

# OLYMPUS®

Olympus is about life. About photographic innovations that capture precious moments of life. About advanced medical technology that saves lives. About information- and industry-related products that make possible a better living. About adding to the richness and quality of life for everyone. Olympus. Quality products with a **FOCUS ON LIFE**

INDUSTRIAL INSPECTION  
MICROSCOPE

## MX40

*UIS*  
UNIVERSAL  
INFINITY SYSTEM

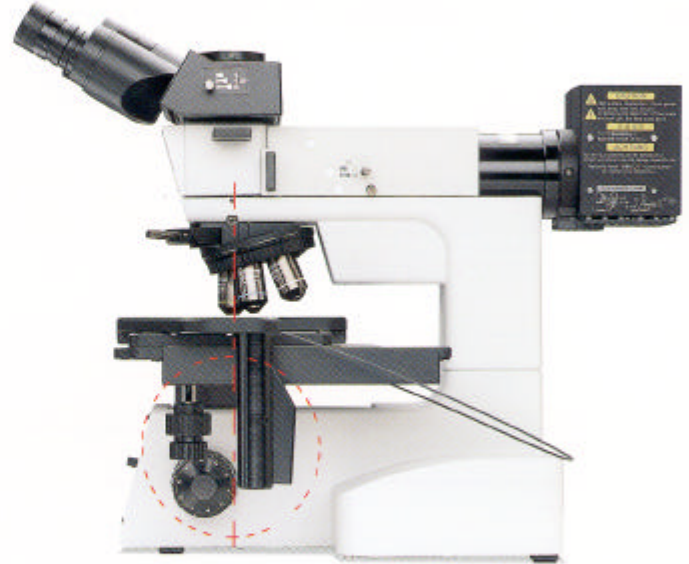




# Introducing a microscope optimized for inspecting many different varieties of electronics components.

*In our continuing quest for the ideal inspection microscope, Olympus creates a continuing line of innovative designs. The entire MX-series offers an outstanding degree of operational versatility for superb inspection efficiency. Now, Olympus introduces the new MX40, a reflected-light inspection microscope optimized for the inspection requirements of a variety of electronics components including magnetic heads and semiconductors. Compact, simple to operate, and cost-effective, the MX40 model retains the proprietary Frontal Control operational system of the MX-series, as well as world-renowned UIS optics. Its flexible design can accommodate various modifications depending on user needs.*

## MX40



For operational efficiency, important controls and switches are located up front, near the optical axis.





## Vertical illuminator units



### U-KMA100 Vertical illuminator unit for brightfield

Especially designed to facilitate inspection of magnetic heads, electronics components, and metallurgical structures, this unit provides a built-in lamp housing to eliminate the need for centering and adjustment of the field iris diaphragm with the light source. In addition to brightfield and Nomarski DIC observations, simple polarized light observation is accommodated, and changeover to Nomarski DIC observation is quick and easy using a single DIC prism.



### U-RLA Vertical illuminator unit for brightfield/darkfield (with U-LH100L)

This versatile illuminator can be used for brightfield and darkfield as well as Nomarski DIC and simple polarized light observations. A pinhole is incorporated to further assure the production of images with increased focal depth and razor-sharp contrast, an especially convenient feature in observation at extra-high magnification.

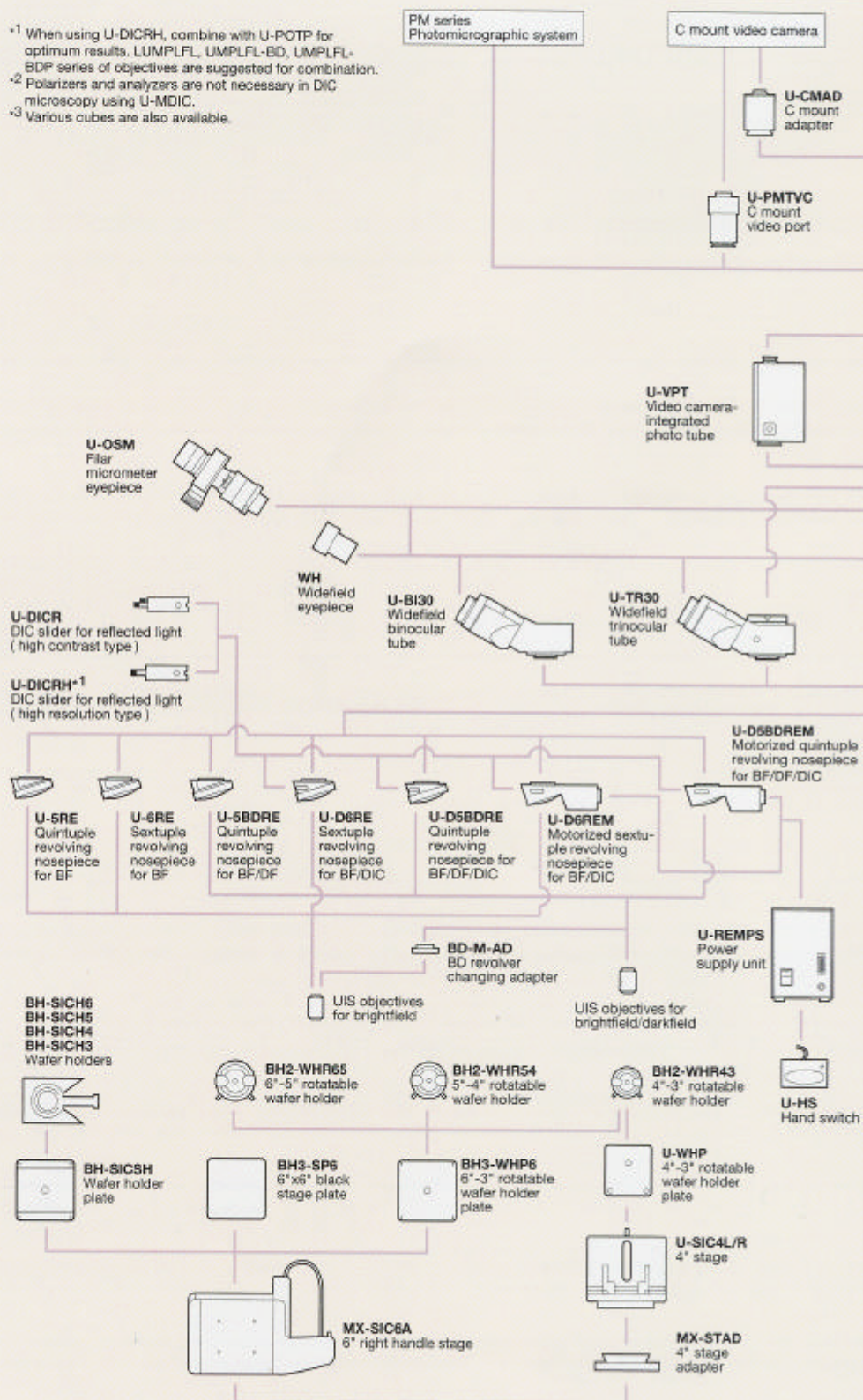


### U-URA Universal vertical illuminator unit (with U-LH100)

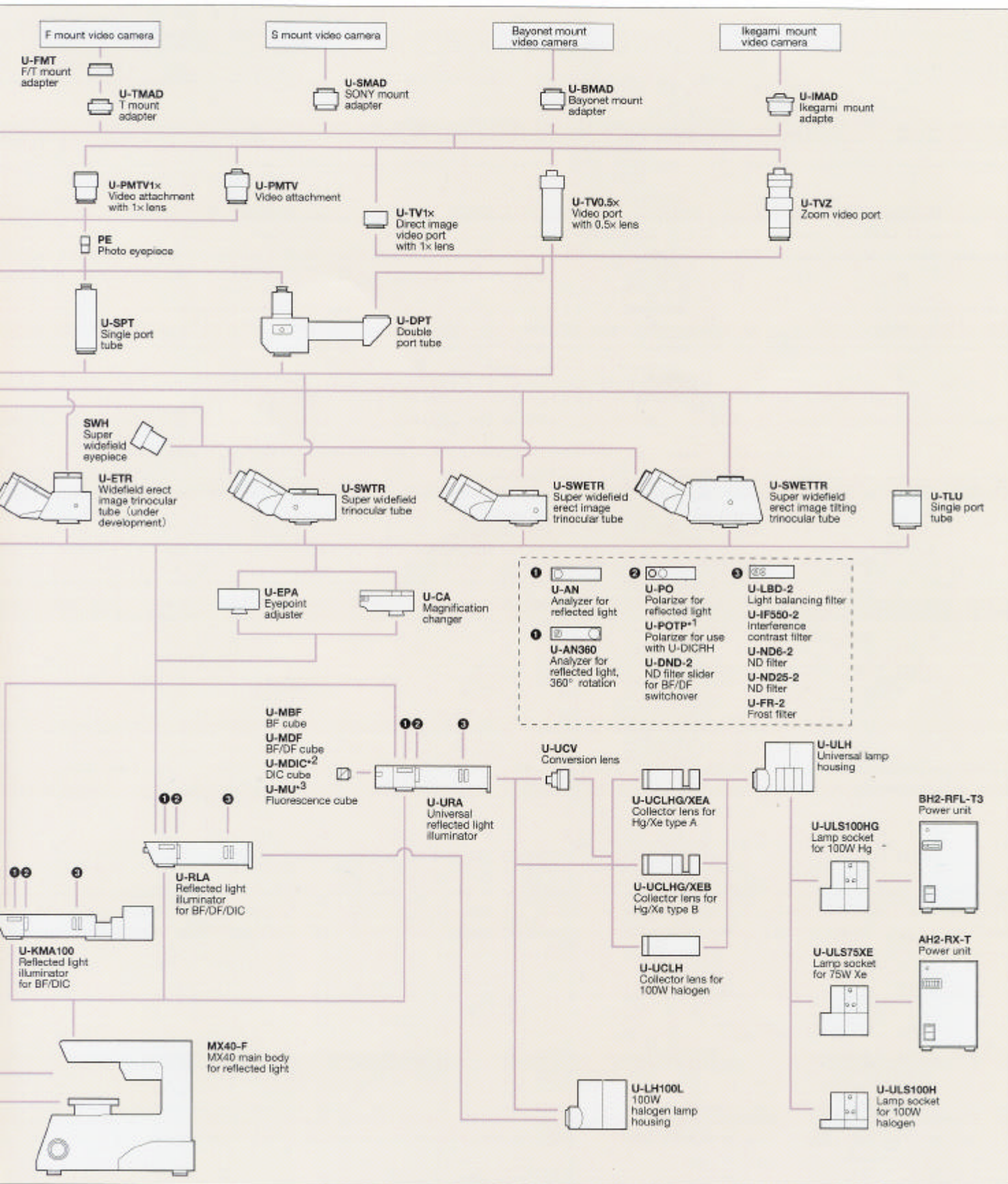
Designed for improved ultraviolet transmission, this illuminator ensures outstanding brightness and contrast for fluorescent images. In addition to fluorescence microscopy, the unit can be easily used for all other observation methods. It accommodates up to four different cube units in the rotating turret.

## MX40 SYSTEM DIAGRAM

- \*1 When using U-DICRH, combine with U-POTP for optimum results. LUMPLFL, UMPLFL-BD, UMPLFL-BDF series of objectives are suggested for combination.
- \*2 Polarizers and analyzers are not necessary in DIC microscopy using U-MDIC.
- \*3 Various cubes are also available.









**Controls are positioned up front, close to the optical axis for convenient stage manipulation.**

The MX40 uses the original Frontal Control design concept of the MX-series, with focusing knobs, illumination intensity controls, and a stage control panel all arranged in front for easy access. Operator fatigue is significantly reduced by positioning the most frequently used knobs and switches in this manner. Since electronics components inspection generally involves frequent stage manipulation, controls are located near the optical axis for maximum operator convenience.

**Space-saving compact design allows plenty of room to work.**

The new MX40 requires the smallest installation space of any microscope in its class. Thanks to its compact design, the MX40 allows a wider workspace area.

**An integral clutch lever on the stage handle allows smooth, fatigue-free stage control.**

The MX40 provides an ultra-compact 6-inch stage with a smaller travel range than any previous model. In addition to these convenient features, the MX40 stage handle incorporates a clutch lever. This allows easy manipulation of the clutch without releasing the stage handle, for rapid changeover between coarse and fine adjustments. The operator does not need to look away from the eyepieces during operation, expediting inspection tasks.

**Compact dimensions are combined with a high-rigidity, vibration-resistant design.**

In addition to a compact, space-saving design, an industrial inspection microscope should provide clear, consistent image quality and superior durability. To achieve all these objectives, Olympus used a variety of computer simulation techniques, such as the infinite-element method. We also conducted vibration analysis to determine the optimal absorption of external vibration and damping of internal vibration. As a result, the MX40 frame is rigid and stable enough to prevent optical axis deviation, while the instrument supplies crystal-clear, blur-free images. The focusing unit features significantly enhanced rigidity, and its perfectly balanced design offers an ultra-precise fine focus adjustment of less than 1µm.

**The frame and arm can be separated for easy inspection of mounted samples.**

In order to accommodate bulky samples and provide adequate working distance, the MX40 allows detachment of the arm and insertion of a spacer unit between the arm and the frame.

**Three illumination options accommodate virtually any reflected-light observation application.**

The MX40's brightfield-dedicated illumination pillar incorporates a simple, easy-to-handle lamp housing with an extra-bright 100W halogen bulb light source. This boosts operational efficiency and cost-effective performance in routine inspection of electronics components. Brightfield/darkfield and universal illuminators can also be used for many other industrial inspection applications ranging from magnetic heads and electronics components to semiconductors.

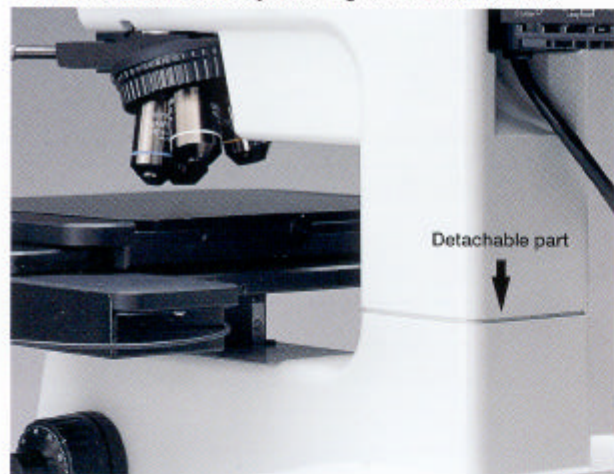
**World-famous UIS optics offer outstanding image clarity and sharpness.**

The Olympus UIS optical system enables the MX40 to deliver superb image resolution and contrast. As light passes through the objective, it travels through the body tube as parallel rays. The telan lens focuses these rays to form an aberration-free intermediate image. Attachments can be added between the objective and telan lens without compromising exceptionally clear, ghost-free images.

**Ultra-long working distance objectives are convenient for many kind of electronics components.**

A full line of cost-efficient objectives can be selected, depending on the application. The SLMPL50x ultra-long W.D. objective extends the working distance to 15mm, preventing the objective from touching the sample.

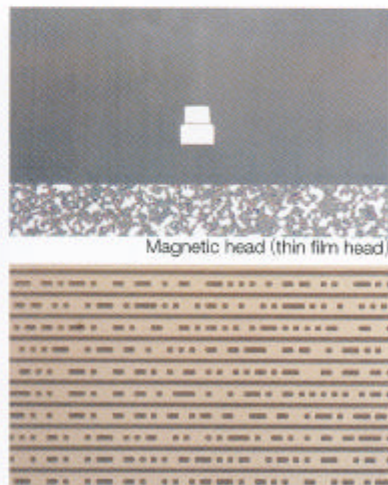
The MX40 can be modified by detaching the arm from the frame.



The flexible MX40 design simplifies inspection of thick, heavy samples.



Surface of hard disk



Magnetic head (thin film head)

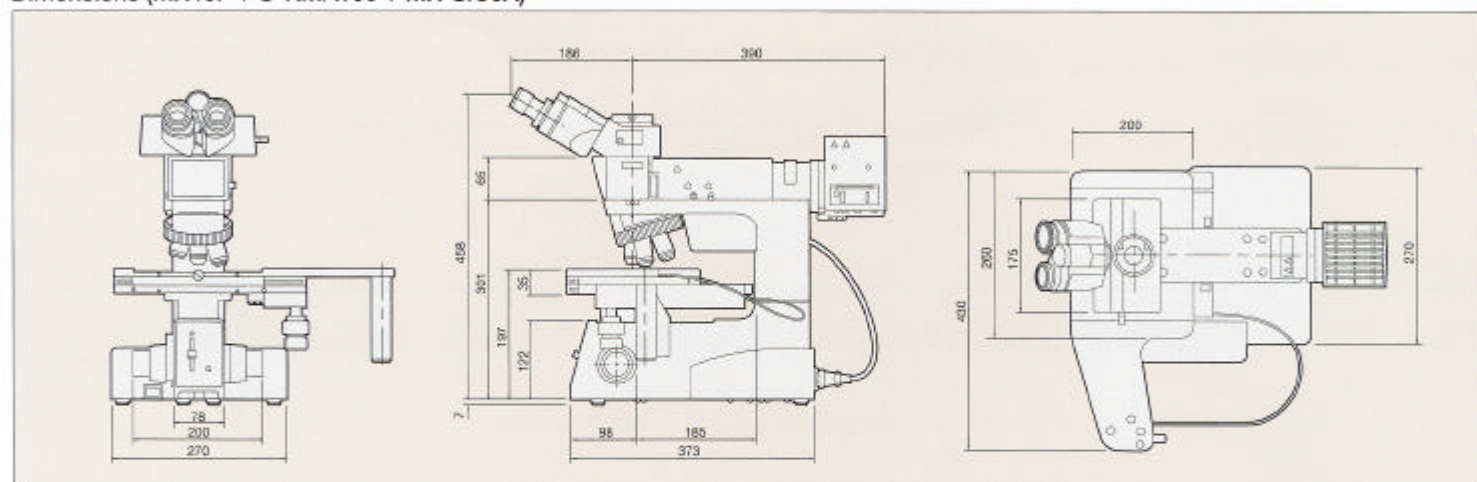
Magneto-optical card pit



## MX40 Specifications

Item		Description
Microscope stand	Frame	6" arm-integrated frame dedicated for reflected light. Built-in transformer for reflected light.
	Focus	Coaxial coarse and fine focus controls, stage travel range: 32mm (2mm up and 30mm down from the focal plane). Fine focus stroke per rotation: 0.1mm, minimum focus adjustment graduation: 1µm, sensitivity: 1µm or less.
Revolving nosepiece	Brightfield	Quintuple/sextuple/DIC sextuple/motorized DIC sextuple.
	Brightfield/darkfield	Quintuple/DIC quintuple/motorized DIC quintuple.
Incident illumination	Brightfield/DIC	12V, 100W halogen bulb light source. Integrated lamp housing. Built-in aperture diaphragm (with centering mechanism).
	Brightfield/darkfield/DIC	12V, 100W halogen bulb light source (xenon and mercury lamp housing mountable). Brightfield/darkfield switchable via slider. Field diaphragm, aperture diaphragm (with centering mechanism), and built-in pinhole slider.
	Fluorescence	100W mercury and 75 xenon light source (halogen lamp housing mountable). Observation method changeover via a turret holding four filter cubes. Field diaphragm, aperture diaphragm (with centering mechanism) and built-in shutter mechanism.
Stage	6" x 6"	Stroke: 158x158mm. Reflected light: roller guide slide mechanism, belt drive system (no racks), stage handle with a built-in clutch.
	4" x 4"	Stroke: 100x105mm. Reflected light: roller guide slide mechanism, rack & pinion drive system, built-in Y-direction lock mechanism.
Observation tube	Invert	Widefield binocular tube, widefield trinocular tube (F.N. 22), super widefield trinocular tube (F.N. 26.5).
	Erect	Widefield trinocular tube (F.N. 22), super widefield trinocular tube, super widefield tilting trinocular tube (F.N. 26.5).
Objectives	UIS objectives	
Eyepieces	UIS eyepieces (10x, 12.5x, 15x)	
Photo eyepieces	UIS photo eyepieces (2x, 2.5x, 3.3x, 4x, 5x)	
Power consumption	150VA	
Weight	Approx. 25kg. (standard set)	

## Dimensions (MX40F + U-KMA100 + MX-SIC6A)





### Semiconductor Inspection Microscope **MX50**

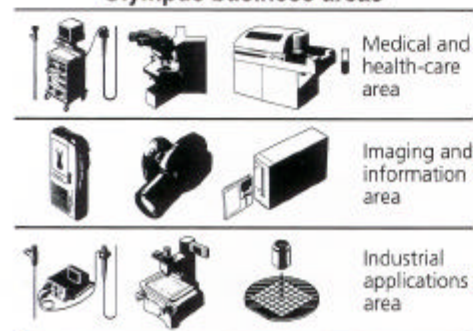
One of the Olympus MX-series, the MX50 Semiconductor Inspection Microscope can accommodate 8" wafers. Combined with the easy-to-use, high-performance AL100 wafer loader series, the MX50 improves inspection efficiency and helps conserve cleanroom space.

AL100+MX50



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

### Olympus business areas



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OLYMPUS OPTICAL CO., LTD.  
2-43-2, Hongo-cho, Shibuya-ku, Tokyo, Japan  
OLYMPUS OPTICAL CO. (EUROPE) GMBH.  
Postfach 10 49 08, 20034, Hamburg, Germany  
OLYMPUS AMERICA INC.  
2 Corporate Center Drive, Melville, NY 11747-3157, U.S.A.  
OLYMPUS OPTICAL CO. (UK) LTD.  
2-8 Horsdune Street, London EC1Y 0TX, United Kingdom.