



Comprehensive analysis of thermal images.

Analyzing, evaluating and documenting thermal images.

Thermography at the highest level needs more than just a modern imager system. A high-performance analysis software is crucial in order to quickly and easily analyze and evaluate thermal images, and to document them in a report.

The challenge.

In professional thermography, the creation of sharp-focus thermal images is only a fraction of the actual job. The greatest challenges are hidden under the surface: Only through subsequent processing and interpretation are the brightly coloured pictures transformed into meaningful thermograms. These can then be used as a basis for efficient optimization measures on thermographically recorded objects.

You can meet these challenges quickly and easily with a high-performance yet easy-to-operate software. Intelligent analysis functions such as the setting of measurement points or the creation of histograms and profile lines are as essential for this as is the possibility of subsequent processing of certain parameters of the thermal image (emissivity, ambient temperature, reflected temperature etc.)

or the overlaying of a thermal and a real image for a more comprehensive visualization of the measurement object.

You then invest only a short time for the summary of these insights and analyses in a professional report. Of course, you still wish to be able to post-edit all information contained in the report, and to save it in all common file formats. How? We have the right software for you.

The solution

The licence-free software testo IRSofT was specially developed for these requirements. It offers comprehensive analysis functions, intuitive operation as well as a high level of user-friendliness and is applicable with all Testo thermal imagers – from the attractive entry-level thermal imager testo 875 to the high-resolution pro imager testo 890.

Overview of the Testo thermal imager models



testo 875/875i



testo 876



testo 882



testo 885



testo 890

For contractors.

The most important software functions in building thermography:

Thermogram = thermal image

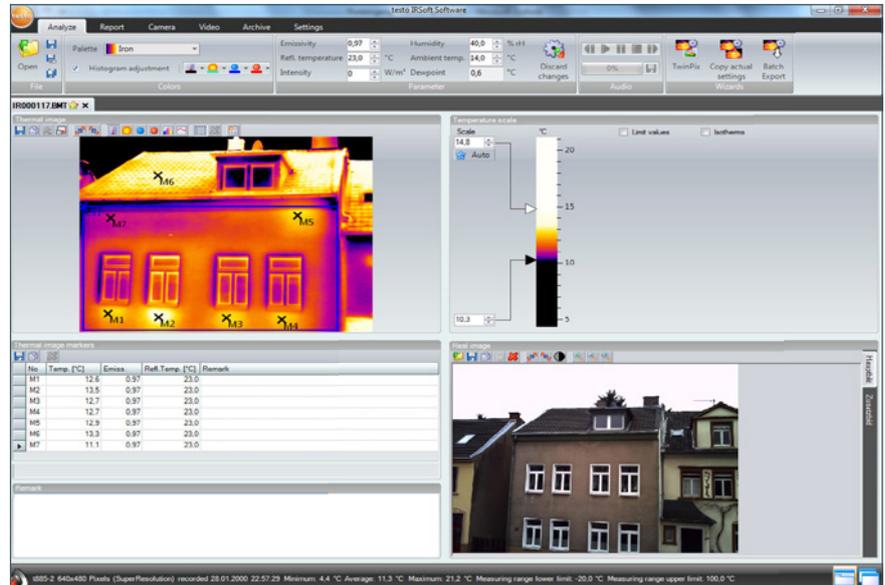
A temperature value is allocated to each pixel. The digital thermograms (thermal images) can be analyzed comprehensively and quickly using the high-performance integrated measurement and processing functions. Numerous automatic functions are available to the user for image correction and optimization purposes. These allow the thermal details of measurement objects to be clearly recognized.

Analysis tools

The advanced operating concept as well as the familiar symbols allow intuitive and quickly learned operation – even for unpractised users. Thanks to the clearly structured user interface, you always keep an overview of the processing functions.

Real image

In some imager types, a digital image of each measurement object is also recorded parallel to the thermal image. The digital camera integrated into the thermal imager is ideal, since it saves identically congruent images. However, the possibility of using an image taken by an external digital



camera also exists. This allows the clear allocation of measurement scenarios or problem sites.

Fast report

For the purposes of quick and uncomplicated documentation, pre-defined yet adaptable report templates are available. All analyses in the individual images are taken over automatically.

These are then quickly turned into a report:

- Select template
- Print report – done!



TwinPix – two images in one

TwinPix is an image overlay of thermal and real image, in order to create better orientation in the image and to localize any damaged sites exactly. By setting marking points which correspond in the infrared and the real image, the images are overlaid exactly. The transparency level in TwinPix allows you to then individually set the intensity of the real image or infrared image. And by setting infrared limits, thermal anomalies can be visualized easily and impressively in the real image. TwinPix is conveniently carried over into the report with which you convince the customer of your analysis and your quote.



For service providers.

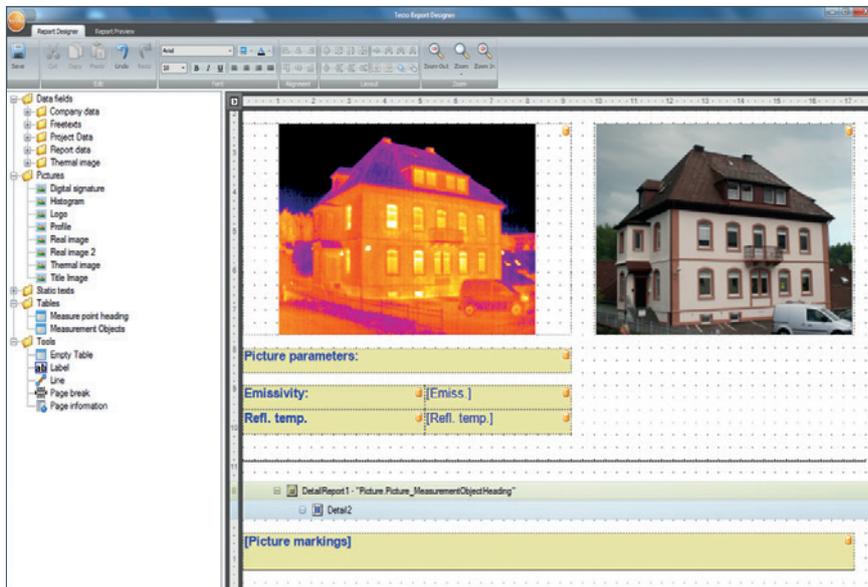
The most important software functions for professional thermography:

Creating reports

The report assistant guides you step by step to a complete and clear report.

- Select template
- Select image
- Enter company address and logo
- Enter address of customer and measurement site
- Enter description of job
- Enter ambient conditions
- Write summary – done!

All information selected and entered is automatically summarized into a report – including all analyzed parameters, histograms and profile lines.



Pre-defined report templates

Different templates are available not only for short and quick reports, but also for more comprehensive documentation. Especially for the purpose of examining building shells for cold bridges, the testo IRSoft offers report templates, with which reports compliant with EN 13187 can be created.

Customized reports

Is there nothing suitable for you in the report templates? Then simply use the report designer to create your own template, adapted to your requirements.

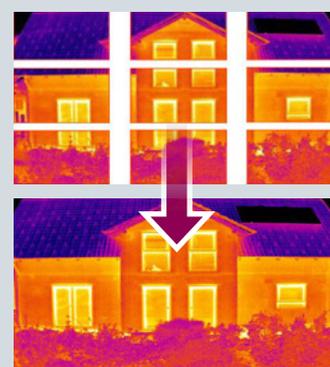
Report export

The report can be simply stored as a PDF, RTF (e.g. for further processing in Word) or in Testo's own TIR format. TIR was specially developed for testo IRSoft, and enables saved reports to be easily altered any time at a later date.



Panorama image function*

Taking thermographic measurements on very large objects presents the user with a great challenge. He is always faced with the conflict between attention to detail, i.e. good resolution, and the most complete object coverage possible. In order not to have to administer, view and compare several images, but to be able to analyze and document the entire object at a glance, there is the Testo panorama image function in the software. This allows you to stitch individual recordings together to a composite image. Very easily, and in top quality! If the individual images are needed later, they can be extracted again without any problems.



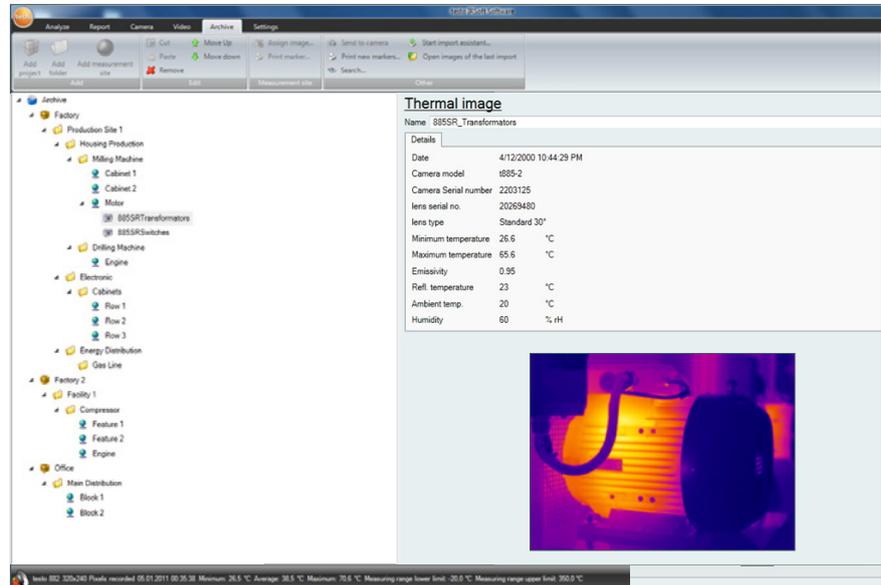
* (only possible with testo 885 and testo 890)

For maintenance engineers.

The most important software functions in maintenance:

Measurement SiteRecognition

Allocate your images yourself, or have the imager do it for you – you have the choice. Many similar measurement objects mean many similar thermal images. In order to be able to allocate the measurements clearly to the different measurement sites, users usually need to keep complex lists or directories, or add a voice comment to each individual thermal image. With Testo SiteRecognition technology, measurement sites are automatically recognized and the resulting thermal images correctly archived.



The necessary preparation

Simply establish the inspection route or all measurement sites in the archive integrated into the system. Example:

Works - hall - switching cabinet/machine - measurement position. The individual measurement sites are simply identified with markers on the measurement object, and the imager does the rest.

Carry out inspection tour

Periodical inspection tours can be conducted efficiently and all thermal images then precisely analyzed on a PC.

Marker example:



ID: 19 - SITE B

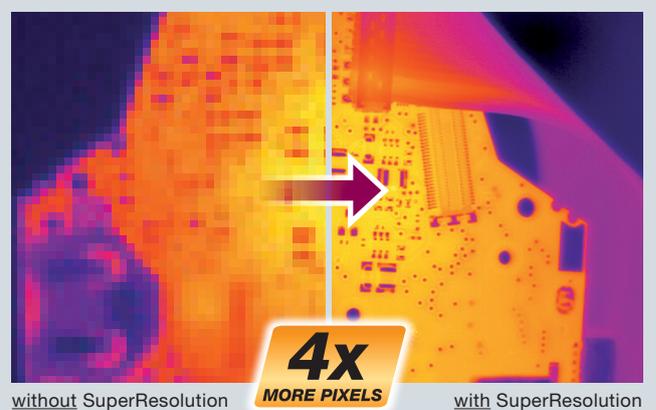
Automatic archiving

The measurement site recognition and measurement site management carry out the recognition, storage and management work for the thermal images after a measurement series fully automatically. Under the respective measurement site in the archive, you can compare the current images with previously made recordings. This allows you to identify changes in the condition of a component early.



SuperResolution

The higher the resolution of your thermal images, the more anomalies you can identify. With the revolutionary SuperResolution technology, you improve the image quality of your thermal imager by one class in no time. Four times more measurement values and a geometric resolution improved by a factor of 1.6 mean for you even more details and even more security in your measurement.



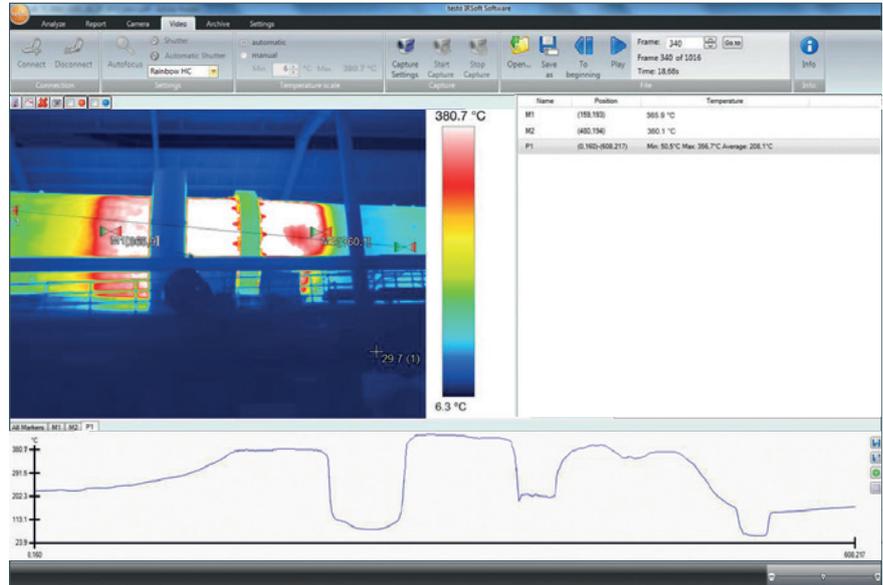
For researchers & developers.

The most important software functions in R & D:

Remote control

With the testo IIRSoft, various basic settings can be made on the imager. The thermal are additionally video-compatible and can be remotely controlled.

Remote trigger: for storing individual images as thermal images or as JPEG-files. Autofocus: for automatic focusing. Manual shutter: for adjusting the imager manually. Change temperature scale: to highlight problem sites better.



Fully radiometric video measurement

Heat development over a longer period can be recorded in real time with Testo thermal imagers. Via the USB 2.0 interface, all data from the thermographic recording are directly transferred to the PC, and can be stopped, analyzed and if necessary extracted, at any point.

Logger recording

The logger function allows the recording of individual images at defined time intervals. This means that the quantities of data created are reduced to a necessary minimum.

Event-based trigger

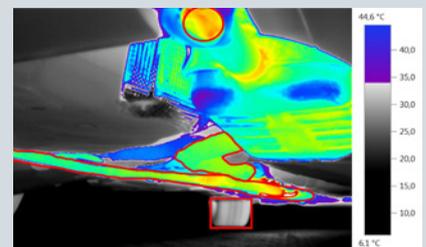
The recordings can be started either directly, or after a defined period. If recordings are relevant only within certain temperature limits, the events can also be triggered based on an event, i.e. when the required upper or lower temperature values are exceeded.



Emissivity correction

The emissivities and the reflected temperatures can be altered either

- over the whole thermal image (global)
- in specially marked areas (surfaces)
- on individual pixels (points)
- with change of presentation in the thermal image



The following shapes are available for marking different sections: Rectangle, circle, ellipse. In addition to this, the area to be correlated can be specifically marked using a freehand tool.

testo IRSoft: Functions at a glance.

Software functions	Possible with thermal imager...	Ideal for...			
		Contractors	Service providers	Maintenance engineers	Researchers/ developers
Handling/operation					
Multi-lingual user interface	all	✓	✓	✓	✓
Display and comparison of several parallel thermal images	all	-	✓	✓	✓
Processing of real image or import from external camera	all	-	✓	✓	-
Solar mode (input of irradiation intensity)	all	✓	✓	-	-
Copying of thermal image settings	all	-	✓	✓	✓
Data processing					
TwinPix image overlay with adjustment of transparency	all	✓	✓	✓	-
SiteRecognition archive for measurement site recognition	testo 885/890	-	-	✓	-
Panorama image assistant	testo 885/890	-	✓	✓	-
Measurement value analysis					
Alteration of palette selection and temperature presentation range	all	✓	✓	✓	✓
Audio comment replay	all	-	✓	✓	-
Speech comment replay and export	all	-	✓	✓	✓
Surface temperature moisture after input of humidity and ambient temperature	all	-	✓	-	-
Thermal image rotation	all	-	✓	✓	✓
Measurement point setting	all	✓	✓	✓	✓
Temperature value correction (single-point, surface, global)	all	-	✓	✓	✓
Cold/hot spot	all	✓	✓	✓	✓
Histogram of a surface	all	-	✓	-	✓
Temperature profile line and diagram	all	✓	✓	✓	✓
Data compression for analysis of individual image sections	all	-	-	-	✓
Histogram adjustment in thermal image	testo 885/890	-	✓	✓	✓
Definition/display of limit values (alarm function)	all	-	✓	✓	✓
Definition/display of isotherms	all	-	✓	✓	✓
Comments on all individual measurement points	all	✓	✓	✓	✓
Comments on overall thermal image	all	✓	✓	✓	✓
Colour change of markings in thermal image	all	✓	✓	✓	✓
SuperResolution	all	✓	✓	✓	✓
Fully radiometric video incl. logger function	testo 885/890*	-	-	-	✓
Temperature-time-diagram	testo 885/890*	-	-	-	✓
Profile-time-diagram	testo 885/890*	-	-	-	✓
Report					
Report function with application-specific report templates	all	✓	✓	✓	✓
Report editor for processing templates	all	-	✓	✓	✓
Report export as PDF or RTF (Word)	all	✓	✓	✓	✓
Export / interfaces					
Measurement value export as XLSX, PNG, JPEG, BMP	all	✓	✓	✓	✓
Measurement value table export a XLS	all	-	-	-	✓
Serial export of several thermograms XLSX, PNG, JPEG, BMP	all	✓	✓	✓	✓
Video MPEG, WMV	testo 885/890	-	-	-	✓
Operating systems		WindowsXP SP3 / WindowsVista SP2 / Windows7 SP1 / Windows8			

*Functions not supported by WindowsXP.

Overview of your benefits:

The most important highlights of testo IRSofT:



TwinPix – two images in one

The image overlay of thermal and real images allows the easy localization of damage.



Panorama image function

Stitch individual recordings of large objects easily together to make a high-quality composite image.

SuperResolution



The image quality of the thermal imager is improved by one class instantly.

Emissivity correction



Alter emissivities and reflected temperature globally, surface-based and point-based, incl. the presentation in the thermal image.

Fully radiometric video measurement



Record heat developments over a longer period in real time.

SiteRecognition



Measurement sites are automatically recognized and the thermal images archived correctly.

Copying of thermal image settings



Copy individual thermal image settings automatically into other thermal images. This improves comparability, facilitates analysis and saves time.

Report templates

Use pre-defined report templates or create your own, specially adapted to your requirements.

Licence-free software

The testo IRSofT is included with all Testo thermal imagers, and can be installed on a unlimited number of computers.

Free updates

Use future new functions of the software for free: simply download from "www.testo.com/upgrade".

Test Testo

Still not sure?

Simply download the full version of the testo IRSofT from "www.testo.com/download", and see for yourself.

Would you like easy analysis, evaluation and documentation of thermal images?

Then visit www.testo.com or mail us at thermografie@testo.de.

Our experts are happy to help you.