

OLYMPUS[®]

Your Vision, Our Future

MICROSCOPE DIGITAL CAMERA

DP71

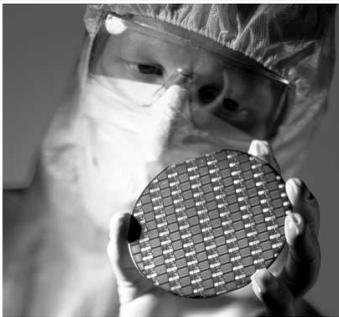
NEW



Digital Micro Imaging



High level of color accuracy ensures faithful rendering of critical image
Stress-free operations by smooth real-time display and fast image capture
High expandability to support growing analytical needs



The Olympus DP71 provides a complete range of functions to meet today's demands for high-performance digital imaging. As well as taking accurate photos of a variety of specimens with high sensitivity and high resolution, it offers fast, easy operation to improve work throughput — letting you capture, display and examine images quickly, utilize them effectively, and complete all operations from observation and analysis to drafting reports on a single PC.

L S I



Brass, cast iron



Color filter



OLYMPUS
DP71



MX61 semiconductor/FPD inspection microscope
with DP71 digital color camera

L S I

Brazing structure

Contamination on a wafer

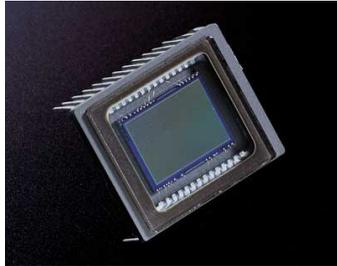


Spot the difference:

high resolution clearly shows up minute flaws or color differences

■ Super high resolution, equivalent to 12.5 megapixels

Applying pixel shift to the 1.45 million-pixel 2/3-inch CCD achieves super high resolution equivalent to 12.5 megapixels, and gives a maximum recordable image size of 4080 x 3072 pixels.



■ High optical sensitivity with reduced noise

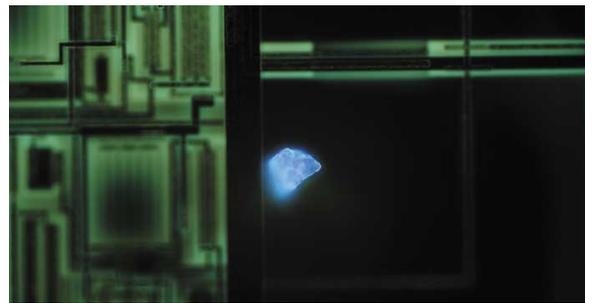
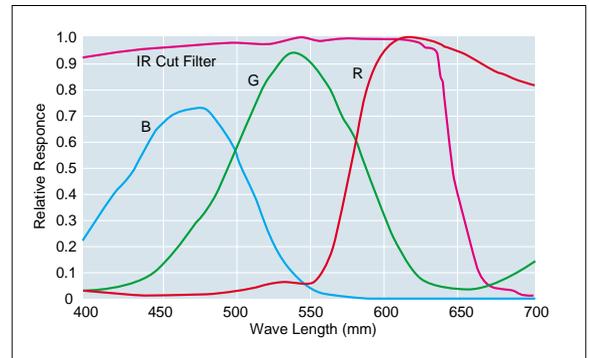
The DP71's dedicated 2/3-inch CCD is cooled by a Peltier element to 10°C, ensuring high-sensitivity, low-noise (equivalent to ISO1600) image capture. Along with the 2 x 2, 4 x 4 binning function, this gives sharp, clear results with confocal images and others requiring particularly high sensitivity (e.g. inspecting resist residue and organic EL by fluorescence observation).



■ 12-bit RGB colors

Bayer series RGB color filters are used, with up to 12-bit information capture (4096 gradations) for each RGB color. This very high level of color accuracy ensures faithful rendering of critical images.

■ CCD and IR Cut filter spectral sensitivity characteristics



Super fast image capture,

even at the highest resolution

■ Rapid high-resolution image acquisition — 12.5 million pixels equivalent - in only 3 seconds

High-speed hardware makes it possible to save even high-resolution images (equivalent to 12.5 megapixels) in approx. 3 seconds.

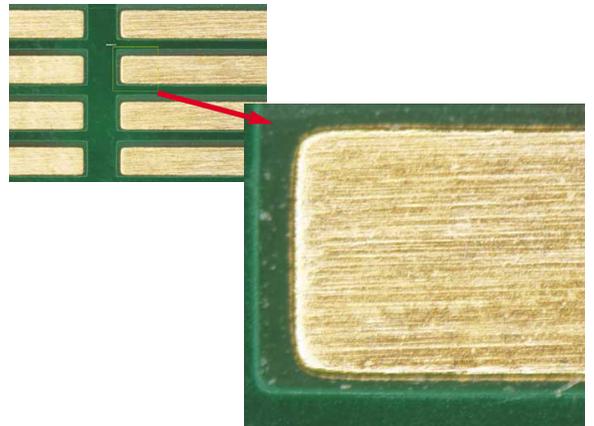
* For exposure times in the range of 1/44,000 - 1/15 seconds, capture can be slowed if several tasks, such as file copying, are active in the background.

■ Instant full-screen display of live images

Press the F11 key or click the toolbar button for instant full-screen display of the current live image. Additional images can be acquired by pressing the F8 key while in full-screen display mode.

■ Frame and clip a region of interest

A region of interest within the live image can be designated, clipped and saved. The size and position can be specified freely.

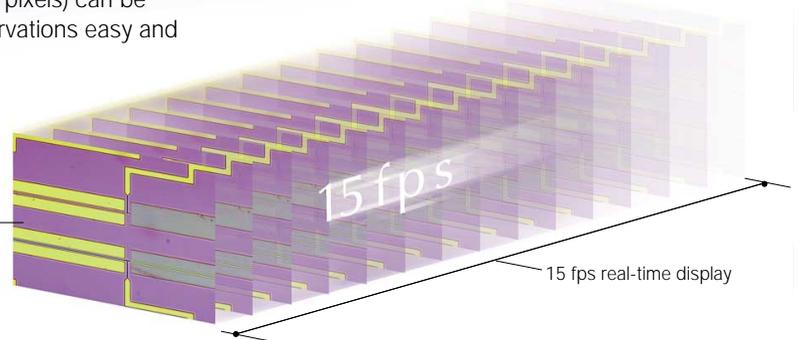


Smooth, sharp real-time display for easy, stress-free observations

Pin-sharp image display in real time at 15 fps

Sharp, detailed images (1360 x 1024 pixels) can be displayed live at 15 fps, making observations easy and comfortable.

Sharp, live images at
1360 x 1204 pixels

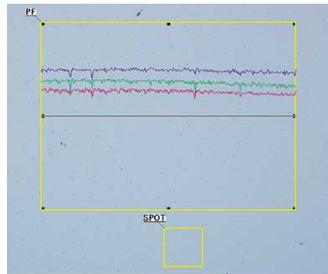


15 fps real-time display

Easily choose and set photo conditions according to the specimen or observation method

Easy, accurate focusing

An indicator function makes focusing easy, while the line profile function lets you focus accurately on specific regions. For live images, the center of the field of view can be magnified to 2 times.



Line profile function

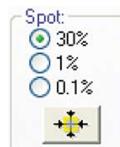
Accurate automatic exposure for fluorescent specimens

The SFL-Auto Exposure Mode makes it easy to acquire fluorescence images, since it sets the correct exposure time automatically. Manual exposure mode can also be selected.



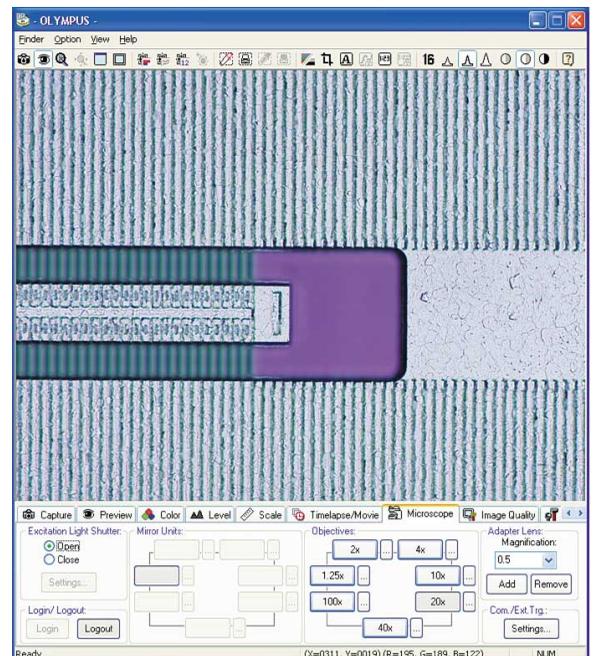
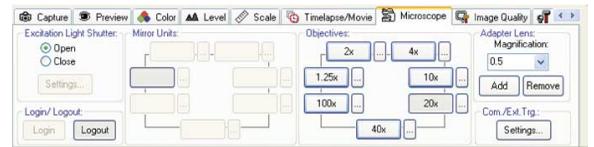
Photometric areas can be set freely

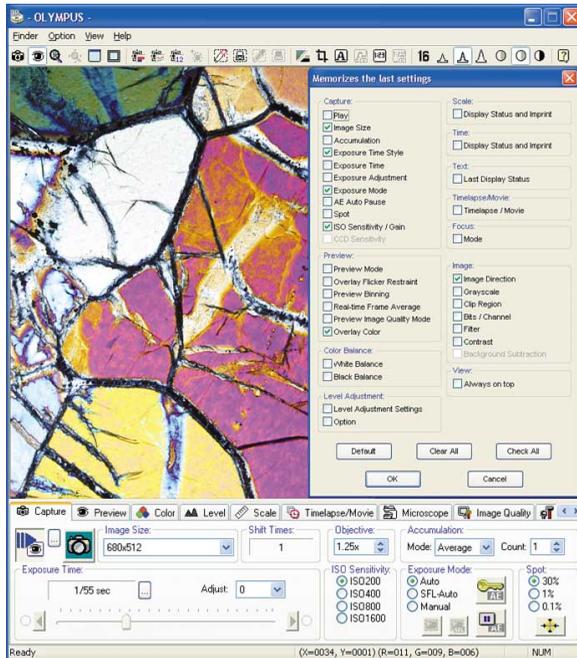
Three types of photometric area can be selected, depending on the specimen: 30%, 1%, 0.1%. The selected area can be moved freely, allowing sharp exposures without changing frames.



Include scale information or text

A scale bar can be shown on the live image, and included when the image is saved. The same function enables incorporation of captions and/or text.





Return to conditions of a previously saved image

Image acquisition conditions are recorded at the time of a software termination, and can be recalled automatically at the time of the next startup.



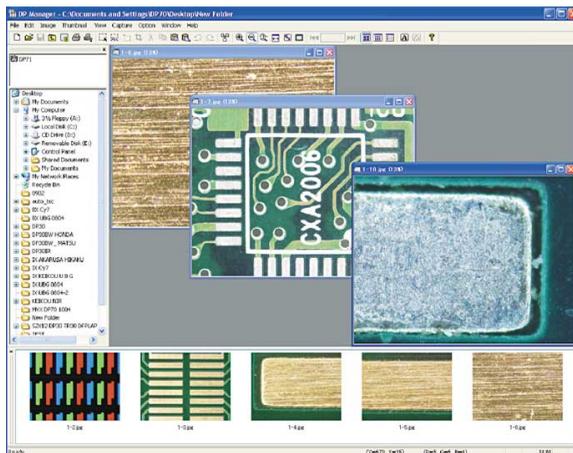
Quickly find the image you want and start using it

Display folder tree

All folders containing stored data are clearly displayed, so finding the one you want is easy and quick.

Easy to view thumbnail display

Stored images can be displayed simultaneously as thumbnails, the size of which can be changed at the press of a button. Locating, selecting, and displaying an image is performed quickly.



Multiple image merging for spinning disk confocal imaging

- Images from a specimen captured using Olympus patented disk confocal module can be combined to compose a single image.
- For enhanced viewing, the DP71 has a pixel shift function which provides accurate overlays of images from different filter sets.

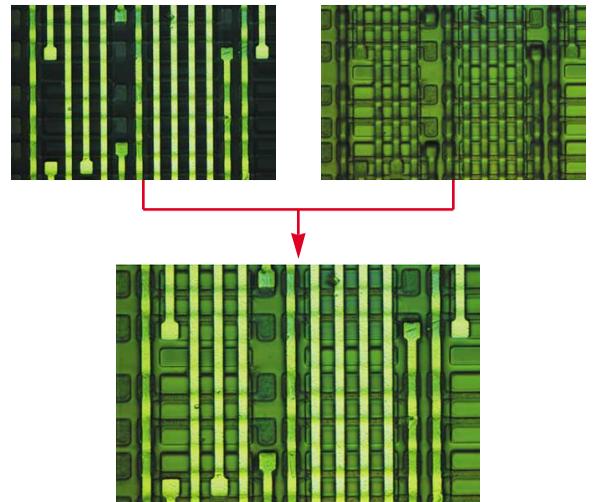


Image zoom

- Acquired images can be displayed at any size from 6% to 1600%.

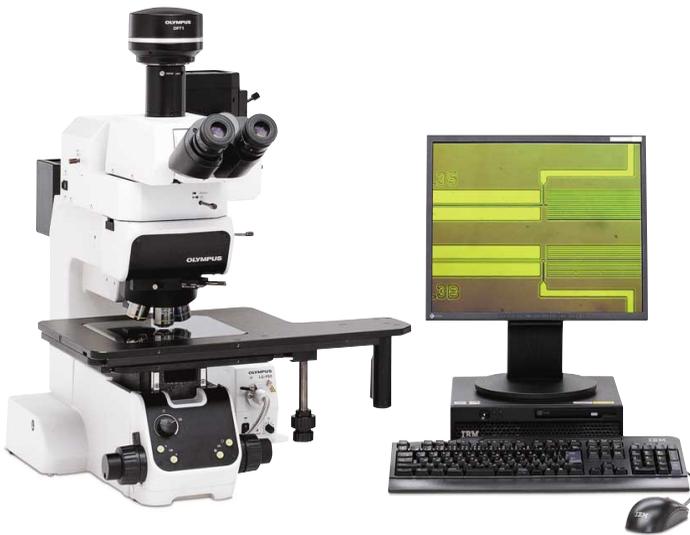


Comprehensive image analysis software for producing documents and reports

Compatible with image analysis software* for particulate analysis or analysis involving image stitching

In addition to standard software, DP71 is compatible with image analysis software that enables detailed particle analysis, analysis of images in which stitching has been performed and so on.

* Further developments are planned for introduction in the summer of 2006.



Semiconductor/FPD inspection microscope digital imaging system

MX series microscope + U-CFU + DP71 + Image analysis software

This is the optimum system for observing or measuring precision patterns in semiconductors or flat panel displays (FPD).



Particle analysis system

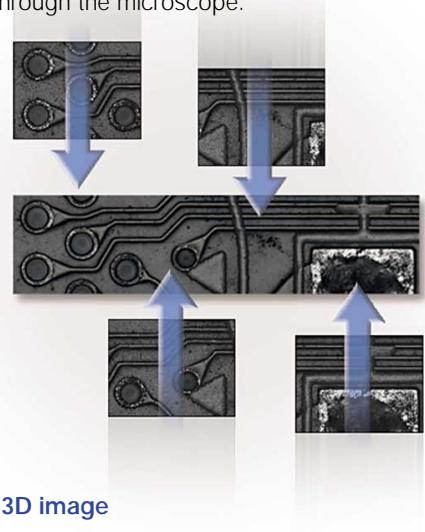
GX series microscope + DP71 + Image analysis software

The system's optimal high resolution makes the use of a Polaroid camera an entirely valid alternative. It is also ideal for metallographic observations or particle analysis required in quality improvement programs. The image magnification factor can be specified by the user.



Stitching image

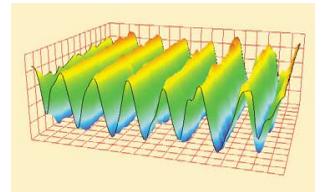
Multiple adjacent images can be seamlessly and naturally stitched together into one — an easy, effective way of observing areas too large to be viewed as one image through the microscope.



3D image

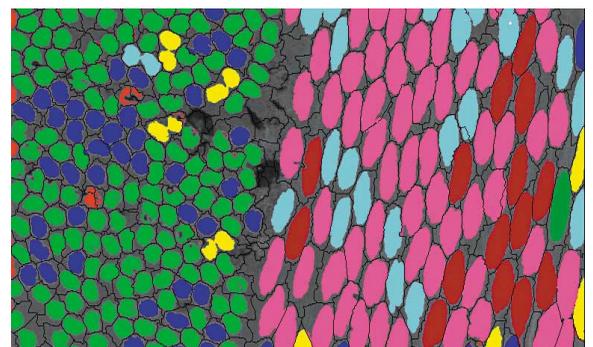
A uniformly focused image, obtained using the extended focal point function, can be used to construct 3D images and create real 3D animation.

Magnification, reduction, pan, and rotation can be performed freely, allowing the specimen to be seen as a whole and examined from any angle.



Particle analysis

The separator function enables automatic separation of particles within an image, while threshold levels and detection areas are set through the ROI (region of interest). All particles are measured automatically, using a range of measurement parameters. The measurement data is statistically processed to enable high-level particulate analysis.



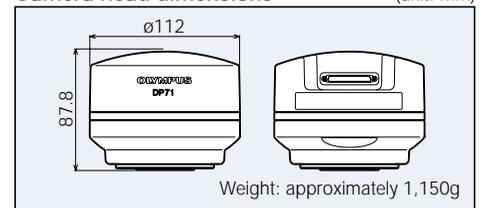
DP71 SPECIFICATIONS

Camera	Type: Single CCD (Pixel shifting) Peltier cooling (max Ta-10°C)
Image sensor	Size: 2/3-inch Effective pixels: 1.45million pixels Scanning method: Progressive scanning
Lens mount	C mount
Recorded image sizes	4080 x 3072/ 2040 x 1536/ 1360 x 1024/ 680 x 512/ 680 x 510/ 340 x 250
ISO speed	ISO 200/ 400/ 800/ 1600 equivalent
A/D	12bits
Metering area	30%, 1%, 0.1% (measuring area can be moved in image freely)
Exposure control	Modes: Auto/ SFL auto/ Manual AE lock: Available AE pause: Available Correction range: ±2.0EV Step: 1/3EV
Exposure time	1/44,000 to 60s
Image accumulation	Modes: Integral, averaging Accumulation count: 64frames (max)
Image rotation	Up/ down inversion, left/ right inversion, 180°
White balance modes	Area-specified auto/ Entire area-specified auto/ Manual
Black balance modes	Area-specified auto/ Entire area-specified auto/ Manual
Color modes	Color/ standard gray scale/ custom gray scale
Sharpness filter	Low/ Standard/ High
Motion image display	Max 15 frames/s (image size of 1360 x 1024)
Focus indicator	Contrast bar/ Numeric display/ Histogram
Image transfer time	Approx. 3 s* (Max resolution of 4080 x 3072)
Image formats	TIFF/ JPEG/ BMP /PICT /AVI/ MPEG-1
Dimensions & weight	Camera head: 112 (ø) x 87.8 (H) mm approx. 1,150g PCI unit: 187.4 (W) x 125.7 (D) x 21.4 (H) mm approx. 250g Interface cable: approx. 2.8m

* For exposure times in the range of 1/44,000 - 1/15 seconds, capture can be slowed if several tasks, such as file copying, are active in the background.

Camera head dimensions

(unit: mm)



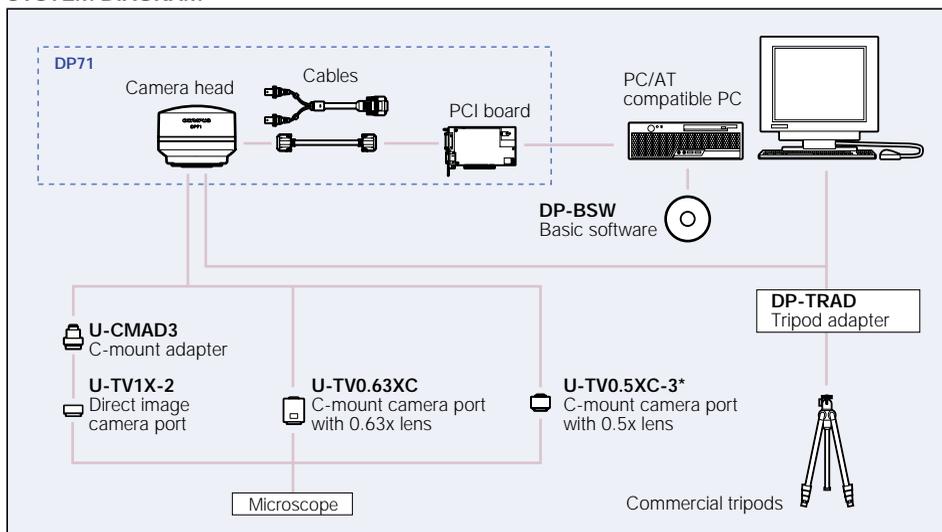
• Replacement parts are available for 5 years after purchase.

This product contains precision electronic components that can break or malfunction if subjected to strong vibrations or impacts. Please handle with care.

RECOMMENDED SPECIFICATIONS FOR PC CONTROLLER

CPU	Intel Pentium4 1.3 GHz or greater (2.6GHz or greater, Hyper -Threading dual-core CPU recommended) Pentium D, Pentium EE
Chip set	Intel i845, i850, i865, i875, i915, i925, i945, i955, i975 (i865 or later recommended)
RAM	SDRAM, 512MB or more (PC2700 or after, dual-channel DDR/DDR2 recommended)
HDD	Free space 500MB or more
Graphic	Graphic RAM 16MB or more Graphic card of the AGP specification with the capability of 32-bit color display of 1280 x 1024 or more, or PCI-Express x16 graphic card. *Onboard graphic also available when the chipset is i915 or after.
PCI bus	PCI Rev.2.1 or 2.2
OS	Windows XP professional SP1a or later (Not compatible with x64 edition) Windows 2000 professional SP4
Drive	CD-ROM or CD-R/RW etc
Main body	Half size PCI board compatible
Power supply	250W or more (with CE marking)

SYSTEM DIAGRAM



* Besides STM series measuring image microscopes

•OLYMPUS CORPORATION obtains ISO9001/ISO14001.

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Specifications are subject to change without any obligation on the part of the manufacturer.

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Printed in Japan M1592E-0606B