



# Optilia Instruments

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Empowering Your Vision!



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Soporte y Garantía Local en México

Product Review:

# High Definition Inspection Cameras

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New technology to replace microscope based inspection tasks!



# Advantages over Traditional Ocular Microscopes

- **Less tiring** than looking under binocular based cameras / ocular microscopes.
- **Longer working distances** no risk of board contact. Crucial for efficient assembly, reparation and rework.
- **Auto focus optics** 'frees up' the hands and allows quick inspection of objects at different heights and magnifications.
- **Larger depth of field** for easier and quicker work.
- **Powerful optical zoom** 10x, 20x or 30x with additional Close-Ups.
- **Up to 300X magnification** on a 24" HD display.
- **Remote control** of magnification, focus, brightness, Iris etc.
- **Live image overlay** displaying cross-line and zoom factor.
- **Foot switch** control option allows improved workflow and flexibility.
- **Very high resolution** display of the inspection object.

# Advantages over Stereo Microscopes

| Performance            | HD Video  | Stereo Microscope |
|------------------------|-----------|-------------------|
| Ergonomic Inspection   | Excellent | Poor              |
| Large Working Distance | Excellent | Good              |
| Large Depth of Focus   | Excellent | Good              |
| Large Field Of View    | Excellent | Good              |
| 3D image               | -         | Excellent         |

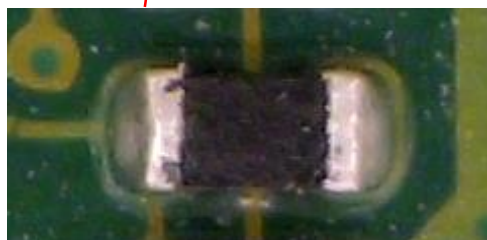
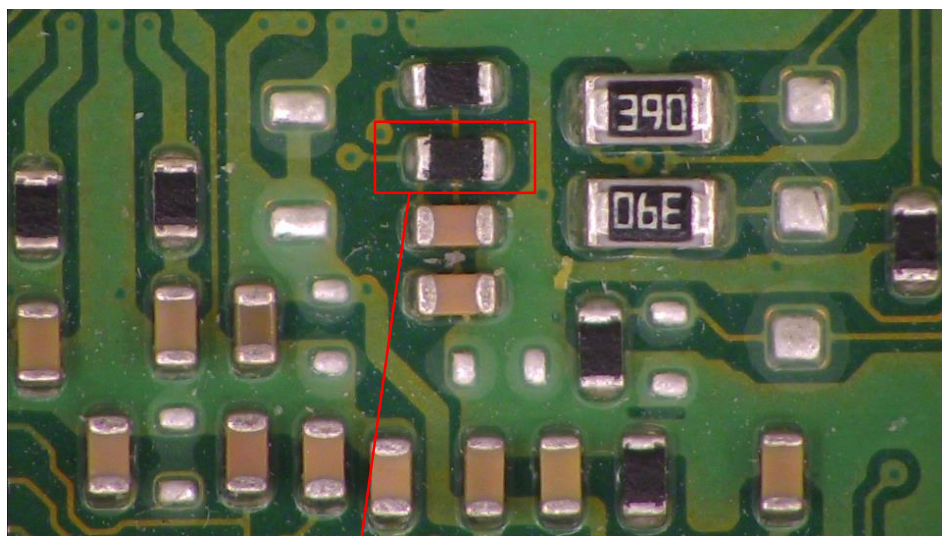
| Application             | HD Video  | Stereo Microscope |
|-------------------------|-----------|-------------------|
| Visual Inspection       | Excellent | Excellent         |
| Video / Image Recording | Excellent | Optional          |
| Documentation           | Excellent | Optional          |
| Repair / Rework         | Excellent | Good              |
| Assembly Work           | Excellent | Good              |

# Optilia High Definition Inspection Cameras

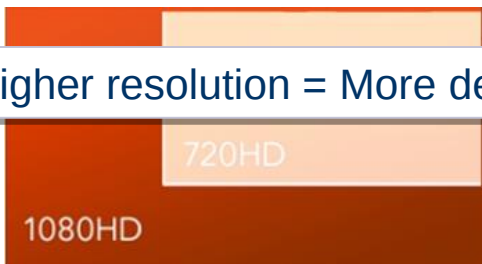
| Product Features                        | M20X<br>EasyView                                 | M20X<br>FreeSight                                | W10X                                                                    | W30X                                                                    | W30X<br>FreeSight                                                       |
|-----------------------------------------|--------------------------------------------------|--------------------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------|
| HD Format(s)                            | 720p                                             | 720p                                             | 1080i, 720p                                                             | 1080p, 720p                                                             | 1080p, 720p                                                             |
| Image Sensor<br>(Video)                 | 1/4" CMOS<br>1.4 M Pixels                        | 1/4" CMOS<br>1.4 M Pixels                        | 1/3" CMOS<br>2 M Pixels                                                 | 1/2.8" CMOS<br>3.2 M Pixels                                             | 1/2.8" CMOS<br>3.2 M Pixels                                             |
| True Optical<br>Zoom                    | 20x                                              | 20x                                              | 10x                                                                     | 30x                                                                     | 30x                                                                     |
| Max<br>Magnification<br>(with +10 lens) | ~ 190X                                           | ~ 190X                                           | ~ 90x @ 1080p<br>~135x @ 720p                                           | ~ 250x @ 1080p<br>~ 350x @ 720p                                         | ~ 250x @ 1080p<br>~ 350x @ 720p                                         |
| Standard<br>Working<br>Distance         | 210-240mm                                        | 350-500 mm                                       | 190-245 mm                                                              | 190-245 mm                                                              | 350-500 mm                                                              |
| Laser pointer                           | No                                               | No                                               | Yes                                                                     | Yes                                                                     | Yes                                                                     |
| Auto Focus<br>Speed                     | Very Fast                                        | Very Fast                                        | Fast                                                                    | Normal<br>Very Fast @<br>720p                                           | Normal<br>Very Fast @ 720p                                              |
| Remote Camera<br>Control device         | Yes<br>Push button                               | Yes<br>Push button                               | Yes<br>Joystick                                                         | Yes<br>Joystick                                                         | Yes<br>Joystick                                                         |
| Controls                                | Zoom,<br>Brightness<br>Focus, overlay,<br>freeze | Zoom,<br>Brightness<br>Focus, overlay,<br>freeze | Zoom, Brightness<br>Focus, Iris, shutter,<br>colour, overlay,<br>freeze | Zoom, Brightness<br>Focus, Iris, shutter,<br>colour, overlay,<br>freeze | Zoom, Brightness<br>Focus, Iris, shutter,<br>colour, overlay,<br>freeze |
| Control Software                        | No                                               | No                                               | Yes                                                                     | Yes                                                                     | Yes                                                                     |

# Full 1080 HD vs. 720 HD

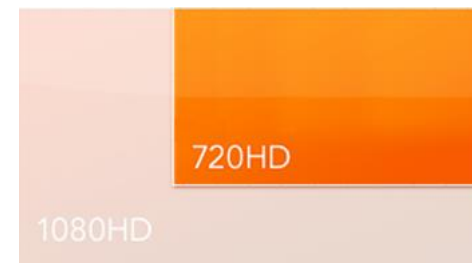
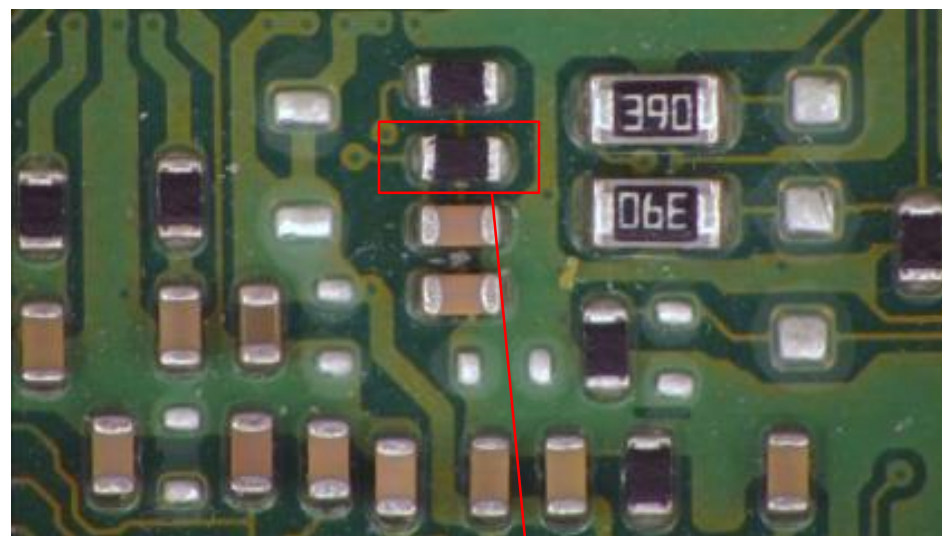
1080 HD (Full HD)  
1920x1080 pixels



Higher resolution = More details



720 HD  
1280x720 pixels



# Basic HD Camera kits

## High Definition 720p

**M20x EasyView**  
Tough plastic housing



**M20x FreeSight**



## Full High Definition 1080i/p

**W10x (1080i)**  
Aluminum housing



**W20x/W30x (1080p)**  
Tough plastic housing



**W30x FreeSight (1080p)**



**HD TV/Monitor Sold Separately or Customer can purchase independently.**  
**HD TV/Monitor Specs are Full HD1080p with HD Component (Y/Pb/Pr) Input.**  
**Optional Antistatic housing and/or IP65 housing available for M20x, W20x and W30x models.**

# W10x 1080i HD Camera

Reliable, Robust and Long-life!



Full HD  
1080

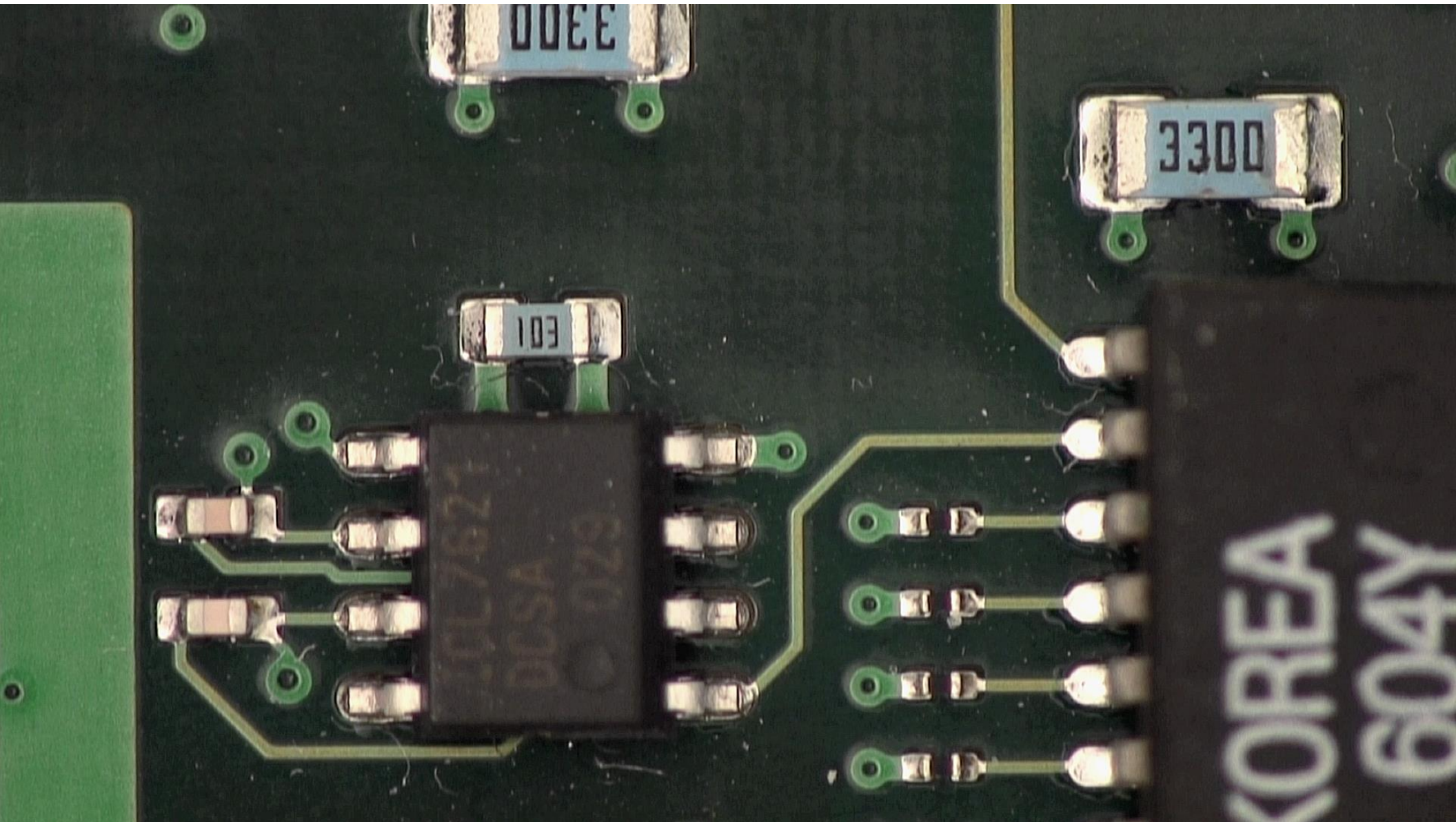


**Rugged aluminum housing with integrated zoom buttons!**

**Fast #F1.8 optics! Use it without extra illumination!  
Designed for highest quality and flexibility!**

Optimised for  
In-line inspection!

# Sample picture



10x zoom, standard lens  
Ambient light

# W30x 1080p HD Camera

Powerful 30x Optical Zoom!



Full HD  
1080



Highest Magnification in the family.  
Best Image Quality with extra illumination.  
Optimized for image analysis and measurement.

Replaces your  
microscope!

# FreeSight, M20x 720p, W30x 1080p HD Camera

Extended 350 to 500 mm working distance !



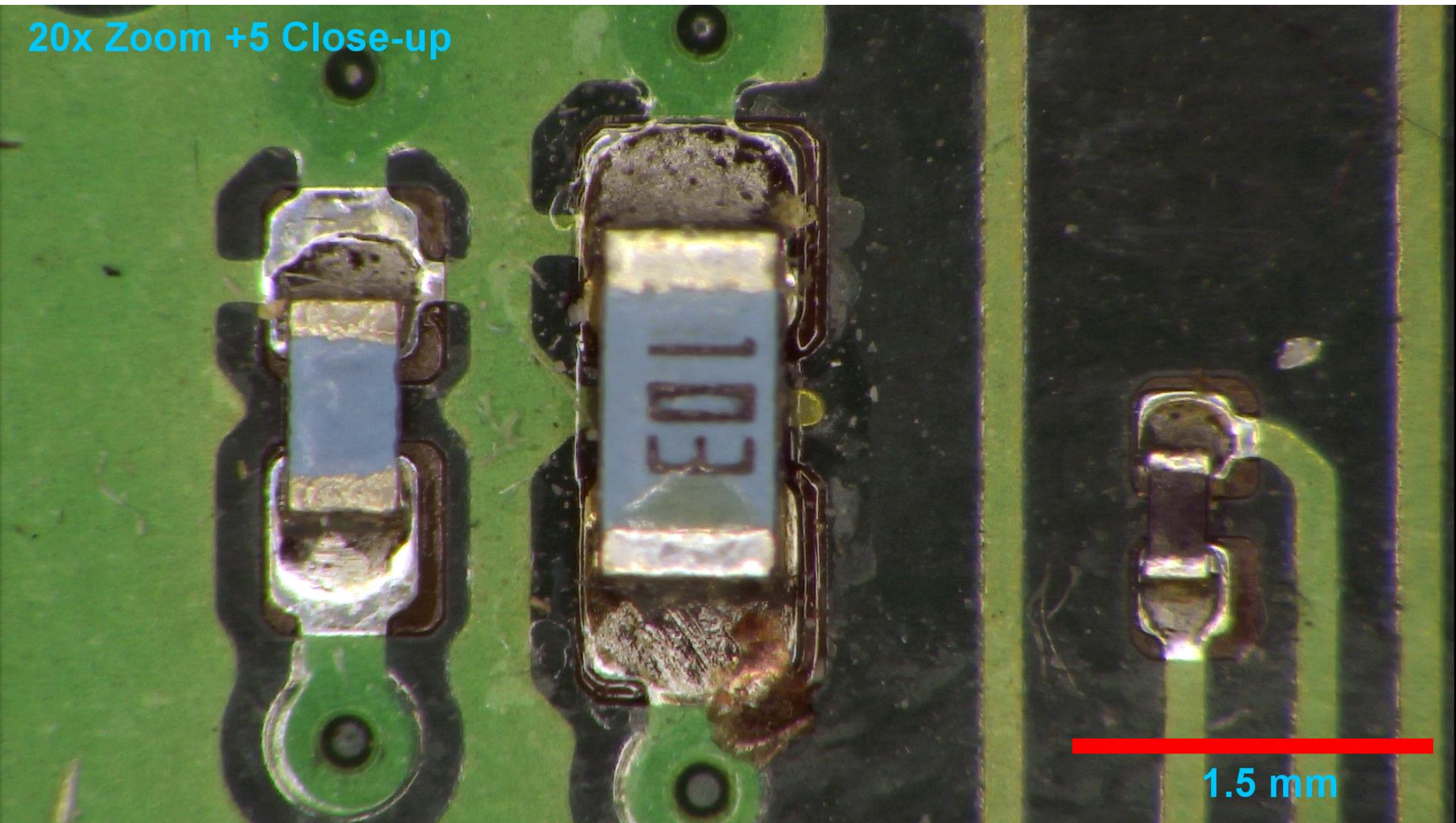
**Very fast Auto Focus.**  
**Excellent Dept of Field even at high magnifications!**  
**The most Ergonomic optical Inspection!**



**For assembly,  
rework and  
reparation!**

# Sample picture

20x Zoom +5 Close-up



20x zoom with +5 close-up  
RingLight LED Illumination

# EasyView, M20x 720p HD Camera

Plug & Play, All Inclusive!



High frame rate, crisp HD video.  
Easy to setup and to operate.  
The most cost effective professional HD  
inspection.



For all kind of  
Optical Inspection!

# Remote Camera Control

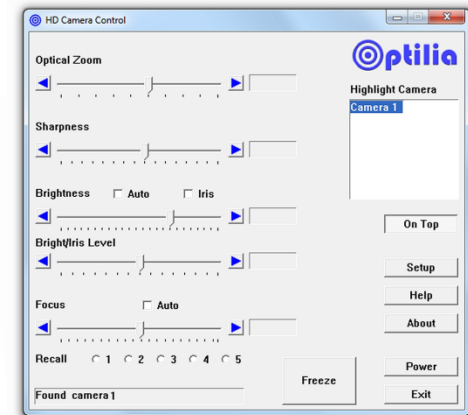
- **Remote Control of Magnification, Brightness, Iris, Shutter, Colour, Focus etc.**
- **Add-on software for Cross Line overlay and Zoom factor display.**
- **2 preset configurations can be saved in memory and re-called!**
- **PC Control Software available for W10x and W20x/W30x cameras.**
- **Optional Foot Switch for “Hand-free” control of Magnification, Brightness and Focus!**



Joystick **advance**  
control  
W30x/W20x  
W30x FreeSight  
W10x



Basic **control**  
M20x FreeSight  
M20x EasyView



PC software **full**  
control  
W20x/W30x  
W30x FreeSight  
W10x

# Double-rod Boon Stand



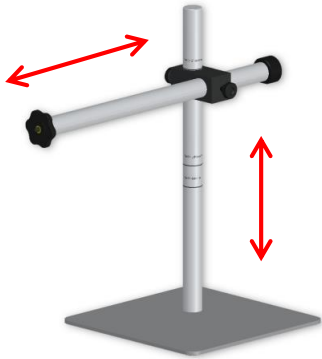
**Robust and stable stand with 300mm Y-Z-travel as standard!**

**Up to 600mm travel at request!**

**Compatible with optional Coarse/Fine Rack & Pinion Unit for precision manual focusing of camera!**

# Single-rod Boon Stands

Single-rod Boom



OP-006 660  
Multifunction, easy-to-use!

with Height extender



OP-006 660  
OP-006 661

Table Clamp



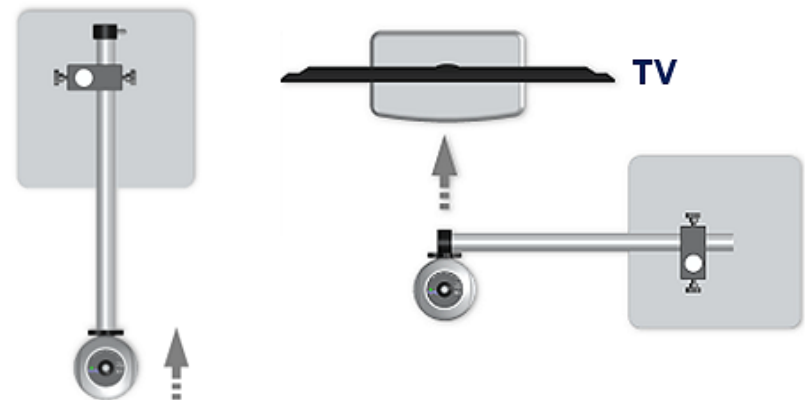
OP-006 662  
Recommended for W30x FreeSight.

Wall mount



OP-006 663  
For best image Stability!

The Camera can be mounted  
straight or 90° angled position!



# 4-directional tilt unit

Camera Tilt device For Double-rod Boom and XY-stands

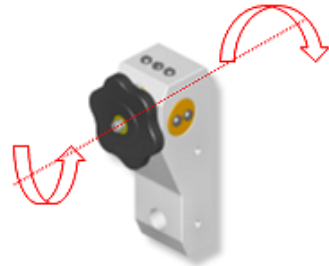
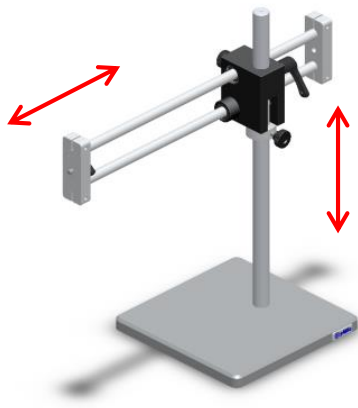
OP-006-199

+

OP-006-334

=

X ,Z, 4 Tilt- Axes



25 degree all Tilt-Axes

**Camera Plus 4- Direction Tilt Unit provides the greatest flexibility for Side Inspection of objects.**

# Focusing Stand

Microscope stand with precise rack & pinion vertical travel!



OP-006 201



**For precise Focus Adjustment at High Magnifications!**  
**Best option for W30x/W20x with extra Close-up lens and RingLight**

# Gantry, large working area XY-Stand

In-Line



Desk-top



The camera can be positioned over conveyors or inspection area and allow inspection without moving or touching the board.  
Up to 1000mm XY-travel over inspection object!

# In-line large working area XY-Stand



The Camera positioned over conveyor after Pick & Place

# Weight less Parallel Arm

Long-reach solution for ultimate flexibility!



OP-006 328



X, Y, Z and free Tilt-Axes

**920 mm working range!**

**With articulating knuckle and lockable gas springs.**

# Optional Close-up Lenses



+2 Dioptr  
~ 1.5x more Mag.



+5 Dioptr  
~ 2.2x more Mag.



+10 Dioptr  
~ 3.2x more Mag.



W10x, standard lens



W10x, standard lens +5 Close up

**Specially designed for best Colour and highest Image Quality!**  
**Several Close-up Lenses can be stacked for more optical power!**

# Illuminations and Filters

- White Ring Lights 40 or 80 LEDs.
- UV Florescent Ring Light.
- Coaxial Incident Diffuse LED light.
- Bright Field Polarized LED Illumination Kit with Rotatable Analyzer.
- Dark Field LED Illumination Kit.
- Double Arm Spot-Light.
- Polarizer Filters, Diffusers, Lens Protection filters.



White Ring Lights 40 LED



UV Ring Light



Coaxial incident



Bright field with Pol.

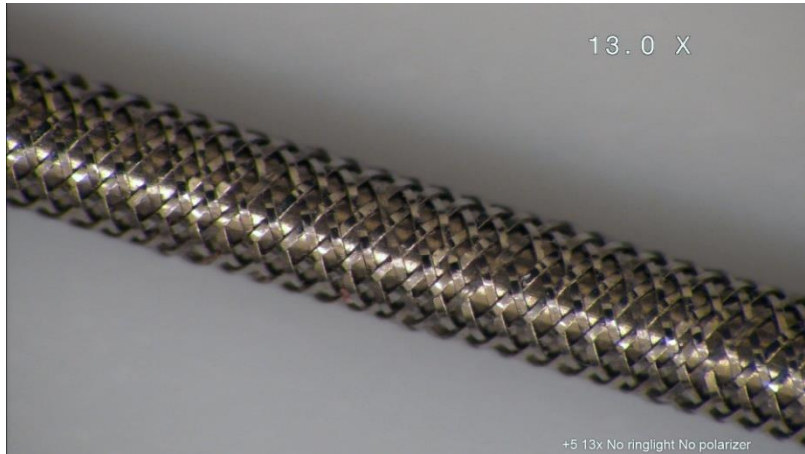


Dark field



Double Spot-light

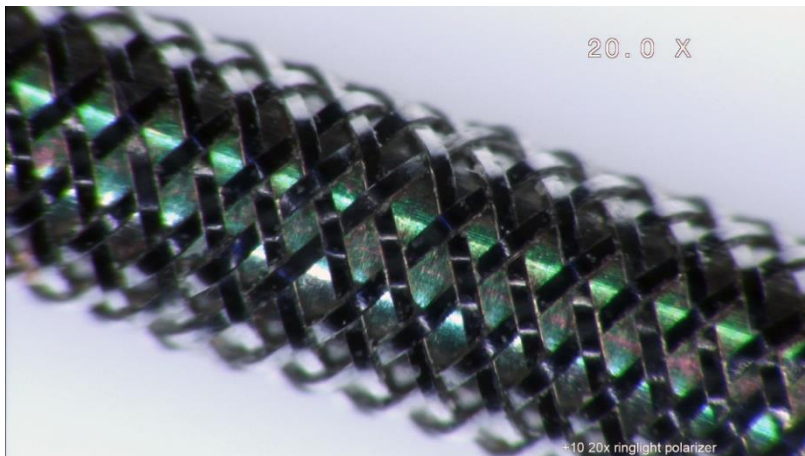
# Illuminations effect on Object!



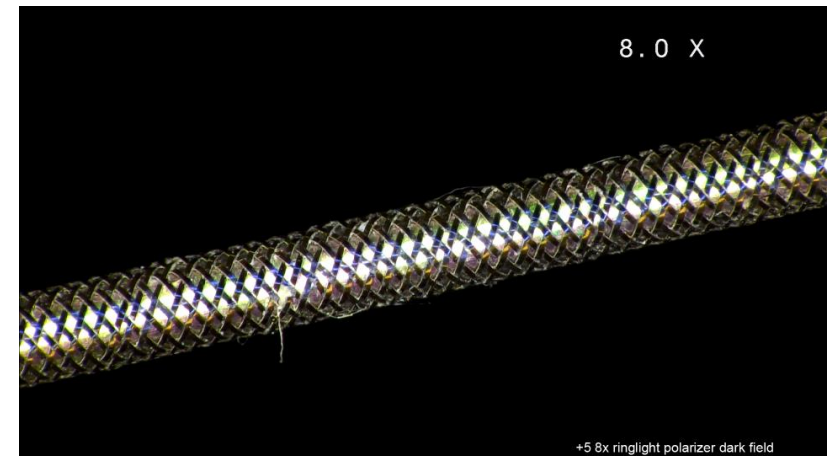
**13x Zoom +5, Ambient office light!**



**20x Zoom +5, with Ring light & Polarizer!**



**20x Zoom +10, with Ring light & Polarizer!**



**8x Zoom +5, with Dark Field & Ring light!**

# Accessories, XY-boards

Linear Floating XY-Translation Stage, equipped with thick static dissipative top matting.



- X-travel • 450 mm
- Y-travel • 300 mm
- Size of antistatic surface • 420x330 mm
- Maximum height • 42 mm

Can also be ordered with electromagnetically Position Locking system.



# Capture and Measurement with PC / Laptop

## 1080HD Frame grabbers with Software

PCI-e



USB3.0



## Recommended PC's

Minitower/Tower:

**HP PRO 35XX MT, W7/8**

**HP Compaq 8300 Elite CMT CI5, W7/8**

Small size:

**Fujitsu ESPRIMO Q910 CI5 Win7P**

Laptop:

**HP ProBook, Intel i5, 15.6" HD**

**HP ProBook, Intel i5, 17.3" HD+ LED**

**MSI GE60, Intel i5, 15.6" Full HD**

## Software



OP-006 120, **OptiPix Lite. Display/Capture. No measurements. Frame Grabber Included.**

OP-006 119, **OptiPix Full. Display/Capture/ Measurement Overlay/ Software with Calibration Scale.**

OP-006 121, **OptiPix Full with Date Base. Display/ Capture/ Measurement/ Overlay/ Data Base/Reporting Software with Calibration Scale.**

# Capture Full HD Digital Image without PC

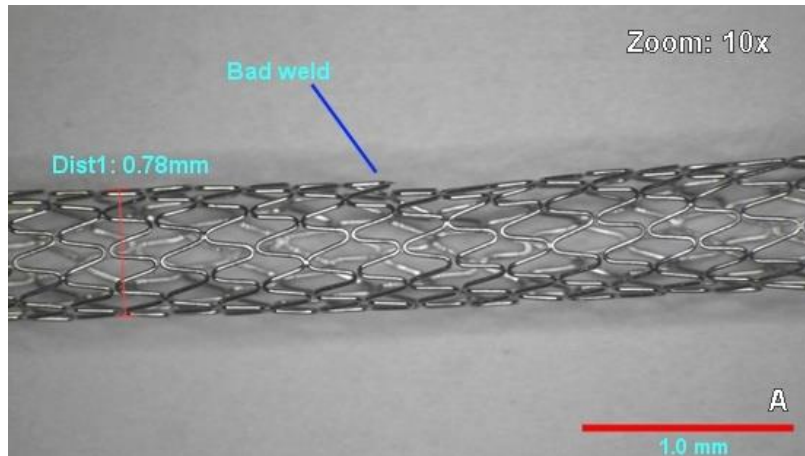
Capture 32 GB of Full HD still pictures on removable SD-card



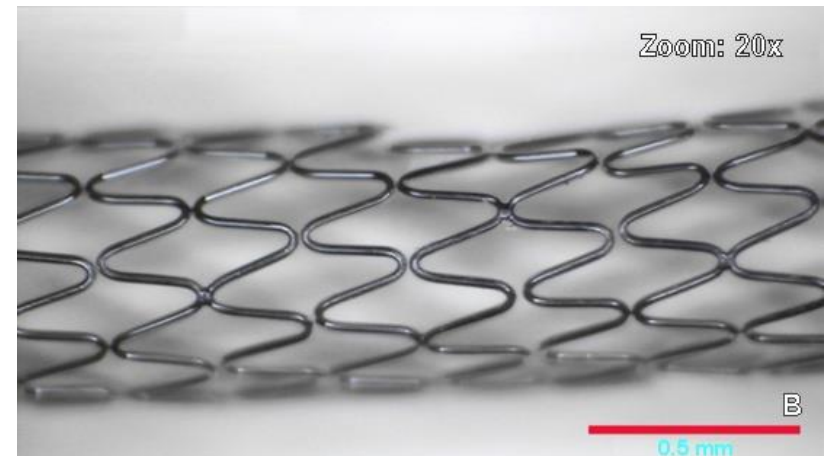
Full HD 1920x1080 resolution!

- HDMI output
- Double picture display via USB output (reference image)
- Overlay lines, patterns, annotations or CAD drawings on live image “Digital Graticule”
- Foot switch for hand-free operation

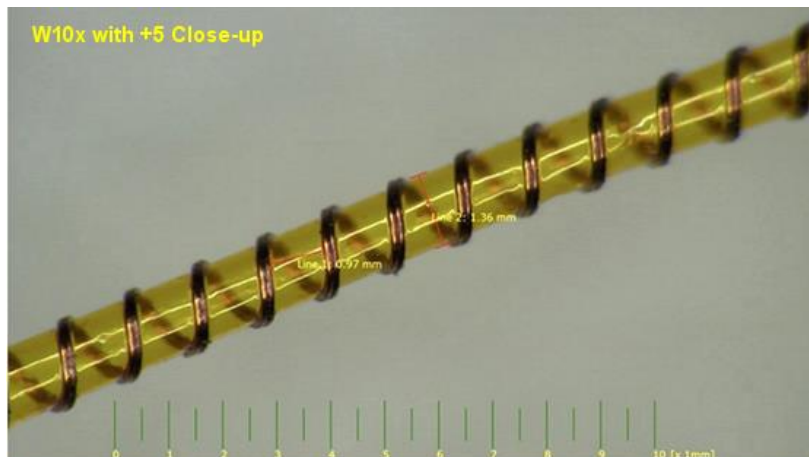
# Sample calibrated pictures in OptiPix



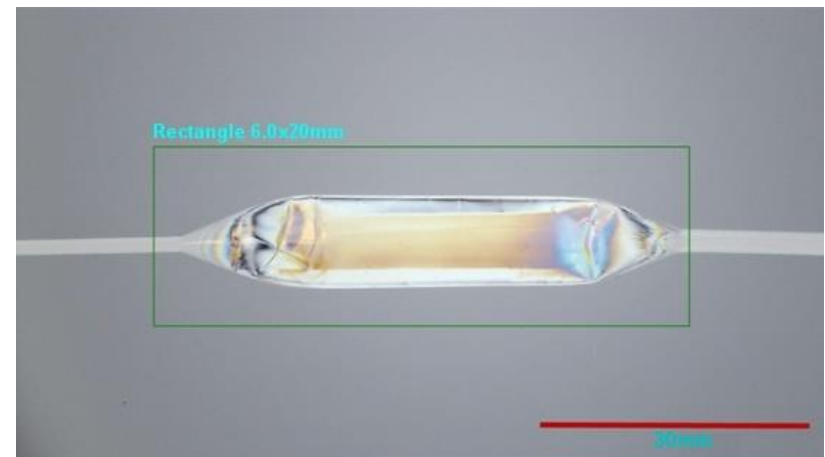
W20x with +10 macro, 10x zoom, A  
Incident RingLight



W20x with +10 macro, 20x zoom, B  
Incident RingLight



W10x with +5 macro, calibrated in  
OptiPix  
Incident RingLight



W10x standard lens  
Bright Field Polarized Illumination

# Software – OptiPix Lite, Full or DataBase version?

| OptiPix Feature                    | Lite | Full | Data base |
|------------------------------------|------|------|-----------|
| Database management                |      |      |           |
| Encrypted Database                 |      |      | O         |
| Case Management                    |      |      | O         |
| Advanced Search and Sort           |      |      | O         |
| Create Automatic Reports in pdf    |      |      | O         |
| Archiving                          |      |      |           |
| File Folder System Management      | O    | O    | O         |
| Open/save Images with Calibration  | O    | O    | O         |
| Device                             |      |      |           |
| Image Capture                      | O    | O    | O         |
| Adjust Properties                  | O    | O    | O         |
| Adjust Resolution                  | O    | O    | O         |
| User-defined Magnification         | O    | O    | O         |
| View                               |      |      |           |
| Freeze Image                       | O    | O    | O         |
| Compare Image (live and freezed)   |      | O    | O         |
| Image manipulation                 |      |      |           |
| Contrast, Brightness, Color contr. |      | O    | O         |
| Flip images Vertically/Horizontaly | O    | O    | O         |

| OptiPix Feature                       | Lite | Full | Data base |
|---------------------------------------|------|------|-----------|
| Calibrated Measurements               |      |      |           |
| Calibrate user-defined Magnifications | O    | O    | O         |
| Distance Measurement                  | O    | O    | O         |
| Circle and Polygon Measurement        |      | O    | O         |
| Angle and Curve Measurement           |      | O    | O         |
| Free-form Area, Length and Perimeter  |      | O    | O         |
| Count Objects                         |      | O    | O         |
| Overlays on Live Image                |      |      |           |
| Adjustable Grid, Crosshair            | O    | O    | O         |
| Adjustable Rectangle                  |      | O    | O         |
| Calibrated Ruler                      |      | O    | O         |
| Digital Graticule overlay             |      | O    | O         |
| Others                                |      |      |           |
| Annotations on Image                  | O    | O    | O         |
| Change item Size, Color, Font         | O    | O    | O         |
| Color Mapping, B/W Conversion         |      | O    | O         |