

# Leica CM1950 Platform

The cryostats for high quality sectioning, user safety, and efficient workflow

The Leica CM1950 platform is the latest innovation in a long line of distinguished cryostats manufactured by Leica Biosystems. Leica designed and developed the new family of cryostats based upon users’ feedback and their requirements for high quality sections, user safety, and efficient laboratory workflow.

## HIGH QUALITY SECTIONING

- High precision microtome with stepper motor object feed
- Motorized sectioning (optional)
- Stable specimen clamp system
- Flat specimen discs for high specimen stability
- Rapid freezing shelf design
- Effective object cooling system (optional)

## USER SAFETY

- UVC disinfection
- **AgProtect™** antimicrobial nanosilver surface coating
- Disposable blade holder CE
- Debris-free, frost-free enclosed microtome assembly
- Leica’s Section Waste Removal System (optional)
- Spacious cabinet with rounded edges inside and out

## EFFICIENT WORKFLOW

- UVC disinfection at any time and temperature
- Organized work space inside and out
- Frost-free, encapsulated microtome assembly
- Leica’s Section Waste Removal System with easily-accessible, concealed filter system (optional)
- Easily recognizable control symbols
- Visible operating parameters at all times



- 1 The brightly lit, ergonomic cryocabinet is spacious enough to allow efficient handling of multiple specimens.
- 2 Store tools, glass slides, staining containers, etc. in a recessed area on top of the cryostat to have these items immediately at hand.
- 3 For extra ease of use and consistent sectioning of all specimen types, an optional sectioning motor drive is available.
- 4 Learn quickly and work confidently using the externally located, self-explanatory controls with easily recognizable symbols.
- 5 For an extra measure of safety, the inside of the instrument features an ozone-free UVC disinfection system that is certified to be effective against most bacteria, virus, and fungi, even at cold temperatures.
- 6 Increased safety for the user and others in the immediate work area: Leica's **AgProtect™** antimicrobial nanosilver surface coating deters the propagation of infectious agents on the outside of the instrument.
- 7 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.
- 8 Liquid condensate is safely collected in an easily accessible waste container.

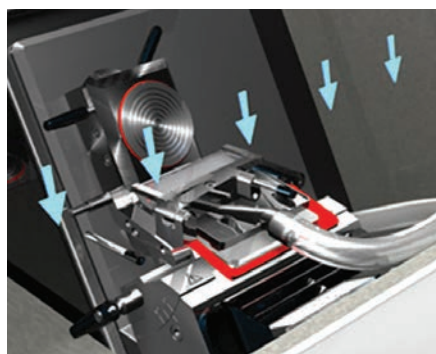
# High Quality Sectioning

Obtain high quality sections through:

- NEW: CryoZone™ blade holder and anti-roll guide cooling
- Maintaining the ideal object temperature for specific specimens
- Great stability of the microtome and blade holder system
- Extreme accuracy of the stepper motor object feed
- Consistent motor-driven cutting stroke (optional)
- Vacuum-assisted sectioning aid (optional)
- High precision microtome with exact stepper motor object feed

## COOL AIR CIRCULATION

The cool way to improve section quality! The CryoZone™ system controls a zone of uniformly cool air in the critical areas of the cryochamber. This cool air circulates around the specimen, knife and anti-roll guide to create the optimal conditions for consistent, high-quality sectioning.



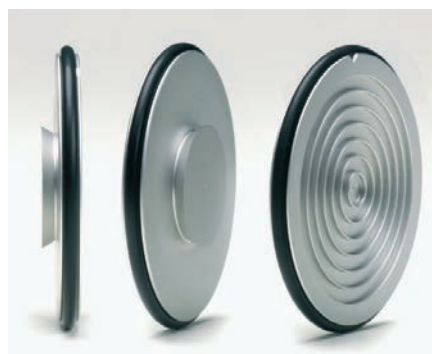
## EFFICIENCY

Efficient specimen loading is achieved via single lever operation that provides maximum clamping force independent of individual user strength. Direct contact cooling through the (optional) actively cooled object head facilitates rapid changes of specimen temperatures to provide the best conditions for sectioning various specimen types.

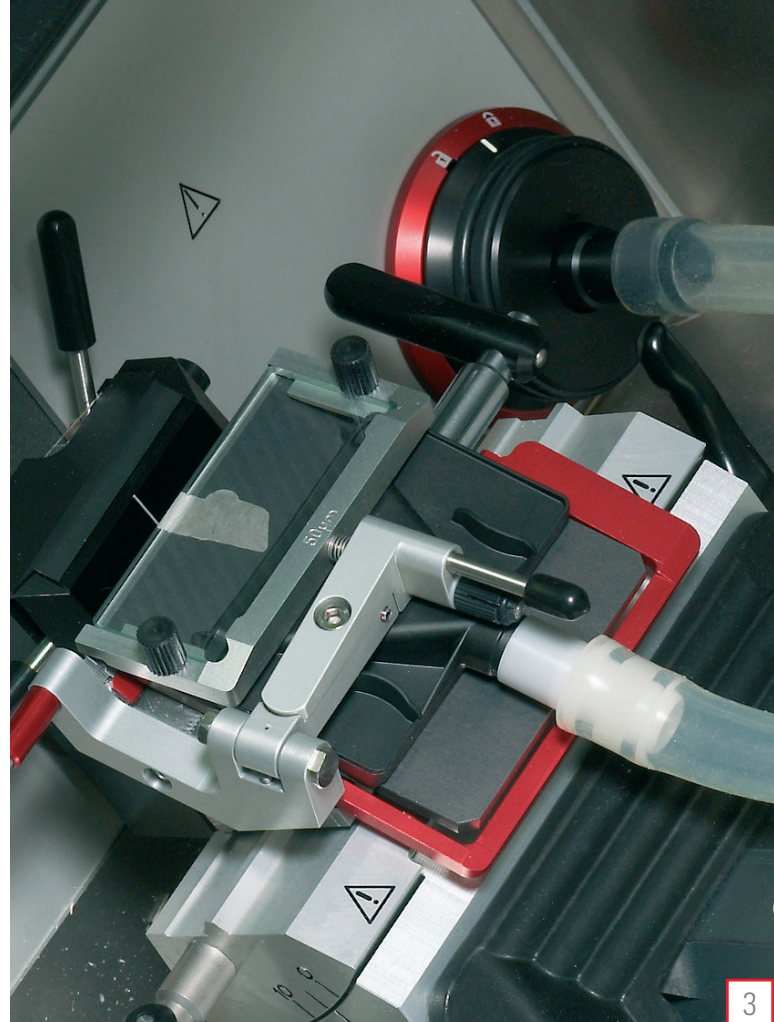
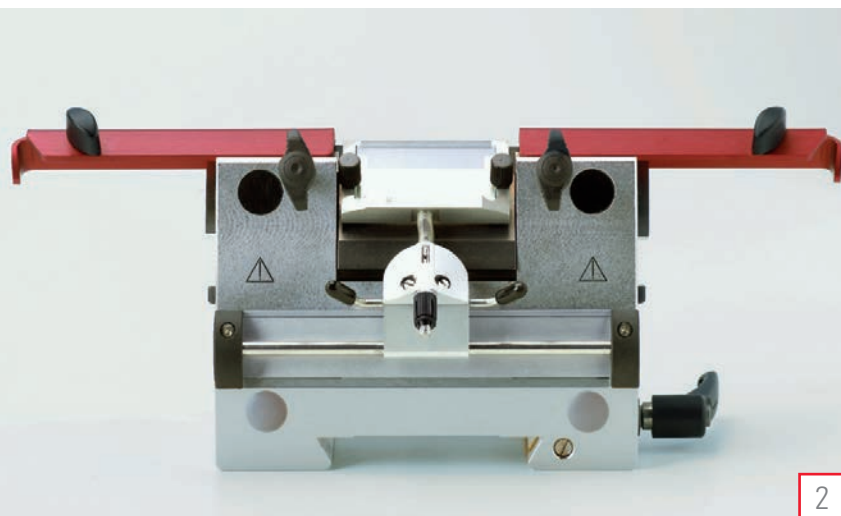
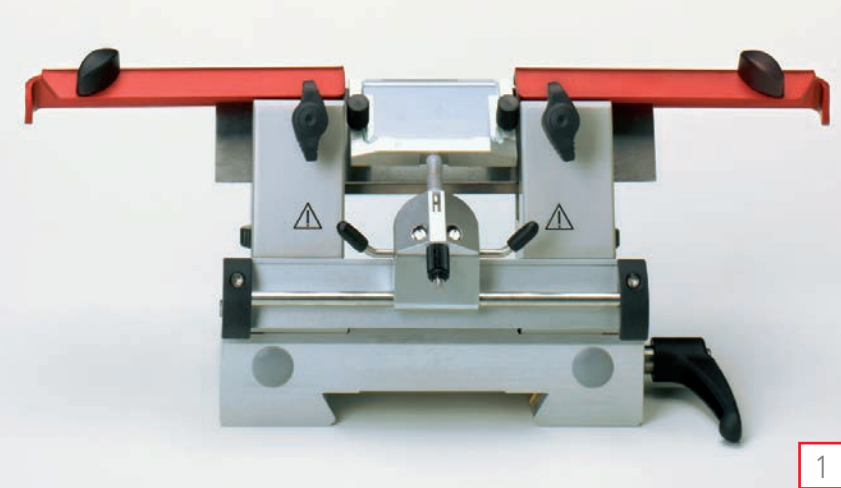


## FAST FREEZING

High specimen stability is achieved by adherence to deeply grooved specimen discs. Specimens freeze quickly because the pre-cooled discs feature a large back surface that fully contacts the freezing shelf with integrated Peltier element.



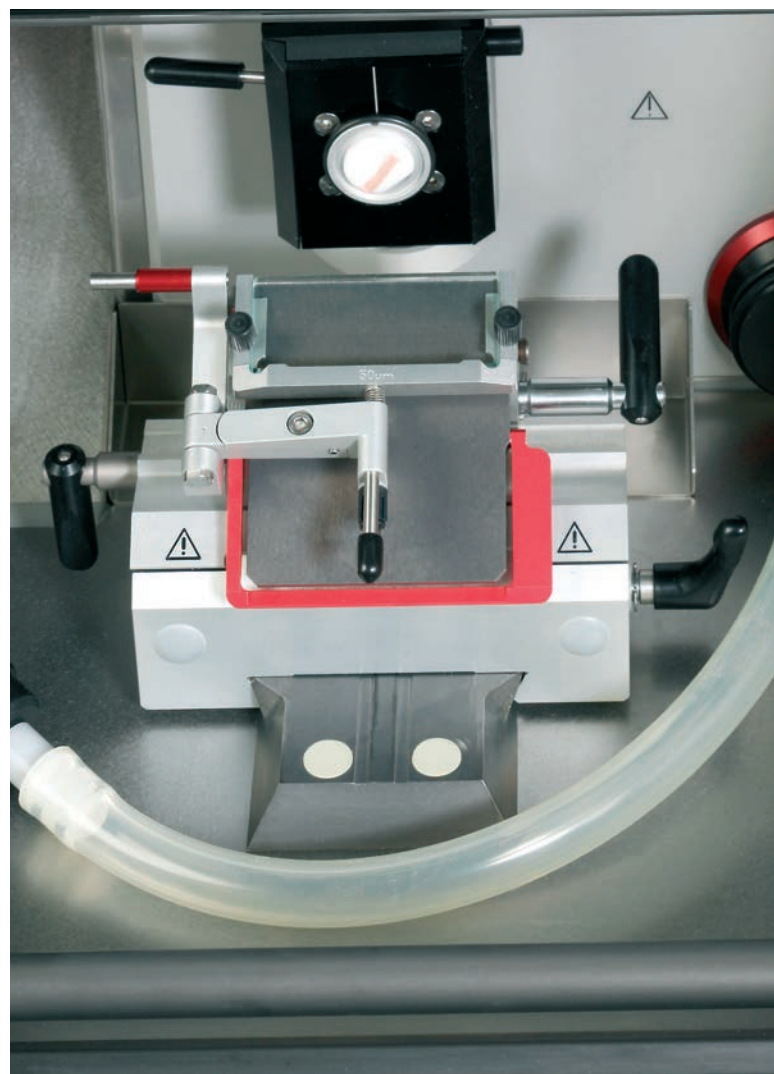




## VIBRATION-FREE SECTIONING

Superior sectioning of routine, hard, and/or large samples is achieved using a choice of knife/blade holders as well as the new dove tail mounting system that provides increased stability and extended working distance. The new CE holder for high and low profile disposable blades evenly distributes clamping pressure across the entire length of the blade, which provides vibration-free sectioning.

1. Knife holder CN for steel knives (optional accessory)
2. Knife holder CNZ for steel or tungsten carbide knives (optional accessory)
3. The optional vacuum sectioning aid achieves time-saving section preparation and reduces section curling



# Highest User Safety

Histology laboratories continue to express major concerns about biohazard exposure and non-ergonomic work practices. As a result of their feedback, the Leica CM1950 family of cryostats is designed to provide maximum protection from these risks at all stages of the sectioning process.



- Certified UVC disinfection of exposed surfaces and air within the cryochamber at cold temperatures
- **AgProtect™** antimicrobial nanosilver coating on the outside surfaces of the cryostat to efficiently reduce the propagation of infectious agents. Silver (Ag) ions are well documented for their ability to reduce bacterial growth
- Optional Section Waste Removal System with a series of three filters
- Ergonomic exterior cabinet design with rounded edges and comfortable working height
- Optional ergonomic chair and foot rest

## COMFORTABLE WORKING

The ergonomic design of the Leica CM1950 protects the user from sharp edges and helps prevent workrelated musculoskeletal disorders (MSD) and repetitive strain injury (RSI). Rounded edges allow the user to adopt a comfortable working position. Bright, glare-free illumination helps reduce eye fatigue.



## DISPOSABLE BLADE HOLDER CE

The new disposable blade holder CE with integrated, colored safety guard and blade removal aid makes blade handling safer. For users who prefer using the brush technique during sectioning, the palm rest can be used instead of the anti-roll guide.



## USER COMFORT

For individual user comfort, the Leica chair and height adjustable foot rest are available as optional accessories.



# Highly Efficient Workflow

The best workflow for efficient operation is achieved by:

- Simple specimen identification using the optional, color-coded specimen discs
- Fast, efficient specimen orientation with clearly defined zero position
- Disposable blade holder for both high and low profile blades
- Frost-free, enclosed microtome assembly
- Optional motor drive for specimen sectioning
- Certified UVC disinfection at low temperatures - does not produce condensation or contaminated waste, is effective at low temperatures, and can be terminated at any time to process urgent cases

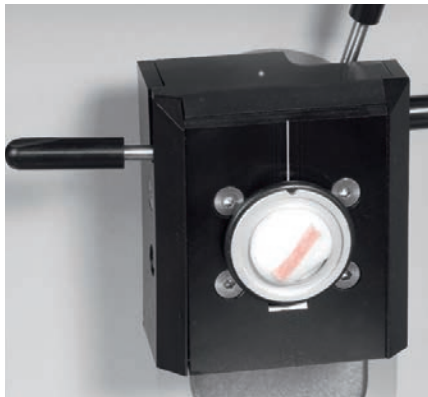
## FOR MULTIPLE USERS

The self-explanatory, single-function keys and easily readable LEDs help prevent operating errors, facilitate cryosectioning, and make scrolling through multiple menus unnecessary. The control panels are comfortably positioned in the armrests to eliminate the need to reach into the cold chamber to use or adjust settings.



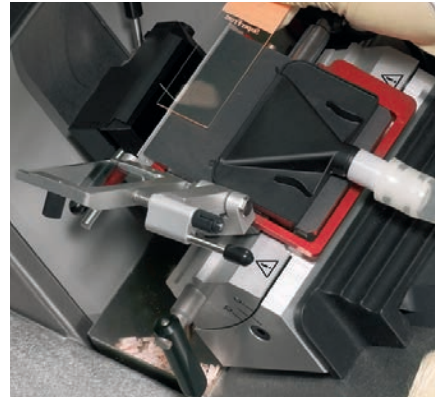
## SPECIMEN ORIENTATION

A clearly defined zero-position allows faster specimen alignment prior to sectioning and easy realignment if the specimen is removed from the object head.



## DISPOSABLE BLADE HOLDER

With the disposable blade holder CE blade exchange is simple and fast. The holder's lateral displacement function allows the use of the full length of the blade. Small and large sections are easily lifted from the large, horizontal pressure plate.





# Leica CM1950 Technical Specifications

The Leica CM1950 basic instrument is equipped with CryoZone™ technology, UVC Disinfection, specimen orientation and AgProtect™ antimicrobial nanosilver coating.

An individual, tailor-made instrument can be configured by use of the various options available:

- Actively cooled object head (double compressor)
- Vacuum Section Waste Removal System
- Motorized Sectioning
- A wide range of accessories

|                                     |  |   |
|-------------------------------------|--|---|
| UVC surface disinfection:           | 30 or 180 minutes, user selectable   |   |
| <b>Microtome</b>                    |  |   |
| Section thickness range:            | Setting values:  | 1 to 100 µm<br>1.0 µm – 5.0 µm in 0.5 µm steps<br>5.0 µm – 20.0 µm in 1.0 µm steps<br>20.0 µm – 60.0 µm in 5.0 µm steps<br>60.0 µm – 100.0 µm in 10.0 µm steps                            |
| Trimming range:                     | <b>Clinical:</b>   | 10 – 40 µm  |
|                                     | Setting values:  | 10 µm, 20 µm, 30 µm, 40 µm  |
|                                     | <b>Research:</b>   | 1 – 600 µm  |
|                                     | Setting values:  | 1,0 µm – 10,0 µm in 1,0 µm steps<br>10,0 µm – 20,0 µm in 2,0 µm steps<br>20,0 µm – 50,0 µm in 5,0 µm steps<br>50,0 µm – 100,0 µm in 10,0 µm steps<br>100,0 µm – 600,0 µm in 50,0 µm steps |
| Maximum specimen size:              | 50 x 80 mm   |   |
| Total specimen feed:                | 25 mm  |   |
| Vertical specimen stroke:           | 59 mm  |   |
| Specimen retraction:                | 20 µm or off   |   |
| Specimen orientation:               | 8° (x-, y-axis), 360° rotation of specimen disc  |   |
| <b>Electric coarse feed:</b>        | Slow:  | 300 µm/s, in 20 µm steps  |
|                                     | Fast:  | 900 µm/s  |
| <b>Cryochamber</b>                  |  |   |
| Temperature range:                  | 0 °C to -35 °C at ambient temperature of 20 °C   |   |
| <b>Specimen Cooling (optional)</b>  | Temperature range:   | -10 to -50 °C   |
| <b>Defrosting of specimen head:</b> | manual defrost   |   |
| <b>Cryochamber defrosting</b>       |  |   |
| Automatic cryochamber defrosting:   | programmable, (hot gas defrost),<br>selectable time,<br>1 defrost in 24 h or manual hot gas defrost,<br>defrost time: 12 minutes |   |
| Automatic shut off defrost:         | at – 5 °C chamber temperature  |   |

**Quick-freeze shelf**

|                              |  |
|------------------------------|--|
| Minimum temperature:         | down to – 42 °C, at chamber temp. – 35°C |
| Number of freezing stations: | 15 + 2                                   |
| Defrost:                     | manual hot-gas defrost                   |

|                                 |                                   |
|---------------------------------|-----------------------------------|
| Peltier element                 |                                   |
| Number of freezing stations:    | 2                                 |
| Maximum temperature difference: | 17 K, at chamber temp. of – 35 °C |

|                   |         |
|-------------------|---------|
| <b>Power draw</b> | 1900 VA |
|-------------------|---------|

**General information**

|                              |                          |
|------------------------------|--------------------------|
| Operating temperature range: | 18°C to 35°C             |
| Relative humidity:           | max. 60%, non-condensing |
| Storage humidity:            | < 60%                    |

**Dimensions and Weights**

|                            |         |
|----------------------------|---------|
| Width (without handwheel): | 700 mm  |
| Width (with handwheel):    | 835 mm  |
| Depth (cabinet only):      | 800 mm  |
| Height (total):            | 1215 mm |
| Working height (armrest):  | 1025 mm |

|                                 |        |
|---------------------------------|--------|
| Weight:                         | 165 kg |
| Weight (with vacuum):           | 183 kg |
| Weight (with motor):            | 185 kg |
| Weight (with motor and vacuum): | 193 kg |

**Choice of blade or knife holders:**

Stable blade holder base with segment arc for lateral displacement of the blade. Disposable blade holder insert CE for high and low profile blades with 2 anti-roll guides with 50 and 100 µm spacer with glare minimizing glass insert, colored safety guard and blade removal help. Palm rest for brush technique.

Stable knife holder base for knife holder CN or knife holder CNZ. Knife holder CN for reusable steel knives  
Knife holder CNZ for reusable steel or tungsten carbide knives with central pressure plate for full usage of the knife.

Wide range of accessories available on request.  
Technical specifications subject to change without prior notice. As confirmed by the successful c\_CSA\_us certification, the Leica CM1950 has been designed and manufactured in compliance with US, Canadian and IEC requirements.

The Cryostats for high quality sectioning, user safety and efficient Lean Histology™ workflow.

