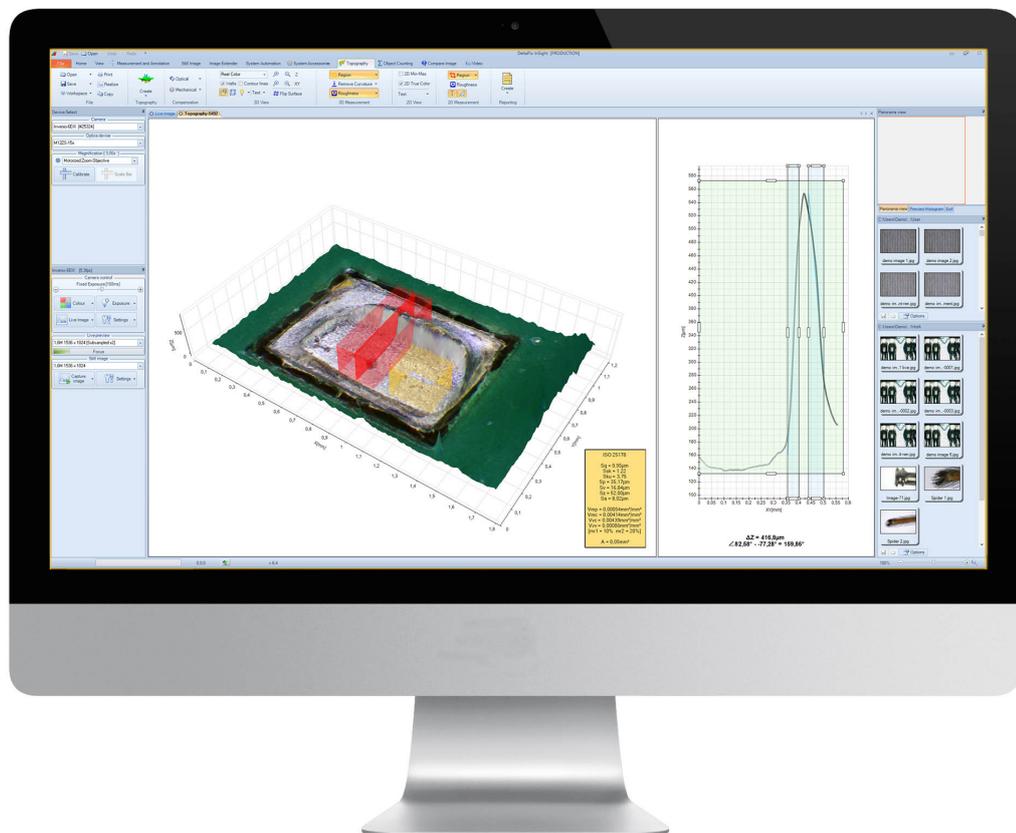


# DeltaPix InSight 6.0



- InSight Basic
- 3D topography
- Roughness Measurement
- Microscope And Stage Interface
- Segmentation, Counting, and Multiphase Analysis
- Extended Focus, Exposure, and Manual Stitching
- Automation, Stage and Microscope Control



## About DeltaPix

DeltaPix is pioneering the digital microscopy industry and has done so for more than 20 years, introducing many innovative technologies and solutions to meet different requirements. The first innovative product to be released by DeltaPix back in 2003, was the groundbreaking Infinity X, with 21 million real color pixels, setting new standards for microscopy cameras at that time.

DeltaPix develops and markets a wide range of digital imaging solutions for various industrial, forensics and biomedical microscopy applications, and has established a very deep and broad expertise with-in digital image capturing, image handling and processing.

It is the primary strategy of DeltaPix to use these technologies to create innovative new products to be marketed and sold internationally through a selective network of partners.



# Product range

## Cameras

DeltaPix' camera range is intended for all kinds of microscopy users, for the basic routine use, to the advanced professional researcher, who needs to manipulate the working method of the camera and control every detail. The Invenio cameras range is a series of easy to use cameras, with high resolution, high sensitivity and very low noise.

All DeltaPix cameras are manufactured to scientific standards with an extreme focus on the details; assembled in a dust-free environment, high-quality IR filters, high-grade sensors, low-temperature design, and long durability. All DeltaPix cameras are equipped with the newest high-quality CMOS and Exmor™ sensors.



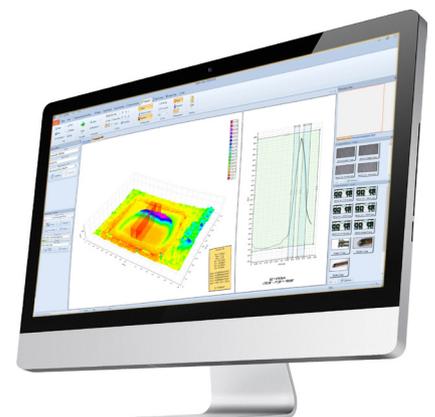
## DeltaPix Digital microscopes

Digital microscopes are becoming a vital part of any well-equipped laboratory. DeltaPix aims to provide a high-quality digital microscope for a wide variety of industries and research labs, with a focus on providing reliable 2D and 3D measurements and material information like roughness, depth and height profiles. Offering a flexible solution for virtually any application and budget, ranging from a fully automatic 2D/3D microscope to a simple inspection microscope.



## Software

Comprehensive and advanced, but intuitive and easy to use Microscope Software Suite for measurement, analysis, and control of microscopes, cameras, stages, and other connected equipment. The software is built by a basic package (free with all DeltaPix cameras) with optional modules for special functions, in order for the user only to get the functions required for the specific application

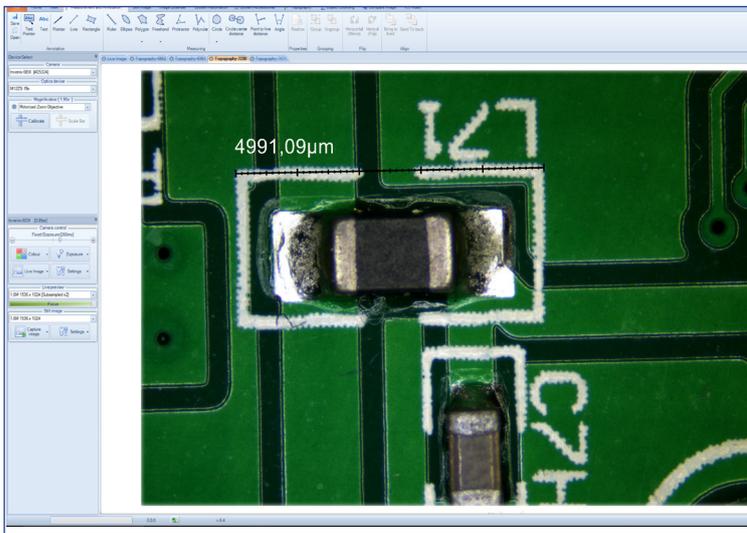


# InSight Basic

DeltaPix InSight has a modern and intuitive user interface based on the ribbon band style known from Microsoft Office 2010/2016. Functionality has been grouped logically, and the program is easy to use. DeltaPix InSight is a modular software

## Calibration

Each optical device, objective, and camera can be calibrated individually. In this way, several microscopes and other optical systems can be managed by the same software installation. Calibrations can be private or shared among all users of the computer.



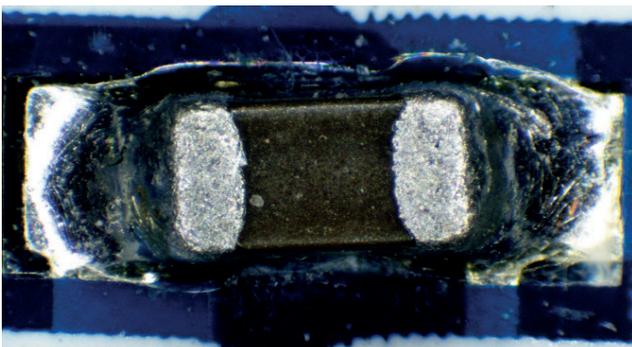
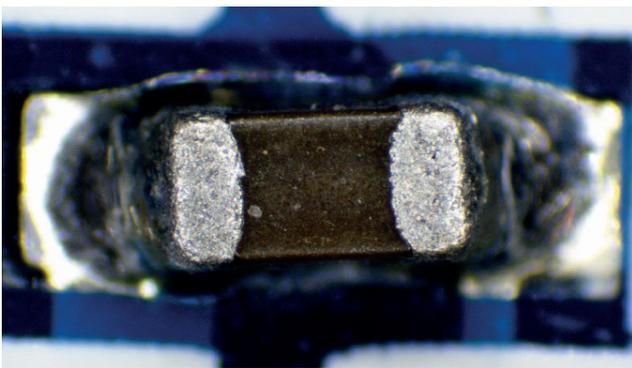
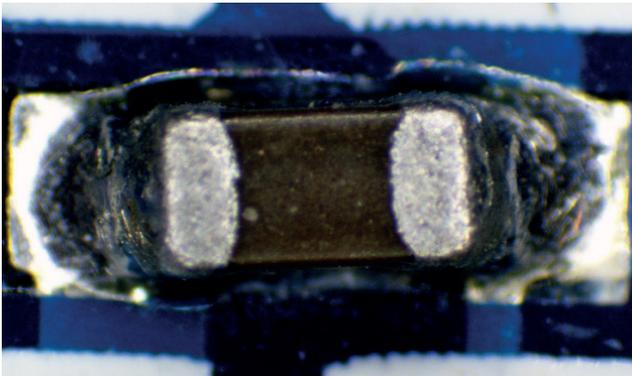
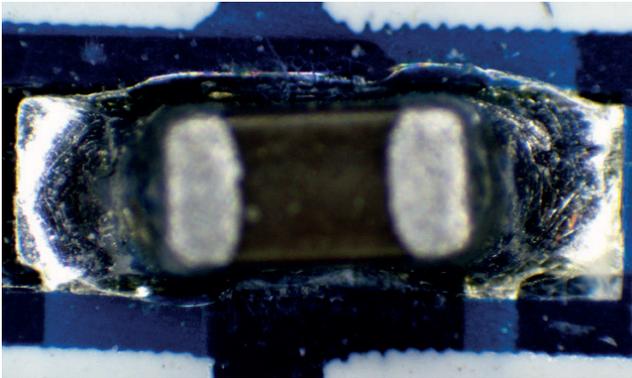
## 2D measurements

DeltaPix microscopes offer accurate measurements in real-time, or in captured images. The software offers many powerful measuring tools including length, area, angle, diameter and much more. In addition, the actual dimension and measurement results can be saved on the captured image or exported to Excel, CSV or PDF files.

Export to Excel or PDF using the included templates or design a custom template.

Measurements on multiple specimens can be exported to one CSV file for statistical purposes.

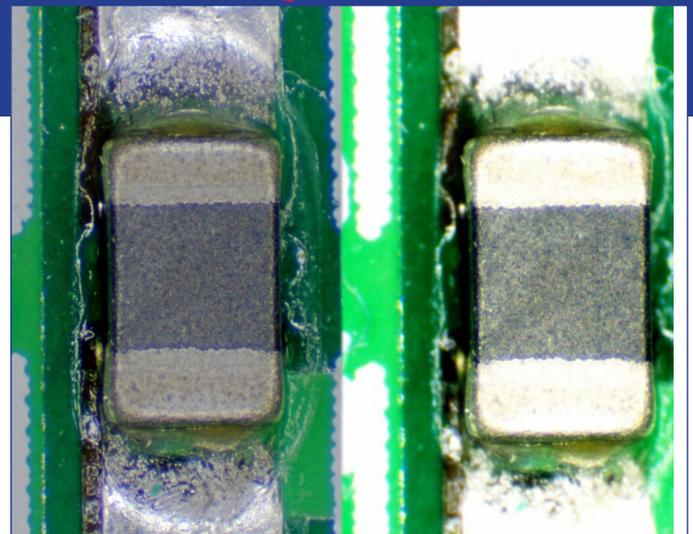
# Extended Focus, Exposure, and Stitching



## Extended Focus

With DeltaPix InSight it is possible to add the EE EF module to capture "Super depth of field", by capturing images at different focal planes and using the state of the art algorithm which also works on stereo microscopes to stitch a full focus image from the captured images.

The number of images needed for each extended focus capture, can be automatically calculated from the depth of focus at the actual magnification.

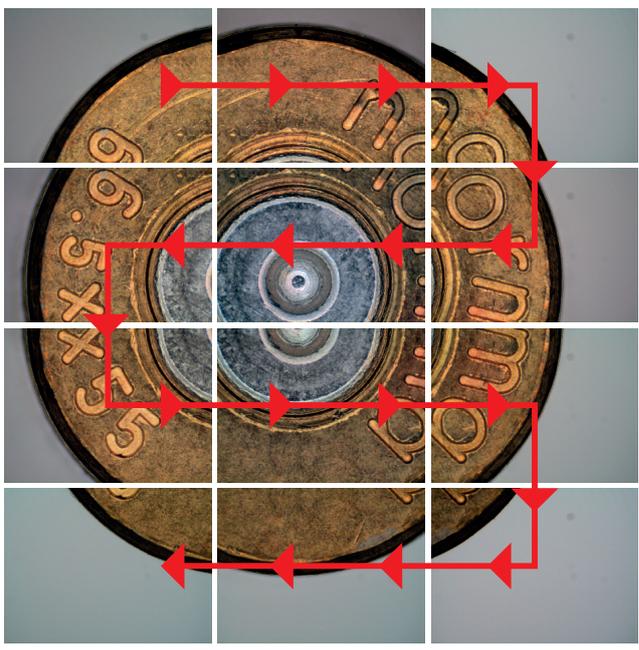
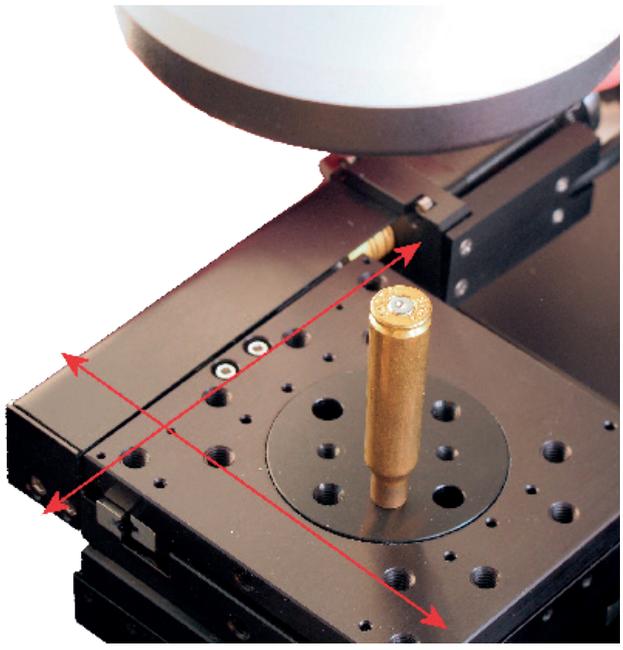
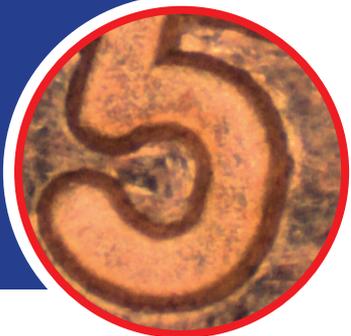


## Extended Exposure

The EE EF module includes a state of the art Extended Exposure function. Extended Exposure function can combine images at different exposure times and combines the images into one single image with perfect exposition.

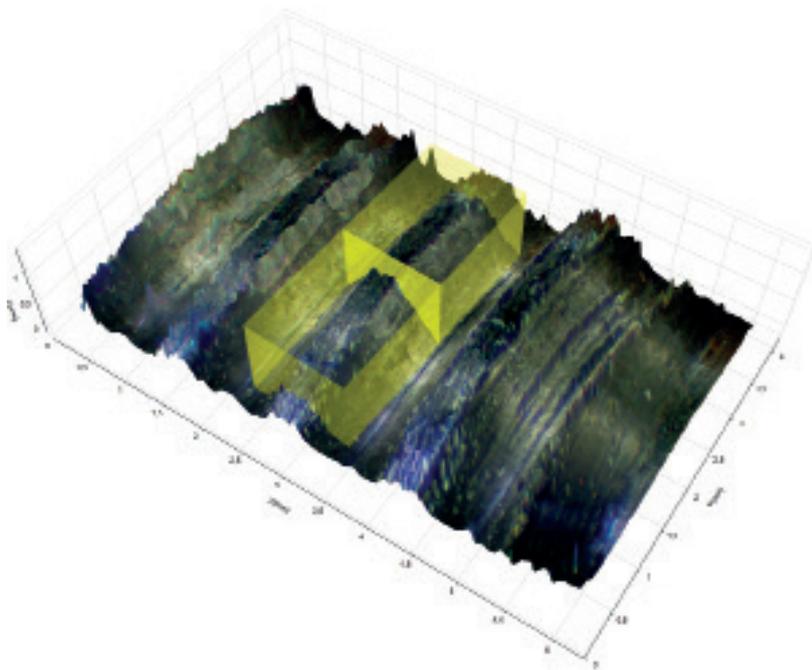
# Stitching

With its intuitive user interface both automatic and manual stitching of single captured images, can be performed fast and precise with DeltaPix InSight..



# 3D Topography

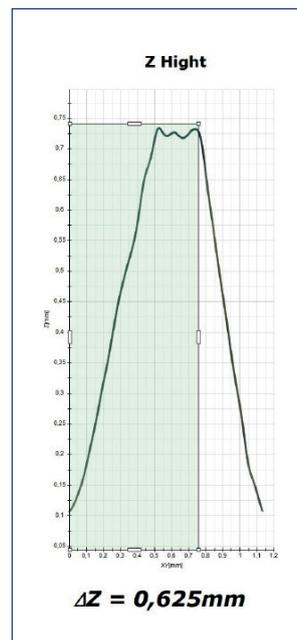
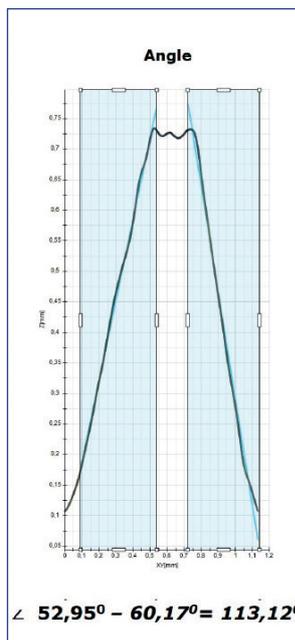
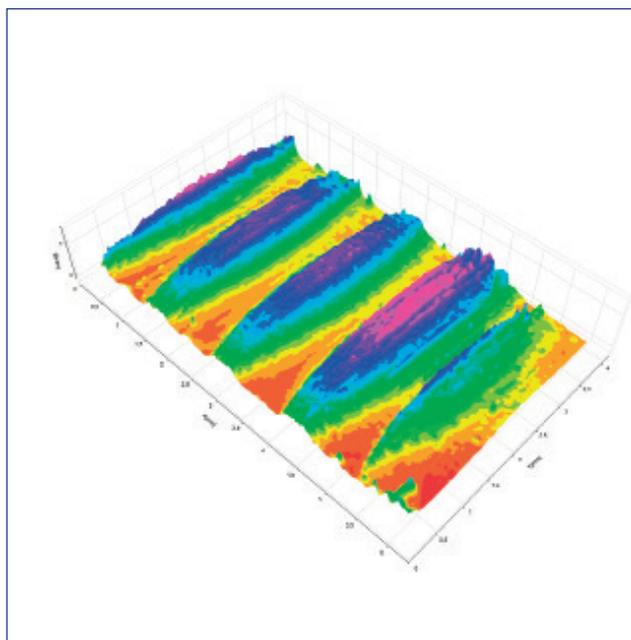
Extend the visualization and measurement from 2D to 3D.



With the 3D module in InSight, it is possible to display a 3D model of the specimen under observation.

Displaying the 3D model in its true color or fake color to better illustrate the height difference in the specimen.

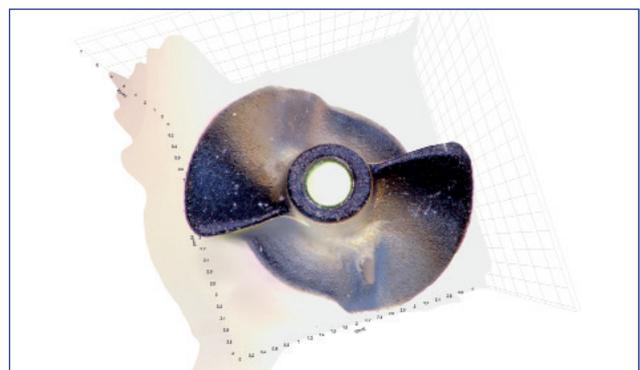
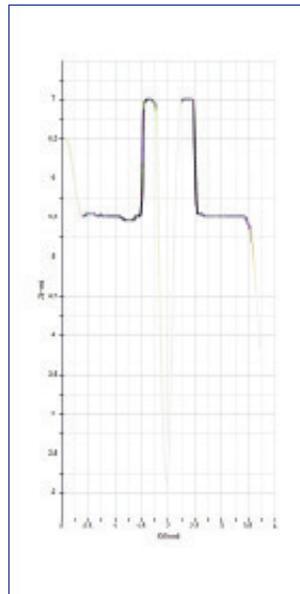
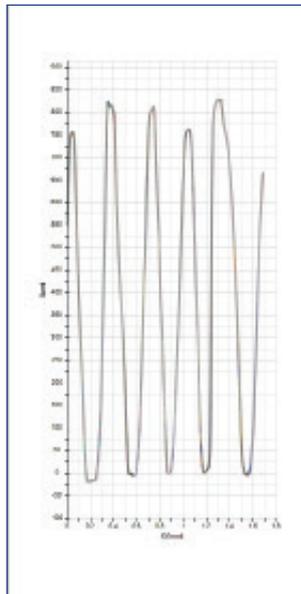
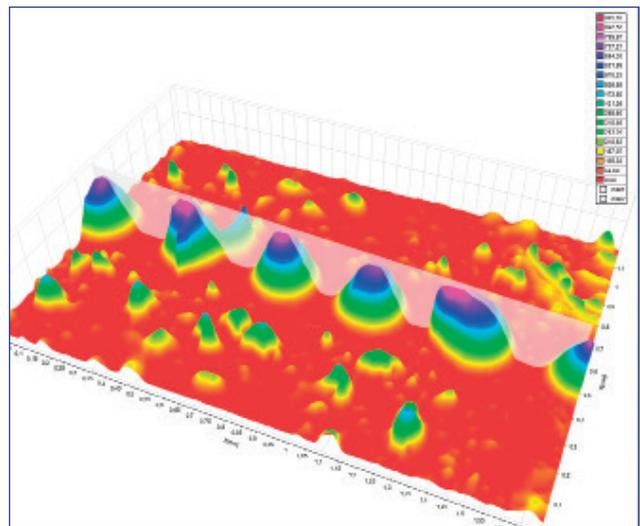
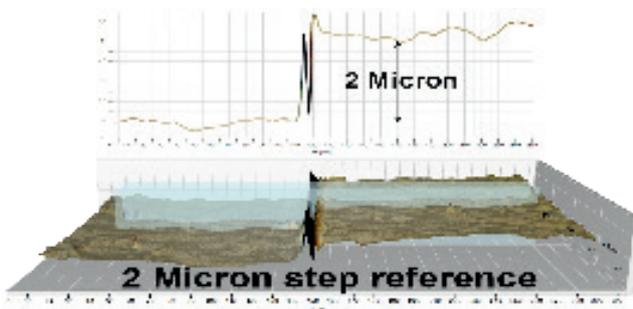
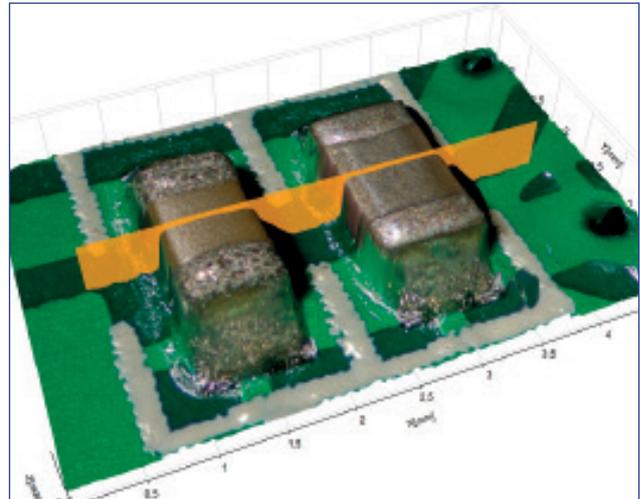
This is a 3D rendering of a screw



# 3D Measurements

Comprehensive, intuitive 3D measurements.

With the 3D Topography module, surface analyzing, 3D measurement. 2D parameters like angle, distance, and area can be visualized and measured in 3D without limits as well, and as easy as if it was in only two dimensions. With 3D Topography, it is possible to display all complex details in true color, like it not seen elsewhere.

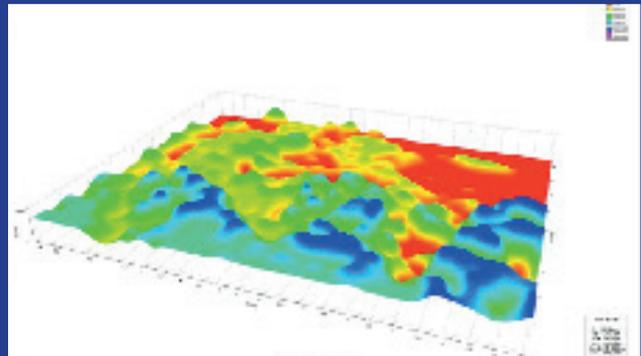
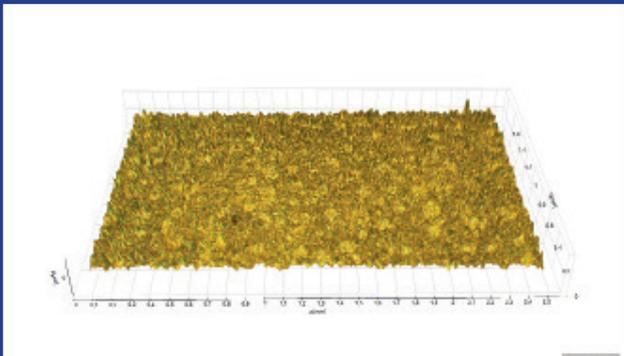


# Roughness Measurement

DeltaPix InSight offers a non-contact roughness measurement according to guidelines of ISO 25178-2:2012.

The software can be applied in various applications where surface textures need to be analyzed. The implementation of surface roughness measurement is based on the data collected from topography analysis thus the need for a third party add on software is eliminated for most applications.

Roughness measurement of a sample, in 3D with fake coloring



The data shown in a panel in the lower right corner is the results of the Roughness 3D calculations.

- Sq: Root mean square height of the scale-limited surface
- Ssk: Skewness of the scale-limited surface
- Sku: Kurtosis of the scale-limited surface
- Sp: Maximum peak height of the scale limited surface
- Sv: Maximum pit height of the scale limited surface
- Sz: Maximum height of the scale-limited surface
- Sa: Arithmetical mean height of the scale limited surface

# Automation, Stage and Microscope Control

DeltaPix motorization modules make it possible to add automatization and control for XY, focus, and zoom motors. The motorization modules can be combined with other software modules to allow the user to perform automated tasks like Extended Focus images with up to 250 focus positions, 3D topography of a sample surface, do scanning, time-lapse recording in up to 100 positions, looped image acquisition, and much more.

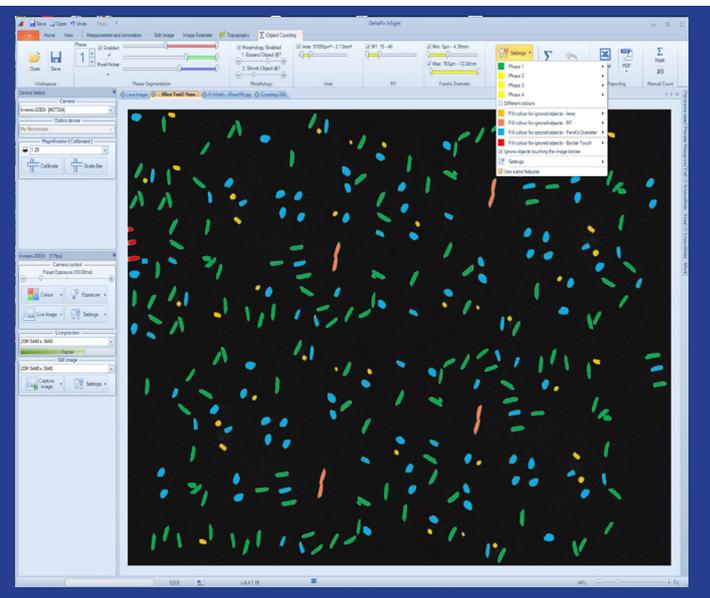


## Microscope And Stage Interface

The Interface module can interface to a variety of motor controllers (e.g. Prior, Märzhäuser, Ludl, Zeiss via MTB server), and can even control a mix of these.



# Segmentation, Counting, and Multi-phase Analysis



The Multiphase counting module can utilize up to four phases.

A counting phase is defined by a set of features, like RGB color range and geometrical features.

Preprocessing operations can be done using morphological erode or dilate operations.

Object discrimination is done using the geometrical features area, M1, and Ferret minimum/maximum distance. The geometrical features can be:

Individual for each phase. This makes counting of objects with different geometrical features possible.

This means that all phases use the same geometrical features. Used when counting objects only segmented by color.

For multiphase counting, an area percentage of each object is calculated, this makes multiphase percentage calculations easy.

The setup is easy and intuitive with interactive fake-color marking of counted objects and an indication of rejected objects.

The counting result can be exported to an Excel spreadsheet for further processing and analysis. The Excel report generator does not require the installation of Excel.

PDF reports can also be generated directly.

All settings can be saved in a dedicated workspace – this makes switching between different counting scenarios quick and easy.

## DeltaPix InSight Modules

DeltaPix InSight Modules											
InSight Software <small>Module functions. Modules can be combined to get multiple functionalities.</small>	InSight Basic	EE/EF module	Z-module	XY-module	Autofocus	Zoom Module	Topography & Rough	Segmentation and Counting V2.00	Multiphase Segmentation and Counting	DS-module	Interface
<b>Basic features</b>											
Exposure, gain, white balance, and other camera settings	X										
Calibration of multiple optical systems	X										
Insert of user definable calibration bar	X										
Snapshot mode for CCD cameras	X										
Force and add colors	X										
Shading correction	X										
Save in JPG, JPG2000, BMP and TIFF	X										
Freely configurable GUI	X										
Multiple cameras connected simultaneously	X										
Advanced hotspot removal	X										
Language selection (14 different languages, including Chinese and Japanese)	X										
Online manual	X										
<b>Advanced functions</b>											
Annotations and measurements on live and captured images	X										
Measurements from multiple images to single CSV file	X										
Reports (Excel, PDF and CSV)	X										
Comprehensive Image processing	X										
Extended focus (works also with stereo microscopes)		X									
Extended exposure		X									
Manual stitching		X									
Multiphase counting									x		
Automatic counting, segmentation and area calculation								X	x		
Interface to all "Direct show" cameras										X	
Motor control			X	X							
XY- motor control				X							
Z-motor control			X								
Automatic extended focus			X								
Video and time laps recording	X										
Automatic stitching and multi area scanning				X							
Z-measurement							X				
Control of Zeiss motorized microscope and readout the objectives via MTB											X <sup>1</sup>
Controlling Prior, Marzhauser, Ludl stages											X <sup>2</sup>
Auto focus					X <sup>3</sup>						
Motorized zoom control						X					
3D Topography							X				
Rough measurement							X				

Added features



Minimum System requirements:

- Intel I5 (quad-core) CPU
  - 4 GB of RAM
- 15 GB of free disk space
- Windows 8, Windows 10 64Bit version

Recommended System requirements:

- Intel I7 8th gen or newer
  - 8 GB of RAM or more
  - SSD drive 120GB or more
- Graphic Card Nvidia GT 1030 or better
- Windows 8, Windows 10 64 bit version
- A high-resolution monitor

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