

MicroScan XYZ Piezo Scanning Stage

The SCXYZ100 low-profile, piezo-driven stage, designed for 3D scanning in microscopy applications, offers 100 μm of travel in the X and Y directions and 80 μm in the Z direction. It can be combined with any MAX series microscopy stage to yield precise sample positioning over a large travel range (see pages 1420-1423 for MAX Series stages).

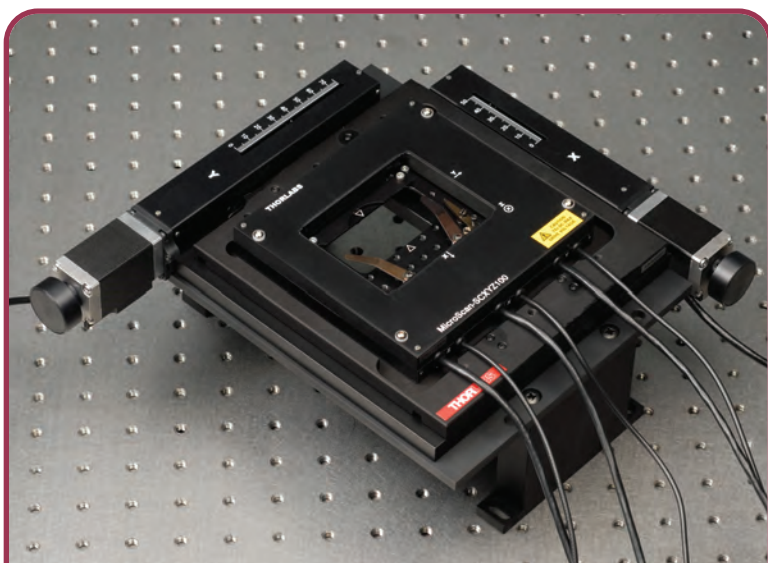
For visualizing specimens or samples on standard microscope slides (1" x 3"), the Thorlabs MicroScan piezo scanning stage provides a

convenient mechanism for precise control of a sample's position with submicron repeatability. When combined with the BPC203 3-channel piezo controller (following page), this system is all that is needed for complete computer control of the sample position with active location feedback.

The closed-loop active feedback of the MicroScan stage ensures correct positioning with a resolution of 25 nm and submicron repeatability. In addition, the active feedback compensates for thermal changes and other factors that might lead to stage drift, making these stages ideal for laser scanning microscopy applications requiring 2D or 3D data collection. The SCXYZ100B is a discounted bundle that included the SCXYZ100 Microscope Stage and the BPC203 3-Axis Closed-Loop Piezo Controller.

Features

- Compact, Low-Profile Design
- Accurate, Reliable Sample Positioning
- Compatible with a Wide Range of Microscope Slides and Petri Dishes
- Fully Compatible with the MAX200 and MAX201 XY Travel Stages
- Allows Fast Optical Scanning
- Closed-Loop Control Based on Strain Gauge Feedback



Piezo Scanning Stage with a MAX201 XY Stepper Motor Stage secured to a PBG11101 Optical Breadboard using MAX200P5 Mounting Brackets.

SCXYZ100B

XYZ Piezo Scanning Stage Kit with BPC203 Controller (included)



SCXYZ100 Specifications

- **X- and Y-Axis Travel:** 100 μm
- **Z-Axis Travel:** 80 μm
- **Positioning Resolution:** 25 nm
- **Feedback:** Strain Gauges
- **Load Capacity:** 100 g on Top Surface
- **Stiffness:** 0.4 N/ μm in X or Y
- **Resonant Frequency:** >70 Hz
- **Max Voltage:** 75 V
- **Recommended Controller:** BPC203

ITEM#	\$	£	€	RMB	DESCRIPTION
SCXYZ100	\$ 6,334.00	£ 4,391.00	€ 5,624.00	¥ 53,485.00	MicroScan XYZ Microscopy Scanning Stage
SCXYZ100B	\$ 9,990.00	£ 6,926.00	€ 8,870.00	¥ 84,356.00	Kit Including SCXYZ100 and BPC203

Benchtop Controller for MicroScan XYZ Piezo Scanning Stage



BPC203

LabVIEW™
Compatible

The BPC203 three-channel apt™ piezo controller is ideal for use with the MicroScan SCXYZ100 stage shown on the previous page. Flexible software settings make this unit highly configurable, and therefore, it is suitable for driving a wide range of piezo elements in third-party products. A waveform generation capability, combined with triggering outputs, makes this unit particularly well-suited for piezo scanning applications.

Controls are located on the front face of the unit to allow manual adjustment of the piezo position using the digitally encoded adjustment potentiometer. The display is easy to read and can be set to show either applied voltage or position in microns. Open- or closed-loop control and zeroing of the piezo can also be selected from the front panel.

Features

- Front-Panel Controls
- High Current Output
- Closed-Loop PID Position via Strain Gauge Feedback Circuit
- Quiet High-Resolution Position Control (for Very Fine Positioning Applications)
- Voltage Ramp/Waveform Generation Capability (for Scanning Applications)
- Open-Loop High Bandwidth Piezo Positioning
- Full Software Control Suite Supplied
- Extensive ActiveX® Programming Interfaces
- 3 m (9.75') Cable Included



PHS101

Specifications (Per Channel)

- **Piezoelectric Output:** SMC Male
- **Voltage (Software Control):** 0-75 VDC
- **Voltage (External Input):** -10 to 90 VDC
- **Current:** 500 mA (Max) Continuous
- **Stability:** 100 ppm Over 24 Hours (After 30 Min. Warm-up Time)
- **Noise:** <3 mV RMS
- **Typical Piezo Capacitance:** 1-10 μ F
- **Bandwidth:** 10 kHz (1 μ F Load, 1 V_{p-p})
- **USB Port:** Version 1.1
- **Power Input**
 - Voltage: 85-264 VAC
 - Power: 200 W
 - Fuse: 3 A
- **Housing Dimensions (W x D x H):** 240 mm x 360 mm x 133 mm (9.5" x 14.2" x 5.2")
- **Position Feedback (9-Pin D-Type Female):**
 - Feedback Transducer Type: Strain Gauge
 - Detection Method: AC Bridge (18 kHz Excitation)
 - Typical Resolution: 5 nm (for 20 μ m Actuator)
 - Auto-Configure: Identification Resistance in Actuator
- **User Input/Output (15-Pin D-Type Female)**
 - 4 Digital Inputs: TTL Levels
 - 4 Digital Outputs: Open Collector
 - Trigger Input/Output: TTL
 - Trigger Input Functionality: Triggered Voltage Ramps/Waveforms
 - Trigger Output Functionality: Trigger Generation During Voltage Ramp Output
 - User 5 V (with Ground): 250 mA Max

By coupling these features with user-friendly apt™ software, the user is able to get up and running in a short period of time. Advanced custom motion control applications and sequences are also possible using the extensive ActiveX® programming environment.

It is often convenient to make adjustments to the piezo output while closely watching the device being positioned, which can prove difficult when using the front panel keys or a remote PC. To allow this kind of use, Thorlabs has developed the PHS101 handset, which enables the piezos to be positioned remotely from the controller and PC.

ITEM#	\$	£	€	RMB	DESCRIPTION
BPC203	\$ 4,325.00	£ 2,998.00	€ 3,840.00	¥ 36,521.00	3-Channel Benchtop Closed-Loop Piezo Controller/Driver
PHS101	\$ 265.50	£ 184.10	€ 235.80	¥ 2,241.90	Remote Handset for BPC Series Benchtop Piezo Controllers