Vibrating Microtomes

Precision Tissue Sectioning

Campden Instruments

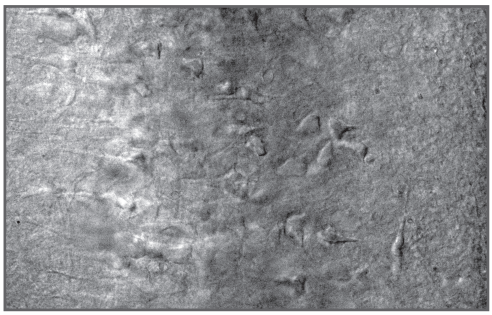
campdeninstruments.com/vibrating-microtomes

9000SMZ

The culmination of over 40 years of tissue slicer research and development, the Campden Instruments 9000SMZ Vibrating Microtome provides tissue slices for visual patching, extracellular recording and imaging of neurological (e.g. brain slice, spinal cord), heart, lung and liver tissue.

- Proven high-quality slices with high cell viability
- No chatter marks
- Variable blade frequency and amplitude to cater for all tissue types
- Precise control of advance speed, adjustable during slicing, for the perfect slice
- Measure and correct blade Z-axis deflection (down to 0.1µm), essential for quality slices
- Slice window mode for fast, automatic sectioning
- Clear visibility of tissue; positional adjustments can be made during slicing
- Store up to 8 user slice profiles for easy recall

Slices taken from 9 month-old rats



Area CA1

Entorhinal Cortex

5100MZ & 5100MZ-Plus

This budget microtome is perfect for techniques such as histology, organotypic slice culture and low resolution imaging.

- Shares many features with the flagship vibratome series
- Mechanism Z axis error of less than 10µm
- Manual or Semi automatic operation
- Control handset allows full remote control

The 5100MZ-Plus is designed for techniques requiring viable slices for longer durations such as electrophysiological field recordings or ISME's.

- Optimal Z-axis deflection 2 µm

SPECIFICATIONS

	9000SMZ	5100MZ-Plus	5100MZ
Optimal Z-Axis Deflection	0 µm (±0.1 µm)	2.0 µm (±0.1 µm)	≈5-8 µm
Opti-cal Vertical (Z-axis) Calibration Device*	Included as standard	Included as standard	Optional Accessory
Blade Oscillation Frequency Range	20–120 Hz	50-80 Hz	50-80 Hz
Blade Oscillation Amplitude	Minimum: 0.5 mm Maximum: 3.0 mm	Minimum: 0.5 mm Maximum: 1.5 mm	Minimum: 0.5 mm Maximum: 1.5 mm
Amplitude Step Size	0.25 mm	0.5 mm	0.5 mm
Advance Speed Resolution During Slicing	0.01 mm/sec	0.1 mm/sec	0.1 mm/sec
Specimen Retraction as Blade Retracts	Yes	Yes	Yes
Max Specimen Size	28 x 40 x 19 mm	28 x 40 x 19 mm	28 x 40 x 19 mm
Slice Thickness	1–999 µm in auto mode, Up to 20 mm in manual mode		
Memory to Store Section Thickness	Yes	Yes	Yes
Cutting Range	40 mm	40 mm	40 mm
Multiple User Settings	8 different	8 different	8 different
Operating Modes	Manual, semi-automated, or fully automated	Manual or semi-automated	Manual or semi-automated
Cooling Options	Ice bath or optional Model 7610A Tissue Bath Cooler		
Physiological Temperature Unit	Yes	Yes	Yes
Dimensions (not including accessories or controls)	16.5” x 15.7” x 10.6” 420 x 400 x 270 mm	13.7” x 17.7” x 13.7” 350 x 450 x 350 mm	13.7” x 17.7” x 13.7” 350 x 450 x 350 mm

* Campden’s ‘Opti-cal’ is calibrated with metrology equipment traceable to National Standards

RECENT RESEARCH

Studies of visual patching and extracellular recording of neurological, heart, kidney and lung tissue have been published using our Vibrating Microtomes for over 40 years. More published research is available upon request.

Bibliography

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Boaten et al. (2025, April 27-30). **User interface refinements and quality assurance assessment in an updated popular tissue vibratome** [Poster presentation]. *International BNA2025 Festival of Neuroscience*. Liverpool, England, UK.

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Contact Us for a Quotation, a Full Bibliography, and More

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