OPTIKA®
MICROSCOPES
ITALY


# Cameras & Digital Solutions

Cameras for Microscopy & Digital Scanner

# MICROSCOPE Cameras



## Icons

- Multi-Plug low voltage power supply
- Li-Ion Rechargeable battery
- CCD sensor
- CMOS sensor
- -- MP Camera resolution
- Cooling system
- USB-IN USB 2.0 input (mouse)
- USB-OUT USB 2.0 output
- USB 3.0 USB 3.0 output
- Tablet screen size
- Software included
- HDMI HDMI output
- SD/MicroSD slot
- Wi-Fi
- BlueTooth
- Mouse included

# Microscope Cameras


## MICROSCOPE CAMERAS

# USB CAMERAS - B Series


USB User-frienldy cameras for **general purposes.** Superb results and vivid details from standard to high resolution.

C-B1 1.3 MP | C-B3 3.1 MP | C-B5 5.1 MP | C-B10 10 MP | 4083.F33 3 MP

CMOS | USB-OUT

### USB 2.0 C-mount and Eyepiece Microscope Cameras

Cameras have become indispensable nowadays and OPTIKA is offering a line of remarkable solutions for digital imaging. OPTIKA B Series represents a cost-effective solution equipped with the latest technology sensors with more vivid colors and great contrast for stunning images.
This series features Aptina CMOS sensor with excellent color reproduction, significantly high frame rates and several resolutions available to match any customer need.
Thanks to the convenience and simplicity, being extremely intuitive to install and operate, the OPTIKA B Series is recommended for educational and routinary microscopes, also as eyepiece cameras (no need for additional adapters/rings in case of monocular and binocular microscopes).
All the main operating systems like Windows, IOS, Linux are supported. Software included: Optika Vision Lite, Optika LiteView and Optika ProView.

# USB CAMERAS - B Series - Specifications

| | C-B1 | C-B3 |
|---|---|---|
| **Digital camera resolution** | 1.3 MP (1280 x 1024) | 3.1 MP (2048 x 1536) |
| **Signal output** | USB 2.0 | USB 2.0 |
| **Sensor Size** | 1/3" | 1/2" |
| **Sensor technology** | CMOS | CMOS |
| **Sensor type** | Aptina CMOS | Aptina CMOS |
| **Image format** | 5/4 | 4/3 |
| **Pixel size** | 3.6 x 3.6 µm | 3.2 x 3.2 µm |
| **Frame rate full resolution** | 15 fps (1280 x 1024) | 12 fps (2048 x 1536) |
| **Frame rate other resolutions** | 50 fps (320 x 256) | 45 fps (680 x 510) |
| **Sensitivity** | 1 V/lux-second | 1 V/lux-second |
| **Signal / noise ratio** | 44 dB | 43 dB |
| **Dynamic range** | 71 dB | 61 dB |
| **ADC conversion** | 8 Bit | 8 Bit |
| **Color Depth** | 1 Bit; 4 Bit; 8 Bit; 24 Bit | 1 Bit ; 4 Bit; 8 Bit; 24 Bit |
| **Exposure Time** | 0.14 msec - 2 sec | 0.244 msec - 2 sec |
| **Binning** | 1x1; 2x2; 4x4 | 1x1; 2x2; 3x3 |
| **IR filter** | 380-650 nm (IR-cut filter) | 380-650 nm (IR-cut filter) |
| **Camera power** | PC USB | PC USB |
| **C-mount** | YES | YES |

**Accessories included:** 0.37x (for 23 mm eyepiece tube), 30 mm & 30.5 mm diameter (except 4083.F33), calibration slide, 1.8 m USB cable

# USB CAMERAS - B Series

**Conveniently installable** either on trinocular head or on monocular/binocular microscopes.



OPTIKAM FAST3 4083.F33

| 4083.F33 | C-B5 | C-B10 |
|---|---|---|
| 3 MP | 5.1 MP (2592 x 1944) | 10 MP (3584 x 2748) |
| USB 3.0 | USB 2.0 | USB 2.0 |
| 1\2.7" | 1/2.5" | 1/2.3" |
| CMOS | CMOS | CMOS |
| ISP Integrated Chip | Aptina CMOS | Aptina CMOS |
| 16\09 | 4/3 | 4/3 |
| 3.0x3.0 µm | 2.2 x 2.2 µm | 1.67 x 1.67 µm |
| 30 fps (1920x1080) | 7 fps (2592 x 1944) | 3.3 fps (3584 x 2748) |
| 7 fps (2304x1936) | 27 fps (1280x 960); 90fps (640x 480) | 38 fps (896 x 684) |
| 1.275 V/lux-sec (550 nm) | 0.53 V/lux-second | 0.31 V/lux-second |
| 32 dB | 40.5 dB | 34 dB |
| 62.7 dB | 66.5 dB | 65.2 dB |
| 8 bit | 8 Bit | 8 Bit |
| 8 bit | 1 Bit; 4 Bit; 8 Bit; 24 Bit | 1 Bit; 4 Bit; 8 Bit; 24 Bit |
| 330 msec | 0.294 msec - 2 sec | 0.4 msec - 2 sec |
| 1x1 , 2x2 | 1x1; 2x2; 4x4 | 1x1; 2x2; 4x4 |
| 700 nM | 380-650 nm (IR-cut filter) | 380-650 nm (IR-cut filter) |
| PC USB | PC USB | PC USB |
| YES | YES | YES |

# USB Cameras & Tablets PC - TB Series


**Unique Features**
> Simultaneous camera & power connection
> Equipped with the latest **Windows OS** & **Intel** processor
> Easily detachable, can be used as a laptop (keyboard included)

**Exclusive tablet PC, powerful and versatile for a great user experience. Always one step forward to ensure the latest technology!**

- For trinocular microscopes only
- A 2-in-1 solution that you can use like a PC, being Windows-based
- Powerful Intel processor ensuring top performance and speed
- High-resolution, vivid color graphic display
- Large touch screen of 10.1" with fast, responsive and smooth control
- Attached camera available in 3.1 MP (TB-3W) or 5.1 MP (TB-5W) resolution
- Holding solution for open discussion, 360° rotating
- Includes the user-friendly and intuitive Optika Vision Lite software

## TB-3W


Windows tablet PC with large **10.1" LCD touch screen**, combined with a **3.1 MP camera** to create the most advanced solution for digital microscopy.

## TB-5W


Windows tablet PC with large **10.1" LCD touch screen**, combined with a **5.1 MP camera** to create the most advanced solution for digital microscopy.

# USB Cameras & Tablets PC - TB Series

Perform **linear measurement** on your image with OPTIKA Vision Lite just by drawing a line!

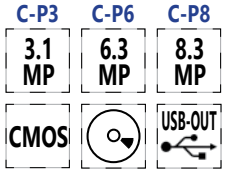
| TABLET TECHNICAL SPECIFICATIONS | |
|---|---|
| **Model** | Tablet 10.8" |
| **Operating System** | Windows 10 32-bit |
| **Language** | Multilanguages already installed |
| **Image capturing software** | OPTIKA Vision lite |
| **CPU** | Intel® Atom™ Z3735F, Quad core |
| **CPU speed** | 1.44 GHz |
| **Graphics Card** | Intel® HD Graphics 3D Accelerator |
| **Memory** | Ram 2,048 GB DDR3L |
| **LCD display** | LED 10.1" IPS Multi Touch Screen |
| **LCD resolution** | 1920 x 1280, 16/10 (WXGA) |
| **Storage** | HDD 64GB |
| **Network** | Wireless, Bluetooth 4.0 |
| **Input/output ports** | Micro USB-B - USB - Microphone - MicroSD card reader - Mini HDMI - Head-phone |
| **Control Buttons** | Auto rotate off, volume control |
| **Battery Technology** | Lithium-ion battery, 2x cell |
| **Battery capacity** | 8400 mAh |
| **Max load** | 15 W |
| **Dimensions & Weight** | Thickness 10,5 mm, Height 17,4 cm, Width 25,7 cm, Weight: 720 g |

| CAMERA TECHNICAL SPECIFICATIONS | TB-3W | TB-5W |
|---|---|---|
| **Digital camera resolution** | 3.1 MP (2048 x 1536) | 5.1 MP (2592 x 1944) |
| **Signal output** | USB 2.0 | USB 2.0 |
| **Sensor Size** | 1/2" | 1/2.5" |
| **Sensor technology** | CMOS | CMOS |
| **Sensor type** | Aptina CMOS | Aptina CMOS |
| **Image format** | 4/3 | 4/3 |
| **Pixel size** | 3.2 x 3.2 µm | 2.2 x 2.2 µm |
| **Frame rate full resolution** | 12 fps (2048 x 1536) | 7 fps (2592 x 1944) |
| **Frame rate other resolutions** | 45 fps (680 x 510) | 27 fps (1280x 960); 90fps (640x 480) |
| **Sensitivity** | 1 V/lux-second | 0.53 V/lux-second |
| **Signal / noise ratio** | 43 dB | 40.5 dB |
| **Dynamic range** | 61 dB | 66.5 dB |
| **ADC conversion** | 8 Bit | 8 Bit |
| **Color Depth** | 1 Bit ; 4 Bit; 8 Bit; 24 Bit | 1 Bit; 4 Bit; 8 Bit; 24 Bit |
| **Exposure Time** | 0.244 msec - 2 sec | 0.294 msec - 2 sec |
| **Binning** | 1x1; 2x2; 3x3 | 1x1; 2x2; 4x4 |
| **IR filter** | 380-650 nm (IR-cut filter) | 380-650 nm (IR-cut filter) |
| **Camera power** | PC USB | PC USB |
| **C-mount** | YES | YES |

**Accessories included:** C-mount adapter for 23 mm tube, calibration slide, USB cable, keyboard with touchpad and touch pen.

# USB CAMERAS - PRO Series


**Professional** cameras with high sensitivity, low noise and **impressive capabilities** in special applications (on different observation methods)




**High-Performance USB 3.0 C-mount Microscope Cameras**

Do you require a high-end camera with an especially high resolution, generous dynamic range, rapid read-out rate and a USB3.0 port?
If your answer is yes, then the PRO series is your choice. Its compact and elegantly designed housing conceals the very latest in camera technology. Your images will be of the highest quality and rich in contrast and detail.
OPTIKA PRO Series includes a wide range, to virtually fulfill each application demand.
Top-class SONY sensors, worldwide recognized, ensure you to capture your specimen in beautiful true-to-life color, delivering incredibly accurate colors just as you see them.
All the main operating systems like Windows, IOS, Linux are supported. Software included: Optika Vision Lite, Optika LiteView and Optika ProView.

# USB CAMERAS - PRO Series - Specifications

| | C-P3 | C-P6 | C-P8 |
|---|---|---|---|
| Digital camera resolution | 3.1 MP (2048 x 1536) | 6.3 MP (3072 x 2048) | 8.3 MP (3840 x 2160) |
| Signal output | USB 3.0 | USB 3.0 | USB 3.0 |
| Sensor Size | 1/2.8" | 1/1.8" | 1/2.5" |
| Sensor technology | CMOS | CMOS | CMOS |
| Sensor type | SONY EXMOR CMOS | SONY EXMOR CMOS | SONY EXMOR CMOS |
| Image format | 4/3 | 3/2 | 16/9 |
| Pixel size | 2.5 x 2.5 µm | 2.4 x 2.4 µm | 1.62 x 1.62 µm |
| Frame rate full resolution | 50 fps (2048 x 1536) | 30 fps (3072 x 2048) | 32 fps (3840 x 2160) |
| Frame rate other resolutions | 50 fps (1920 x 1080) | 38 fps (1536 x 1024) | 65 fps (1920 x 1080) |
| Sensitivity | 600 mV at 1/30sec | 425 mV at 1/30sec | 236 mV at 1/30sec |
| Dark signal | 0.15 mV at 1/30sec | 0.15 mV at 1/30sec | 0.1 mV at 1/30sec |
| ADC Conversion | 8 Bit - 12 Bit | 8 Bit - 12 Bit | 8 Bit - 12 Bit |
| Color Depth | 1 Bit; 4 Bit; 8 Bit; 24 Bit | 1 Bit; 4 Bit; 8 Bit; 24 Bit | 1 Bit; 4 Bit; 8 Bit; 24 Bit |
| Exposure Time | 0.1 msec - 15 sec | 0.1 msec - 15 sec | 0.1 msec - 15 sec |
| Binning | 1x1 | 1x1; 2x2 | 1x1; 2x2 |
| IR filter | 380-650 nm (IR-cut filter) | 380-650 nm (IR-cut filter) | 380-650 nm (IR-cut filter) |
| Camera power | PC USB | PC USB | PC USB |
| C-mount | YES | YES | YES |

**Accessories included:** calibration slide, 1.5 m USB cable

# **USB CAMERAS** - PRO Series

Achieve **professional results** and outstanding images with PRO Series: incredibly sharp and high contrast images also when combined to a stereomicroscope

Several focusable C-mount adapters available

# USB CAMERAS - PRO Series - C-P6FL


**High-performance CCD camera** for special applications. Recommended for professional microscopes, **routinary and research level** (on different observation methods)

6.0 MP | CCD | USB 3.0

### High-Performance USB 3.0 C-mount Microscope Cameras

High grade SONY EXView HAD CCD sensor camera with 6.0 MP resolution recommended for special applications thanks to the impressive capabilities in the most challenging working conditions.
High sensitivity, low noise with USB3.0 connection for Windows, Mac OS and Linux. Software included: Optika Vision Lite, Optika LiteView and Optika ProView.

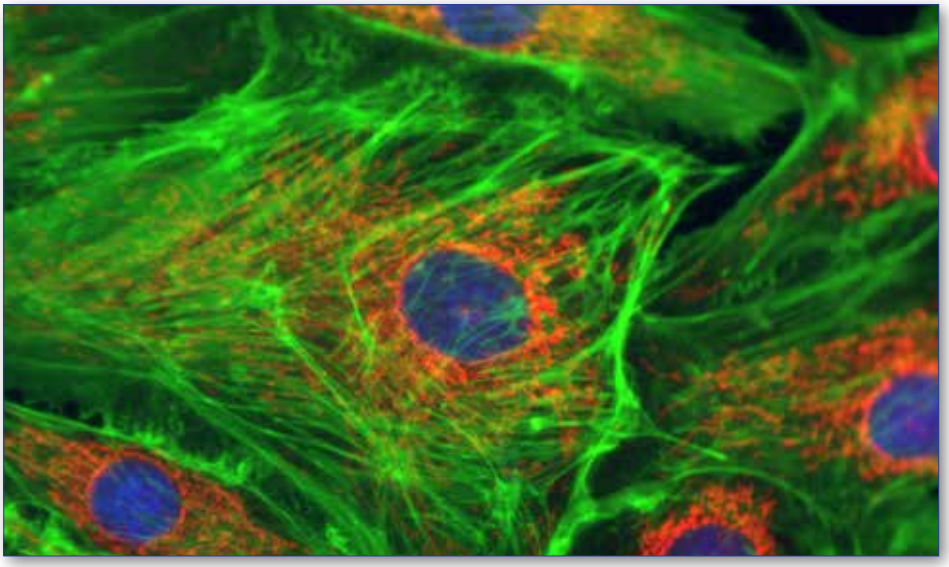
## C-P6FL - Specifications

| | C-P6FL |
|---|---|
| Digital camera resolution | 6 MP (2748 x 2200) |
| Signal output | USB 3.0 |
| Sensor Size | 1" |
| Sensor technology | CCD |
| Sensor type | SONY ExView HAD |
| Image format | 5/4 |
| Pixel size | 4.54 x 4.54 µm |
| Frame rate full resolution | 7.5 fps (2748 x 2200) |
| Frame rate other resolutions | 14 fps (1374 x 1092) |
| Sensitivity | 1000 mV at 1/30sec |
| Dark signal | 8 mV at 1/30sec |
| ADC Conversion | 8 Bit - 14 Bit |
| Color Depth | 1 Bit; 4 Bit; 8 Bit; 24 Bit |
| Exposure Time | 0.06 msec - 1000 sec |
| Binning | 1x1 |
| IR filter | 380-650 nm (IR-cut filter) |
| Camera power | PC USB |
| C-mount | YES |

**Accessories included:** calibration slide, 1.5 m USB cable

Several focusable C-mount adapters available

# **USB CAMERAS** - PRO Series - **C-P6FL**



**CCD sensor** ensures significant and impressive quality on special techniques, including fluorescence

**Non-cooled** high-performance CCD camera. Thanks to its very high sensitivity, it's perfect for **fluorescence microscopy**

# USB CAMERAS - PRO Series - Cooled Models


20 MP | CMOS | USB 3.0

**Ultra High-Performance USB 3.0 C-mount Cooled Microscope Cameras**

For special applications, and requiring different observation methods, high sensor size cameras are preferred for the high sensitivity delivering high signal-to-noise ratio (low noise is achieved via cooling) and a large dynamic range.
OPTIKA Pro Cooled cameras provide an excellent sensitivity. Peltier-cooled (cooling to 45°C below ambient), with scientific-grade CMOS sensor, they ensure great performance in low light conditions, ultra-long exposure time and an impressive reliable color fidelity. All the main operating systems like Windows, IOS, Linux are supported. Software included: Optika Vision Lite, Optika LiteView and Optika ProView.

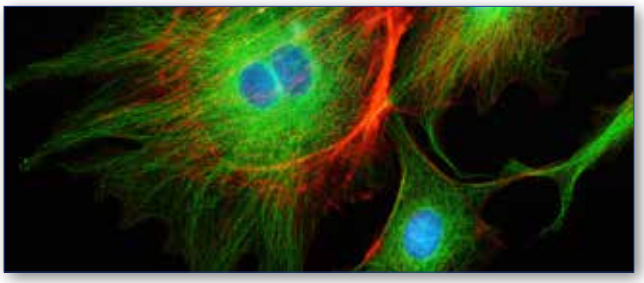
# USB CAMERAS - PRO COOLED Series - Specifications

| | C-P20CC (Color) | C-P20CM (Monochrome) |
|---|---|---|
| Digital camera resolution | 20 MP (5440 x 3648) | 20 MP (5440 x 3648) |
| Signal output | USB 3.0 | USB 3.0 |
| Sensor Size | 1" | 1" |
| Sensor technology | CMOS | CMOS |
| Sensor type | SONY EXMOR | SONY EXMOR |
| Image format | 3/2 | 3/2 |
| Pixel size | 2.4 x 2.4 µm | 2.4 x 2.4 µm |
| Frame rate full resolution | 5 fps (5440 x 3648) | 17.8 fps (5440 x 3648) |
| Frame rate other resolutions | 10 fps (4096 x 2160); 15 fps (2736 x 1824); 30 fps (1824 x 1216) | 41 fps (4096 x 2160); 51 fps (2736 x 1824); 64 fps (1824 x 1216) |
| Sensitivity | 426mV at 1/30sec | 388mV at 1/30sec |
| Dark Signal | 0.21mV at 1/30sec | 0.21mV at 1/30sec |
| Cooling System | Internal two-stage TE cooling system -45°C | Internal two-stage TE cooling system -45°C |
| ADC conversion | 8 Bit - 14 Bit | 14 Bit |
| Color Depth | 1 Bit; 4 Bit; 8 Bit; 24 Bit | 1 Bit; 4 Bit; 8 Bit; 24 Bit |
| Exposure Time | 0.1 msec - 3600 sec | 0.1 msec - 3600 sec |
| Binning | 1x1; 2x2; 3x3 | 1x1; 2x2; 3x3 |
| IR filter | 380-650 nm (IR-cut filter) | 380-650 nm (IR-cut filter) |
| Camera power | PC USB | PC USB |
| C-mount | YES | YES |

**Accessories included:** calibration slide, 1.8 m USB cable, power supply for cooling system

# **USB CAMERAS** - PRO Series - Cooled Models


Durable and safe reinforced plastic case



Achieve **unparalleled results** and superb images on special techniques, including fluorescence, with the lastest technology **SONY EXMOR sensors**

# HDMI CAMERAS - H Series - C-HE


2.0 MP | CMOS | HDMI | USB-IN | SD | mouse

**HDMI camera for easy operation, no compromises in quality**

- C-mount connection, eyepiece adapter available
- No installation of software required when used in HDMI mode
- HDMI (720p) camera, for TV live view
- Extremely reliable color fidelity
- Lightweight cameras, to be used even on the smallest and lightest microscopes
- SD card enables image and video capturing
- Built-in function buttons for HDMI camera control

**720p HD** high-speed microscope camera with Aptina CMOS sensor: **intuitive, entry-level**

# HDMI CAMERAS - H Series - C-HP


2.0 MP | CMOS | HDMI | USB-IN | USB-OUT | SD | CD | mouse

**HDMI / USB camera for extremely easy operation, and maximum flexibility**

- C-mount connection, eyepiece adapter available
- No installation of software required when used in HDMI mode
- HDMI (1080p) and USB camera, for TV live view and PC use
- Reliable color fidelity
- Highly reccomended for wide range of applications
- SD card enables image and video capturing
- External mouse (included) for HDMI camera control
- Software included: Optika ProView

**Professional 1080p FULL HD** high-speed microscope camera with **measurement functions** for premium performance

# HDMI CAMERAS - H Series


**World-class viewing experience** for crystal-clear videos and image

# HDMI CAMERAS - H Series - Specifications

| | C-HE | C-HP |
|---|---|---|
| Video resolution (USB output) | - | 1920 x 1080 pixel |
| Video resolution (HDMI output) | HD 720p | Full HD 1080p |
| Digital camera resolution | 2 MP (1280 x 720) | 2 MP (1920 x 1080) |
| Signal output | HDMI | HDMI |
| Sensor Size | 1/2.8" | 1/1.9" |
| Sensor technology | CMOS | CMOS |
| Sensor type | APTINA | SONY |
| Image format | 16/9 | 16/9 |
| Pixel size | 2.8 x 2.8 µm | 3.75 x 3.75 µm |
| Frame rate (HDMI) | 30 fps (1280 x 720) | 60 fps (1920 x 1080) - HDMI; 26fps (1920 x 1080) - USB |
| Sensitivity | 510 mV at 1/30sec | 1120 mV at 1/30sec |
| Dark Signal | 0.15mV at 1/30sec | 0.15mV at 1/30sec |
| Exposure Time | 0.06 msec - 1900 msec | 0.34 msec - 4 sec |
| Binning | 1x1 | 1x1 |
| IR filter | 380-650 nm (IR-cut filter) | YES |
| Camera power | DC 12V | DC 12V/1A |
| C-mount | YES | YES |
| White balance | Auto | Auto / Manual |
| Gain control | Manual | Auto / Manual |
| Exposure control | Auto / Manual | Auto / Manual |

**Accessories included:** C-HE: HDMI Cable, SD card slot (16G), Mouse C-HP: Calibration Slide, HDMI and USB Cable, SD card slot (16G), Mouse

# HDMI CAMERAS WITH SCREEN - H Series - C-HESC


2.0 MP | CMOS | HDMI | USB-IN | SD | 11.5"

**HDMI camera, 2 MP CMOS, HDMI, with 11.5" Full HD LCD screen**

- All-in-one: save space on the bench, with no need for external devices
- Feel free to tilt the screen and adjust the position to the preferred level, eliminating fatigue during observation. Ideal also for discussion groups
- Aptina CMOS sensor with excellent color reproduction for routine applications
- 720p HD (2 MP, 1280 x 720)
- C-mount connection on trinocular microscopes only
- Mouse, 16G SD card and HDMI cable also included

# HDMI CAMERAS WITH SCREEN - H Series - C-HPSC


2.0 MP | CMOS | HDMI | USB-IN | USB-OUT | SD | 11.5"

**HDMI camera, 2 MP CMOS, HDMI/USB2.0, with 11.5" Full HD LCD screen**

- All-in-one: save space on the bench, with no need for external devices
- Feel free to tilt the screen and adjust the position to the preferred level, eliminating fatigue during observation. Ideal also for discussion groups
- High grade SONY CMOS sensor for reliable colors
- 1080p FULL HD (2 MP, 1920 x 1080)
- C-mount connection for professional microscopes
- Camera control panel shows exposure, gain, white balance, color adjustment, sharpness and noise control
- On-screen monitor toolbar shows measuring, mirror, comparison, zoom, freeze, cross & browser when using mouse control
- Equipped with calibration slide for establishing measurement baselines
- Mouse, 16G SD card and HDMI/USB cable also included
- Software included: Optika ProView

# HDMI CAMERAS WITH SCREEN - H Series

Freely inclinable for ergonomic vision



Ideal for discussion groups, **360° rotating**

All-in-one solution

| | C-HESC | C-HPSC |
|---|---|---|
| **Camera** | C-HE Camera:<br>720p HDMI output;<br>Video Capturing;<br>Still Image Capturing;<br>For full specifications see page 365. | C-HP Camera:<br>1080p FULL HDMI output;<br>Video Capturing;<br>Still Image Capturing;<br>For full specifications see page 365. |
| **Screen** | 11.5" Full HD HDMI LCD Screen.<br>360° rotating.<br>Freely inclinable for ergonomic vision | 11.5" Full HD HDMI LCD Screen.<br>360° rotating.<br>Freely inclinable for ergonomic vision |
| **Accessories (Included)** | USB Mouse;<br>HDMI Cable;<br>16GB SD Card;<br>Camera Power Adapter;<br>Screen Power Adapter | USB Mouse;<br>Calibration Slide;<br>HDMI and USB Cable;<br>16GB SD Card;<br>Camera Power Adapter;<br>Screen Power Adapter |

# AUTOFOCUS HDMI CAMERA - H Series - C-HA


Equipped with the **state-of-the-art autofocus** system to ensure **precise focusing** in any condition and in real time

2.0 MP | CMOS | HDMI | USB-IN | SD

**Full Hd HDMI C-mount Autofocus Microscope Camera**

A superb microscope camera with the state-of-the-art autofocusing system, ensuring precise and ultra-fast automatic focus adjustment in any condition and in real time. Ideal to compensate the lack of parfocality of the microscope without any user effort.

- Aptina CMOS sensor with excellent color reproduction for routine applications
- 1080p FULL HD (2 MP, 1920 x 1080)
- C-mount connection for professional microscopes
- Camera control panel shows exposure, white balance, color adjustment and sharpness when using mouse control
- Mouse, 8G SD card and HDMI cable also included

# C-HA - Specifications

| | C-HA |
|---|---|
| Digital camera resolution | 2 MP (1920x1080) |
| Signal output | HDMI |
| Sensor Size | 1/2.8" |
| Sensor technology | CMOS |
| Sensor type | APTINA CMOS |
| Image format | 16/9 |
| Pixel size | 2.9 x 2.9 µm |
| Frame rate (HDMI) | 50 fps (1920x1080) |
| Sensitivity | 510 mV at 1/30sec |
| Dark Signal | 0.15mV at 1/30sec |
| Exposure Time | Auto |
| Binning | 1x1 |
| IR filter | YES |
| Camera power | 5V 2A |
| C-mount | YES |
| CS-Mount | YES |

**Accessories included:** HDMI Cable, SD card slot (8G), Mouse

# AUTOFOCUS HDMI CAMERA - H Series - C-HA


Extremely simple and convenient use: **no need of focus adjustment!**

Compensates any lack of parfocality of the objectives

# WIFI CAMERAS - WF Series - 4083.WiFi

5.0 MP | CMOS | USB-OUT

**Camera with remote WiFi connection, ideal for teaching purposes and discussion groups**

- Connection for both trinocular C-mount ports and eyepiece tubes
- WiFi & USB camera
- 5 MP resolution on USB mode and 2 MP resolution on WiFi mode
- Ideal for educational applications
- Lightweight cameras, to be used even on the smallest and lightest microscopes
- Direct connection via browser to share the specimen view (router is not needed)
- Unlimited users connectable (average speed depending on connected users)
- Supported by any device (PC, tablet or smartphone) with any type of browser
- Image and video capturing function when used in WiFi mode
- Includes the user-friendly and intuitive Optika Vision Lite software (USB mode)

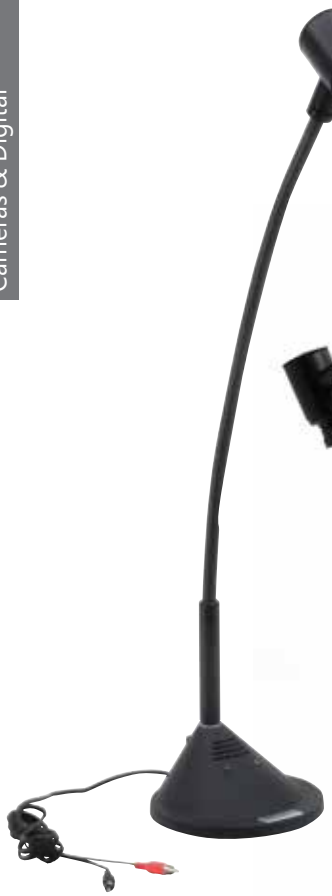
USB and WiFi camera in once.
**No router needed!**

| | OPTIKAM WIFI 4083.WiFi |
|---|---|
| PC camera resolution | 5 MP |
| WiFi camera resolution | 2 MP |
| Signal output | USB 2.0, WiFi |
| Sensor Size | 1\2.5" |
| Sensor technology | CMOS |
| Image format | 4\3 |
| Full Image size | 2592 x 1944 |
| USB Frame rate Full resolution | 3 frames/sec: 2592 x 1944 |
| USB Frame rate other resolutions | 11 frames/sec: 640 x 480,<br>8 frames/sec: 1024 x 768 |
| WiFi Frame rate Low resolution | 2 frames/sec: 640 x 480 with 10 users |
| WiFi Frame rate other resolutions | 1 frames/sec: 1024 x 768 with 10 users,<br>1 frames/3sec: 1600 x 1200 with 10 users |
| Max Exposure time | Automatic |
| External camera power | 5 V 2000mA |
| White Balance | Auto / Man |
| Gain Control | Auto / Man |
| Back light control | Auto / Man |
| Exposure control | Auto / Man |
| C-Mount connection | YES |
| CS-Mount connection | YES, ready |

**Accessories included:** CS- to C-mount adapter, C-mount to 23mm adapter, 23mm to 30mm and 30.5mm ring adapters, micrometer slide for software calibration, 1mm/10um, 10mm/100um, USB cable.

# **WIFI CAMERAS** - WF Series - **4083.WiFi**

# EYEPIECE CAMERAS - EDUCAM & VC SERIES



4083 - 4083.1 - 4083.2 - 4083.3

USB - 4083.4

CMOS USB-OUT 4083.4 4083.4

**EDUCAM - Multimedia cameras to meet various requirements in the educational field**

- Direct connection to TV screen and monitor
- Versatile and flexible, yet sturdy and stable at the same time: can be used as overhead projector, for the projection of drawings, as a camera for teleconferences, assemblies, meetings or as a camera for filming
- Up to 90x magnifying power for any specimen and object
- 8mm objective lens enables focus from 0,76 cm, up to an infinite distance
- Extremely sensitive microphone to record voices/sounds (Multimedia models only)
- Includes the user-friendly and intuitive OPTIKA Vision Lite software

All models are equipped with two adapters for video-microscopy (for biological and stereo microscopes).

**VC-05 - Simple eyepiece camera with CCD sensor, 420 TV Lines (PAL)**

MIC- 4083.5

VC-05

| | MULTIMEDIA / 4083 | MULTIMEDIA PRO / 4083.1 | STUDENT / 4083.2 | STUDENT PRO / 4083.3 |
|---|---|---|---|---|
| Digital camera resolution | NO | NO | NO | NO |
| Analog camera resolution | PAL 582 x 420 | PAL 582 x 420 | PAL 582 x 420 | PAL 582 x 420 |
| Signal output | PAL | PAL | PAL | PAL |
| Audio Signal | Analog | Analog | NO | NO |
| Sensor Size | 1\3" | 1\3" | 1\3" | 1\3" |
| Sensor technology | CCD | CCD | CCD | CCD |
| Image format | 4\3 | 4\3 | 4\3 | 4\3 |
| Full Image size | - | - | - | - |
| Frame rate full resolution | 50 frames\sec (analog mode) | 50 frames\sec (analog mode) | 50 frames\sec (analog mode) | 50 frames\sec (analog mode) |
| Max Exposure time | - | - | - | - |
| ON board Memory | NO | NO | NO | NO |
| External Memory Card | NO | NO | NO | NO |
| External camera power | 15V DC power supply | 15V DC power supply | 12V DC power supply | 12V DC power supply |
| White Balance | Auto | Auto | Auto | Auto |
| Gain Control | Auto | Auto | Auto | Auto |
| Back light control | Auto | Auto | Auto | Auto |
| Exposure control | Auto | Auto | Auto | Auto |
| C-Mount connection | YES | YES | YES | YES |
| CS-Mount connection | NO | NO | NO | NO |
| Arm length | 50cm | 65cm | 50cm | 65cm |
| 8mm objective | YES | YES | YES | YES |

Accessories included:
**All models (except VC-05 and C-E2):** SCART for TV plug, 23mm eyepiece tube adapter and 30mm ring adapter for microscopes.
**VC-05:** 23mm to 30mm or 30.5mm ring adapters for microscopes, SCART for TV plug. **C-E2:** 30 mm and 30.5 mm ring adapters for built-in 23mm eyepiece adapter, USB cable.

# EYEPIECE CAMERAS - EDUCAM & VC SERIES

2.0 MP | CMOS | USB-OUT

**C-E2**

**User-friendly eyepiece camera to be combined with any microscope**

- Direct connection into the eyepiece tube instead of one of the eyepieces (23 mm, 30 mm & 30.5 mm diameter)
- No additional adapters required
- Very useful for educational purposes
- Removable miniUSB cable
- Includes the user-friendly and intuitive OPTIKA Pro View & OPTIKA Lite View.

Ready to use, instead of one of the eyepiece.

| USB / 4083.4 | MIC / 4083.5 | VC-05 | C-E2 |
|---|---|---|---|
| 0.3 MP | NO | NO | 2 MP |
| PAL 582 x 420 | PAL 582 x 420 | PAL 582 x 420 | NO |
| PAL , USB2.0 | PAL | PAL | USB 2.0 |
| Analog | NO | NO | NO |
| 1\3" | 1\3" | 1\3" | 1\3.2" |
| CCD | CCD | CCD | CMOS |
| 4\3 | 4\3 | 4\3 | 4\3 |
| 640 x 480 | - | - | 1600 x 1200 |
| 50 frames\sec (analog mode), 25 frames\sec (digital mode) | 50 frames\sec (analog mode) | 50 frames\sec (analog mode) | 5 fps (1600x1200) / 7,5 fps (1280x1024) / 22fps (640x480) |
| Auto | - | - | Auto |
| NO | NO | NO | NO |
| NO | NO | NO | NO |
| 15V DC power supply | 12V DC power supply | 12V DC power supply | PC USB |
| Auto | Auto | Auto | Auto |
| Auto | Auto | Auto | Auto |
| Auto | Auto | Auto | Auto |
| Auto | Auto | Auto | Auto |
| YES | YES | NO | NO |
| NO | NO | NO | NO |
| 65cm | - | - | - |
| YES | YES | NO | NO |

# RECOMMENDED ADAPTERS FOR YOUR MICROSCOPE

**Upright/Inverted Microscopes (C-mount projection lens)**

**M-115** (0.35x)



**M-114** (0.5x)

**Stereomicroscopes - LAB 30 (Focusable C-mount adapter)**

**ST-418** (0.35x)

**ST-419** (0.5x)

**Upright/Inverted Microscopes (Focusable C-mount adapter)**

**M-620** (0.35x)

**M-620.1** (0.5x)

**M-620.2** (0.65x)

**M-620.3** (1x)

**Stereomicroscopes - SZM / SZO / SZP Series (Focusable C-mount adapter)**

**ST-090** (0.35x)

**ST-090.1** (0.5x)

**ST-090.2** (0.65x)

**M-620.3** (1x)

| | | Upright/Inverted Microscopes | | Stereomicroscopes | | |
|---|---|---|---|---|---|---|
| Camera model | Sensor size | C-mount projection lens - **Ecovision, B-150, B-190, B-290 Series** | Focusable C-mount adapter (trino port) - **B-380, B-510, B-810, B-1000, IM-3, IM-5 Series** | C-mount projection lens - **LAB-30, SZM, SZO, SZP Series** | Focusable C-mount adapter (trino port) - **LAB-30** | Focusable C-mount adapter (trino port) - **SZM, SZO, SZP Series** |
| **C-B1** | 1/3" | Included with the camera | M-620 / M-620.1 | Included with the camera | ST-418 | ST-090 / ST-090.1 |
| **C-B3 / TB-3W** | 1/2" | Included with the camera | M-620.1 / M-620.2 | Included with the camera | ST-419 | ST-090.1 / ST-090.2 |
| **C-B5 / TB-5W** | 1/2.5" | Included with the camera | M-620.1 / M-620.2 | Included with the camera | ST-419 | ST-090.1 / ST-090.2 |
| **C-B10** | 1/2.3" | Included with the camera | M-620.1 / M-620.2 | Included with the camera | ST-419 | ST-090.1 / ST-090.2 |
| **C-P3** | 1/2.8" | Not recommended association | M-620 / M-620.1 | Not recommended association | Not recommended association | ST-090 / ST-090.1 |
| **C-P6** | 1/1.8" | Not recommended association | M-620.1 / M-620.2 | Not recommended association | Not recommended association | ST-090.1 / ST-090.2 |
| **C-P8** | 1/2.5" | Not recommended association | M-620.1 / M-620.2 | Not recommended association | Not recommended association | ST-090.1 / ST-090.2 |
| **C-P6FL** | 1" | Not recommended association | M-620.3 | Not recommended association | Not recommended association | M-620.3 |
| **C-P20CC** | 1" | Not recommended association | M-620.3 | Not recommended association | Not recommended association | M-620.3 |
| **C-P20CM** | 1" | Not recommended association | M-620.3 | Not recommended association | Not recommended association | M-620.3 |
| **C-HP / C-HPSC** | 1/1.9" | M-114 / M-115 | M-620 / M-620.1 | M-114 / M-115 | ST-418 | ST-090 / ST-090.1 |
| **C-HE / C-HESC** | 1/2.8" | M-114 / M-115 | M-620 / M-620.1 | M-114 / M-115 | ST-418 | ST-090 / ST-090.1 |
| **C-HA** | 1/2.8" | M-114 / M-115 | M-620 / M-620.1 | M-114 / M-115 | ST-418 | ST-090 / ST-090.1 |
| **4083.WIFI** | 1/2.5" | Not recommended association | M-620.1 / M-620.2 | Not recommended association | Not recommended association | ST-090.1 / ST-090.2 |
| **4083.F33** | 1/2.5" | Not recommended association | M-620.1 / M-620.2 | Not recommended association | Not recommended association | ST-090.1 / ST-090.2 |



Headquarters and Manufacturing Facilities

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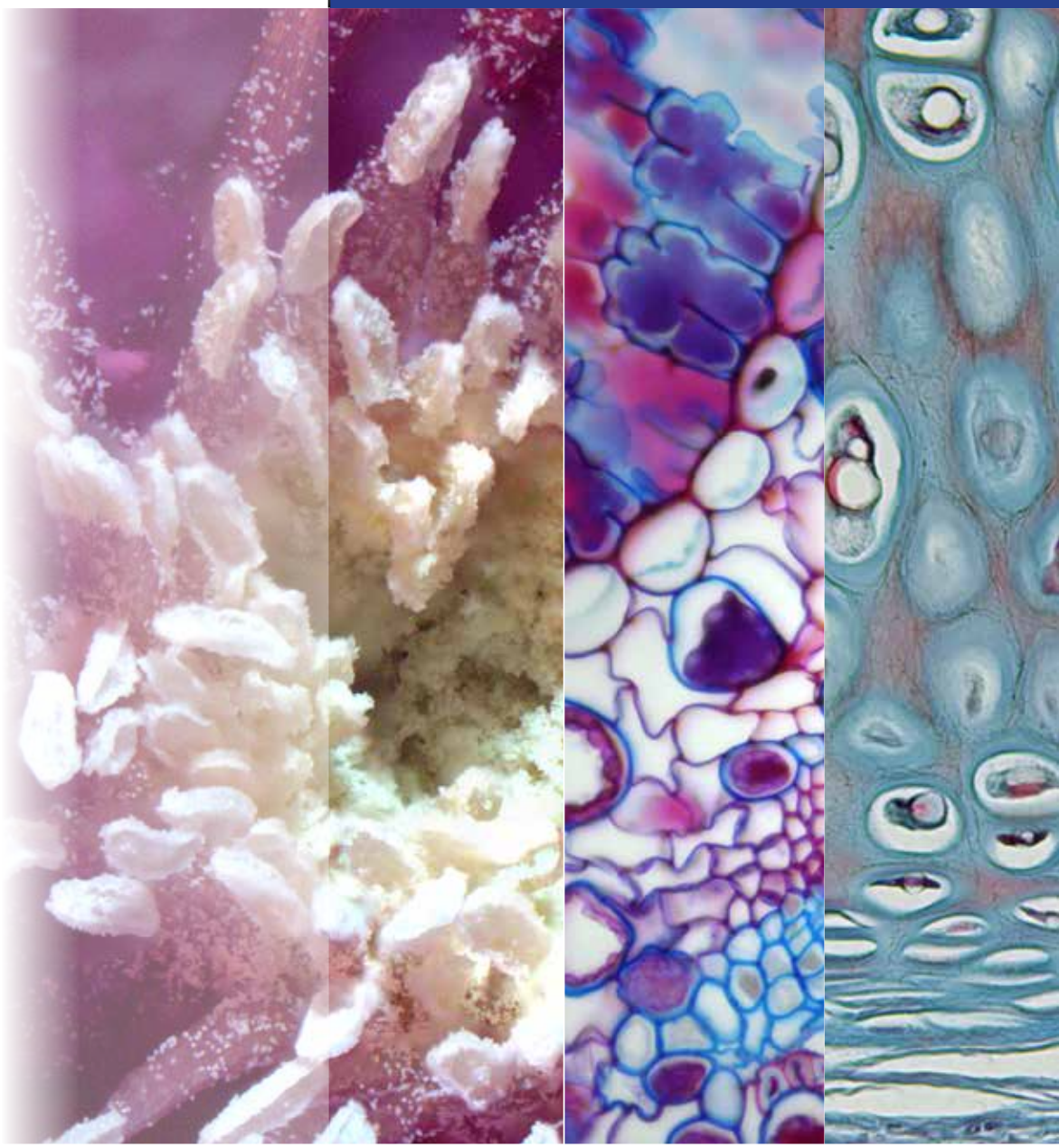
OPTIKA®
MICROSCOPES
ITALY

# OPTIKA SOFTWARE



## OPTIKA SOFTWARE SUITES

# OPTIKA SOFTWARE - Comparison chart

**Software**

• Before proceeding with the SW installation, please check the table below "Software Function list" to identify the most suitable software.




## SOFTWARE FUNCTION LIST

| | FUNCTION | | OPTIKA PRO VIEW | OPTIKA LITE VIEW | OPTIKA VISION LITE |
|---|---|---|---|---|---|
| GENERAL | Simultaneous management of several cameras | | X | X | X |
| | GUI (Graphical User Interface) | | X | | |
| | Report generator | | X | | X |
| | Archiving | | X | X | X |
| | Language | Catalan | X | X | |
| | | Chinese (simpl.) | X | X | |
| | | Chinese (trad.) | X | X | |
| | | Korean | X | X | |
| | | English | X | X | X |
| | | French | X | X | X |
| | | German | X | X | X |
| | | Indonesian | X | X | |
| | | Italian | X | X | X |
| | | Japanese | X | X | |
| | | Polish | X | X | X |
| | | Russian | X | X | |
| | | Spanish | X | X | X |
| | | Swedish | | | X |
| | | Thai | X | X | |
| | | Turkish | X | X | |

| | FUNCTION | | OPTIKA PRO VIEW | OPTIKA LITE VIEW | OPTIKA VISION LITE |
|---|---|---|---|---|---|
| MEASUREMENTS | Measurements on "live" | | X | | |
| | Measurements on "captured" | | X | | X |
| | 2D Measurements | Line | X | | X |
| | | Angle | X | | |
| | | Parallel lines | X | | |
| | | Rectangle | X | | |
| | | Ellipse | X | | |
| | | Circle | X | | |
| | | Annulus | X | | |
| | | Arc | X | | |
| | | Curve | X | | |
| | | Polygon | X | | |
| | Particle count | | X | | |
| | Export to Excel | | X | | X |

# OPTIKA SOFTWARE - Comparison chart

## SOFTWARE FUNCTION LIST

### IMAGE ACQUISITION

| FUNCTION | | OPTIKA PRO VIEW | OPTIKA LITE VIEW | OPTIKA VISION LITE |
|---|---|---|---|---|
| Simultaneous management of several cameras | | X | X | |
| IMAGE acquisition | | X | X | X |
| Image formats | tiff | X | X | X |
| | jpg | X | X | X |
| | bmp | X | X | X |
| | png | X | X | |
| | pcx | X | X | |
| | jp2 | X | X | |
| | dcm | X | X | |
| IMAGE acquisition | | X | X | X |
| VIDEO formats | avi | X | X | X |
| | wmv | X | X | X |
| | mp4 | X | X | X |
| | asf | X | X | X |
| | 3gp | X | X | X |
| | mov | X | X | X |
| | h264 | X | X | X |
| | h265 | X | X | X |
| Continuous automatic exposure | | X | X | X |
| Manual Exposure | | X | X | X |
| Mobile spot for exposure | | X | X | X |
| Resizable spot for exposure | | X | X | X |
| Colour acquisition | | X | X | X |
| Grey-scale acquisition | | X | X | X |
| Manual Time-Lapse | | X | | X |
| Automatic Time-Lapse | | X | | |
| Fast Image Acquisition | | X | X | X |
| Focus Indicator | | X | | |
| White Balance | | X | X | X |
| Black balance | | X | | |
| Background correction | | X | | |
| Dark Field Correction | | X | X | |
| Image Enhancement | | X | X | X |
| Live Histogram | | X | X | X |
| Flip | Horizontal | X | X | X |
| | Vertical | X | X | X |
| Rotate | | X | | |

### PROCESSING

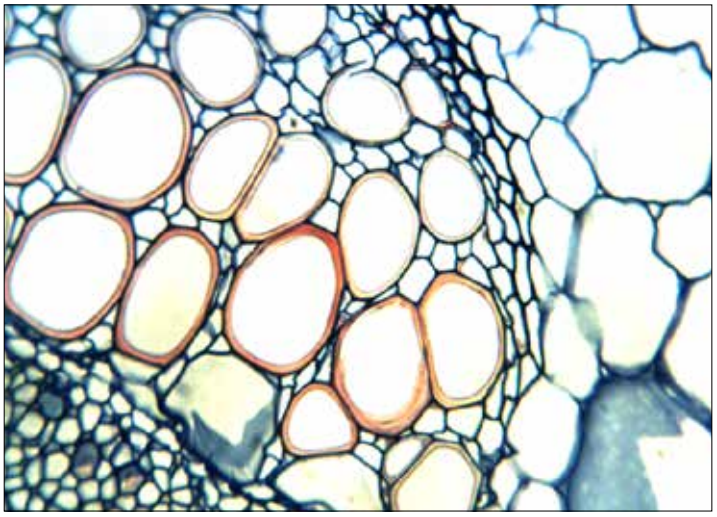
| FUNCTION | OPTIKA PRO VIEW | OPTIKA LITE VIEW | OPTIKA VISION LITE |
|---|---|---|---|
| Several function of image processing (filters) | X | | |
| Multiple image combining | X | | |
| EDF (Extended Depth of Focus) | X | | |
| Colour Combine (Multi-Fluorescence Imaging) | X | | |
| Shift Correction | X | | |
| HDR (High Dynamic Range) | X | | |
| Layer Management | X | | X |
| Text Overlay | X | | |
| Ruler Overlay | X | | |
| Measurement Overlay | X | | |
| Grids | X | | X |

4083.Wifi, 4083.4 and 4083.EC2 work with Vision Lite only. Cameras with HDMI connection only, do not require any software.

# OPTIKA Vision Lite - Extremely Intuitive Software

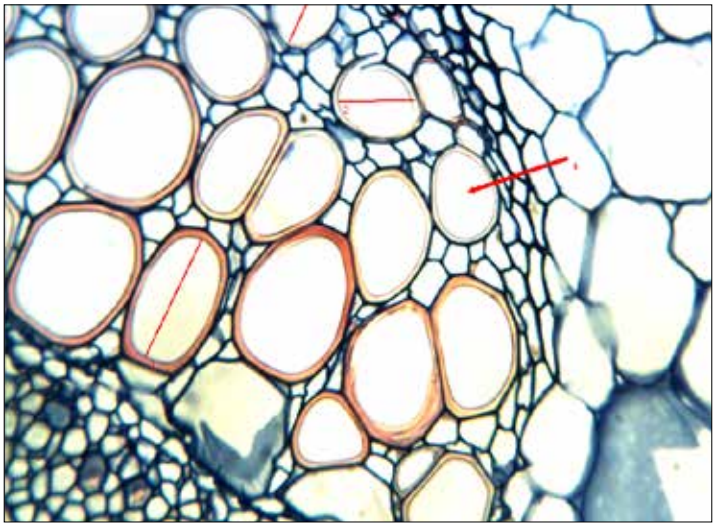
**Optika Vision Lite** has been designed and developed to be incredibly intuitive, simple and easy to use for customers needing a convenient solution to be combined with OPTIKAM cameras.

» Friendly interface, multilanguage
» Capture still images & stream live videos
» Perform linear measurements
» Export comprehensive reports



**Friendly interface, multilanguage**
Engineered for easy user interaction and optimized image acquisition, the main purpose of OPTIKA Vision Lite is ensure clear communication.

•An efficient means to efficiently completing your jobs
•Pleasant, easy-to-navigate menus
•Eight languages pre-installed, others upgreadable

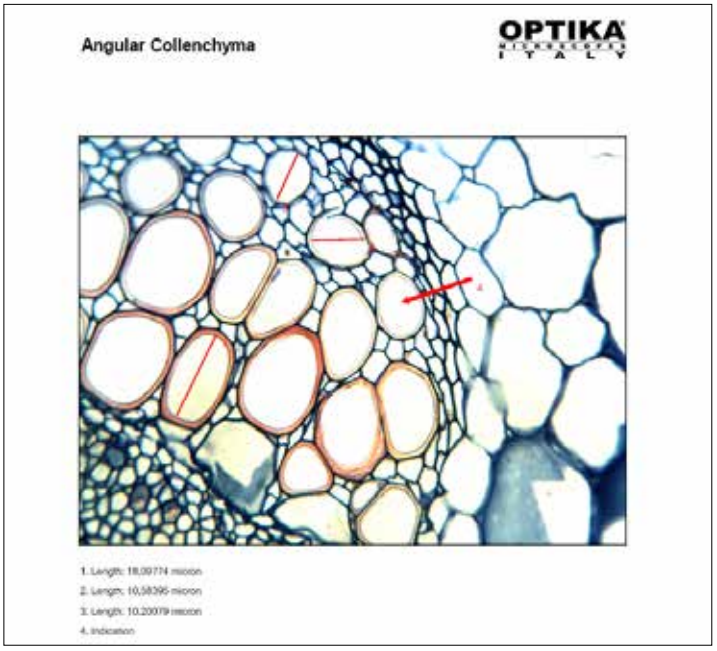


**Capture still images & stream live videos**
Use the live preview to accurately focus your image and change parameters to obtain the perfect final result you are looking for. Images can be saved in different formats and even as test reports, including personal comments.

Additional features:
• Image stack acquisition
• Grid addition for rapid considerations
• Image flipping option available

**Perform linear measurements**
Perform linear measurements in an extremely way just by drawing a line after creating your preferred calibration based on the magnification.

• Accurate measurements through simple calibration
• Comprehensive data export (notes & measures included)
• Indicate particular objects in the image to add persona comments

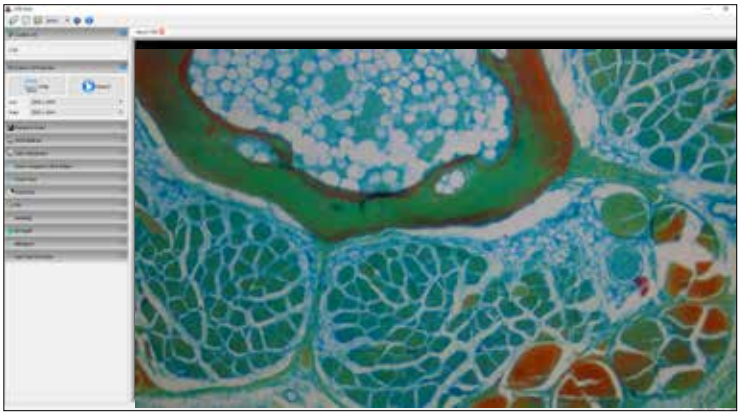


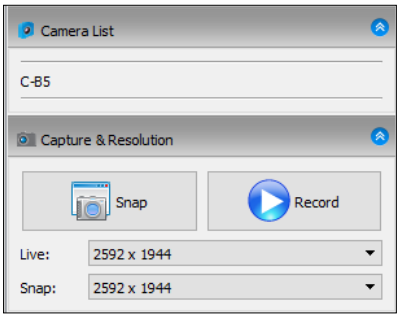

**Export comprehensive reports**
Detailed test reports can be generated, printed and saved. Reports can be also customized with company logos.

# **OPTIKA LITEView -** Life is Easier

**OPTIKA LITEView** is a basic image acquisition software. The user who simply wants acquire a still image or a video, with no no need to perform measurements, has, with this powerful and intuitive software, the perfect solution.

-) Simple management of «live» image
-) Acquisition of still images or video
-) Basic imaging functions
-) Background correction

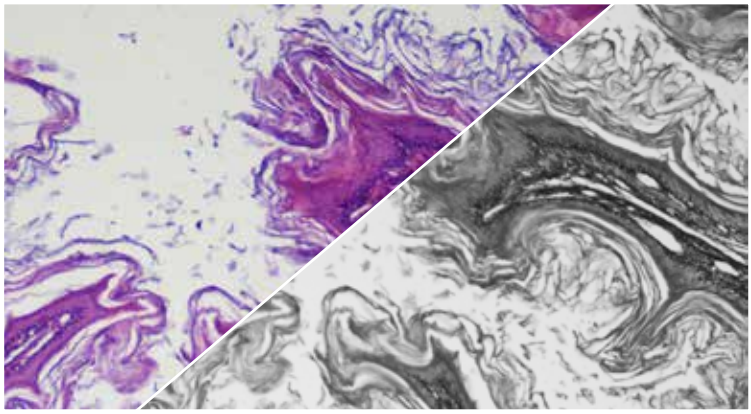





## Simple management of «live» image

Image preview is freely customizable by the user. A simple White Balance function with a mobile spot allows to perform the balance even on very small areas, once the specimen has been framed and focused.

Basic functions:
- Automatic or manual acquisition
- Possibility to have «live» and «capture» at different resolutions
- White Balance with mobile spot
- Background correction for the acquisition of perfectly illuminated images.



Color / Grey scales

## Capturing still images or video

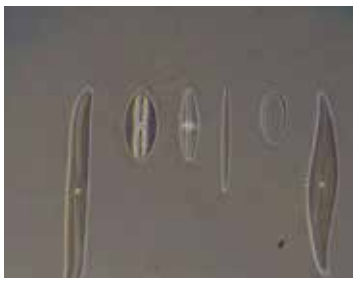
Just select the option and the software performs: acquiring still images or videos is simply and intuitive.

## Basic imaging functions

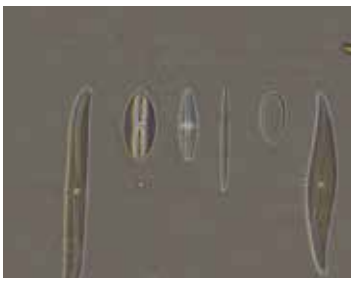
Image parameters can be modified according user's needs. Color, Contrast and Gamma can be chaned in real time.
More, it is possible to use a color camera in «SGrey Scales» modo in order to increase the camera sensitivity.

## Background Correction

Any inhomogeneity of illumination of the microscope can be corrected by using the background correction function.
This allows to obtain a faithful reproduction of the image without annoying inhomogeneity due to a not perfect illumination.



No Background correction

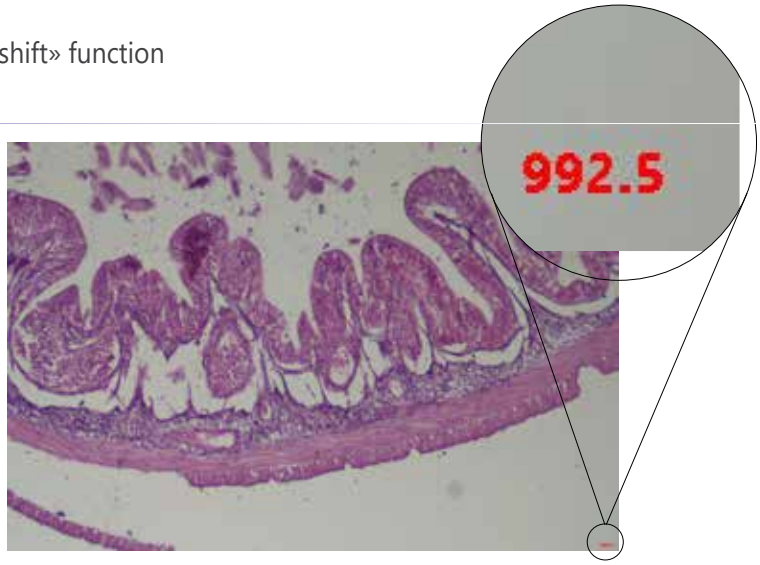


With Background correction

# OPTIKA PROView - Professional Image Analysis

**OPTIKA PROView** is a professional image analysis software. The user who needs to acquire an image or video and to perform a series of processings or measurements, can easily achieve incredible results thanks to this software. PROView incorporates all the functions of the LITEView package, but in addition allows:

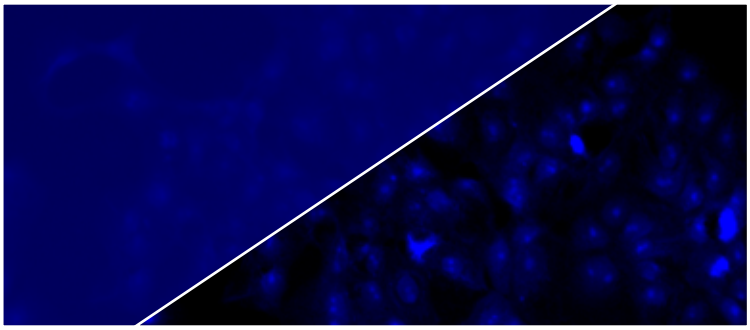
- White Balance and Black Balance
- Simultaneous management of several cameras
- Graphical User Interface fully customizable
- Imaging of Multichannel Fluorescence Images with «pixel shift» function
- Multilanguage Software




**Beginners? Experts?**
An «On-line» manual will help any user (no matter on how expert he can be) to get the best from the software

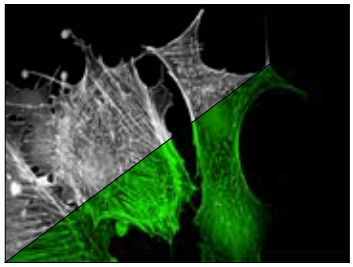
**Images always perfect**
The management of the acquisition parameters allows to get always the best from your camera. White balance, black balance, background correction, «live» management of Colors, Contrast, Gamma, Gain and Exposure Time ensure to obtain a faithful image. A numerical focus indicator will ensure an optimal focusing, also on specimaens with different focal planes.

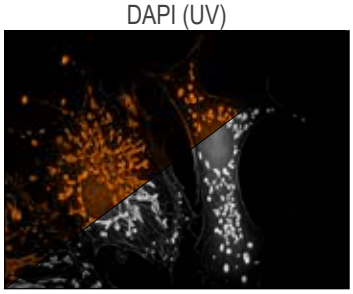
**White Balance and Black Balance**
It is possible to obtain the balance either on the whole frame or on a small ROI (Region Of Interest) of the image simply resizing and moving the spot in one part of the specimen

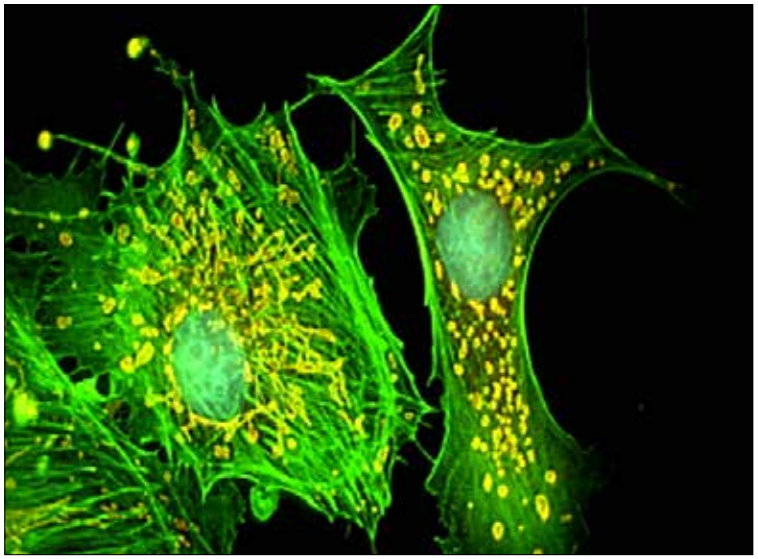

No black correction / Black correction

**Multichannel Fluorescence Image processing**
Acquire fluorescence images with a specific filtercube, use a false color for the used fluorochrome, get a single multichannel image is simply and intuitive.


DAPI (UV)


FITC (B)

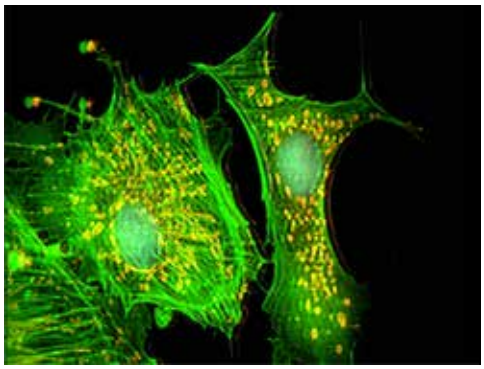

TEXAS RED (G)

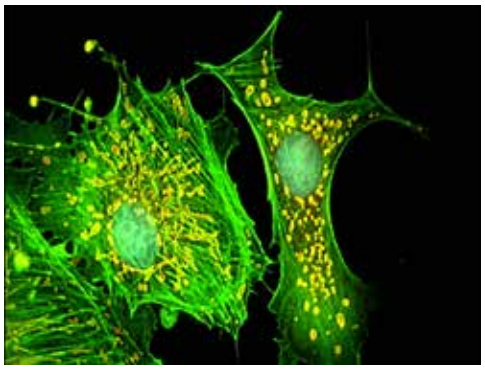

Combined multichannel image

# OPTIKA PROView - Professional Image Analysis

**«Pixel Shift» function**

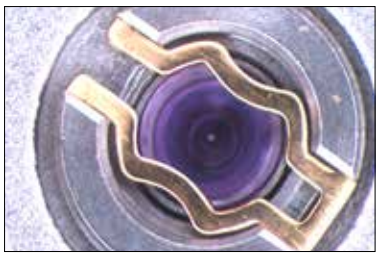
Fluorescence ilter cubes, sometimes, are not perfectly aligned.
During acquisition of multichannel luorescence images, this can cause a non perfect overlapping of the different signals, making the colocalization calculation almost impossible.
«Pixel Shift» function allows to correct these small misalignments:

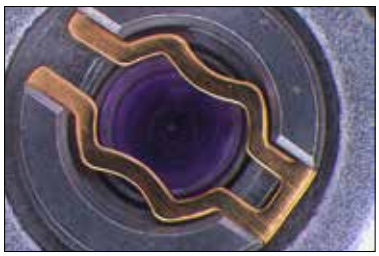

Orignal image


Corrected image

**HDR (High Dynamic Range) acquisition**

Acquisition of different images with different exposure times allows this function to create a final image where bright and dark zones of the specimen are perfectly displayed.


Standard Dynamic Range


High Dynamic Range

**Extended Depth of Focus (EDF)**

Acquire images with different focal planes, specially on specimens observed under a stereomicroscope, and to obtain a focused final image with a theoretical infinite focus. **EDF** function (also known as «Z-stack») allows a very refined image processing.



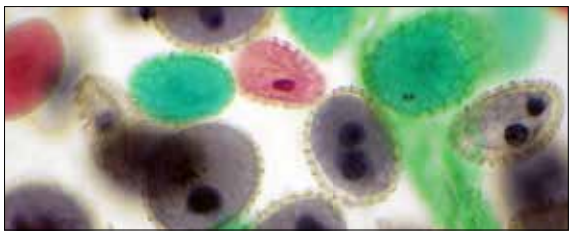
Single Focal Plane Images


EDF Image

**Stitching & Tiling**

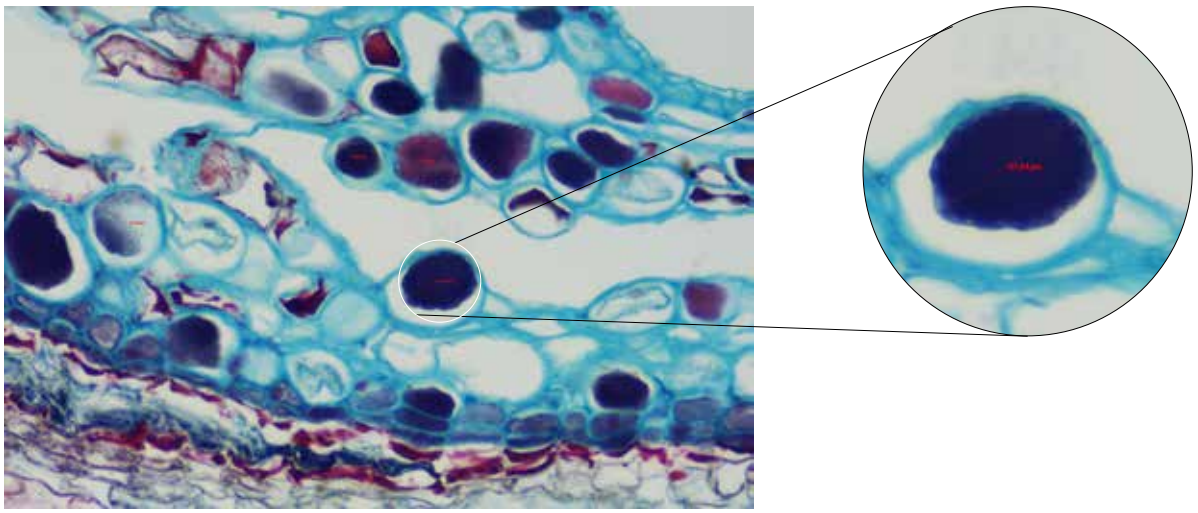
Get an image with high resolution but, at the same time, have a wide view of the specimen under observation.
Impossible? No. The multiple image alignment function allows to get a singe image starting from adjacent images of the specimen.


Separate Images


Stitched image

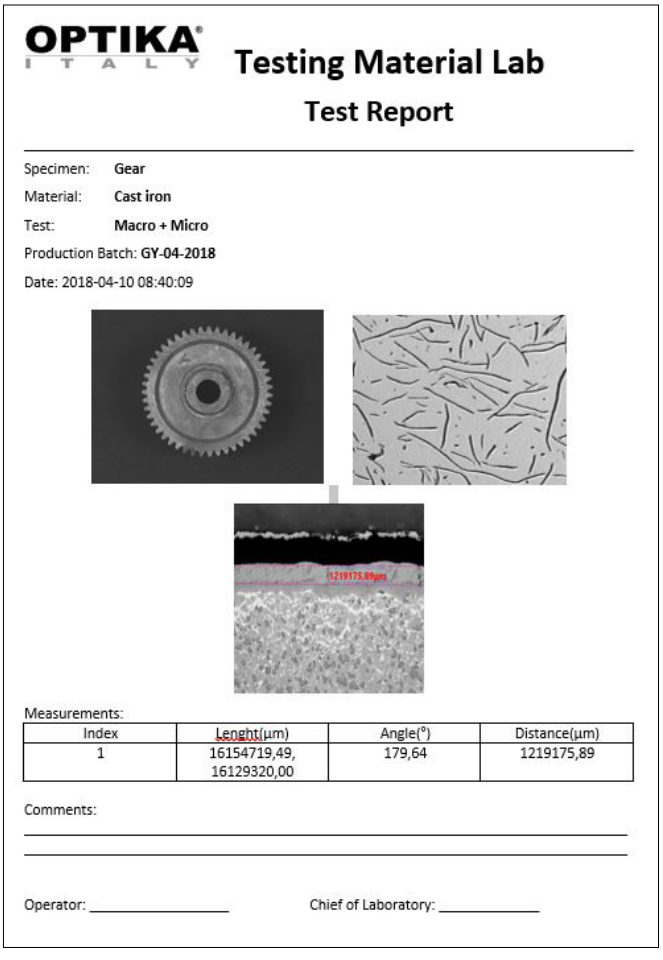
# OPTIKA PROView - Professional Image Analysis

**Measurements**
User can perform measurements on the «live» image (no need to capture an image) and on captured images.



**From Beginners To Experts**
Measurements available:
- linear measurements
- angles
- circles
- annuli
- poligons
- touch count

**Report Generator**
At the end of the analysis it is possible to export images and measurement results either on a Excel sheet and on a Report Generator in MS Word format.
The template is freely configurable and can be modified according to laboratory standards.



OPTIKA ITALY

**Testing Material Lab**

**Test Report**

Specimen: **Gear**
Material: **Cast iron**
Test: **Macro + Micro**
Production Batch: **GY-04-2018**
Date: 2018-04-10 08:40:09

Measurements:

| Index | Lenght(µm) | Angle(°) | Distance(µm) |
|---|---|---|---|
| 1 | 16154719,49, 16129320,00 | 179,64 | 1219175,89 |

Comments:

Operator: _____ Chief of Laboratory: _____




## Headquarters and Manufacturing Facilities

**OPTIKA® S.r.l.** Via Rigla, 30 - 24010 Ponteranica (BG) - ITALY - Tel.: +39 035.571.392 - info@optikamicroscopes.com

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OPTIKA®
MICROSCOPES
ITALY

# OPTISCAN

**OPTISCAN10**
Digital scanner

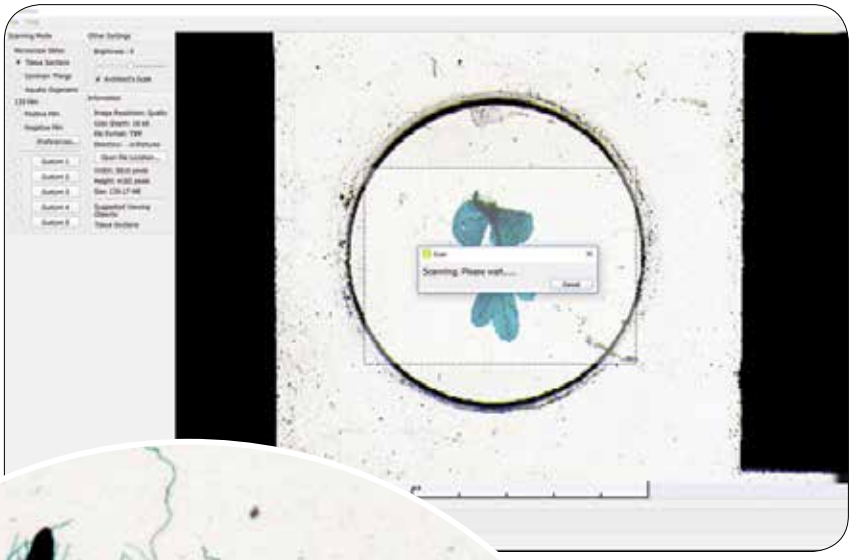
# OPTISCAN10 - 4083.SC10

**CONVERT YOUR GLASS SLIDES INTO DIGITAL DATA !**

Rapid and high resolution scanner to convert your slides into digital slides. The digital slide can be easily manipulated to see any location at any magnifications. Digitizing slides opens up a variety of new possibilities, like:

- Creating a database to be incorporated into a laboratory information system
- Networking slide libraries to be consulted from distant facilities and research institutes
- Sharing expertise for evaluation processes and discussing
- Information storing (digital data does not deteriorate, are secure from damages and losses)

Main application fields are quality control & research, education, veterinary, histology / pathology, entomology / insectology, etc.



**Main Features:**

- High Resolution (up to 10.000 dpi)
- True & Neutral Color Fidelity
- White Balance & Distortion-free Images
- Dedicated Illumination (LED Transmitted Light)
- Efficient Scanning Area, Wide Field of View
- Impressive Scanning Speed (from 40 sec. to few minutes)
- High Sensitivity CCD Sensor
- Largest Field Of View, Better Than Any Camera

**Ideal for:**

- building up a comprehensive database of images for routine operations
- sharing expertise for evaluation processes
- archiving confidential patient information

# OPTISCAN10 - Technical Specifications

**OPTISCAN10** is an extremely convenient scanner for professionals, labs & teaching purposes, offering unmatchable price/performance ratio and coming along with a comprehensive but user-friendly software.
A ultra efficient, compact scanning device carrying high resolution features for spot detection with easy operation figure.
It is equipped with a dedicated LED transmitted light system and high resolution CCD sensor, ensuring high sensitivity with low background noise.

| | |
|---|---|
| **Signal output** | USB 2.0 |
| **Illumination** | LED |
| **Resolution** | 5'000 dpi (Normal), 10'000 dpi (Quality) |
| **Allowed slide** | Standard 24 x 75 mm |
| **Scan view size** | Any size, Max 24 x 36mm |
| **Prescan function time** | 25 seconds |
| **Scanning time (Normal)** | 1min 30sec (24 x 36mm); 40 sec (standard 15x15mm cover slide) |
| **Scanning time (Quality)** | 2min 10sec (24 x 36mm); 1min (standard 15x15mm cover slide) |
| **Always included** | 1.5 m USB cable, power supply, CD rom |
| **System requirements** | Windows XP service pack 2, Vista / win7 / win8 / win10 / 32-64 bit / USB 2.0 |
| **Supplied software** | Multilanguage software for image scan |
| **Capture features** | Prescan, slide scan 24x36mm, crop scan, brightness, contrast, saturation, image flip |

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