

# Datasheet

## Thermal imager

### testo 890 – Thermography for the highest demands

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Detector size 640 x 480 pixels

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SuperResolution technology to 1280 x 960 pixels

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Thermal sensitivity < 40 mK

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Flexibility thanks to rotatable handle and fold-out, rotatable display

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Exchangeable lenses

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Special measurement mode for mould-risk areas

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High temperature measurement up to 1,200 °C

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Panorama image assistant

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SiteRecognition technology

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Fully radiometric video measurement

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The thermal imager testo 890 offers outstanding image quality for the highest thermographic demands. Thanks to the high-quality infrared measurement system with a 640 x 480-pixel detector, thermal images can be recorded in megapixel quality (1290 x 960) using the SuperResolution technology. This means that even the smallest measurement objects such as electronic components or far

distant measurement objects, e.g. on industrial plants, can be safely recorded thermographically in best image quality and high resolution. Even thermal processes can be precisely analyzed over time using the fully radiometric video measurement: all measurement points of the thermal image are available, accurate to the pixel, at all times.

## Ordering data

### testo 890-1

Thermal imager testo 890-1 in a robust case incl. pro software, SD card, USB cable, carrying strap, lens cleaning cloth, mains unit, and Li ion rechargeable battery



Part no. 0563 0890 V1

### testo 890-2

Thermal imager testo 890-2 in a robust case incl. pro software, SD card, USB cable, carrying strap, lens cleaning cloth, mains unit, Li ion rechargeable battery and headset

Part no. 0563 0890 V2

### testo 890-2 Set

Thermal imager testo 890-2 set in a robust case incl. pro software, SD card, USB cable, carrying strap, lens cleaning cloth, mains unit, Li ion rechargeable battery, exchangeable lens, lens protection glass, spare battery, fast charger, headset, telephoto lens, lens bag



Part no. 0563 0890 V3

## Accessories

|                                                                                                                                                    | Code <sup>1)</sup><br>(Initial<br>equipment) | Part no.<br>(Retrofit) |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|------------------------|--|
| SuperResolution.<br>Four times more measurement values for even more detailed analysis of the thermal images                                       | S1                                           | 0554 7806              |  |
| Lens protection glass.<br>Special Germanium protection glass for optimum protection of the lens from dust and scratching                           | F1                                           | 0554 0289              |  |
| Additional battery.<br>Additional lithium-ion rechargeable battery for extending the operating time.                                               | G1                                           | 0554 8852              |  |
| Fast battery charger.<br>Desktop charging station for two rechargeable batteries for the optimization of the charging time.                        | H1                                           | 0554 8851              |  |
| High temperature measurement up to +1,200 °C                                                                                                       | I1                                           | <sup>2)</sup>          |  |
| Humidity measurement*                                                                                                                              | E1                                           | <sup>2) 3)</sup>       |  |
| Telephoto lens 15° x 11°                                                                                                                           | D1                                           | <sup>2)</sup>          |  |
| Fully radiometric video measurement incl. logger function                                                                                          | J1                                           | 0554 8901              |  |
| Emission adhesive tape. Adhesive tape, e.g. for bare surfaces (roll, L.: 10 m, W.: 25 mm),<br>$\epsilon = 0.95$ , temperature resistant to +250 °C |                                              | 0554 0051              |  |
| ISO calibration certificates;<br>Calibration points at 0 °C, +25 °C, +50 °C                                                                        |                                              | 0520 0489              |  |
| ISO calibration certificates;<br>Calibration points at 0 °C, +100 °C, +200 °C                                                                      |                                              | 0520 0490              |  |
| ISO calibration certificates;<br>Freely selectable calibration points in the range -18 °C to +250 °C                                               |                                              | 0520 0495              |  |

\*Wireless humidity probes only in the EU, Norway, Switzerland, USA, Canada, Colombia, Turkey, Brazil, Chile, Mexico, New Zealand, Indonesia

<sup>1)</sup> When ordering as initial equipment, you receive the accessories directly in the case. Example: testo 890-1 incl. lens protection glass and SuperResolution: Order no. 0563 0890 V1 F1S1

<sup>2)</sup> Please contact our customer service

<sup>3)</sup> Plus installation

## Technical data

|                                                                                                      | testo 890-1                                                                                                            | testo 890-2                                     |
|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <b>Infrared image output</b>                                                                         |                                                                                                                        |                                                 |
| Detector type                                                                                        | FPA 640 x 480 pixels, a.Si                                                                                             |                                                 |
| Thermal sensitivity (NETD)                                                                           | < 40 mK at +30 °C                                                                                                      |                                                 |
| Field of view/min. focus distance                                                                    | 42° x 32° / 0.1 m (Standard lens)                                                                                      | 42° x 32° / 0.1 m (Tele: 15° x 11° / 0.5 m)     |
| Geometric resolution (IFOV)                                                                          | 1,13 mrad (Standard lens)                                                                                              | 1,13 mrad (Tele: 0.42 mrad)                     |
| SuperResolution (pixel / IFOV) - optional                                                            | 1280 x 960 pixels / 0.71 mrad (Standard lens)                                                                          | 1280 x 960 pixels / 0.71 mrad (Tele: 0.26 mrad) |
| Image refresh rate                                                                                   | 33 Hz*                                                                                                                 |                                                 |
| Focus                                                                                                | auto / manual                                                                                                          |                                                 |
| Spectral range                                                                                       | 8 to 14 µm                                                                                                             |                                                 |
| <b>Image output visual</b>                                                                           |                                                                                                                        |                                                 |
| Image size / min. focus distance                                                                     | 3.1 MP / 0.5 m                                                                                                         |                                                 |
| <b>Image presentation</b>                                                                            |                                                                                                                        |                                                 |
| Image display                                                                                        | 4.3" LCD touchscreen with 480 x 272 pixels                                                                             |                                                 |
| Digital zoom                                                                                         | 1 to 3 fold                                                                                                            |                                                 |
| Display options                                                                                      | IR / real image                                                                                                        |                                                 |
| Video output                                                                                         | USB 2.0                                                                                                                |                                                 |
| Colour palettes                                                                                      | 8 (iron, rainbow, cold-hot, blue-red, grey, inverted grey, sepia, Testo)                                               |                                                 |
| <b>Measurement</b>                                                                                   |                                                                                                                        |                                                 |
| Temperature range                                                                                    | -20 to +100°C / 0 to +350 °C (switchable)                                                                              |                                                 |
| High temperature measurement - optional                                                              | -                                                                                                                      | +350 to +1,200 °C                               |
| Accuracy                                                                                             | ±2 °C, ±2% of mv                                                                                                       |                                                 |
| Emissivity / reflected temperature                                                                   | 0,01 to 1 / manual                                                                                                     |                                                 |
| Transmission correction (atmosphere)                                                                 | ✓                                                                                                                      |                                                 |
| <b>Measuring functions</b>                                                                           |                                                                                                                        |                                                 |
| Display of surface moisture distribution (using manual input)                                        | -                                                                                                                      | ✓                                               |
| Humidity measurement with radio humidity probe (automatic measurement value transfer in real time)** | -                                                                                                                      | (✓)                                             |
| Solar mode                                                                                           | ✓                                                                                                                      |                                                 |
| Analysis function                                                                                    | up to 3 measurement points, Hot/Cold Spot Recognition, Area measurement (Min/Max & average), Isotherm and alarm values |                                                 |

\* inside the EU, outside 9 Hz

\*\* Wireless humidity probes only in the EU, Norway, Switzerland, USA, Canada, Colombia, Turkey, Brazil, Chile, Mexico, New Zealand, Indonesia

\*\*\* excepting USA, China and Japan

\*\*\*\* Bluetooth only in the EU, Norway, Switzerland, USA, Canada, Colombia, Turkey, Japan, Russia, Ukraine, India, Australia

|                                                                      | testo 890-1                                                                               | testo 890-2                                            |
|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------|--------------------------------------------------------|
| <b>Imager equipment</b>                                              |                                                                                           |                                                        |
| Digital camera                                                       | ✓                                                                                         |                                                        |
| Standard lens                                                        | 42° x 32°                                                                                 |                                                        |
| Exchangeable lenses - optional                                       | -                                                                                         | 15° x 11°                                              |
| SiteRecognition (measurement site recognition with image management) | -                                                                                         | ✓                                                      |
| Panorama image assistant                                             | ✓                                                                                         |                                                        |
| Laser (laser classification 635 nm, Class 2)***                      | Laser marker                                                                              |                                                        |
| Voice recording                                                      | -                                                                                         | Bluetooth****/wired headset                            |
| Video measurement (via USB)                                          | up to 3 measurement points                                                                |                                                        |
| Fully radiometric video measurement incl. logger function (via USB)  | -                                                                                         | (✓)                                                    |
| <b>Image storage</b>                                                 |                                                                                           |                                                        |
| File format single image                                             | .bmt; export option in .bmp, .jpg, .png, .csv, .xls                                       |                                                        |
| File format video (via USB)                                          | .wmv, .mpeg-1                                                                             | .wmv, .mpeg-1 / Testo format (fully radiometric video) |
| Storage device                                                       | SD card 2 GB (800-1.000 images)                                                           |                                                        |
| <b>Power supply</b>                                                  |                                                                                           |                                                        |
| Battery type                                                         | Fast-charging, Li-ion battery can be changed on-site                                      |                                                        |
| Operating time                                                       | 4.5 hours                                                                                 |                                                        |
| Charging options                                                     | in instrument / in charger (optional)                                                     |                                                        |
| Mains operation                                                      | yes                                                                                       |                                                        |
| <b>Ambient conditions</b>                                            |                                                                                           |                                                        |
| Operating temperature range                                          | -15 °C to +50 °C                                                                          |                                                        |
| Storage temperature range                                            | -30 to +60 °C                                                                             |                                                        |
| Air humidity                                                         | +20 to +80% non-condensing                                                                |                                                        |
| Housing protection class (IEC 60529)                                 | IP54                                                                                      |                                                        |
| Vibration (IEC 60068-2-6)                                            | 2G                                                                                        |                                                        |
| <b>Physical specifications</b>                                       |                                                                                           |                                                        |
| Weight                                                               | 1.630 g                                                                                   |                                                        |
| Dimensions (L x W x H) in mm                                         | 253 x 132 x 111                                                                           |                                                        |
| Tripod mounting                                                      | 1/4" - 20UNC                                                                              |                                                        |
| Housing                                                              | ABS                                                                                       |                                                        |
| <b>PC software</b>                                                   |                                                                                           |                                                        |
| System requirements                                                  | Windows XP (Service Pack 3), Windows Vista, Windows 7 (Service Pack 1), interface USB 2.0 |                                                        |
| <b>Standards, tests, warranty</b>                                    |                                                                                           |                                                        |
| EU Directive                                                         | 2004 / 108 / EC                                                                           |                                                        |
| Warranty                                                             | 2 years                                                                                   |                                                        |

✓ included in delivery

(✓) optional

- not available

## Overview of variants

| Features                                                                                                 | testo 890-1      | testo 890-2 | testo 890-2 Set |
|----------------------------------------------------------------------------------------------------------|------------------|-------------|-----------------|
| Detector                                                                                                 | 640 x 480 pixels |             |                 |
| Thermal sensitivity (NETD)                                                                               | < 40 mK          |             |                 |
| Temperature range                                                                                        | -20 to +350 °C   |             |                 |
| Image refresh rate                                                                                       | 33 Hz*           |             |                 |
| SuperResolution                                                                                          | (✓)              | (✓)         | (✓)             |
| Exchangeable telephoto lens 15° x 11°                                                                    | -                | (✓)         | ✓               |
| Auto focus                                                                                               | ✓                | ✓           | ✓               |
| High temperature measurement up to 1,200 °C                                                              | -                | (✓)         | (✓)             |
| Panorama image assistant                                                                                 | ✓                | ✓           | ✓               |
| SiteRecognition (measurement site recognition with image management)                                     | -                | ✓           | ✓               |
| Laser marker**                                                                                           | ✓                | ✓           | ✓               |
| Display of surface moisture distribution (by manual input)                                               | -                | ✓           | ✓               |
| Humidity measurement with wireless humidity probe*** (automatic measurement value transfer in real time) | -                | (✓)         | (✓)             |
| Voice recording using the headset****                                                                    | -                | ✓           | ✓               |
| Fully radiometric video measurement incl. logger function                                                | -                | (✓)         | (✓)             |
| Solar mode                                                                                               | ✓                | ✓           | ✓               |
| Lens protection glass                                                                                    | (✓)              | (✓)         | ✓               |
| Additional battery                                                                                       | (✓)              | (✓)         | ✓               |
| Fast battery charger                                                                                     | (✓)              | (✓)         | ✓               |

- ✓ included in delivery
- (✓) optional
- not available

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