

From Eye to Insight

Leica
MICROSYSTEMS

POWER UP ROUTINES WITH EFFICIENCY AND COMFORT

Visoria M materials microscope



VISORIA M MATERIALS MICROSCOPE

Experience enhanced efficiency and comfort in your daily microscopy routine. The Visoria M materials microscope is for applications performed in the metal, electronics, and polymer industries as well as for materials science labs.

Streamline your workflows with encoded functions, optimized light settings, and other microscope features. You can also be more comfortable and minimize strain thanks to the microscope's ergonomic design.

VISORIA M DIGITAL MATERIAL MICROSCOPE

The Visoria M digital material microscope without eyepieces offers a number of practical benefits.

Work without eyepieces by going digital

- > Work in a comfortable and relaxed position by viewing images directly on a tablet.
- > Visualize and document your work steps quickly and discuss image results easily with your colleagues.
- > Save space on your workbench without the need for a computer.

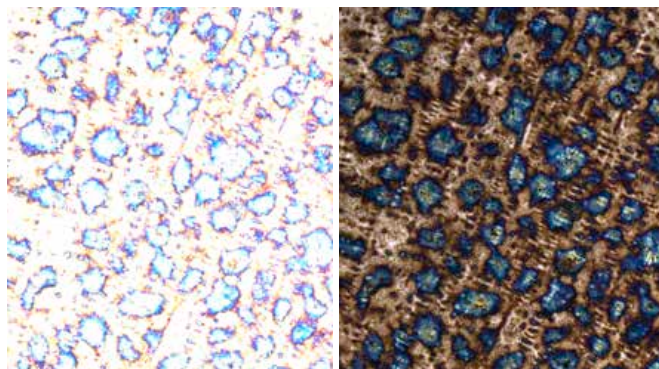


EFFICIENCY THROUGH ENCODED FUNCTIONS

Increase the efficiency of your routine microscopy tasks. Save valuable time with simplified documentation and encoded microscope functionality, allowing you to focus on your sample.

Save time with optimized light settings

Spend more time viewing and examining samples with Visoria M. If you change the microscope's magnification or contrast method, there is no need to manually adjust the brightness thanks to the light management function. The illumination settings are automatically applied thanks to the microscope's encoding.



Observe samples with optimal illumination: Left image taken without and right one with the light management function.

Simplify your documentation

You can quickly capture sample details with a press of a button while keeping your eyes on the image. The button for image acquisition is easily accessible on the Visoria M microscope stand.

When you store an image for documentation, selected system settings are automatically saved along with the meta data of the image.

The scale bar is automatically adjusted and added to the image which increases efficiency and saves you valuable time.



Save time and effort by snapping your image with a press of a button on the microscope stand.

Operate your microscope with ease

Perform daily routines rapidly and reliably thanks to the intuitive operation of Visoria M.

- > Easily find the appropriate aperture for each objective with color coding.
- > Protect your samples and objectives from accidental damage with the built-in focus stop.
- > For finer focus at higher magnification, use the three-gear focusing system - coarse, medium, and fine.



The aperture diaphragm's scale on the incident-light axis has color markings matching the objective color codes.

MORE COMFORT WITH ERGONOMICS

Work with a comfortable posture by taking advantage of the symmetrical positioning of controls and ergonomic accessories. These features help reduce neck and back strain, even during extended hours at the microscope.

Stay comfortable while working

Visoria M adapts to your needs, allowing a proper posture and reducing the risk of neck and back strain during long hours at the microscope.

Work comfortably with aligned shoulders and ergonomic hand and arm positioning thanks to the symmetrical layout and height adjustment of the focus and stage control knobs. You can operate Vistoria M with just one hand.

Easily switch between right- and left-handed operation, making it especially beneficial when you share the microscope with other users.



Users can maintain a comfortable position while working with Vistoria M.

Adapt your microscope with ergo accessories

You can maintain an upright posture thanks to the adaptability of Vistoria M. Choose from a range of ergonomic accessories to suit your needs.

- > **Ergonomic tubes:** Choose the 15° ergonomic tubes or adjustable VarioTubes (0–35° tilt) for a relaxed head position and flexible viewing angles.
- > **Ergonomic modules:** Insert ErgoModules below the tube to adjust the eyepiece height for a comfortable sitting posture.
- > **Ergonomic lift:** The optional ErgoLift enables easy height adjustments of the microscope.



Flexibly adapt the eyepiece viewing angle and height as well as the overall microscope height.

Reduce strain with fewer repetitive motions

Need to spend extended hours working at your microscope? Reduce the risk of discomfort and repetitive strain injury with Vistoria M. Minimize repetitive movements by adjusting the height and torque of the stage and focus control.



The XY stage position and focus knobs are easily accessible and adjustable with one hand.

POWERED BY THE ENERSIGHT SOFTWARE PLATFORM

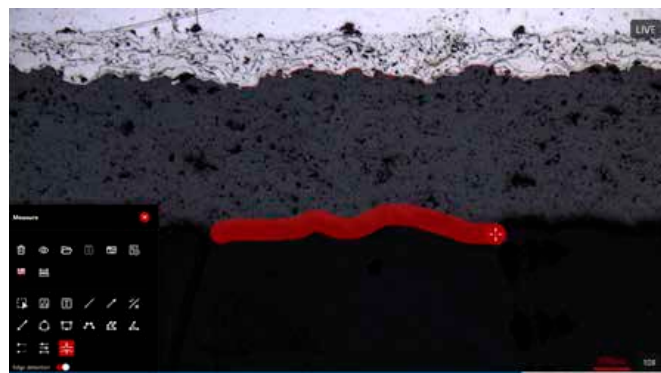


Simplify and streamline your workflow with the Vistoria M materials microscope and Enersight software platform. It helps you compare, measure, and share data seamlessly with a single intuitive interface.

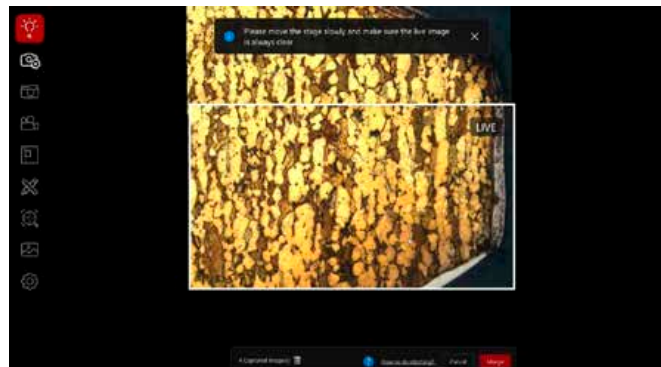
Left: Vistoria M digital material microscope with Flexacam i5 camera and Enersight software.

Key advantages:

- > Determine the thickness of coatings or layers using the Layer Thickness Measurement function.
- > Observe samples with a larger field of view and higher resolution using the XY Stitching with Manual Stage function.
- > Acquire sharp images of samples with extended depth of field (EDOF).
- > Capture images with optimal illumination and camera settings by using the Quick Brightness function.
- > Optimize images by automatic correction of shading due to uneven illumination.
- > Gain a better understanding of samples by merging multiple images from different contrast methods, such as brightfield and darkfield.



The semi-automated measurement provides the minimum, maximum, and average thickness information of a coating or layer.



A larger area of a sample with higher resolution can be observed using the XY stitching function.

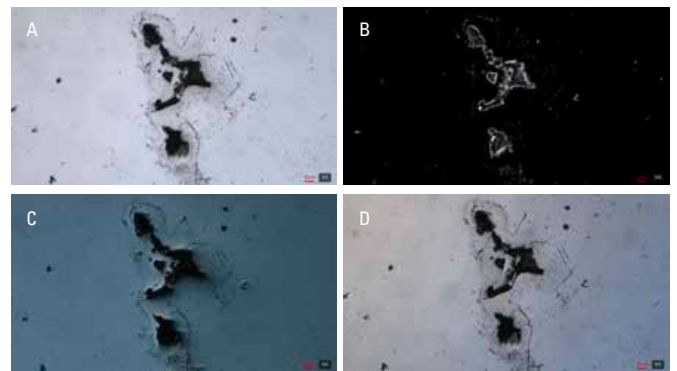
VISORIA M MATERIALS MICROSCOPE

Visoria M is designed for routine inspection concerning quality control, failure analysis, and R&D in the metal, electronics, and polymer industries, as well as for materials science labs.

With the Vistoria M materials microscope, you can examine the microstructure of metals, alloys, electronic and mechanical components, composite materials, glass, ceramics, and more. When used with the Eversight software platform, you can also perform cross-section or layer-thickness analysis.

Visualize sample details with the right contrast

For industrial and material inspection and R&D, Vistoria M allows you to see the details of structures and defects, such as scratches or contamination, on your samples. It uses a variety of contrast methods, including brightfield, darkfield, polarization, differential interference (DIC), oblique illumination, and fluorescence. In particular, the oblique illumination helps you improve the visualization of surface topography.



Images of the same inclusions acquired with A) brightfield, B) darkfield, C) DIC, and D) oblique illumination using Vistoria M.

Quick sample overview with the 0.7x Macro objective

When you need to visualize macro structures, you can go quickly from a sample overview to observing the fine details with the optional 0.7x Macro objective. It enables you to see a sample diameter view of approximately 36 mm at a glance and achieve a fast orientation and overview. Compared to the overview obtained with conventional objectives, you can save time with the Macro objective when screening samples.

You can also visualize the fine details of your sample at higher magnification using a wide range of objectives.

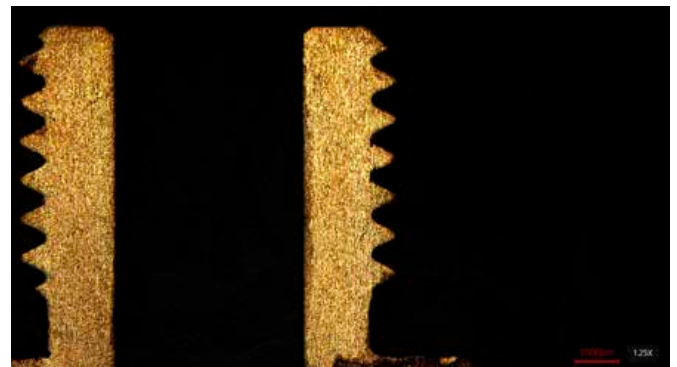


Image of a coated thread sample acquired with Vistoria M using 0.7x Macro HCX Plan Apo EPI objective.

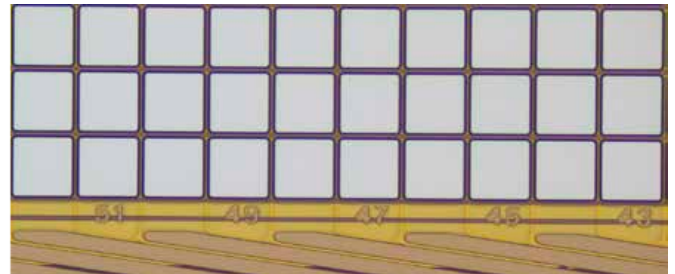
MICROSCOPE CONTRAST METHODS AND THEIR APPLICATIONS

Efficiently visualize and analyze samples of your parts, components, and materials using various contrast methods with the Visoria M materials microscope. You can reveal surface structures with brightfield, darkfield, DIC, polarization, and oblique illumination concerning applications in the electronics, metal, and polymer industries as well as material science.

Brightfield (BF)

Perform measurements of sample features using incident-light brightfield contrast.

Visoria M can be used for various types of routine inspection tasks related to quality control, failure analysis, and R&D.



Electronic display, 5x, BF

Darkfield (DF)

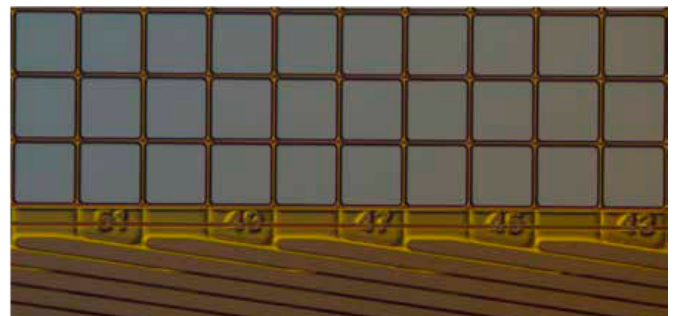
Detect surface structures and contamination with incident-light darkfield contrast.



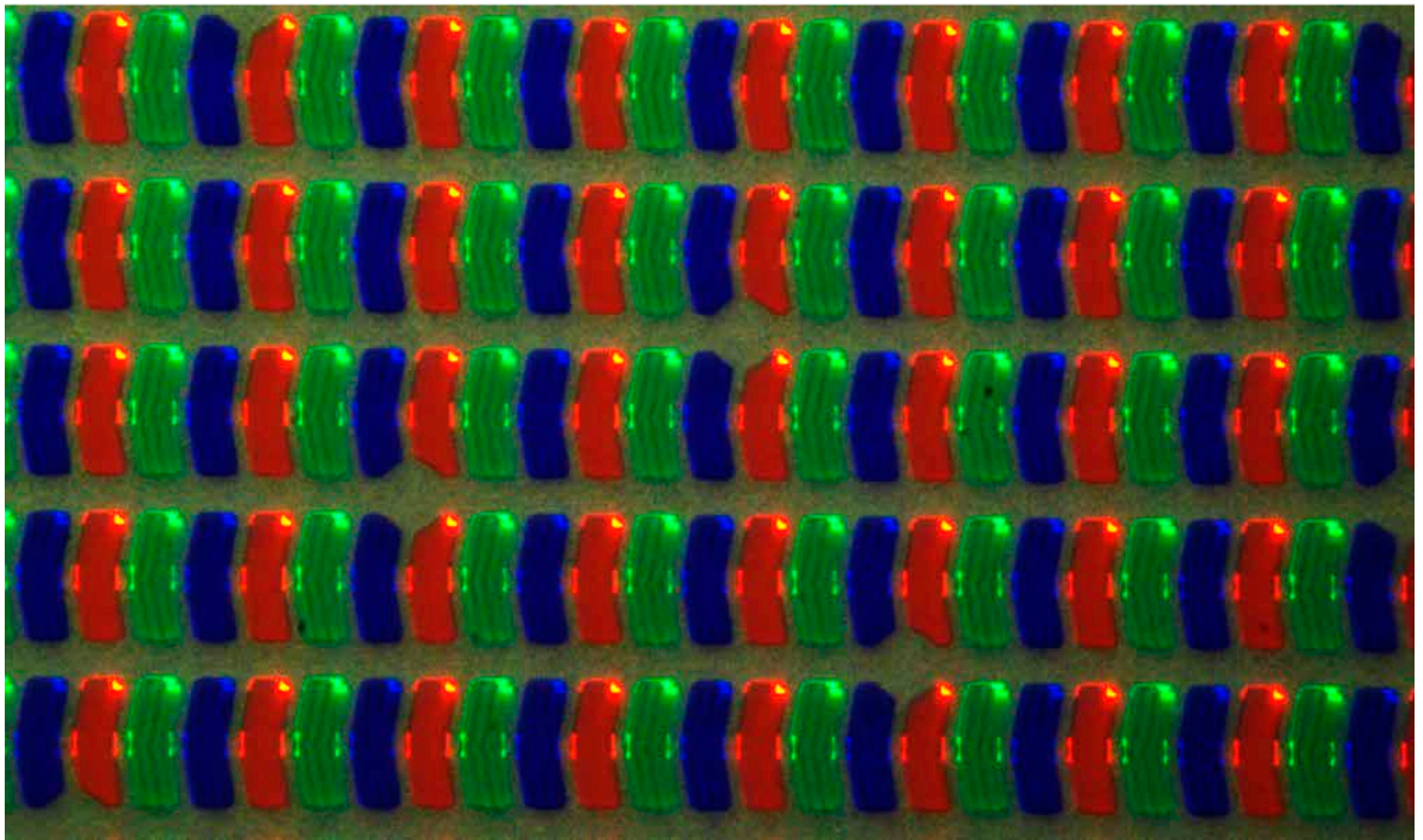
Electronic display, 5x, DF

Differential interference contrast (DIC)

Examine sample surfaces with DIC to visualize topographic differences.



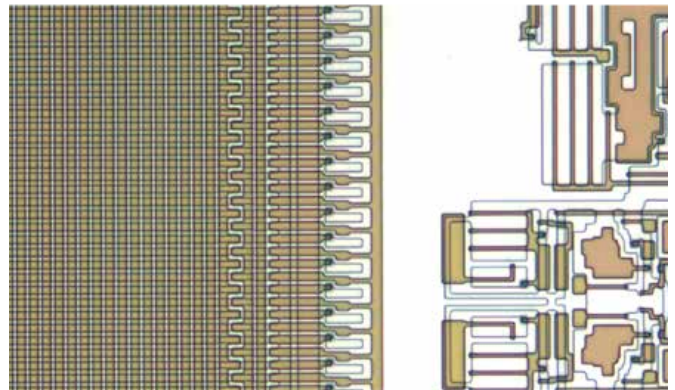
Electronic display, 5x, DIC



Electronics

Elevate your routine inspection process for quality control in the electronics industry with the Visoria M materials microscope. Harness the power of multiple contrast techniques, including brightfield, darkfield, oblique illumination, differential interference contrast (DIC), and polarization. These methods allow you to see the details with clarity when examining PCBs, microchips, and microelectronic assemblies.

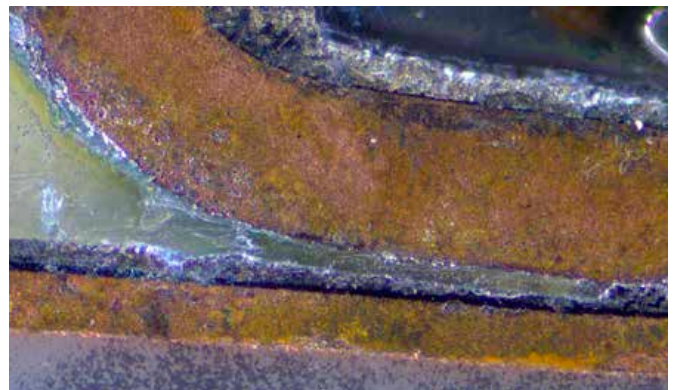
You can detect small defects and irregularities on product samples with Visoria M, helping you to streamline your inspection processes and ensure high quality standards.



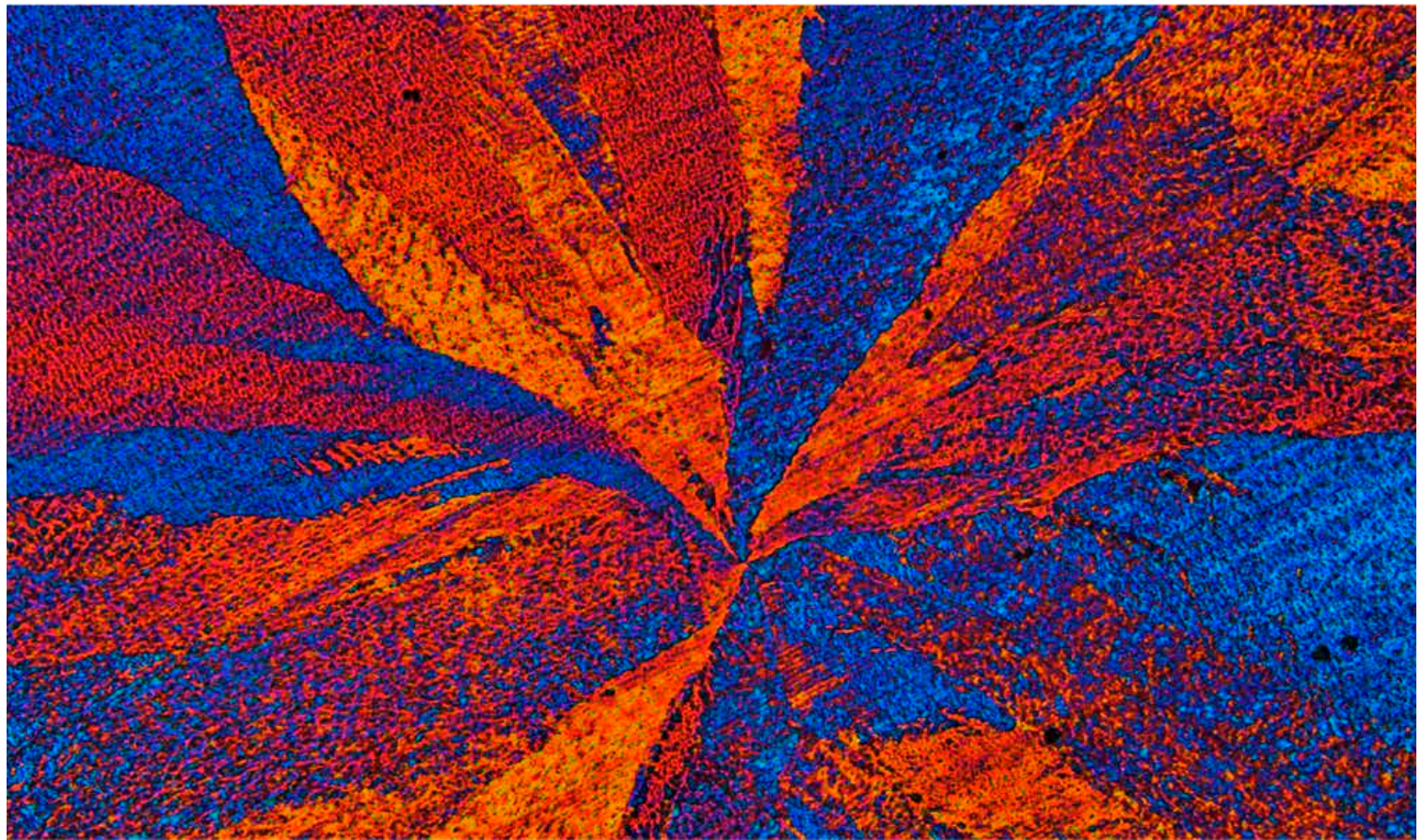
Microchip structure, 20x, BF



Electronic display, 20x, DIC



PCB cross section, 20x, DF

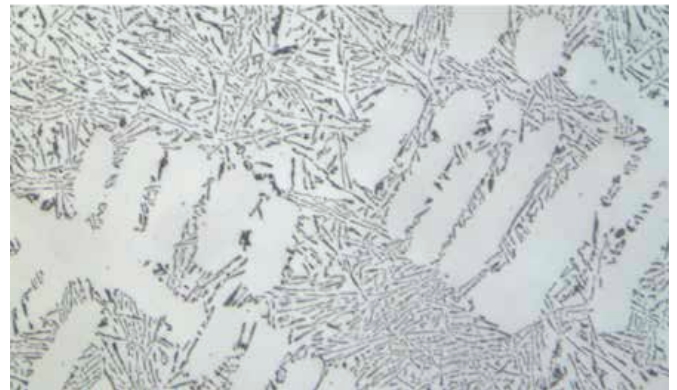


Materials and metals

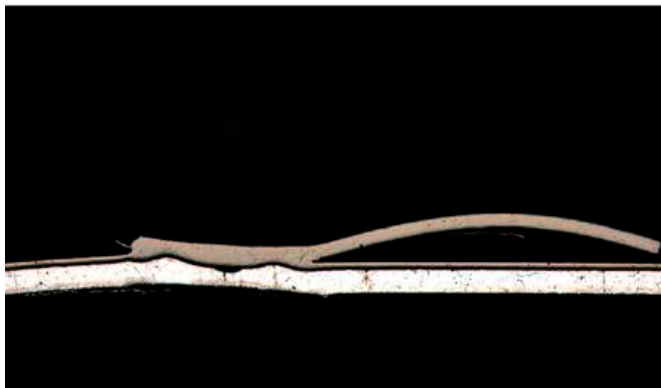
Visoria M helps you perform routine inspection for applications concerning materials and metals. It enables the detection and localization of specific sample structures and defects.

For the detection and documentation of macro structures, the 0.7x Macro objective helps you obtain a large overview of the sample.

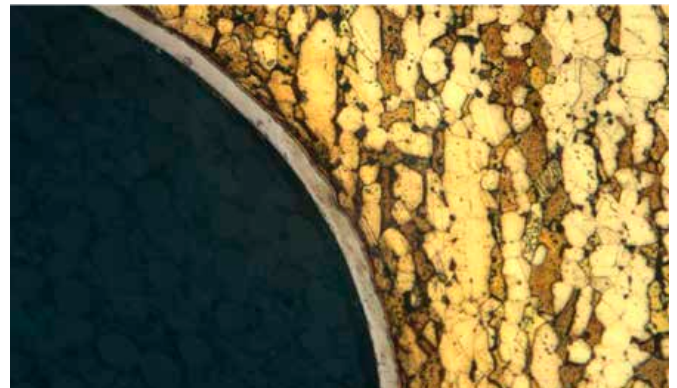
Easily switch between different magnifications and contrast methods to visualize the important structures on your samples for quality control and failure analysis.



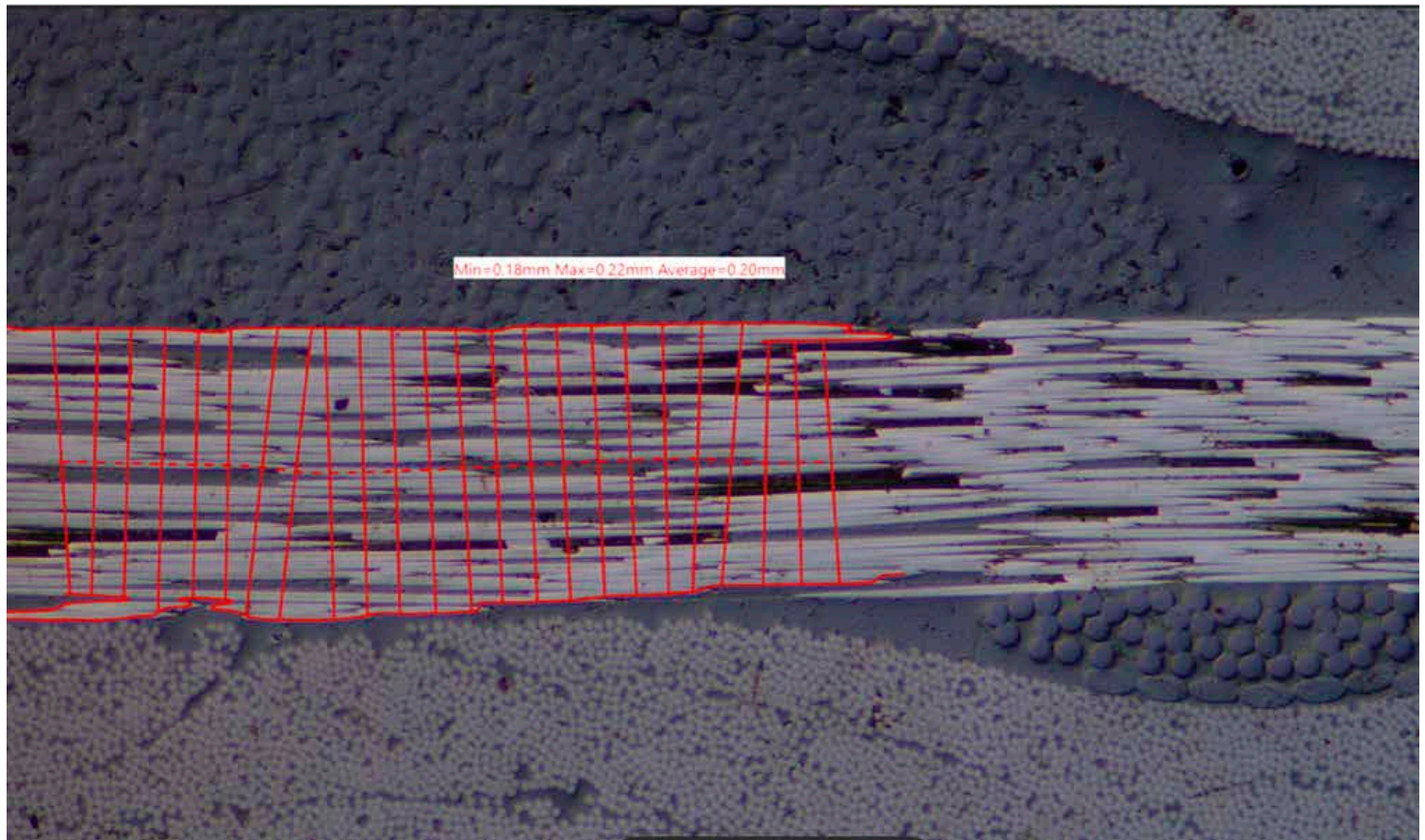
Aluminum alloy, 50x, BF



Welded layers, 0.7x Macro objective, BF



Cross section of coated thread, 50x, BF



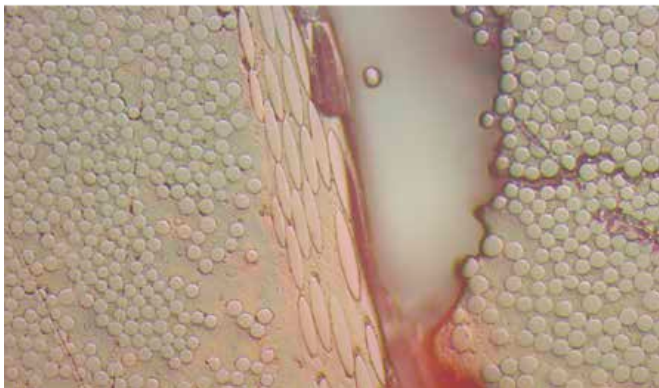
Composite materials

Unlock the full potential of composite materials, known for their superior strength and lightweight properties, with Visoria M. This microscope is designed for routine inspection and quality control.

Visoria M offers various contrast techniques which help reveal intricate details and fine defects during inspection, ensuring that the materials meet your quality standards.



Composite material, 10x, DF



Composite material, 10x, BF



Composite material, 10x, polarization

Specifications Visoria M

Microscope	
Size and weight	Length: 410 mm, width: 331 mm, height: 505 mm, approx. 18 kg (depending on configuration)
Stand	Illumination toggle buttons with status indicator, image capture button, built-in analyzer slot, antimicrobial surface with AgTreat according to ISO 22196
Optics	
Nosepiece	Encoded 5x (M32), encoded 6x (M25)
Eyepieces (FOV)	20 / 22 / 25 mm
Tubes	Wide range of standard, ergonomic and phototubes available, with different beam splitters available
Digital version	Digital version with 10" screen / tablet
Ergonomic accessories	Wide range of ergonomic accessories available (ErgoTubes, ErgoLift, ErgoModules)
Encoded illumination management	IL and TL: High-power white LED, encoded 4-color fluorescence illumination, further external light sources on request (non-encoded)
Incident light axis	Manual encoded, 4-fold filter turret, color-coded diaphragm assistant; aperture diaphragm, slots for analyzer / polarizer, two filter positions
Fluorescence light axis	Optional
Incident light (IL)	Methods: Brightfield (with BF cube or Smith reflector), darkfield, DIC, fluorescence, oblique illumination, qualitative polarization
Transmitted light axis	Manual, fixed and flip-top condenser operation with color-coded diaphragm assistant
Transmitted light (TL)	Methods: Brightfield, darkfield, phase contrast, DIC, qualitative polarization
Operation	
Stage	Stages are exchangeable and height-adjustable. manual XY-stage 76 x 50 mm / 3-plate stage (4 x 4), additional stages (incl. rotating or large-sample stages)
Stage control	Left-, right-handed stage, torque-adjustable handle
Focus drive	Height-adjustable focus knobs, 19 mm travel range, maximum 28 mm total stage stroke depending on stage and condenser type, 2-gear focus drive (coarse / fine) with 140, 4 and 1 µm scale, torque adjustment, and adjustable upper focus stop
Accessories	
Analyzer	Fixed, 180°, 360°
Polarizer	Fixed, 0 / 45 / 90°, 90° with rotatable lambda plate, 360°, fixed with lambda plate
General specifications	
Supply voltage	100–240 V AC, 50 / 60 Hz, power consumption max. 15 W
Ambient conditions	15–35°C, relative humidity max. 80% up to 30°C (non-condensing)

CONNECT
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