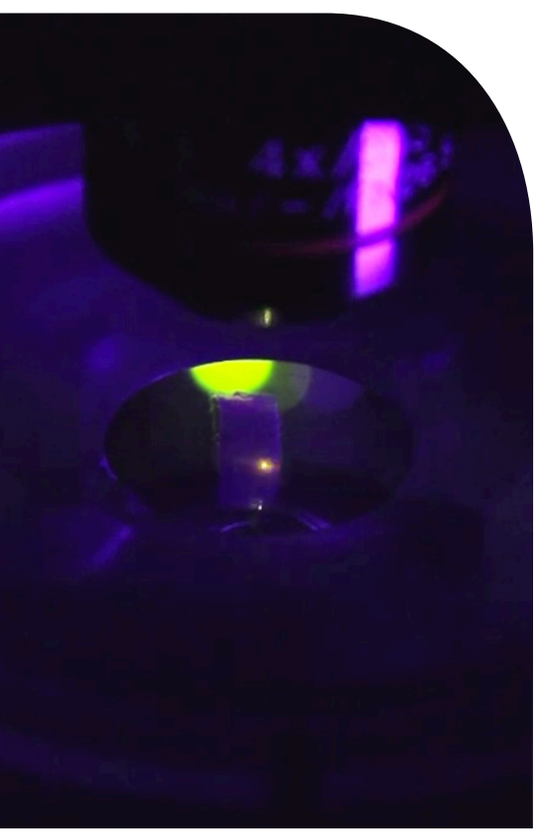
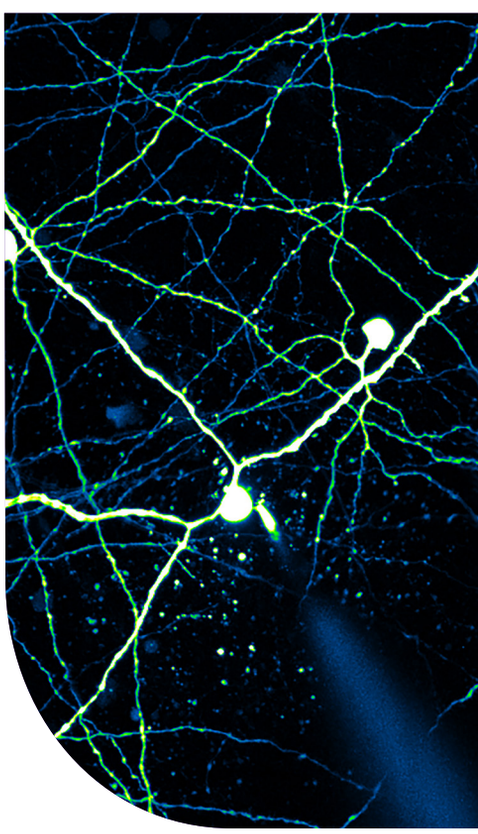
Scientifica

Built with neuroscience in mind

Product range overview





Welcome to Scientifica

Scientifica was established in 1997 with the vision of becoming a major provider of electrophysiology and imaging systems across the world.

Through friendly, helpful and knowledgeable staff, Scientifica empowers researchers to achieve breakthroughs in neuroscience by overcoming experimental hurdles with world-class laboratory equipment.

By listening to and understanding the demands of researchers in leading worldwide universities and companies, Scientifica continue to produce, refine and expand its expertise and product range. These collaborations have enabled Scientifica to provide equipment with the exceptional features and benefits expected from a market-leading company.

Based in the UK, production, development, marketing and sales teams are spread across two modern facilities in the South of England. At the end of 2015, a new office opened in the United States to help serve growing sales in North America.

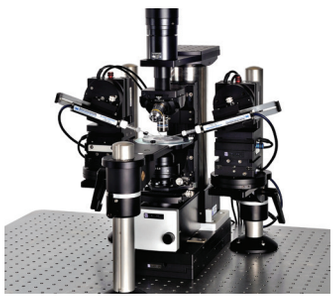
Scientifica's success has led to a number of awards including two Queen's Awards for Enterprise, one in International Trade (2012) and another in Innovation (2014).

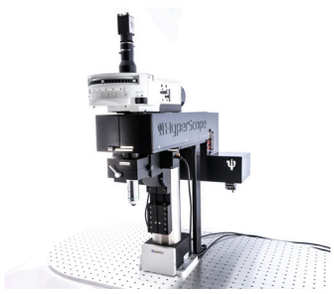
In 2013, Scientifica became a part of the Judges Scientific Group and since then the company has continued to grow and develop quality products and help lead the way in furthering scientific research.

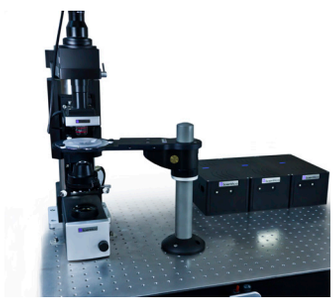
Our extensive team of worldwide distribution partners, third party suppliers and direct sales staff will ensure that the service and support continue to be of paramount importance as we continue to grow.

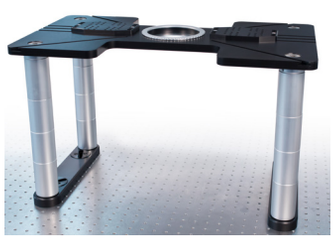
This brochure contains a summary of Scientifica equipment. If you require more information, please consult our dedicated team of product specialists or visit our website:

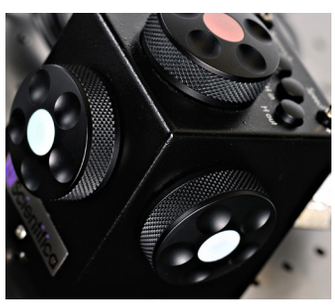
www.scientifica.uk.com



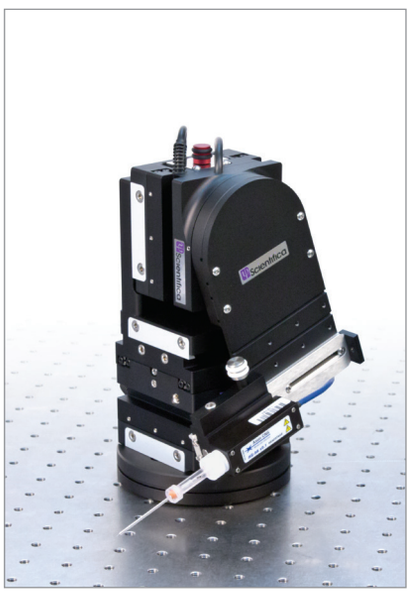




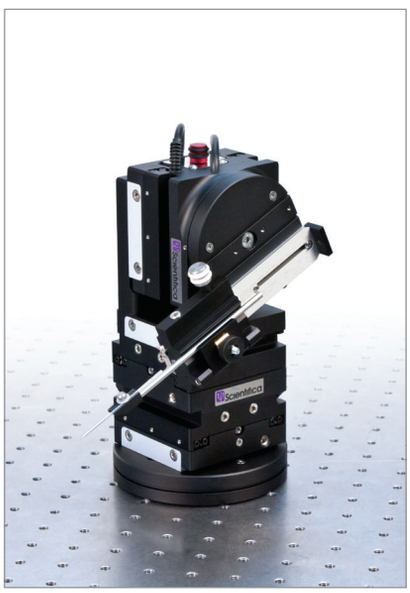




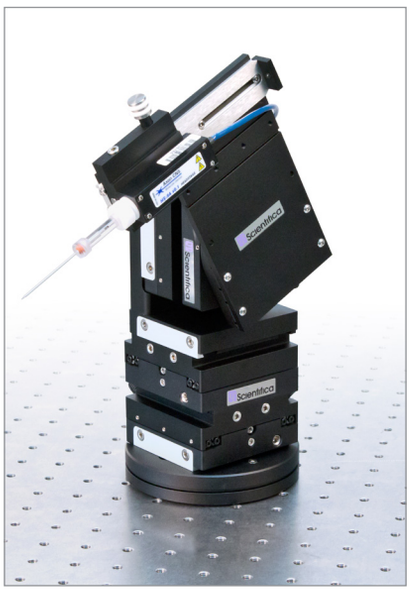
Micromanipulators



PatchStar with shallow bracket



PatchStar with electrode holding bar



PatchStar with steep bracket

PatchStar

The PatchStar is an ultra-stable, super smooth micromanipulator with extremely low electrical noise. Its versatile, modular design and user-friendly responsive controls, make the PatchStar perfect for a wide range of electrophysiological, microinjection and other demanding positioning requirements.

Ergonomically designed in collaboration with leading physiologists, the PatchStar features four axes of movement (three orthogonal and a further virtual 'approach' axis) and an angle detection function for accurate sub-surface positioning of patch pipettes. The modular design ensures that it can easily convert from right to left handed operation.

The ease of control through software or multiplexed user consoles ensures these devices are suitable for the most demanding applications. The PatchStar is compatible with various control options including the PatchPad, Control Cube and LinLab software.

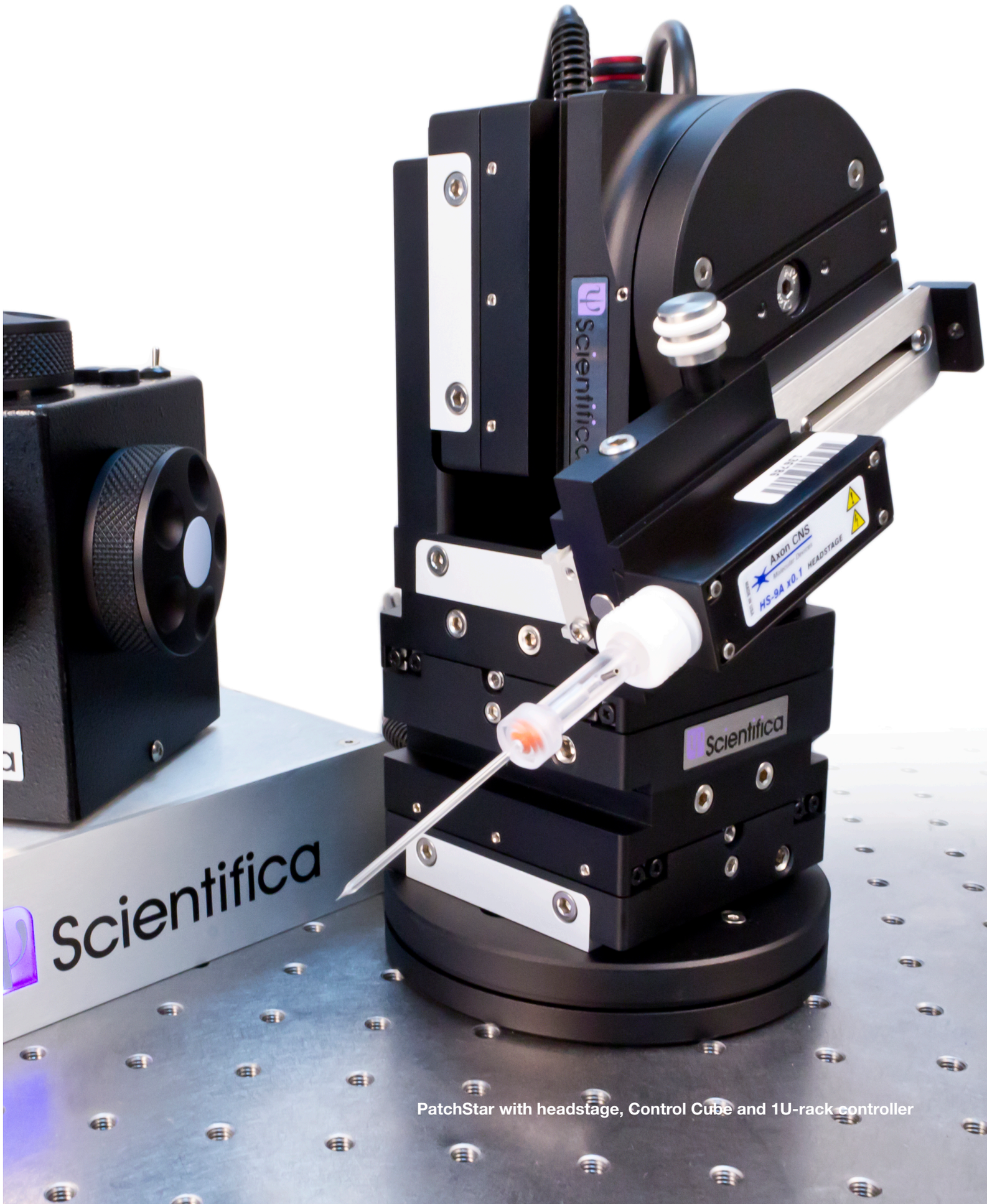
Benefits include:

Smooth motion: 20 nm resolution, 20 mm of travel and quality engineering, ensures remote, precise pipette control and placement

Ultra-stable: less than 1 micron of drift in 2 hours, allows long-term experiments

4th 'virtual approach' axis: allows users to approach samples along the axis of the probe

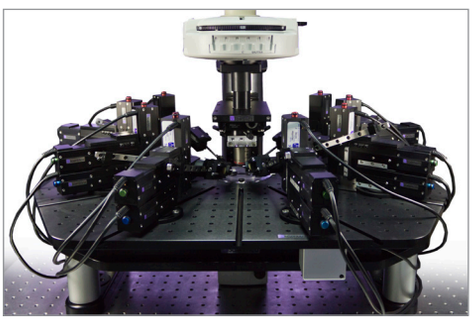
Versatile: a range of accessories and brackets to customise the PatchStar to your exact needs

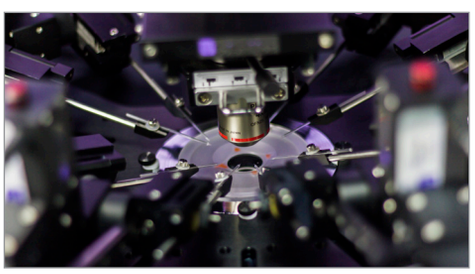


PatchStar with headstage, Control Cube and 1U-rack controller

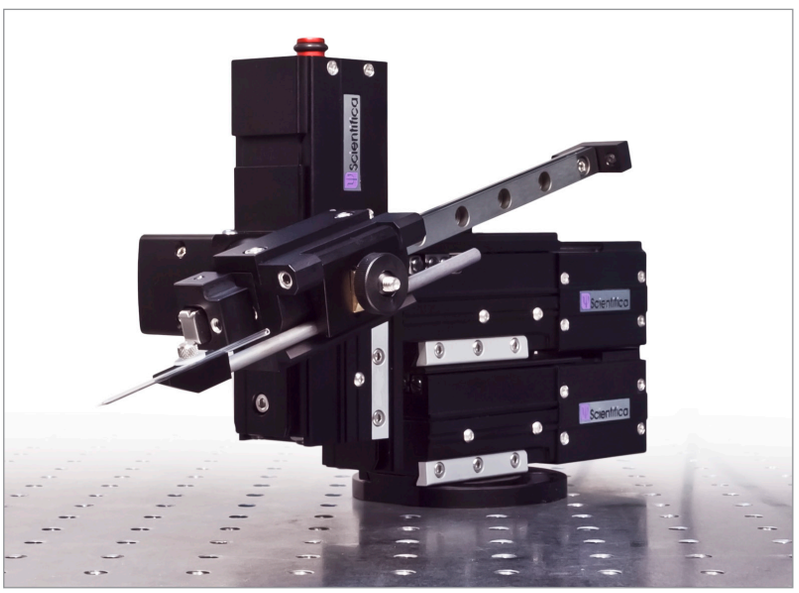
Micromanipulators

MicroStars in combination with a SliceScope Pro 3000





The ultra slim profile offers new options for multiple patching



MicroStar

The ease of control through software or multiplexed user consoles ensures these devices are suitable for the most demanding applications. Based on the same solid engineering principles as our world-class PatchStar micromanipulators, the MicroStar enables researchers to arrange up to eight electrodes around a sample. This makes it ideal for neuroscientists studying synaptic connectivity and networks, and also for a wider range of applications where space around tissue samples is at a premium. A real success in the design of this product is the impressive travel achieved despite the compact dimensions.

The MicroStar, offering four axes of motorised motion (X, Y, Z and virtual 'approach'), can be mounted next to both upright and inverted microscopes. MicroStars can be easily multiplexed to the control consoles for simple, intuitive operation and customisation.

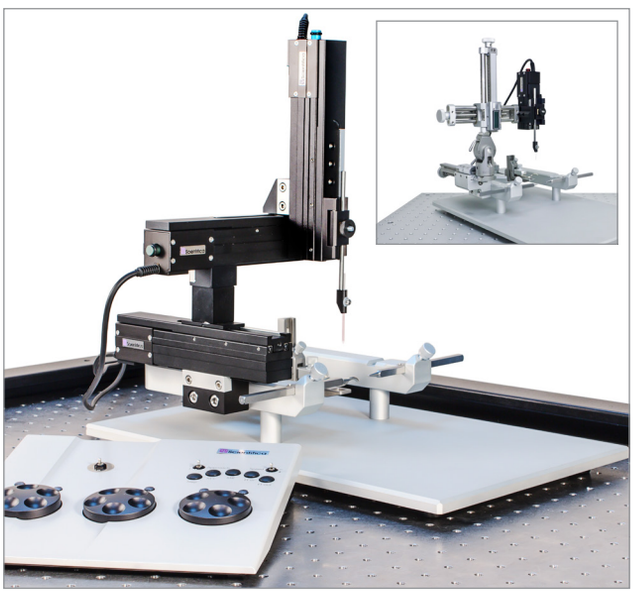
The ultra-low noise of the device means that the smallest electrical signals can be detected. Its exceptional mechanical stability allows work with small cells, over long experiments, to be undertaken. The super smooth motion allows for probe positioning onto delicate cells, whilst the fast pipette exchange system saves you time.

Benefits include:

Super, smooth travel: 20 mm in X and Z axes, and 14 mm in the Y axis

Small footprint allows up to eight micromanipulators around a sample. Perfect for network studies

Fast and easy pipette exchange via the smooth sliding bracket



IVM (in vivo manipulators)

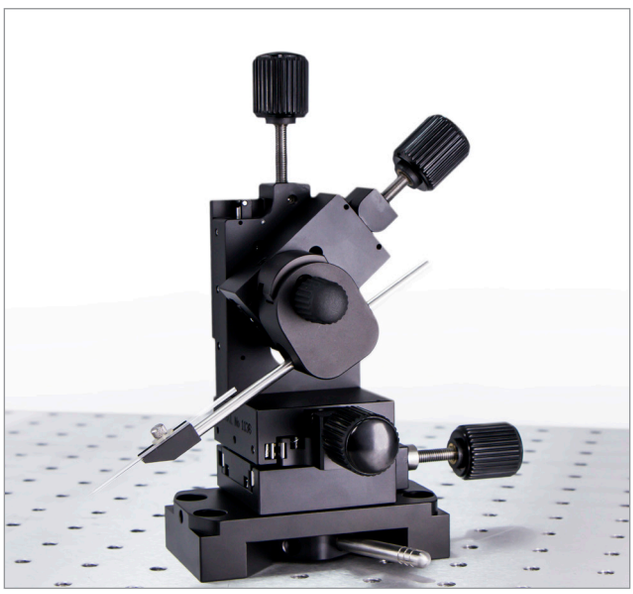
The IVM was developed to meet the requirements of the most demanding in vivo applications. It can be used for microinjection, electrophysiology and viral injections among other applications. High quality materials and precision assembly, along with the super smooth motion and long travel, means that the IVM is stable, versatile and low-noise. The movement is controlled via our intuitive user consoles or Windows™ based LinLab software. The IVM is available with either one or three axes of smooth motorised movement and in miniaturised versions (with less travel).

Benefits include:

70 mm of travel, suitable for large and small in vivo preparations (20 mm for 'mini' versions)

Compatible with many stereotaxic frames. A range of headstages and adapters can be easily fitted to cater for a wide range of experimental needs

Minimise tissue damage via the unique 'creeper' function. Probes can be automatically positioned at slow speeds, unachievable by hand



LBM-7 manual manipulator

The LBM-7 was designed and developed in conjunction with scientists to be stable, low-drift and easy to use. It bridges the gap between coarse manipulators and micromanipulators.

Affectionately known as the 'Little Black Manipulator', this device can be easily converted from left to right-handed operation. Seven axes of movement and micron resolution make the LBM-7 an excellent design for a broad range of applications.

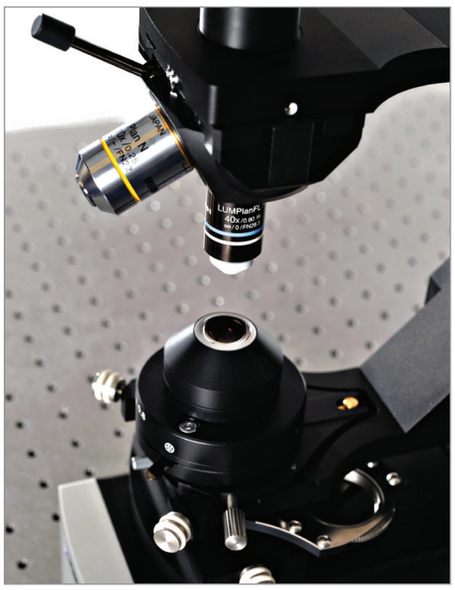
Benefits include:

Seven axes of fine control; four linear and three rotational, for fast and accurate positioning and high productivity

Mechanical stop system for easy probe exchange

Ideal for users who want the flexibility of placement either side of the microscope. This greatly improves return-on-investment and use within the laboratory

Complete rigs
SliceScope



The SliceScope is a fully-motorised, upright, fixed-stage, focusing nosepiece microscope. It is now a world-leader for imaging and electrophysiology research and was developed in collaboration with leading researchers. The SliceScope provides a very stable, compact platform, that takes a range of industry standard optics for efficient microscopy. The SliceScope's smart design is ready to accept a wide variety of accessories and light sources to suit your application.

Fluorescence turret and eyepieces available

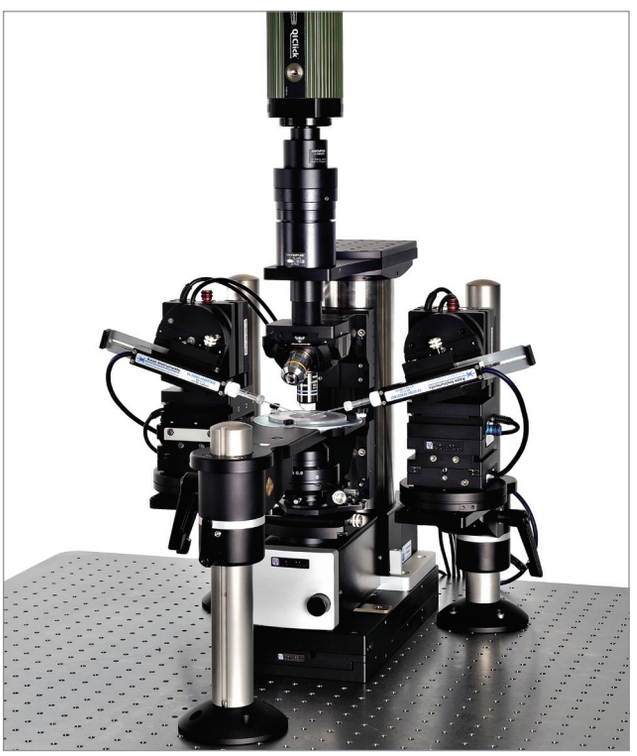
Benefits of the SliceScope range

- Fully motorised objective
- Motorised condenser control for optimal Koehler illumination
- Slim profile, allowing easy placement of equipment around your sample
- Can be switched between in vitro and in vivo configuration for further flexibility and cost-effectiveness
- Choice of contrast techniques: oblique, IR DIC and Dodt contrast, depending on your requirements and preference
- Multiphoton compatible: easily upgradeable to a two-photon imaging system
- Superb image quality, integrating a variety of industry leading optics
- Memory positions for repeatable return to sites of interest

In vivo and in vitro configurations

The SliceScope is easily interchangeable between in vivo and in vitro configurations, enabling a single setup for both techniques, saving both space and money. The in vitro configuration includes the nosepiece arm, condenser and substage optics. However, for in vivo applications, the condenser and substage optics are not required and therefore can be removed by the user. Thus providing plenty of space to position additional equipment around the SliceScope body - including treadmills, visual or odour stimulation and many others.

SliceScope Pro range



The SliceScope Pro 1000

The SliceScope Pro 1000 is a moving microscope system ideal for researchers who prefer the flexibility of Post and Platform mounting for the sample, manipulators and other equipment. This system allows the SliceScope to translate in X and Y axes, using a compact motorised stage to move between fields of view without disturbing established patch recordings. Users of this system can take advantage of the repeatable locking collar on the Post and Platforms, to swing out their manipulators and sample, providing easy access to the microscope.

The SliceScope Pro 2000

The SliceScope Pro 2000 is another moving microscopy system, created for researchers who prefer to use the large fixed stage SlicePlatform as the basis for their experimental setup.

The SliceScope translates in both X and Y axes using a motosied stage, offering the ability to move around a sample while retaining patches. The SlicePlatform features height-adjustable legs, sliding lockable mounting carriages for mounting manipulators and a locking sample plate holder. It extends the mounting space around the sample for other experimental equipment, with an M6 or ¼ - 20 hole pattern to bolt devices down.

SliceScope Pro systems are a range of fully integrated and motorised patch clamping solutions. They allow the user to control: manipulators, microscope platforms, microscope condenser and objective focus, all from simple, user consoles. As standard, all SliceScope Pro systems include the SliceScope frame with motorised objective and condenser focus, two PatchStar micromanipulators, a choice of multiplexed control consoles and 'LinLab' software for customisation of motorised features.

The unique 'follow' software function enables the user to virtually 'link' multiple manipulators to the X,Y and Z-focus of the microscope so your pipettes stay within the field of view as the scope is moved around a sample. This is convenient for searching the sample and patching cells of interest.

The SliceScope Pro 3000

The SliceScope Pro 3000 system is designed to overcome the limitations imposed by confocal, multiphoton or other techniques where the microscope cannot be moved.

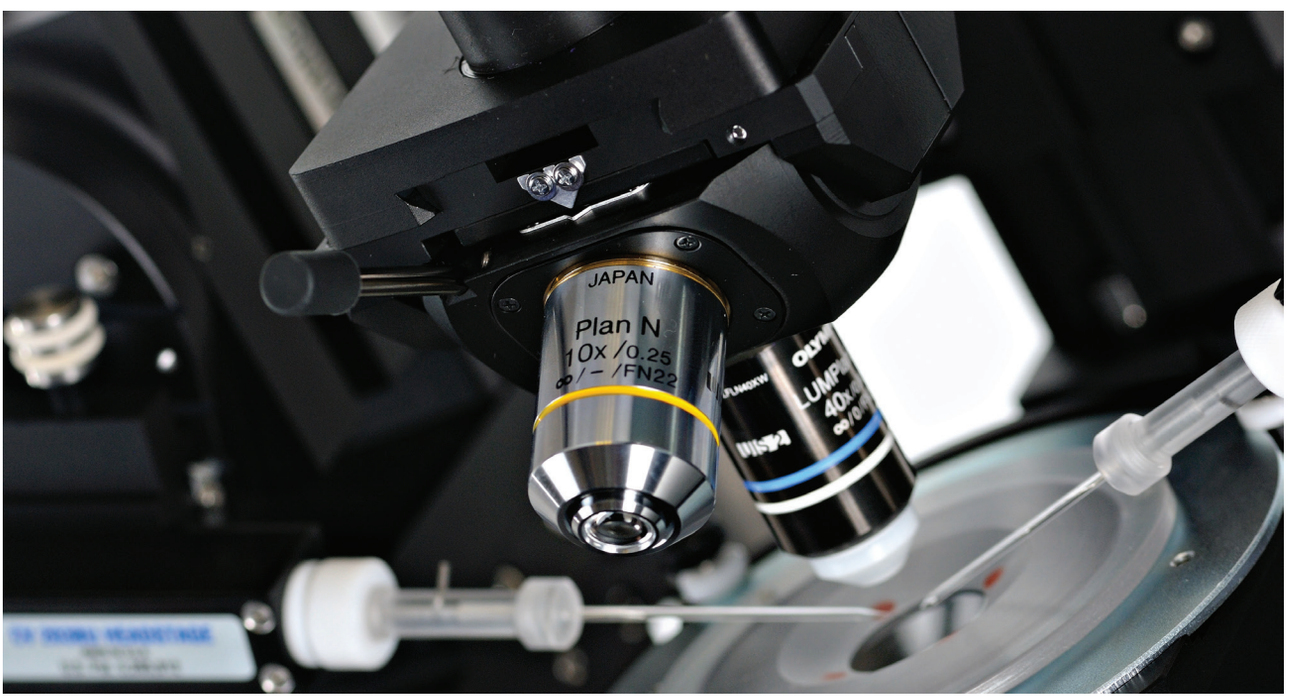
Offering the ability to manoeuvre the entire experimental setup relative to the microscope, it allows imaging of all areas of the sample. The motorised top plate enables smooth remote control movement required to retain patches. This can offer real benefits to the researcher, as full access to brain slices and other large samples can give a more complete knowledge of cell interaction.

The SliceScope Pro 6000

Featuring the motorised movable base plate, the SliceScope Pro 6000 system offers maximum flexibility for both in vitro and in vivo studies. The large base plate offers ample space around the experiment for all equipment configurations. This enables the researcher to retain patches by keeping experimental equipment securely mounted on the same stable surface.

The baseplate features smooth motorised movement, controllable via any of the standard range of control options.

PatchPro range



The PatchPro systems are fully integrated patch clamping solutions that work in conjunction with fixed stage microscopes from Olympus, Zeiss, Nikon and Leica. They allow the user to control manipulators, microscope platforms, microscope focus and temperature control all from two simple and intuitive user consoles.

With the versatility to freely combine numerous individual devices, the PatchPro systems are perfect for your current and future experimental needs. At any time you can add additional manipulators or heater units. The multiplexing system allows control via single or multiple Control Cubes, Joysticks and PatchPads, or combinations of these. PatchPro systems are fully upgradeable, with future-proof software control at no extra cost.

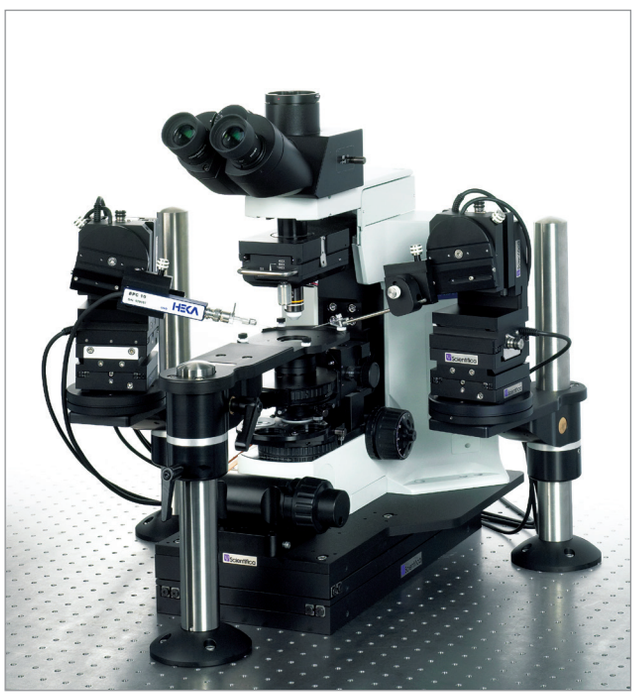
All PatchPro systems include:

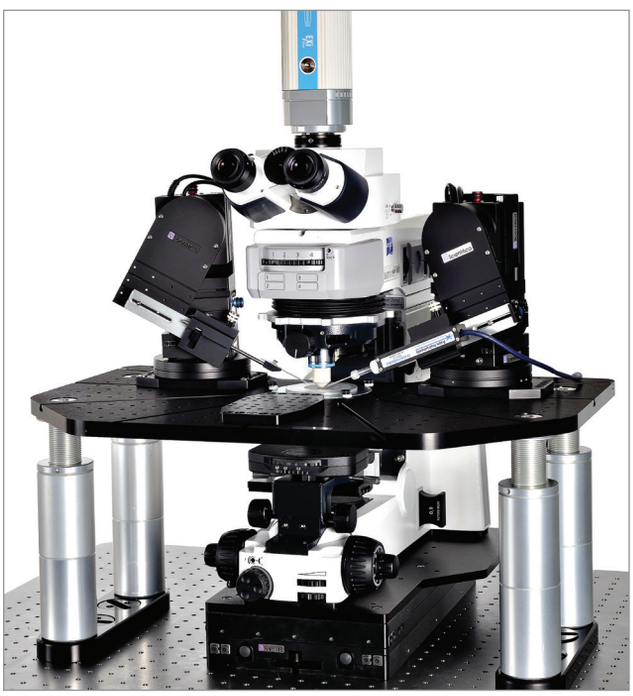
- Two ultra-stable Scientifica PatchStar micromanipulators
- Two control interfaces, switchable between motorised components
- LinLab software for setup and PC control
- Slice recording chamber kit
- A choice of motorised stages & platforms

PatchPro benefits include:

- Hands free remote control of all the major microscope brands
- ‘Follow’ function: virtually link manipulators and stages to effortlessly keep pipettes in the field of view, while searching for areas of interest
- Value for money: by offering multiple items together the user saves money compared to purchasing these items individually

The PatchPro is available in a choice of configurations. If your requirements demand a different design, our team of product specialists can work with you to purpose-build a rig to fit your needs exactly.





The PatchPro 1000

The PatchPro 1000 is ideal for users who prefer the flexibility of mounting manipulators and other devices on a post and platform. The system incorporates a Universal Motorised Stage (UMS) with 50 mm of motorised XY travel and fixed, super-stable posts to mount the sample and manipulators.

With the PatchPro 1000, the microscope moves relative to the sample, a popular approach for slice recording. It also gives plenty of open space around the mircoscope which some users prefer.

The PatchPro 2000

The PatchPro 2000 system utilises the SlicePlatform, with its height-adjustable legs, in a moving microscope system. The PatchPro 2000 is ideal for users who prefer a large fixed stage platform for mounting a variety of manipulators and other devices close to the sample chamber.

The PatchPro 2000 provides 50 mm of motorised, remotely controlled microscope movement in X & Y. The system has excellent stability and low drift so that patches can be retained during long experiments.

PatchPro range

The PatchPro 3000

The PatchPro 3000 is designed to work alongside confocal and multiphoton imaging systems where laser inputs prohibit any movement of the microscope. The sample and manipulators are all mounted on a motorised top plate and move smoothly as one, relative to the fixed microscope. This opens up the opportunity to search the whole sample and select the most appropriate area for imaging and placing electrodes or stimulators.

The PatchPro 3000 provides 25 mm of motorized XY. By utilizing the memory functions, areas of interest can quickly be returned to with the push of a button or click of a mouse.

The PatchPro 4000

The PatchPro 4000 is specifically designed for use with inverted microscopes. The microscope is moved relative to the fixed sample and manipulators ensuring that recordings and images can be made from several widely spaced areas of interest across the sample.

Far more convenient than other inverted electrophysiology systems, the PatchPro 4000 incorporates a specially designed fixed SlicePlatform and Universal Motorised Stage (UMS), with memory functions. The low-noise electronics ensure that the system will not interfere with delicate electrophysiological signals, allowing you to carry out recordings without the need to switch off the system.

The PatchPro 5000

The PatchPro 5000 is perfect for combining electrophysiology (using an inverted microscope) with confocal, multiphoton or other techniques requiring a fixed scope attached directly to the table. Overcome the limitations of an inverted microscope with an Inverted Motorised Movable Top Plate (IMMTP), which translates the sample and manipulators as one, relative to the microscope.

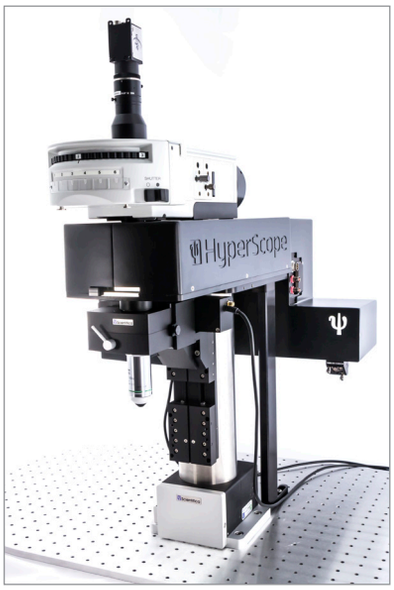
This top plate features 25 mm of X & Y travel, allowing movement between fields of view without disturbing established patch recordings.

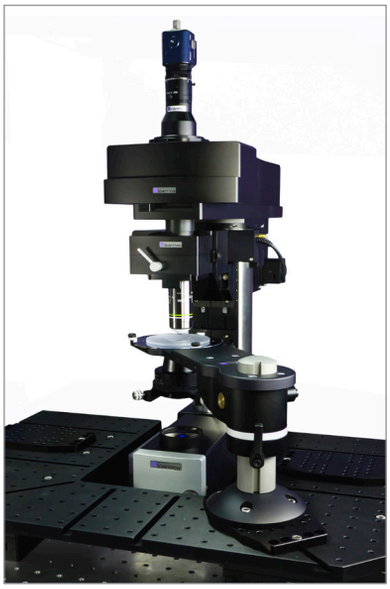
The PatchPro 6000

The PatchPro 6000 incorporates a low-level Motorised Movable Base Plate (MMBP) and two micromanipulators, with the sample and manipulators all moving smoothly, as one, relative to the microscope. This makes it suitable for techniques prohibiting any movement of the microscope. With the MMBP's large surface area this set up is attractive if more space is needed around the sample.

A further benefit of the PatchPro 6000 is its versatility; the sample holder height can be quickly and easily adjusted to suit various preparations, including in vivo and in vitro specimens.

Multiphoton Imaging





Scientifica Multiphoton Systems provide fantastic images from in vivo and in vitro samples.

With high efficiency collection optics and scan head design (with relay lens), they allow the detection of deep or weak fluorescence signals, whilst keeping laser power to a minimum. This has the major benefit of helping to maintain sample health and viability.

All Scientifica Multiphoton systems are available as complete hardware solutions. Alternatively, modules can be purchased separately for integration into existing systems.

Our collection of Multiphoton systems provide the option of one or more scan paths employing galvo or resonant mirrors to suit a wide range of applications.

Our open design allows the system to be controlled with a range of free software or with a custom written solution. This gives users ultimate flexibility and control.

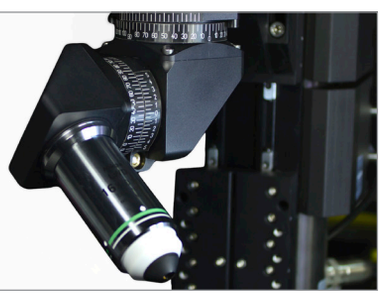
Benefits include:

Efficient photon collection through a choice of detection options with PMT or GaAsP detectors, mounted close to the objective back aperture for brighter signals and less photobleaching

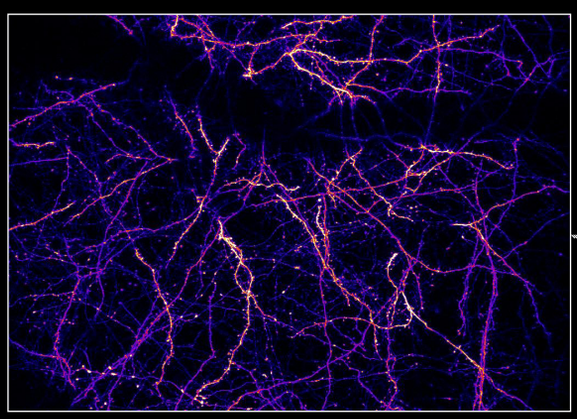
In vivo and in vitro experiments can be carried out with the same system. Removable sub-stage modules allow easy placement of large in vivo preparations, making this a very cost-effective system

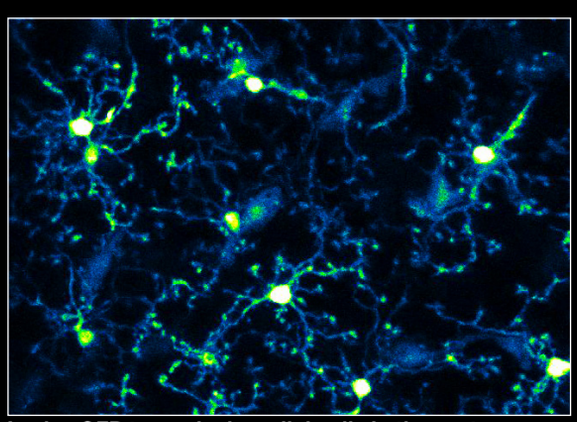
Compact design ensures that the system is great where space is limited and it's ideal for combination with other experimental techniques, such as electrophysiology

The "Tiltable Objective Mount", is perfect for in vivo applications by allowing access to more of your sample.

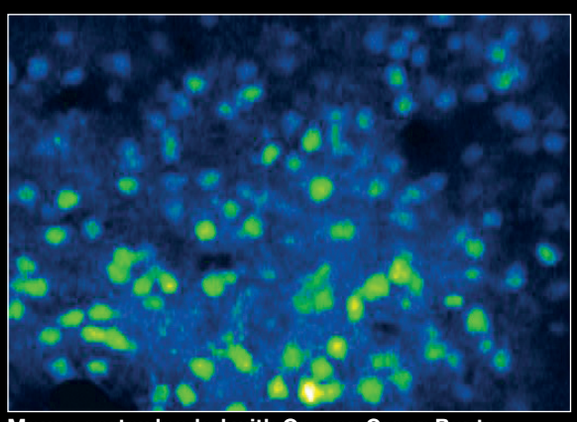


Imaging Structure and Function of the Nervous System Workshop
Cold Spring Harbour

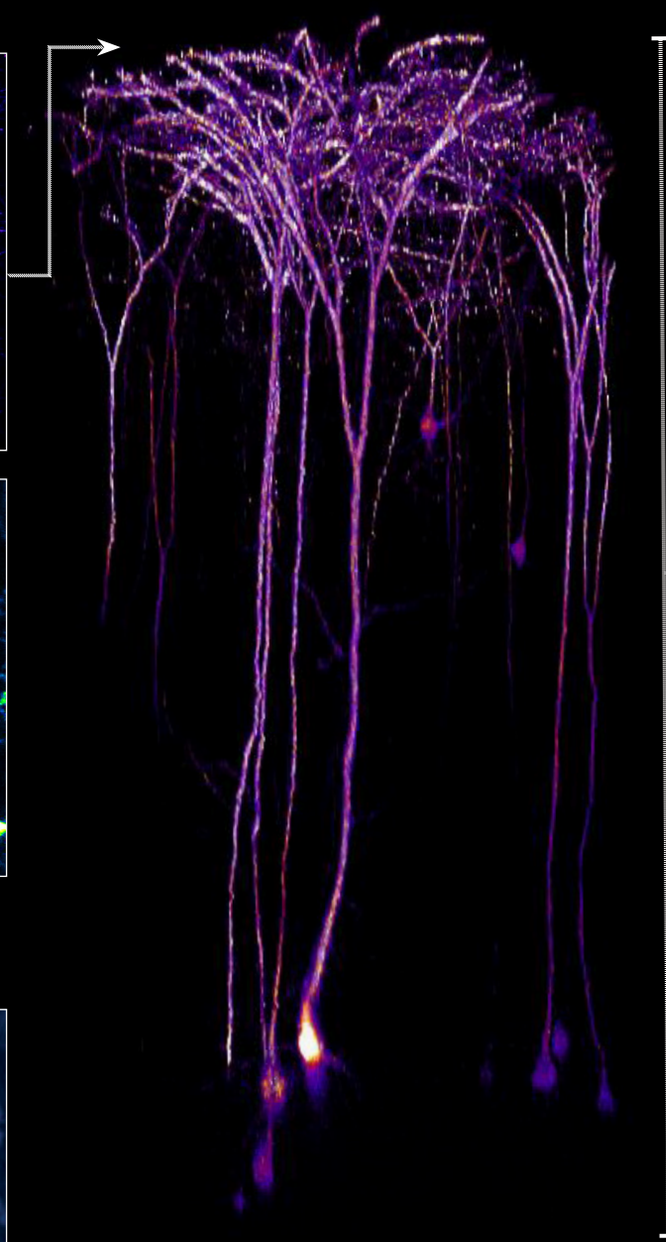




In vivo GFP tagged microglial cells in the cortex of 3 month old mouse using LUMPFLN40x (courtesy of the Long-Jun Wu Lab Rutgers University)



Mouse cortex loaded with Oregon Green Bapta (courtesy of the Schultz Lab, Imperial College London)



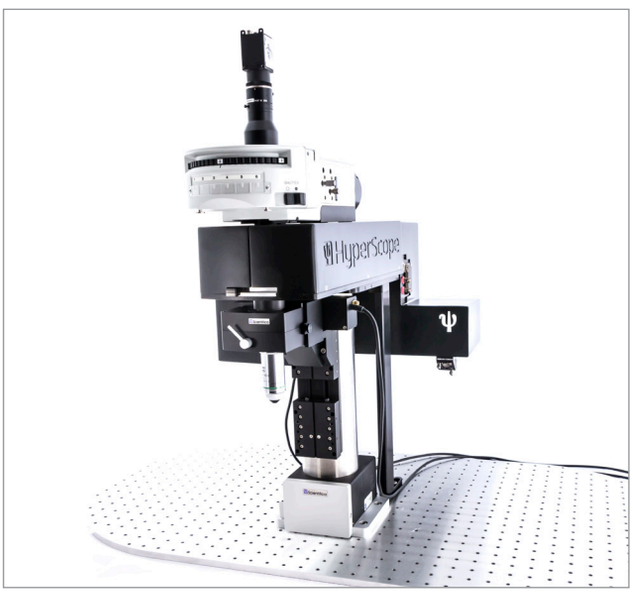
900 µm imaging depth

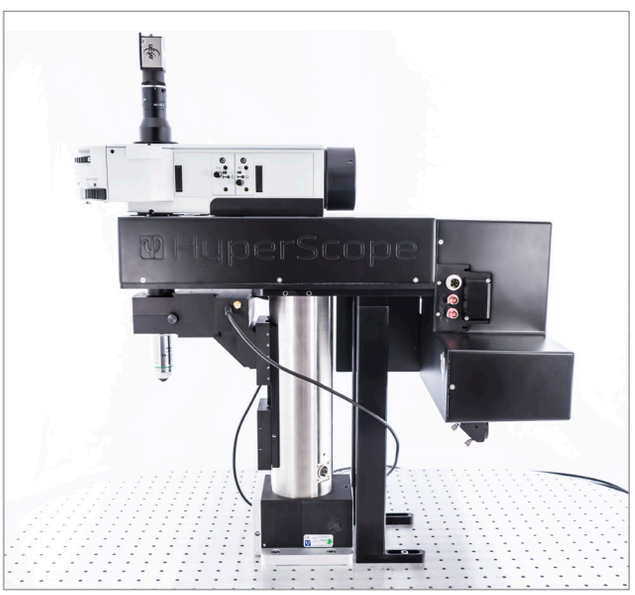
Layer V pyramidal cells in the visual cortex, 2 month old Thyl-eGFP mouse (Jax 7788) using LUMPFLN40x courtesy of:
Kate Smith - Feinberg School of Medicine, Northwestern University
Javi Munoz-Cuevas - Gallo Research Center, UCSF

Multiphoton Imaging Systems

HyperScope

Pictures below show the Scientifica HyperScope





The HyperScope is Scientifica's latest Multiphoton Imaging System ideal for simultaneously performing two-photon microscopy and photostimulation with exceptional performance due to its optional twin scan paths.

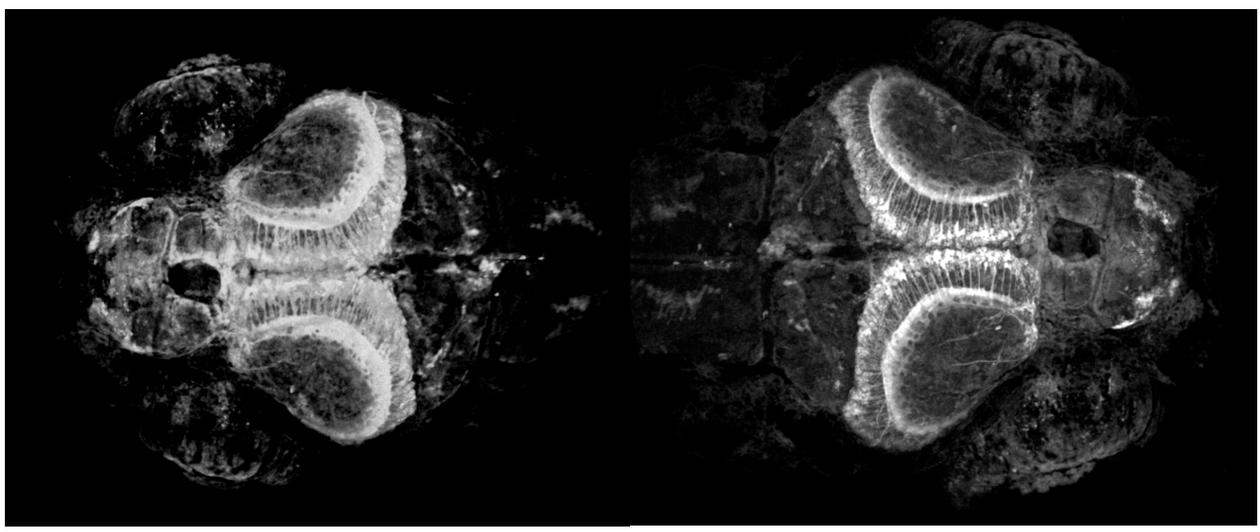
The scan mirrors on the imaging path can be arranged as a galvo-galvo, resonant-galvo or galvo-galvo-resonant scan head, helping to answer complex research questions in either in vitro or in vivo samples and providing total versatility.

To maximise modularity, a second beam path can be added in the field, making it easily upgradeable.

The HyperScope optics are coated for wavelengths of 700 to 1400nm to let you excite dyes further into the infrared spectrum and potentially perform three-photon imaging. This gives you more experimental flexibility for multiphoton imaging and the ability to image deeper into your sample.

Benefits include:

- Outstanding images of the finest structures deep within your sample
- The pioneering slim design enables you to easily integrate your multiphoton system with other techniques such as electrophysiology
- Available with the SliceScope or VivoScope frames depending on research requirements
- The twin light paths enable simultaneous two-photon imaging and uncaging with exceptional performance
- Upgradeable: choose a 2, 3 or 4 PMT system depending on your requirements. Upgrade when necessary for more complex studies with a choice of various configurations



Z-stacks from in vivo 6 days post fertilisation zebrafish (courtesy of Professor Leon Lagnado's lab at the University of Sussex)

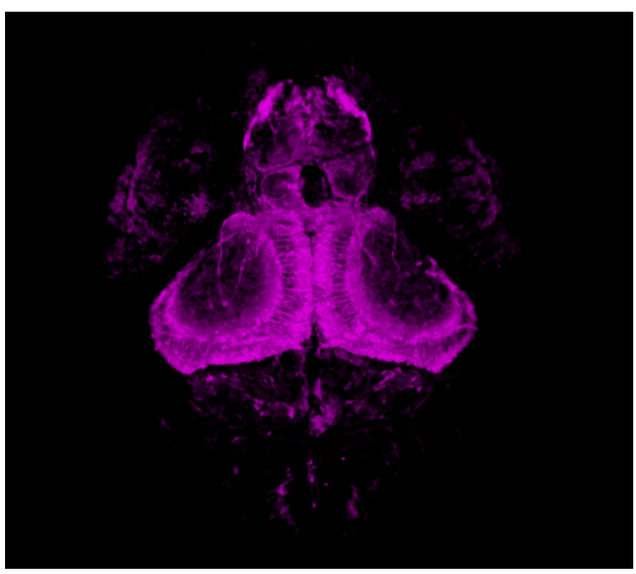
Efficient, high-resolution imaging

Imaging the finest details across the whole field of view is possible thanks to the unique relay lens system. This ensures that each scanning mirror is imaged precisely onto the next scanning mirror, which is then perfectly imaged onto the objective back aperture. This avoids movement of the expanded beam at the objective back aperture, regardless of the scanning angle.

Optical design

Optimal resolution is achieved with a range of multiphoton objectives. Scientifica offers a range of lenses including RMS, M25, M27 and M32 threaded objectives, which are perfectly suited for combining multiphoton imaging and electrophysiology, due to their provision of large working distances (up to 3.3 mm). Utilising the entire numerical aperture of the objective helps researchers to image incredibly fine structures.

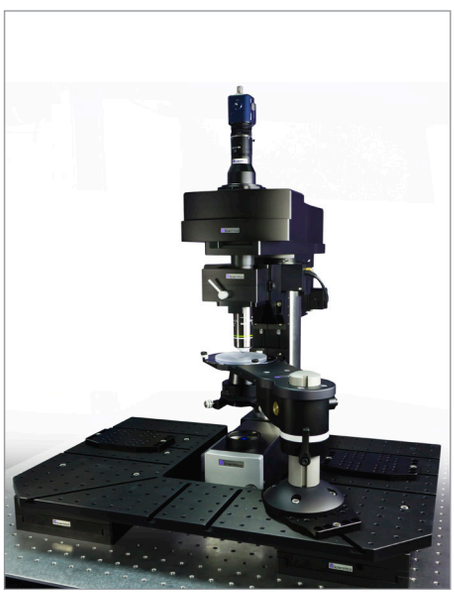
All optical elements are coated to optimise transmission from 700 to 1400 nm infrared light, allowing the use of a wide range of excitation wavelengths, without any change in performance.

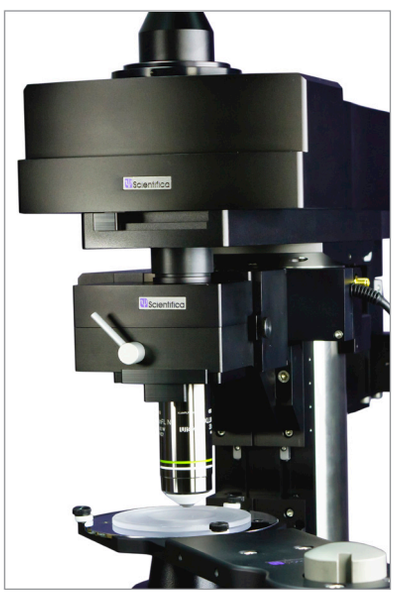


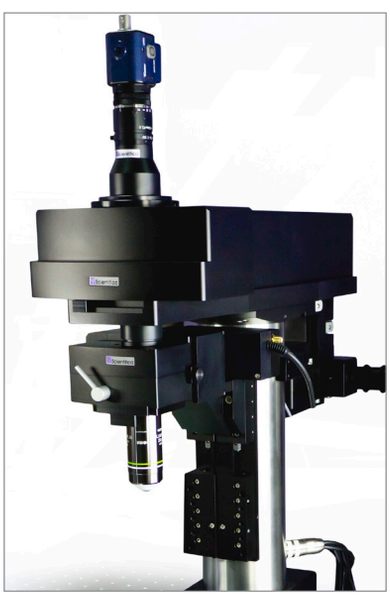
Multiphoton Imaging Systems

Resonant and Galvo Scanning

Pictures below show the Scientifica Resonant Multiphoton System







With a choice of Galvo or Resonant scanners, the user can make the perfect choice for their experimental needs.

The resonant system offers high speed scanning, 30 frames per second at full resolution (512x512 pixels). It is possible to scan even faster by simply adjusting resolution or scan area. This means that it is possible to monitor fast activity across a large population of cells as well as patching targeted structures visible only with 2P excitation.

Accurate positioning and speed control of your laser spot can be achieved with the Galvo Scanhead. This is essential when carrying out arbitrary line scanning which allows for the highest possible temporal resolution. The system also allows for slow scanning, where signals may be very weak, or to achieve the highest possible resolution.

Benefits include:

Resonant System

Fast volume scanning can be achieved by combining the Resonant scan head with the piezo objective mount

High speed imaging across a large population of cells at full resolution - the perfect option for examining networks

Galvo System

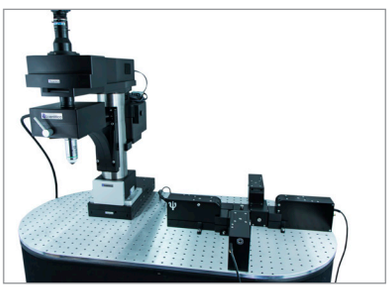
Arbitrary line scans for highest temporal resolution is available with the Galvo scan head

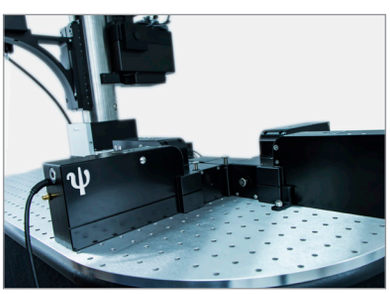
Slow scanning can be carried out to detect weak signals where the laser dwell time is important

The highest resolution images can be acquired by controlling the laser speed, thus improving the signal-to-noise ratio

VivoScope

Pictures below show the Scientifica VivoScope & ChromoFlex





The VivoScope is the ideal in vivo imaging system for two-photon behavioural studies. The extended scan head provides plenty of room for larger in vivo samples, linear or spherical treadmills, large stereotaxic frames or other virtual reality set-ups.

The VivoScope features a resonant scan head that can take frames of 512 x 512 pixels at 30 frames per second.

The VivoScope can be fully controlled in Scientifica's SciScan software. It can also be driven by Vidrio Technologies ScanImage software.

Benefits include:

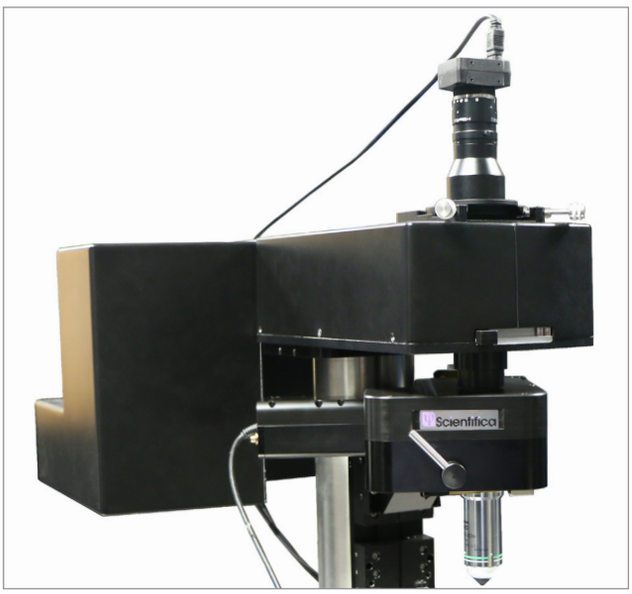
Fast volume scanning can be achieved by combining the Resonant Scanhead with the piezo objective mount

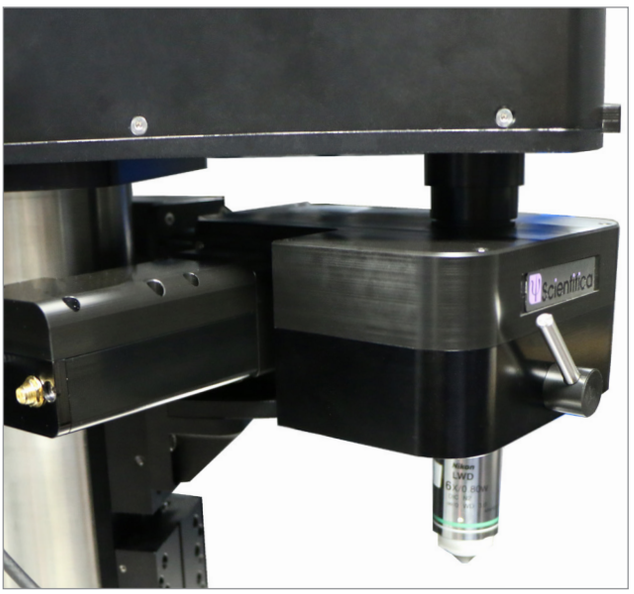
High speed imaging across a large population of cells at full resolution - the perfect option for examining networks

Extra space: the extended scan head gives more room between the light path onto your sample and the microscope frame without compromising stability

Photon Collection Options

Multiphoton Detection Unit XL (MDU XL)

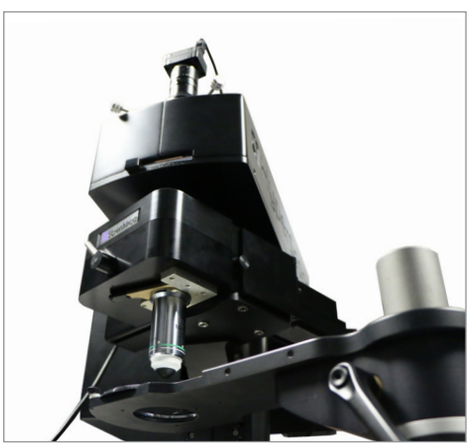




Scientifica's MDU XL is a multiphoton detection unit with increased sensitivity, designed to achieve a superior signal-to-noise ratio and improved image quality, translating to crisper and deeper images.

The MDU XL is optimised for photon collection with large back aperture objectives. The large optics enable collection of more scattered light for deeper tissue structures. It offers up to 30% more efficient light collection in multiphoton imaging experiments for up to two colours when compared to the standard MDU.

The MDU XL can be fitted with two photomultiplier tubes (PMTs) for photon collection from two channels at the same time. It is available with up to two gated or protected GaAsP PMTs for maximum sensitivity.



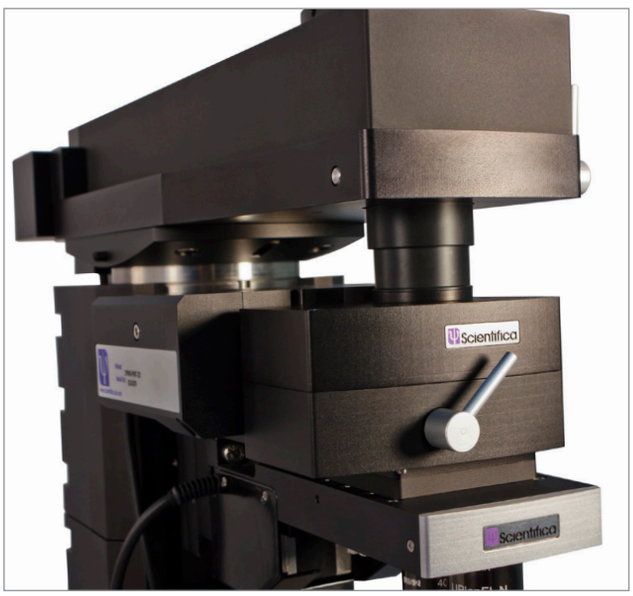
Benefits include:

Custom built optics: a custom design allows for optimal photon collection for crisper and deeper images

Superior signal-to-noise ratio: the MDU XL design minimises background noise, helping to maintain image quality

Available with a range of PMTs to suit experimental needs and budget requirements

Multiphoton Detection Unit (MDU) & Chromoflex



MDU

Scientifica's MDU is ideal for the collection of valuable photons by using customised optics, mechanics and noise-reducing electronics. It is optimised for use with small back aperture objectives.

The MDU has been specifically designed to achieve a high signal-to-noise ratio thanks to the careful placement of the electronic components.

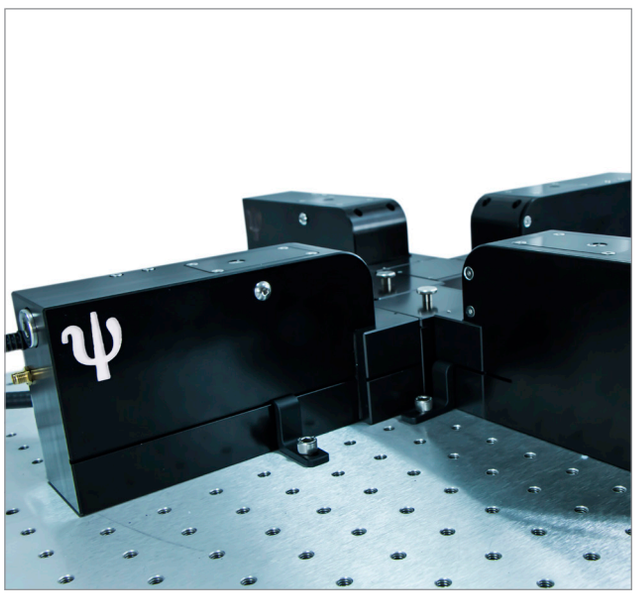
This is the only multiphoton collection option that allows for substage detection.

Benefits include:

Customised optics: a custom designed, extra-large fixed position collection lens is sited very close to the objective back aperture, allowing photon collection at the widest of scan angles

High signal-to-noise ratio: the electronic design of the MDU performs exceptionally by minimising background noise which can degrade the image quality

Fast filter exchange: a standard Olympus filter cube is fitted to a dovetail slier which can easily move in and out of the MDU, easing the setup of the next set of experiments



Chromoflex

The Chromoflex enables the simultaneous imaging of up to four different colour dyes with the increased sensitivity of GaAsP PMT detectors. The option of 4 PMTs makes it perfect for in vivo studies.

Large collection optics allow greater light gathering from the objective back aperture. This increases overall efficiency by up to 10% after reductions by the liquid light guide when compared to our MDU for better detection of weak fluorescent signals.

Now available with a range of PMTs.

Benefits include:

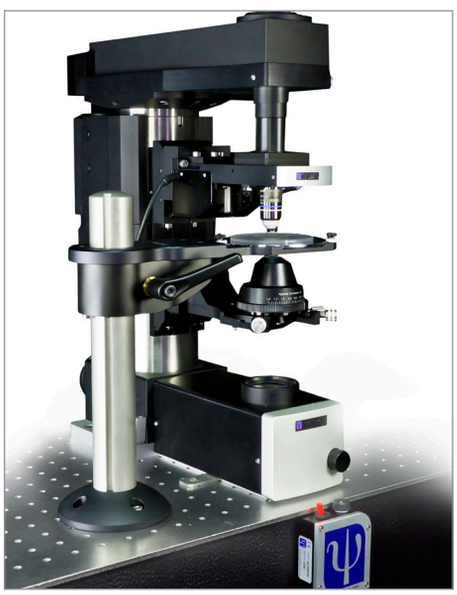
Large collection optics allows more light collection from the objective back aperture . This increases overall efficiency by up to 10% after reductions by the liquid light guide compared to our standard MDU

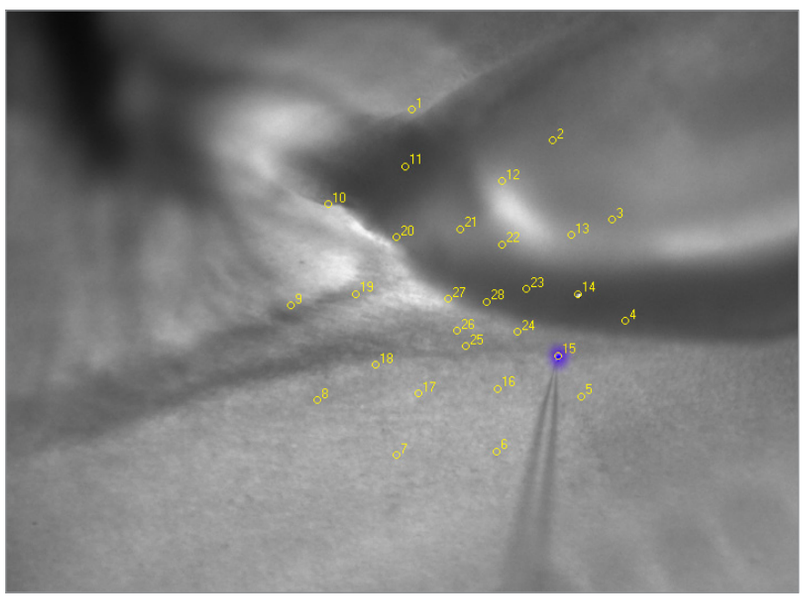
Modular and upgradeable: choose a 2, 3 or 4 PMT system depending on your requirements. Upgrade when necessary for more complex studies

Remote placement: the two-metre liquid light guide enables flexible placement of the detection module remotely from the collection module

Optogenetic Research

Laser Applied Stimulation and Uncaging (LASU)





The Laser Applied Stimulating and Uncaging (LASU) system is perfect for users engaging in optogenetics, uncaging or other optical stimulation experiments.

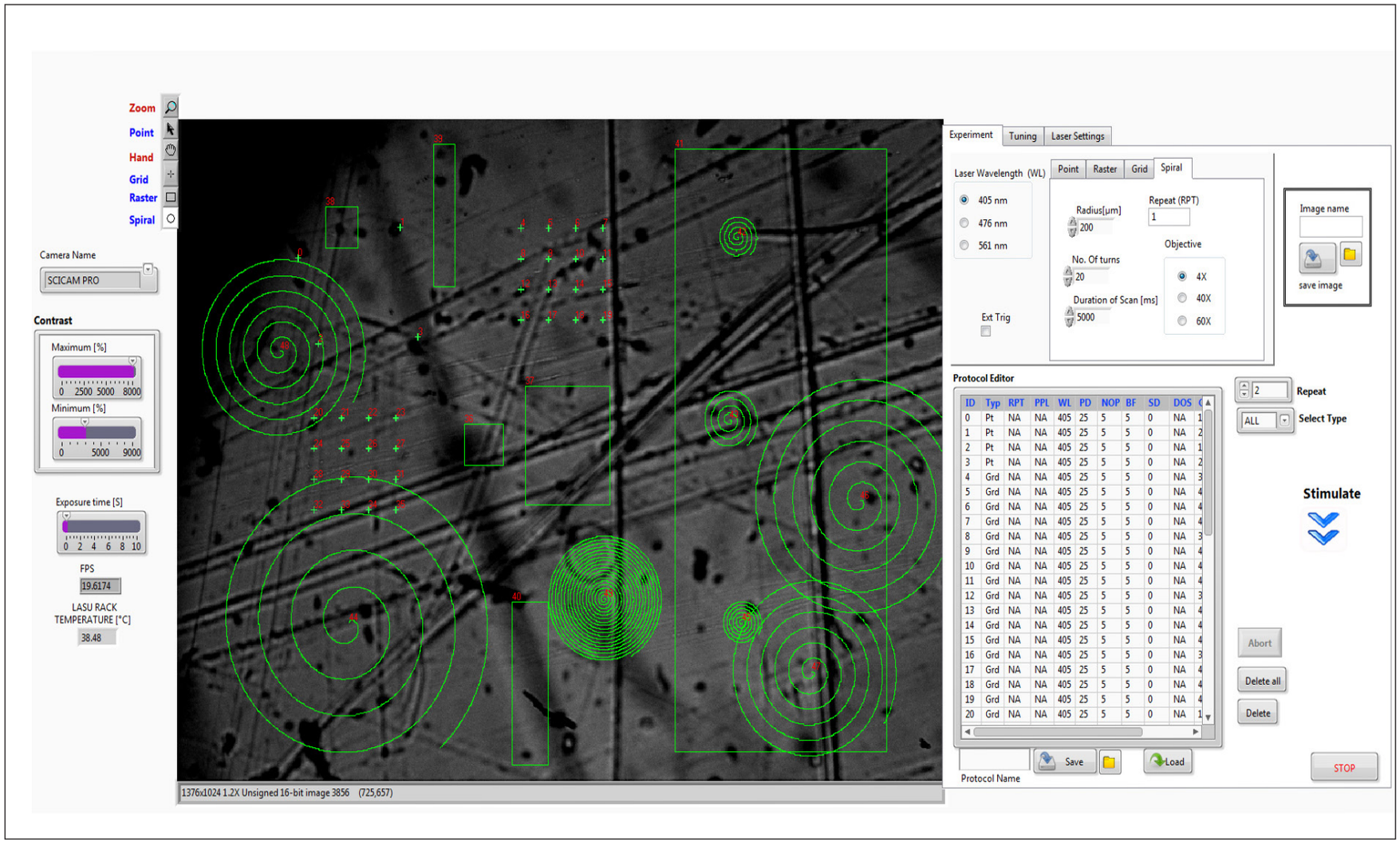
This galvanometer based device provides accurate and repeatable positioning of a laser beam onto your sample. This provides extremely fast optical manipulation of biological systems giving you more control of your experiment.

The latest software release enables greater cell area stimulation, where specific points of interest or areas to raster can be selected. Independent stimulation protocols with a choice of scanning patterns can now be determined, and the timing of stimulation can be controlled and repeated.

Additionally, an improved range of cameras are now supported, including Scientifica's SciCam Pro.

Key Features

- Ability to select points or areas of interest giving you control of what you stimulate, choice of scanning patterns and flexible stimulation protocols
- TTL controlled timing of independent stimulation protocols to suit every experimental need
- Control of laser power and pulse frequency to optimise cell activation
- Grid generation to standardise stimulation points
- Adjustable frame rate, pixel clock, intensity control, exposure and gain provides best image optimisation



LASU interface demonstrating various stimulation protocols

Mounting equipment

Slice platforms and microscope stages

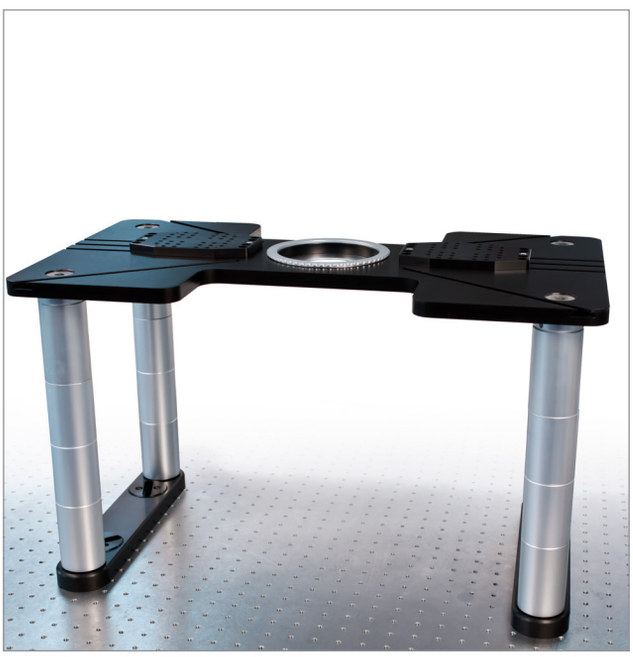
A crucial element of every experimental set-up is a stable mounting system. Scientifica offers height-adjustable platforms for upright and inverted microscopes from Olympus, Zeiss, Nikon and Leica. Used in combination with these platforms are either manual or motorised translation stages which allow the microscope objective to be positioned over the complete preparation.

SlicePlatform

The SlicePlatform provides a large, extremely stable mounting surface onto which several manipulators and the sample can be mounted. Height adjustable legs accomodate any microscope, while the unique rotating slotted inserts mean that it can be attached to any standard vibration isolation platform. The sliding carriages and tapped surface enable you to securely and conveniently position a full range of equipment at optimal distances from your sample.

Benefits include:

- Universal compatibility with upright microscopes from all major manufacturers
- Maximum stability for long-term experiments
- Unique mounting carriage system allows users to precisely mount manipulators close to the sample area

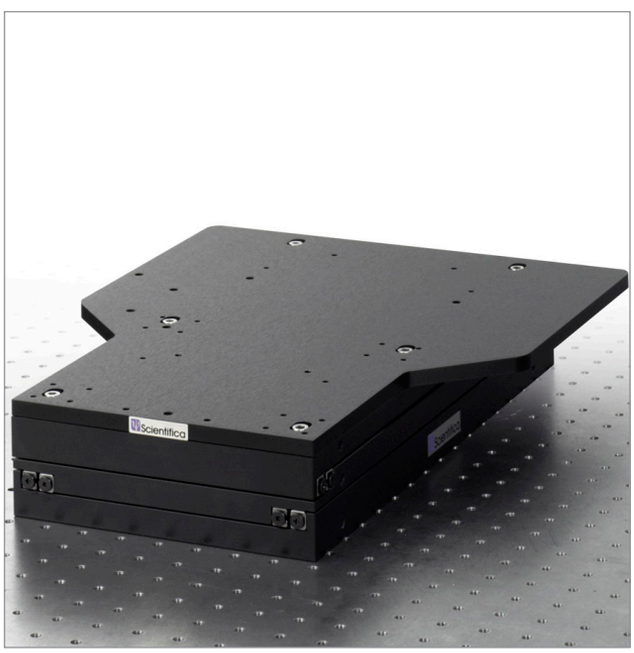


Inverted Fixed Platform

Similar to the upright solution, this innovative design is specific for inverted microscopes. It provides a surface onto which several manipulators and the sample can be mounted. The height adjustable legs make this platform compatible with microscopes from Olympus, Nikon, Leica and Zeiss. The sliding carriages allow manipulators to be easily positioned.

Benefits include:

- Wide compatibility with inverted microscopes from all major manufacturers, including: Olympus, Zeiss, Nikon and Leica
- Unique sliding carriage design combined with seven grooves will ensure accurate and fast placement of equipment, relative to the microscope
- Solid construction ensures maximum stability



Universal Motorised Stage (UMS)

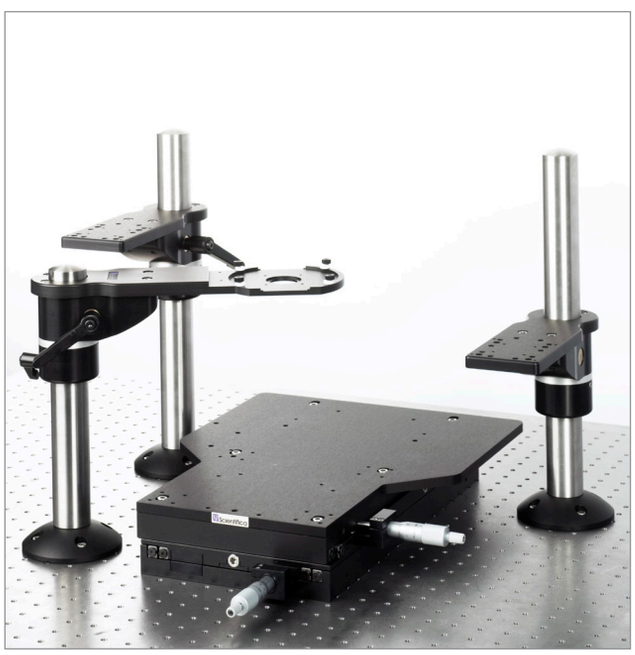
The UMS provides rapid, accurate and intuitive remote control, removing the effort and potential for error from the adjustment process. With 50 mm of travel in both the X and Y axes at a resolution of 20 nm, the largest of samples can be explored. Translation speed can be user-customised down to 1 micron per second and up to 50 memory positions can be stored and recalled.

Benefits include:

Smooth and accurate translation with 50 mm movement in X & Y

Compatible with Olympus, Nikon, Zeiss & Leica microscopes. Scientifica are also able to provide custom-made solutions for specific requirements

LinLab software: unlimited memory positions. Also allows users to set speed, direction of movement and step sizes



Manual XY Stage

The Manual XY Stage offers positioning control of your microscope. High capacity crossed roller bearings ensure 25 mm of super smooth travel in X & Y axes.

High performance micrometers allow fingertip control, and the capability to change from right to left-handed operation provides added convenience. The large 200 x 400 mm footprint means that the stage can support even the heaviest of microscopes.

Benefits include:

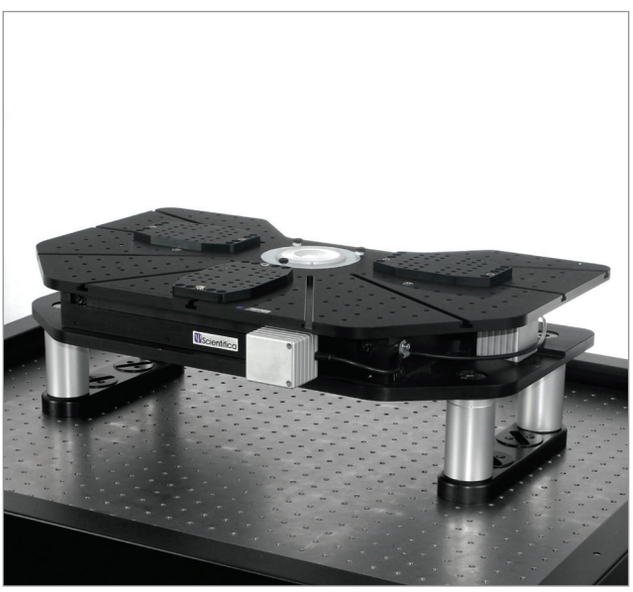
50 mm in X and Y with 20 nm resolution

Cost-effective method of microscope translation

Simple to operate via high quality micrometers

Imaging platforms

Scientifica offers mounting equipment suitable for those who require a stationary microscope due to restrictions placed on them by imaging techniques such as confocal or multiphoton. Using the systems described here, the user can still roam their sample whilst translating micromanipulators and other mounted equipment at the same time.



Motorised Movable Top Plate (MMTP)

Compatible with all major upright microscopes and featuring an integrated sample plate holder, the MMTP offers a large mounting surface with 25 mm of super-smooth X & Y travel at a resolution of 20 nm. Up to 50 memory positions can be stored and recalled in X and Y axes (via control device). The ultra low noise electronics mean you can continue to record sensitive signals even during sample adjustment. Platform positioning can be carried out by either a Control Cube, PatchPad or with a PC.

Benefits include:

- Complete remote adjustment and super-smooth travel for stable recordings
- Large surface area, for maximum micromanipulators
- Unique mounting carriage system allows users to precisely mount manipulators close to the sample area
- Unlimited memory positions via LinLab software

Movable Top Plate (MTP)

The MTP is an ultra stable microscope platform which features manual adjustment in the X and Y axes with fingertip control using micrometers. The MTP has 25 mm of travel in X and Y axes. Smooth, predictable movements allow the maintenance of patched cells while the stage is in motion.

The height adjustable legs combined with a large condenser working area makes the MTP compatible with all leading brands of upright microscopes.

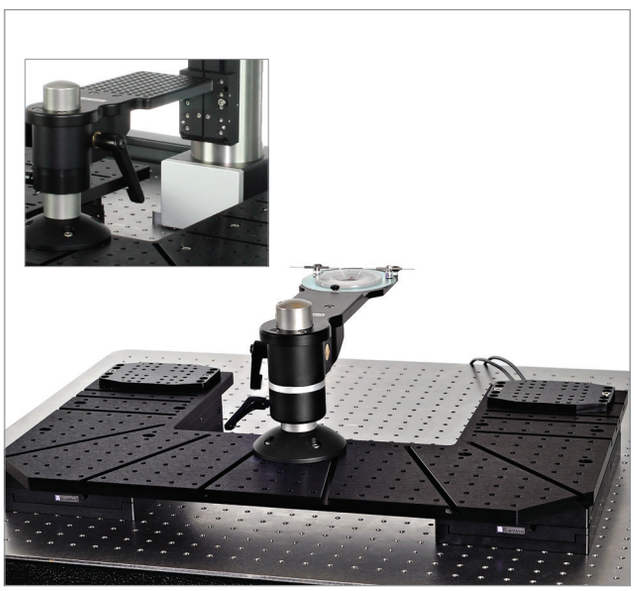
Benefits include:

- Precision micrometers for smooth manual adjustment
- Removable top plate so you can build multiple experimental setups
- Can be attached anywhere on a table surface using slotted inserts

Inverted Motorised Moveable Top Plate (IMMTP)

The IMMTP is a moving platform for imaging with inverted microscopes. Compatible with all the leading inverted systems, it offers 25 mm of super-smooth motorised travel in X and Y with a resolution of 20 nm (a manual version is also available). The design is durable, user-friendly and benefits from the ability to store up to 50 memory positions (via a control device). The ultra-low noise electronics means you can continue to record sensitive signals even during sample adjustment.

Benefits include:
Motorised, hands-free movement of manipulators and sample
Height-adjustable legs for easy compatibility and versatility
Ultra stable for the most demanding studies



Motorised Moveable Base Plate (MMBP)

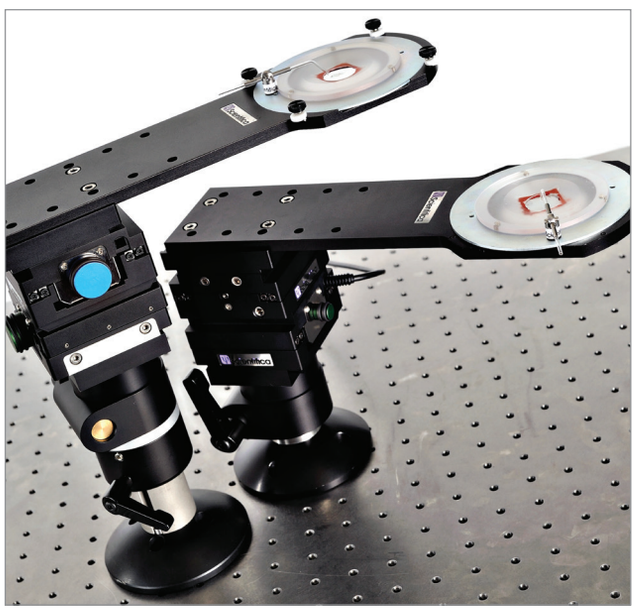
The MMBP offers a solid low-level foundation for an electrophysiology rig. The real benefit of this approach to mounting equipment is that it can be converted between in vivo and in vitro configurations by the user. This versatility can help save on lab space and money.

It offers long, motorised travel in X & Y at a resolution of 20 nm.

Benefits include:
Perfect for multiphoton and confocal imaging
A range of accessories makes this a flexible and future-proof choice
Compatible with all major upright microscopes
Easily switched between in vivo and in vitro samples, making this a versatile and cost-effective solution

Post and Platform mounts

The Post and Platform system is a popular approach to mounting a wide range of equipment, as well as sample plates. Usually applied in combination with our ‘UMS’ microscope translator to enable roaming around a sample, the incredibly stable Post and Platform system offers the freedom to configure equipment anywhere on the anti-vibration table.



Post and Platforms for manipulators

The Scientifica Post and Platform (P&P) offers a versatile yet stable approach to mounting manipulators and other equipment around your microscope. The choice of a bolt down or magnetic base means that the P&P is suitable for many different table tops. The platform is fully height adjustable and has the benefit of a convenient swing in/swing out function for repeatable positioning.

Benefits include:

Used to support a wide range of manipulators for many demanding applications

Maximum stability achieved by solid stainless steel & aluminium construction

Quick release locks to swiftly adjust and secure the platform

Post and Platform Sample Mounting System

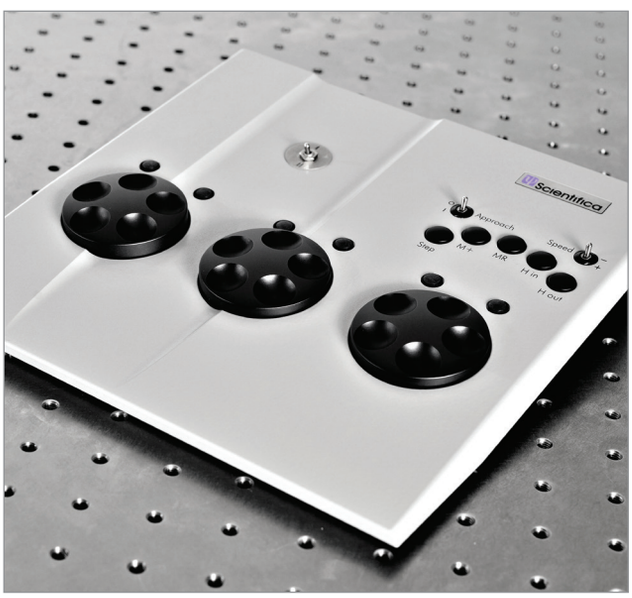
Compatible with industry standard 108 mm and 110 mm chamber adaptors. Scientifica provides three variants of sample mounting designed around an ultra-stable post system:

- The fixed post system is usually applied in combination with a moving microscope stage (see image, right)
- The manual movable configuration additionally offers fingertip translation of your sample in X and Y axes, with 25 mm of travel
- The motorised model gives 20 mm of travel in X and Y axes, with a resolution of 20 nm, offering the benefit of recallable memory positions and hands-free motion

The SliceScope Pro 1000 - featuring the Post and Platform Sample Mounting System

Control Options

In line with our ambition to make our equipment as accessible and easy to use as possible, Scientifica offers a range of configurable control options that can be used with the entire range of manipulation and translation products.



Control Cube

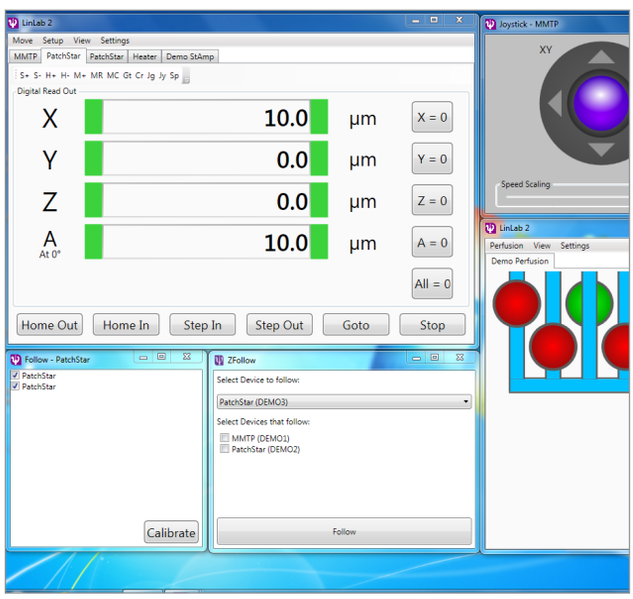
Compact and comfortable to use, this popular wheeled design gives fingertip control and excellent functionality. “Speed”, “Home In”, “Home Out”, “Memory” and “Step” positions can all be controlled from buttons on the cube. In addition to this, a switch allows the user to activate or deactivate the “approach” function of the micromanipulators. The wheels on the Control Cube can be turned from left to right handed use with ease.

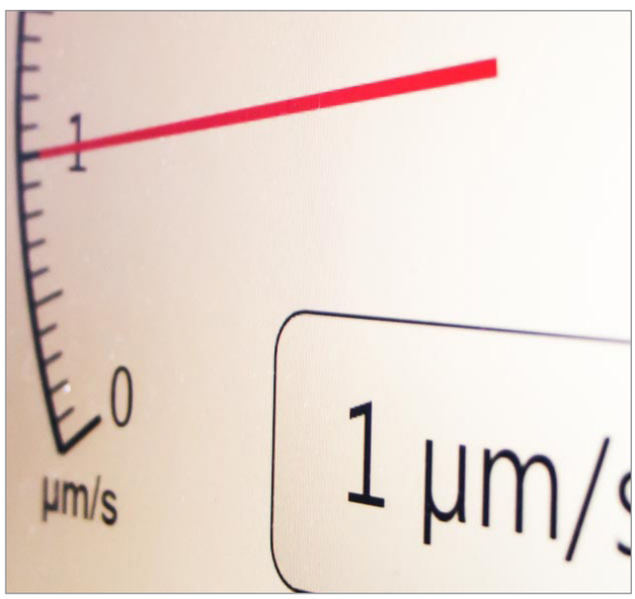
A useful way to maximise workstation space is to use this cube to control more than one device. A switch on the side of the cube enables the user to alternate between the control of two devices, or, if a second device is not present, to deactivate the whole cube.

The PatchPad

The PatchPad offers all the functionality and benefits of the Control Cube in the form of a flat panel.

The PatchPad features three wheels, each controlling one axis of motorised movement. The additional functionality is accessible via buttons and switches mounted on the panel. The design provides excellent functionality over any of the Scientifica range of motorised systems.





LinLab Software

While all our equipment can be operated without connecting it to a PC, some users prefer to customise their systems. Each motorised Scientifica product, therefore, includes the free LinLab software for Windows™. LinLab will allow you to set the speed and direction of movement, step sizes, positional display and memory positions. You can accurately read approach angles from the manipulators, use the “Follow” function to virtually link the movement of multiple motorised products and take advantage of other unique capabilities.

You can also set and control heaters through this versatile software. For users wishing to program their own robotic control, a full command set is included with each system. With a comprehensive list of individual commands, even the most complex application can be achieved.

Control up to 12 individual Scientifica devices from one piece of software; PatchStar, MicroStar, SliceScope, heater, perfusion system and motorised stages making it easy to integrate your complete electrophysiology and imaging system.

Benefits include:

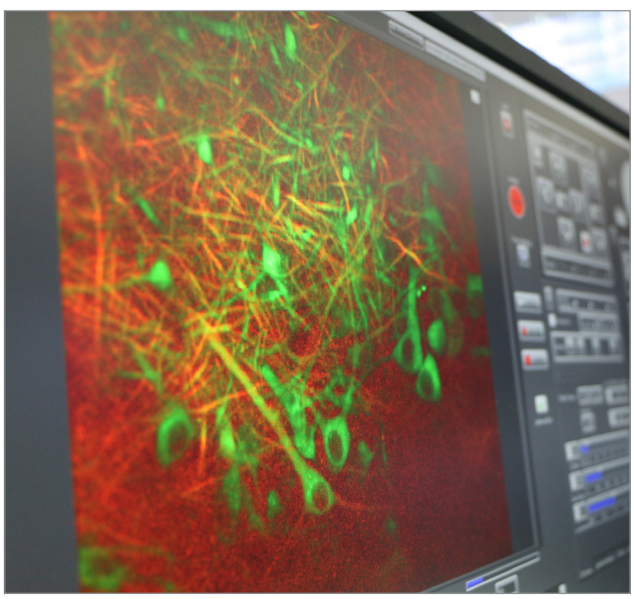
Efficient patching: benefit from the unique “Follow” function, linking motorised products together

Positioning: visualise positional information, providing coordinates and measurements

Customisation: speed and acceleration settings can be set to suit your application and sample

Personalisation: configure your control device to suit your preferences

Memory positions: set and label an unlimited number of memory positions, then return to them at a click of a mouse, making it easy to return to areas of interest



SciScan Software

This award-winning two-photon acquisition software was designed and built by Scientifica in collaboration with researchers. You can control both galvo and resonant scanning systems for in vivo and in vitro imaging applications.

SciScan's purpose-built API allows you to integrate SciScan easily with customer-written applications from LabVIEW and other programming languages.

The software has integrated controls for industry standard instruments including: pockell cells, Piezo objective positioners, XY stages and microscope focus drives.

Benefits include:

Modular software: the purpose-built API allows integration with custom written applications

Open source: created in LabView and utilising popular interface boards, the software can be provided "open source" to allow you to customise your own modules for your experiments

User-friendly interface: designed with the user in mind and in collaboration with scientists in the field, the interface is clear and easy to use

Built by Scientifica: SciScan has been designed and built by the Scientifica research and development team. You can discuss your specific requirements directly with your Scientifica representative

Scientifica

Microscopy TODAY 2016 Innovation Award

For more information on these products and the full Scientifica range, please visit:

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Edition 5

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