

Mitaka



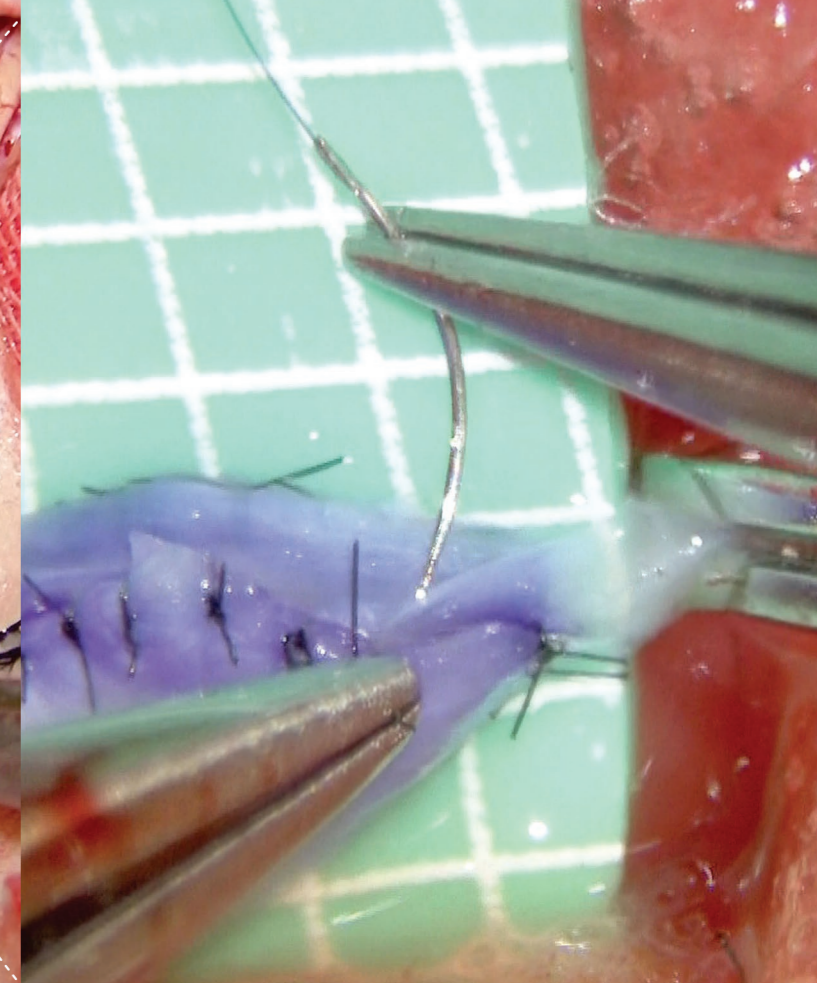
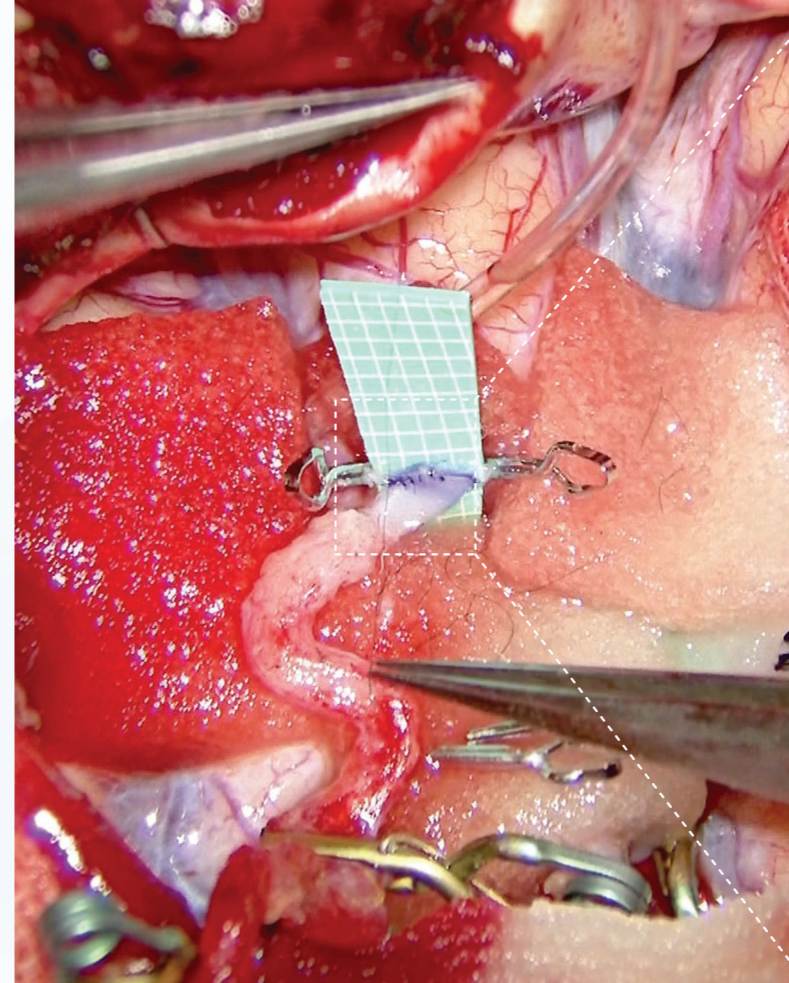
Mitaka MM90/MM80

The Neuro Supermicroscope



Scope essentials supercharged

Image quality and precise handling are the most important features of any surgical microscope. Years of experience have enabled Mitaka engineers to achieve perfection in both.

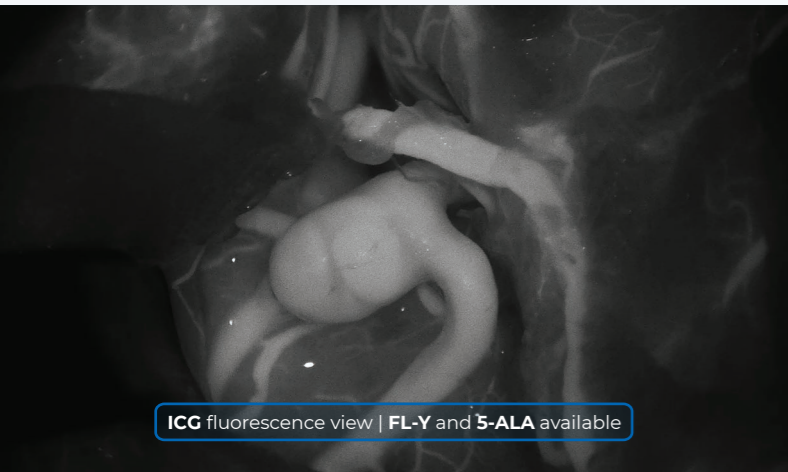


Optional feature of **MM90 and MM80**

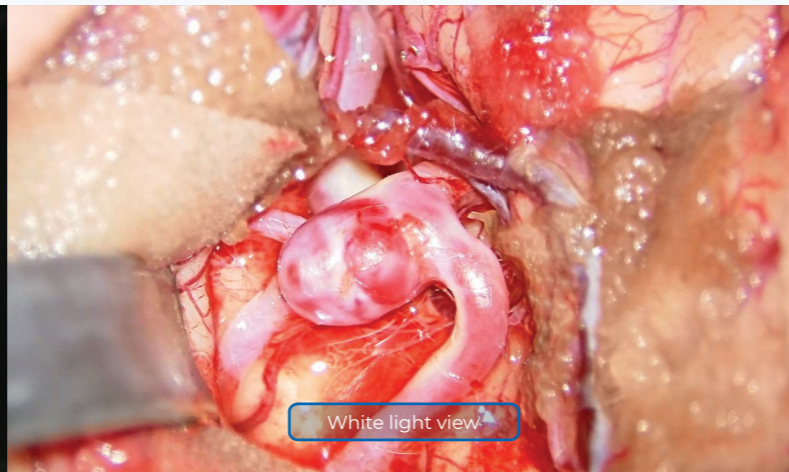
High-Speed Zoom

Mitaka developed the High-Speed Zoom as a further step forward. Recurring zoom operation is not only fast but also remarkably smooth.

Zoom in-out in
0.45 sec



ICG fluorescence view | **FL-Y** and **5-ALA** available



White light view

Magnification with resolution

The high-resolution optical design of the MM90/MM80, adopting an 8:1 zoom ratio, achieves a magnification of 21.6x. Surgeons can observe a sharp and clear image of the anatomical details. An exceptionally bright optical path allows for the visualization of incredibly fine vessels and brain structures to improve brightness, clarity and color authenticity of observation.

8:1
zoom ratio

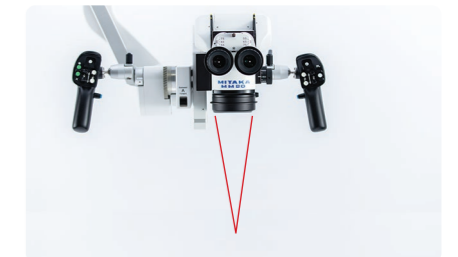
Wide-range multi-focus

The neuroscope 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.

21.6x
magnification

Native magnification

The reference optics in the Mitaka MM90/MM80 surpass standard microscopes thanks to its native 21.6x magnification, achieved without the need for extending accessories.



Laser focus guide

A laser guide beam indicates the focus position when moving the microscope. The indicator allows a quick and accurate focus adjustment.

Dispensing - intentionally - with superfluous gadgets, the Neuro Supermicroscope is

dedicated to micro-neurovascular surgery



Unique feature of MM90

360° binocular

The unique rotating binocular has the ability to change the side assistant's position without detachment. It is fully automatically balanced by the SOH stand.

Full integration

Perfect synergy between man and machine makes it possible to work smoothly and quickly. Accuracy, quality and stability are second to none. Just as the surgeon demands.

Feature of SOH stand

Auto Balance

Mitaka Kohki has been involved in astronomical optical devices for years. The SOH stand was developed utilizing its high-precision technology and innovative solutions with a single button for operation, ensuring unprecedented weightless balance.



"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. All movements are counter-balanced by the balance mechanics, including starting and braking, and are thus extremely smooth and accurate.



Vibration absorption

The microscope YOH and SOH stands have the unique Mitaka shock-absorbing system installed, developed for astronomical telescopes. This system eliminates vibrations caused by external forces as well as those generated while manoeuvring.



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

positioning of the scope is key

Smart and compact

In the limited space of an operating field, where many devices may be concentrated, the small size of the MM90/MM80 body minimizes interference with other equipment.



Flexible settings

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



Working distance from 200 to 600 mm

Working distance

Compact design and reference optics give plenty of room to create a workspace in the surgical field. It provides a large range of working distance from 200 to 600 mm - comfortable and safe.



Drape suction system

The suction system wraps the drape to the microscope 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 colour representation available as an option for the MM90/MM80.

4K Monitor

UHD monitor 32" - 43" available.

Feature of MM90 and MM80

Spectator focus

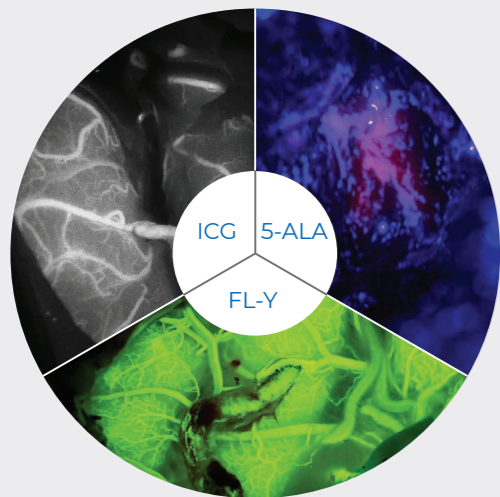
Independent of the surgeons' microscope focus, the monitor's focus can be adjusted for theatre team and spectators individually.

Three fluorescence options

With a high-sensitivity camera unit and high-resolution optics, the Mitaka MM90/MM80 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 SOH stand

2x 400W xenon arc-lamp



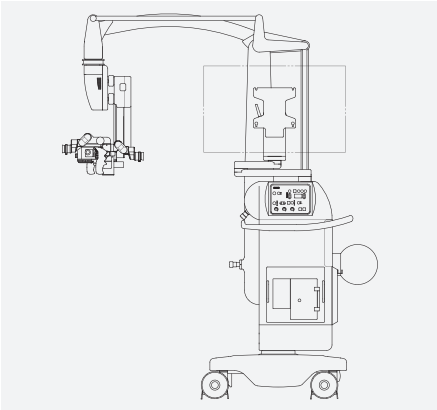
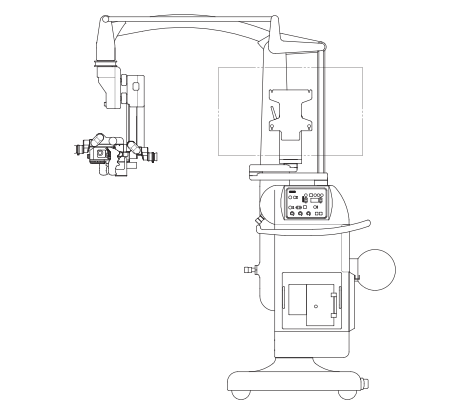
Safety

The neuroscope is equipped with two completely independent 400W 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.

Key specifications - Technical data

Microscope body	Surgical Neuro Supermicroscope MM90	Surgical Neuro Supermicroscope MM80
Zoom ratio	8 : 1	8 : 1
Zoom adjustment	Motorized zoom via hand grip & foot switch control	Motorized zoom via hand grip & foot switch control
Magnification range	1.4x ~ 21.6x	1.4x ~ 21.6x
Focus adjustment	Motorized focus via hand grip & foot switch control	Motorized focus via hand grip & foot switch control
Focus assistant	Laser focus guide	Laser focus guide
Working distance	200 ~ 600 mm	200 ~ 600 mm
Illumination	Coaxial lighting	Coaxial lighting
Illumination aperture	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Sterilizable objective lens cover	<input type="radio"/>	<input type="radio"/>
Front assistant eyepiece	180° across the main eyepiece	180° across the main eyepiece
Side assistant eyepiece	360° rotating	90° across the main eyepiece
Microscope stand type	SOH or YOH (see below)	SOH or YOH (see below)
Microscope stand	Super Overhead Stand SOH	Overhead Stand YOH
Balance adjustment:		
Balance adjustment method	Omnidirectional weight balancing	Omnidirectional weight balancing
Microscope body front-rear/up-down (A-axis/B-axis)	Electric auto	Manual
Microscope body left-right (C-axis)	Electric auto	Electric manual
Whole arm balance adjustment (D-axis)	Electric auto	Electric manual
Auto-balance mechanism	Full Auto Balance	x
Tilt adjustment:		
Stand arm control method	Electromagnetic lock control	Electromagnetic lock control
Observation direction left-right (X)	100° (-50° ~ +50°)	100° (-50° ~ +50°)
Observation direction backward-forward (Y)	150° (-30° ~ +120°)	150° (-30° ~ +120°)
Foot switch pedal (hands-free)	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Illumination:		
Main illumination light source	400W xenon arc-lamp	300W xenon arc-lamp
Spare illumination light source	400W xenon arc-lamp	300W xenon arc-lamp
Illumination safety mode	Tissue-Care	Tissue-Care
Stand data:		
Power supply	AC100-120/220-240V (50Hz / 60Hz)	AC100-120/220-240V (50Hz / 60Hz)
Power consumption	Max 1200W	Max 1100W
Floor occupation area	750 mm x 750 mm	720 mm x 720 mm
Storage space (length x width x height)	1500 mm x 750 mm x 2100 mm	1500 mm x 720 mm x 1880 mm
Gross weight	250 kg	220 kg
Options:		
Semi-stereoscopic side assistant	<input type="radio"/>	<input type="radio"/>
Mouth switch for subtle XYZ-movements	<input type="radio"/>	<input type="radio"/>
Camera adapter (with focus adjustment function)	<input type="radio"/>	<input type="radio"/>
Integrated video camera and recorder	<input type="radio"/>	<input type="radio"/>
Integrated monitor and arm	<input type="radio"/>	<input type="radio"/>
Fluorescence observation unit	<input type="radio"/>	<input type="radio"/>
Drape suction unit	<input type="radio"/>	<input type="radio"/>
External view		

The Shokunin way



When microsurgons 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.



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