# PInano® 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 actuators

- 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 18 mm for easy integration. Versions available for inverted microscopes from Nikon and Olympus.

**PICMA® piezo actuator drive**
All-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 stable position control
- Direct-measuring capacitive sensors for considerably 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 NI LabVIEW, shared libraries for Windows and Linux. Compatible with µManager, MATLAB and Andor iQ.

**Application fields**
Confocal microscopy, 3D imaging, laser technology, interferometry, metrology / measuring technology, biotechnology, micromanipulation.

## Specifications

| | PD73Z2ROW / P-736.ZRN2S | PD73Z2COW / P-736.ZCN2S | Unit | Tolerance |
|---|---|---|---|---|
| Active axes | Z | Z | | |
| **Motion and positioning** | | | | |
| Integrated sensor | Piezoresistive | Capacitive | | |
| Closed-loop travel range | 220 | 220 | µm | |
| Closed-loop resolution | 1 | 1 | nm | typ. |
| **Mechanical properties** | | | | |
| Resonant frequency, under load, at 100 g | 250 | 250 | Hz | |
| Recommended load* | 500 | 500 | g | max. |
| **Drive properties** | | | | |
| Piezo ceramic | PICMA® P-885 | PICMA® P-885 | | |
| **Miscellaneous** | | | | |
| Operating temperature range | 15 to 40 | 15 to 40 | °C | |
| Material | Aluminum | Aluminum | | |
| Mass | 850 | 850 | g | ±5 % |
| Cable length | 1.7 | 1.7 | m | ±10 mm |
| Piezo controller | E-709 digital servo (included in scope of delivery) | | | |
| Communication interfaces | USB, RS-232, SPI | | | |
| I/O connector | HD D-sub 26-pin<br>1× analog input 0 to 10 V<br>1× sensor monitor 0 to10 V<br>1× digital input (LVTTL, programmable)<br>1× analog output<br>5× digital outputs (LVTTL, 3× predefined, 2× programmable) | | | |
| Command set | PI General Command Set (GCS) | | | |
| User software | PIMikroMove | | | |
| Software drivers | NI LabVIEW driver, dynamic libraries for Windows and Linux. Supported by MATLAB, µManager, Andor iQ | | | |
| Supported functions | Wave generator, data recorder, auto zero, trigger I/O | | | |
| Controller dimensions | 160 mm × 96 mm × 33 mm | | | |

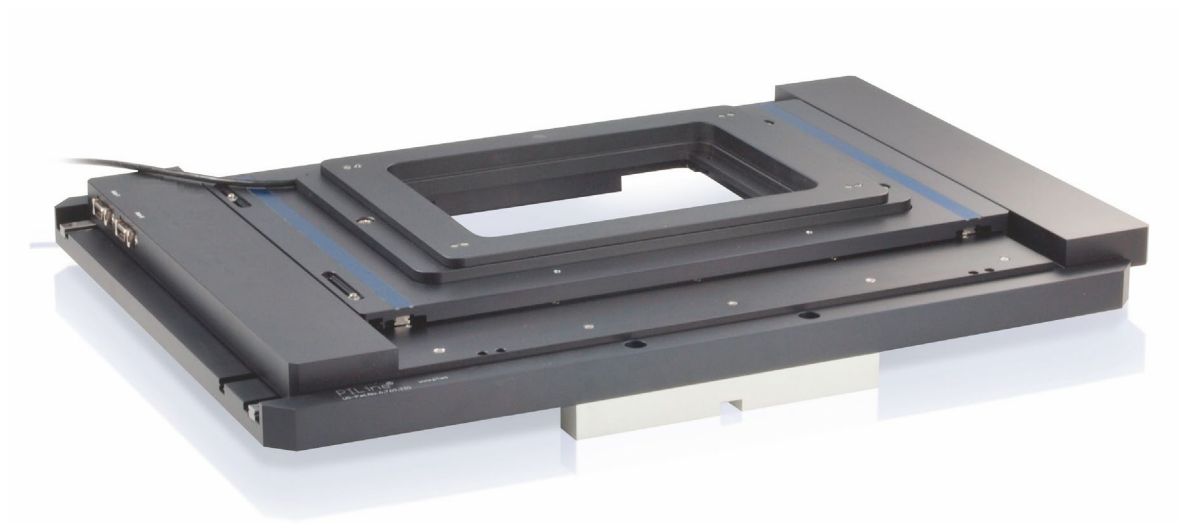* For dynamic operation. Higher dynamics are possible with a reduced load.

# Drawings / Images
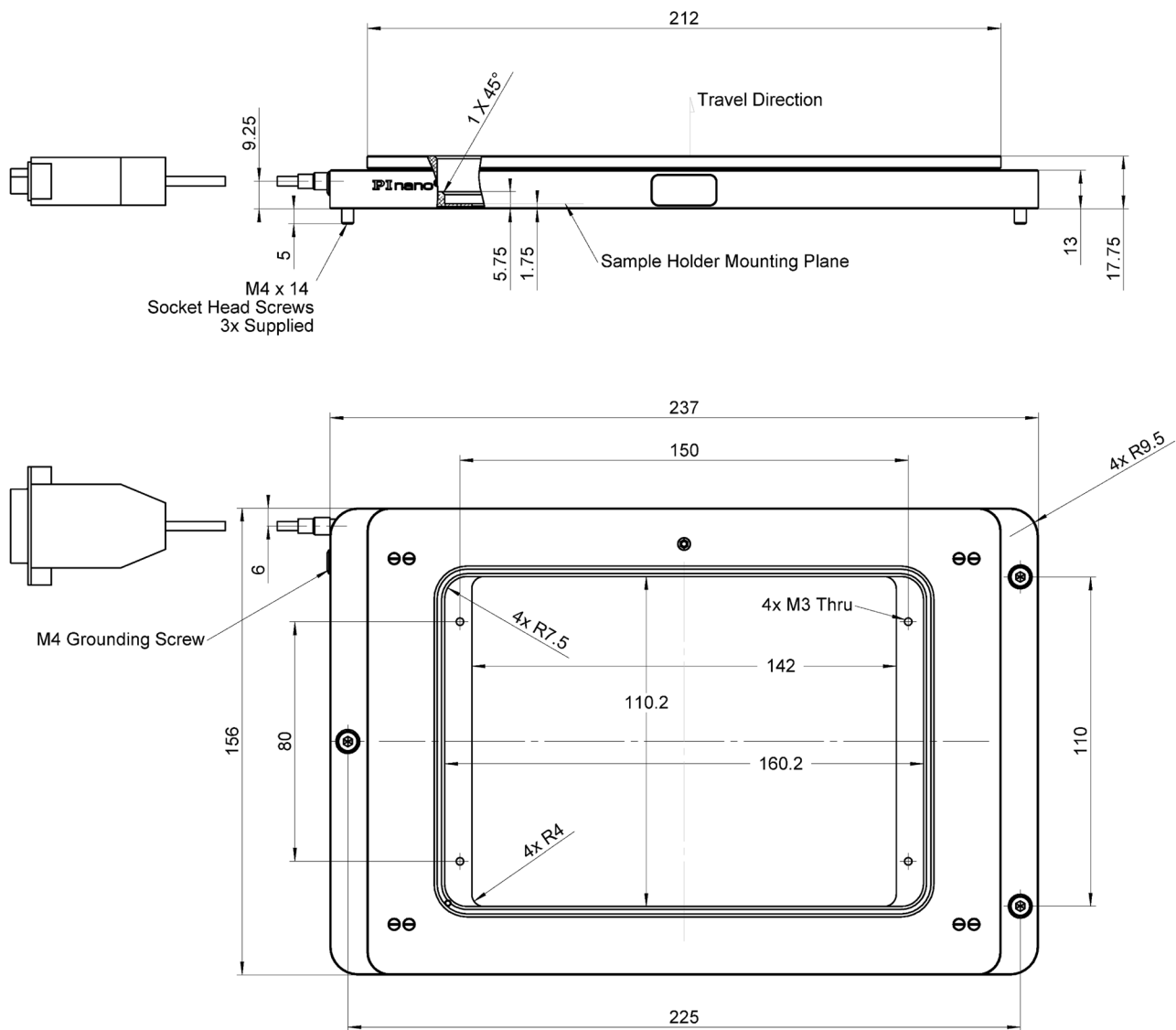




*P-736.ZCO / P-736.ZRO, dimensions in mm. Note that a comma is used in the drawings instead of a decimal point.*
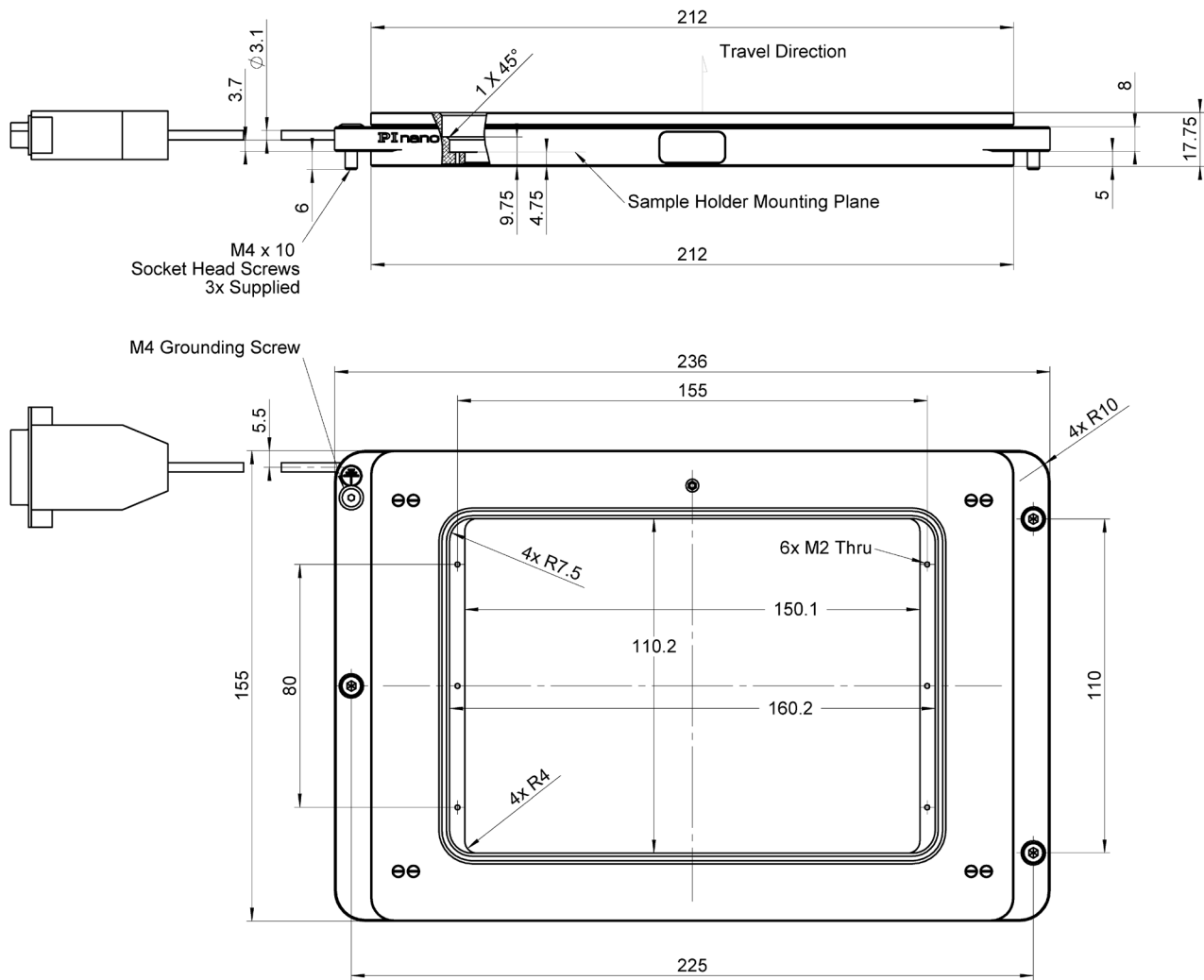
*P-736.ZCN2 / P-736.ZRN2, dimensions in mm. Note that a comma is used in the drawings instead of a decimal point.*

*P-736.ZCN2 in combination with the XY stage M-687 with extra large free aperture*

## Ordering Information

### PD73Z2ROW

PInano® Z piezo scanner system with clear aperture for microtiter plates, for inverted Olympus microscopes, 220 µm, piezoresistive sensors, with USB digital controller

### PD73Z2COW

PInano® Z piezo scanner system with clear aperture for microtiter plates, for inverted Olympus microscopes, 220 µm, capacitive sensor, with USB digital controller

### PD73Z2RNW

PInano® Z piezo scanner system with clear aperture for microtiter plates, for inverted Nikon microscopes, 220 µm, piezoresistive sensors, with USB digital controller

### PD73Z2CNW

PInano® Z piezo scanner system with clear aperture for microtiter plates, for inverted Nikon microscopes, 220 µm, capacitive sensors, with USB digital controller