Leica M820 F20

High Performance for Best Results
Microscope for Ophthalmic Surgery

Living up to Life
Leica Design by Christophe Apothéloz
The Leica M820 F20 provides the ophthalmic surgeon with high performance 800-series optics on an easy-to-use, intuitive floor stand.

**Crisp and sharp!**
Leica M820 APO OptiChrome™ Optics provide the highest resolution to see even the smallest anatomical details.

**Added safety for the patient, fatigue-free viewing for the surgeon!**
Leica Microsystems’ exclusive direct illumination system offers the best clarity, contrast, and color at safer, low-light levels.

**Double beam stereo illumination!**
The unique 800-series double beam illumination system provides a stable red reflex and three-dimensional vision for the surgeon.
The Leica M820 builds on the success of the 800-series APO OptiChrome™
A sharp, crisp image is critical for all types of ophthalmic microsurgery. The proven technology of the Leica 800-series optics gives the surgeon natural color, outstanding depth of focus, and higher contrast for maximum detail recognition. The extraordinary degree of light transmission through the Leica M820 optics provides added patient safety by allowing the surgeon to use lower levels of illumination.

Double beam stereo illumination is the key
Using two bulbs and two prisms, the Leica M820 creates true, three-dimensional illumination. The surgeon can quickly and accurately complete the surgical procedure because of the highly defined view seen through the microscope. Direct halogen illumination projects a crisp, sharp, and homogenous image – even at low light levels.

An extra boost for difficult visualization
OttoFlex™ II, an integrated independent illumination system, gives a brilliant red reflex even in low light conditions. Difficult anatomical conditions, such as small pupils or very advanced cataracts, are more easily visualized through this unique system. Continuously adjustable from 4 – 35 mm diameter, the OttoFlex™ II places the brightness where the surgeon needs it most.
Simple, straightforward control
The touchscreen control unit provides many innovative features, and is very user friendly for the operating room staff. Up to 30 different users can input their individual, customized settings so the microscope is ready for each surgeon’s individual needs.

The unique StepCycle™ for more efficient surgical procedures
Different levels of light, focus, and zoom are used during a typical surgical procedure. Each time the surgeon makes these adjustments, precious time is wasted. With StepCycle™, the surgeon can program predefined settings into the microscope. Throughout the surgical procedure, a touch of the button on the foot control will make fast, accurate adjustments.

Real time video is conveniently located on the microscope
With one touch of a button, the Leica M820 control unit’s display becomes a general use, real-time video monitor. Conveniently located on the microscope, the operating room staff can watch the ongoing surgical procedure without bringing a separate video cart into the room.

More accuracy at higher magnification
Enjoy sharp images thanks to the focus and the XY-positioning being dynamically linked to the magnification. In other words, as magnification increases, the drive-speeds of the focus and the XY-unit decrease simultaneously and vice versa. This function allows to avoid overrun of the correct focus plane and of the surgical field.
Largest selection of binoculars for individual needs

The physical comfort of the surgeon and assistant are important to the success of any surgical procedure. Since no two people are alike, having a wide choice of binoculars and objective lenses to choose from is very important. Leica Microsystems provides the largest selection of interchangeable binoculars from any microscope company. Newest to the line are the UltraLow™ II, which drop lower than conventional binoculars to compensate for stacking auxiliary accessories on the optics.

Going temporal? Swing around…

For those surgical procedures where an assistant is needed, especially with the growing number of temporal approach cataract surgeries, Leica Microsystems proudly presents the world’s first two-beam path solution – the Leica Rotatable Beamsplitter. The easy side-to-side quick change of the assistant observer optics saves time between cases, increases efficiency in the operating room, and minimizes potential damages to the binoculars. Also the interface for the Leica Video Adapter is conveniently placed at the rear for maximum flexibility.
Easy to Use from Start to Finish

**Leica F20 compact floor stand, maneuverable and affordable**

The Leica F20 floor stand has an exceptionally small footprint. Its long reach and slim solid metal construction make the Leica M820 F20 very convenient in the limited space of today’s operating rooms. Pivot points give the Leica F20 easy maneuverability with knobs that adjust using friction.

**Auto Reset and the microscope is ready for the next case**

When the surgeon pushes the swing arm up and away from the operating table after each procedure, all the microscope functions are automatically reset. Now the microscope is ready for the next surgical case. The staff does not need to remember to reset the system before the next case, which saves time and provides peace of mind for staff and surgeon.

**Choice of foot switches for many functions**

Leica Microsystems offers three foot switch styles to meet the needs of all users. Standard functions, such as XY, zoom, focus, and illumination can be controlled from three choices. The 16-function cross pedal gives the user four additional options for individual tasks, such as inverter usage, StepCycle™ or the room light function. Additionally, the surgeon can now choose between a wired or a wireless foot switch.
Your choice of documentation
All the latest documentation options are available with the Leica M820. The Leica MDRS4 digital recording system, as well as many other commercially available digital video systems can be easily interfaced. Even classic, 35 mm photography can be performed.

The unique Leica Zoom Video Adapter
The Leica Zoom Video Adapter has a 3× optical zoom, which gives the surgeon full freedom to adjust the monitor image for observers without affecting the surgeon’s view. The monitor image can also be independently focused both before and during surgery by an easy-to-reach, fine focus adjustment knob, which can be covered by a sterilizable cap.

Interface for retinal procedures
The Leica M820 is designed to accept the most commonly used wide-angle observation systems and stereo image inverters. For the Oculus SDI/BIOM electronic inverter system, the surgeon can control its functions through the Leica 16-function foot switch. For surgeons who want to use the precision surgical slit lamp from Leica Microsystems, attachment to the Leica M820 is quick and easy. Laser shutters and laser filters can also be easily integrated.
### Leica M820 Technical Data

#### Electrical data
- **Power supply**: 100 – 240 VAC (±10%), 50/60 Hz
- **Power consumption**: 250 VA
- **Classification**: Class I

#### Microscope Leica M820
- **Magnification changer**: APO-Zoom 6:1, motorized, with 2 separate beam paths
- **Magnification**: 3.5× – 21× (WD 175 mm, 10× eyepieces)
- **Optics**: APO-chromatic corrected optics
- **Field diameter**: 7 mm – 80 mm
- **Working distance**: 175 mm, 200 mm and 225 mm
- **Focus range**: 54 mm, motorized, with automatic reset
- **Eyepieces**: Widefield eyepieces for eyeglass wearers (8.33×, 10×, 12.5×)
  - Dioptric setting ±5 with adjustable eye cup
- **Objectives**: Leica OptiChrome™, WD 175 mm, APO
  - Leica OptiChrome™, WD 200 mm, APO
  - Leica OptiChrome™, WD 225 mm, APO
  (WD = working distance)

#### Illumination
- **Quick-change lamp mount**: With two 12 V / 50 W halogen lamps
- **Filters**: IR-barrier filter, UV-barrier filter, two built-in filter holders for optional filters

#### Stand Leica F20
- **Type**: Floor stand with 3 friction brakes
  - Alternatives: Floor stand F40 with electromagnetic brakes, Ceiling mount C40 or Telescope mount CT40
- **Balancing**: Continuously adjustable gas spring
- **Load**: Max. 11.5 kg accessories attached to the microscope
- **Reach**: Max. 1480 mm
- **Vertical range**: 650 mm
- **Transport height**: Min. 1940 mm
- **Weight**: Approx. 270 kg as a fully configured system
- **XY-unit**: Motorized, movement range 50 × 50 mm, with automatic reset
- **Tilt mechanism**: Motorized, +15°/−50°
- **Hand / foot switches**: 16- or 12-function foot switch with controls arranged longitudinally or transversally, wired or wireless
  - 12-function hand switch

#### Control unit
- **Two-in-one display**: control and video display in one. The latest electronic control for the continuous governing of all motor functions and the light intensity. Data shown by means of LCD, with adjustable contrast and brightness. Operation by modern touch-panel control. ISUS™ Intelligent SetUp System, menu selection based on unique software for user specific configuration, with built-in electronic auto-diagnosis and user support.

#### Accessories Leica M820
- **Assistant attachment**: Stereo assistant attachment
- **Beamsplitter**: 50/50% or 70/30%
- **TV / Photo**: Leica 2D video systems
  - Leica MDRS4 digital recording system
  - Leica Zoom Video Adapter (VA) f = 35 – 100 mm, Manual VA 55/70 mm, Remote VA 55/70 mm
  - Photo/TV dual attachment: f = 60/85/107 mm for TV, f = 250/350 mm for 35 mm camera
  - Photo tube f = 250/350 mm
- **Wide-angle observation**: BIOM, EIBOS
- **Inverters**: AVI, SDI, DIVISL, ROLS
- **Laser**: Can be fitted, adapters available from laser suppliers
- **Slit lamp**: Motorized travel ±23°, slit width 0.01 – 15 mm, length 3 – 15 mm, Rotatable 180°, quick lamp-changer, made by Leica Microsystems
- **Asepsis**: Sterilizable components for all drive knobs, commercially available drapes

#### Standards
  - The Medical Division, within Leica Microsystems (Schweiz) AG holds the management system certificates for the international standards ISO 9001, ISO 13485 and ISO 14001 relating to quality management, quality assurance and environmental management.
“With the user, for the user”

Leica Microsystems

Leica Microsystems operates globally in four divisions, where we rank with the market leaders.

- **Life Science Division**
  The Leica Microsystems Life Science Division supports the imaging needs of the scientific community with advanced innovation and technical expertise for the visualization, measurement, and analysis of microstructures. Our strong focus on understanding scientific applications puts Leica Microsystems’ customers at the leading edge of science.

- **Industry Division**
  The Leica Microsystems Industry Division’s focus is to support customers’ pursuit of the highest quality end result. Leica Microsystems provide the best and most innovative imaging systems to see, measure, and analyze the microstructures in routine and research industrial applications, materials science, quality control, forensic science investigation, and educational applications.

- **Biosystems Division**
  The Leica Microsystems Biosystems Division brings high-end pathology labs and researchers the highest-quality, most comprehensive product range. From patient to pathologist, the range includes the ideal product for each histology step and high-productivity workflow solutions for the entire lab. With complete histology systems featuring innovative automation and Novocastra™ reagents, Leica Microsystems creates better patient care through rapid turnaround, diagnostic confidence, and close customer collaboration.

- **Medical Division**
  The Leica Microsystems Medical Division’s focus is to partner with and support surgeons and their care of patients with the highest-quality, most innovative surgical microscope technology today and into the future.

The statement by Ernst Leitz in 1907, “with the user, for the user,” describes the fruitful collaboration with end users and driving force of innovation at Leica Microsystems. We have developed five brand values to live up to this tradition: Pioneering, High-end Quality, Team Spirit, Dedication to Science, and Continuous Improvement. For us, living up to these values means: Living up to Life.

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**Active worldwide**

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and representatives in more than 100 countries

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www.leica-microsystems.com
Leica M820 F40

Premium Performance for Best Results
Microscope for Ophthalmic Surgery

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### Electrical data

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- **Power consumption**: 300 VA
- **Classification**: Class I

### Microscope Leica M820

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- **Optics**: APO-chromatic corrected optics
- **Field diameter**: 7 mm – 80 mm
- **Working distance**: 175 mm, 200 mm and 225 mm
- **Focus range**: 54 mm, motorized, with automatic reset
- **Eyepieces**: Widefield eyepieces for eyeglass wearers (8.33×, 10×, 12.5×)
- **Dioptic setting**: ±5 with adjustable eye cup
- **Objectives**
  - Leica OptiChrome™, WD 175 mm, APO
  - Leica OptiChrome™, WD 200 mm, APO
  - Leica OptiChrome™, WD 225 mm, APO
  (WD = working distance)

### Illumination

- **Quick-change lamp mount**: With two 12 V / 50 W halogen lamps
- **Filters**: IR-barrier filter, UV-barrier filter, two built-in filter holders for optional filters

### Stand Leica F40

- **Type**: Floor stand with 4 electromagnetic brakes
- **Balancing**: Continuously adjustable gas spring
- **Load**: Max. 12.2 kg accessories attached to the microscope
- **Reach**: Max. 1492 mm
- **Vertical range**: 846 mm
- **Transport height**: Min. 1949 mm
- **Weight**: Approx. 330 kg as a fully configured system
- **XY-unit**: Motorized, movement range 50 x 50 mm, with automatic reset
- **Tilt mechanism**: Motorized, +15° / –50°
- **Hand / foot switches**: 16- or 12-function foot switch with controls arranged longitudinally or transversally, wired or wireless
- **Control unit**: Two-in-one display, control and video display in one. The latest electronic control for the continuous governing of all motor functions and the light intensity. Data shown by means of LCD, with adjustable contrast and brightness. Operation by modern touch-panel control. ISUS™ Intelligent SetUp System, menu selection based on unique software for user specific configuration, with built-in electronic auto-diagnosis and user support.

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