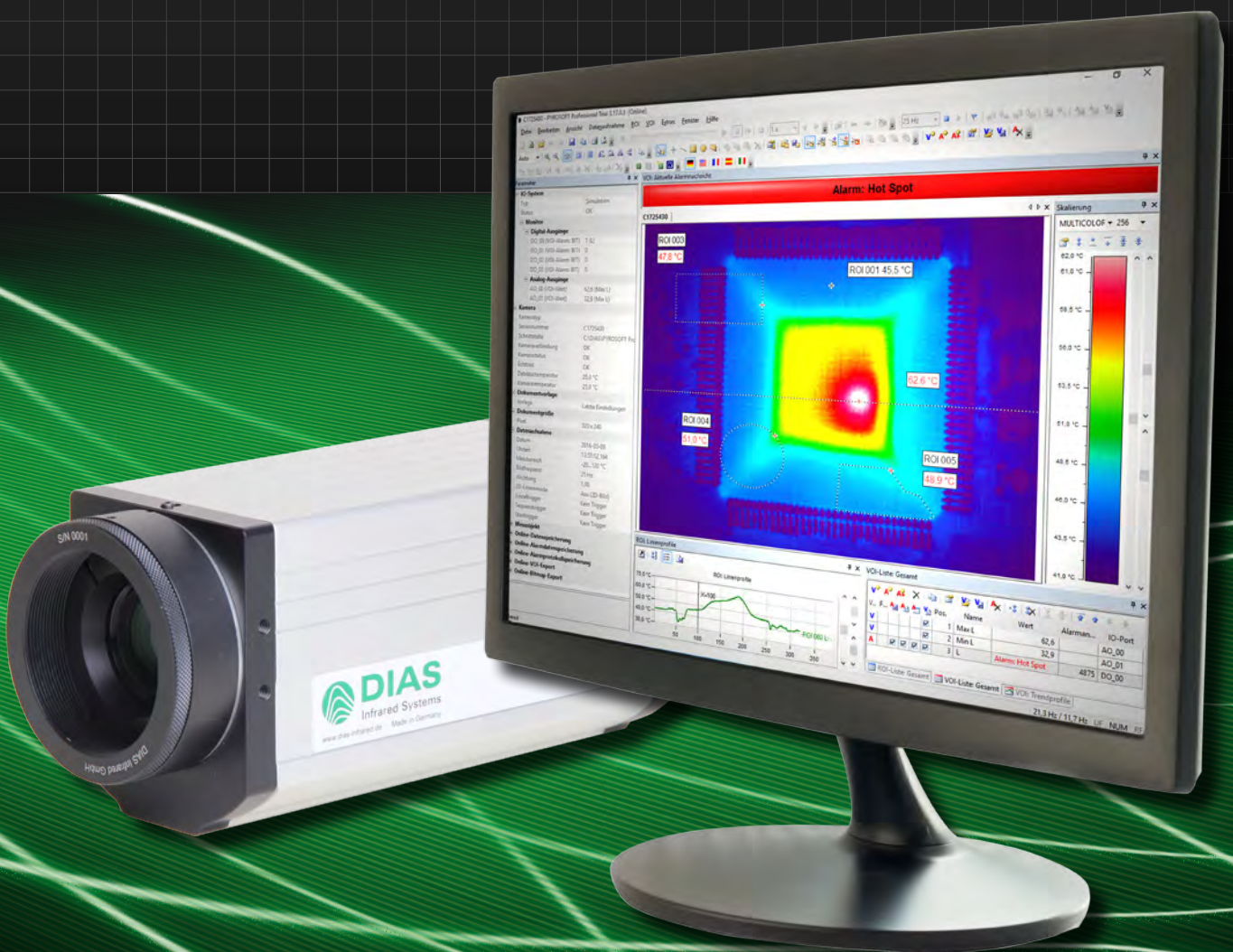TRANSMETRA

DIAS
Infrared Systems

PYROSOFT

Software for DIAS infrared cameras in industry and research & development

Standard and application specific software
Overview & Features

PYROSOFT Compact, Professional, Professiona

Powerful online and offline software for DIAS infrared cameras

PYROSOFT Compact, Professional and Professional IO are multilingual and universal thermal imaging software applications for all DIAS infrared cameras PYROVIEW and PYROLINE running under Windows®.

PYROSOFT Compact is the free software version that is delivered with every DIAS camera. Setup the online data acquisition and automatic data storage of your DIAS camera, open files and sequences, analyze regions of interests, create reports – all this is possible with PYROSOFT Compact.

PYROSOFT Professional is the right choice for complex measurement projects with advanced requirements for data analysis. Versatile possibilities for defining regions and alarm values, trend display, multi report function and much more allow the convienient and easy use in research and development.

PYROSOFT Professional IO has additional functions for process integration. Trigger signals, alarm states and measured values can be input and output via an I/O system (PROFIBUS, PROFINET, WAGO, Modbus, OPC, TCP socket or text file). Use PYROSOFT Professional IO to connect your DIAS camera to your process.
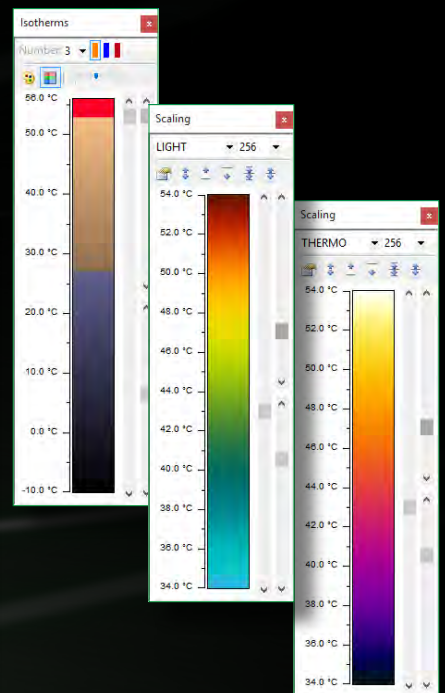
Acquisition + Display

You can customize the PYROSOFT program interface by using the versatile views and layout templates. The multi-document structure of PYROSOFT Professional and PYROSOFT Professional IO enables analysys of data from multiple cameras or saved files simultaneously.

Camera measurement data is transferred in real-time via the Ethernet interface to the host PC. On the PC, this data is analyzed by the PYROSOFT software and saved if necessary. Integrated buttons for operation of the camera's motor focus allows convienient focusing of your DIAS camera to the measurement object.

Choose between different color scales for the display of the thermal image in °C, °F, °K or as radiation values. The temperature range displayed in the image is fully adjustable with auto dynamic or manual temperature. The user can also zoom into a region in the displayed image in order to examine fine details using the zoom function.
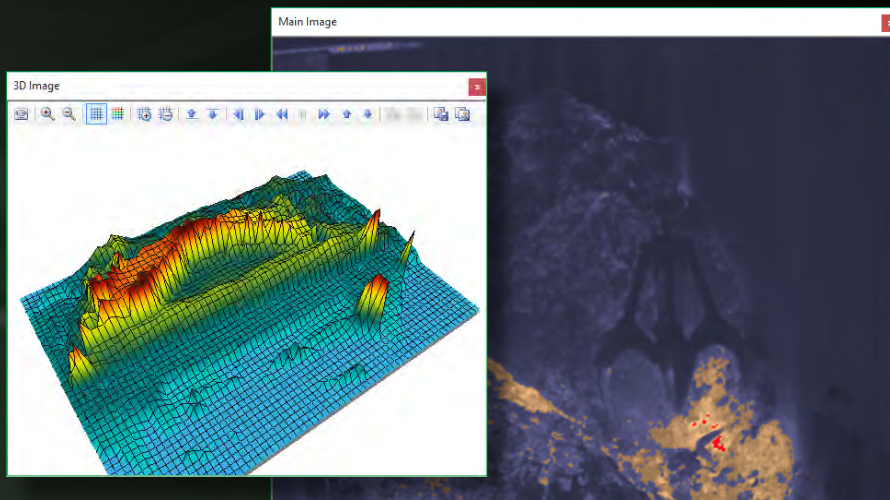
Features
Customizable display of the thermal image
Various color bars and isotherms display
Auto dynamic and manual scaling of temperature scale

I IO – Standard and analysis software

Analyze + Control

For data analysis of local regions (Regions Of Interest = ROI) points, lines, rectangles, circles/ellipsis and polygons are all available. Calculate hot and cold spots within the ROIs, select specific values of emissivity, transmittance and ambient temperature for every ROI and display histograms and automatic partitions within the ROIs.

Define values (**V**alues **O**f **I**nterest = VOIs) from calculated ROI minima/maxima/average values or other values (e.g. histogram, spot, FFT) and display them as temporal trend. Specify alarms with fixed or variable thresholds and alarm combinations to detect critical temperatures immediately and display them offline and online, save and log them.

Analyze dynamic processes by using reference and difference images, filter images and 2D line images, detect temporal trends of temperature distributions on their measurement objects.

By using the configurable IO system in PYROSOFT Professional IO, triggers and reference values can be input, and measured values and the alarm statescan be output for process control.

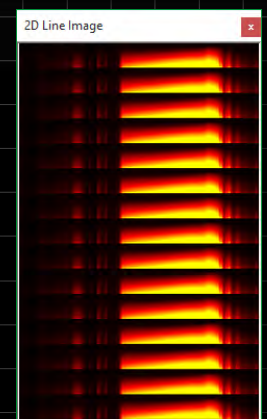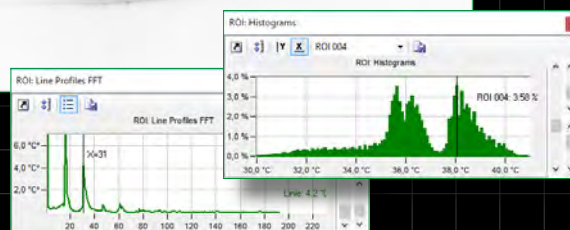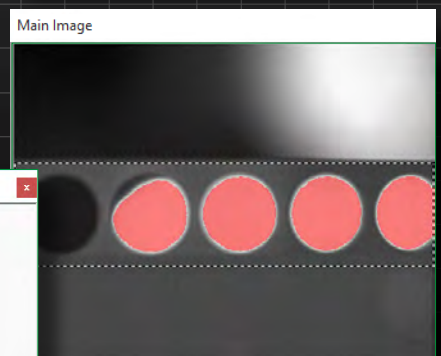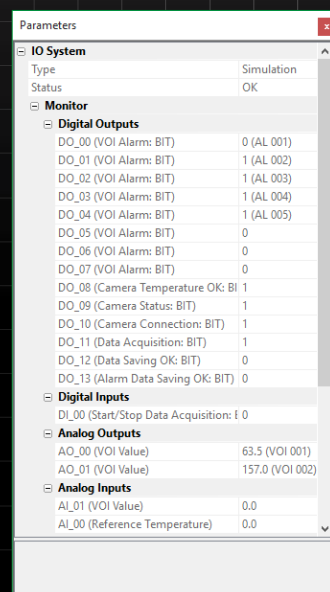| Features |
| --- |
| ROIs: points, lines, rectangles, circles/ ellipsis, polygones |
| Calculation of hot and cold spots |
| Reference, difference, filter and 2D line images |
| Definition of VOIs from ROI values |
| Trend, histogram and profile charts |
| Alarm functions |

Parameters

IO System	
Type	Simulation
Status	OK
Monitor	
Digital Outputs	
DO_00 (VOI Alarm: BIT)	0 (AL 001)
DO_01 (VOI Alarm: BIT)	1 (AL 002)
DO_02 (VOI Alarm: BIT)	1 (AL 003)
DO_03 (VOI Alarm: BIT)	1 (AL 004)
DO_04 (VOI Alarm: BIT)	1 (AL 005)
DO_05 (VOI Alarm: BIT)	0
DO_06 (VOI Alarm: BIT)	0
DO_07 (VOI Alarm: BIT)	0
DO_08 (Camera Temperature OK: BI	1
DO_09 (Camera Status: BIT)	1
DO_10 (Camera Connection: BIT)	1
DO_11 (Data Acquisition: BIT)	1
DO_12 (Data Saving OK: BIT)	0
DO_13 (Alarm Data Saving OK: BIT)	0
Digital Inputs	
DI_00 (Start/Stop Data Acquisition: I	0
Analog Outputs	
AO_00 (VOI Value)	63.5 (VOI 001)
AO_01 (VOI Value)	157.0 (VOI 002)
Analog Inputs	
AI_01 (VOI Value)	0.0
AI_00 (Reference Temperature)	0.0

Evaluaton + Documentation

Evaluate with the integrated data player recorded sequences, cut and export them as single files, as text, bitmap or video.

Derive from your offline evaluation online document templates for recurring measurement tasks.

Create album files from different recordings and multi-reports for Microsoft Word with thermal images, result lists of the calculation of ROIs and VOIs, profile and trend charts, histograms, difference images and many more objects.

Generate customized report templates for recurring reports so that they can be generated easily and edited as needed.

PYROSOFT – Function overview

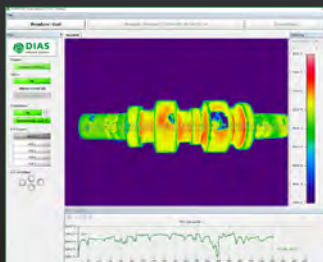|	Compact	Professional	Professional IO	Automation	MultiCam	CamZone
User interface						
Multilingual software for Windows® (from version XP)	✓	✓	✓	✓	✓	✓
Program interface with customized views and layout templates	✓	✓	✓	✓	✓	✓
Multi document structure for multiple documents or cameras		✓	✓		✓	
Use of document templates		✓	✓	✓		
File functions						
Open saved files and sequences	✓	✓	✓	✓		✓
Real-time data saving	✓	✓	✓	✓	✓	✓
Bitmap export (BMP, JPG, PNG)	✓	✓	✓	✓	✓	✓
Video export (AVI, WMV)	✓	✓	✓	✓		✓
Text export		✓	✓	✓	✓	
Functions for image display						
Choice of color bars and scaling including autodynamic	✓	✓	✓	✓	✓	✓
Zoom functions with auto zoom, full image view, rotation and tilting	✓	✓	✓	✓	✓	✓
Display of the visual image	✓	✓	✓	✓	✓	
Display of isotherms		✓	✓	✓	✓	
3D display with auto rotation		✓	✓			
Analysis functions						
Correction of emissivity, transmittance and reflected ambience radiation	✓	✓	✓	✓	✓	✓
Calculation of the emissivity for a pixel from a target temperature	✓	✓	✓	✓	✓	✓
Triggerable difference image display with selectable reference image		✓	✓	✓		
Filter image with temporal and local filter functions		✓	✓	✓		
2D line image		✓	✓	✓		
Online ring buffer (history) for images		✓	✓	✓		
ROI functions ("Region Of Interest")						
Points	5	1000	1000	1000	1000	
Lines	1	1000	1000	1000	1000	
Areas (rectangle □, circle/ellipse, polygone)	1 □	each 1000	each 1000	each 1000	each 1000	8 □
Mark of minimum/maximum (hot/cold spot) for lines and areas	✓	✓	✓	✓	✓	✓
Specific correction of emissivity, transmittance and ambient temperature within a ROI	✓	✓	✓	✓	✓	✓
Self adjusting SUB-ROI with automatic splitting		✓	✓	✓	✓	
Histogram and spot calculation		✓	✓	✓	✓	
FFT calculation for ROI lines		✓	✓	✓	✓	
VOI functions ("Value Of Interest")						
Defintion of VOI values from calculated ROI values, e.g.: maximum, average, difference,…		✓	✓	✓	✓	
Trend display of VOI values		✓	✓	✓	✓	
Definition of VOI alarms with fixed or variable thresholds, teach-in function and hysteresis		✓	✓	✓	✓	
Definition of VOI alarm combinations (OR/AND) from calculated VOI alarms		✓	✓	✓	✓	
Alarm saving, alarm logging, alarm text export		✓	✓	✓	✓	
Alarm counter, acoustic and visual alarm display with customized alarm texts		✓	✓	✓	✓	
Report function						
Integrated report generation with customized templates for Microsoft® Word	✓	✓	✓	✓		
Multi report for album files of multiple documents		✓	✓			
Functions for process interface, industry use, server/client connection						
Input and output of analog/digital values via the IO system (PROFIBUS, PROFINET, WAGO, Modbus, OPC, TCP socket, text file)			✓	✓	✓	
Configurator and monitor for IO system			✓	✓	✓	
Management of products and users				✓		
Product switching via IO system				✓		
Server functionality for the transmission of live images and alarm states to PYROSOFT Client			✓	✓	✓	
Program and test of the stand-alone functionality of a camera						✓

PYROSOFT

Application specific thermal imaging software

PYROSOFT **Automation**

Software for the integration of one DIAS camera into automation processes

- Online functionality like PYROSOFT Professional IO for one camera
- User management with different authorization levels (operator, setter, administrator, guest)
- Configurable user interface and user rights
- Product management, product switch manual or automatic by IO system
- Display of status information and alarms

PYROSOFT **MultiCam**

Software for the data acquisition and image display of up to 8 DIAS cameras

- Online functionality like PYROSOFT Professional IO
- Operation modes "setup" and "automatic"
- Display of single images of all cameras
- Overview image of all cameras
- Display of system state, alarm messages and alarm overview at IO system

PYROSOFT **Client**

Software for the image and alarm display of up to 8 DIAS cameras

- Client connection to PYROSOFT Professional, Professional IO, Automation or MultiCam
- Transmission of the live images and the alarm states from the local cameras to a server PC
- Display of single images of all cameras
- Overview image of all cameras
- Display of system state, alarm messages and alarm overview at IO system
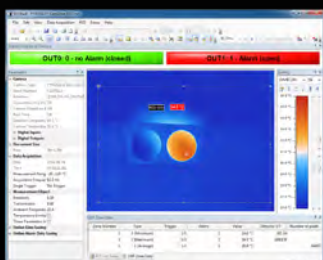
PYROSOFT **CamZone**

Software for the zone programming of a DIAS stand-alone camera

- Load and program up to 8 zone parameters for one camera
- Display of the UPD zone data for the calculated zone and alarm values of the camera
- Display of the live image
- Display of the status at the digital alarm outputs of the camera
- Online alarm saving

PYROSOFT **FDS**

Software for DIAS early fire detection system PYROVIEW FDS

- Real-time fire detection with up to 32 cameras
- Intelligent alarm monitoring with spot and trend analysis
- Multi camera view, views for sectors, map, panorama
- Server-/Client architecture for PYROSOFT FDS Client
- Event view and report generation with PYROSOFT FDS Viewer
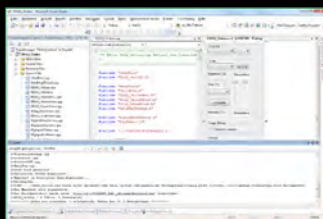
PYROSOFT **DAQ**

Software for the integration of DIAS cameras in own software

- API (32 and 64 Bit Windows-DLL) for direct data access to the cameras
- Setting of recording parameters and measurement object parameters
- Inquiry of temperature measurement values and camera information
- Bitmap functions for the display of color bars and measured values
- Online and offline functionality