SEIWA OPTICAL

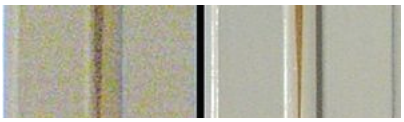
Invenio 6EIII

Digital camera for microscopes
USB 3.0
Windows Vista / XP / 7,8 and 10

A new generation of high performance and affordable Microscope Cameras

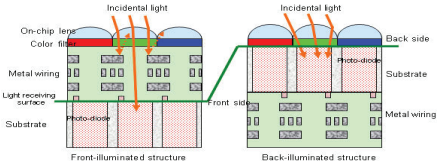
USB3.0 and Exmor Sensor Advantages:
Real High Speed Readout
The new Exmor sensors combine the high-speed readout from CMOS sensors with the low noise, high sensitivity, large dynamic range and color precision of CCD sensors. In combination with USB3, it offers a new generation of microscope cameras with real live video performance combined with high quality still images.

Ultra Low Noise
The Exmor sensors digitize the pixels before the column signals are multiplexed, thereby minimizing the noise signal significantly compared to standard CMOS sensors.



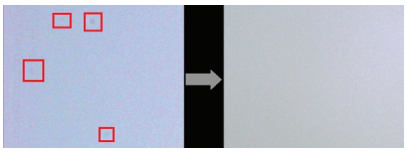
Smear-free images.
The special construction of the Exmor sensor allows the sensor to produce smear-free images like other CMOS sensors, but without the limited dynamic range and contrast know from traditional CMOS sensors.

Exmor back-illuminated structure
Sony Exmor back-illuminated structure sensor, is developed with the intention of capturing vivid images even in low light settings. “Exmor” sensor is approximately twice as sensitive as a conventional front illuminated CMOS sensor and also features low noise. This is due to back illuminated CMOS sensor, light is directed onto the silicon substrate from behing, allowing light to be used with a level of efficiency not possible with conventional front illuminated pixel structures.



Seiwa Advantages:
Extreme Quality Assurance
All Seiwa cameras are thoroughly tested in order to ensure that all cameras meets the same high quality.

Clean Sensors and Filters.
The way the light hits the camera sensor and filter on a microscope, dispense all particles on the sensor and IR-filter as illustrated on the image below the dark spots on the image are dust particles. Seiwa cameras are assembled, carefully cleaned and assembled in dust free clean chambers to ensure that such particles are removed.



Extreme Performance
Cameras from different manufacturers often use the same sensors. To get the best performance out of these cameras, Seiwa uses optimal circuit design and components like ultra high quality capacitors, to ensure low noise and long life.

Ulta High ESD Protection
An advanced ESD protection scheme has been designed to avoid camera freezes, and computer or USB - port errors.

Professional Software

Enclosed with all Invenio III cameras is a comprehensive software package. Seiwa InSight, is based on 25 years of experience and user feedback, built especial ly for Invenio cameras. No need for poor integrated third party software. Modules for stage control, topography, image analysis and much more can be added as needed.

Features:

- 6.3 MPixels still image and video
- High speed video at up to 25 FPS
- High Resolution and crisp colors
- 1/1.8’ Sony Exmor™ Back illuminated sensor
- Fast subsampled live video in combination with full resolution still image capture.
- Easy and flexible daily use with dynamic insertion and removal of the camera to PC and notebook via a single standard USB 3.0 high-speed interface
- Small compact camera with optical C-mount for easy attachment to a microscope
- Tripod receptable for mounting to stands for macro photography
- Automatic and manual exposure and sensitivity control
- Back focus adjustment
- Free software upgrade (2 years guaranteed)
- 2 Years warranty
- Manufactured in Denmark

Typical Applications:

- Live cell imaging and video
- Material science
- FISH, GFP, NIR
- Metrology
- Dark Field
- Bright Field
- Histology
- Pathology
- Semiconductor Inspection
- Cytology
- Biology

Invenio 6EIII Specifications

Imager

Effective Size:	1/1.8" format Exmor 7.37 mm x 4.92 mm
Colour Filter:	Red, green and blue in Bayer pattern
Effective Pixels:	3072 x 2048 pixels (6.3 million)
Pixel Size:	2.4 x 2.4 microns
Dynamic Range:	65 dB
Signal to Noise:	38dB / 50dB in binmode
Dark Current Noise:	20 electrons/pixel/second
Exposure Time:	0.244 milliseconds to 1000 milliseconds
Sensitivity:	0.31 V/Lux-s 1x1 and 2x2
Binning:	
Exposure Sensitivity:	Adjustable from 1 to 16 times
Exposure Mode:	Automatic, manual or converging
Colour Balance:	Automatic, manual or spot white balance
Shutter:	Electronic rolling shutter

Digital Still Image

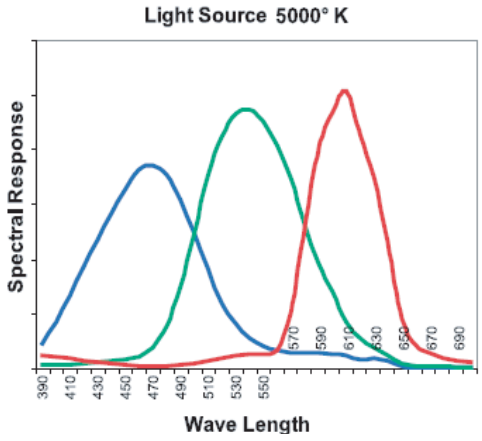
Single exposure:	3072 x 2048 pixels (6.3 million)

Data Format & Compression

Digital outout:	24 bit uncompressed TIFF-RGB (8 bits per colour)
	24 bit loss-less compressed JPEG2000 (8 bits per colour)
	24 bit JPEG compressed (8 bits per colour)
	24 bit uncompressed DICOM (8 bits per colour)
	24 bit uncompressed video in AVI format (8 bits per colour)

Computer & Software

Data interface:	High-speed USB 3.0 architecture
Cable:	Standard USB 3.0 cable
Power:	USB
Application interface:	Intuitive, easy-to-use user application



Response shown with IR-filter.

Video Resolution:

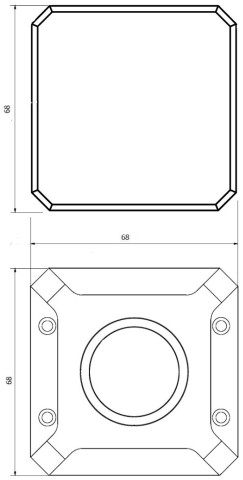
3072 x 2048 pixels
More than 15 fps in full resolution
ROI can be freely selected

Operational Requirements

Temperature:	0°C to +50 °C
Humidity:	5% to 95% RH (non-condensing)

Physical Data

Optical mount:	Standard C-mount
Mechanical mount:	Tripod receptable for macro photography
Enclosure:	Blue/grey Aluminium with tripod mount
Height:	38 mm
Width:	68 mm
Depth:	68 mm
Weight:	270 g
Compliance:	CE



Minimum Computer Platform

1 GB RAM
15 GB free harddisk space
USB 3.0 port
Windows X P, Vista, 7,8 ,10, 32 and 64 bit

Product Includes:

- Invenio 6EIII digital camera for USB 3.0
- 8GB USB Memory stick with "InSight LE". Free upgrade from website
- USB 3.0 cable

Optional:

Software Developer Kit (SDK) for developing deep intergration with other software applications

SEIWA OPTICAL

3042 Scott Boulevard
Santa Clara, California 95054
United States

Phone: +1(408)844-8008
Fax: +1(408)844-8944
Email: info@seiwaamerica.com
http://www.seiwaamerica.com/