Jodovit
Chemical Group

J-THERM
Spot finder IR Camera

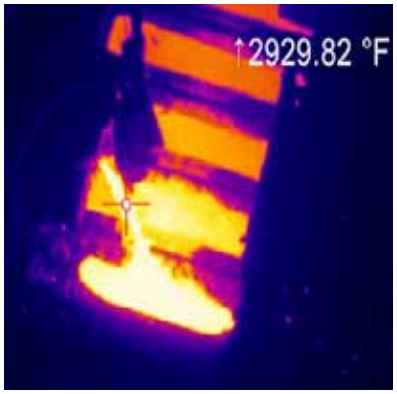
when temperature matters

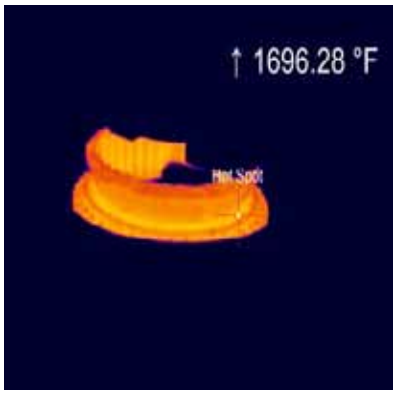
J-THERM IR Camera
TECHNICAL DATA

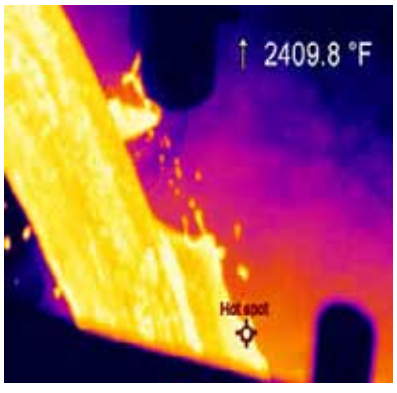
Compact spot finder IR camera

Features:

- Industrial imager with 382 x 288 pixels for exact temperature measurement of -20 °C ... 900 °C
- Small sized rugged camera with motorized focus
- Superb distance-to-spot-size ratio up to 390:1 with sighting capabilities
- 80 Hz frame rate for monitoring of fast thermal processes
- Extensive ready-to-use package for an attractive price – including versatile image processing software with line-scan feature and connection cables







Technical Specifications	
Optical resolution	382 x 288 pixels
Detector	FPA, uncooled (17 µm pitch)
Spectral range	8 - 14 µm
Temperature ranges	-20 ... 100 °C -- 0 ... 250 °C -- 150 ... 900 °C
Frame rate	80 Hz / 27 Hz
Optics (FOV)	18° x 14° (f = 20), 29° x 22° (f = 12.37) 53° x 38° (f = 7.7), 80° x 54° (f = 5.7)
Microscope lens (FOV)	18° X 14° (f = 20), smallest measuring spot (MFOV): 240 µm
Focus	Motorized motor focus
Optica resolution (D:S)	390 : 1 (18° optics)
Thermal sensitivity (NETD)	80 mK
Accuracy	±2 °C ro ± 2 % whichever is greater
PC Interface	GigE (PoE) connector up 2 cameras
Process interface (PIF)	0 - 10 V input, digital input (max. 24 V), 0 -10 V output
Industrial Process interface (PIF)	2 x 0 - 10 inputs, digital input (max. 24 V), 3x 0/4-20 mA outputs 3 x relay (0 - 30 V 7 400 mA), fail-safe relay
Cable length	10 m
Ambient temperature	0 °C ... 50 °C
Enclosure IP Class	Full IP 67 liquid cooled
Power supply	USB

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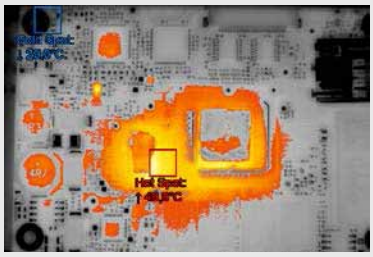
TECHNICAL DATA

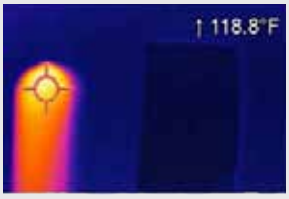
Advantages:

- Motor focus
- Compact industrial imager for temperature measurements from - 20 to 900 °C
- Autonomous operation with automatic spot finder and direct analog output. Ideal for OEM use

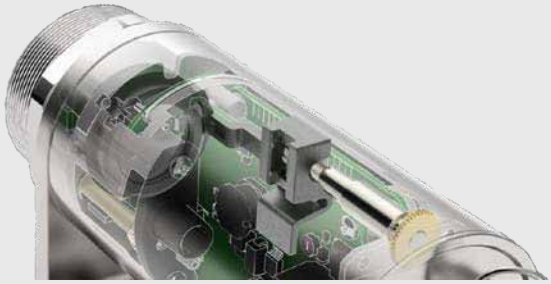
Automatic hotspot search

Object can be thermally analyzed and hot or cold spots can be found automatically.





The integrated spot finder function allows for precise temperature measurements of moving objects, without having to readjust the sensor.



Motor focus simplifies handling

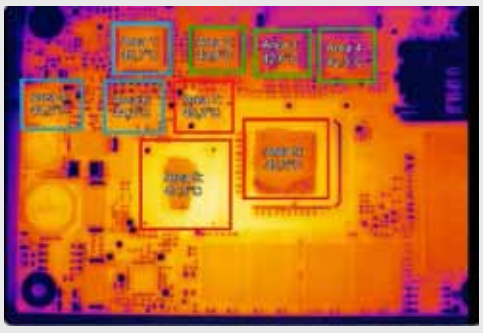
J-THERM Camera is equipped with a motorized focus. The J-THERM Control Software enables a remote focusing from distance.

Autonomous operation with direct analog output

Up to 9 freely definable measuring areas may be used as analog outputs when using an external process interface.

Pyrometer or camera?

J-THERM camera is a fusion of a rugged, compact pyrometer and a modern IR camera. Thanks to analog and digital outputs as well as the option to process up to nine freely definable measuring areas using an esternal process interface, perfectly suited for OEM applications.



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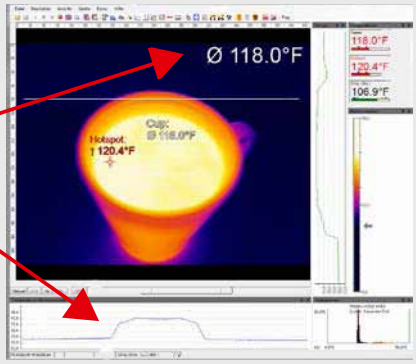
J-THERM CONTROL
SOFTWARE

Comprehensive IR camera software

- No additional costs or licensing restrictions
- Modern software with intuitive user interface
- Remote control of camera
- Display of numerous images in different windows
- Compatible with Windows 7, 8 and 10 as well as Linux (ubuntu)
- Two Software Development Kits for Windows and Linux included
- Various language options, incl. translation function
- Temperature display in °C or in °F

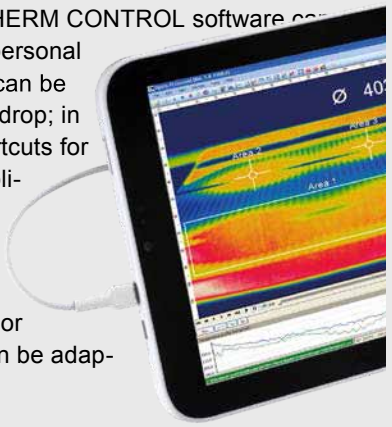
Temperature information in main window, as digital display or as graphic



Our layouts – as individual as your applications

Pre-defined layouts make it quick and easy to start with your applications. And because we know that every measurement task has its own individual requirements, we have ensured that it is quite easy to adapt the preset layout to suit your individual requirements.

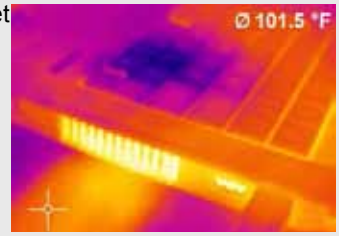
The user interface of the J-THERM CONTROL software can also be adapted to suit your personal workflow: Software windows can be easily arranged using drag & drop; in the toolbar you can save shortcuts for functions relevant to your application – or even remove links which you do not need.

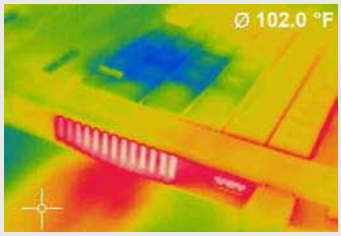


Regardless of whether you are working on a desktop PC or a tablet, the user interface can be adapted.

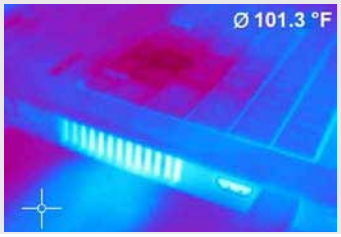
The J-THERM CONTROL software makes a wide range of preset color palettes available. This allows optimal depiction of thermal contrasts. The pre-defined color palettes can be individually adapted to be able to cater for the specific requirements of your respective application.

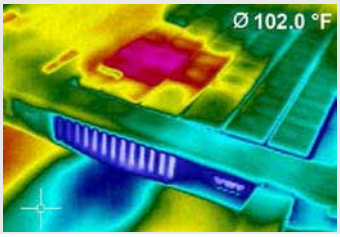
Associated temperature groups (isotherms) can be identified by color markers and highlighted. It is also possible to define temperature values in advance; pixels above, below, or between these values are highlighted in color.

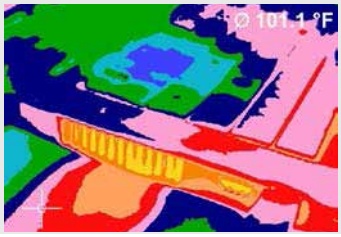


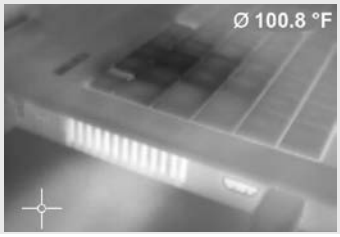


The right color palette for every application









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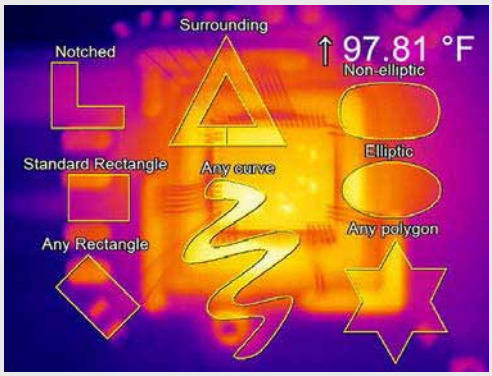
J-THERM CONTROL
SOFTWARE

Measuring areas

It is not just a matter of size, but also depends on the content: designing a suitable measurement area



The size and shape of measurement area can be freely designed and moved. For an easy introduction, a large selection of pre-defined measurement area shapes is available.

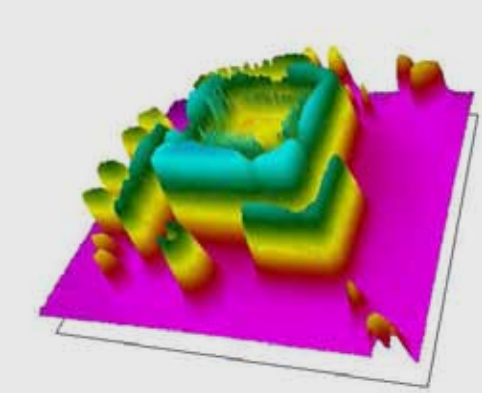
You can set up as many measurement areas as you like in the camera's field of view. To do this, it is possible to make a distinction between main and ancillary fields.

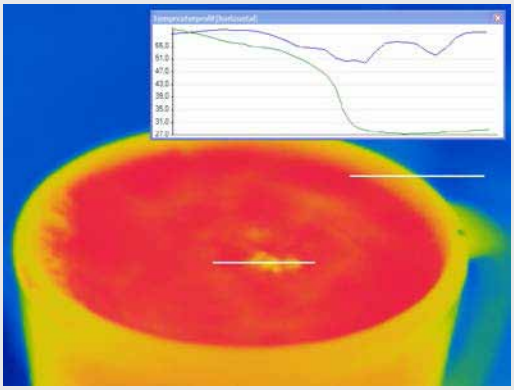
Various modes can be set in a measurement area, such as minimum value, maximum value, or average value, or you can rule out the detection of hot or cold spots.

The separate setting of the emissivity for measurement areas allows various material surfaces to be monitored with a single camera.

Differences and averaging between different measurement areas are easy to calculate with the J-THERM CONTROL software.
Saved measurement areas can be displayed as an image, a digital display or a diagram and can then be saved for further analysis.

Graphic display of the temperature values





Temperature values can be shown along a straight line as temperature profiles as well as as 3D diagrams.

A temperature/time diagram can be used to analyze the temperature development over time. Individual time sections can be lifted out of the diagram and be analyzed in detail by zooming in and out.

Diagrams defined in this way can be exported from the software and be saved in Excel for further analysis.

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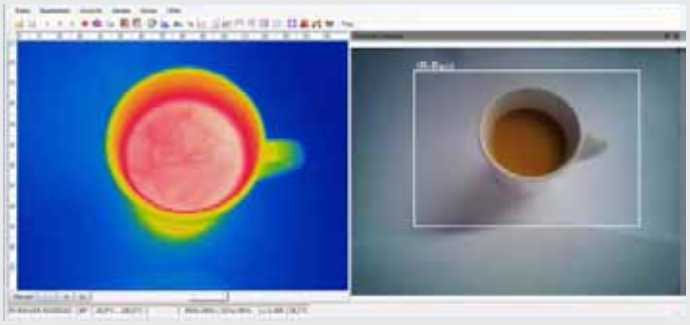
Recording and display

Recording video sequences for later analysis and documentation



The software can be used to save the recording from the thermal imaging camera as video sequences which can then be saved for analysis later on. The video sequence is recorded for every pixel including all temperature information. An integrated screen capture function makes it simple to retrospectively generate videos in wmv format.

BI-SPECTRAL video analysis where both an IR as well as a VIS image are recorded makes it easy to highlight critical temperature ranges.

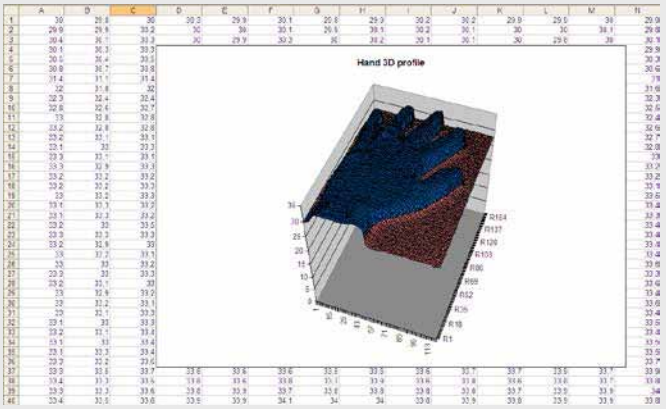
Videos recorded can be processed retrospectively. For example, individual sections can be cut out of a recording and can be saved as an independent sequence.

Saved video recordings are available for analysis. The sequences can be played back in slow motion or time lapse for this purpose. It is also possible to play back as a continuous loop.

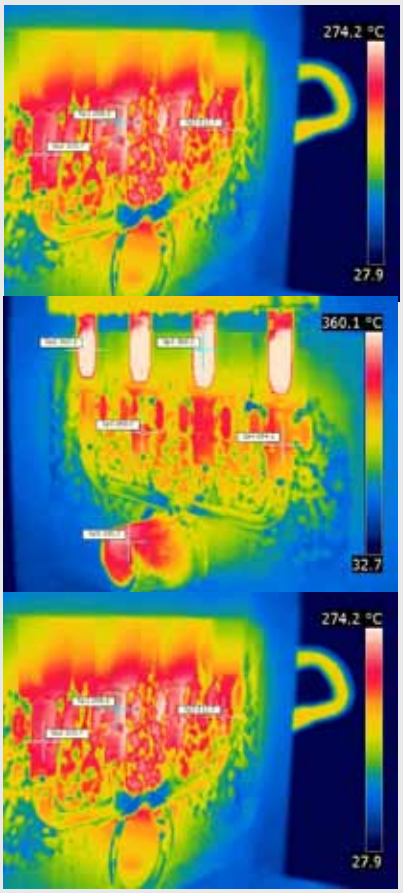
The snapshot option works like a screenshot; an individual image is recorded from the live picture. This snapshot is a radiometric image (*.tiff), where all the temperature and measurement area information at the time of the recording is saved for every pixel.

The snapshots can be saved as text format for detailed analysis, i.e. as text image data (.csv format) and can then be made available for analysis in Excel. It is also possible to continue processing the image data with standard programs such as Photoshop or Windows Media Player.

The recorded images can be rotated and reversed, and you can also magnify individual sections of them. 3D display is also possible.



Snapshots – all temperature information in one picture



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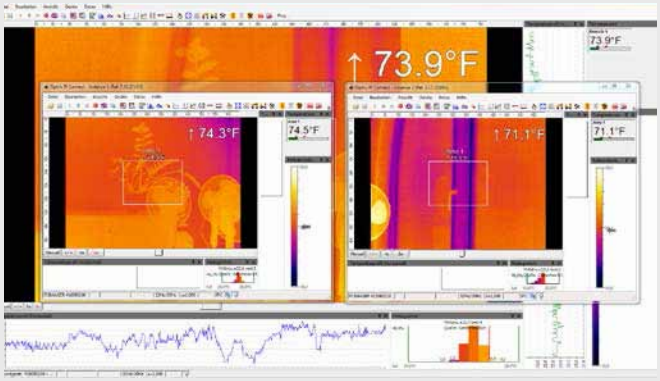
Merging



The fields of vision of three cameras (top) are converted into one single image via the merging function (right)

The merging function combines several camera angles together in a single picture

The software gives you the option of grouping together several cameras within a software instance, i.e. the field of view of several infrared cameras are merged together to make a single picture. For processes with several control points in particular, it is helpful to concentrate the various angles on one screen. Merging several cameras also makes it possible to get an all-round view of a 3D object.

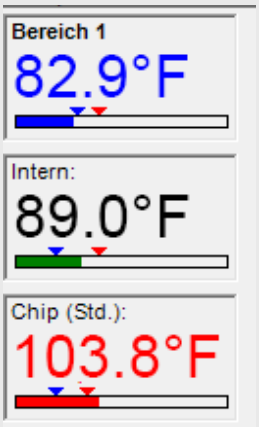
You can merge several cameras either using a direct USB connection or via Ethernet. While in the first case, every camera needs to have its own USB port; for the second option, one Ethernet connection is enough. The cameras here are each connected to the Ethernet switch on the PC via a USB Server Gigabit 2.0.

Alarms

Various alarms can be activated for measurement areas as well as for previously defined temperature values or ranges using the Connection software. Apart from minimum and maximum values, it is also possible to set so-called advance alarms. These will emit a warning when the measured temperature approaches the defined minimum or maximum value, therefore giving you more options and time to react.

If the measured temperature reaches one of these previously defined values, then the software will trigger an alarm. In addition to that, the critical event can be easily documented as a snapshot or video recording and be used for analysis later on.

Defining several alarm values allows quick intervention



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