The question is not whether you need a dental microscope, it’s which one.

Living up to Life
“Finally,” some say. – “Already,” we say. Because Leica Micro-systems went all the way and didn’t merely modify existing microscopes. We developed a totally new one from the bottom up. That is why the Leica dental microscope is the first system of its kind explicitly designed for modern dental medicine. The effort was worthwhile. The result is impressive:

**Leica M320 F12**

**The highlights:**
- Leica optics: the new paradigm of seeing
- Leica LED illumination: a global debut in dental medicine
- Leica high-definition imaging technology: the benchmark for image sharing and documentation
- Leica ergonomics: convenience for more efficiency
- Leica design: aesthetic, hygienic, innovative, refined
Leica optics: the new paradigm of seeing
No other optics brand is associated with more prestige and heritage than Leica. To the general public, the name stands for the highest quality photography; in the medical environment, it is respected by surgeons and microsurgeons.

Crystal clear apochromatic optical quality is the core component of Leica Microsystems’ high-level surgical microscopes. The same applies to the Leica M320 F12. Its optical system allows you to see more details than ever before. As the world’s first configuration with LED illumination, the Leica M320 F12 opens up new dimensions in vision: absolutely crisp, clear, and bright images with amazing depth of field for dental surgery and procedures.

LED technology in a dental microscope: a global debut
The future belongs to LED technology. It is aesthetic, cost-effective, and ecologically sound, while producing excellent quality illumination. Daylight-temperature LEDs provide high fidelity image colors. LEDs have no start-up delay: when switched on, they instantly deliver full light output. Additionally, because LEDs are small and compact, they are conducive to attractive product design approaches.

Finally, the 60,000-hour lifetime of an LED bulb exceeds that of conventional light sources by far and eliminates the need to replace fiber optic cables as well. All in all, LED illumination significantly reduces cost of ownership.

Leica optics with LED – a highlight in dental medicine.

Comparison is based on initial purchase price, average consumption of bulbs and periodic fiber optic cable replacement costs.

Start saving from day one with the Leica M320 F12.

Leica Microsystems’ optics system with LED delivers more light and enhanced detail for precise dental surgery. This can mean better patient outcomes and faster results.
The Information Age in Dental Medicine

**High-definition imaging**

The growing need for information places more demands on the dentist, while at the same time opening up new opportunities for sharing and documenting procedures. The Leica M320 F12 features, as an option, an integrated HD camera and recording system that has the ability to take a 3-megapixel still image or a MPEG-4 video and save all data onto an internal SD memory card.

The Leica imaging technology makes it easy to share information for teaching or consultation purposes, document cases, keep records, present at meetings, and a wide variety of different uses. Visual resources have become part of dental care and are instrumental for positioning in the competitive environment. Dentists who can visualize their skills gain trust.

**Leica high-definition imaging – the benchmark for documentation.**

Remote control to operate the documentation system from anywhere in the room. Remote control and SD memory card, shown here in actual size.
The Leica M320 F12 adapts to individual working preferences; for example, the dentist can choose either a perpendicular or inclined arm.
Easy Handling, Greater Efficiency

Unparalleled positioning flexibility
In addressing the requirements of the dentist, Leica Microsystems went beyond the refinement of optics and LED illumination and also focused on ease of use and maneuverability. All of the system articulations are exactly where they need to be and move with high-level precision. The microscope can be effortlessly positioned anywhere. The sophisticated mechanical engineering is easy to feel while using the microscope, and the stand features vibration-minimizing bearings for overall stability.

An individual fit
The dentist can select from an assortment of product accessories to ideally suit his or her working preferences and medical specializations. For example, Leica Microsystems offers a wide range of binoculars and objective lenses, the choice of a single or dual handle, and the Leica ergonomics modules: ErgoWedge™ and ErgoOptic Dent™. The result: a unique, customized microscope designed for the personal comfort of every user.

Leica ergonomics – convenience for more efficiency.
Hands-on Design for a Pleasant Ambience

Functional elegance is more than the result of an advanced design philosophy. It has a highly pragmatic origin: form follows function. The Leica dental microscope is virtually jointless, which makes it easy to clean. All cables are routed internally. The surface is protected with a permanent antimicrobial coating to reduce contaminants on the microscope. The handles can be washed and sterilized.

With its understated, contemporary design and slender silhouette, the Leica M320 F12 integrates well with any modern dental practice and is perceived by dentists, medical staff, and patients as a graceful, high-tech instrument.

**Leica M320 F12 – designed for dentists.**

AgProtect™: Typical structure of a metal powder produced via inert gas condensation (nano powder). This antimicrobial nano silver (Ag) coating reduces pathogens on the microscope and their transfer to the users.
ELECTRICAL DATA

Power socket 100–240 V AC (±10%), 50/60 Hz
Fuse 2 x T 6.3 A/250 V
Power consumption Leica M320 F12/C12/W12/FP12: 100 VA
Safety class Class I
Control unit Connection sockets for: Power cable, Video: HDMI / BNC

SURGICAL MICROSCOPE

Magnification Manual APOchromatic 5-step magnification changer 6.4/10/16/25/40×
Stereo base 24 mm
Objectives Fixed focal lengths from f=100 mm up to f=400 mm, Fine focusing lenses with f=200, 250, 300 mm
Eyepiece 10×21B, 12.5×17B, 8.33×22B, 10×21B with reticule
Reset functions Limit switch for light on/off
Light source Direct and long-lasting 2-LED illumination with average service life of 60,000 h
UV filter UV and IR-free LED illumination
Built-in orange filter OG530
Light intensity adjustment Using a drive knob on the optics carrier

STANDS

Max extension range 1775 mm (fully stretched for the inclined version)
Base 608 × 608 mm (footprint)
Transportation height Min 1621 mm
Balancing range Min 1.1 kg to max 4 kg load on the optics carrier
Brake system Fine adjustable mechanical brakes for all rotation axes with detachable brake
System weight Max load ca. 116 kg
Stand options Leica C12 Ceiling mount, Leica W12 Wall mount, Leica FP12 Floor plate

ACCESSORIES

Binocular tubes Selection of fixed and variable observation angle
Handles Two options: sterilizable and disinfectable
Knobs and protective glass Sterilizable
Orange filter External orange filter (530 nm) for illumination and observation
ErgoWedge 5° to 25° adjustment range for binocular tube with fixed angle
ErgoOptic Dent With 52° rotation range for binocular tube 0° to 180° variable angle

OPTICAL DATA

Range of magnification 1.5× – 40× with 10× eyepieces
Field of view 5.3 mm to 206 mm with 10× eyepiece

VIDEO ACCESSORIES

Leica M320 HD video and photo camera Integrated (optional) HD video camera with 1280×720P video resolution and 3-Megapixel still photo resolution, camera also has playback function for video and photo and thumbnail view, video (MPEG-4) and photo (jpg) storage on SD memory card (system comes with a 4GB SD memory card), video signal available in HDMI and analog (PAL/NTSC selectable), video storage optionally on external recording system, video/photo control through IR remote control and two hard keys on camera body, all camera settings with onscreen menu
Remote control IR-remote control for Leica M320 HD Video & Photo Camera
Leica M320 IVA Integrated (optional) video adapter for attachment of external c-mount cameras, focal length of optics: f=55 mm

AMBIENT CONDITIONS

Use +10°C to +40°C
+50°F to +104°F
30% to 75% relative humidity
500 mbar to 1060 mbar atmospheric pressure
Storage −30°C to +70°C
−22°F to +158°F
10% to 100% relative humidity
500 mbar to 1060 mbar atmospheric pressure

LIMITATIONS ON USE

The Leica 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

Classification: Class I, in compliance with Annex IX, rule 1 and rule 12 of the directive.
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 histopathology 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**.

### Active worldwide

<table>
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<tr>
<th>Country</th>
<th>City</th>
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<tr>
<td>Australia</td>
<td>North Ryde</td>
<td>+61 2 8870 3500</td>
<td>+61 2 9878 1055</td>
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<td>Vienna</td>
<td>+43 1 486 80 50 0</td>
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<td>Groot Biggaarden</td>
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<tr>
<td>Canada</td>
<td>Richmond Hill/Ontario</td>
<td>+1 905 762 2000</td>
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<td>Rijswijk</td>
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<td>People’s Rep. of China</td>
<td>Hong Kong</td>
<td>+852 2564 6699</td>
<td>+852 2564 4163</td>
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<td>Kista</td>
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<td>Heerbrugg</td>
<td>+41 71 726 34 34</td>
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<td>United Kingdom</td>
<td>Milton Keynes</td>
<td>+44 800 298 2344</td>
<td>+44 1908 246312</td>
</tr>
<tr>
<td>USA</td>
<td>Buffalo Grove/Illinois</td>
<td>+1 847 405 0123</td>
<td>+1 847 405 0164</td>
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and representatives in more than 100 countries

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