

PRIOR®
Scientific

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 **KINETIC
SYSTEMS**
A DIVISION OF PRIOR SCIENTIFIC

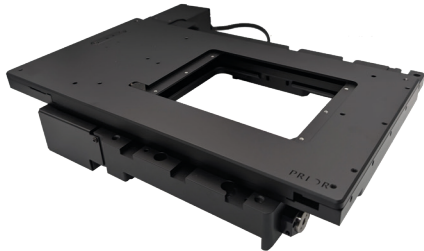


Experts in precision positioning, imaging
automation and vibration isolation.

Product and Services Guide

Motorized XY Stages

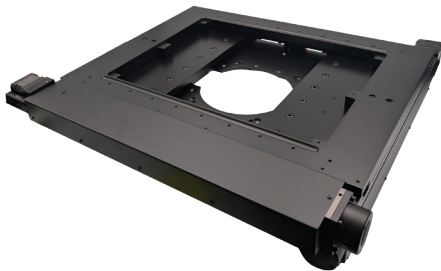
Prior Scientific's motorized XY stages deliver high-precision positioning for life science and industrial applications with a choice of drive and encoder configurations to suit different requirements and budgets. Our stages suit a variety of applications including high content screening, well plate scanning, slide imaging, wafer inspection, industrial samples, and other automated microscopy requirements. Travel ranges are available from 50 - 300 mm with loads from 6 kg up to 100 kg, and our linear motors also offer speeds up to 300 mm/s with nanometer resolution.



Life Science Stages

Life science stages that deliver high-precision automated positioning for microscopy applications such as super resolution and confocal microscopy, live-cell imaging, multi-well plate scanning, and time-lapse studies.

These motorized stages integrate with ProScan controllers and imaging software to support smooth, accurate sample motion and repeatability, enhancing throughput and reliability in biological research and laboratory workflows.



Industrial Stages

Industrial motorized stages that provide robust, precision motion control for materials inspection and quality assurance.

Featuring large travel ranges, patented Intelligent Scanning Technology, and compatibility with optical systems, these stages excel at precise scanning and component mapping, printed circuit boards, and varied industrial specimens with repeatability and durability for manufacturing inspection environments.



Semiconductor Stages

Semiconductor-capable stages that are engineered for high-accuracy wafer and mask inspection.

With large travel ranges, fine minimum step sizes, and patented Intelligent Scanning Technology, these motorized XY stages support scanning of semiconductor wafers (up to 12 inches), photo masks, flat panel displays, and PCBs, enabling precise automated inspection and metrology in semiconductor and materials science.



Specialized and OEM Stages

Customized stages that go beyond standard products to meet unique application needs in microscopy, imaging, automation, photonics, semiconductor, and industrial inspection.

We offer a full customization service for stages, from unique designs for a specific application to developing and productionizing OEM products.

Focus Mechanisms

Motorized focus drives that offer excellent precision, speed and repeatability to provide a complete focusing solution for a range of applications. We offer focusing solutions for both upright and inverted microscopes that are easy to operate and integrate into existing imaging systems.



Focus Motors

Motorized focus drives that are an ideal upgrade for manual microscopes and imaging systems. They deliver ultra-fine Z-axis control for smooth and precise automated focusing and rapid positioning.

Compatible with a wide range of microscope brands including Nikon, Evident/Olympus, Zeiss, and Leica to provide reliable and repeatable Z-axis control for demanding imaging tasks.



Focus Blocks

Focus mechanisms that can translate heavy cantilevered loads up to 25 kg over long distances. They are ideal for optical systems for inspection and precise movement of samples, XY stages or objectives in Z at high resolution.

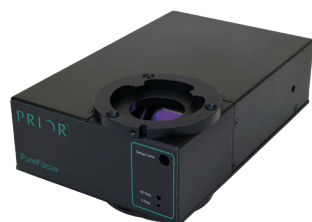
They are ideal for optical table experiments or integration into OEM devices and are compatible with the ProScan III controller for versatile imaging integration.



Piezo Focusing Devices

Piezo-driven stages and objective positioners that offer fast step and settle times with travel ranges from 100 μm to 800 μm , together with high-accuracy and nanometer resolution.

The stages ensure exceptional repeatability and resolution and, with a wide range of available adapters, can be fine-tuned for specific applications. They are compatible with most microscopes and objective lenses, including the Prior OpenStand system.



Laser Autofocus

The PureFocus™ laser autofocus system offers multiple laser wavelengths and transmission characteristics to deliver fast, reliable real-time focusing for infinity-corrected optical systems. Combining advanced optics with intelligent processing, it offers sample detection, dynamic power adjustment, and extended focus recapture.

It is designed for various applications including fluorescence imaging; industrial inspection using darkfield, DIC and other techniques; high-end microscopy modalities such as TIRF; and complex sample types such as microfluidic chips.

Filter Wheels, Turrets, Nosepieces

Filter wheels, nosepieces, and high-speed shutter systems suitable for upright, inverted and stereo microscopes on either the excitation, transmitted light, or emission ports. They are designed to provide rapid and precise control over illumination for accurate imaging in a wide range of applications including fluorescence and bright field microscopy. Users can quickly and accurately change filter sets, control the exposure time, improve image quality, and minimize light damage to samples.



High-Speed Filter Wheels

The HF108B high-speed filter wheel holds up to eight 32 mm filters and allows users to simply and quickly tailor illumination to suit specific applications.

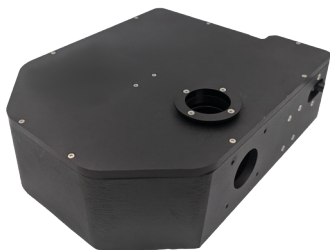
Its ultra-thin 21 mm body enables easy integration and minimal impact on microscope infinity spaces, and includes an easy-to-use filter clamping mechanism. The HF108B is ideal for high-speed widefield fluorescence microscopy or integration into confocal or super-resolution instruments.



Nosepieces

Choose from 1, 2, 4, 5, or 6- position nosepieces that work with most microscope objectives. Nosepiece options that are compatible with Evident, Nikon, and Mitutoyo objectives are available.

Typically configured as motorized to offer greater automation for OEM optical solutions and custom microscopes, our nosepieces can also include vacuum extraction suitable for semiconductor equipment.



Filter Cube Turrets

Wide-field filter cube turrets offering a high-capacity, durable solution for advanced fluorescence imaging.

Supporting up to eight 25 mm or 32 mm filter cubes, they deliver fast 200 ms switching, flexible mounting, and long-life reliability, ideal for high-plex life science, materials science, and hybrid imaging systems.



Controllers

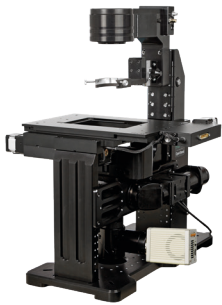
Plug-and-play controllers that provide powerful, precise motion for microscopy and industrial imaging applications.

Capable of movement on up to 16 different axes, the ProScan and OptiScan controllers and CS200 Series joysticks provide complete control with little restriction. They feature a space-saving design and are easily integrated into third-party software to offer compact and powerful systems that save both time and money.

OpenStand®

Prior Scientific's OpenStand platform is a flexible and fully customizable modular system suitable for optical microscopy and imaging. It is an ideal development platform for testing and proving novel optical techniques or imaging automation.

It offers OEMs a cost-effective and fast route to prototyping, testing, and production, reducing the crucial time to market. With OpenStand you get a working system and full support from Prior's expert team to start developing your application immediately.



OpenStand-V: Inverted Microscopy Platform

The OpenStand-V is a customizable system for inverted microscopy and is ideal for high-content screening, well plate scanning, and slide imaging.

It has multiple light source inputs, multiple cameras, and infinity space access ports available and customizable optics for non-visible wavelength imaging. Prior Scientific's PureFocus™ laser autofocus system can also be integrated to provide real-time focus for long time-lapse imaging.



OpenStand-L: Large Format Microscopy Platform

The OpenStand-L is designed for larger samples and comes with large motorized stage options that support 12-inch wafer scanning or industrial sample inspection.

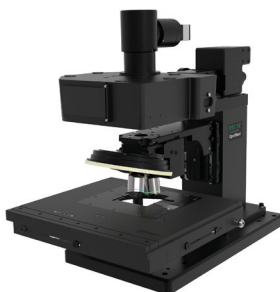
It has dual 145 mm coarse focus and 20 mm fine focusing axes with optional encoding. Prior Scientific's PureFocus™ laser autofocus system can also be integrated for industrial scanning without volumetric imaging and there is a diverse array of reflected light imaging options available.



OpenStand-U: Upright Microscopy Platform

The OpenStand-U is a customizable system for upright microscopy and offers a versatile configuration for transmitted and reflected light. It can be adapted to applications as diverse as industrial inspection or confocal microscopy and can also be configured with stage or nosepiece focusing.

Prior Scientific's PureFocus™ laser autofocus system can also be adapted and integrated to provide real-time focus for different samples.



OpenStand-M: Small Format Microscopy Platform

The OpenStand-M is customizable for upright microscopy and dedicated reflected light configurations. It is an adaptable episcopic illumination system with interchangeable illumination ports ideal for fluorescence or industrial imaging.

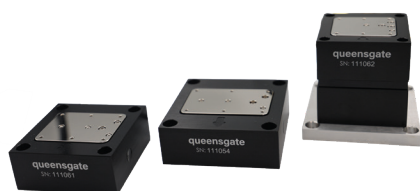
Its compact design enables easy integration into larger assemblies, and its low profile provides enhanced stability in uncontrolled environments.

Queensgate Nanopositioning

Queensgate manufactures high-speed, high-precision piezo stages and capacitive sensors with low picometer resolutions for the most demanding nanopositioning applications.

Specializing in customized solutions that deliver high performance, load tolerance, and speed, our technologies help customers tackle their most challenging applications — from validating and testing the latest semiconductor materials to rapidly identifying new diseases and pathogens.

Single Axis Stages



A range of single-axis nanopositioning stages that utilize proven mechanical design and capacitive sensor technologies to deliver cost effective solutions for a wide variety of precision positioning applications.

These stages are suitable for a range of applications including metrology, AFM, precision industrial automation, and lightsheet microscope objective lens positioning.

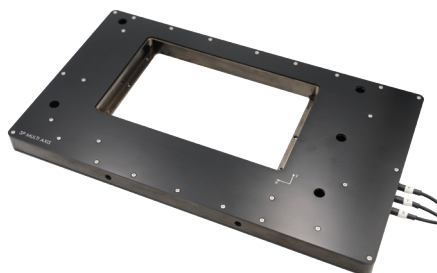
High Speed and High Performance Stages



High-speed, high-performance nanopositioning stages that provide millisecond response times and sub-nanometer resolution.

Developed for demanding ultra-precision applications such as hard-disk drive inspection, interferometry, mirror positioning, and high precision microscopy.

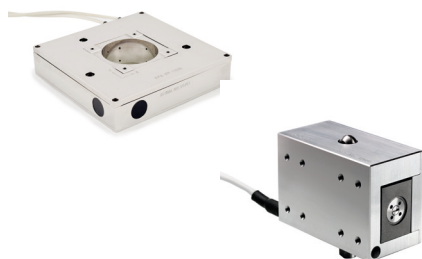
Multi-Axis Stages, Tip/Tilt Platforms



Our multi-axis piezo-driven flexure-guided stages and piezo tip-tilt stages deliver sub-nanometer resolution and reproducibility with friction-free motion and high dynamic performance.

Compact multi-degree-of-freedom designs enable precise alignment, scanning, and stabilization for demanding applications including high-precision microscopy, laser communication devices, and back-end semiconductor manufacturing processes.

Vacuum-Compatible Piezo Stages



Many of Queensgate's nanopositioning and nanosensing products are adaptable for ultra-high vacuum (UHV), radiation-hard, and cryogenic applications, including synchrotrons, scanning electron microscopes, and space missions.

They deliver ultra-high precision motion with sub-nanometer resolution and repeatability in extreme environments, while maintaining low drift and high thermal stability. Customized variants are also available.



Specialist and OEM Stages

Queensgate's specialist and OEM positioning stages are custom designed for precision applications including silicon wafer scanning, hard disk drive testing, and high-end microscopy.

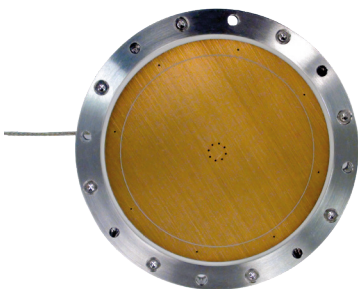
Leveraging expert engineering, customized systems, and bespoke modifications to deliver tailored nanopositioning solutions that integrate seamlessly into advanced scientific, industrial, and automated instrumentation projects.



Piezo Actuators

Nano linear piezo actuators that deliver fast, ultra-precise movements with high repeatability ideal for high-precision motion control and nanopositioning applications, including vibration control, optics and photonics, life sciences, and microscopy.

They offer up to 120 μm travel or 35,000 N blocking force, closed-loop capacitance feedback for low hysteresis, high accuracy positioning, and compatibility with Queensgate digital controllers.



Nanosensors

Capacitive nanosensors that measure distances to picometer resolution, with up to 11 mm range.

Featuring all-metal construction, configurable materials, and compatibility with advanced analog controllers, enabling custom multi-channel systems for demanding applications including silicon wafer stepping, vibration analysis, strain measurement, and space-qualified robotics.



Controllers

Nanopositioning controllers that provide super-fast, fully digital closed-loop and cost-effective analog control for Queensgate piezo products.

Featuring low noise, low drift, high power, and high resolution, they support demanding dynamic applications with fast update rates. Flexible interfaces include analog I/O, USB, RS232c, and step-and-direction control for seamless integration.

OEM and Contract Manufacturing

Prior Scientific offers comprehensive custom design and contract manufacturing services that support product development from concept through full-scale production. Our approach enables clients to bring advanced precision instruments to market efficiently, with reduced upfront cost and risk.

As a globally recognized provider of precision motion, optical systems, and automated instrumentation, we partner with system integrators, OEMs, and research organizations to design, prototype, build, and manufacture bespoke systems tailored to specific application requirements.

End-to-End Custom Solutions

We provide full-service design, development, prototyping, manufacturing, and branding under one roof - allowing you to outsource not only production but also development, reducing capital investment and streamlining time to market. We deliver direct to your worldwide customers and have offices in Europe, North America, Japan, and China for local support.

Expertise in Optics, Microscopy and Automation

With over a century of engineering experience, our in-house teams deliver solutions spanning:

- Custom microscopes and imaging platforms
- Robotic loaders and encoded stages
- Nanoparticle characterization systems and mass spectrometry devices
- High-load, long-travel motorized stages

Supporting Innovation and Startups

We actively partner with global leading scientific instrumentation companies and startups to provide white-label manufacturing and custom solutions, offering essential expertise for companies without in-house capabilities or capital. With global reach and proven expertise in precision instrumentation, optics, and automation, Prior Scientific is a trusted partner for companies seeking reliable, high-quality contract manufacturing solutions.



Certified and Compliant

ISO 9001

Quality Management

ISO 14001:2015

Environmental Management

ISO 45001:2018

Health and Safety

CE and ROHS

Compliant Certifications

Manufacturing at scale.

Precision at every step.

- Multidisciplinary R&D team

- Full product lifecycle management

- Skilled engineers and technicians

- In-house CNC and quality control

- Project management

- Strategic sourcing and cost control

- Automated test equipment

- 50,000 ft² facilities and assembly

Want to know more about our OEM and contract manufacturing services?

Contact Prior Scientific today: inquiries@prior.com

Kinetic Systems Inc.

Kinetic Systems, Inc. has been at the forefront of vibration isolation and control since its inception in 1968, and is a trusted name in academic, industrial, and government research facilities worldwide.

We offer a range of advanced vibration control and optical tables that support a range of precision applications in metrology, interferometry, laser research, semiconductor manufacturing, microscopy, and life sciences where external vibrations can adversely affect the operation of precision equipment.



High Performance Workstations

The 9100 Series Vibration Isolation Workstation sets the industry standard for providing a stable, vibration-free working surface.

These tables deliver precision vibration isolation for sensitive laboratory instruments, including atomic force microscopes, confocal microscopes, cell injection, patch clamping, and analytical balances.

- **Advanced 6-Degrees-of-Freedom Vibration Isolation:** Provides comprehensive vertical and horizontal vibration isolation to deliver maximum stability for ultra-precision instruments, protecting them from external and structural vibration sources.
- **Active-Air Auto-Leveling Stability:** High-performance active-air suspension maintains a preset level, with precise and repeatable leveling accuracy to 0.001", along with tabletop up-limit travel restraints for added safety and stability.
- **Ergonomic, Operator-Friendly Design:** Ergonomic styling enhances operator comfort and workflow, helping teams work more efficiently. A wide selection of work surfaces and accessories allows each workstation to be easily configured and customized to meet specific application and user requirements.



Want to know more about our vibration control and optical tables?

Visit the Kinetic Systems website today: kineticsystems.com

Notes

Our Mission

We understand that every problem requires a unique approach.

Our team works closely with customers and partners to identify their specific needs and design a cost-effective and tailored solution that meets their unique requirements.

We continue to push scientific boundaries and constantly build on and improve our expertise in automated precision optical and mechanical systems.

Applications

From semiconductor and high-end microscopy to automating routine processes, our products are used worldwide in life sciences, research, semiconductor and industrial applications including:

Pathology and Slide Scanning

Physiology and Neuroscience

High Content Screening

High Throughput Screening

Semiconductor Inspection

Semiconductor Manufacturing

Fluorescence Microscopy

Super-Resolution and Confocal

Atomic Force Microscopy

Microfluid Imaging

Particle Analysis

Metrology

Regions covered

United Kingdom:

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Germany:

jena@prior.com

Japan:

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China:

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