

# Open-Frame Microscope Stage

LOW PROFILE, LOW DRIFT DESIGN, LONG TRAVEL RANGE



## M-545

- Stable platform for P-545 Plnano® piezo nanopositioning systems
- Low profile for easy integration: 30 mm
- Travel range 25 x 25 mm
- Micrometer screws
- For inverted microscopes made by Nikon, Zeiss, Leica, and Olympus

### Standard-class, manual XY microscope stage

Coarse adjustment for P-545 piezo nanopositioning systems. Stiff design enables optimal scanning and settling behavior

### Field of application

For inverted microscopes made by Nikon (TI), Zeiss (Axio Observer), Leica (DMI), and Olympus (IX2). Versions for other microscopes are available on request

### Accessories

M-545.USG M-229 Stepper-Mike Upgrade for M-545 Stages: Includes Stepper-Mikes

M-545.SHP Adapter Plate for Microscope Sample Holder for M-545 XY Microscope Stage

M-545.USC Stepper-Mike Upgrade for M-545 Stages: Includes M-229 Stepper-Mikes, Controller and Joystick (not suitable for M-545.2MZ)

	M-545.2M	Units	Tolerance
Active axes	X, Y		
<b>Motion and positioning</b>			
Travel range	25 x 25	mm	
Min. incremental motion	1	µm	typ.
Min. incremental motion with M-229 stepper linear actuators	1	µm	typ.
Velocity with M-229 stepper linear actuators	1.5	mm/s	max.
<b>Mechanical properties</b>			
Max. load	50	N	
Preloading	10	N	
<b>Miscellaneous</b>			
Material	Aluminum, stainless steel		
Mass	4	kg	±5%

### Compatible nanopositioning stages

P-517 • P-527 Multiaxis Piezo Scanner  
 P-518 • P-528 • P-558 Piezo Tip/Tilt Stage  
 P-541.2 • P-542.2 Piezo XY Stage  
 P-561 • P-562 • P-563 PIMars Nanopositioning Stage  
 P-545 Plnano® Series

### Compatible nanopositioning stages (with adapter plate)

P-733.2 • P-733.3 XY(Z) Piezo Nanopositioning Stage  
 P-736 Plnano® Z Microscopy Scanner

Additional accessories and custom designs on request.

# XY Microscope Stage with PI Line® Piezo Motor, Controller & Joystick

STABLE, DYNAMIC, LOW PROFILE



## M26821LNJ/OJ

- Highest stability
- 0.1 µm resolution
- Travel range up to 135 x 85 mm
- For inverse microscopes, Recessed slide holder for free rotation of turret
- Suitable piezo-Z sample scanner available

### Reference-class XY microscope stage

with controller and joystick. Large clear aperture 160 x 110 mm. Versions for inverse microscopes:

- Nikon Eclipse Ti-E/Ti-U/Ti-S (NJ)
- Olympus IX2 (OJ)

### High-resolution piezo linear drive

Self-locking at rest. Low noise. Highest stability due to low thermal load and no need for lubricants. Large dynamics range of 10 µm/sec to 100 µm/sec, ideal for operation via joystick and automated high-content methods

### Direct-metrology linear encoder

High resolution and repeatability

### User software

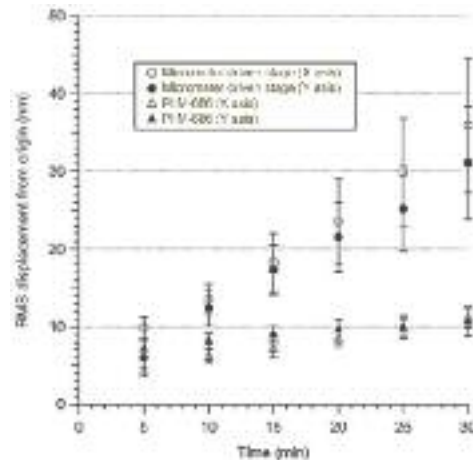
PIMikroMove. PI General Command Set (GCS). Drivers for LabVIEW. compatible with µManager, MetaMorph, MATLAB

### Accessories available

Slide holder and petri dish holder (P-736K019), microplate holder (P-736K020)

### Application fields

For inverse microscopes made by Nikon and Olympus, versions for other microscopes are available on request. For super-resolution microscopy, tiling, automated scanning microscopy

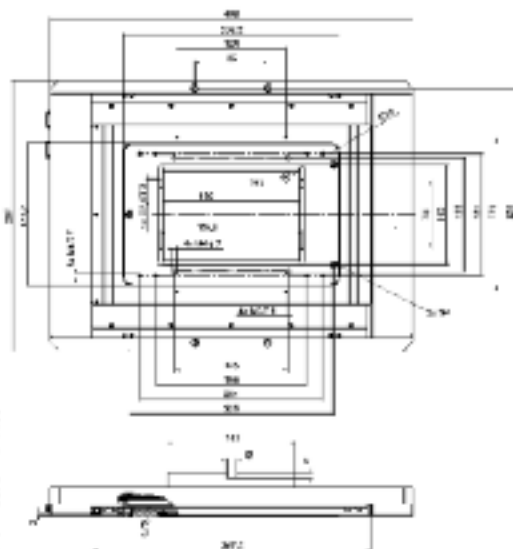


Stability of a M-686 XY stage in comparison to a stage with micrometer screw. Source: S.C. Jordan/P.C. Anthony; Design Considerations for Micro- and Nanopositioning: Leveraging the Latest for Biophysical Applications, Current Pharmaceutical Biotechnology, 2009, 10, 515-521

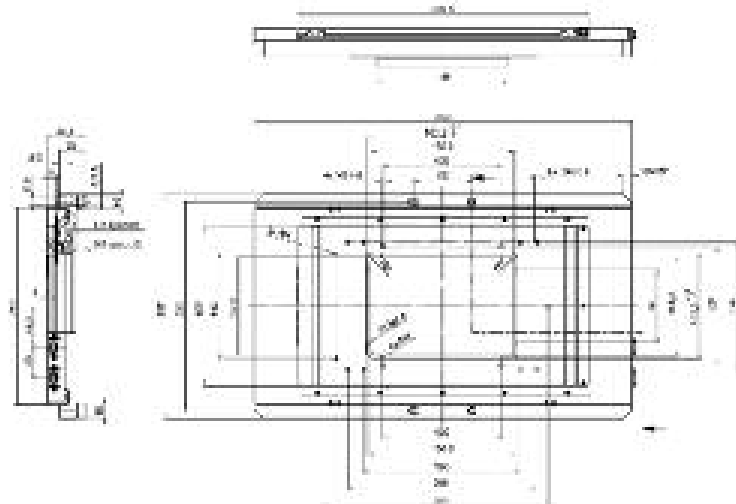


Suitable Z piezo stage with 200 µm stroke and 60 x 110 mm clear aperture available on request

	M26821LNJ	M26821LOJ	Units	Tolerance
	<b>XY stage for Nikon microscopes</b>	<b>XY stage for Olympus microscopes</b>		
Active axes	XY	XY		
<b>Motion and positioning</b>				
Travel range	135 x 85	100 x 75	mm	
Integrated sensor	Linear encoder	Linear encoder		
Sensor resolution	0.1	0.1	µm	
Bidirectional repeatability	0.4	0.4	µm	
Pitch / Yaw	±300	±300	µrad	typ.
Max. velocity	120	120	mm/s	
Reference point switches	Optical, 1 µm repeatability	Optical, 1 µm repeatability		
Limit Switches	Hall-effect	Hall-effect		
<b>Mechanical properties</b>				
Max. load	50	50	N	
Max. push / pull force	7	7	N	
<b>Miscellaneous</b>				
Operating temperature range	5 to 40	5 to 40	°C	
Material	Al (black anodized)	Al (black anodized)		
Mass	3.2	3.8	kg	±5 %
Piezo Controllers	C-867.262 with USB joystick (included in delivery)			
Communication interfaces	USB, RS-232, Ethernet			
I/O Connector	4 analog/digital in, 4 digital out (Mini-DIN, 9-pin) digital: TTL; analog: 0 to 5 V, USB joystick			
Command set	PI General Command Set (GCS)			
User software	PIMikroMove			
Software drivers	LabVIEW drivers, GCS-DLL, dynamic link libraries for Windows (DLL) and Linux			
Supported functionality	Start-up macro, macro, Data Recorder / trace memory, MetaMorph, µManager, MATLAB			
Controller dimensions	320 x 150 x 80,5 mm (including mounting rails)			



M-687.UN for Nikon Microscopes, dimensions in mm



M-687.UO for Olympus Microscopes, dimensions in mm