

PILine® XY Stage System with Controller and Joystick

Stable, Dynamic, Low Profile



U-780

- High velocity constancy at 10 $\mu\text{m/s}$
- Velocity to 120 mm/s, sensor resolution 100 nm
- Travel ranges to 135 mm $\times$ 85 mm (depending on model type)
- For inverted microscopes, freely revolving nosepiece
- Compact, low-profile design: Unrestricted access to the sample
- Extensive accessories

Reference-class microscope XY stage

System consisting of M-687 XY stage, controller, USB joystick, and appropriate cables. Large clear aperture 160 mm $\times$ 110 mm.

Accessories necessary: Sample holders, fine positioning stages, and Z stages

You will find matching fine positioning stages (X / Y / Z / Θ X / Θ Y / Θ Z), sample holders (holders for microscope slides, Petri dishes, and microtiter plates), as well as any adapter plates necessary in our "Microscope Stage Configurator" brochure.

Suitable for the following inverted microscopes:

- Nikon Eclipse Ti / Ti2
- Olympus IX / IX2 / IX3
- Leica DMI6000 / DMI8

High-resolution PILINE® piezo linear drive

Self-locking at rest. Low noise. Highest stability due to low thermal load and no lubricants. Large dynamics range of 10 $\mu\text{m/s}$ to 120 mm/s, ideal for operating with joystick and automated high-content processes.

Highly accurate position measuring with incremental linear encoder

Noncontact optical encoders measure the actual position directly at the motion platforms with the greatest accuracy so that nonlinearity, mechanical play or elastic deformation have no influence on position measuring.

User software

PI MikroMove. PI General Command Set (GCS). Drivers for NI LabVIEW. Compatible with μ Manager, Andor iQ, MATLAB.

Application fields

For inverted microscopes from Nikon, Olympus and Leica, versions for other microscopes available on request. For super resolution microscopy, tiling, automated scanning microscopy.

Motion	Unit	Tolerance	U-780.DLS	U-780.DNS	U-780.DOS
Active axes			X Y	X Y	X Y
Travel range in X	mm		135	135	100
Travel range in Y	mm		85	85	75
Maximum velocity in X, unloaded	mm/s		120	120	120
Maximum velocity in Y, unloaded	mm/s		120	120	120
Angular error E_AY (pitch)	μrad	Typ.	± 300	± 300	± 300
Angular error E_BX (pitch)	μrad	Typ.	± 300	± 300	± 300
Angular error E_CX (yaw)	μrad	Typ.	± 300	± 300	± 300
Angular error E_CY (yaw)	μrad	Typ.	± 300	± 300	± 300

Positioning	Unit		U-780.DLS	U-780.DNS	U-780.DOS
Reference switch			Optical	Optical	Optical
Reference switch repeatability	μm		1	1	1
Limit switches			Hall effect	Hall effect	Hall effect
Integrated sensor			Incremental linear encoder	Incremental linear encoder	Incremental linear encoder
Sensor resolution	nm		100	100	100

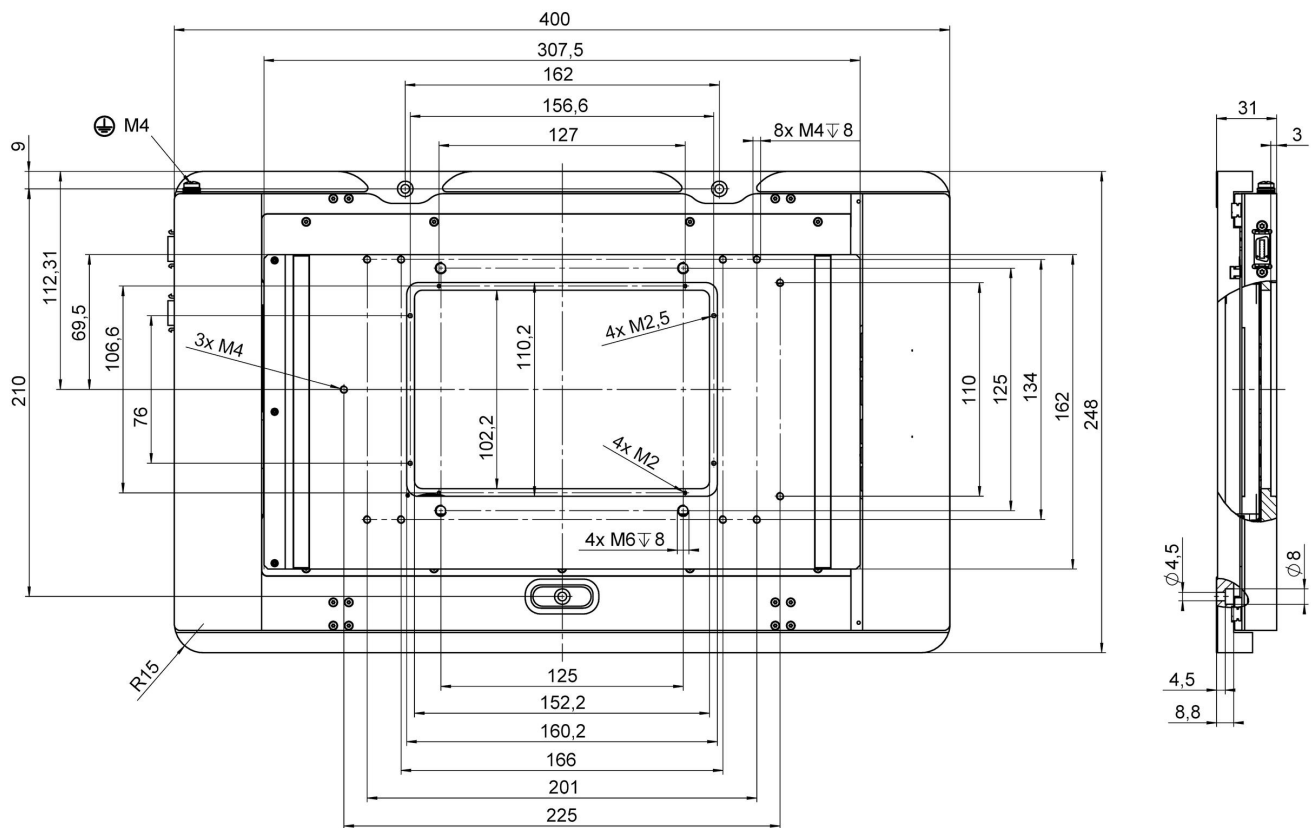
Drive Properties			U-780.DLS	U-780.DNS	U-780.DOS
Drive type			PILine® piezo motor, performance class 2	PILine® piezo motor, performance class 2	PILine® piezo motor, performance class 2

Mechanical Properties	Unit	Tolerance	U-780.DLS	U-780.DNS	U-780.DOS
Permissible push force in Z	N	Max.	25	25	25
Overall mass	g	±5%	4200	4200	3200
Material			Aluminum (black anodized)	Aluminum (black anodized)	Aluminum (black anodized)

Miscellaneous	Unit		U-780.DLS	U-780.DNS	U-780.DOS
Operating temperature range	°C		20 to 40	20 to 40	20 to 40
Connector			2 × MDR 14-pole (f)	2 × MDR 14-pole (f)	2 × MDR 14-pole (f)

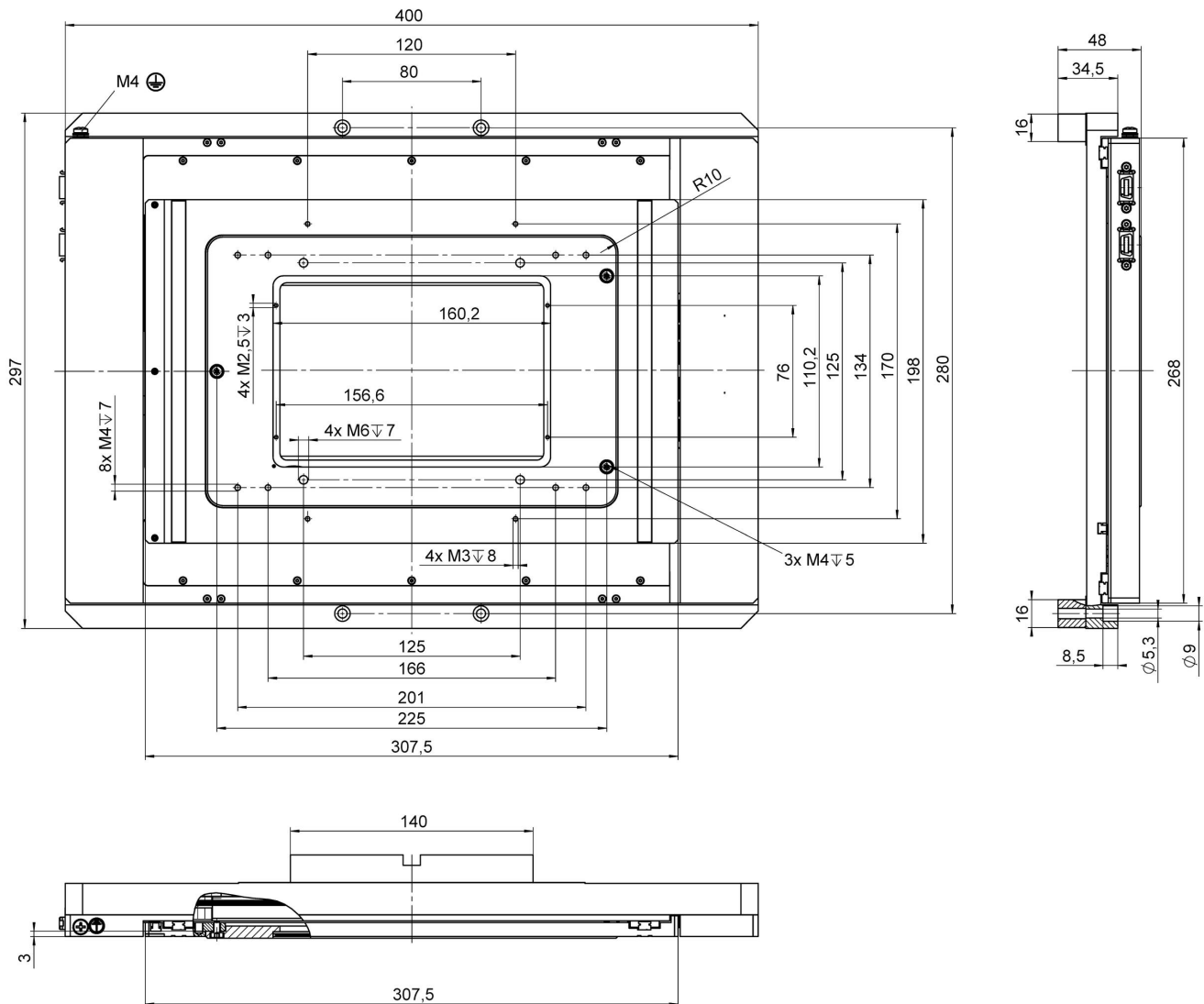
At PI, technical data is specified at 22 ±3 °C. Unless otherwise stated, the values are for unloaded conditions. Some properties are interdependent. The designation "typ." indicates a statistical average for a property; it does not indicate a guaranteed value for every product supplied. During the final inspection of a product, only selected properties are analyzed, not all. Please note that some product characteristics may deteriorate with increasing operating time.

Drawings / Images



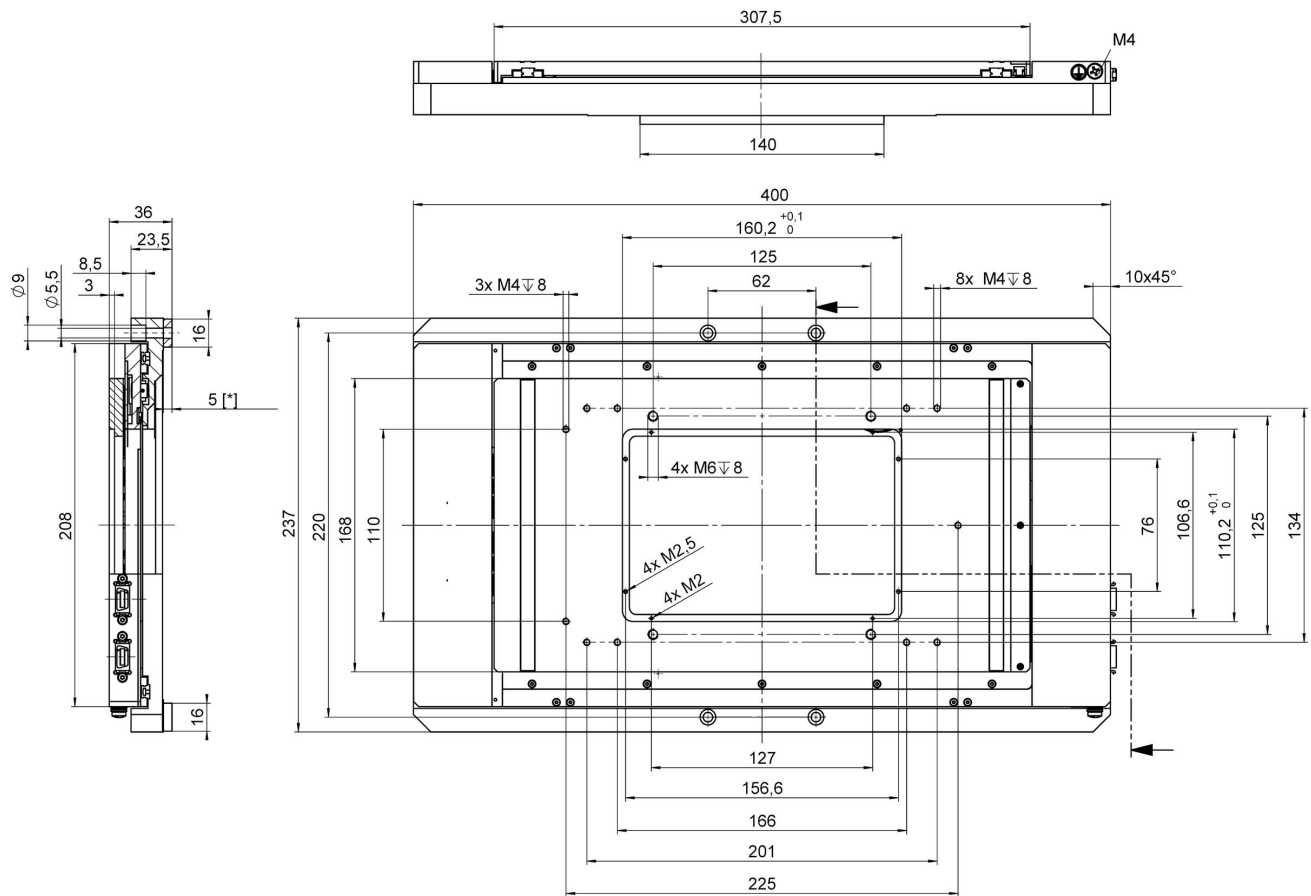
M-687.UL for Leica microscopes, dimensions in mm. Note that a comma is used in the drawings instead of a decimal point.

Drawings / Images



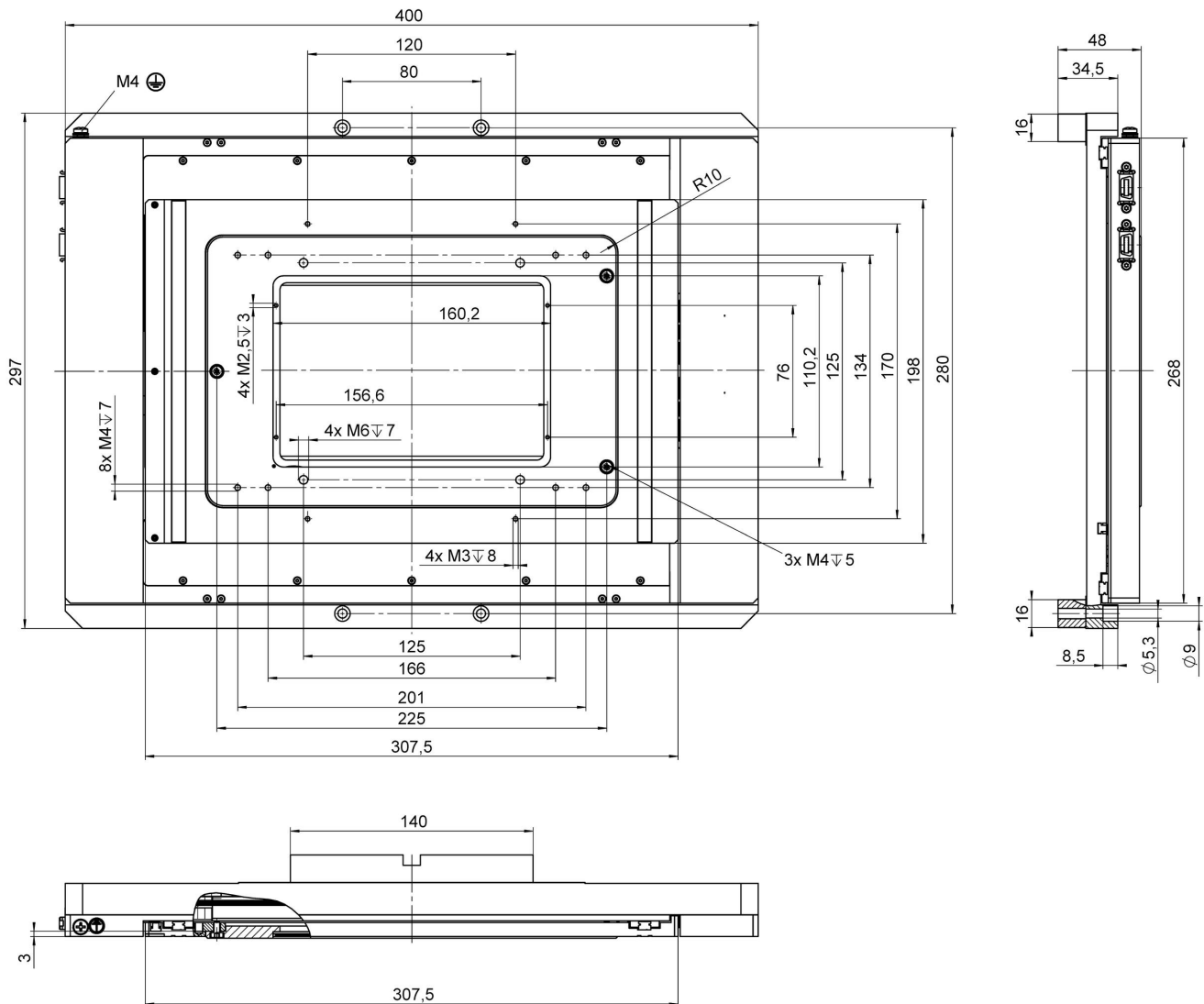
M-687.UN for Nikon microscopes, dimensions in mm. Note that a comma is used in the drawings instead of a decimal point.

Drawings / Images



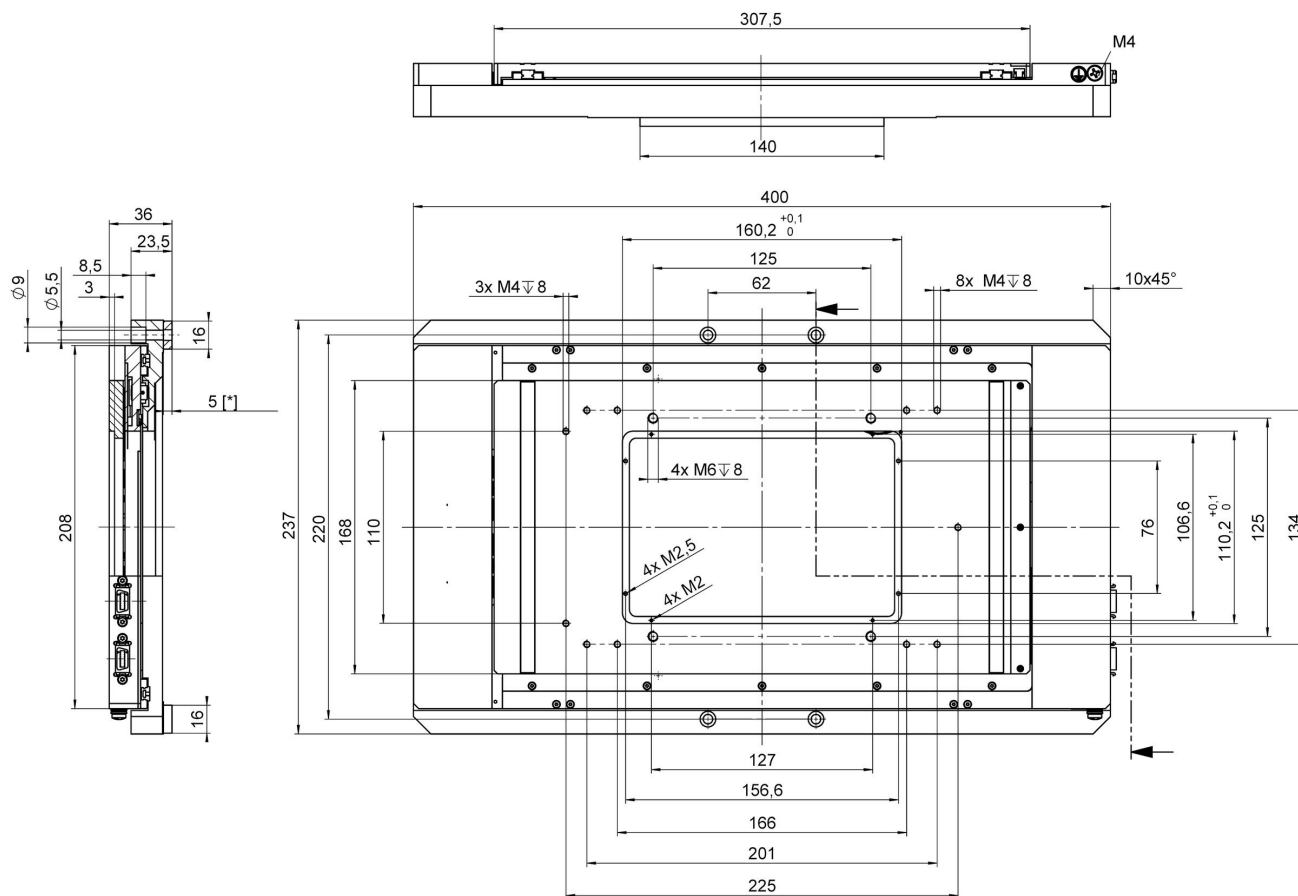
M-687.UO for Olympus microscopes, dimensions in mm. Note that a comma is used in the drawings instead of a decimal point.

Drawings / Images



M-687.UN for Nikon microscopes, dimensions in mm. Note that a comma is used in the drawings instead of a decimal point.

Drawings / Images



M-687.UO for Olympus microscopes, dimensions in mm. Note that a comma is used in the drawings instead of a decimal point.

Order Information

U-780.DLS

PILine® XY stage system with controller and joystick; M-687.UL XY stage for inverted microscopes from Leica; PILine® piezo motor; 135 mm × 85 mm travel range (X × Y); 25 N load capacity; 120 mm/s × 120 mm/s maximum velocity; incremental linear encoder, 100 nm sensor resolution

U-780.DNS

PILine® XY stage system with controller and joystick; M-687.UN XY stage for inverted microscopes from Nikon; PILine® piezo motor; 135 mm × 85 mm travel range (X × Y); 25 N load capacity; 120 mm/s × 120 mm/s maximum velocity; incremental linear encoder, 100 nm sensor resolution

U-780.DOS

PILine® XY stage system with controller and joystick; M-687.UO XY stage for inverted microscopes from Olympus; PILine® piezo motor; 100 mm × 75 mm mm travel range (X × Y); 25 N load capacity; 120 mm/s × 120 mm/s maximum velocity; incremental linear encoder, 100 nm sensor resolution