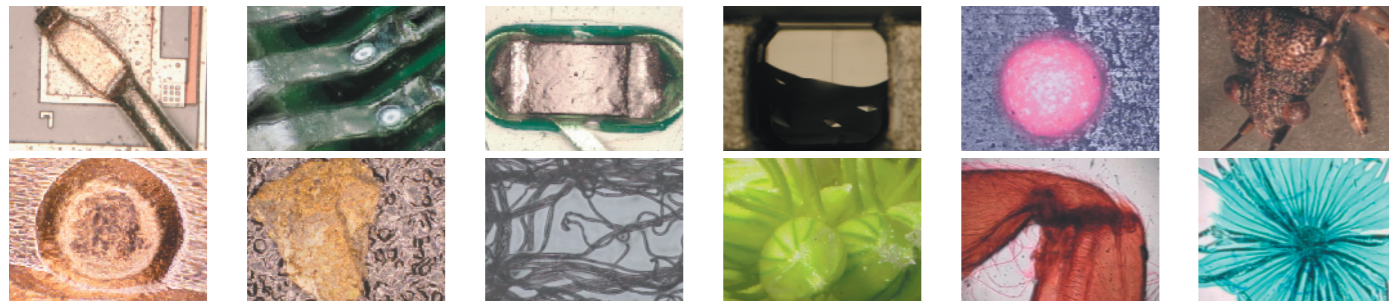


## Adapting to the Needs of Many Different Industries

Wire bonding, bumps, solder balls, IC Patterns, implemented boards, processed metals (coins), molds, metal parts, optical fiber end faces, impalpable particles, paper, chemical fibers, protein crystals, salt crystals, underwater life, leaves and petals (plants), pollens, fern seeds, bees' legs, insects, etc.



## List of Features

### [DynamicEye REAL]

Shooting Method Selection	Existing Image files	File Opening	Readable file formats: jpeg, bmp, tiff, and dib; branch-structured directory system; thumbnails; and manual height adjustment
	Image Input	Manual Shooting	Live window, focusing preview, thumbnails, and manual height adjustment
		Automatic Shooting Using a Motor-Operated Stage	Stage control, live window, focusing preview, thumbnails, and manual height input
		Turnaround Composition	Live window, real focusing preview, direct saving, link to viewer, and link to WinROOF
Focus Composition	Processing Options		Sharpening, smoothing, normal processing, and manual processing (graininess elimination and edge interpolation)
	Number of Exposure		2 to 256
Viewer	Display		Enlarged/reduced and pseudo-color display
	Lens Settings		Lens designation entry, calibration setting
	Height Data Noise Correction		Noise area settings, noise correction (edge correction and top/bottom correction), and averaging
	Image Output	Saving/Printing	Image saving (jpeg, bmp, tiff, and dib), 3-D data saving (vv3), and printing
		Links	3D Viewer (specialized 3-D surface shape observation software*1) and WinROOF (image analysis/measurement software)*1
Configuration Settings	Microscope Settings		Normal microscope and stereoscopic microscope
	Image Input Device Settings*2	Analog	Video capture board (PCI bus), color, and monochrome
		Digital	IEEE1394 (PCI bus, PC card type), specialized board, etc.
	Z-stage Settings*3	Control Settings	Moving speed settings (Free choice from 3 steps), communications conditions settings (serial port, baud rate, etc.)
Z-calibration Settings		Specification with 2-point distance and specification with distance per pulse	

### [3D Viewer]

Image Display	File Opening	Readable file formats: frn, vv3, jpeg, bmp, text, tiff, and tdv
	Screen Display	Flat image, contour-line image (extraction point settings available), 2-valued image, and 3-D real-time image
	3-D Display	Display Selection: color, pseudo-color, monochrome, enlargement/reduction, partial enlargement/reduction, Z-axis scale adjustment, and smoothing
Measurement	Horizontal Cross Section	Cross-sectional area, perimeter, and cut level adjustment
	Vertical Cross Section	Width, height, vertical cross-sectional area, and angle (cut level direction: vertical, horizontal, slanting, arbitrary)
Output	Saving/Printing	Image saving (bmp), 3-D data saving (tdv), measurement data saving (CSV), and printing

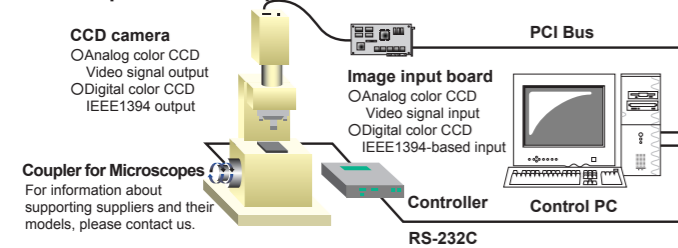
\*1 3D Viewer, a specialized 3-D surface shape observation software, and WinROOF, an image analysis/measuring software, are options.

\*2 For information about the supported image input devices, please contact us.

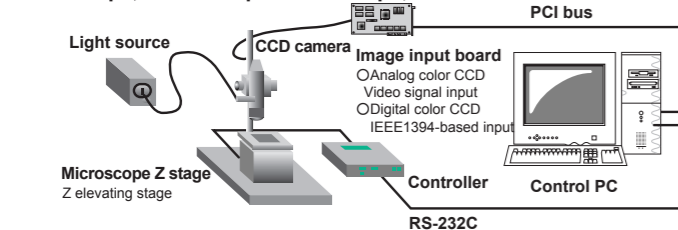
\*3 For information about the supported stages and controllers, please contact us.

## Examples of System Configurations

### Normal Optical Microscope



### Microscope, stereoscopic microscope, etc.



## System Requirements

**C o m p u t e r** : PC/AT compatible  
**O S** : Windows XP  
**Main Memory** : 256 MB or more  
**C P U** : 1 GHz or more  
**H D D** : 10 GB or more  
**M o n i t o r** : Full color 1024 x 768 or more  
**Protection Key** : USB port  
**Image capture card** : One or more free PCI BUS slots (if used)  
 \*The PCI bus to be used must be half sized.  
 For notebook PCs, at least one free PC card slot  
**Stage Controller** : At least one free serial port (if used)

\* Windows is a registered trade mark of the Microsoft Corporation.  
 \* The company and product names quoted are generally trade marks or registered trademarks of their respective owners.

**NEW**

## FOCUS IMAGE COMPOSITION

# DynamicEye REAL

FOCUS IMAGE COMPOSITION SYSTEM FOR MICROSCOPE

SPECIAL REAL TIME FOCUS IMAGE COMPOSITION

3Dimension IMAGE



To Biological and Biotechnological Applications

For easy to use Infinite-Depth Observation,  
 and High-Speed / High-Quality Image Generation  
 From Industrial Use

The DynamicEye REAL is an epoch-making focus imaging composition system that processes images obtained from microscopes to provide 100% in focus images for specialists in the field of industry, biology, and biotechnology, who use microscopes including optical and stereoscopic microscopes.



MITANI CORPORATION

MITANI CORPORATION, Visual System Department

daVinci 3-chome Bldg. 1F 3-28-2 Takada Toshima-ku, Tokyo, 171-0033, JAPAN Phone:+81-3-5949-6220 Fax:+81-3-5949-6217

Osaka Office: Shin-Osaka Daiichi Seimei Bldg. 12F 3-5-24 Miyahara Yodogawa-ku, Osaka, 532-0003, JAPAN Phone:+81-6-6399-3755 Fax:+81-6-6399-3760

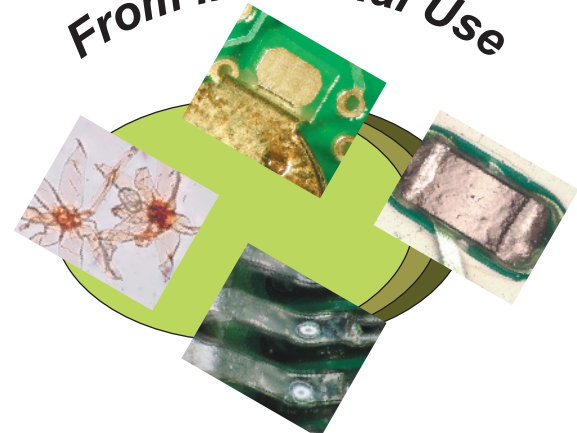
Fukui Office: The 3rd Mitani Bldg. 2F 1-3-1 Toyoshima, Fukui city, Fukui Pref. 910-8510, JAPAN Phone:+81-776-20-3570 Fax:+81-776-20-3574

URL : <http://www.image.mitani-corp.co.jp> (Downloadable demonstration software available)

MITANI CORPORATION

# Further Progress in Microscope-based Observation

From Industrial Use



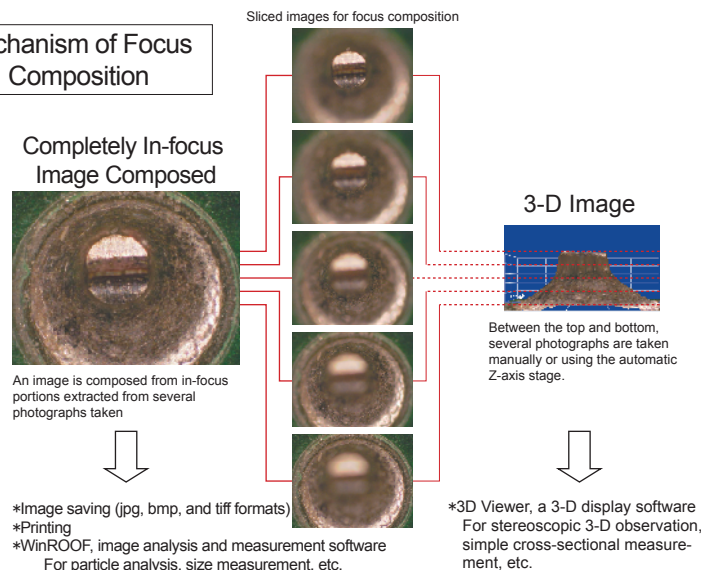
To Biological and Biotechnological Applications

## What Is Focus Composition?

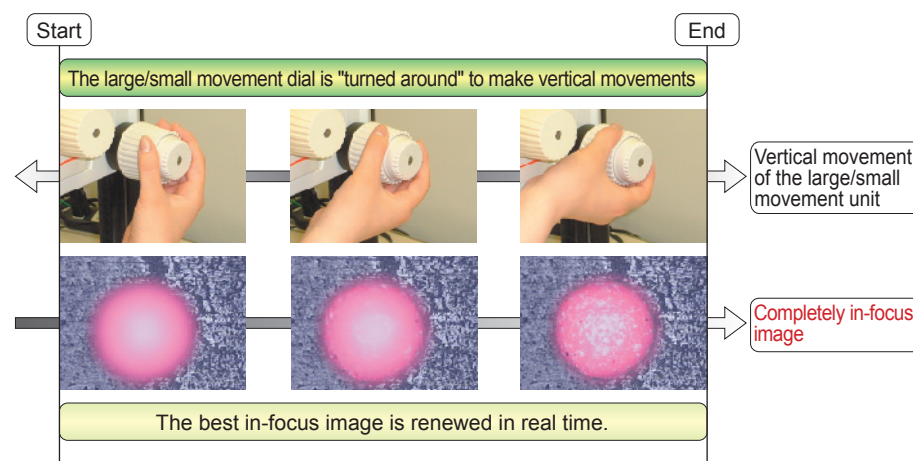
Focus composition produces an image that focuses on the subject by detecting, through image processing, only those in-focus portions extracted from several photographs taken with the large/small movement unit of a microscope sliding vertically.

The DynamicEye REAL, a focus image composition system, can be used to observe specimens difficult to observe under microscopes with shallow field depth. In observing a specimen with asperities and step heights under a microscope, it is almost impossible to locate a position where the specimen is completely in-focus. Even for such specimens, the DynamicEye REAL processes images at high speed to produce completely in-focus images, providing high-quality observation at infinite depths.

## Mechanism of Focus Composition



## Ultimate Focus Composition - "Turnaround Composition"



Turning the large/small movement dial to focus the subject in the same manner for normal microscopic observation produces a completely in-focus image in real time. During this operation, you can preview the 100% in-focus image. This provides you with a sufficiently accurate completely in-focus image.

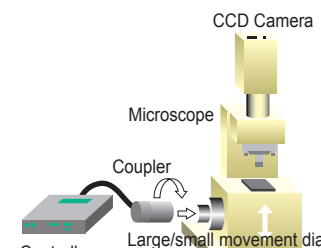
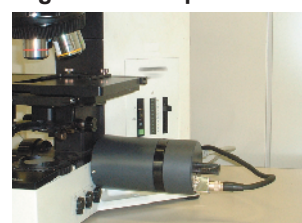
In addition, the DynamicEye REAL does not compose an image from photographs taken separately as the traditional composing method does. This reduces operation time for quick observation and photo shooting.

With specification of the shooting interval between the top and bottom of the specimen, the CCD camera automatically makes exposures to produce an image that focuses the subject (a completely in-focus image) on the screen. Up to 256 images may be combined into a single in-focus image.

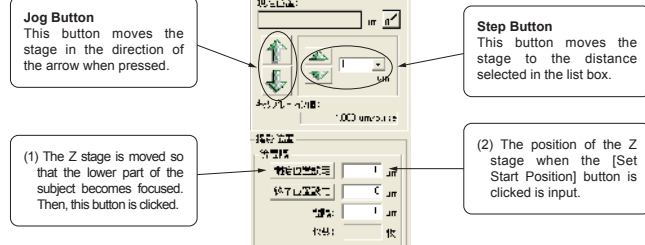
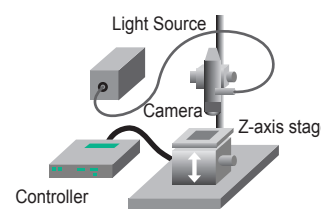
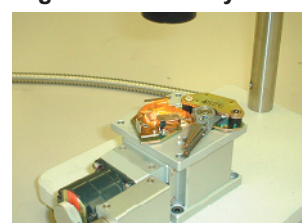
In addition, the DynamicEye REAL stores the shooting positions as height information, which will be useful in displaying 3-D images and analyzing images later.

## Automatic Shooting Feature Based on a Motor-operated Coupler and Stage

### Using a Microscope



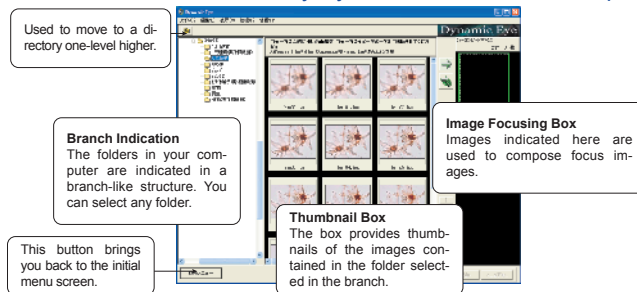
### Using a Commercially Available Optical System



Easy Setting for Motor-operated Coupler Control

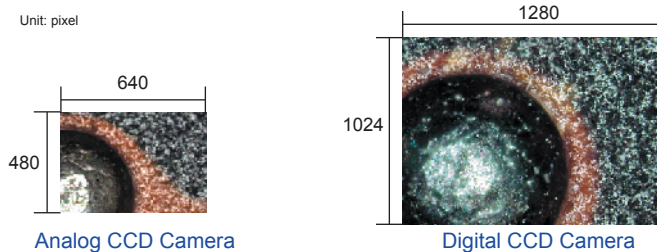
## Interface for Maximum Ease of Use

### Branch-structured Directory System and Thumbnail Displays



You can quickly view the stored images to select only those necessary for focus composition.

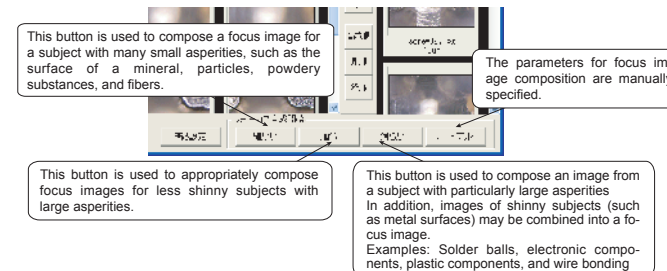
## Digital CCD Camera Delivering High-speed, High-resolution Focused Image Composition



Supporting digital CCD cameras with up to 1.4 million-pixel resolution, the DynamicEye REAL displays real-time images within the application to provide high-resolution, high-quality completely in-focus images in no time based on a high-speed image processing algorithm. Images input from an analog CCD camera may be combined to produce focus images.

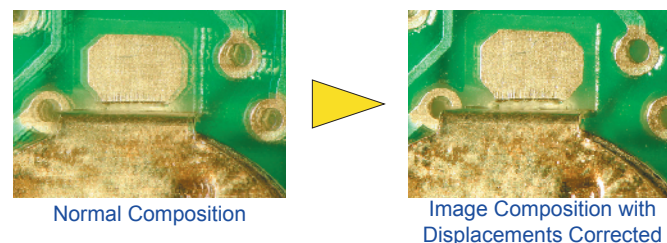
\*For information about supported cameras and video input boards, please contact us separately.

### Proper Focus Image Composition Depending on Samples



Selecting the appropriate method from the three composition methods depending on the subject provides higher-quality composed images.

## Stereoscopic Microscopes Also Supported

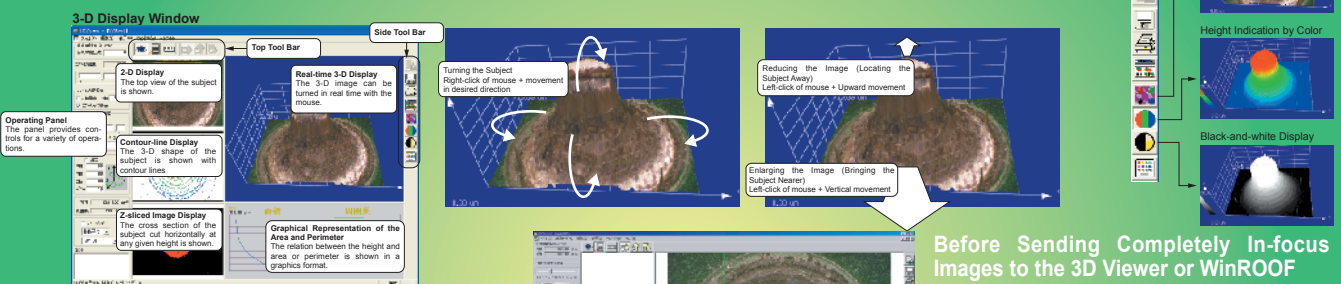


In composing focus images, the automatic position correction feature eliminates displacements caused by an inclination of the optical axis produced when the large/small movement dial of the stereoscopic microscope is turned clockwise or counterclockwise. This allows images from a stereoscopic microscope to be combined into focused images, providing more stereoscopic observation and photo shooting by making advantage of the features of stereoscopic microscopes.

## Completely In-focus Images Leading to 3-D Stereoscopic Observation and Image Analysis/Measurement

In making exposures, the DynamicEye REAL stores the shooting positions as height information, which can be later utilized in displaying 3-D images and analyzing images. Completely composed in-focus images with height information can be used to display 3-D images with the optionally available 3D Viewer. In addition, completely in-focus images without height information can also be used to measure sizes and analyze particles with WinROOF.

## Real-time 3-D Displays, Shape Observation, and Simple Cross-sectional Measurement - 3D Viewer



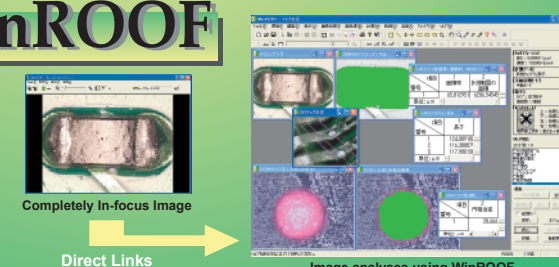
## Before Sending Completely In-focus Images to the 3D Viewer or WinROOF

<Noise Filter (New Concept)>  
The innovative noise filter is capable of correcting images with transparent background or insufficiently lit subjects, providing 3-D data with reality.

<Lens Information Entry>  
The lens information entry feature allows you to perform simple measurements with the optionally available 3D Viewer and to analyze particles and measure sizes with WinROOF, image analysis/measurement software, without calibration settings if the lens to be used are set in advance.

## Measuring Image Sizes and Analyzing Particles - WinROOF

Completely composed in-focus images may be sent to WinROOF, an image analysis/measurement application, with one click. For images sent to WinROOF, area, longer/shorter diameter and other particle analyses and size measurements covering areas and longer/shorter diameters may be made without having to set the calibration (X, Y, and Z).



The 3D Viewer and WinROOF are optional.

OPTION