Advanced Imaging System Plus
Versatile Modular Design

Both of these new GX series microscopes feature Olympus' world-renowned UIS infinity-corrected optical system for ultra-clear images, no matter what observation method is used. In addition they are built to a modular design which enables the user to match selected image recording equipment (video, digital or large-format/35mm cameras) to the microscope body and attach them singly or in multiple configurations — along with calibration scales that are recorded directly with the image.

Together with these sophisticated functions and performance features, the GX71 also allows erect image observation. The GX series represents a highly advanced imaging system with the flexibility to meet the diverse needs of current and future materials research and inspection applications.
Improved optical performance sets new standards of image clarity for inverted metallurgical microscopes

Getting the full picture with any observation method

The UIS infinity-corrected optical system was developed with Olympus' original technological know-how — and the GX series is designed to maximize its performance in the context of inverted metallurgical microscopes. The result are sharp, detailed images with excellent contrast and consistently high clarity with any and all observation methods. Equipped with extra-bright 100W halogen lamps and newly improved light collecting efficiency, the GX series microscopes provide the intense and even illumination that contemporary applications demand.

Ergonomic layout of control elements allows a natural working posture

Numerous refinements are included to ensure that the user can adopt a natural posture and work in comfort. They include an ergonomic control layout that places the field stop (FS), aperture stop (AS), focus control and light adjustment dial close to the user's hand. The introduction of a flexible stage handle further contributes to the work comfort.

Computer-designed frame with more rigidity and higher reliability

Computer simulations have been used to further improve the rigidity and low center of gravity design of the frame, which is the key to greater stability and a more flexible system structure.

Adjusting the image to suit the specimen — Nomarski DIC observation

To obtain the ideal combination of resolution and contrast to suit the nature of each specimen, three different Nomarski DIC prisms are provided. The U-DCR prism serves all imaging applications with a balance of contrast enhancement and resolution. For very densely structured specimen the U-DCRH prism provides an additional resolution level. The U-DCRHC prism greatly emphasizes the contrast and detection of minute surface gradients that may otherwise remain unseen. All three are slider-operated, so that the operator can make smooth transitions to different magnifications and can easily switch between observation methods.

A select range of filters

The GX series comes with a select range of filters, including neutral density, color temperature conversion and green filters. Two slider slots are provided, each allowing introduction of up to three filters.

Brightfield

Darkfield

Nomarski DIC

Simple Polarized Light

Fluorescence

Sample provided by Prof. Kenji Abiko, doctor of engineering, Institute for materials research, Tohoku university.
Modular design for flexible system configuration from digital recording to conventional photography

Greater freedom to select and combine image recording equipment
The GX series’ modular construction maximizes the flexibility to mix and match image recording devices on the microscope body. Digital, video and conventional still cameras (large-format or 35mm) can be attached to the front port, while the side port accepts digital and video cameras. When both ports are used simultaneously, up to 3 camera backs can be attached, providing ample system variation.

High-precision, high-sensitivity digital images at 5.8 million* pixels via personal computer
Combined with a DP50 digital camera, the GX series displays its potential by recording microscope images in exceptionally sharp detail. The DP50 camera excels in all imaging modes, recording images from brightfield to fluorescence, in each case offering a truthful representation of the original specimen. Advanced software and an intuitive graphic user interface make both the capture and filing of images easy and effortless.

* Special technology is used to derive a 5.8 million-pixel equivalent image from the 1.5 million pixel CCD.

Easy image capture via control unit with LCD monitor
With a DP12 digital camera attached, microscope images can be captured directly (without a personal computer) and recorded stored to SmartMedia. The DP12 has a 1/1.8 inch, 3.34 million-pixel CCD and provides sharp, high-precision results with both full-size images and detailed, individually-selected areas. Its 3.5-inch TFT color LCD monitor is directly attached to the control unit. The operator can freely place the control unit for easy viewing, framing and focusing.

GX photo unit for simultaneous attachment of 35mm and large-format camera backs
Specifically designed for integration with GX microscopes, the photo unit GX-PHU enables attachment of both 35mm and large-format camera backs simultaneously. The compact controller is easy to use, with only essential operating control buttons, but offers a full range of features including 1% spot and 30% averaging light metering, AE lock and multiple exposures.
Scale printing and zoom magnification

from all ports  *GX7S only

Digital image

35mm photo micrographs

Large-format photo micrographs

*All-camera compatibility
The GX series allows scale imprinting for all ports and with any kind of camera, including digital, 35mm and large-format.

Accurate photo micrographs of any user-selected area
A large-format camera will record any given image (or part of an image) at the same magnification as is used for observation. With the GX7S’s free-framing and 1x-2x zoom magnification capabilities, user-selected areas of the image can be easily and accurately recorded.

*When using 10x eyepieces.

A full range of scales
In addition to the calibration scales for each objective, grain size reticules and square scales can also be recorded. Up to 3 scales can be freely combined in a single slider.

Sample provided by Prof. Kenji Abiko, doctor of engineering, Institute for materials research, Tohoku university
All the quality that today’s advanced research demands

Erect images* — observation and recording of the specimen “as is”
Since observation images are not reversed, the specimen’s positional characteristics (right/left, up/down) are the same in a photomicrograph as they are in the real-time observation of the viewing field. This makes it easier to compare the two, and presents specimen movement in an intuitive, natural way.

*Digital images are reversed.

Ideal for every observation method from brightfield to fluorescence:
Simply by changing the position of the GX71’s beamsplitter turret, it is quick and easy to alternate between brightfield, darkfield, Nomarski DIC, simple polarized light and fluorescence observation. The Olympus universal objectives accommodate all observation methods. There is no need to change the objective type each time the observation method is changed. The GX71 also employs super widefield eyepieces (F.N.26.5), for an efficient orientation and observation process.

Zoom function for easy framing
The 1x-2x zoom facility acts on all ports, shows critical specimen detail more clearly and makes accurate framing especially easy. Photomicrography with a large-format camera allows image capture at the same magnification as the visual observation.

MPlanApo100x Oil
Nomarski DIC observation
Sample provided by Prof. Kenji Abiko, doctor of engineering, Institute for materials research, Tohoku university
Inverted Metallurgical System Microscope

**GX51**

Superb performance and reliability for all kinds of routine observation and documentation

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**Single lever switchover for brightfield/darkfield observation**

The versatile GX51 performs brightfield, darkfield, Nomarski DIC, and simple polarized light observations. Switching between brightfield and darkfield observation is done with a single lever, located close to the operator’s hand. Changing to Nomarski DIC observation is a simple matter of inserting the DIC-slider.

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**Expandable functionality**

A wide variety of optional units can be easily attached to the GX51, allowing such system upgrades as linking to a digital or video camera via an intermediate tube (GX-SPU).

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**Improved operating convenience**

Since the GX51 was especially developed for routine inspection applications, its design pays close attention to operating convenience. All frequently used operating functions are accessed from the front, and the design makes it easy to use whether the operator is working in a seated or standing position.

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**Intermediate tubes**

Other high-performance accessories are available to meet a variety of applications. Included are an intermediate tube (IX-ATU), which allows attachment of a trinocular observation tube, a side port intermediate tube (GX-SPU), and an eyepoint adjuster (IX-EPA).

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**GX71/GX51 ACCESSORIES**

**GX71 observation tubes**

The super widefield binocular observation tube (U-SWB130) and super widefield trinocular observation tube (U-SWTTR2) are provided for the GX71.

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**GX51 observation tubes**

The GX51 microscope employs a widefield trinocular observation tube (U-TR30H) and a widefield binocular observation tube (GX-BI90). Another widefield binocular observation tube (U-BI90) can also be used when combined with an eyepoint adjuster.

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**Revolving nosepieces**

Sextuple revolving nosepieces and quintuple revolving nosepieces with DIC slider compatibility are also provided.

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**Motorized revolving nosepieces**

The motorized sextuple revolving nosepiece and quintuple revolving nosepiece enable the user to change magnifications directly by means of a hand switch.

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**Transmitted light illuminator**

This illuminator can be attached to the back of the microscope body, enabling observation of transparent specimens and powders.

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**GX series specifications**

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**GX71 dimensions** (unit:mm)

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**GX51 dimensions** (unit:mm)

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**GX51 observation tubes**

The super widefield binocular observation tube (U-SWB130) and super widefield trinocular observation tube (U-SWTTR2) are provided for the GX51.
The page contains a diagram and textual information related to a system diagram. The text includes various components and specifications, such as control units, stages, and cameras. The objective specifications table lists different objectives with their specifications, such as N.A. (Numerical Aperture), Working Distance, and Diameter. The text and diagram are part of a manual or technical guide, likely for a microscope or imaging system.