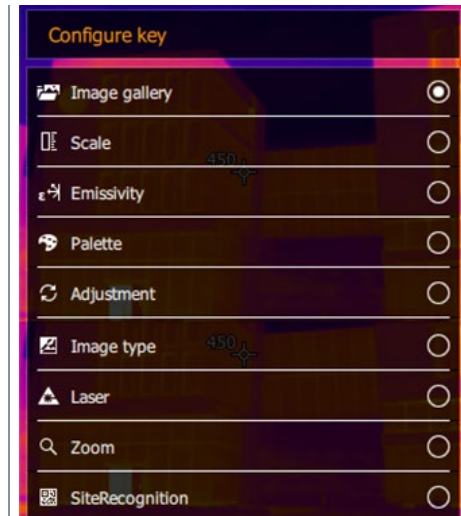
► **Optics** opens.



► The lens used is marked ✓.

9.10.8 Quick select button

- 1 Move the **joystick** to the right.
- ▶ The **Configure key** selection menu opens. The activated function is marked with a dot (●).



- 2 Select the required menu item (joystick or touchscreen).
- ▶ The activated function is marked with a dot (●).

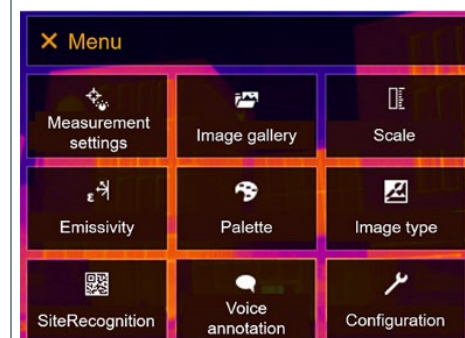
9.10.9 Ambient conditions

Measurement deviations arising due to high humidity or large distances to the object to be measured can be corrected. Correction parameters must be entered for this.

If the camera is connected to an optional humidity radio probe, the ambient temperature and humidity are transferred automatically.

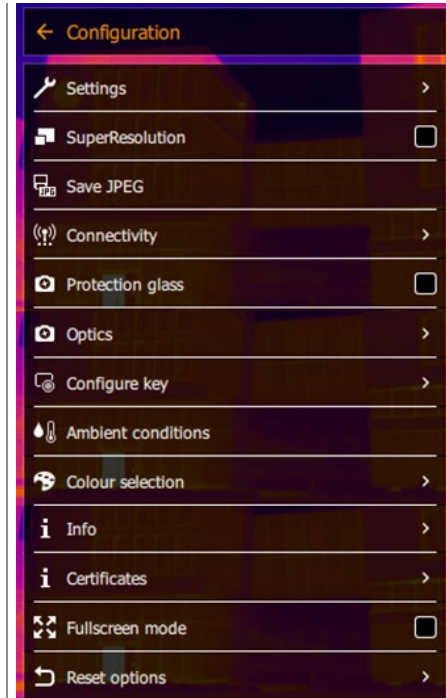
Values for ambient temperature (Temperature) and ambient humidity (Humidity) can be set manually.

- 1 Open the **Menu**.



- 2 Select **Configuration** (joystick or touchscreen).

- **Configuration** opens.



- 3 Select **Ambient conditions** (joystick or touchscreen).

- **Ambient conditions** opens.

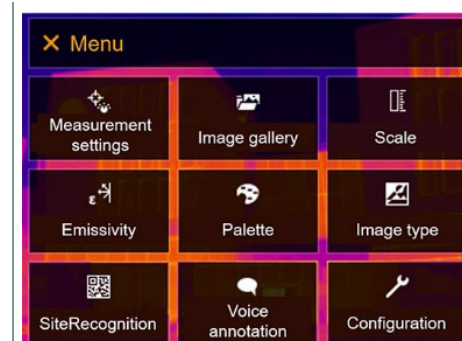


- 4 Select the required setting (joystick or touchscreen).

- 5 Confirm selection with ✓ or exit the menu with X.

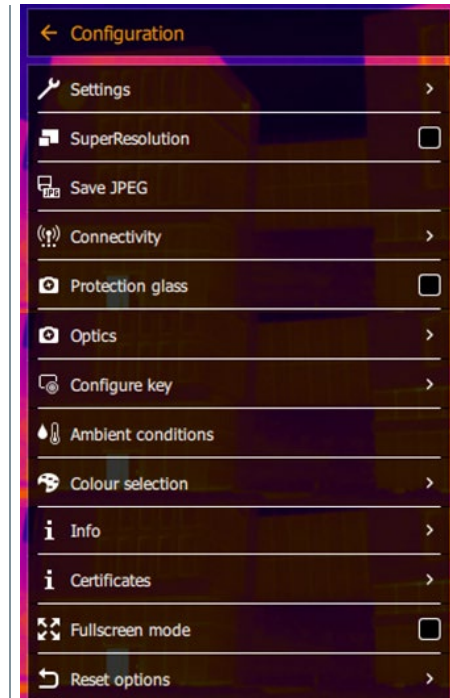
9.10.10 Color selection

- 1 Open the **Menu**.



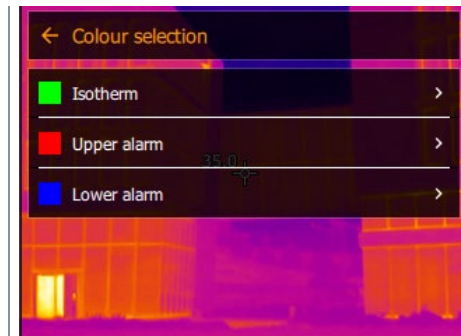
- 2 Select **Configuration** (joystick or touchscreen).

► **Configuration** opens.



- 3 Select **Color selection** (joystick or touchscreen).

► **Color selection** opens.



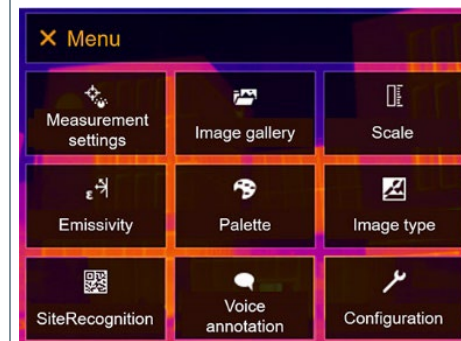
- 4 Select colour (red, green, blue, black, white, grey) for the Isotherm, Upper Alarm and Lower Alarm markings (joystick or touchscreen).



Colours cannot be assigned twice. Colours that have already been assigned cannot be selected and have to be released first.

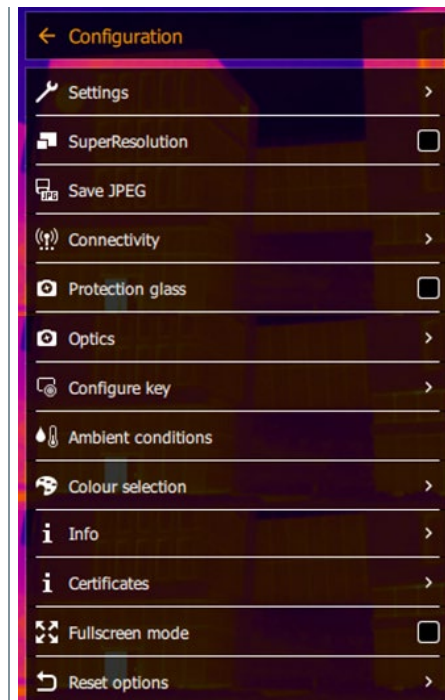
9.10.11 Info

- 1 Open the **Menu**.



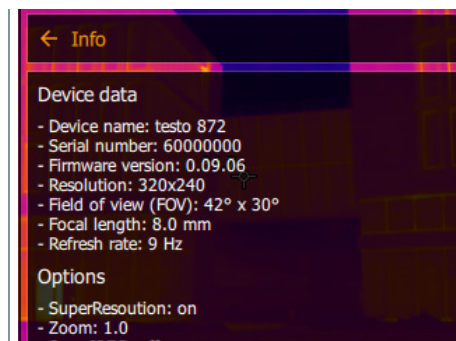
- 2 Select **Configuration** (joystick or touchscreen).

- **Configuration** opens.



- 3 Select **Info** (joystick or touchscreen).

- **Info** opens.

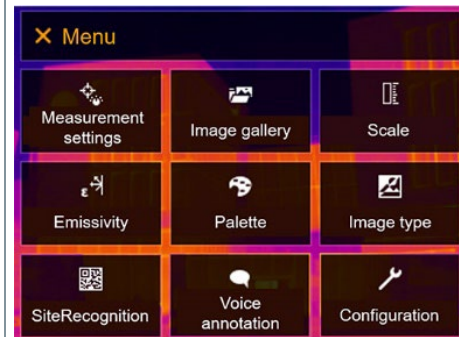


- The following information is displayed:

- Device data (e.g. serial number, device name, firmware version)
- Options
- Measurement settings
- Connectivity

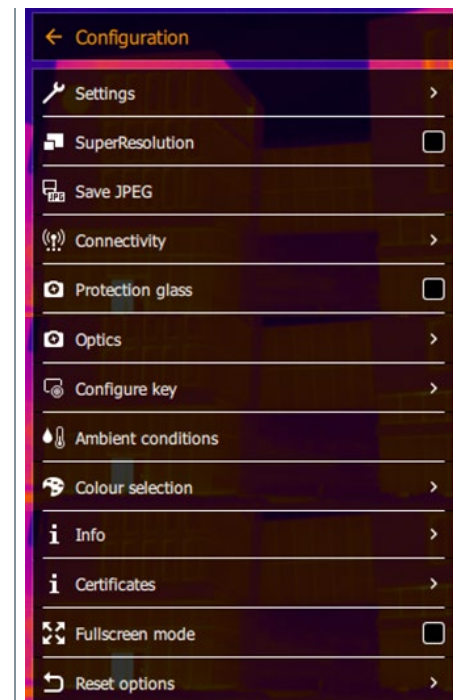
9.10.12 Certificates

- 1 Open the **Menu**.



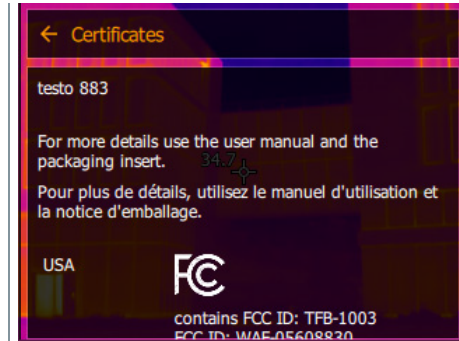
- 2 Select **Configuration** (joystick or touchscreen).

- **Configuration** opens.



- 3 Select **Certificates** (joystick or touchscreen).

- ▶ **Certificates** opens.

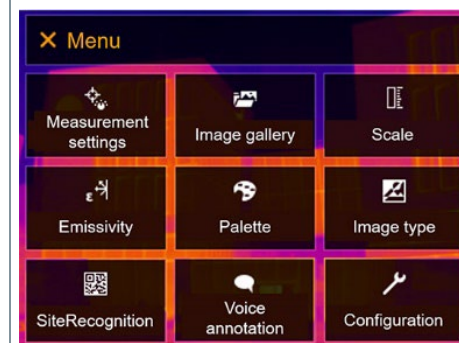


- ▶ Stored certificates are displayed.

9.10.13 Fullscreen mode

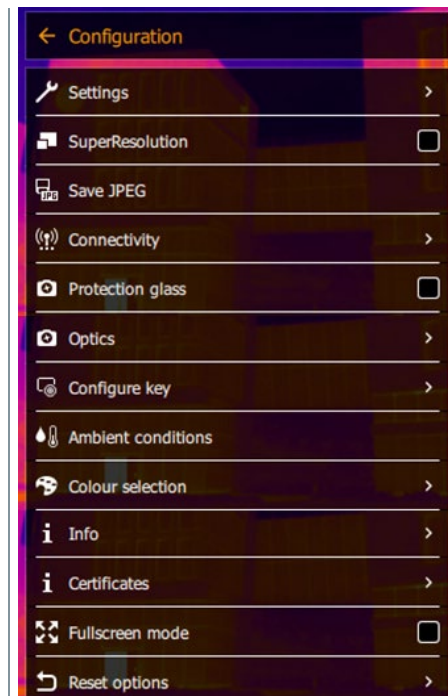
The scale can be hidden.

- 1 Open the **Menu**.



- 2 Select **Configuration** (joystick or touchscreen).

- ▶ **Configuration** opens.

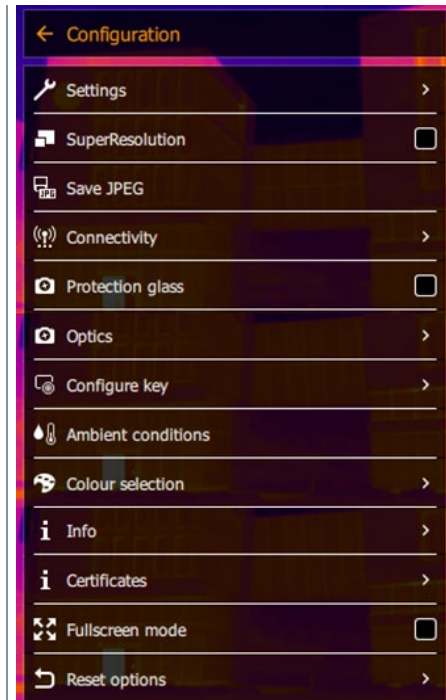


3 | Select **Fullscreen mode** (joystick or touchscreen).

▶ **Fullscreen mode** opens.

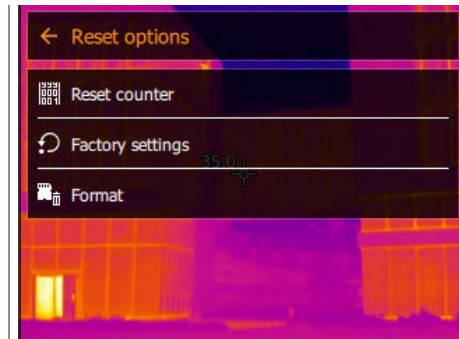
▶ **Fullscreen mode** is enabled (

- **Configuration** opens.



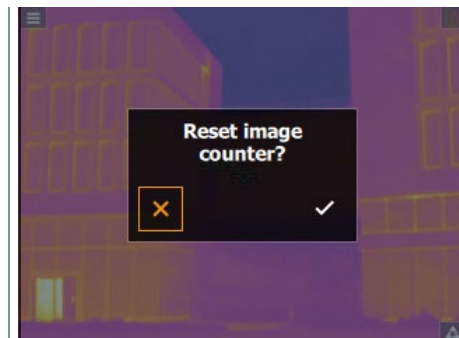
- 3 Select **Reset options** (joystick or touchscreen).

- **Reset options** opens.



- 4 Select **Reset counter**.

- **Reset image counter?** is displayed.



- 5 Press ✓ to confirm or press X to cancel the process.

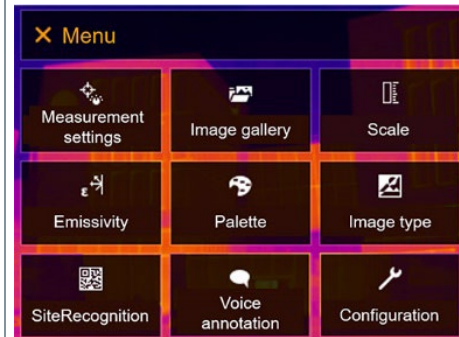
9.10.14.2 Factory settings

The instrument settings can be reset to the factory settings.



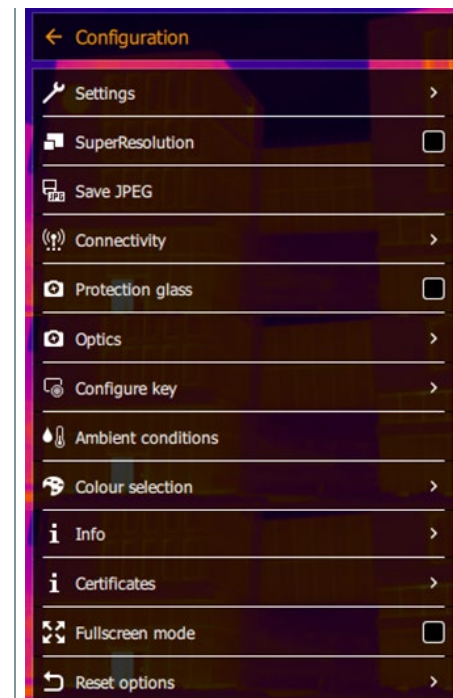
Time/date, country settings and counter are not reset.

- 1 Open the **Menu**.



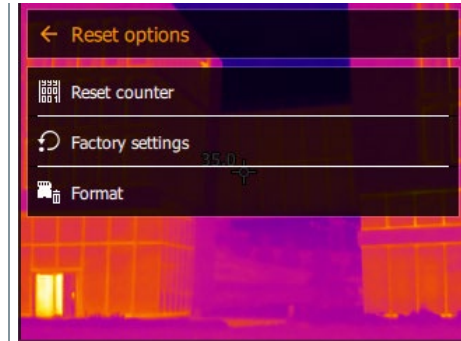
- 2 Select **Configuration** (joystick or touchscreen).

- **Configuration** opens.



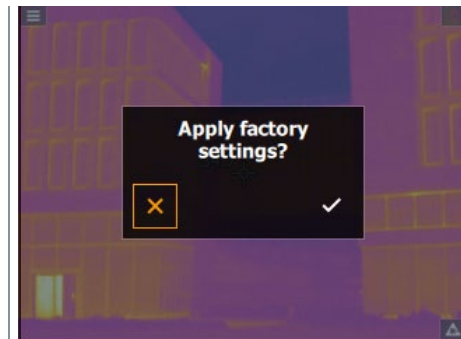
- 3 Select **Reset options** (joystick or touchscreen).

- ▶ **Reset options** opens.



- 4 Select **Factory settings**.

- ▶ **Apply factory settings?** is displayed.



- 5 Press **✓** to confirm or press **X** to cancel the process.

9.10.14.3 Formatting

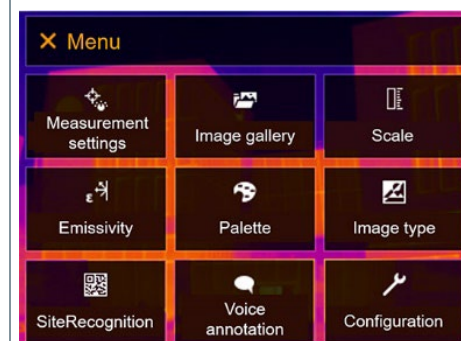
The image memory can be formatted.



When formatting, all images saved in the memory are lost. Back up all saved images before formatting to prevent loss of data.

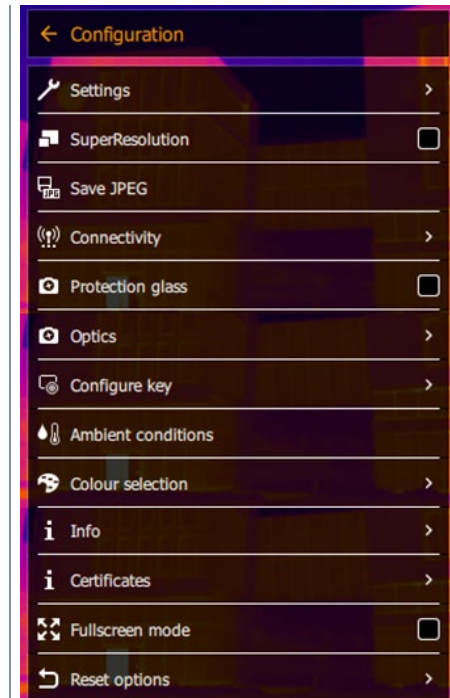
Formatting does not reset the counter.

- 1 Open the **Menu**.



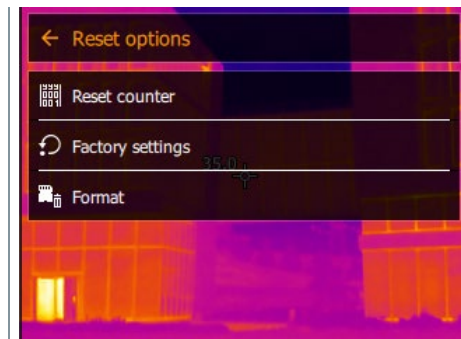
- 2 Select **Configuration** (joystick or touchscreen).

- ▶ **Configuration** opens.



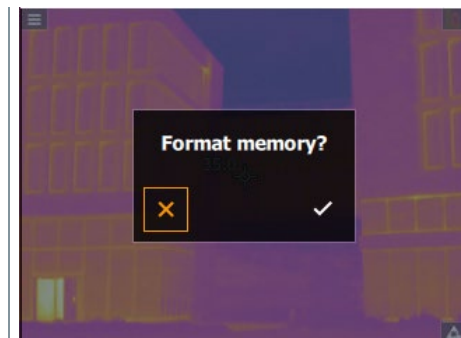
- 3 Select **Reset options** (joystick or touchscreen).

- ▶ **Reset options** opens.



- 4 Select **Format**.

- ▶ **Format memory?** is displayed.

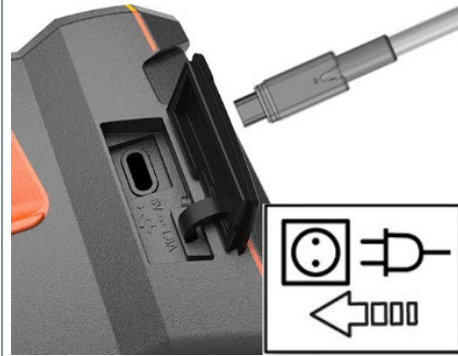


- 5 Press ✓ to confirm or press X to cancel the process.

10 Maintenance

10.1 Charging the rechargeable battery

- 1 Open the cover of the interface terminal.
- 2 Connect the charging cable to the USB-C port.
- 3 Connect the mains unit to a mains socket.



- ▶ The charging process starts.
If the battery has been completely drained, the charging time is approx. 6 hours with the mains unit supplied.
- ▶ The charge status is not displayed while the instrument is switched off.

10.2 Changing the rechargeable battery

⚠ WARNING

Serious risk of injury to the user and/or destruction of the instrument

- > There is a risk of explosion if the battery is replaced with one that is the wrong type.
- > Dispose of spent/faulty batteries in accordance with the relevant legal specifications.

- 1 - Press and hold down  until the progress bar on the display is complete.



- ▶ The display goes off.

- 2 Pull back the unlocking button to open the battery compartment cover on the bottom of the handle.



The rechargeable battery is no longer secured and may fall out of the battery compartment. Make sure that you always open the battery compartment cover with it facing upwards.

- ▶ The rechargeable battery is released and slides out a little from the rechargeable battery slot.
- 3 Pull the rechargeable battery completely out of the battery compartment.



- 4 Push the new battery all the way into the rechargeable battery slot until it is flush with the bottom of the handle.



- 5 Close the battery compartment cover and secure with the unlocking button.



There is a tripod socket bushing on the base of the imager. A standard tripod can be used to mount the imager. The tripod connection must fit the thread.



The supplied carrying strap can be attached to the tripod socket bushing.

10.3 Cleaning the instrument

Cleaning the instrument housing

- ✓ - The interface terminal is closed.
 - ✓ - The battery compartment is closed.
- 1 - Rub down the surface of the instrument with a damp cloth. Use mild household cleaning agents or soapy water for this.

Cleaning the lens

- 1 If the lens is dirty, clean it with a cotton bud.

Cleaning the display

- 1 If the display is dirty, clean it with a cleaning cloth (e.g. microfibre cloth).

Cleaning the protective glass

- 1 Larger dust particles can be removed with a clean optical cleaning brush (available from specialized photo supplies).
- 2 Use a lens cleaning cloth for slight contamination. Do not use rubbing alcohol!

10.4 Firmware update

The current firmware version is available at www.testo.com. In the download area, you will find the current firmware version for the testo 883.

There are two options available:

- Performing an update using IRSoft or
- Performing an update with the thermal imager

Downloading firmware

- 1 Download firmware: **Firmware-testo-883.exe**
 - 2 Unzip file: double-click on the .exe file.
- **FW_T883_Vx.xx.bin** is stored in the selected folder.

10.4.1 Performing an update using IRSoft

10.4.1.1 Preparing the camera

- ✓ The rechargeable battery is fully charged or the camera is connected to the mains adapter.
- 1 Connect the computer to the camera with the USB cable.
 - 2 Switch on the camera.

10.4.1.2 Performing an update

- ✓ IRSoft is open.

- 1 Select the "Camera" tab in IRSoft.
- 2 Select **Thermal imager configuration**.
- ▶ The **Camera settings** window opens.
- 3 Select **Instrument settings -> Firmware Update**.
- 4 Call up the appropriate update file.
- 5 Select **Open**.
- ▶ Firmware update is performed.
- ▶ Thermal imager is automatically restarted. Update complete.



In certain circumstances, the camera reports: **Firmware update finished. Please restart the device.** A restart is not performed.

Action:

- After 10 seconds, switch off the camera; switch back on again after 3 seconds.

- ▶ The current firmware version is displayed.

10.4.2 Performing an update with the camera

10.4.2.1 Preparing the camera

- ✓ The rechargeable battery is fully charged or the camera is connected to the mains adapter.
- 1 Switch on the camera.
- 2 Open the cover of the interface.
- 3 Connect the computer to the camera with the USB cable.
- ▶ The camera is displayed as a removable medium in Windows Explorer.

10.4.2.2 Performing an update

- 1 Copy the **FW_T883_Vx.xx.bin** file to the removable medium using drag & drop.
- 2 Eject the removable medium.

- 3 | Disconnecting the USB connection.
 - 4 | Switch off camera.
 - 5 | Switch on the camera: an update is performed.
 - 6 | Observe the progress bar.
- Update complete. The current firmware version is displayed.

11 Technical data

11.1 Optical data

Feature	Values
Infrared resolution	320 x 240
Thermal sensitivity (NETD)	≤ 40 mK
Measurement accuracy	$\pm 3^\circ$ for readings from -30°C to -20°C $\pm 2^\circ$ for readings from -20°C to $+100^\circ\text{C}$ $\pm 2\%$ for readings from 100°C to $+650^\circ\text{C}$
Measuring ranges	Measuring range 1 from -30°C to $+100^\circ\text{C}$ Measuring range 2 from 0°C to $+650^\circ\text{C}$ Automatic measuring range switchover
testo SuperResolution (pixels/iFOV)	640 x 480 pixels 1.1 mrad (standard lens) 0.4 mrad (telephoto lens) 1,4 mrad (wide-angle lens)
Field of view (FOV) with standard lens	$30^\circ \times 23^\circ$
Geometric resolution (iFOV) with standard lens	1.7 mrad
Focusing, standard lens	manual, 0.1 m to infinity
Field of view (FOV) with wide-angle lens	$42^\circ \times 32^\circ$
Geometric resolution (iFOV) with wide-angle lens	2,3 mrad
Focusing wide-angle lens	manual, 0.1 m to infinity
Field of view (FOV) with telephoto lens	$12^\circ \times 9^\circ$
Geometric resolution (iFOV) with telephoto lens	0.7 mrad
Image refresh rate	27 Hz or 9 Hz, depending on export restrictions
Focusing, telephoto lens	manual, 0.5 m to infinity
Spectral range	7.5 to $14\ \mu\text{m}$
Image sensor resolution, visual	5 MP
Minimum focusing distance, visual	< 0.5 m

11.2 Image presentation

Feature	Values
Display	8.9 cm (3.5") TFT, QVGA (320 x 240 pixels)
Digital zoom	2x / 4x
Display options	• Infrared image • Real image
Colour palettes	11 options: • Blue/red • Grey • Inverted grey • Iron HT • Cold-hot • Humidity • Iron • Rainbow • Rainbow HC • Sepia • Testo

11.3 Data interfaces

Feature	Values
Communication Thermography App	WLAN IEEE 802.11b/g/n
Communication with PC (IRsoft)	USB-C jack; USB 2.0
Communication with headset	Bluetooth 4.2
Communication with external probes	Bluetooth Low Energy: - testo 605i humidity probe - testo 770-3 clamp meter

11.4 Measuring functions

Feature	Values
Analysis function	Up to 5 selectable individual measuring points, hot/cold spot detection, Delta T, area measurement (min/max on area), alarms, isotherm

Temperature scaling	Automatic, manual or testo ScaleAssist
Solar mode	Manual: Input of the solar radiation value
Humidity mode	Manual: Input of ambient humidity and temperature or Automatic data transfer of testo 605i thermohygrometer via Bluetooth (instrument must be ordered separately)
Electrical mode	Manual: Input of current, voltage or power or Automatic transmission of data from the testo 770-3 clamp meter via Bluetooth (instrument must be ordered separately)
IFOV warner	Yes
Reflected temperature	Manual input
Emissivity	0.01-1.0; manual input, material selection or testo ϵ -Assist

11.5 Imager features

Feature	Values
Digital camera	Yes
Touch operation	yes (capacitive touch display)
Fullscreen mode	Yes
Save JPEG	yes, optionally with date/time
Video streaming	• USB • WLAN with testo Thermography App • Non-radiometric
Laser (not available in USA, Japan, China)	Laser marker (laser class 2, 635 nm)
Interfaces	USB 2.0 (USB-C jack)
WLAN Connectivity	Communication with the testo Thermography App; wireless module BT/WLAN
Bluetooth	Headset for voice annotations; transfer of readings from testo 605i thermohygrometer, testo 770-3 clamp meter (optional)
Tripod socket	for carrying strap (included in the scope of delivery) or a photo tripod with UNC thread

11.6 Image storage

Feature	Values
File format	• .jpg • .bmt • Can export as .bmp .jpg .png .csv .xlsx • Via testo IR-Soft
Memory capacity	Internal memory 2.8 GB, > 2000 images (without SuperResolution)

11.7 Audio functions

Feature	Values
Sound recording / playback	via headset (included in the scope of delivery)
Recording duration	1 min per image

11.8 Power supply

Feature	Values
Battery type	Fast-charging Li-ion battery, replaceable on site (6600 mAh / 3.7 V)
Operating time	5.5 h at 20 °C ambient temperature
Mains operation	With mains unit supplied
Charging options	In the instrument (via supplied mains unit) / in charging station (optional)
Charging time	approx. 6 h via mains unit
USB port	5V  1.8 A*

*  Direct current

11.9 Ambient conditions

Feature	Values
Operating temperature	-15 to 50 °C
Storage temperature	-30 to 60 °C
Humidity	20 to 80 %RH; non-condensing

Battery charging temperature range	0 °C to +45 °C
Housing protection class	IP 54
Vibration resistance	2g according to IEC 60068-2-6

11.10 Physical features

Feature	Values
Product/housing material	PC - ABS
Product colour	black
Weight	827 g
Dimensions	171 x 95 x 236 mm
Display illumination	bright / normal / dark

11.11 Standards, tests

Feature	Values
EMC	2014/30/EU
RED	2014/53/EU
WEEE	2012/19/EU
RoHS	2011/65/EU + 2015/863
REACH	1907/2006

12 Questions and answers

Question	Possible cause / solution
Error! Memory full! is displayed.	Insufficient memory available: Transfer images to the PC or delete.
Error! Permissible instrument temperature exceeded! is displayed.	Switch off the camera, allow the instrument to cool down and observe the permissible ambient temperature.
~ is displayed before a value.	Value is outside the measuring range: extended display range with no guarantee of accuracy.
--- or +++ is displayed instead of a value.	Value is outside the measuring range and the extended display range.
xxx is displayed instead of a value.	Value cannot be calculated: Check parameter settings for plausibility.

Question	Possible cause / solution
Automatic zeroing (audible “click” and brief image freeze) is carried out very frequently.	Camera is still in its warm-up period (takes approx. 90 seconds): Wait until the warm-up period has passed.
 is displayed on screen.	Real image camera only takes very dark or sometimes even black real images. Restart the camera.

13 Accessories

Description	Order no.
Battery charging station 5 V, 2 A	0554 8801
Spare rechargeable battery	0554 8831
Mains unit	0554 1106
Humidity probe (testo 605i)	0560 2605 02
Clamp meter (testo 770-3)	0590 7703
Additional markers for ϵ -Assist function (10 off)	0554 0872
Emission tape	0554 0051
ISO calibration certificate: calibration points at 0°C, 25°C, 50°C	0520 0489
ISO calibration certificate: calibration points at 0°C, 100°C, 200°C	0520 0490
ISO calibration certificate: Freely selectable calibration points in the range -18 °C to 250 °C	0520 0495