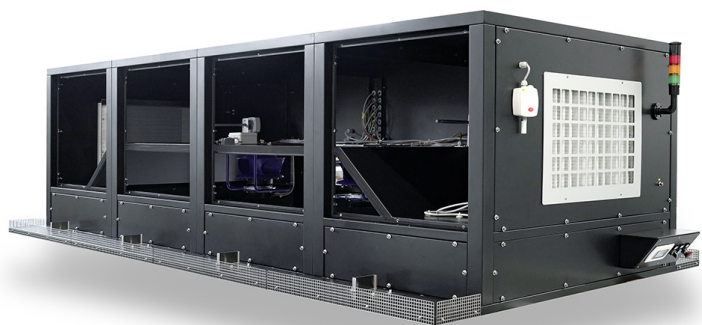




THERMOSTATIC HOOD – CT COSTUM



The ThermoStatic Hood is an air handling unit designed to draw air from an enclosed laboratory, treat it thermally and filter it, and re-introduce it towards an underlying optical table with controlled temperature and cleanliness.

The air treatment process takes place through the following sequential stages:

- Extraction of ambient air from the laboratory through intake openings on the hood structure;
- Pre-filtration through G4 class filters (EN 779) for the removal of coarse particles;
- Cooling through water/air heat exchanger coils, supplied with chilled water at 13-18°C, to bring the air to the operating temperature;
- Absolute filtration through H14 HEPA filters (efficiency $\geq 99.995\%$ for particles $\geq 0.3 \mu\text{m}$, EN 1822:2019). To guarantee ISO 6 cleanliness class;
- Delivery of the treated air (filtered and thermostated at $21 \pm 0.5^\circ\text{C}$) towards the underlying optical table, in laminar flow at a nominal velocity of 0.25 m/s.

The ThermoStatic Hood is designed to operate in combination with:

- The underlying optical table (customer-supplied, not included in the scope of supply), which also acts as the mechanical support for the hood;
- Optional extra;
- Side sliding compartmentation walls, which delimit the workspace between the hood and the optical table, separating it from the surrounding environment.

The unit is built from four structural modules – two central ventilation/treatment modules and two filtering end-modules – assembled at the factory. Two plenums complete the airflow path: an upper plenum where the two treated air streams merge and mix before crossing the absolute filters, and a lower plenum, downstream of the HEPA H14 filters, from which filtered air is delivered towards the optical table.



The Thermostatic Hood is classified as machinery under the Machinery Directive 2006/42/EC and carries CE marking.

SKU: N/A



PRODUCT DESCRIPTION

CONTROL SYSTEM

The control system is based on the Carel Pco5+ programmable controller and manages:

- Regulation of supply air temperature (setpoint 21 ± 0.5 °C) via motorized valves on the exchangers;
- Fan speed control (airflow modulation via 0-10V signal);
- Filter status monitoring via pressure switches (G4 pre-filters on Module 1 and 2, sampled HEPA absolute filter);
- Alarm management with activation of an acoustic/visual signal tower;
- Remote supervision via BMS protocol (Modbus RTU over RS-485).

The pGD1 keypad interface allows the operator to consult plant status, view the main process values, check alarms/pre-alarms and adjust the authorized operating parameters (temperature setpoint, alarm thresholds/delays, fan speed limits). It does not replace the physical control and safety devices (run selector, emergency stop button, microswitches).

A signal tower provides at-a-glance status indication (steady green = running normally; flashing green = running with plenum temperature out of tolerance; steady amber = OFF by selector; flashing amber=pre alarm, unit still running; flashing red = serious alarm, unit stopped; steady red = emergency stop pressed).

STANDARD FEATURES

- Modular construction (2 ventilation/treatment modules + 2 filtering end-modules);
- Painted tubular steel structure with sandwich panels and transparent Perspex inspection doors;
- Two centrifugal EC fans with integrated mixing units for anti-condensation control;
- G4 pre-filtration stage with clogging pressure switches;
- H14 HEPA absolute filtration stage, ISO 6 cleanliness class;
- Programmable microprocessor control (Carel Pco5+) with pGD1 keypad interface;
- Signal tower (acoustic/visual alarm indication);
- Fixed guards on fan blades;
- Modbus RTU/RS-485 BMS connectivity;
- CE marking in accordance with the Machinery Directive 2006/42/EC, Low Voltage Directive 2014/35/EU and EMC Directive 2014/30/EU.



OPTIONAL ACCESSORIES

- Additional temperature/humidity sensors;
- Extended BMS supervision packages;
- Spare filter kits (G4 pre-filters, H14 HEPA filters);
- Custom dimensional configurations to match different optical table footprints.

INTENDED USE

Designed for use in combination with a customer-supplied optical table and side sliding compartmentation walls, in laboratory environments requiring controlled temperature and air purity above sensitive optical equipment. Not intended for use in explosive or potentially explosive atmospheres, and not designed to allow personnel to enter the workspace between the hood and the optical table (hand access only, for placement/retrieval of optical instruments).















