From Eye to Insight

Leica
MICROSYSTEMS

Premium Surgical Microscope

STAY FOCUSED

Leica M530 OHX
with FusionOptics

STAY FOCUSED

Focus on your patient, focus on your surgery and let the Leica M530 OHX support you to achieve the best possible outcome.

Designed to be your trusted partner in the OR, the Leica M530 OHX unites the exclusive innovation FusionOptics with a flexible, ergonomic design and customizable imaging options. Experience outstanding visualization and feel the ongoing benefits of a comfortable working position - for you and your team.

See more with optical innovations
> FusionOptics for high resolution with enhanced depth of field
> Better visibility in deep cavities

See pages 4 to 5.

Comfort and efficiency built in
> More space to work
> Full integration
> Flexible positioning for everyone
> Superior maneuverability

See pages 6 to 7.

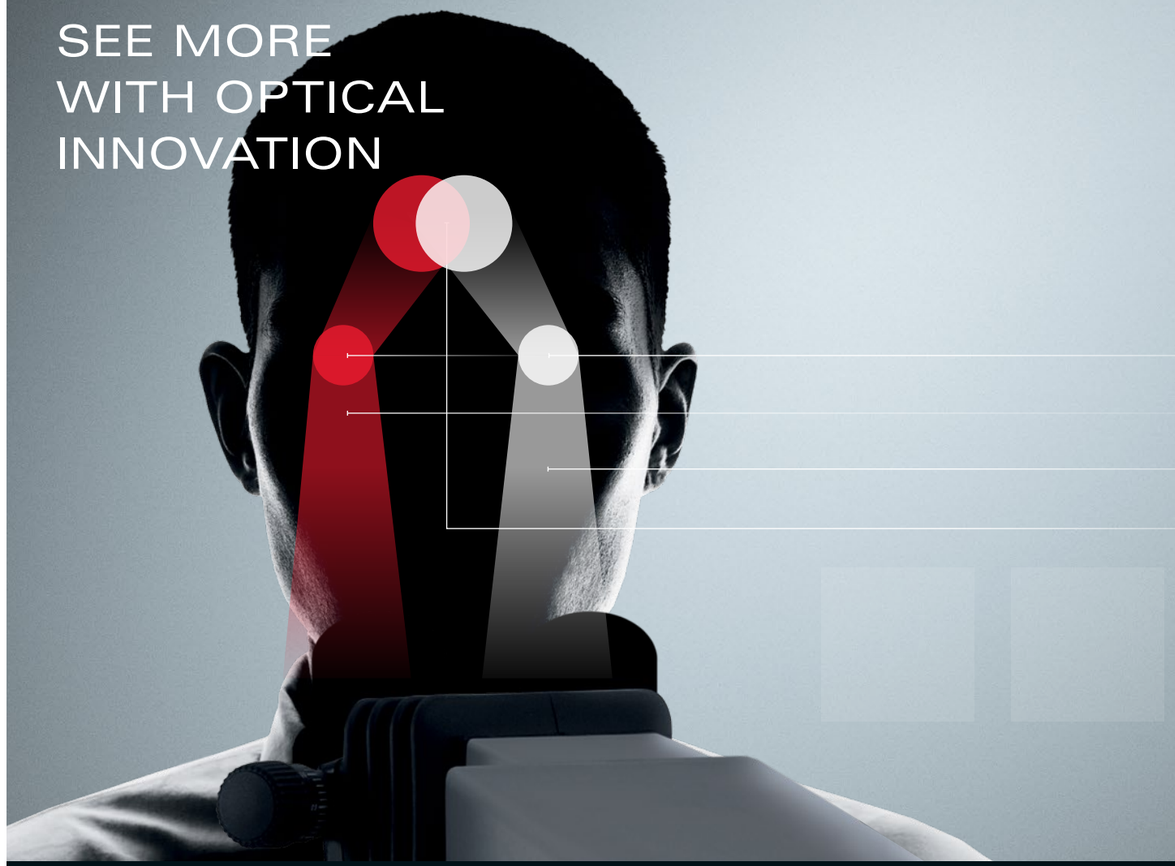
Customizable to your needs
> Individually configurable
> Modular for changing needs
> Imaging upgrades made easy

See pages 8 to 11.

Three-in-one fluorescence
> Leica FL400 oncological fluorescence
> Leica FL800 vascular fluorescence
> Leica FL560 fluorescence

See pages 10 to 11.

SEE MORE WITH OPTICAL INNOVATION

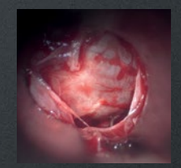


FusionOptics Technology

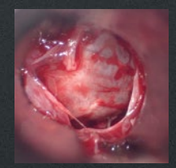
1. Two separate beam paths
2. One beam path provides depth of field
3. The other provides high resolution
4. The brain merges the two images into a single, optimal spatial image

Deep insights

Small Angle Illumination (SAI) combined with bright 400-Watt xenon light provides a concentrated light beam that penetrates to the bottom of deep, narrow cavities. The result is better illumination with less shadow. SAI provides you with more details and an improved depth perception.



Without SAI
(400 mm working distance)

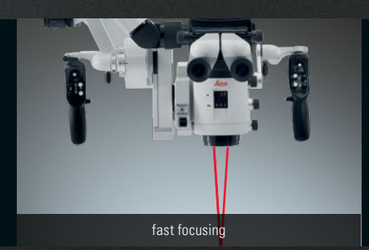


With SAI
(400 mm working distance)

FusionOptics technology combined with intelligent illumination and apochromatic optics delivers astounding image quality.

Magnification Multiplier

rear Fine Focus



fast focusing

See more, refocus less with FusionOptics

Achieving depth of field and high resolution in one image has always been a challenge. Leica Microsystems has developed a innovative new approach to overcome this challenge: FusionOptics. Making use of the power of the human brain, FusionOptics technology captures different information from each of the two beam paths, delivering the highest possible resolution to the left eye and maximum depth of field to the right. The brain then easily merges the visual information into a single, optimal spatial image with amazing clarity and a significantly expanded area in full focus. A larger area in full focus also means you need to refocus less frequently, potentialy enhancing your workflow efficiency. FusionOptics helps you to stay focused, in every sense of the word.

See even more, fast

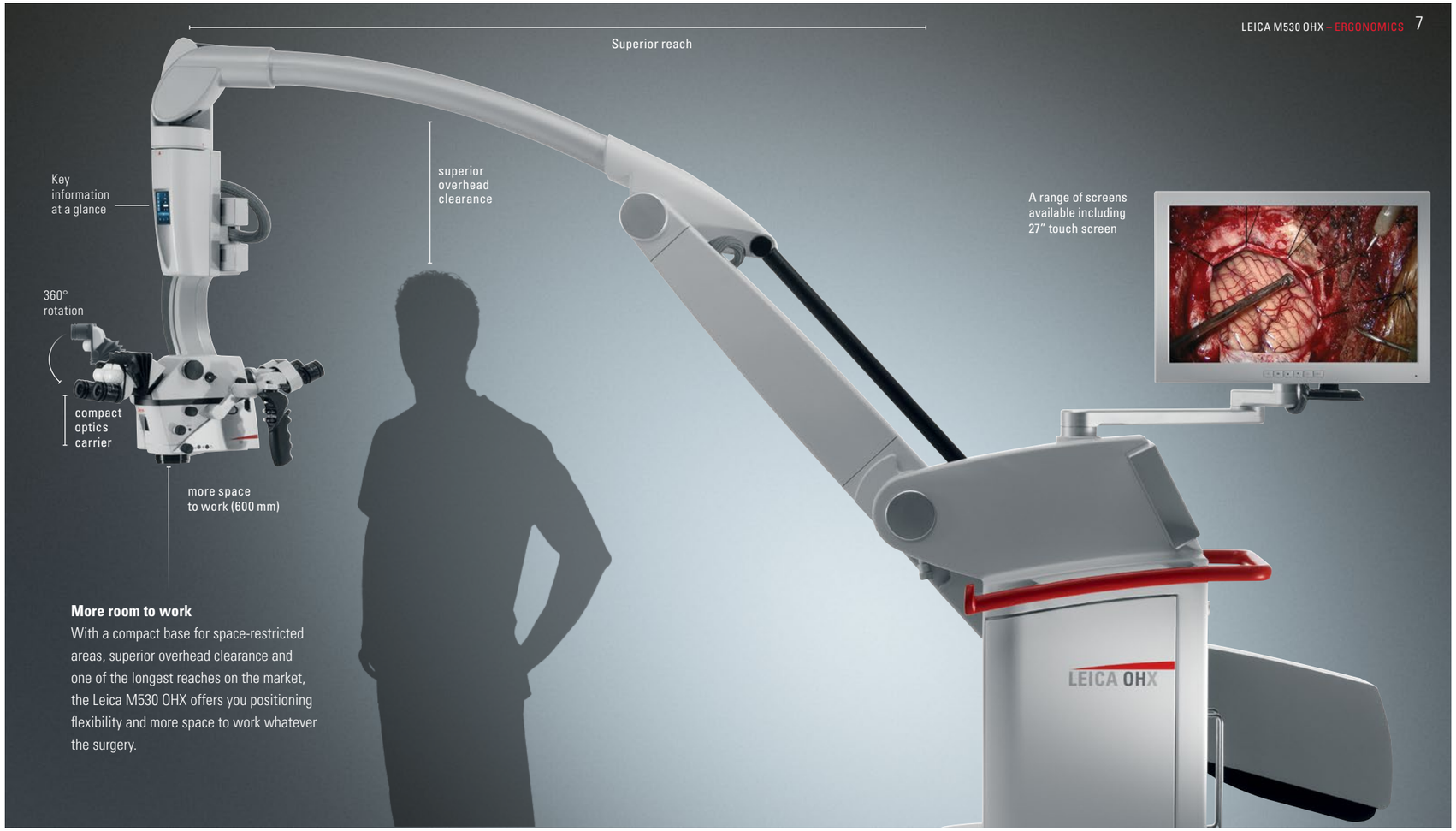
Adapt the Leica M530 OHX optics to meet the requirements of your surgery and your team

- Additional 40% magnification boost with the optional Magnification Multiplier
- Fast focusing with two laser beams acting as a focusing reference to quickly provide a defined focus point for all three viewing positions (surgeon, assistant, camera)
- Independent fine focus for the rear assistant with a range of +/- 5 diopters
- A selection of binoculars all with full 360°-rotation to allow adjustment to different heights and positioning needs - no need to swap binoculars

COMFORT AND EFFICIENCY BUILT IN

Ergonomic working positions, smooth maneuverability and ease of use for comfort and streamlined workflow.

The Leica M530 OHX is designed to fully adapt to you and the needs of your surgical specialty. Its intelligent ergonomic features and smooth manueverability limit physical distraction and workflow interruptions so you can stay even more focused on the critical task at hand.



More room to work
With a compact base for space-restricted areas, superior overhead clearance and one of the longest reaches on the market, the Leica M530 OHX offers you positioning flexibility and more space to work whatever the surgery.

Compact and fully integrated

Ease of use
Setting up the Leica M530 OHX is fast and simple with the intuitive touch-screen control panel. For your comfort and efficiency key functions can be controlled via handgrip, foot or mouth switches. To confirm settings just glance to the surgeon information panel above the optics carrier.

Full range of movement and tilt of the optics carrier

Smooth handling
With cables routed internally and electromagnetic brakes, maneuvering is smooth and effortless, reducing the potential strain of harsh movements. For unmatched positioning flexibility the optics carrier has an extensive range of movement. Fast stabilization keeps workflow interruptions to a minimum.

Auto balance and manual balance

Perfect balance
The time-saving auto-balance system requires only two pushes of one button to fully balance all six axes.To quickly and accurately re-balance the microscope intraoperatively, even through a sterile drape, simply push the AC/BC button, conveniently located above the optical head.

Positioned for your comfort

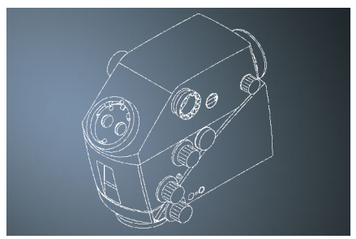
> Compact optics carrier design means less distance from eyepiece to objective lens so arms can remain in a natural position and are not over-extended
> Accommodates different operating positions and body frames with a range of binoculars for main surgeon and assistant all with full 360°-rotation
> The design of the optics carrier means that the opposite assitant can also achieve a comfortable upright working posture
> Market-leading 600 mm working distance allows for easy maneuvering and passing of instruments enabling the microscope to be used in spine procedures where previously only loupes could be used

Comfortable working posture and large free working space during a spine surgery

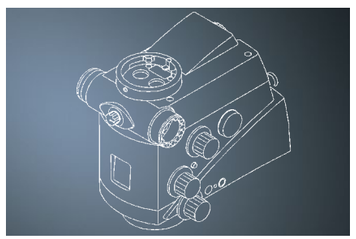
CUSTOMIZABLE TO YOUR NEEDS

A **modular yet integrated** design for configuration flexibility today and in the future.

The streamlined, cable-free Leica M530 optics carriers were developed with a modular Open Architecture design to allow for maximum configuration flexibility. Choose the optics carrier to best suit your surgery needs and then configure with imaging and recording options. And if your requirements change or you want to add a new imaging technology in the future, the upgrade-ready design makes it simple.



Ultraobserver
The Leica ULT530 is the optimal configuration for neurosurgery, spine and plastic reconstructive surgery. Left, right and rear assistant interfaces and optional integrated Leica HD C100 camera, Leica FL800, Leica FL400 and Leica FL560 fluorescence modules offer maximum flexibility.



Integrated video adapter
The compact design of the Leica IVA530 offers an ideal solution for otolaryngology and neurotology. With no opposite assistant, more light is directed to the main surgeon and side assistant for even greater visual enhancement. The integrated video adapter has a built-in depth enhancer, for outstanding screen display and recording.

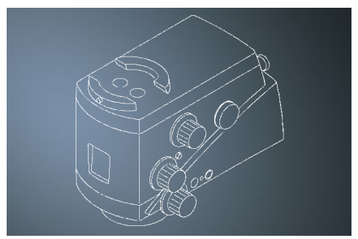


Image injection
The top plate configuration is designed for attachment of the Leica DI C500 dual imaging color module. The Leica DI C500 allows the surgeon to inject data directly into the eye-piece, from external and internal sources, such as MRI, CT, IGS, endoscopes and Leica FL800 video sequences.

Three-dimensional view for all
Integrated TrueVision 3D visualization and recording is also available. 3D imagery can greatly enhance microsurgery education, providing staff and students with the same 3D view as the surgeon during live surgery or a seminar. With TrueVision Smart 3D built in, set-up time is minimized and OR space freed up.

Fully integrated and under control
HD 2D and 3D cameras, fluorescence modules, documentation systems and all cables are fully integrated inside the microscope. Not only does this give a sleek, clean appearance, it ensures seamless integration and flexible control via the handgrip or optional mouth and foot switches.

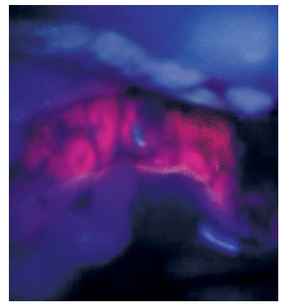
Ready for today and tomorrow
The OpenArchitecture design of the microscope allows easy integration of systems such as the user-friendly Med X Change HDMD full HD digital recording system or Image Guided Surgery (IGS). Upgrade easily when your requirements change or when new imaging techniques or further surgical guidance applications become available.

THREE-IN-ONE FLUORESCENCE

Available with three fluorescence modes fully integrated, the Leica M530 OHX enables you to go **beyond the visible**.

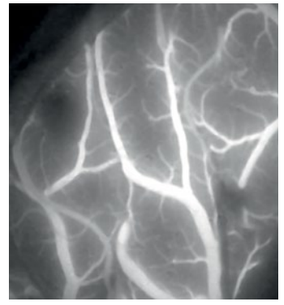
The Leica M530 OHX can be supplied with three types of fluorescence fully integrated: Leica FL400 for oncological fluorescence, Leica FL800 for vascular fluorescence, and Leica FL560. With only a few button clicks, you can easily switch from white light to fluorescence mode or between fluorescence filters. Brilliant HD fluorescence video can be easily viewed on screen and recorded. For best viewing results, the built-in Mode Control video technology automatically optimizes the settings of specific, optional cameras according to the selected mode.

* For all fluorescence modules, please check the status of regulatory approval for your country with your local Leica Microsystems representative



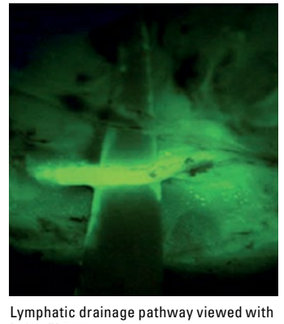
Glioblastoma tumor viewed with Leica FL400 and 5-ALA

FL400 oncological fluorescence
The fluorescence module Leica FL400 for M530 is used in conjunction with 5-ALA fluorescent agent for characterization of tumor tissue in open neurosurgery.



Neurovascular structure viewed with Leica FL800 and ICG

FL800 vascular fluorescence
The Leica FL800 ULT intraoperative videoangiography module is used in conjunction with ICG fluorescent agent and allows surgeons to see blood flow through vessels in real-time during surgery.



Lymphatic drainage pathway viewed with Leica FL560

FL560 fluorescence
The Leica FL560 for M530 module is designed to enable fluorescence observation of fluorophores with an excitation peak between ~460 nm and ~500 nm (blue) and fluorescence emission observation comprising the green, yellow, and red spectrum in a spectral band above ~510 nm.

REINFORCE PATIENT SAFETY

Innovative illumination controls, fail safes and design features help you optimize patient safety and minimize interruptions.

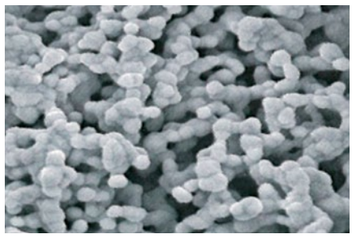
Luxmeter for consistent lighting
BrightCare Plus compensates for decreased light intensity as bulbs age to ensure consistent lighting. With the internal luxometer providing real-time light intensity data to the BrightCare Plus system, light intensity is calculated on actual bulb output, not by using an algorithm or formula.

Efficient light transmission

Reliable illumination system
The Leica M530 OHX features two redundant 400-Watt xenon arc-lamp illumination systems, with independent lamps and boards. The microscope automatically switches to the second illumination system when needed.

Safe, maximum brightness

Maximum brightness at all times
The efficient light transmission of the Leica M530 OHX ensures that the maximum possible amount of light is always being provided. Therefore, you can operate at safer light levels and still see more than ever before.



Antimicrobial nano silver coating to minimize pathogens

Protection for team and patients
For superior hygienic conditions the Leica M530 OHX has a special AgProtect coating. Nano silver minimizes pathogens on the microscope as well as possible transmission to OR staff.

Separate operating systems for video and microcope

Stay operational
To ensure full operability the microscope and the video have completely independent operating systems. In the rare case of a video system error, the microscope retains full functionality and surgery can continue uninterrupted.

OPTIMAL LIGHT INTENSITY

BrightCare Plus optimizes the light intensity relative to the working distance.

Max. illumination

Long working distance.

Max. illumination (BrightCare Plus inactive)

Decreased working distance at same illumination setting (left) creates burn potential in conventional microscopes.

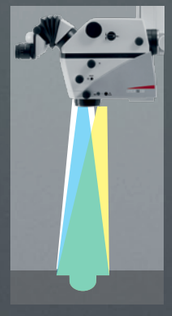
Microscope with BrightCare Plus activated

BrightCare Plus automatically adapts light intensity to the working distance, providing safer illumination (up to 60 % reduction of intensity).

OPTIMAL FIELD OF ILLUMINATION

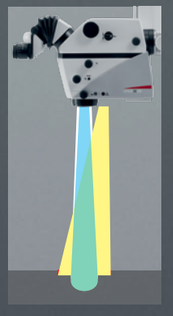
Autolris automatically adjusts the diaphragm so that only the visible area is illuminated.

Conventional microscope at low magnification



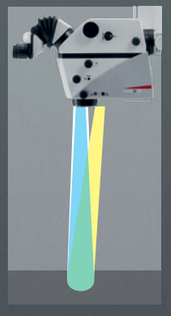
At low magnification, the field of illumination (yellow) fills the field of view (green) completely.

Conventional microscope at high magnification



Previously, as magnification increased, the field of view became smaller, but the illumination outside the field of view could potentially cause tissue burns (red).

Leica Microscope with Autolris



Autolris automatically works with the zoom, decreasing the field of illumination as the field of view decreases. There is no peripheral illumination to cause tissue burns outside the field of view.

TECHNICAL SPECIFICATIONS

OPTICS AND ILLUMINATION

FusionOptics	For increased depth of field and high resolution for main surgeon
Fully apochromatic optics	For high contrast, natural colors without chromatic aberrations
Magnification	6:1 zoom, motorized
Total magnification	1.0× to 12.1× with 10× eyepiece
Magnification multiplier	1.4×(optional)
Focus	Motorized via multifocal lens, with manual adjustment
Fine focus	±5 diopter available for opposite assistant (ULT)
Objective / working distance	225–600 mm, motorized multifocal lens, continuously adjustable and manual adjustment option
Field of view	17.4 to 210 mm ø with 10× eyepiece
Eyepieces	Wide-field eyepieces for persons wearing glasses 8.3×, 10× and 12.5× dioptric adjustment, ±5 diopter settings and adjustable eyecup
Integrated 360° rotatable adapter	For main surgeon binocular (IVA, ULT) and opposite assistant (ULT)
Illumination	- High-output 2x 400-W redundant xenon arc-lamp systems via fiber optics cable - Continuously variable illumination field diameter with Gaussian distribution - Continuously adjustable brightness at constant color temperature
SpeedSpot	Laser focusing aid for fast and exact positioning of the microscope

MANEUVERABILITY

Optics	- 540° rotation - 50° lateral tilt to left and right - -30° /+120° inclination tilt
XY speed	Zoom linked XY speed
Balancing	One button/two push complete automatic balancing of stand and optics
Intraoperative balancing	Automatic intraoperative AC/BC balancing of AC and BC axes (not available for Japan).
Brakes	Floor stand with 6 electromagnetic brakes
Carrier for monitor	700 mm flexible arm with 4 axis for rotation and inclination

MODULARITY

Leica ULT530	- Full stereo view for main surgeon and opposite assistant, semi stereo view for 2 side assistants - High sensitivity, built-in IR video camera with 1/2" CCD - Optional integrated HD Camera (Leica HD C100) - Light distribution: 50% for main surgeon, either 20% for each side assistant or 40% for opposite assistant
Leica FL800 ULT	ULT with the Leica FL800 vascular fluorescence observation filter module
Leica FL400	Leica FL400 oncological fluorescence observation filter module
Leica FL560	Leica FL560 investigational fluorescence observation filter module
IVA530	- Full stereo view for main surgeon, semi stereo view for 2 side assistants and C-mount interface for camera (HD or SD) - Light distribution: 67% for surgeon, 23% for side assistant, 20% for C-mount port
Top plate with Leica DI C500	- Full stereo view for main surgeon and opposite assistant, semi stereo view for up to 2 side assistants - Data injection - Optional: C-mount interface for camera (HD or SD), FL800 function, FL400 function
OpenArchitecture	- Easy integration of IGS and laser systems (please ask your Leica Microsystems representative) - Prepared for integration of video camera system and digital recording system
Connectors	- Numerous built-in connectors for video, IGS and control data transfer - Internal power supply 12 VDC, 19 VDC and AC terminals
2D/3D HD Video	Fully integrated 2D HD and/or 3D HD video and recording

CONTROL

Control unit	- Programmable touch-screen with user-friendly Graphical User Interface for control of microscope and stand - Built-in electronic auto-diagnosis and user support - Software independent hard keys for illumination and auto-balancing - Indicator for main/backup illumination and fluorescence modes
Control elements	- Pistol handle with 10 programmable functions - Optional mouthswitch - Optional 12-function wireless footswitch
IR sensor	For remote control of the external Leica HD C100 camera

SAFETY

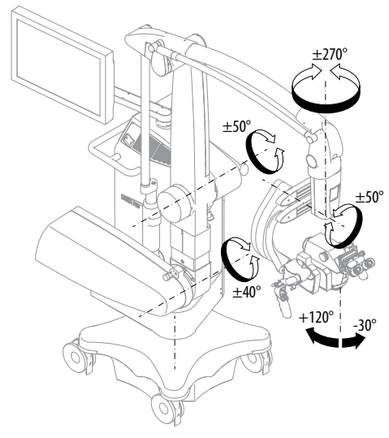
AutoIris	Built-in automatic zoom-synchronized illumination field diameter, with manual override and reset feature
BrightCare Plus	Safety function through working distance-dependent limitation of the brightness, controlled by a built-in luxometer

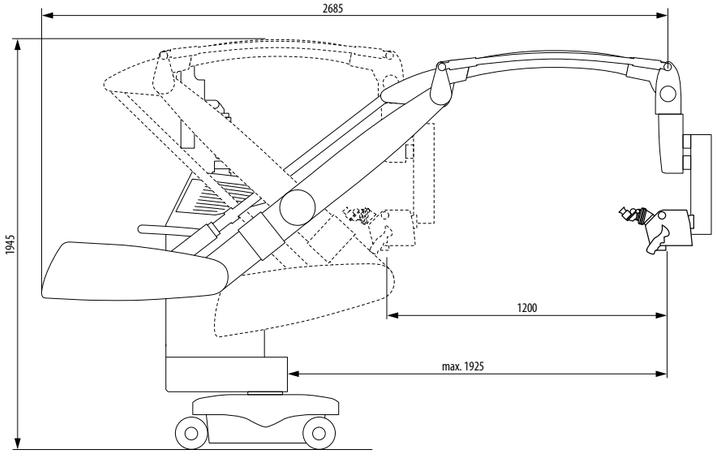
CONSTRUCTION

Base	690 × 690 mm with four 360° rotating castors with a diameter of 150 mm each, one parking brake
Materials	All solid metal construction coated with antimicrobial paint
Load	Min. 6.7 kg, max. 12.2 kg from microscope dovetail ring interface
Weight	Approx. 320 kg without load
Indicator	LEDs for fluorescence mode status and video record status

TECHNICAL DATA

Ambient conditions in use	- +10 °C to +40 °C - +50 °F to +104 °F - 30% to 95% rel. humidity - 800 mbar to 1060 mbar atmospheric pressure
Power connection	- 1600 VA 50/60 Hz - 100 V, 120 V, 220 V, 240 V (+10 %/–15 %) - 2 × T10 AL 100/120 V - 2 × T8 AL 220/240 V
Protection class	Class 1





Leica M844 F20

Premium Optics Surgical Microscope for Ophthalmology

Living up to Life

Leica
MICROSYSTEMS


Leica

M844 F20

Uniquely Leica

Crisp and sharp!
Leica's APO OptiChrome™ M844 Optics provide the highest resolution to see even the smallest anatomical details.

Same perfect view, same perfect light!
Leica's QuadZoom™ gives both the surgeon and assistant 100% of the illumination and the same magnification.

Safety for the patient, fatigue-free viewing for the surgeon!
Leica's exclusive direct illumination system offers the best clarity, contrast and colour at safe low-light levels.

See more of what you need to see.

Combining a higher level of optical quality than ever before with the best technologies of today's surgical microscopes, the Leica M844 truly redefines the premium class of ophthalmic surgical microscopes.

The Leica M844 is the microscope you must see!

APO OptiChrome™ Changing microsurgery forever

Leica introduces the original APO OptiChrome™

Providing an extraordinary degree of light transmission for maximum detail recognition is critical for all types of ophthalmic microsurgery. For the posterior segment surgeon, where availability of light is limited, a high degree of light transmission is essential. For refractive and anterior segment surgery, low light is always better for the patient.

Expect only the highest standards in optics from the Leica M844

- Sharper and crisper image
- Higher light transmission
- Natural colour fidelity
- Outstanding depth of focus
- Higher contrast

QuadZoom™ Uniquely Leica

Efficient illumination

By utilising four separate beam paths through the same common zoom system, the Leica QuadZoom™ delivers 100% APO OptiChrome™ stereovision and 100% illumination for both the main surgeon and the assistant.

2 × 2 views always synchronized

By putting both pairs of beam paths through one common zoom system, as the surgeon changes magnification, the assistant's view is perfectly synchronized with the surgeon's view.

See more with less light

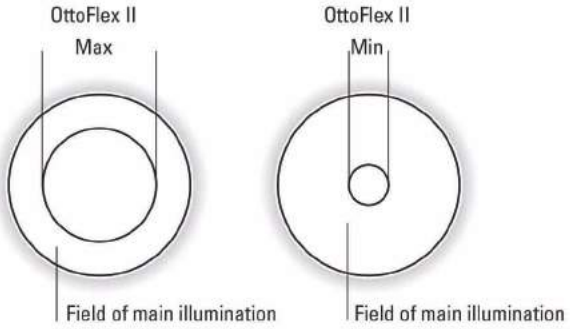
OttoFlex™ II
See more with less light

Low light ensures fatigue-free viewing and patient safety

With two bulbs and two prisms, the Leica M844 creates true three-dimensional illumination. Using a focused, direct illumination system instead of fiber optics, the Leica M844 takes a ray of light and projects a crisp, sharp and homogeneous image even at very low light levels. Proven for over 25 years, this combination of direct halogen illumination and highly efficient optical transmission ensures patient safety and fatigue-free viewing for the surgeon.

See things in a different light

OttoFlex™ II, an integrated independent illumination system, gives a brilliant red reflex even in low light conditions and enhances the view's contrast. Difficult anatomical conditions, such as small pupils or very advanced cataracts are more easily visualised through this unique system. Continuously adjustable from 4 mm to 35 mm diameter, OttoFlex™ II places the brightness where the surgeon needs it most.



Take control

Leica Two-in-One display control unit mode (above) and video mode (below)

Intuitive control unit

The touch panel offers intuitive control of all the Leica M844's functions. The control unit's operation is simple and straightforward with many innovative features.

Everyone is an individual

Customised start settings, such as illumination and magnification levels, are easily programmed into the control unit for up to 30 different users. By having a surgeon's individual settings available at the touch of a button, the microscope is instantly ready for the next procedure and/or surgeon and the workflow of the surgical team is faster and more efficient.

StepCycle™ for greater efficiency

Different levels of light, focus and zoom can optimize each phase of surgery. Making these adjustments today takes surgeons' precious time. The automatic StepCycle™ function enables the surgeon to program predefined settings that are used throughout typical surgical procedures. After simple programming, a touch of a button on the foot pedal will activate the microscope's predefined settings, step by step, during the procedure.

Real-time video

With one touch of a button the control unit's display becomes a general use, real-time video monitor, which allows an immediate and convenient view of the current surgical procedure for the operating room staff. For general video viewing there is no need for an extra video cart.