

Imaging Modules

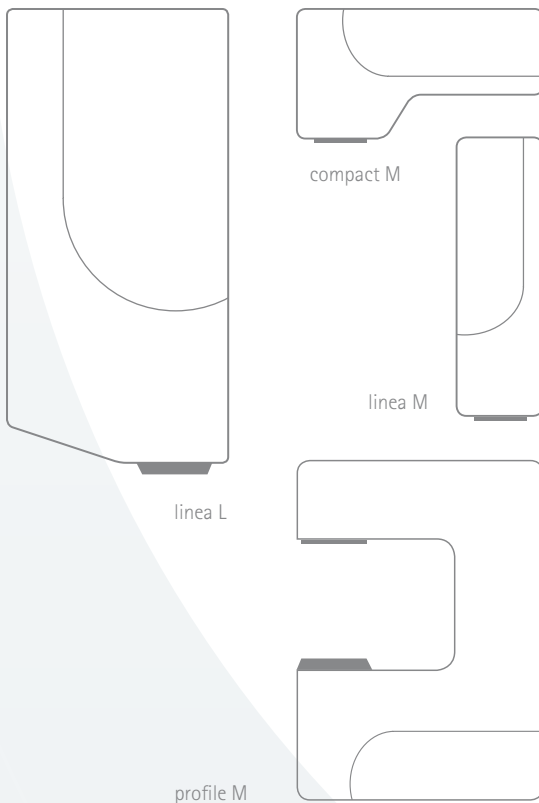
digital microscopes and vision sensors

Plug & Play imaging and micro-vision devices for
Life Science – Medical & Test – Measurement applications

We Automate Microscopy



Microscopes as vision sensors.
One Imaging Module for one application.
Not more not less



4 form factors, countless variations

- Innumerable variants and light contrast versions
 - Ultra-compact form factors for easy integration, robust and clear aluminum design
 - Lenses and sensor integrated, no additional objectives necessary
 - Optimized, fixed magnification factors
 - Sony Pregius 3 MP and 5 MP sensor, monochrome and color
 - Only one cable from the module (USB 3.1w / USB-C)
 - USB 3.0 and GigE available
 - Easy to use with intuitive user interface
 - Open software architecture and free OptoViewer
 - Many application software plugins available
 - Moderate priced
-
- 40 years experience in HW & SW Made in Germany
 - Easy product selection with productfinder (on website)

www.opto-gmbh.com



Designed, manufactured and tested in Germany to the highest optical standards.



Imaging Modules

are the Opto own standard Image Sensors for Machine Builders and Integrators

Why are Imaging Modules needed?

1 Performance

Many existing 'all-in-one' sensors, optics, and smart cameras don't meet the combined resolution and performance demands of emerging vision and inspection applications

2 Consistency

New 'Industry 4.0' applications and AI imaging applications require consistent images to be captured, leading to a need for dedicated, high performance optoelectronic configurations.

3 Simplicity

Users are becoming increasingly confused by the technical challenges presented by specifying a simple, high performance imaging setup in a market that is already well saturated with 'me too' products that are difficult to understand and differentiate between.

- Perfect combination of integrated optics, sensors and lighting – tested and optimally calibrated by specialists
- Significant shortening of system development times for machine builders and integrators
- One image module for one image task. Thus continuously repeatable imaging performance and guaranteed reproducibility in the application
- Open software architecture provides easy, seamless connectivity to virtually any image processing package
- The free OptoViewer 2.0 software allows quick access, measurements and has useful plugIns



Seamlessly integrated,
perfectly optimised optic
to sensor interface

Test | Measurement

The Opto Imaging Modules are available with integrated, diffuse LED ring light illumination in fixed and segmented version and a coaxial incident LED.

Within the different form factors many magnifications, working distances and optical contrast techniques are available.

USB3.0 versions or GigE versions for machine builders and integrators.

Applications

- SMD inspection
- Image based hardness testing
- Crimp analysis
- Quality & control needs
- Documentation units
- Industry 4.0 sensor solutions
- Overview and detail digital zoom

Materialography

Customer-Task

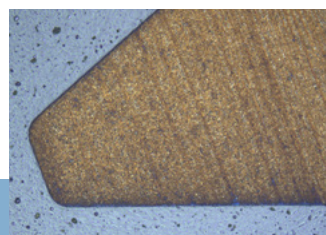
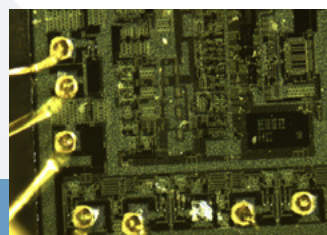
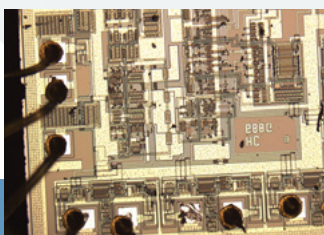
- Grain & structure analysis of metals
- Predictive maintenance of production processes
- Quality control of mechanical parts
- Damage evaluation of metal malfunction

Solution

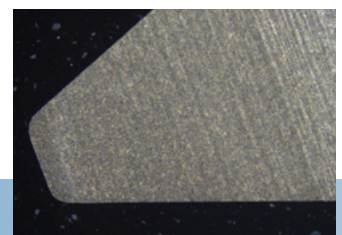
- Imaging Module compact-M (MVM)
- Small Footprint with (optional) portable stand and case
- Easy to use and free software OptoViewer 2.0
- Ring- and coaxial illumination integrated
- Direct measurement without calibration
- USB one cable solution

Advantage for customer

- Pure all in one digital microscope
- Micrometer / pixel resolution with large FoV
- High contrast and color stability
- Repeatability of image
- Open SW architecture
- Easy machine integration
- Bright and darkfield in one unit

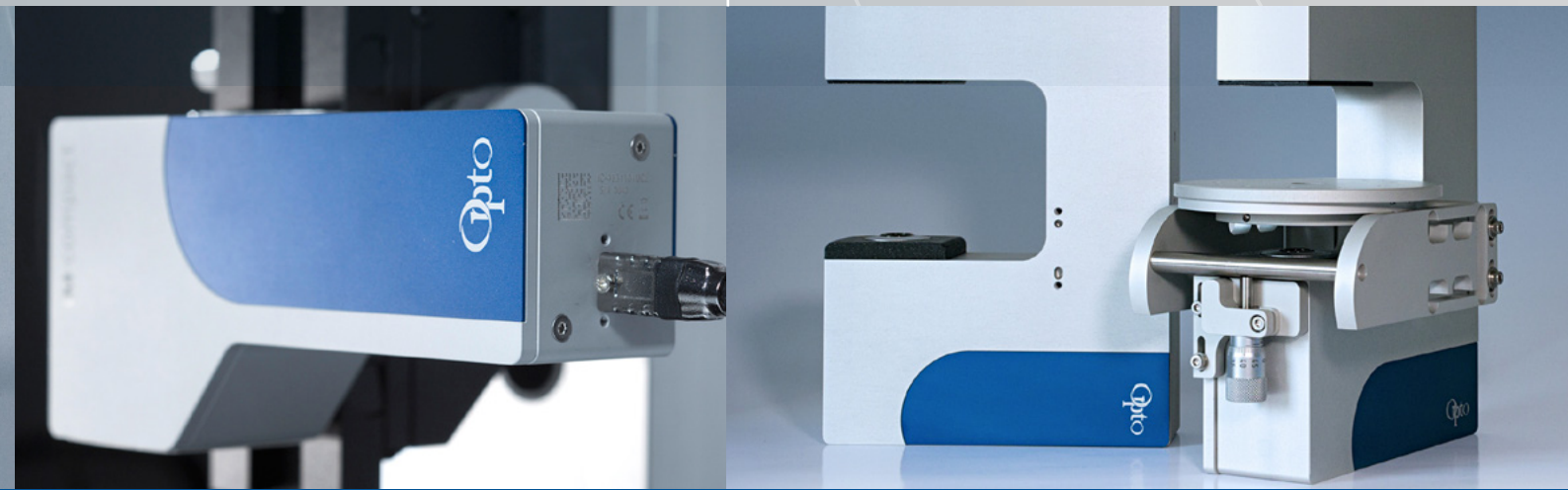


Brightfield



Darkfield

Digital microscope with integrated illumination
in upright or transmitted light versions



Life Science | Medical

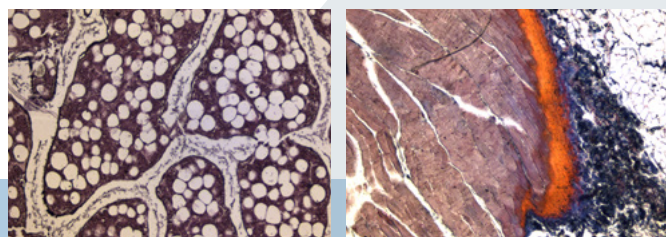
For BioMed applications the transmitted light modules with 5x, 10x and 20x in the profile-M design are ideal.

All modules are ultra compact, coming with the free OptoViewer and are programmable with many common SW packages. That makes them universal for scientific R&D needs as for high throughput screening solutions.

For microscopy automation needs Opto offers its own OEM BioScreen platform for multifluorescence imaging, motorized X-Y-Z hardware and autofocus functionality.

Applications

- Slide screening of Pathology biopsies
- Blood / Urin analysis of smears or in flow
- IVF for visualizing Embryos
- Low contrast biomaterial microscopy
- Microfluidic, Flow Cytometry Image processing
- Automated Multifluorescence Image Analysis
- Digital and quantitative image based PCR
- Digital microscopes for Lab on a Chip automation



Microfluidic

Customer-Task

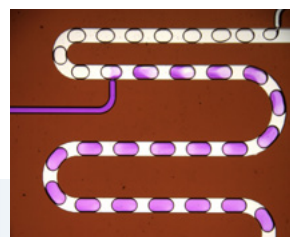
- Screening
- Reaction kinetics
- Rare molecule detection
- Gene expression detection
- Single-cell analysis
- Pathogen detection
- Quality control & assurance

Solution

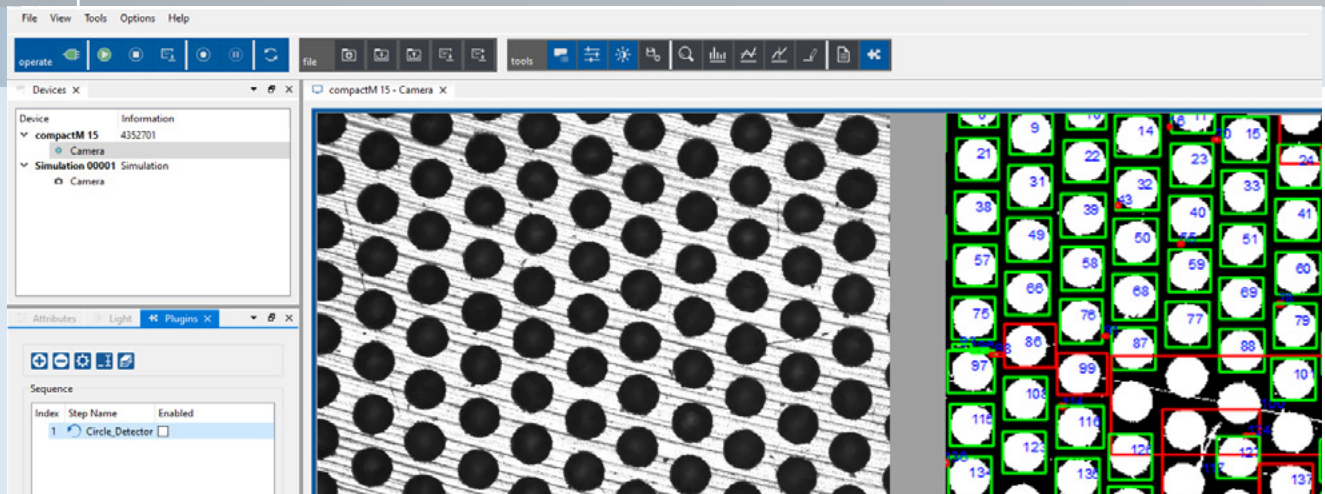
- Imaging Module profile-M
- Monochrome or colour version
- Easy to use and free OptoViewer 2.0 software
- Image processing
- PlugIns available
- Integrated transmission illumination
- Direct measurement without calibration
- USB 3.0 / GigE available – Plug and Play

Advantage for customer

- Pure all in one digital microscope
- Nano / pixel resolution with large FoV
- High contrast and color stability
- Repeatability of image
- Open software architecture
- Easy machine integration
- Ultra compact design



Opto automates microscopy „reduced to your needs“
Highest hardware standards with own application driven
software solutions



OptoViewer 2 software

All Imaging Modules are delivered with the free OptoViewer. The simple user interface enables easy installation of the camera, drives the different light sources and includes many additional functions such as:

- Settings presets files
- Pre-calibrated magnification settings
- Flat field correction
- One-click export to image file storage
- Crosshair / grid / scale generator
- Drawing / annotations (basic, shapes, bitmaps, text)
- Standard measurement functions
(point to point distance, angle, focus ...)
- PlugIns for special applications
(blob analysis, automated hole diameter measurement...)
- SDK's and toolkit for NI LabVIEW and Vision Builder

The goal is that the Opto Imaging Modules perform to its best within every application.
From plug&play to a deep integration.

We offer with the free OptoViewer a ready to use SW package with many ready PlugIns for automation of image analysis purpose. Many more will come to increase the value of every module over the time.

With an open SW architecture in mind, we offer many ready SDK and toolkits and offer application programming for machine builders and integrators.

Opto is your partner for Hard- and Software.
All out of one hand. One module for one application.

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