

# Microscopes

Microscope lineups that systemize observation, measurement and processing

## Hyper MF/MF-U SERIES 176 — High-Accuracy Measuring Microscopes

**MeasurLink<sup>®</sup> ENABLED**  
Data Management Software by Mitutoyo

- This is the ultimate measuring microscope achieving the world's highest accuracy (1.5 + 10L/1000 μm), with 0.01 μm resolution.
- Three-axis motorized front operation joystick control, which makes a refreshing change from conventional microscope operation, allows fine positioning even during fast movement.

- Large workstage with stroke of 250×150 mm provides enough margin for the measurement of larger workpieces.
- The best-selling data processing unit, **QM-Data200**, and the Vision Unit can be integrated to provide an effective and stable measurement environment.

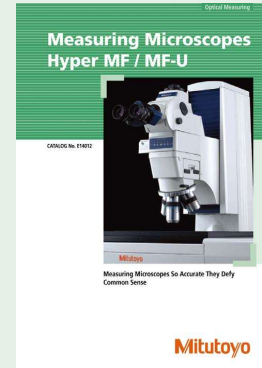


**Hyper MF-U**

- The optical tube, turret, and objective lens are optional.

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Products equipped with the measurement data output function can be connected to the measurement data network system MeasurLink (refer to page A-5 for details).



Refer to the Hyper MF/MF-U Brochure (E14012) for more details.

## SPECIFICATIONS

Model No.	HyperMF-B2515B	HyperMF-UB2515B	HyperMF-UD2515B	HyperMF-UE2515B	HyperMF-UF2515B
Order No.	176-430*1	176-431*1	176-432*1	176-433*1	176-434*1
Optical tube	Finite correction optical system BF (Bright-field)	Infinity-correction optical system BF (Bright-field)	Infinity-correction optical system BD (Bright/Dark-field)	Infinity-correction optical system BF (Bright-field) with the LAF function	Infinity-correction optical system BD (Bright/Dark-field) with the LAF function
Standard reticle (Built-in)	90° broken-cross line (line width 5 μm)				
Pupil distance adjustment	Siedentopf type Adjustment range: 51 to 76 mm				
Optical path switching ratio	Observation/TV-photomicrography=50/50				
Vertical tilt angle	25°				Tilting
TV port	Provided as standard				
Observation image	Erect image				
Eyepiece Magnification	10X, 15X, 20X				
Objective lens (optional)	Selectable from the monocular unit (equipped with one eyepiece) or binocular tube (equipped with two eyepieces)	Equipped with two 10X eyepieces			
ML Series objective lens	1X, 3X, 5X, 10X, 20X, 50X, 100X	—			
BF (Bright-field)	—	<b>M Plan Apo, M plan Apo SL, G plan Apo</b>			
BD (Bright/Dark-field)	—	<b>BD Plan Apo, BD Plan Apo SL</b>			
Turret (optional)	BF (Bright-field)	(Equipped with a four-hole manual turret/motorized five-hole turret*2)			(Equipped with a four-hole manual turret/motorized four-hole turret*3)
BD (Bright/Dark-field)	—	(Equipped with a four-hole manual turret/motorized four-hole turret*3)			
Focusing section	Maximum height of workpiece	150 mm			
Measuring accuracy	(1.5 + 10L/1000) μm L=Measuring length (mm)				
Drive method	Motorized control using a joystick				
Illumination unit	Transmitted illumination device	Telecentric system, Built-in aperture diaphragm, Halogen bulb (12 V, 50 W), 100-step light intensity control, Fiber-optic cable cold light illumination			
Reflected illumination unit	Koehler illumination, Variable aperture diaphragm mechanism, Halogen bulb (12 V, 100 W), 100-step light intensity control, Fiber-optic cable cold light illumination				
Workstage	Measuring range (X×Y)	250×150 mm			
Measuring accuracy*4 (When no load is put on the X or Y axis)	(0.9 + 3L/1000) μm L=Measuring length (mm)				
Dimensions of the top plane	460×350 mm				
Usable dimensions of the stage glass	300×200 mm				
Swiveling angle	±3°				
Maximum loading mass	30 kg				
Drive method	Motorized control using a joystick				
Detector	High precision digital scale (Patented)				
Digital display	Resolution	0.01 μm			
Axes to be displayed	X, Y, Z				
Data processing unit	<b>QM-Data200</b> or Vision Unit (required)				
Operation section	LAF (just focus)	—	—	—	Available
LAF (tracking focus)	—	—	—	—	Available

\*1 To denote your AC power cable add the following suffixes to the order No.: A for UL/CSA, D for CEE, DC for CCC, E for BS, K for KC, C and No suffix is required for PSE.

\*2 and \*3 are factory-installed options.

\*4 Measurement accuracy complies with JIS B 7153.

Bulb replacement for transmitted illumination	Standard: Halogen bulb (12 V, 50 W) (02APA527)	For replacement for reflected illumination (from separate light source)	Standard: Halogen bulb (12 V, 100 W) (517181) High-intensity bulb (12 V, 100 W) (12BAD602)
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