

## U-780 PILine® XY Stage System with Controller and Joystick

Stable, dynamic, low profile



- High velocity constancy at 10  $\mu\text{m/s}$
- Velocity to 120 mm/s, resolution 0.1  $\mu\text{m}$
- Travel range to 135 mm  $\times$  85 mm (depending on model type)
- For inverted microscopes, freely revolving nosepiece
- Compact, flat design: Unrestricted access to the sample
- Extensive accessories: Z sample scanners, microscope slide holder and Petri dish and microtiter plate holder

### Reference-class microscope XY stage

System with controller and joystick. Large clear aperture 160 mm  $\times$  110 mm.  
Suitable for the following inverted microscopes:

- Nikon Eclipse Ti-E/Ti-U/Ti-S
- Olympus IX2
- Leica DMI

### 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.

## Direct position measurement with incremental 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

PIMikroMove. PI General Command Set (GCS). Drivers for LabVIEW. Compatible with  $\mu$ Manager, MetaMorph, Andor iQ, MATLAB.

## Accessories

M-687.AP1 universal holder for microscope slides and Petri dishes.

## Fields of application

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

## Compatible products

All M-687 model types:

P-561 • P-562 • P-563 PIMars nanopositioning stage

P-541.2 • P-542.2 XY piezo stage

P-541.Z piezo Z and Z / tip / tilt stages

P-545.xR8S PInano<sup>®</sup> XY(Z) piezo system

P-737 PIFOC<sup>®</sup> specimen-focusing Z stage

M-687.UN and M-687.UO:

P-736 PInano<sup>®</sup> Z microscope scanner for microtiter plates

## Related products

M-686 XY stage with piezoceramic linear motors

M-545 open-frame microscope stage

## U-780 specifications

	U-780.DNS	U-780.DOS	U-780.DLS	Unit	Tolerance
	System with M-687.UN for Nikon microscopes	System with M-687.UO for Olympus microscopes	System with M-687.UL for Leica microscopes		
Active axes	X, Y	X, Y	X, Y		
<b>Motion and positioning</b>					
Travel range	135 mm × 85 mm	100 mm × 75 mm	135 mm × 85 mm		
Integrated sensor	Linear encoder	Linear encoder	Linear encoder		
Sensor resolution	0.1	0.1	0.1	$\mu$ m	
Bidirectional repeatability	$\pm 0.3$	$\pm 0.3$	$\pm 0.3$	$\mu$ m	
Pitch / yaw	$\pm 300$	$\pm 300$	$\pm 300$	$\mu$ rad	typ.

# U-780 Datasheet



Date of publication: 10/24/2016

	U-780.DNS	U-780.DOS	U-780.DLS	Unit	Tolerance
Velocity	120	120	120	mm/s	max.
Reference point switches	Optical, 1 µm repeatability	Optical, 1 µm repeatability	Optical, 1 µm repeatability		
Limit switches	Hall effect	Hall effect	Hall effect		
<b>Mechanical properties</b>					
Load capacity	25	25	25	N	max.
<b>Drive properties</b>					
Motor type	PILine® ultrasonic piezomotor, performance class 2	PILine® ultrasonic piezomotor, performance class 2	PILine® ultrasonic piezomotor, performance class 2	N	max.
<b>Miscellaneous</b>					
Operating temperature range	20 to 40	20 to 40	20 to 40	°C	
Material	Al (black anodized)	Al (black anodized)	Al (black anodized)		
Mass of the stage	4.2	3.2	4.2	kg	±5 %
<b>Piezomotor controller</b>	C-867.2U2 with USB joystick (included in scope of delivery)				
Interface / communication I/O lines	USB, RS-232, SPI, Ethernet 4 analog / digital inputs 4 digital outputs to mini DIN, 9-pin Digital: TTL Analog: 0 to 5 V				
Command set	PI General Command Set (GCS)				
User software	PIMikroMove				
Software drivers	GCS DLL (with code examples for the most common programming languages such as C++, C#, VB.NET, Python, Delphi), LabVIEW driver, MATLAB library				
Supported functions	Start-up macro, macro, data recorder for recording operating data such as motor voltage, velocity, position or position error				
Controller dimensions	312 mm × 153.4 mm × 59.3 mm (incl. mounting rails)				

# U-780 Datasheet

Date of publication: 10/24/2016

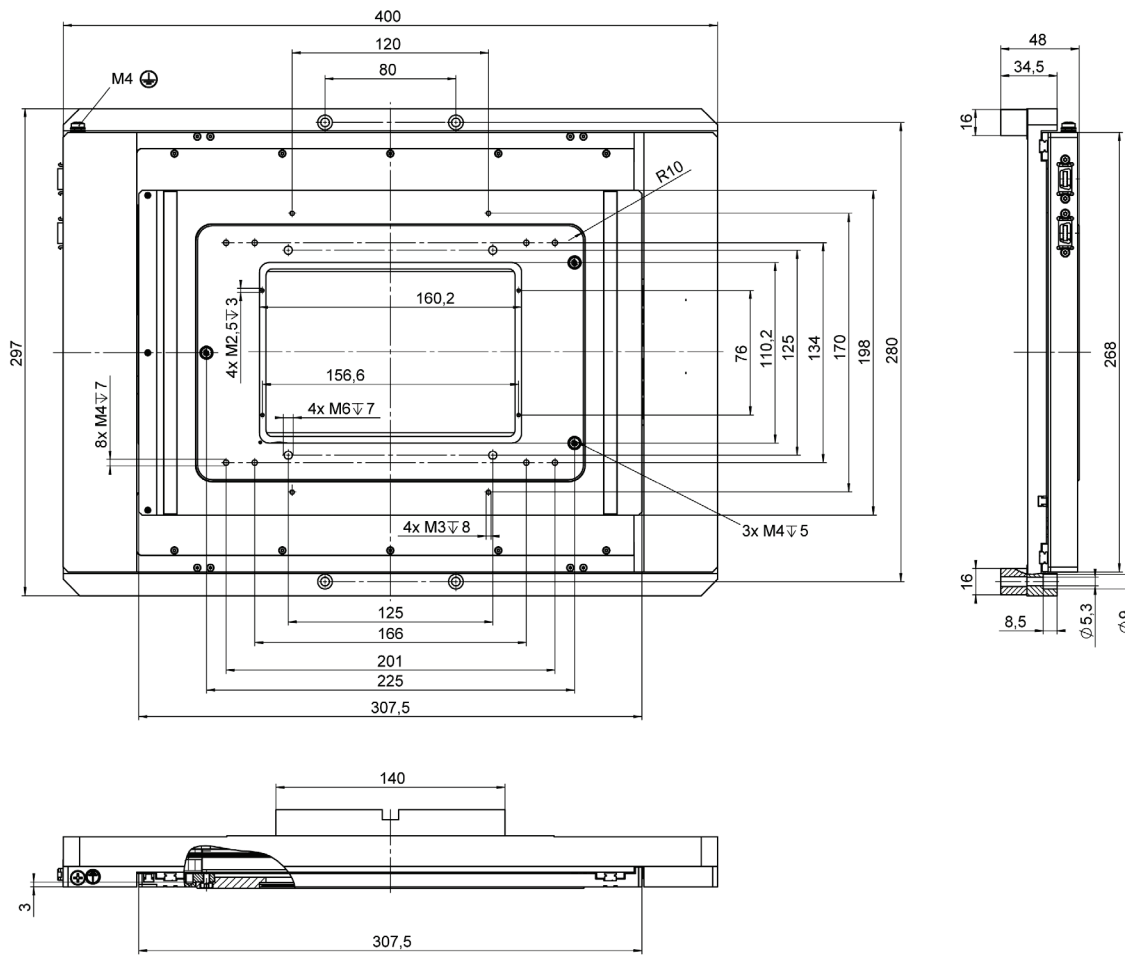


Figure 1: M-687.UN for Nikon microscopes, dimensions in mm

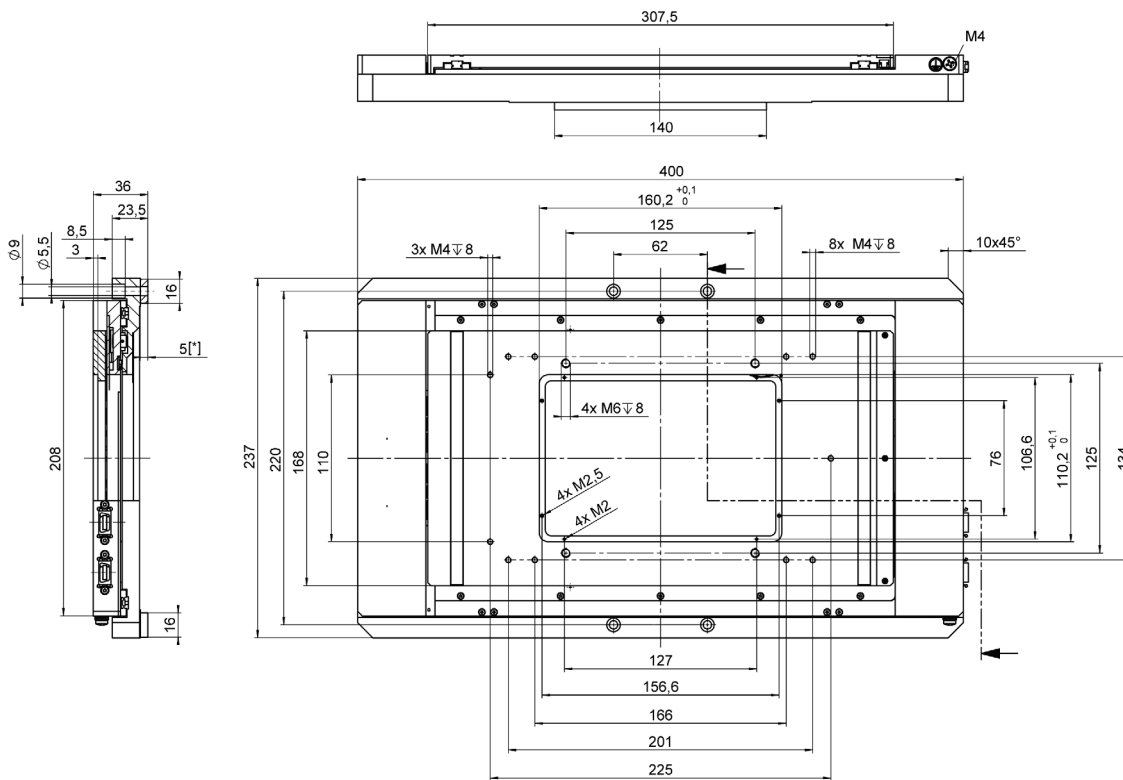


Figure 2: M-687.UO for Olympus microscopes, dimensions in mm

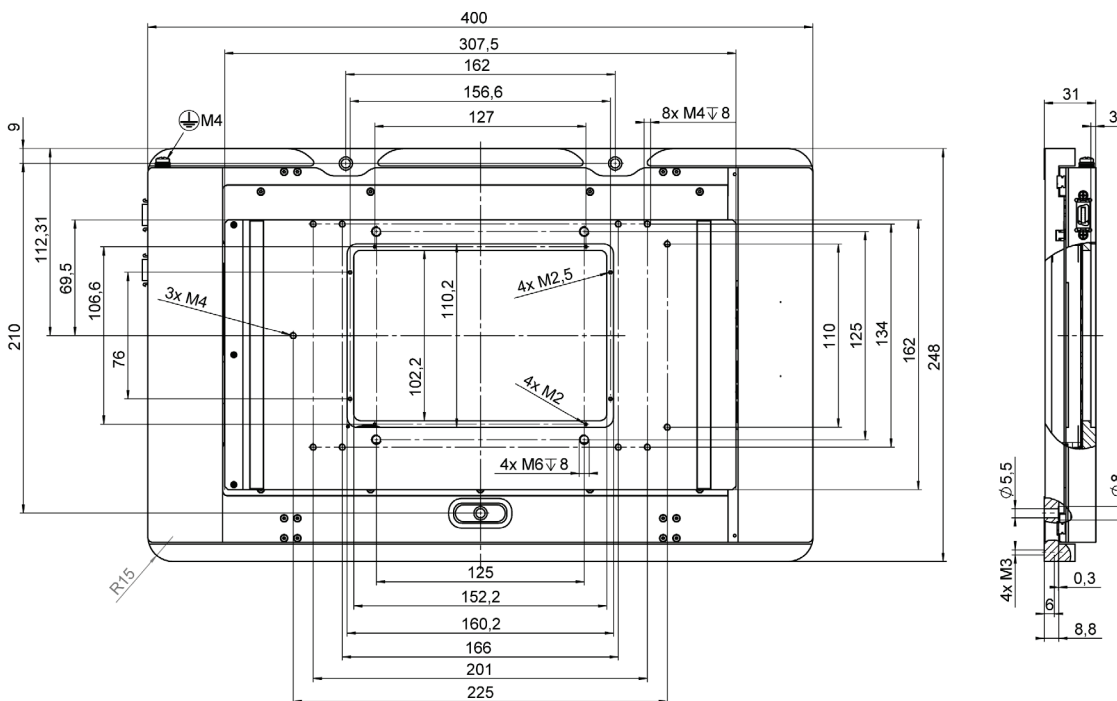


Figure 3: M-687.UL for Leica microscopes, dimensions in mm

## Ordering Information

### **U-780.DNS**

PILine® XY stage system, 135 mm × 85 mm, for inverted microscopes from Nikon, with controller and joystick

### **U-780.DOS**

PILine® XY stage system, 100 mm × 75 mm, for inverted microscopes from Olympus, with controller and joystick

### **U-780.DLS**

PILine® XY stage system, 135 mm × 85 mm, for inverted microscopes from Leica, with controller and joystick

## Accessories

### **M-687.AP1**

Universal holder for microscope slides and Petri dishes for PI stages with 160 mm × 110 mm clear aperture