



Mitaka

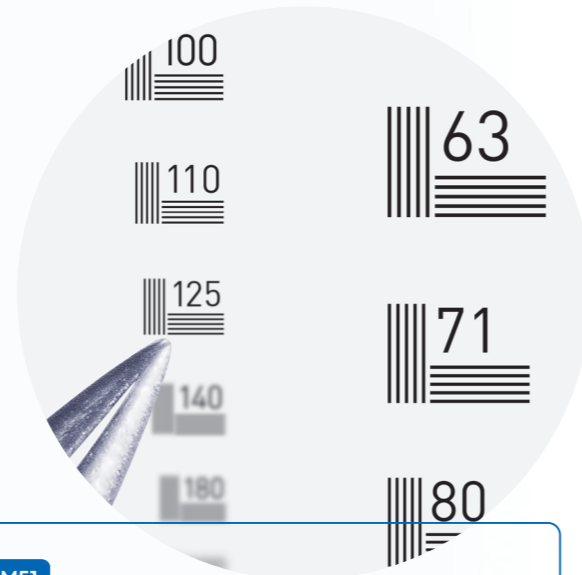
EUROPE

The legendary **Supermicroscope Mitaka MM51**
and the **EMI Supermicro instruments**



Resolution Revolution

The large objective lens of the MM51 combined with Mitaka's advanced 8:1 zoom system creates a supermicroscope with twice the resolution and magnification of standard surgical microscopes – without focal length extenders.



Unique feature of MM51

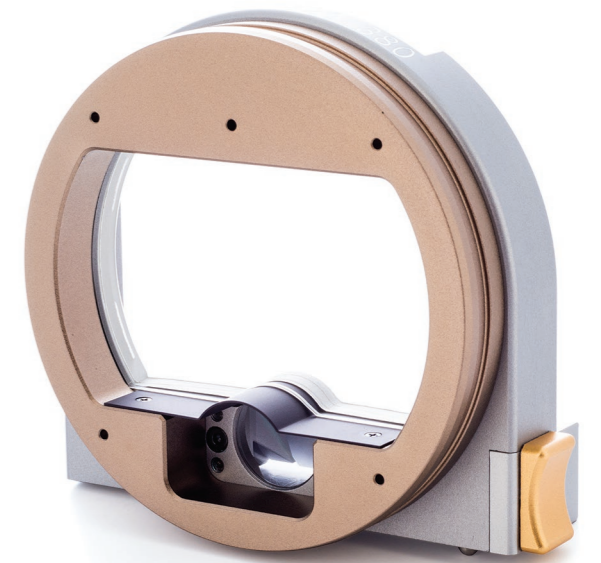
118 lp/mm

Resolution is the measure of optical quality. It is expressed in line pairs per millimetre (LP/mm). The MM51 allows you to distinguish 118 LP/mm (at 8x magnification and WD300 mm with CL3 lens) – more than twice the resolution of any standard microscope.

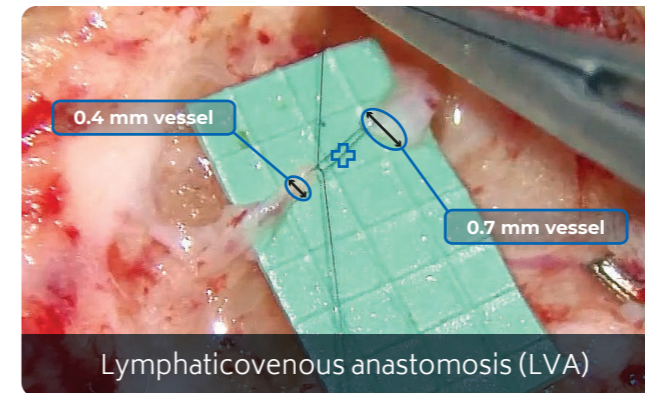
Originating from space observations

Mitaka has dedicated effort over decades designing and manufacturing high-tech astronomical optical units, satellite remote sensing technology and innovative cosmic imaging systems. We pour the experience we've gained in the space industry through integrating advanced technology and high-precision processing techniques into developing systems for the medical field.

Many years of designing surgical optics, delivering over 4,500 stands to the market all over the world, have resulted in technology, quality and stability that are second to none - the next generation of microscopes that redefine the benchmark used in highly difficult and ultra-precise surgeries.



Dedicated to sub 0.8 mm environment



Supermicrosurgery is defined as microsurgery in less than 0.8 mm vessels. The range of applications for this technique has increased recently and now includes lymphedema treatment, nerve reconstruction, replantation and reconstruction of amputated fingertips, microsurgical flap salvage, and also new possibilities for free tissue transfer.

Supermicrosurgery will never be possible without the technology. Mitaka MM51 supermicroscope and EMI supermicro instruments are considered as devices enabling new possibilities in that field: pushing the boundaries for supermicrosurgery masters and lowering the learning curve for the supermicrosurgery newbies.

Outstanding resolution

The unique design of the Mitaka MM51, adopting 8:1 zoom ratio, provides a brilliant image at high magnification, without loss of light level, depth of focus or contrast - therefore it allows you to observe anatomical details not visible with a standard microscope such as the lumen of vessels smaller than 1 mm diameter. It enables you to accurately perform surgeries that were impossible before due to limited zoom and resolution.

77x magnification

Exceptional magnification

The reference optics in the Mitaka MM51 Supermicroscope surpass standard microscopes with variable zoom and a potential maximum magnification of 77x.



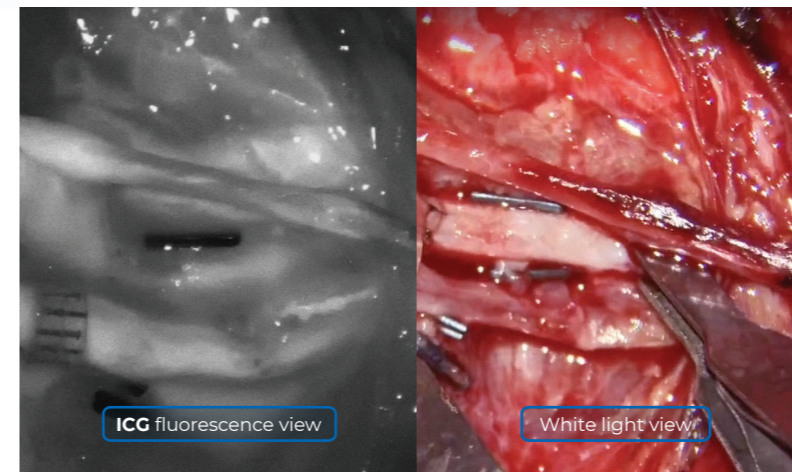
Wide-range multi-focus

The Mitaka MM51 is equipped with a unique apochromatic optical unit and an electric stepless 8:1 zoom. The wide-range multi-focus is capable of capturing a vivid image at each working distance.



Supermicro scale

Surpassing a resolution of 118 LP/mm, the MM51 provides excellent sight and allows the use of instruments with a tip up to 0.05 mm and 12-0 USP sutures.



Feature of MM51

IR in super HD quality

Multispectral ICG imaging is included with the option to add fluorescein to observe super-sensitive and real-time IR image.

The Mitaka MM51 is a superior supermicroscope dedicated to the needs of
supermicro, plastic, hand and reconstructive surgeons



Bionic design

Synergy between man and machine provides surgeons with a real and natural feeling during surgery. The independent imaging of each eyepiece provides high-level synchronization throughout. This avoids fatigue and dizziness even during long-time usage.

"Zero-weight" balancing

The reference quality of Mitaka precision mechanics - derived from the space industry - creates the "zero-weight" feeling while working with a Mitaka supermicroscope. Its counter-balanced stand and proprietary braking system provide extremely smooth and accurate movement.



Vibration absorption

The YOH microscope overhead stand makes use of the unique shock-absorbing system, developed by Mitaka for astronomical telescopes. This system can eliminate vibrations caused by external forces as well as those generated during manoeuvring.



As it's an extension of the surgeon's eyes, the

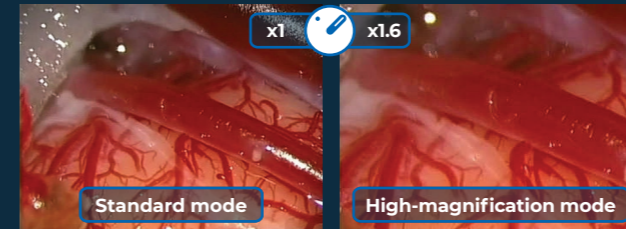
positioning of the scope is key

Unique features of MM51

High-magnification mode



At the flip of a switch, the MM51 can increase the magnification rate by the factor of 1.6. It can be set independently for both main and assistant binoculars.



Adjustable aperture

The adjustable iris diaphragm allows to easily extend the depth of field by rotating the aperture knob. By sacrificing a small amount of light and resolution, an extremely dimensional image with greater depth perception is reached changing the stereoscopic view, which is necessary for supermicrosurgical interventions on a few-millimetre surgical site.



Smart and compact

In the limited space of an operating field, where many devices may be concentrated, the small size of the MM51 body minimizes interference with other equipment.



4 different binocular positions

Both eyepieces can be adjusted in multiple positions. Adaption for every user can easily be achieved.



Handgrip, foot & mouth switch

The truly ergonomic design of the handgrip provides maximum comfort. The foot switch controls zoom, focus and motorized XY-tilting and the optional mouth switch allows activation of subtle XYZ-movements.



Drape suction system

The suction system wraps the drape to the supermicroscope with a click of a button, reducing size and interference in the operating field.

4K Camera

The highest imaging resolution available without compromise in the operating room for the most important procedures.

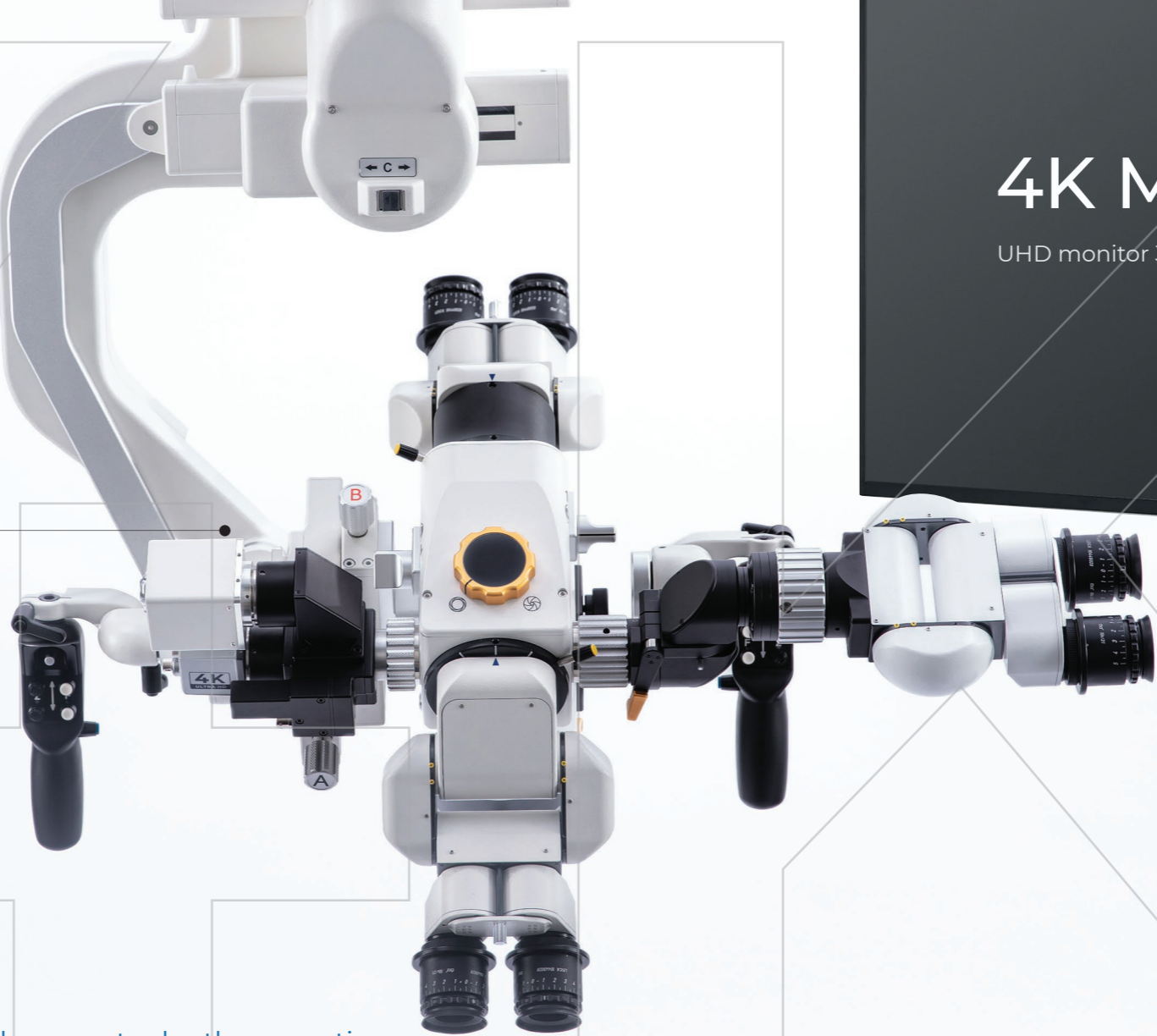


3D Camera

A high-precision medical-grade 3D imaging system with accurate depth perception and authentic color representation is available as an option for the MM51.

4K Monitor

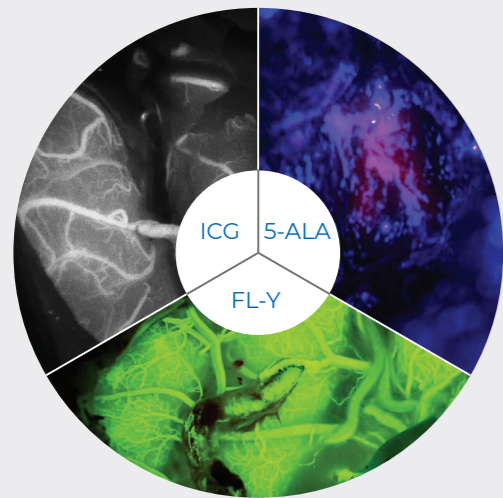
UHD monitor 32" - 43" available.



Feature of MM51

Spectator focus

Independent of the surgeons' microscope focus, the monitor's focus can be adjusted for theatre team and spectators individually.



Three fluorescence options

With a high-sensitivity camera unit and high-resolution optics, the Mitaka MM51 may be equipped for observing three types of fluorescence. A simple press of a button on the handgrip switches the video and optical system to the chosen fluorescence mode.

Triple support

- ICG
- 5-ALA
- FL-Y

Xenon light source

Feature of YOH stand

2x 300W xenon arc-lamp



Safety

The supermicroscope is equipped with two completely independent 300W xenon arc-lamp illumination systems. It can be quickly switched to the second light source if the current one is not functioning correctly - preventing unexpected interruptions during surgery.

Tissue-Care

The Tissue-Care system avoids the unwanted risk of patient's tissue burns when the working distance is shortened and microscope illuminance becomes too strong. Automated adjustment of the illuminance according to the working distance improves patient safety.

Supermicro titanium instruments

The microsurgery tools made by the Japanese company EMI Factory have the quality needed to perform high precision procedures under supermicroscope lense magnification.



No magnetic attraction to needles



Being made of titanium, the instruments are non-magnetic, so needles will not stick to the tip while suturing.

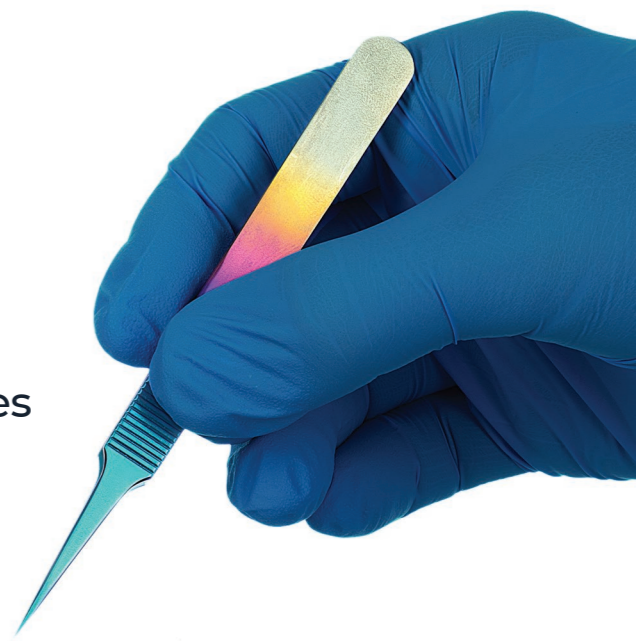
Ductility for high grip performance



By fully applying titanium's ductility, EMI produces instruments that grasp even superfine needles securely and firmly, without breaking or bending them.

Firm and stable grip with the finest tip

The supermicrosurgery forceps are designed by microsurgions to perform anastomoses of the smallest blood and lymphatic vessels and nerves, which **have a diameter of less than 1 mm. The forceps are available in various sizes: 0.05 mm, 0.1 mm and 0.2 mm.** Thanks to the ductility of titanium, the forceps grasp with the whole plane of the tip, not just the tip. They provide a secure and stable grip, which makes them essential for supermicrosurgery.



Designed for grasping superfine needles

EMI's Supermicro Needle Holder **has a tip size starting from 0.1 mm, can be applied to 11-0 ~ 12-0 surgery sutures** and has been specifically designed for supermicrosurgery interventions. It allows the most delicate microvascular anastomosis to be done properly with more confidence thanks to the high grasping performance due to titanium's ductility.



Reflection-free coating



The special surface coating makes the instruments reflection-free, which greatly decreases eye fatigue and improves visibility while working at high magnifications rates.

Less-sticky surface



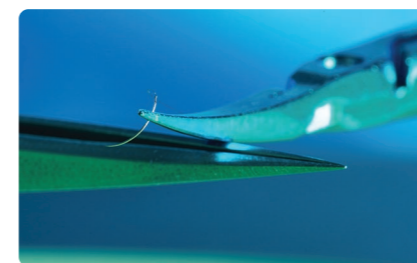
The exceptional surface coating minimises the blood-clotting effect.

Designed by microsurgions. Handcrafted in Japan

Tailored for supermicrosurgery

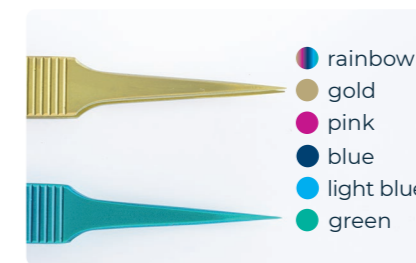


Designed to be used with the smallest sutures in the world, made by hand from titanium alloy and finished with immaculate attention to every detail, they fully meet the needs of microsurgions looking for the ultimate solutions.



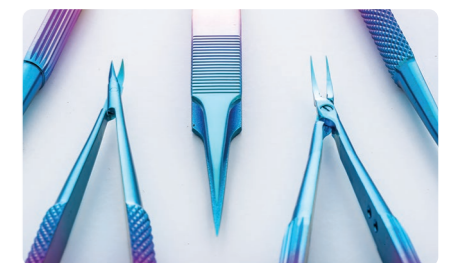
Lightweight

The instruments have an excellent weight-to-strength ratio – thanks to the lightness of titanium – while providing good grip, feeling and balance.



Colour coding

The six beautifully rich titanium colours make it easy to distinguish the different instruments tip sizes.



Tailor-made manufacturing

The cutting-edge techniques adapt to fit surgeons' special requirements, such as adding a protrusion, varying the tip size and shape, adding a lock or tailoring the instruments to individual hand sizes.

EMI Supermicro Set A

Content configuration

	EMI SM Needle Holder	Length: 150 mm	Tip: 0.1 mm
	EMI SM Needle Holder	Length: 150 mm	Tip: 0.3 mm
	EMI SM Micro Scissors	Length: 150 mm	Tip shape: Curved / Straight
	EMI SM Micro Forceps	Length: 120 mm	Tip: 0.05 mm
	EMI SM Micro Forceps	Length: 120 mm	Tip: 0.1 mm
	Sterilization Case L		

Colour of choice:

- rainbow
- gold
- pink
- blue
- light blue
- green

Please note that each Supermicro instrument can be purchased separately.

EMI Micro Set B

Content configuration

EMI titanium instruments features adopted to microsurgions needs. The special design and craftsmanship provide the surgeon with excellent confidence and precision.

	EMI Needle Holder	Length: 150 mm	Tip: 0.3 mm
	EMI Micro Scissors	Length: 150 mm	Tip shape: Curved / Straight
	EMI Micro Forceps	Length: 120 mm	Tip: 0.1 mm
	EMI Micro Forceps	Length: 120 mm	Tip: 0.1 mm
	Sterilization Case M		

Colour:

- blue

Please note that each Micro instrument can be purchased separately.

Practice with our experts or master your skills without assistance

Improve your supermicro skills



Mitaka Europe Training Center

Our training center allows conducting micro- and supermicro tissue anastomosis training, which is the embodiment of one of the most rigorous medical procedures – requiring full target and years of experience.

In our facility we offer the opportunity to fully focus, work and learn with a supermicroscope. Such bionic solutions allow you to achieve man-device synergy and increase efficiency in the operating room. Solutions such as artificial preparations, tissue imitations and many other materials, as well as access to the uncompromising quality of Japanese instruments, sutures and microscopes, will be at your fingertips. Training Center is for you, regardless of whether you are a master who wants to pass on knowledge, a student who strives for it, or you need access to the latest supermicro technology for research and development into new medical treatment methods.

We understand that training is an inherent part of advanced medical solutions. Having this in mind, we have created a dedicated space where surgeons can advance their skills and practice the new clinical applications.

Equipped with state-of-the-art Mitaka devices, METC is the place where surgeons can improve their skills and become familiar with new possibilities and techniques.

Dry-lab training is, of course, different from OR. Our goal is to create an opportunity to focus on different aspects and various details of surgical procedures, without stress and time pressure.



The focus on supermicro

Fully flexible training model includes several scenarios:

- one-on-one sessions with the instructors
- training with a remote instructor
- mastering surgical skills without assistance

Book your supermicro session!

Contact us at:
experience@mitakaeurope.com

The Shokunin way

Special times call for exceptional instruments – and never has this been more the case than today, with surgeons' ever-advancing skills in microsurgery. Technology is constantly developing to enhance the precision of operations performed under the magnification of supermicroscopic lenses, responding to the clinical needs of world-class surgeons. Providing the optimal solutions is our goal and we want to strengthen our position every day. Together with surgeon teams, reference centres across Europe and the world, biotechnologists and engineers, we verify technologies clinically, constantly striving for improvement in achieving supermicrosurgical precision.

When microsurgeons are seeking to make breakthroughs that were previously thought impossible, they often have to face technological limitations in the tools they use. Against current economic trends and refusing to accept "quick-fix" solutions, we combine the best Japanese traditions of solid handcrafting with cutting-edge innovations to invoke the spirit of Shokunin and create truly robust technology that allows surgeons to ignore previous limitations and devote themselves to perfecting their intricate procedures. The precision of our products, aligned with these surgeons' incredible abilities, puts them into a category of their own – the supermicro category.

職人

Shokunin



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