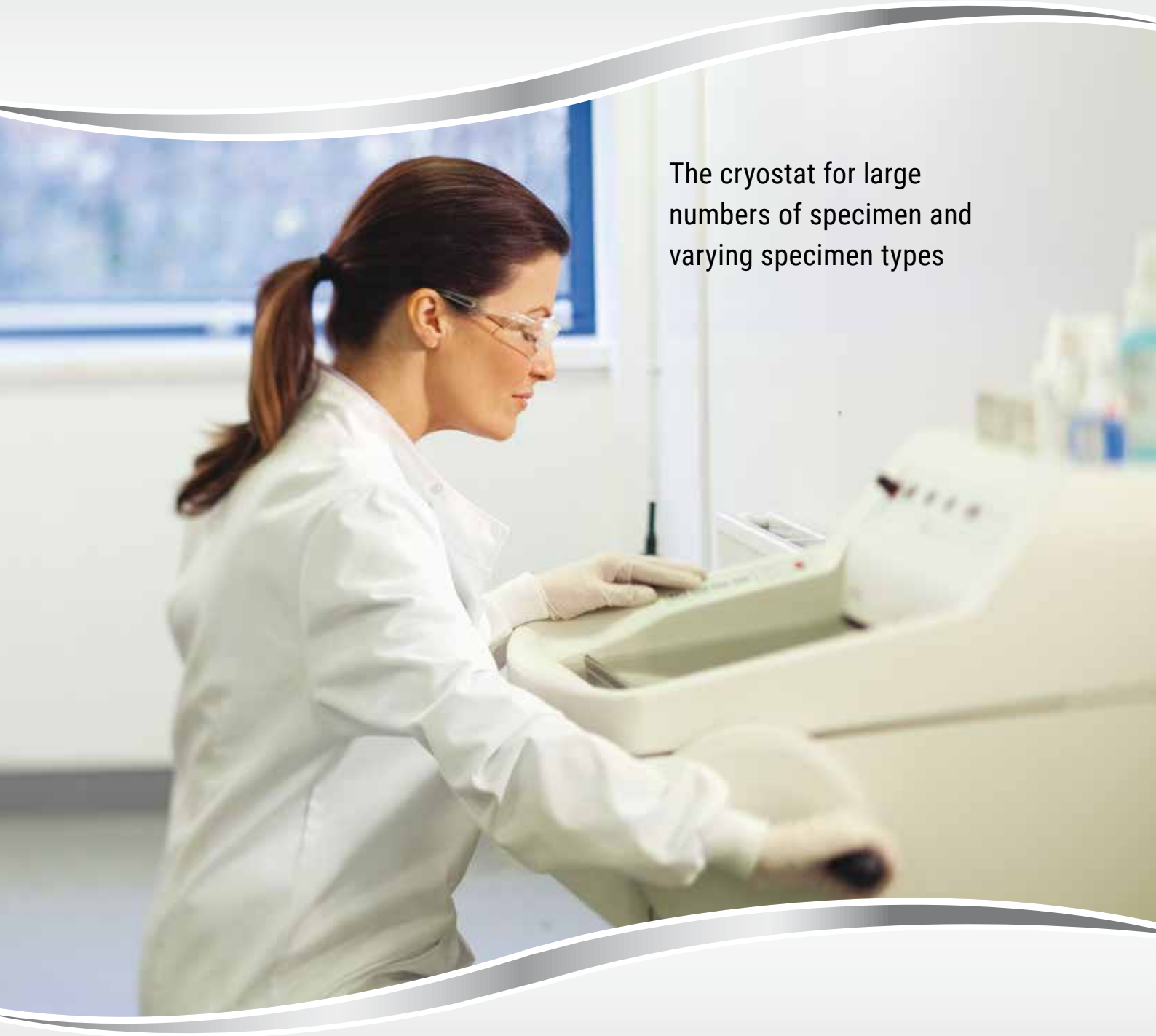
C O R E H I S T O L O G Y S O L U T I O N S

LEICA CM1950 PLATFORM



The cryostat for large numbers of specimen and varying specimen types

Advancing Cancer Diagnostics
Improving Lives

Leica
BIOSYSTEMS

Consistent and Reproducible Section Quality

Deliver diagnostic confidence

In-surgery cancer diagnostics relies on reproducible section quality within minutes. This can be a challenge when dealing with complex or difficult cases. Examples are a head- and neck surgery with multiple tissue samples from one patient, or varying tissue types from brain biopsies to lymph nodes. The Leica CM1950 provides the capacity and can be ordered with the functions, to support even these difficult types of frozen sectioning.

- Specimen disc designed for efficient freezing and easy handling
- Object head with reliable clamping and easy alignment of specimen
- CryoZone design provides for efficient cooling of blade and anti-roll guide
- Optional object head cooling allows to set tissue-specific temperatures
- Precision of the Leica Biosystems Microtome provides for reproducible sections
- Optional motor drive provides consistent stroke for hard specimen or large numbers of specimen

FAST FREEZING

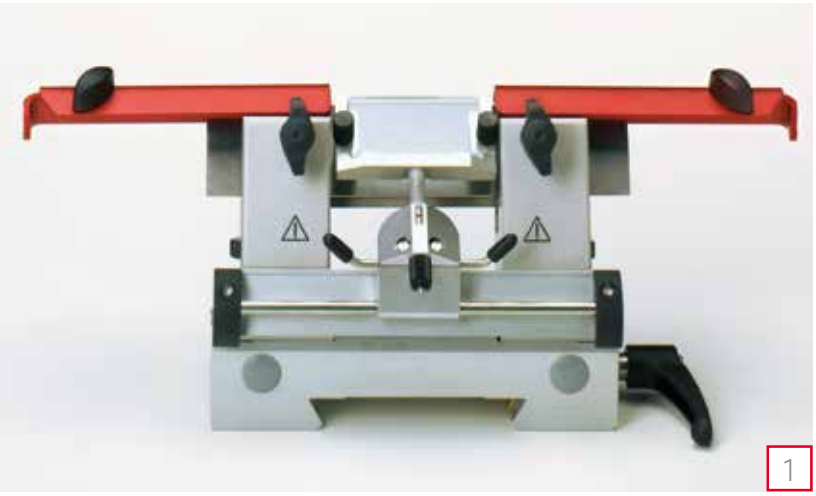
Stable specimen mounting supported with a deep groove design of the specimen discs. Discs are easily handled and suited for quick freeze-down on the CM1950's freezing shelf with integrated Peltier element due to the large contact surface of the flat stem design.

ACCURATE ALIGNMENT

The block face can be accurately aligned to the blade edge by using the specimen orientation system. The optional object head cooling provides for efficient specimen temperature control to adjust for difficult samples such as brain or fatty tissue.

COOL AIR CIRCULATION

The CryoZone™ system provides a zone of cool air in the critical areas of the cryochamber. Cool air entering the chamber moves around specimen, blade, and anti-roll guide and thus helps to keep critical areas at the right temperature.



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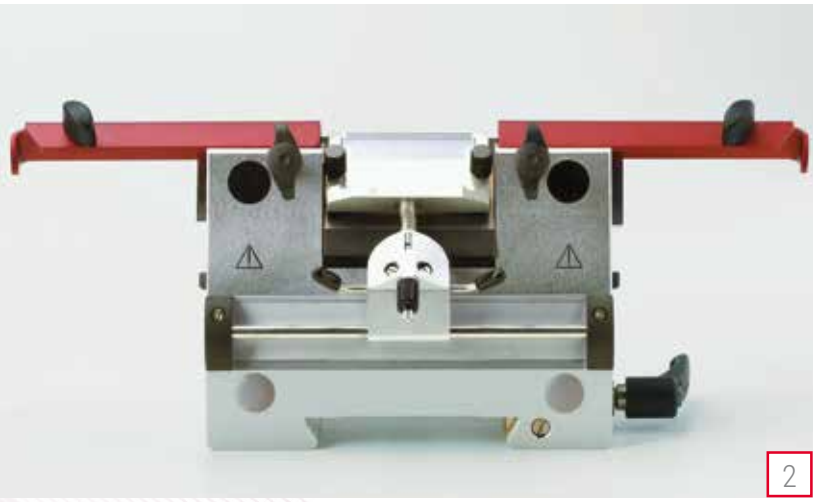

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REPRODUCIBLE SECTION QUALITY

Sectioning a variety of samples including large or hard objects requires the stability and quality that Leica's blade and knife holders provide. The CE blade holder supports the use of high- and low-profile disposable blades and can be laterally moved, allowing the use of the entire blade length. An anti-roll guide or palm rest for brush technique facilitate section flattening. The optional CN/CNZ knife holders support the use of a variety of reusable knives, especially for hard objects. For fast and efficient sectioning of hard objects or multiple specimen, the Leica CM1950 cryostat can be ordered with a motor drive. The blade holder's anti-roll guide can be equipped with an optional vacuum system that assist the user with section flattening.

1. Knife holder CN for steel knives (optional accessory)
2. Knife holder CNZ for steel or tungsten carbide knives (optional accessory)
3. The anti-roll guide can be equipped with an optional vacuum sectioning aid

Focus on Health and Safety

Reduce the risk of infection and injury

During frozen sectioning, safety is essential. Potentially infectious fresh tissue and sharp blades form a unique hazard, especially when the user's mind is on delivering a quality section fast. The Leica CM1950 cryostat provides multiple safety features, including a certified UVC disinfection that reduces pathogen contamination, including SARS-CoV-2.

- Certified UVC cryochamber disinfection reduces the risk of contamination by infectious material
- **Ag**Protect antimicrobial nanosilver coating on the instrument housing reduces the risk of touch contamination
- Optional Section Waste Removal System helps to safely remove section waste
- Finger guard and blade ejector reduce risk of cutting injuries
- Levers with plastic handles and plastic touchpoints can prevent frostbite, when adjusting the blade-holder

REDUCE BIOHAZARD EXPOSURE

The Leica CM1950's UVC cryochamber disinfection system and the **Ag**Protect nanosilver coating help to reduce the number of active pathogens inside and outside the cryostat. While **Ag**Protect is always active, the UVC system can be started when needed and simply stopped with opening the cryochamber window for the next sectioning.

SAFELY REMOVE WASTE

Section waste is easily removed by using Leica Biosystems' Vacuum Section Waste Removal System during trimming or after sectioning. Solid waste is collected in a concealed primary filter system and exhaust air is filtered through a HEPA filter for added safety in the laboratory environment.

REDUCE INJURY RISK

Blade and knife holders are equipped with integrated, colored safety guards to cover the blade for protection. The CE blade holder's blade ejector and a magnetic brush enable the user to safely remove the blade from the blade holder without touching it.

Workflow Efficiency

Ready for multiple users and numerous samples

A cryostat needs to be ready when it's needed for intra-operative consultation. The Leica CM1950 cryostat is designed with multiple users in mind and ready for numerous samples of different tissue types. It helps staying organized and staying focused on the sectioning job at hand.

- Single function keys and easily readable LED displays provide all relevant functions at the push of one button
- Ergonomically designed for multiple users and quick user change, yet comfortable enough for occasional long sectioning sessions
- Large freezing shelf with numbered positions helps keeping track of multiple samples
- Tool trays and storage shelf for keeping tools and accessories inside the cryochamber at hand
- Easily accessible storage area on top of the cryostat for reagents and utilities
- Encapsulated microtome and sealed cryochamber seems help with minimizing cleaning and maintenance

READY FOR MULTIPLE USERS

Leica CM1950 cryostat is designed to facilitate quick turnaround for multiple users. Single function keys and easily readable LED displays provide all relevant functions literally at the "push of one button".

ERGONOMICS FOR EFFICIENCY

The optimized height and off-center microtome help finding an ergonomic stand, so there is no need to adjust the instrument before starting the work. For occasional longer sectioning jobs, the optional Leica Biosystem's chair and adjustable footrest provide extra comfort.

WORKFSPACE ORGANIZATION

The Leica CM1950 cryostat provides designated storage shelves for samples, object holders, tools and an easily accessible storage on top of the instrument. Numbered freezing shelf positions and colored rubber rings on specimen discs help reducing the risk of specimen mix-up.

1 The brightly lit, ergonomic cryocabinet is spacious enough to allow efficient handling of multiple specimens.

2 Store tools, glass slides, staining containers, and freezing media on top of the cryostat to have these items immediately at hand.

3 Ready for multiple users with single-function buttons and convenient working height.

4 The microtome is off-center to the right, so that the handwheel is easily accessible for manual section.

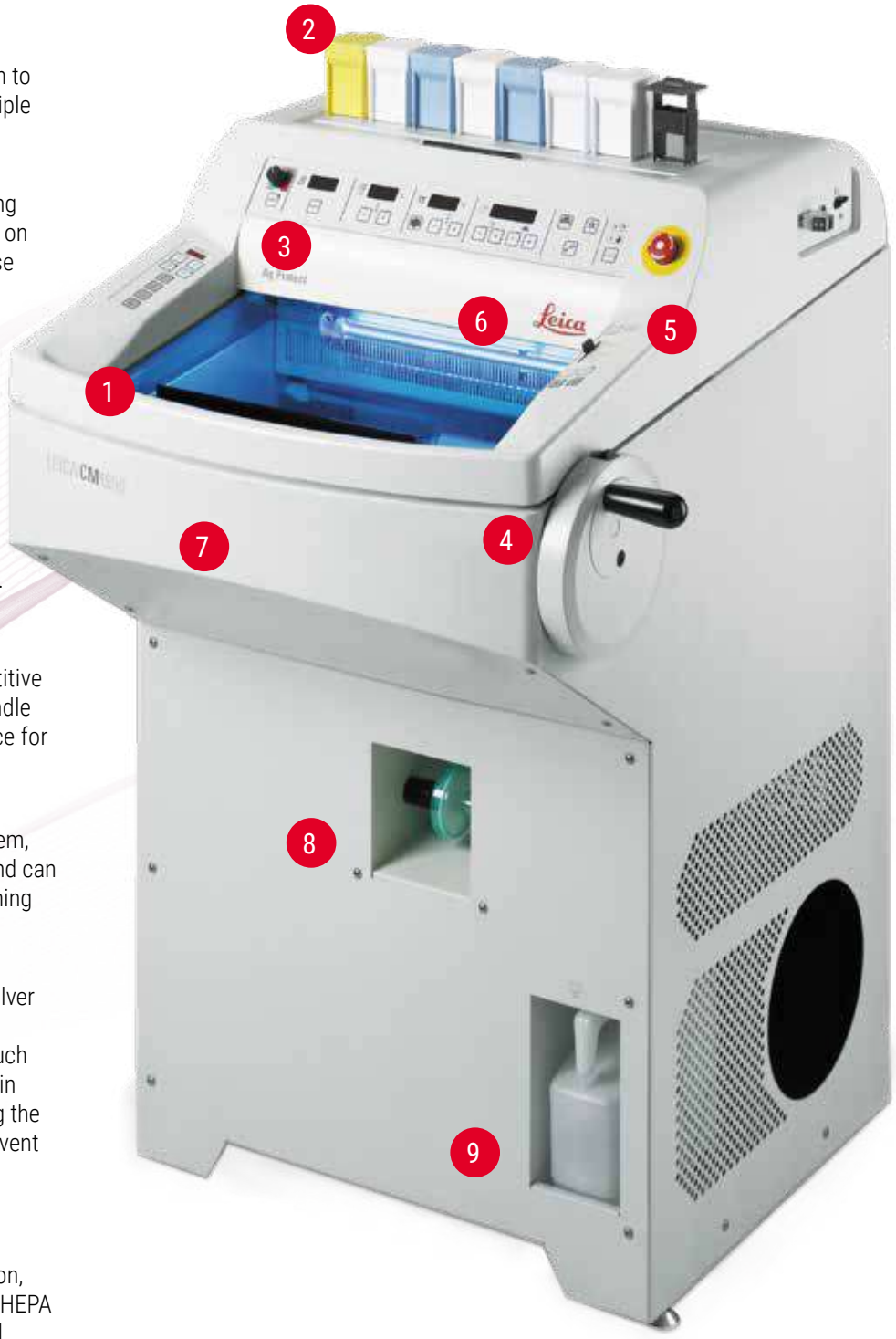
5 Optional motor drive for extra productivity and reduced repetitive motion stress. Handwheel handle can be centered to spin in place for motorized sectioning.

6 Certified UVC disinfection system, free of hazardous chemicals and can be stopped at any time by opening the glass window.

7 **Ag**Protect antimicrobial nanosilver coating on the instrument housing, reduces the risk of touch contamination. The nanosilver in AgProtect works by penetrating the membranes of microbes to prevent replication.

8 To protect the laboratory environment from contamination, a multi-filter system (including HEPA filter) removes particulates and cleans the air exhausted from the optional Section Waste Removal System.

9 Liquid condensate is collected in an easily accessible waste container.



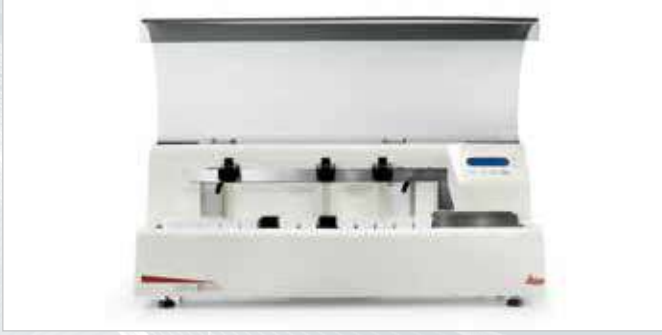
Technical Specifications

The Leica CM1950 basic instrument is equipped with UVC Disinfection, **Ag**Protect™ antimicrobial nanosilver coating, CryoZone™ technology, and encapsulated microtome with specimen orientation. The instrument can be ordered with various options including actively cooled object head (dual compressor,) motorized sectioning drive, vacuum section waste removal system, and a wide range of accessories.

Microtome	
Section thickness range	1 to 100 µm
Trimming thickness range	Set at 10 to 40 µm or 1 to 600 µm
Horizontal specimen feed	25 mm + 1 mm
Vertical specimen stroke	59 mm ± 0.5 mm
Specimen retraction	20 µm (can be deactivated)
Maximum specimen size	50 x 80 mm
Specimen orientation	±8 ° (x-, y-axis)
Coarse feed	Slow: 300 µm/s; Fast: 900 µm/s
Cryochamber	
Temperature range	0 °C to -35 °C ±5 K, adjustable in 1 K increments, at ambient temperature of 20 °C
Cooling time to -25 °C	approx. 5 h at 20 °C ambient temperature
Defrosting	Automatic or manual hot gas defrost, 1 automatic defrost cycle/24 hours, time-controlled (duration 12 min.)
Quick-freeze shelf	
Minimum temperature	Minimum temperature -42 °C (±5 K), at chamber temp. -35 °C (+5 K)
Number of freezing stations	15+2
Defrosting	Manual hot gas defrost
Peltier element	
Max. Temperature difference	-17 K, at chamber temperature of -35 °C +5 K
Number of freezing stations	2
UVC disinfection	30 or 180 minutes, user selectable
AgProtect	Permanently applied to instrument housing surface
Dimensions and weights	
Width (w/o handwheel)	700 mm
Width (with handwheel	835 mm
Depth	850 mm
Height	1215 mm
Working height (armrest)	1025 mm
Weight without accessories	145 kg - 193 kg, depending on configuration

Options	
Object head cooling	**optional**, operated with separate compressor
Temperature range	-10 to -50 °C ± 3 K
Defrosting	Manual electrical heater defrost
Motorized microtome	**optional**
Sectioning speed Slow	0 to 50 strokes/min
Sectioning speed Fast	0 to 85 strokes/min
Max. Speed	85 to 90 strokes/min
Vacuum extraction system	**optional**, includes extraction nozzle for cleaning and suction nozzle for section flattening

LeicaBiosystems.com



CRYOSECTIONING SOLUTIONS

Leica ST4020 Linear Stainer
Easily stain surgical frozen sections with compact linear stainer that is small enough to sit close to your cryostat.

Disposable Blades
Choose the blade you need from Leica Biosystems' diverse range of coated, uncoated, high- and low-profile blades.

Slides
Many color and adhesive options make it easy to find the right slide for your application.

Embedding Media
Leica Biosystems can supply a range of embedding media including Tissue Freezing Medium, FSC22™ and Cryo-Gel.

Dr. Peters Cryoembedding System
Easily achieve proper specimen orientation and uniform embedding with the original Dr. Peters Face-Down embedding system for advantages in precision, speed and decreased tissue wastage (Journal of Histotechnology, 26:11, 2003).

Leica Biosystems is an international company with a strong network of worldwide customer services. For detailed contact information on your nearest sales office or distributor please visit our website: LeicaBiosystems.com

Leica Biosystems is a global leader in workflow solutions and automation. As the only company to own the workflow from biopsy to diagnosis, we are uniquely positioned to break down the barriers between each of these steps. Our mission of "Advancing Cancer Diagnostics, Improving Lives" is at the heart of our corporate culture. Our easy-to-use and consistently reliable offerings help improve workflow efficiency and diagnostic confidence. The company is represented in over 100 countries. It has manufacturing facilities in 9 countries, sales and service organizations in 19 countries, and an international network of dealers. The company is headquartered in Nussloch, Germany. Visit LeicaBiosystems.com for more information.

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