



SWING BUCKET REFRIGERATED CENTRIFUGE (4 X 4 X 15 ML)

Swing Bucket Refrigerated Centrifuge (4 x 4 x 15 mL) - ToronCent™ LSR SB

ToronCent™ LSR SB is a swing bucket refrigerated centrifuge for molecular diagnostics, clinical laboratories, and mobile collection programs handling tubes from 0.5 mL to 50 mL. The swing rotor carries 4 x 4 x 15 mL, sixteen tubes per run, at 4,200 rpm and 2,958 x g. An angle rotor is available separately, trading bucket flexibility for 5,000 rpm and 3,555 x g across twelve 15 mL positions. Chamber temperature sets from -20°C to 40°C within $\pm 1^\circ\text{C}$.

A stainless steel chamber resists the disinfectants that routine decontamination calls for, and cleans up without corroding at the seams. Refrigeration runs on a fully enclosed rotary compressor with R134a refrigerant, sealed against the movement and vibration a vehicle-mounted installation produces. Suction-cup feet anchor the 55 kg chassis to the work surface. The unit draws 500 W and holds noise at or below 65 dB(A).

Control comes through a 5-inch HD touchscreen showing setup values and live run parameters together. Bracket and adapter combinations cover 0.5 mL and 1.5 mL microtubes, 5 mL and 10 mL tubes, 15 mL conical tubes, and 50 mL formats, along with vacuum blood collection tubes and nucleic acid centrifuge tubes. Over-speed, over-temperature, and lid lock monitoring run in the background on every cycle. Brackets order separately from the swing rotor, so the configuration can be built around the tube formats a laboratory actually runs.

APPLICATIONS

Swing Bucket Refrigerated Centrifuge (4 x 4 x 15 mL) - ToronCent™ LSR SB Applications

The ToronCent™ LSR SB covers general purpose separation where tube formats vary from run to run and sample temperature has to stay controlled. The nested bracket and adapter system is what lets one rotor serve that range.

- **Molecular Diagnostics and Nucleic Acid Testing:** dedicated capacity for nucleic acid centrifuge tubes in extraction and PCR sample preparation workflows
- **Clinical Serum and Plasma Separation:** vacuum blood collection tubes spin to a flat cell interface in the swing rotor, giving clean aspiration
- **Mobile Blood Collection Programs:** suction-cup mounting and a sealed compressor let the unit run on a collection vehicle without shifting in transit
- **Cell Culture and Suspension Harvesting:** gentle pelleting of cells in 15 mL and 50 mL conical tubes with the chamber held near 4°C
- **Microtube Sample Preparation:** 0.5 mL and 1.5 mL adapters handle DNA precipitation, protein pellets, and small-volume spins on the same rotor
- **Coagulation and Special Chemistry:** platelet-poor plasma preparation under temperature control for PT, aPTT, and factor assays
- **Research Laboratories:** general purpose separation across tube sizes where one instrument has to cover several protocols
- **Reference and Outreach Laboratories:** batch tube processing at collection points before transport to the main site



FEATURES

Swing Bucket Refrigerated Centrifuge (4 x 4 x 15 mL) - ToronCent™ LSR SB Key Features

The ToronCent™ LSR SB is built as a general purpose platform: two rotor geometries, a wide tube range, and a chassis made for both fixed benches and moving ones.

- **Dual Rotor Compatibility:** one drive takes an angle rotor for speed (5,000 rpm, 3,555 x g) and a swing rotor for interface quality (16 x 15 mL), covering two protocol types
- **Stainless Steel Chamber:** stands up to routine disinfection without corroding, and wipes down cleanly after a spill or tube breakage
- **Fully Enclosed Rotary Compressor:** the sealed design with R134a refrigerant tolerates vibration and movement, suiting vehicle-mounted and mobile installations
- **Suction-Cup Feet:** the base grips the bench so the chassis stays anchored during transport or on an uneven surface
- **5-Inch HD Touchscreen:** setup and running parameters share one screen, so status reads at a glance mid-protocol
- **±1°C Temperature Control:** holds the chamber close to setpoint across the -20°C to 40°C range for temperature-sensitive samples
- **Nested Bracket and Adapter System:** brackets set the tube count, adapters set the tube size, so one rotor covers 0.5 mL through 50 mL
- **Nucleic Acid Tube Capacity:** brackets accept nucleic acid centrifuge tubes alongside standard clinical formats, with no improvised inserts
- **Layered Safety Protection:** over-speed, over-temperature, and lid lock interlocks halt the run before a fault reaches the operator or the sample
- **Compact 415 x 625 mm Footprint:** refrigerated capability with two rotor options on a benchtop, at 500 W draw
- **Environment-Friendly Refrigerant:** the R134a circuit meets current refrigerant requirements while holding cooling performance

THEORY & METHOD

Theory and Method

Two rotor geometries solve two different problems, which is why this platform accepts both. An angle rotor fixes tubes at a slant, giving particles a short path to the outer wall where they pack against the tube side. The compact geometry tolerates higher speed, which is how the angle rotor reaches 5,000 rpm and 3,555 x g. Pellets form at an angle and can slide when the rotor stops.

Swing buckets hang vertically at rest and pivot to horizontal under rotation. Particles then travel the full length of the tube, and the pellet forms flat at the bottom with a level interface above it. That level interface is what makes a swing rotor right for plasma work, since aspiration can reach close to the cell layer without disturbing it. The extended radius at horizontal costs top speed, so the swing rotor here runs to 4,200 rpm and 2,958 x g.

Relative centrifugal force, not rpm, is what a protocol specifies, and the two relate through radius: $RCF = 1.118 \times 10^{-5} \times r \times N^2$. Swapping rotors changes r , so the same rpm setting produces a different field. Operators moving a method between rotors should convert through x g rather than carrying the rpm value across. Refrigeration matters through the run because air shearing against the rotor heats the chamber, and $\pm 1^\circ\text{C}$ control holds the setpoint while that happens.

TECHNICAL SPECIFICATIONS

Swing Bucket Refrigerated Centrifuge (4 x 4 x 15 mL) - ToronCent™ LSR SB Technical Specifications

Parameter	Specification
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Max Speed	5,000 rpm (angle rotor); 4,200 rpm (swing rotor)
Max RCF	3,555 x g (angle rotor); 2,958 x g (swing rotor)
Max Capacity	4 x 4 x 15 mL (16 tubes, swing rotor) or nucleic acid tubes; 12 x 15 mL (angle rotor)
Speed Accuracy	±30 rpm
Time Setting Range	1 min to 99 min
Temperature Setting Range	-20°C to 40°C
Temperature Accuracy	±1°C
Compressor Unit	High-performance fully enclosed rotary compressor, R134a refrigerant
Chamber	Stainless steel
Display	5-inch HD touchscreen
Safety Protection	Over-speed, over-temperature, lid lock
Chassis	Suction-cup feet for bench anchoring
Noise	≤65 dB(A)
Voltage	AC 220 V ±22 V, 50 Hz (110V is also available)
Power Consumption	500 W
Dimensions (W x D x H)	415 × 625 × 320 mm
Packing Dimensions (W x D x H)	960 × 530 × 520 mm
Net Weight	55 kg

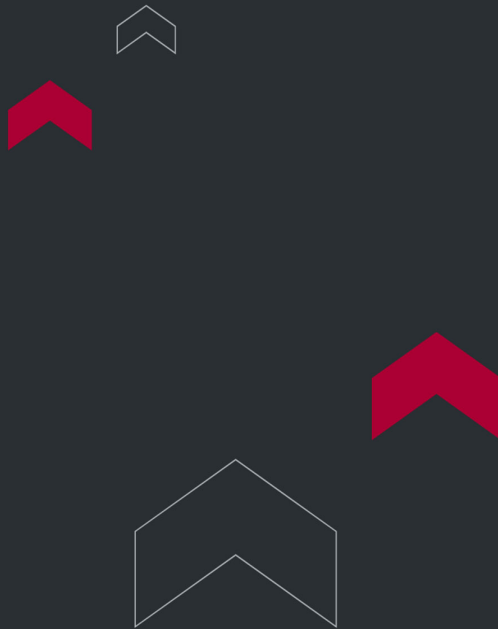
Rotor Options

Rotor	Type	Max Speed	Max RCF	Max Capacity
Rotor 1	Angle rotor	5,000 rpm	3,555 x g	12 x 15 mL
Rotor 2	Swing rotor	4,200 rpm	2,958 x g	4 x 4 x 15 mL (brackets ordered separately)

Swing Rotor Brackets and Adapters

Bracket	Bracket Capacity	Adapter
50 mL bracket	4 x 50 mL	15 mL (conical)
15 mL bracket	4 x 4 x 15 mL	1.5 mL
15 mL bracket	4 x 4 x 15 mL	5 mL
15 mL bracket	4 x 4 x 15 mL	10 mL
5 mL bracket	4 x 6 x 5 mL	1.5 mL
5 mL bracket	4 x 6 x 5 mL	0.5 mL

Brackets are ordered separately from the swing rotor. Additional adapter configurations can be customized on request.



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