



TORONTECH

STANDARD SINGLE- OPERATOR VERTICAL LAMINAR FLOW CABINET



Standard Single-Operator Vertical Laminar Flow Cabinet - ToronLFCab™ SO-S

ToronLFCab™ SO-S is a compact, single-person vertical laminar air flow cabinet purpose-built for individual operators requiring an ISO Class 5 / Class 100 particulate-free clean bench environment. Its front-access, single-side open design maximizes workspace accessibility while the quasi-closed vertical downflow table maintains a positive-pressure clean-air curtain that resists room-air ingress — making it the ideal clean bench for sterile sample handling, cell culture, PCR preparation, and other contamination-critical single-operator tasks.

The ToronLFCab™ SO-S is a vertical laminar flow cabinet designed for single-operator use in research, clinical, pharmaceutical, and industrial laboratories where product and sample protection from airborne particulate contamination is the primary requirement. Operating at ISO Class 5 (Class 100), it generates a continuous, unidirectional downward sweep of HEPA-filtered air across the SUS304 stainless steel worktable, displacing contaminants away from the sample and out through the open front — creating one of the cleanest achievable work environments in a standard laboratory setting.

The cold-rolled steel housing with electrostatic powder-coat finish provides long-term structural durability, while the SUS304 stainless steel worktable resists corrosion and supports thorough surface decontamination with standard laboratory disinfectants. A low-noise centrifugal fan with stable rotational speed drives the laminar airflow, and six-stage wind speed control allows the operator to set air velocity precisely between 0.3 and 0.6 m/s.

The LCD touch-panel controller manages all operational functions — fan speed, work lamp, UV sterilization lamp, and sterilization timer — from a single intuitive interface. Independent control of the UV lamp with a 0-999 minute timer allows pre-session surface decontamination and post-session sterilization cycles to be automated without activating the work lamp.

APPLICATIONS

Standard Single-Operator Vertical Laminar Flow Cabinet - ToronLFCab™

SO-S Applications

The ToronLFCab™ SO-S laminar flow cabinet and clean bench is suited to single-operator contamination-sensitive workflows, including:

- Sterile pharmaceutical compounding & dispensing
- Cell culture media & reagent preparation
- PCR & molecular biology setup
- Microbiological sample plating
- Semiconductor & microelectronics component handling
- Optical & precision instrument assembly
- Quality-control sample inspection
- Food science & cosmetic product formulation

Note: The ToronLFCab™ SO-S is a laminar air flow cabinet (clean bench) that protects the product/sample from environmental contamination. It does not provide operator protection from biological or chemical hazards. Do not use with biohazardous, cytotoxic, or volatile chemical materials.



FEATURES

Standard Single-Operator Vertical Laminar Flow Cabinet - ToronLFCab™ SO-S Key Features



- Cold-rolled steel housing with electrostatic powder-coat finish; grade SUS304 stainless steel worktable provides corrosion resistance and easy surface decontamination for clean bench workflows
- Low-noise centrifugal fan with stable rotational speed maintains consistent vertical laminar airflow at ≤ 67 dB noise and ≤ 5 μm vibration half-peak value in all three axes



- LCD touch-panel controller provides intuitive single-interface management of fan speed, work lamp, UV sterilization lamp, and sterilization timer
- Six-stage wind speed control enables precise airflow adjustment between 0.3 and 0.6 m/s to match the sensitivity of different samples and procedures
- Independent UV lamp circuit with 0-999 minute sterilization timer allows automated preand post-session surface decontamination without activating the work lamp
- Vertical quasi-closed table design generates a positive-pressure clean-air curtain at the front opening, actively resisting room-air ingress and maintaining ISO Class 5 cleanliness within the laminar air flow cabinet

- Two-stage filtration — medium-efficiency pre-filter upstream of HEPA — captures coarse particles before they reach the primary filter, extending HEPA service life and reducing maintenance costs

THEORY & METHOD

Theory and Method

The ToronLFCab™ SO-S uses vertical unidirectional laminar airflow to maintain ISO Class 5 cleanliness within the work zone. Room air enters through a medium-efficiency pre-filter at the intake, where larger particles are captured before reaching the HEPA filter. The HEPA filter removes $\geq 99.97\%$ of airborne particles $\geq 0.3 \mu\text{m}$, producing a continuous, smooth, downward-directed stream of ultra-clean air across the full worktable surface.

This downward laminar flow sweeps contaminants away from the sample and out through the open front of the cabinet, maintaining a positive-pressure clean zone that resists room-air ingress during normal operation.

The six-stage fan speed control allows the operator to set air velocity between 0.3 and 0.6 m/s. Lower speeds reduce turbulence for particularly delicate samples; higher speeds provide stronger positive-pressure protection in less-clean ambient environments. The medium-efficiency pre-filter stage upstream of the HEPA captures larger particles before they can load the primary filter, substantially extending HEPA service life.

Before and after work sessions, the UV germicidal lamp can be activated via the independent UV circuit and sterilization timer (0–999 min) to decontaminate the interior surfaces and air volume of this laminar flow cabinet without requiring the work lamp to be on.

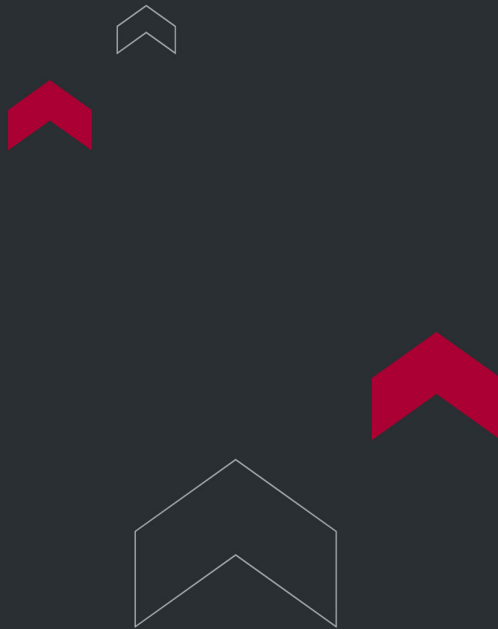
TECHNICAL SPECIFICATIONS

Standard Single-Operator Vertical Laminar Flow Cabinet - ToronLFCab™

SO-S Technical Specifications

Parameter	ToronLFCab™ SO-S
Airflow Direction	Vertical
Working Sides	2 (front & back)
Persons per Side	1 / 1
Cleanliness Class	ISO Class 5 (Class 100)
Wind Speed (m/s)	0.3 – 0.6
Noise (dB)	≤67
Vibration Half-Peak Value (X, Y, Z) (µm)	≤5
Illuminance (Lux)	≥300
Interior Dimensions W×D×H (mm)	870×700×520
Exterior Dimensions W×D×H (mm)	990×724×1,650
HEPA Filter Dimensions (mm)	820×615×50
Number of HEPA Filters	1
Work Lamp (W × pcs)	20 × 1
UV Lamp (W × pcs)	20 × 1
Rated Power (kW)	0.15
Voltage (V, Hz)	220 ±10, 50/60 (110V is also available)
Net Weight / Gross Weight (kg)	105 / 136 109 / 140

Parameter	ToronLFCab™ SO-S
Package Size (mm)	1,110×820×1,820



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