

MS-2500-Dmi8 XY Flat-Top Extended Travel Stage



The MS-2500-Dmi8 Stage has been designed to fit the Leica Dmi8 and Dmi6000. It is a low profile flat top designed with 250 mm of X-axis and 110 mm Y-axis travel (Microscope Limited). The MS-2500-Dmi8 stage accepts either 160 x 110 or 283 x 110 stages inserts. This system has high resolution, high repeatability, and precise motion. Through the use of closed-loop DC servo motors employing high-resolution rotary encoders for positioning feedback, the MS-2500-Dmi8 has the ability to use three of the major linear encoder manufacturers to improve repeatability to less than 300 nm (typical) compared to the standard rotary encoders 200 nm (typical) repeatability rating.

By using closed-loop control of the stage position, there is no chance that the stage will become lost, as can occur with open-loop micro-stepped stages after a number of moves and direction changes. The MS-2500-Dmi8 XY stage utilizes crossed-roller slides, a high-precision lead screw, and zero-backlash miniature geared DC servo motors for smooth and accurate motion. The Z-axis drive also uses ASI's proven line of closed-loop motor drives, each custom fitted to the microscope. The microprocessor-controlled MS-2000 control unit provides for RS-232 and USB communication with a host computer.

MS-2500-Dmi8 Features

- Obstruction-free flat top / Rigid top plate design
- Thin profile: 38.3 mm (1.51") from mounting surface to top
- Closed-loop DC servo control of the X- and Y-axes for precise positioning and highly repeatable focusing
- Wide dynamic speed range with XY joystick control
- Proven operation with many popular software packages
- Suitable for stand-alone, OEM, and specialty applications as well

MS-2500-Dmi8 Options

- X- and Y-axes linear encoders for high-accuracy positioning, incorporated into the stage plates
- Stage Inserts to hold a variety of slides, dishes, sealed glass chambers, multiwell microplates, perfusers, heaters, and many other special items
- Other lead screw pitches are available

Specifications for Standard Configuration

X- and Y-axes range of travel	250 mm x 75 mm
X- and Y-axes resolution*	22 nm (typical)
X- and Y-axes RMS repeatability*	< 700 nm (typical)
X- and Y-axes maximum velocity*	7 mm/s

*Shown with 6.35mm pitch lead screws

Lead Screw Options

Lead screw pitch options	Rotary encoder resolution	Maximum speed
25.40 mm (Ultra-coarse)	88 nm	28 mm/s
12.70 mm (Super-coarse)	44 nm	14 mm/s
6.35 mm (Standard)	22 nm	7 mm/s
1.59 mm (Fine)	5.5 nm	1.75 mm/s
0.635 mm (Extra-fine)	2.2 nm	0.7 mm/s

Standard lead screw accuracy is 0.25 μm per millimeter

Linear Encoder Options

Axis	Resolution	Scale Accuracy
XY	10 nm	$\pm 3 \mu\text{m}$ per length of scale

