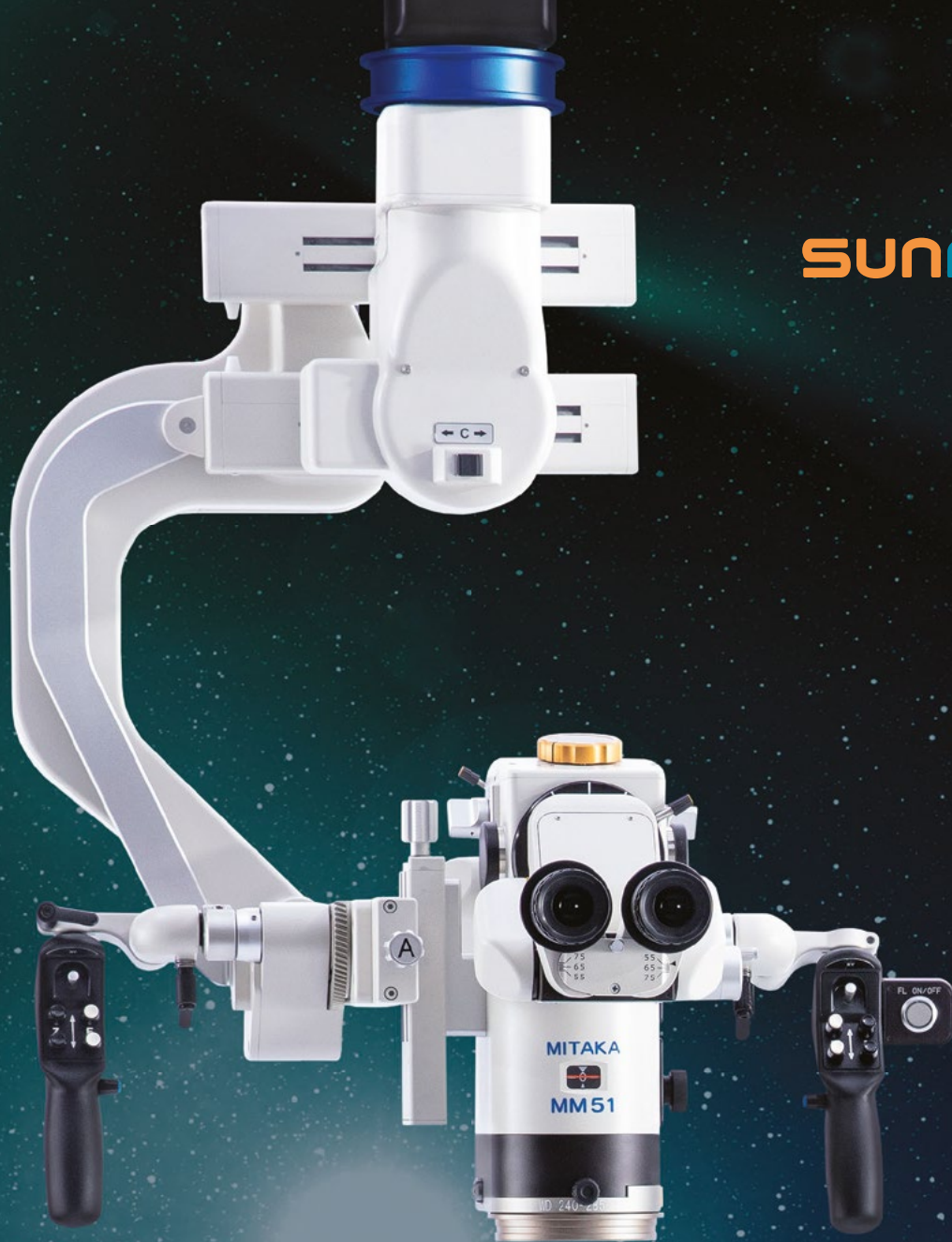


The Sunmedical logo, featuring the word "sunmedical" in a sans-serif font. "sun" is orange and "medical" is blue. An orange circle is positioned to the right of the text, partially overlapping the "al".

sunmedical



Mitaka MM51

The legendary Superscope

Resolution Revolution

The large objective lens of the MM51 combined with Mitaka's advanced 8:1 zoom system creates a superscope 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.



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 Superscope 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.



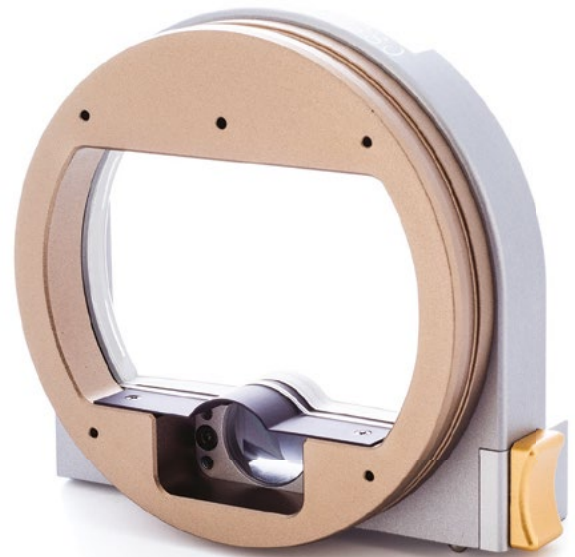
Supermicro scale

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.

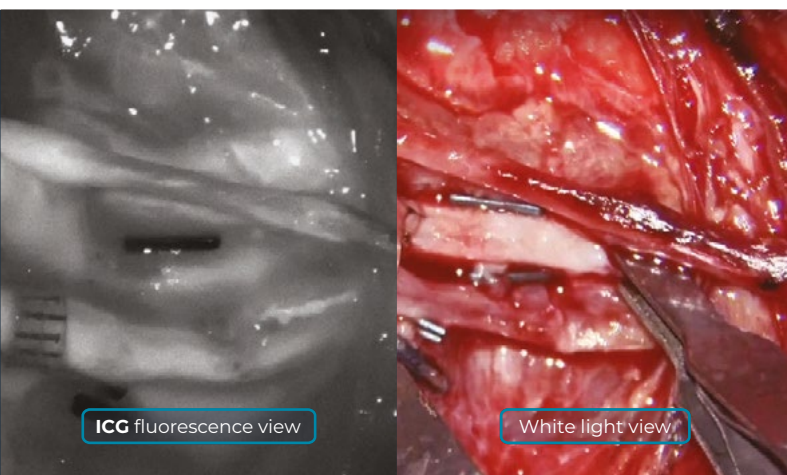
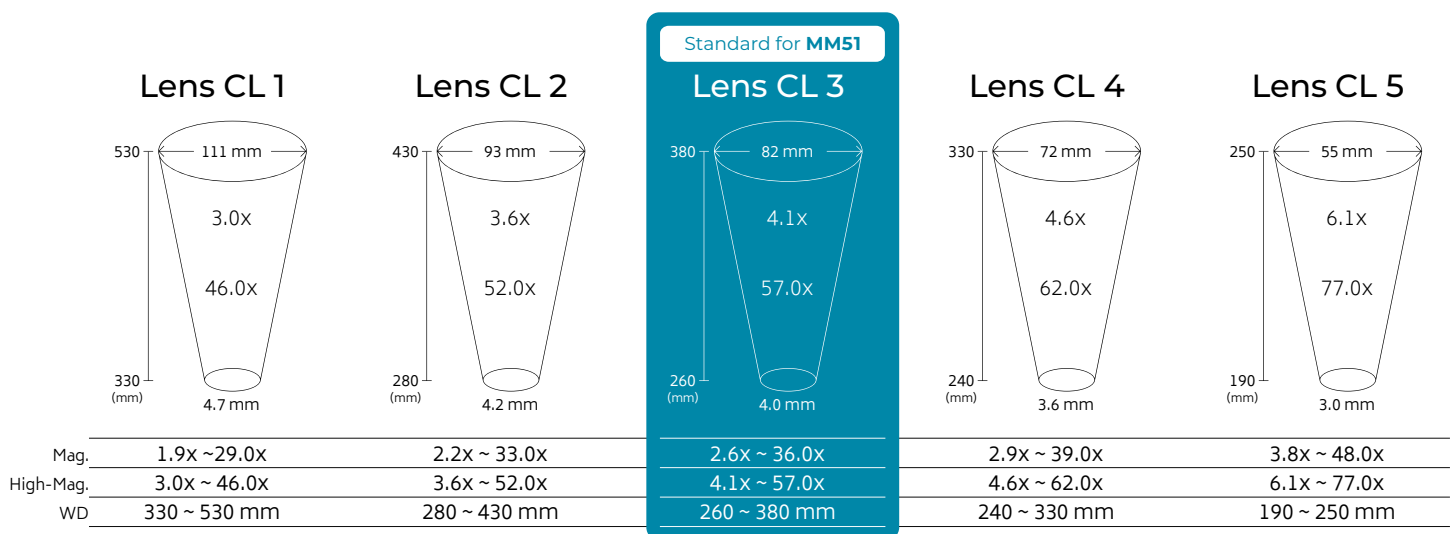
Originating from space observations

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.



Lens line-up - 5 objective lens options



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 superscope 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 superscope. 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

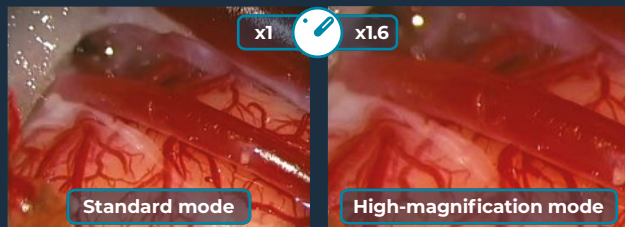
positioning of the scope is key

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.

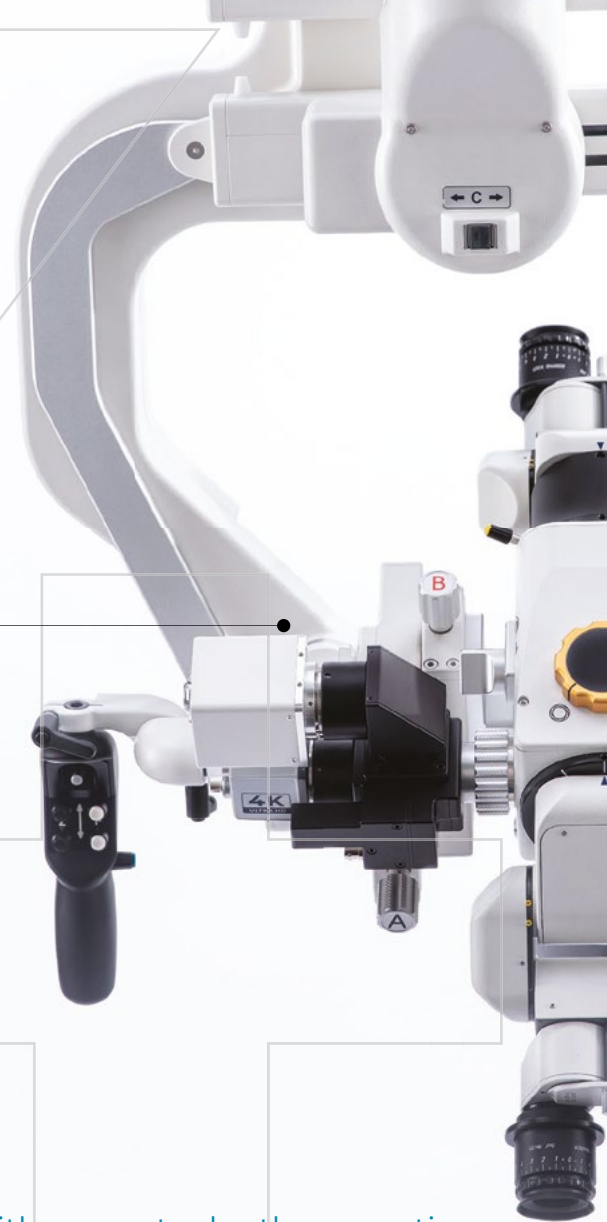


Drape suction system

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

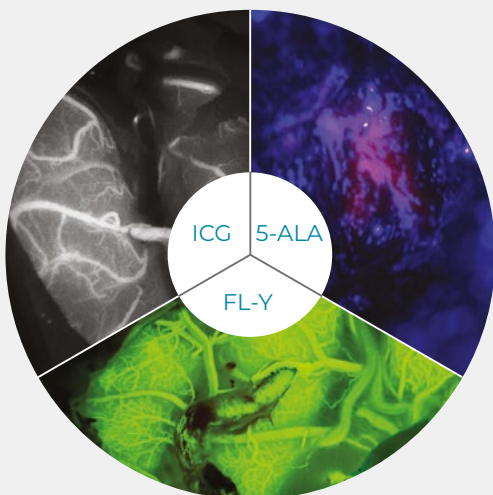
4K Camera

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.



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

4K Monitor

UHD monitor 32" - 43" available.



Xenon light source

Feature of YOH stand

2x 300W xenon arc-lamp



Safety

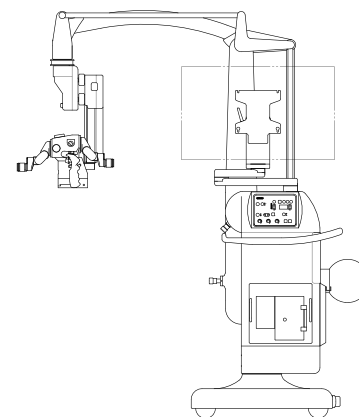
The superscope is equipped with two completely independent 300W xenon arc-lamp illumination systems. It can be quickly switched to the second light source if the current one is not functioning correctly - preventing unexpected interruptions during surgery.

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.

Key specifications - Technical data

Microscope body		Surgical Superscope MM51	
Zoom ratio		8 : 1	
Zoom adjustment		Motorized zoom via hand grip & foot switch control	
Magnification range (depending on obj. lens - see below)		1.9x ~ 77.0x	
Focus adjustment		Motorized focus via hand grip & foot switch control	
Focal depth adjustment		⊙	
Working distance (depending on obj. lens - see below)		190 mm ~ 530 mm	
High-magnification mode		x1.6	
Field of view (10x/21B eyepiece / depending on obj. lens - see below)		3.0 mm ~ 111.0 mm	
Illumination		Coaxial lighting	
Sterilizable objective lens cover		○	
Objective lenses available:	Magnification:	High-magnification (x1.6):	Working distance:
CL 1 (option)	1.9x ~ 29.0x	3.0x ~ 46.0x	330 ~ 530 mm
CL 2 (option)	2.3x ~ 33.0x	3.6x ~ 52.0x	280 ~ 430 mm
CL 3	2.6x ~ 36.0x	4.1x ~ 57.0x	260 ~ 380 mm
CL 4 (option)	2.9x ~ 39.0x	4.6x ~ 62.0x	240 ~ 330 mm
CL 5 (option)	3.8x ~ 48.0x	6.1x ~ 77.0x	190 ~ 250 mm
Field of view:			
			4.7 ~ 111.0 mm
			4.2 ~ 93.0 mm
			4.0 ~ 82.0 mm
			3.6 ~ 72.0 mm
			3.0 ~ 55.0 mm
Front assistant eyepiece		Folding, binocular eyepiece 180° across the main eyepiece	
Side assistant eyepiece (option)		Multi-joints, semi-stereo eyepiece 90° across the main eyepiece	
Microscope stand type		Overhead YOH (see below)	
Microscope stand		Overhead Stand YOH	
Balance adjustment:			External view:
Balance adjustment method		Omnidirectional electric manual balancing	
Tilt adjustment:			
Stand arm control method		Electromagnetic lock control	
Observation direction forward-backward (X)		100° (-50° ~ +50°)	
Observation direction left-right (Y)		150° (-30° ~ +120°)	
Foot switch pedal (hands-free)		⊙	
Illumination:			
Main illumination light source		300W xenon arc-lamp	
Spare illumination light source		300W xenon arc-lamp	
Illumination safety mode		Tissue-Care	
Stand data:			
Power supply		AC100-120/220-240V (50Hz / 60Hz)	
Power consumption		Max 1100W	
Floor occupation area		720 mm × 720 mm	
Storage space (length × width × height)		1500 mm × 720 mm × 1880 mm	
Gross weight		220 kg	
Options:			
Semi-stereoscopic side assistant			○
Mouth switch for subtle XYZ-movements			○
Camera adapter (with focus adjustment function)			○
Integrated video camera and recorder			○
Integrated monitor and arm			○
Fluorescence observation unit			○
Drape suction unit			○



The Shokunin way



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.

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