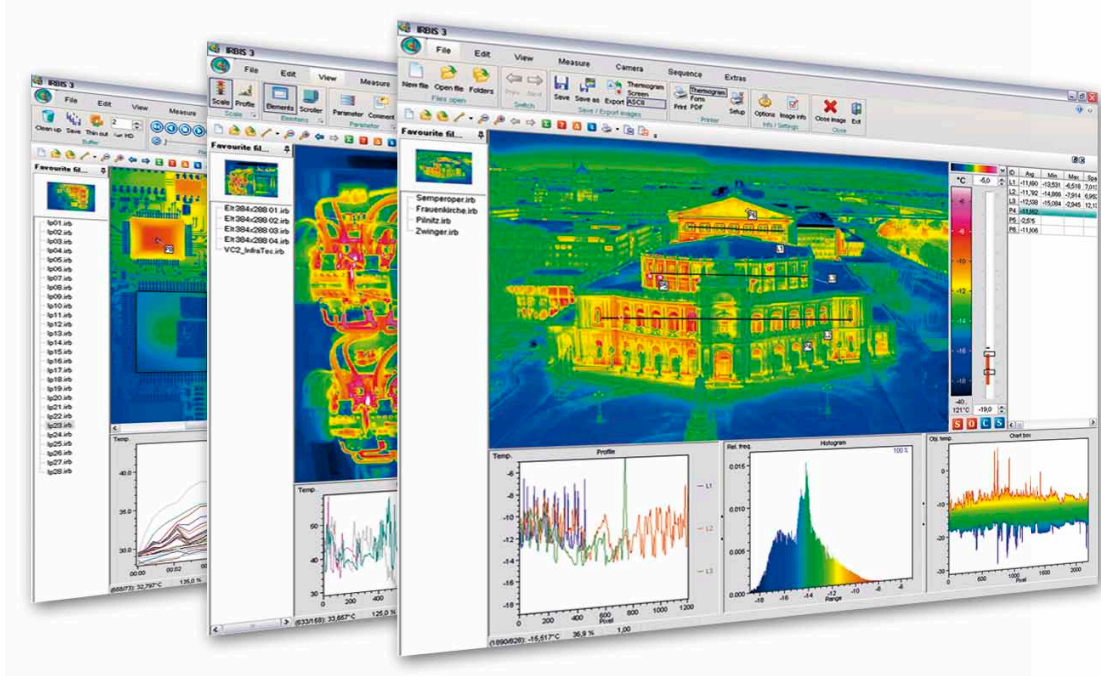# Software package IRBIS® 3
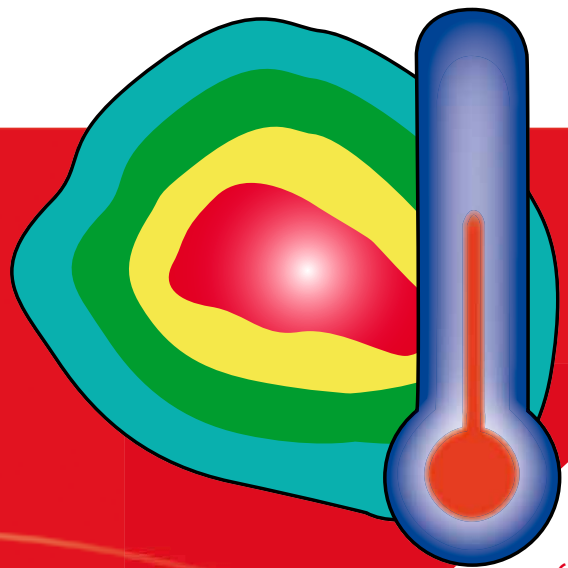
Special software for comfortably handling thermographic images
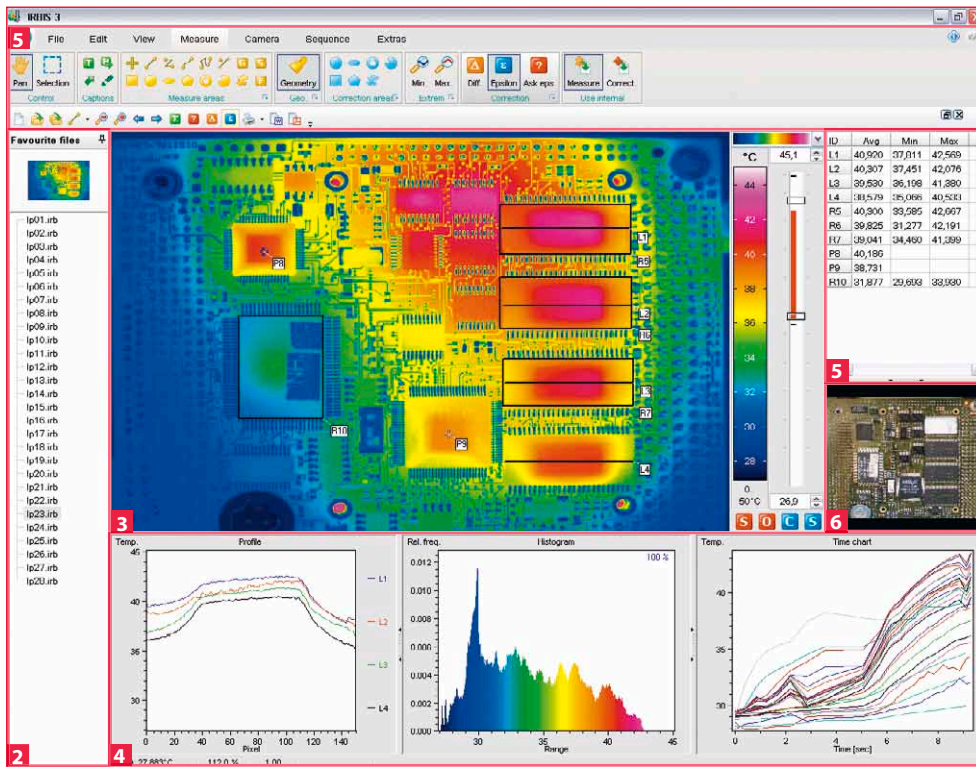

Innovative software from Germany
Extensive analysis options
Modular design
Guarantees working efficiency
Powerful report function

InfraTec

Just ask the specialists ...

revolutionary operating concept

1 Navigation

The revolutionary operating concept as well as the adopted well-known set of icons allow even the unfamiliar user to quickly learn the handling. The possibility to individually design the user interface facilitates the user to keep an overview of the operating functions at any time.

2 Favourite files

The list of favourites clearly arranges all open thermograms and sequences. This allows easy and direct access to single thermal images or sequences.

3 Thermogram

Powerful integrated measuring and editing functions facilitate a comprehensive and fast analysis of digital thermograms. Numerous automatic functions for image correction and optimization support the user in clearly recognizing and visualizing thermal details of measured objects.

4 Diagrams

Numerous, graphically attractive, two and three-dimensional diagrams help to swiftly visualize temperature data of definded measured areas in individual images or image sequences.

5 Table of Measured Data

User-defined measured data and statistical parameters of thermograms or their partial areas can be presented very clearly in a tabular form that can be designed by the user individually.

6 Visual Image

Visual images that have been recorded parallel either by an external camera or a digital camera integrated inside a thermographic camera may optionally be added to the respective thermogram, by just a click of a button or automatically. This serves to clearly allocate measuring scenarios or problem spots.

Control and acquisition software

IRBIS® 3 remote
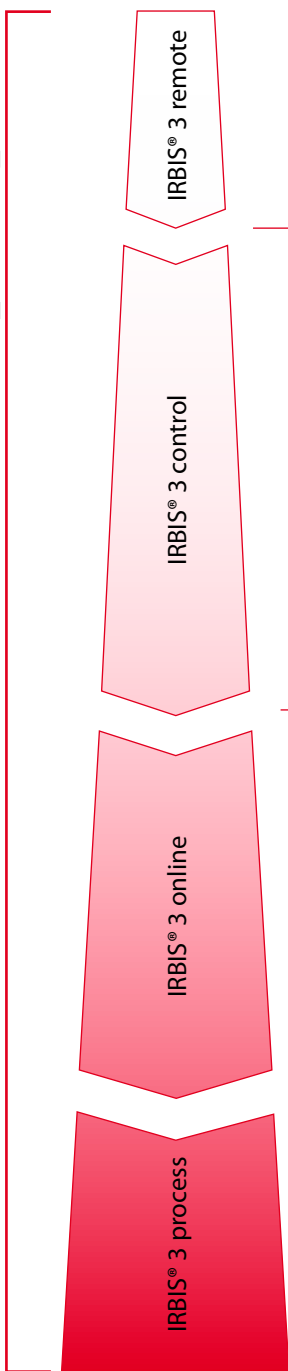
Universal software for linking the thermographic camera with a PC/notebook with the following functions:

- Remote control of the camera-operating functions via a graphic interface
- Real-time visualization of the digitally transferred thermal image
- Storage of real-time thermographic video sequences

IRBIS® 3 control

Control and acquisition software for data acquisition from digital infrared thermographic images:

- Time and temperature-controlled acquisition of digital thermographic data at up to 10 Hz on the PC/notebook
- Real-time visualization and analysis of the digitally transferred thermal image
- Numerous online temperature-measuring functions – determination of measuring spots and any measuring areas
- Comprehensive statistical analysis
- Global correction of emissivity, correction of the emissivity by area and spot, in the online thermal image

IRBIS® 3 online

Control and acqisition software for high-speed data collection of digital infrared thermographic images:

- Digital data are collected at the camera's maximum imaging frequency (till kilohertz area) onto the hard-disk or in the RAM
- Online differential image mode and temperature profile display
- External trigger option, re-trigger, multiple signal sequence, pre-trigger
- Freely definable temperature trigger
- Set parameters of measuring areas and thresholds values, alarm function

IRBIS® 3 process

Extension module of the IRBIS® 3 online for convenient process control:

- Permits intensity-dependent or temperature-dependent control of processes via digital or analog inputs and outputs
- Output of intensity/temperature-proportional analog signals
- Real-time storage of signals in the ASCII format
- Trigger and alarm function for freely definable signal thresholds

Sequence editor

The sequence editor allows to manually or automatically select thermographic data from complex thermal image series as well as to filter image series. These may be stored in the raw image material with respective comments or be reconstructed on their basis.

The new dimension of thermography analysis

The state-of-the art IRBIS® 3 software package designed by InfraTec represents the ideal tool for fast analysis of thermographic image data and for comfortably drafting WORD reports. Packages of several levels are available with application specific expansion modules. IRBIS® 3 is compatible with all thermographic cameras of the InfraTec product range.
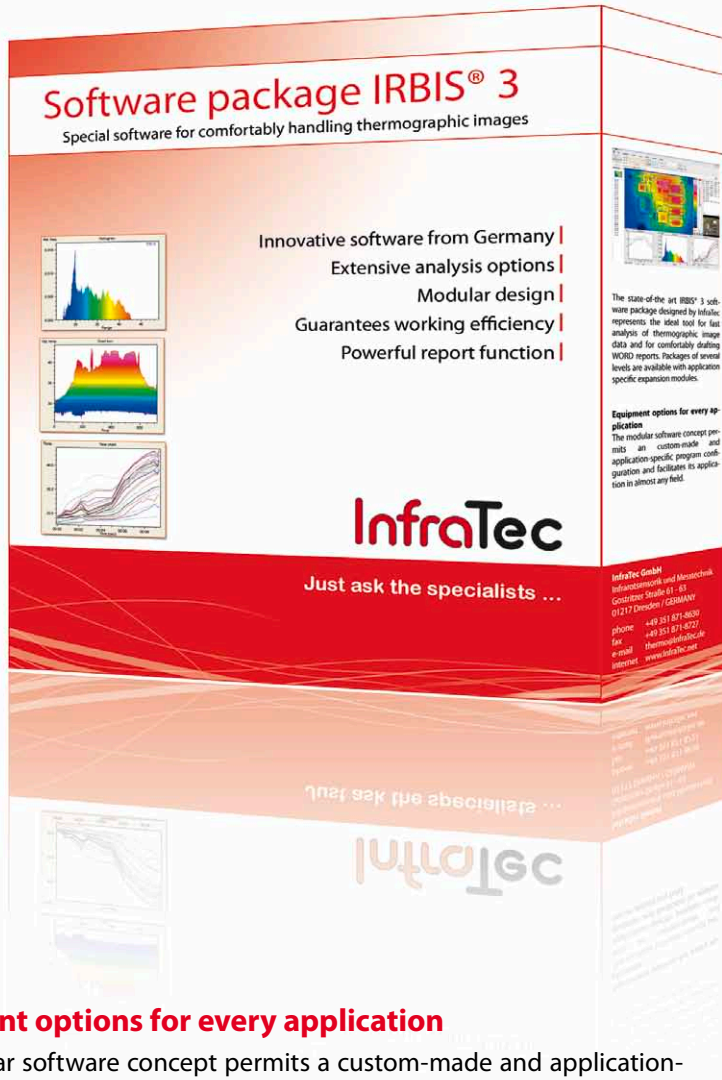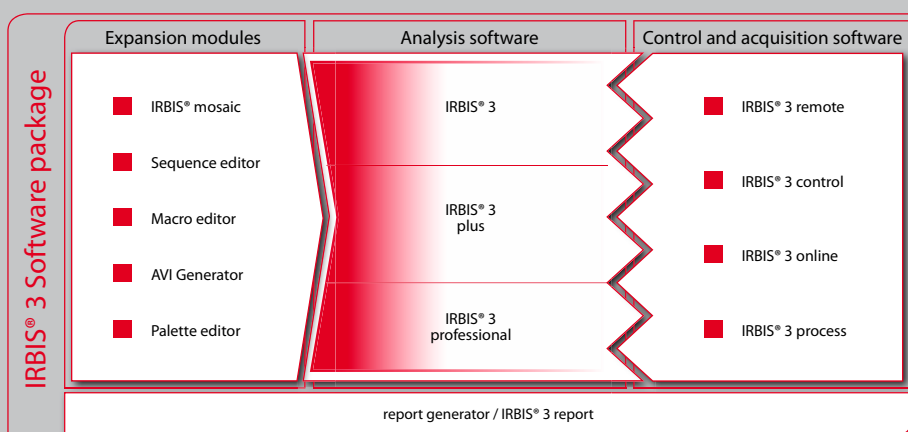

Software packages

IRBIS® 3
IRBIS® 3 plus
IRBIS® 3 professional

IRBIS® 3 remote
IRBIS® 3 control
IRBIS® 3 online
IRBIS® 3 process

IRBIS® 3 report

## Equipment options for every application

The modular software concept permits a custom-made and application-specific program configuration and facilitates its application in any field.

Software package IRBIS® 3

IRBIS® 3 Software package

Expansion modules	Analysis software	Control and acquisition software
IRBIS® mosaic	IRBIS® 3	IRBIS® 3 remote
Sequence editor		IRBIS® 3 control
Macro editor	IRBIS® 3 plus	
AVI Generator		IRBIS® 3 online
Palette editor	IRBIS® 3 professional	IRBIS® 3 process

report generator / IRBIS® 3 report

Basic functions

- Support of file formats of all camera types of the InfraTec product range
- Multi-lingual user interface
- Visualization of thermal images with screen/printer-optimized color palettes
- Manual and automatic temperature range selection
- Temperature profiles along any lines and across any measured areas
- Automatic indication ofmaximum and minimum temperatures mean value
- Print and export of thermal images or tables of measured values
- Display of up to 10 coloured isotherms
- Image improvement by digital filtering
- Integrated WORD-based report function
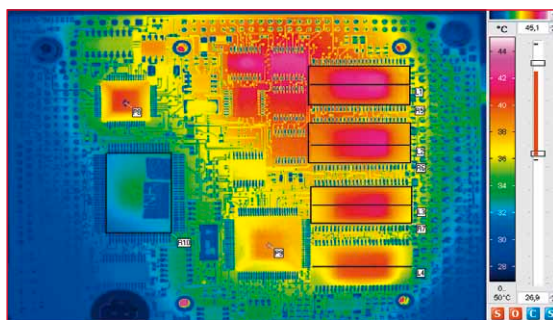
Thermogram of a circuit board with measurement definition

Highlights

- Additional graphic and image-editing functions
- Freely definable color wedges and enlargement factors
- Accumulation of recorded thermographic images
- Visualization of images in the differential image mode
- Various models for correcting the emissivity
- Correction of the emissivity by pixel
- Establishing the difference of temperature values of thermal images
- Multi-window option
- Various statistics functions
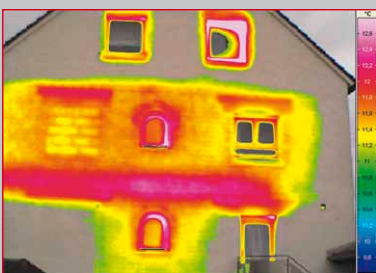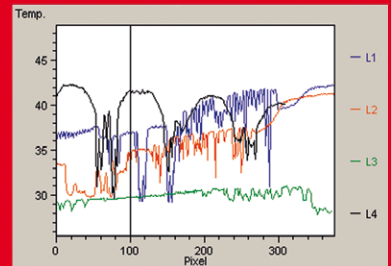- Setting up video sequences

Merging

Image merging enables to put a digital photo of an object or a scene with the respective thermal image on each other. Thereby, thermographic information can be visualized directly on the photograph, improving orientation decisively.
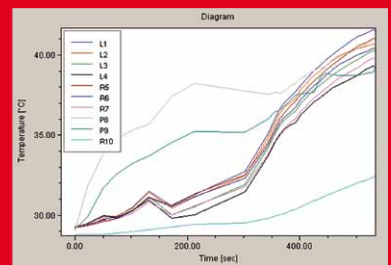
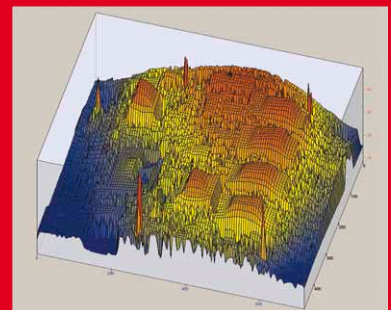## Analysis options of the circuit board thermogram

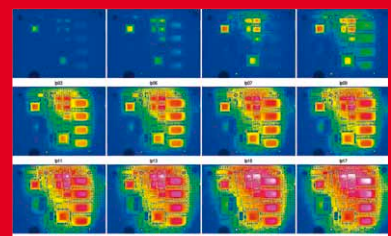Temperature profiles of the lines defined as L1-L4
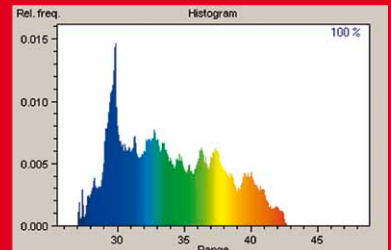
Histogram of the temperature distribution of the total thermogram
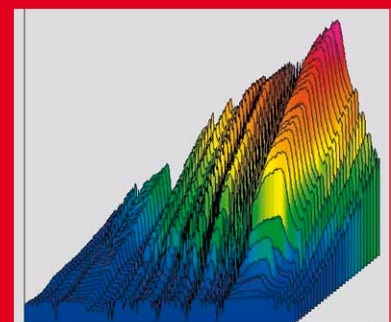

Temperature variation in time of the defined measurement definitions
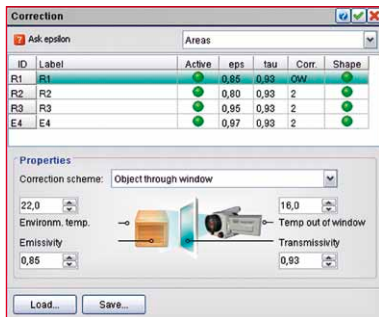

3D profile of the thermogram
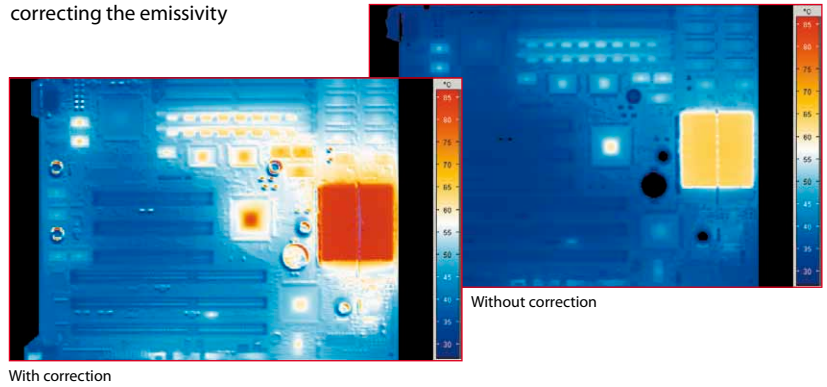

Gallery view of the recorded sequence

3D temperature profile of line L1 in time

Correction models

The IRBIS® 3 software package offers various models for correcting the emissivity by means of which thermograms can be corrected globally, with regard to defined partial areas or automatically by pixel.

correcting the emissivity

Without correction

With correction

All relevant correction models have been provided in a clearly understandable visual form. With its help the respective measuring situation can be reconstructed. Sources of error – such as interference by radiation from the environment or attenuation properties of the measuring distance – are taken into consideration in calculating the temperature (in the calculation formula) in order to safely avoid faulty measurement. Among others, direct and indirect emissivity correction by pixel are available.

IRBIS® mosaic

Should a measuring scenario consist of several individual images, IRBIS® mosaic will help you to produce quickly and easily a combined image. The software will automatically look for places of geometric overlapping and will put them together. The thermogram resulting therefrom can further be analysed with all its measured data.
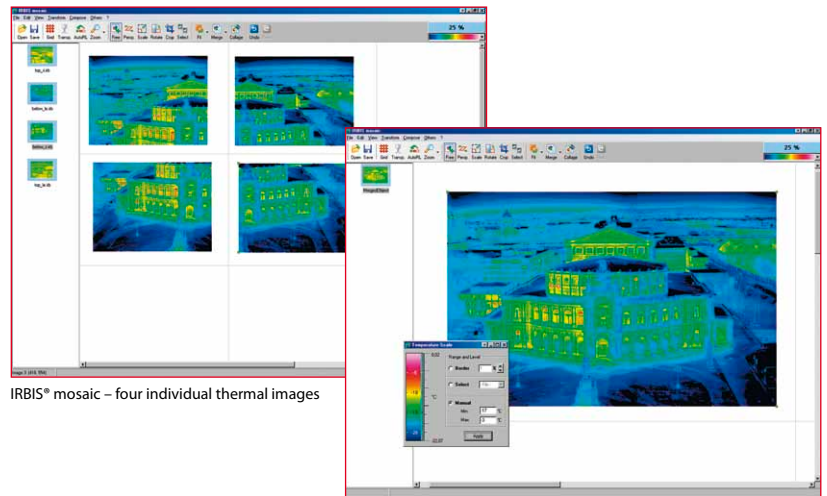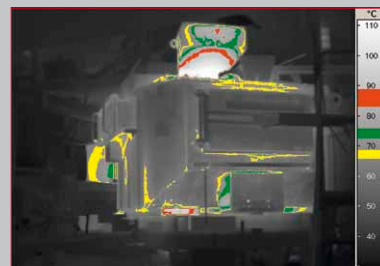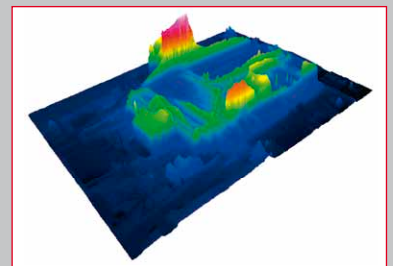

IRBIS® mosaic – four individual thermal images

IRBIS® mosaic – automatically produced a combined thermogram
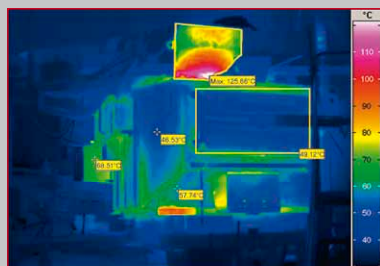
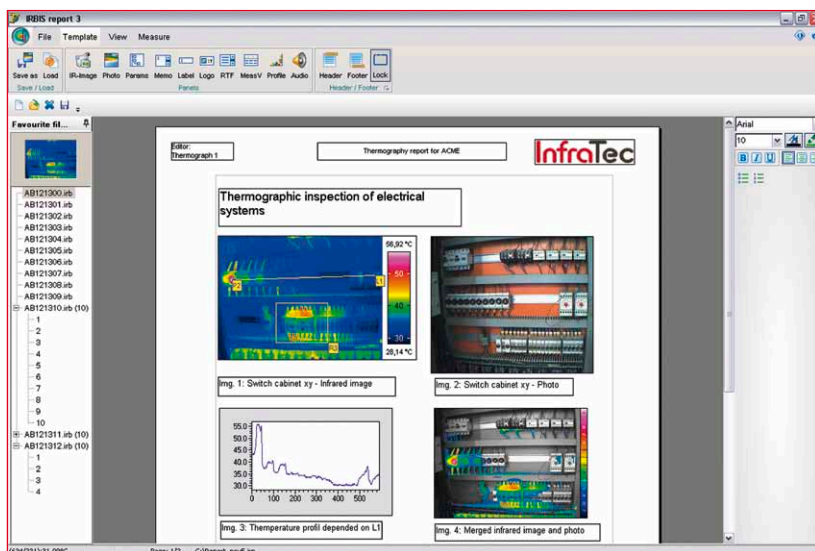A wide range of measuring tools is available for analyzing a thermal image.

By means of isotherms, critical temperature ranges can quickly be localized.

The 3D view with OpenGL offers another perspective onto the scene.

Report Generator/WORD Report

IRBIS® 3 report has been designed for the fast setup of comprehensive and conclusive reports. Extensive experience of expert thermographers have been considered in order to guaranty a maximum of efficiency and performance, at simple operation.

Even largest amounts of data, as they are generated by the professional thermographer, can become documented as a WORD report in a hassle-free and swift way.

Apart from routine analyses of thermographic images, IRBIS® 3 report also meets complex demands for automation:

By means of a comprehensive set of analysis tools, measuring scenarios can conveniently and effortlessly be processed, analysed and documented.

- ■ Automated analysis and correction of thermographic images
- ■ Powerful functions and easy handling
- ■ Wide choice in provided report templates
- ■ Simple setup of individually adjusted report templates
- ■ Storage of report properties in the template
- ■ Completed reports can subsequently be altered and extended
- ■ By just one click, reports are available as WORD documents

By combining the practical experiences in the field of infrared thermography with the latest in software technologies, one of the most progressive thermograpic analysis programm comes to the market.

Thus IRBIS® 3 report will assist you in solving everyday thermographic jobs professionally with a minimum in time and effort.

AVI Generator

This module permits the automatic export of thermal image series or several single images into descriptive AVI movies.
It is also possible to define a partial area of the thermogram, which is designated by the user, for the AVI export. The thereby gained sequences can be played on any commercial media player.
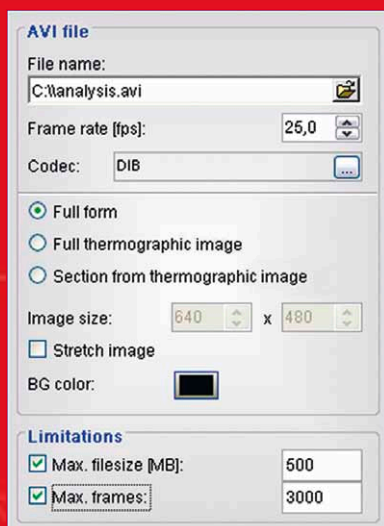
Macro Editor

Extensive sets of commands can be summarized by the user into a macro without any special programming skills. Complexe and repetitive analysis processes can therefore be performed in a time-saving and automated way.

Features of IRBIS® 3 Software package	standard	plus	professional
Analysis Software			
Multi-lingual user interface	x	x	x
Change palette selection and temperature display range	x	x	x
Display editing windows simultaneously	1	1	4
Display/add/edit real image	x	x	x
Play/add/edit audio comment	x	x	x
Merging (visual and infrared image)	x	x	x
Integrated WORD-based report function	x	x	x
Image export/measured data export into WORD, PDF, TIFF, BMP, JPEG, ASCII	x	x	x
Image editing functions (interpolation, rotate, reverse, etc.)	x	x	x
Mirror/distort thermal image	-	-	x
Measured areas (spot, line, polygon, rectangle, circle, ellipse)	x	x	x
Display table of measured date, parameters and comments	-	-	x
Temperature profile diagram	x	x	x
Measured areas (curved line, freehand line, circular ring, segment, freehand)	-	-	x
Image accumulation	-	x	x
Differential image display and differential spot display	-	x	x
Various statistics functions, histogram	-	x	x
Display 3D thermogram	-	-	x
Display/define isotherms	5	10	20
Improve image by digital filtering	3	3	5
Determine emissivity	x	x	x
Correction of emissivity (global, laminar, selective)	x	x	x
Pre-defined models for correcting emissivity	-	x	x
Models for automatically correcting emissivity by pixel	-	-	x
Adoption of GPS coordinates	-	x	x
Geometric measurement within the thermogram	-	x	x
Play, thin out, store image sequences	-	x	x
Temperature-time-diagram / profile-time-diagram	-	x	x
3D temperature profile display	-	x	x
Modules for Image Analysis			
AVI generator (add/edit/play)	o	x	x
Sequence editor	-	o	x
IRBIS® 3 mosaic – add-in of single thermal images	o	o	x
Macro editor (setup/edit/activate)	-	o	x
Palette editor (freely defined color palettes)	o	o	x
Active thermography module	-	o	o
Modules for Control and Data Acquisition			
IRBIS® 3 remote	o	o	o
IRBIS® 3 online	-	o	o
IRBIS® 3 control	-	o	o
IRBIS® 3 process	-	o	o
Add-on			
IRBIS® 3 report	o	o	o

caption   – = not included | o = optionally available | x = included

InfraTec GmbH

Infrarotsensorik und Messtechnik

Gostritzer Straße 61 - 63

01217 Dresden / GERMANY

phone   +49 351 871-8630

fax   +49 351 871-8727

e-mail   thermo@InfraTec.de

Internet   www.InfraTec.de