

From Eye to Insight

Leica
MICROSYSTEMS



Designed to Perform

M320 TEACHING

Microscope for Training and
Teaching Microsurgery

SURGICAL TRAINING DEMANDS SURGICAL- QUALITY OPTICS



Double LED illumination and apochromatic optics for bright, clear visualization.

The objective of a surgical training lab is to replicate the working conditions of the operating room as closely as possible. Featuring surgical-quality apochromatic optics and double LED illumination, the M320 teaching microscope delivers exactly what students need to help them perfect their surgical skills – a crisp, bright, true-color image, with impressive depth of field.



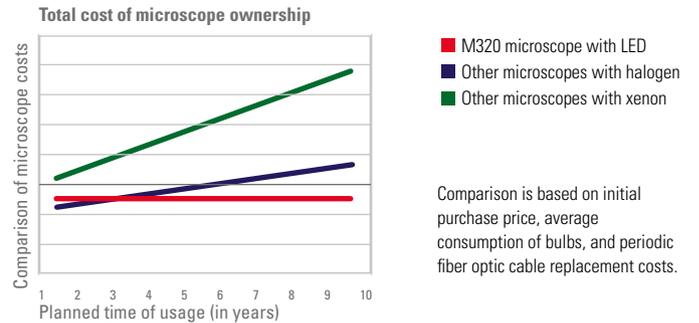
Crystal clear visualization

- > High resolution and large depth of field for impressive detail
- > Premium quality apochromatic optics combined with LED lighting deliver an enhanced view even in deep cavities
- > Full range of objective lenses including the M320 MultiFoc objective for efficient adjustment of working distance



Bright, true-to-life color images

- > Two daylight temperature LEDs deliver bright, natural-looking colors
- > Natural color and a brightly illuminated surgical field help the user easily differentiate anatomical details



Start saving from day one

- > Long bulb lifetime of approx. 60,000 hours for minimal cost of ownership
- > Light source integrated into the optics carrier with no external fiber optics for long-lasting light intensity

Minimum workflow interruption

- > 5-step magnification changer allows simple, quick magnification adjustments for minimum interruption to workflow
- > Magnification steps of 6.4x, 10x, 16x, 25x, and 40x

COMMUNICATION MADE SIMPLE

Share what you see in high definition

Surgical training environments have unique demands for image sharing and documentation. To meet these demands the M320 teaching microscope is available with an optional integrated full High Definition (HD) camera and recording system that captures crystal-clear anatomical detail in true-to-life color.

Share expertise and prepare for surgery

HD Imaging technology allows easy sharing of information for teaching purposes. Professors and trainees can view each others' work in real-time via a HD monitor and additionally record their work as video or still images for later study or presentation.



Integrated and modular

- > Fully integrated full HD camera with 10 MP images and video up to 1080p for crystal-clear anatomical detail and true-to-life color (optional)

Simple image storage

- > Store images and video on an SD memory card
- > Easily transfer to files on the network or PC via the SD memory card or USB

Flexible use and viewing

- > Simple operation via remote control or directly on the microscope
- > Live streaming to an external monitor for easy viewing by groups of students

EASY HANDLING, GREATER EFFICIENCY

Customizable ergonomic design and ease-of-use enhance user comfort and efficiency

When addressing the needs of surgical trainees and instructors, we went beyond the refinement of optics and LED illumination to also deliver ease-of-use and maneuverability. All of the system articulations move with high-level precision for efficient usage and easy sharing between neighboring workstations. The sophisticated mechanical engineering is easy to feel while using the microscope, and the stand features vibration-minimizing bearings for stability.

An individual fit

Select from an assortment of product accessories to ideally suit working preferences, comfort, and procedure. A wide range of binoculars and objective lenses are available and the option of a single or dual handle. The result is a customizable microscope that can be adapted to the personal comfort and convenience of every user.



Stay focused

The optional M320 MultiFoc Objective with variable working distance from 200 mm to 300 mm allows adjustment of working distance with a simple turn of the adjustment knob.

- > Interruption to workflow is decreased helping to maintain efficiency and concentration
- > Flexibility is increased so the user can retain a comfortable working position
- > The adjustment knob can be positioned to the left, right, or centrally as preferred



EQUIPMENT THAT FITS YOUR NEEDS

Responds effortlessly to working preferences, clinic or teaching space, and hygiene requirements

The M320 teaching microscope is designed with your requirements in mind. With a choice of mounting options and clean, integrated design, the M320 delivers the flexibility, quality, and hygiene you need.

Meets your hygiene requirements

The surface of the microscope stand has been designed for easy cleaning and is additionally protected with a permanent antimicrobial coating that reduces contaminants on the microscope.

Meets your space requirements

Whatever the environment, the M320 teaching model provides an all-in-one solution.

- > Available with a robust table plate, table mount, or wall mount
- > Sleek, streamlined design complements the high-quality image of your hospital, clinic or teaching facility



Handles can be removed and sterilized



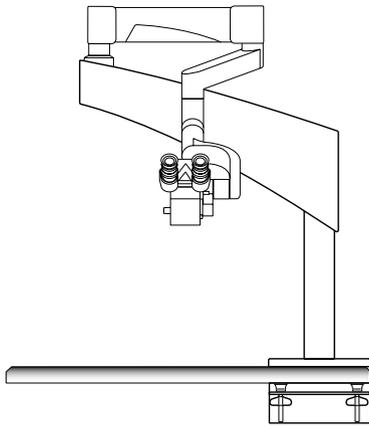
Virtually jointless with cables routed internally for easy cleaning



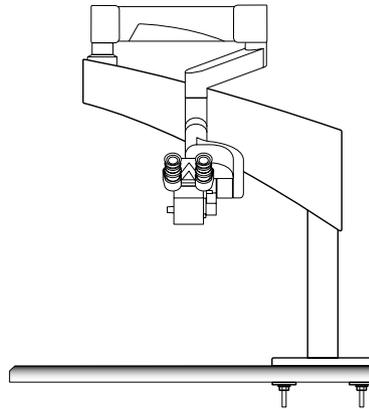
Leica AgProtect antimicrobial nano silver (Ag) coating reduces pathogens on the microscope surface

M320 TEACHING TECHNICAL DATA

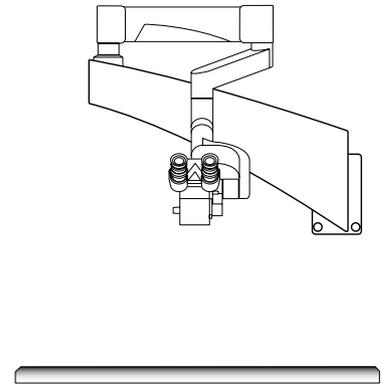
TC12 Table Clamp



TP12 Table Plate



LW12 Wall Mount



MICROSCOPE

Magnification	Manual APOchromatic 5-step magnification changer 6.4x, 10x, 16x, 25x, 40x
Stereo base	24 mm
Objectives	Fixed focal lengths from f=200 mm up to f=400 mm Fine focusing lenses with f=200, 250, 300 mm MultiFoc Objective lens with variable working distance of 200 mm to 300 mm
Eyepiece	10x21B, 12.5x17B, 8.33x22B, 10x21B with reticule
Reset functions	Limit switch for light on/off
Light source	Direct and long-lasting 2-LED illumination integrated into the optics carrier, with average service life of 60,000 h
UV filter	UV and IR-free LED illumination
Light intensity adjustment	Using a drive knob on the optics carrier

STANDS

Max extension range	1455 mm (fully stretched for the inclined version)
System weight	30 kg to 41 kg
Stand options	TC12 table clamp, TP12 table plate, LW12 wall mount

VIDEO ACCESSORIES

Leica M320 HD video and photo camera	Integrated full HD video camera with 1080p, 1080i or 720p video resolution and 2, 5 or 10 Megapixel still photo resolution. Camera playback function for video, photo and thumbnail view Video (MPEG-4) and photo (jpg) storage on SD memory card (system comes with a 16GB SD memory card), or transfer via USB Video signal available in HDMI, video/photo control through IR remote control and two hard keys on camera body, all camera settings can be adjusted via on-screen menu
Remote control	IR-remote control for Leica M320 full HD video & photo camera
M320 IVA Integrated Video Adapter	Integrated (optional) video adapter for attachment of external c-mount cameras, focal length of optics: f=55 mm
SD memory card	16GB supplied, up to 32GB can be used

LIMITATIONS ON USE

The M320 surgical microscope may be used in enclosed rooms and on flat surfaces with max. 0.3° unevenness; or at stable walls or ceilings that fulfill Leica Microsystems' specifications (see installation manual).

STANDARDS

Council Directive 93/42/EEC on Medical Devices (MDD) and its amendments. Classification: Class I, in compliance with Annex IX, rule 1 and rule 12 of the directive. Medical Electrical Equipment, Part 1: General Requirements for Safety IEC 60601-1; EN 60601-1; UL60601-1; CAN/CSA-C22.2 NO. 601.1-M90. Electromagnetic compatibility IEC 60601-1-2; EN 60601-1-2.

The Medical Division, within Leica Microsystems (Schweiz) AG, holds the management system certificates for the international standards ISO 13485, and ISO 14001 relating to quality management, quality assurance and environmental management.



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