

Plnano[®] Z Microscopy Scanner

LOW-COST, LOW-PROFILE, WITH DIGITAL CONTROLLER



P-736

- Fastest settling time up to 5 ms
- Low profile for easy integration
- Travel ranges 100 or 200 μm
- Outstanding lifetime due to PICMA[®] piezo ceramic stacks
- Low-cost due to piezoresistive sensors

Precision-class nanopositioning system for high-resolution microscopy

Optimized for very fast step-and-settle at target position. Exceptionally low profile of 20 mm for easy integration. With large clear aperture

PICMA[®] piezo actuator drive

Ceramic insulation for outstanding life time. Significantly higher humidity resistance. Excellent guiding accuracy due to FEA-modeled flexure joints

High-resolution piezoresistive sensors

For stable position control

System with controller and software

The compact E-709 piezo controller is included in the delivery. Control is possible via USB, RS-232 and a broadband analog interface. Supports PIMikroMove, PI General Command Set (GCS). Drivers for LabVIEW, shared libraries for Windows and Linux. Compatible with μ Manager, MetaMorph, MATLAB

Application fields

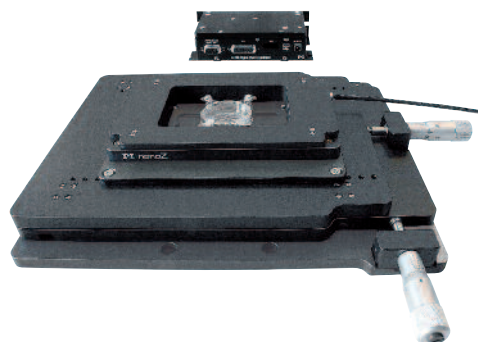
Scanning microscopy, 3D imaging, laser technology, interferometry, metrology, biotechnology, micromanipulation

Accessories

P-545.PD3 35 mm Petri Dish Holder for Plnano[®] Piezo Stages

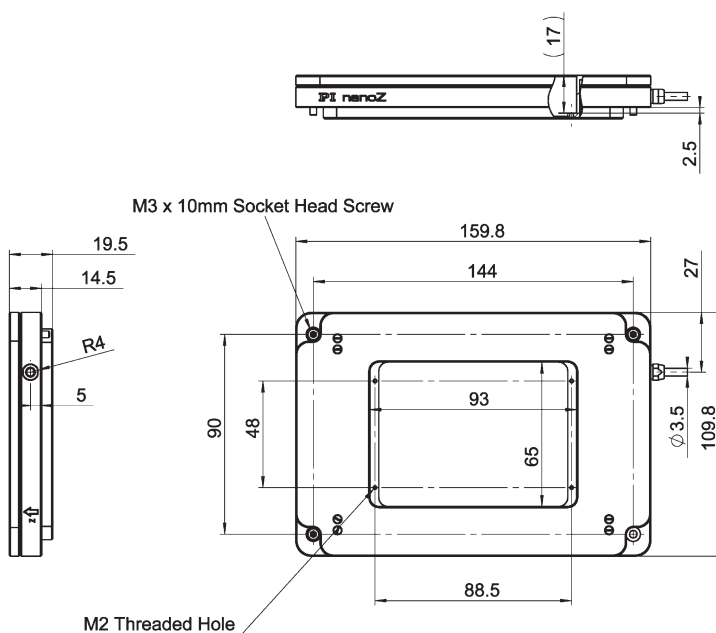
P-545.SH3 Microscope Slide Holder for Plnano[®] Piezo Stages

P-736.AP1 Adapter Plate P-736 Plnano[®] Z Piezo Slide Scanner to M-545 XY Microscope Stage

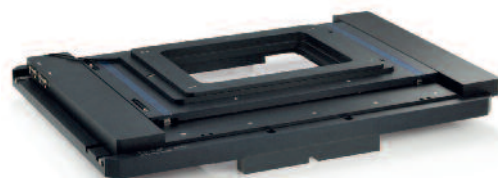


The Plnano[®] Z stage can be combined with the M-545 XY 25 x 25 mm microscope stage

	P-736.ZR1S	P-736.ZR2S	Units	Tolerance
Active axes	Z	Z		
Motion and positioning				
Integrated sensor	Piezoresistive	Piezoresistive		
Closed-loop travel	100	200	µm	
Open-loop resolution	0.2	0.4	nm	typ.
Closed-loop resolution	0.4	0.7	nm	typ.
Mechanical properties				
Settling time (10% step width)	5	7	ms	
Load capacity	500	500	g	max.
Drive properties				
Piezo ceramics	PICMA® P-885	PICMA® P-885		
Miscellaneous				
Operating temperature range	15 to 40	15 to 40	°C	
Material	Aluminum	Aluminum		
Mass	550	550	g	±5 %
Cable length	1.5	1.5	m	10 mm
Piezo controller E-709 (included in delivery)				
Communication interfaces	USB, RS-232, SPI			
I/O Connector	HD-Sub-D 26-pin, 1 analog input 0 to 10 V, 1 sensor monitor 0 to 10 V, 1 digital input (LVTTTL, programmable), 1 analog output, 5 digital outputs (LVTTTL, 3x predefined, 2x programmable)			
Command set	PI General Command Set (GCS)			
User software	PIMikroMove			
Software drivers	LabVIEW drivers, shared libraries for Windows and Linux			
Supported functionality	Wave generator, data recorder, auto zero, trigger I/O, MATLAB, MetaMorph, µManager			
Controller dimensions	160x96x33 mm			



P-736, dimensions in mm



Custom versions are feasible. The example above shows a P-736 version with a particularly large aperture mounted on a motorized M-687 XY stage

Plnano[®] Z Microscope Scanner for Microtiter Plates

LARGE CLEAR APERTURE, LOW PROFILE, WITH DIGITAL CONTROLLER



P-736

- Fast step & settle
- Clear aperture for well plates and low profile for easy integration
- Travel range 220 µm
- Outstanding lifetime due to PICMA[®] piezo ceramic stacks
- Piezoresistive sensors for lower cost
- Capacitive sensors for higher stability

Precision-class nanopositioning system for high-resolution microscopy

Optimized for very fast step-and-settle. Exceptionally low profile of 20 mm for easy integration. Versions for inverse Nikon and Olympus microscopes available

PICMA[®] piezo actuator drive

Ceramic insulation for maximum operating time. Significantly higher humidity resistance. Excellent guiding accuracy due to FEA-modeled flexure joints

Choice of feedback sensors: piezoresistive or capacitive

- High-resolution, piezoresistive sensors ensure a stable control
- Direct-metrology capacitive sensors for significantly improved stability and repeatability compared to piezoresistive sensors

System with controller and software

The compact E-709 digital servo piezo controller is included in the delivery. Digital servos allow adaptation of all control parameters on the fly, by software. Control is possible via USB, RS-232 and a broadband analog interface. Supports PIMikroMove, NanoCapture. PI General

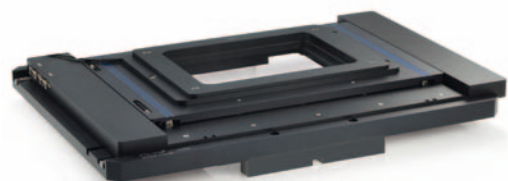
Command Set (GCS). Drivers for LabVIEW, shared libraries for Windows and Linux. Compatible with µManager, MetaMorph, MATLAB and Andor iQ

Fields of application

Scanning microscopy, 3D imaging, laser technology, interferometry, metrology, biotechnology, micromanipulation

Accessories

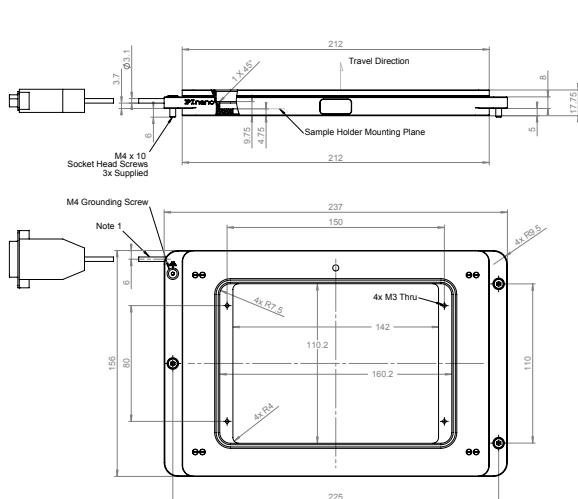
M-687.AP1 Microscope Universal Holder for Slides and Petri Dishes for PI Stages with 160 mm x 110 mm Free Aperture



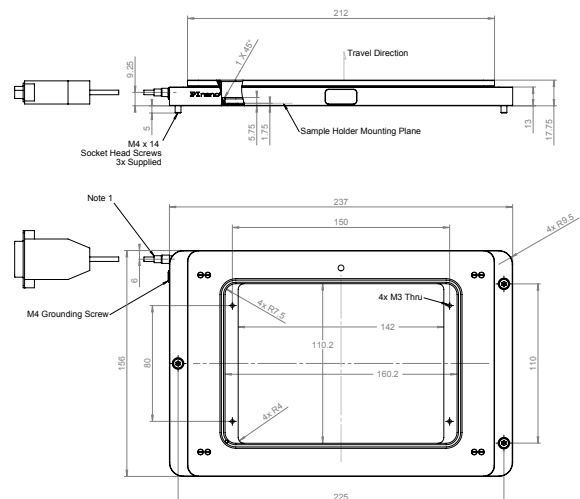
P-736.ZCN in combination with the M-687 XY stage with large clear aperture

	PD73Z2ROW / PD73Z2RNW	PD73Z2COW / PD73Z2CNW	Unit	Tolerance
	Lower cost system with P-736.ZRO stage for Olympus microscopes / P-736.ZRN stage for Nikon microscopes	Higher precision system with P-736.ZCO stage for Olympus microscopes / P-736.ZCN stage for Nikon microscopes		
Active axes	Z	Z		
Motion and positioning				
Integrated sensor	Piezoresistive	Capacitive		
Closed-loop travel	220	220	µm	
Closed-loop resolution	1	1	nm	typ.
Mechanical properties				
Resonant frequency @ 100 g	250	250	Hz	
Recommended load*	500	500	g	max.
Drive properties				
Piezoceramics	PICMA® P-885	PICMA® P-885		
Miscellaneous				
Operating temperature range	15 to 40	15 to 40	°C	
Material	Aluminium	Aluminium		
Mass	850	850	g	±5 %
Cable length	1.5	1.5	m	±10 mm
Piezo controller	E-709 digital servo (included in delivery)			
Communication interfaces	USB, RS-232, SPI			
I/O connector	HD Sub-D 26-pin 1× analog input 0 to 10 V 1× sensor monitor 0 to 10 V 1× digital input (LVTTTL, programmable) 1× analog output 5× digital outputs (LVTTTL, 3× predefined, 2× programmable)			
Command set	PI General Command Set (GCS)			
User software	PIMikroMove®			
Software drivers	LabVIEW driver, shared libraries for Windows and Linux. Supported by MATLAB, MetaMorph, µManager, Andor iQ			
Supported functionality	Wave generator, data recorder, auto zero, trigger I/O			
Controller dimensions	160 mm × 96 mm × 33 mm			

* For dynamic operation. Higher dynamics is possible with a reduced load.



P-736.ZCN / P-736.ZRN, dimensions in mm



P-736.ZCO / P-736.ZRO, dimensions in mm