SPECIFICATION SHEET · TC SERIES (THERMAL CHAMBER)

TC-4 Thermal Chamber

Liquid-nitrogen cooled thermal chamber for fast temperature cycling and thermal screening without vibration, with a 30 × 30 × 47 in (762 × 762 × 1,194 mm) interior: the width and depth of the VTC-4. Designed, built and supported in Allegan, Michigan.

†Photo shows the VTC-4.

30 × 30 × 47 in (762 × 762 × 1,194 mm)	-100 to +200 °C	70 °C/min	48 kW	1,900 lb (862 kg)
interior (W × D × H)	temperature range	product change rate*	heaters	weight

THERMAL PERFORMANCE

Temperature range	−100 to +200 °C
Product change rate*	70 °C/min, −65 to +100 °C
Temperature control	±1 °C after stabilization; stabilization in under 2 minutes
Cooling	Liquid nitrogen, direct atomization in the control plenum, with a redundant safety valve
Heating	48 kW balanced nichrome wire heaters, zero-cross SCR control
Air flow	Adjustable plenum: multiple 3 in ports on each side direct the airflow onto the product
Thermocouples	Two Type T: one in the control air, one for product response

CHAMBER

Interior (W × D × H)	30 × 30 × 47 in (762 × 762 × 1,194 mm)
Exterior (W × D × H)	60 × 44 × 95 in (1,524 × 1,118 × 2,413 mm)
Doors	Two, front and back
Windows	Two, 20 × 20 in (508 × 508 mm), tempered multi-pane
Lights	Two, adjustable
Ports	Two 6 in for customer use
Insulation	Multilayer staggered insulation, for thermal and noise insulation
Sound level	73 dBA nominal at 1 m
Weight	1,900 lb (862 kg)

UTILITIES

Electrical	480 V, 3-phase, 60 FLA
Liquid nitrogen	1 in supply, 40–50 psig (2.8–3.4 bar)
Compressed air	3/4 in, 120 psig (8.3 bar), 45 SCFM (76 m^3/h), clean and dry
Exhaust	One 4 in exhaust ports, vented to outside
Installation	Unloading, rigging and utility connections are provided by the customer

CONTROL AND INSTRUMENTATION

Control	Watlow F4T controller with Hanse ChamberCore software: programmable temperature ramps and closed-loop cascade control of the product temperature, over Ethernet
ChamberDAQ	24 universal inputs on each Watlow F4T (thermocouple, RTD, mA, mV/V), with more F4Ts for more inputs, plus up to eight WebDAQ modules for 128 external thermocouple channels

SAFETY

Door interlocks	Opening a door shuts off system operation
Emergency power off	EPO shuts off system operation
Over/under limit	FM-approved, with its own sensor in the air stream
Interlocks	Heaters and LN2 interlocked to the fans; three-phase supply monitored for phase loss and balance
Electrical code	Built to NEC code with UL / CE marked components

*Measured 4" above center of table, −65 °C to +100 °C.

OPTIONS

- **Extended temperature** — down to −150 °C and up to +400 °C, as an option or custom build.
- **Humidity** — direct water injection, 10 to 85% RH from 25 to 65 °C, with a capacitance sensor.
- **More thermocouples** — 14 more, for 16 monitored in all.
- **Floor plug** — an insulated plug that reduces the working volume.
- **Anti-condensate heaters** — for the door, windows and outer surfaces.
- **LN2 system** — complete installation, piping and controls.
- **Vibration** — add a standalone 6-DoF vibration table, or choose the VTC-4 HALT/HASS chamber.

WARRANTY AND SUPPORT

- **1-year equipment warranty** from shipment: parts and labor for the first 90 days, then parts at no cost other than travel.
- **Supported for the long term** — including controller retrofits for older systems.
- **Built in Allegan, Michigan** — designed, fabricated and supported in the US since 1993.

*Measured 4" above center of table, −65 °C to +100 °C.

Specifications are subject to change without notice. Any Hanse chamber can be modified to fit your requirements.

Request a quote at hanseenv.com/contact-hanse-environmental · Tel 1-269-673-8638 · hanseenv.com/thermal-chambers/tc-4 · Revised October 23, 2026

*Measured 4" above center of table, −65 °C to +100 °C.