



TENSILE TEST CHAMBER TORONTTC™ 40-300

Tensile Test Chamber ToronTTC™ 40-300 is designed to meet precise temperature requirements for material testing. It features a fully enclosed compressor refrigeration system and a PID-controlled temperature regulator for exceptional accuracy with minimal temperature overshoot. A centrifugal fan ensures consistent airflow, maintaining uniform conditions within the chamber.

This advanced testing equipment is ideal for universities, research institutions, and industrial facilities focused on materials analysis. It seamlessly integrates with testing machines without requiring modifications. Equipped with a track system, the high-temperature chamber can be easily moved when conducting room-temperature tests, enhancing ease of use.

The chamber supports tensile, compression, bending, and shearing tests for both metal and non-metal materials under extreme temperature conditions. It is well-suited for specialized industries, including plastics and rubber, ensuring reliable performance across various applications.

APPLICATIONS

Standards

1. Metallic materials – Tensile testing at elevated temperatures
2. Other relevant industry standards for high- and low-temperature testing chambers and tensile testing of metallic materials

FEATURES

Key Features

- 1. Uses compressor refrigeration for low-temperature conditions, while thermal compensation operates through a PID-controlled heater system.
- 2. The exterior features an electrostatic coating, while the inner liner is made of mirror-finish stainless steel. The front door includes an observation window with a demisting function, and built-in lighting allows for clear monitoring during testing.
- 3. The temperature control system utilizes PID regulation with a display precision of 0.1°C, ensuring accurate and stable temperature management.
- 4. A centrifugal fan forces air circulation within the chamber, maintaining a uniform temperature gradient that meets test standard requirements.
- 5. Designed with a guide rail system, allowing for easy movement of the test chamber in and out of the testing machine’s test space.
- 6. Features a "U"-shaped cutout on both the top and bottom ends, equipped with a sealing component for seamless integration with the testing machine.

TECHNICAL SPECIFICATIONS

Temperature control range	-40 300°C
Temperature control accuracy	±1°C
Temperature uniformity	±2°C (Axial center 200mm)
Cooling speed (25°C room temp)	1 2°C/min (Free load)
Heating speed	1 3°C/min (Free load)
Internal dimensions	250 × 530 × 430 mm (W × H × D)
External dimensions	370 × 670 × 640 mm (W × H × D)
Tensile rod hole size	φ 50 mm

Dimensions reference	See dimensions picture
Voltage	AC220V, 50Hz (110V is also available)
Power	2.2 kW
Operating environment Temperature	5°C□ 30°C

Configuration

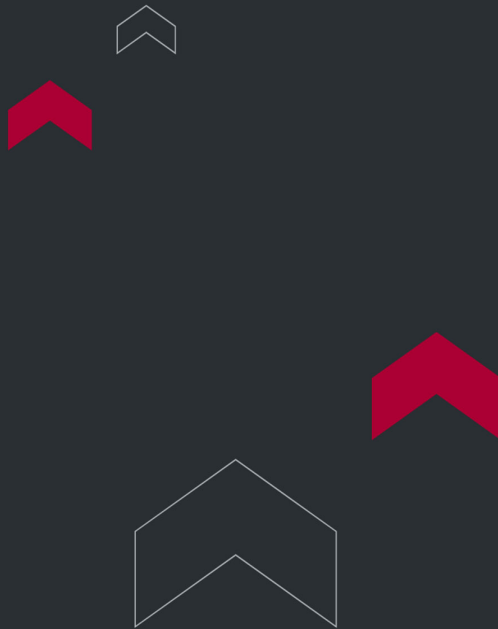
- 1. **Observation Window:** Hollow electric-heated glass prevents condensation during low-temperature tests.
- 2. **Temperature Control:** PID automatic temperature regulation ensures precision.
- 3. **Exterior Material:** Cold-rolled iron plate with electrostatic coating.
- 4. **Interior Material:** Mirror-finish stainless steel.
- 5. **Insulation:** Flame-retardant aluminum silicate for optimal thermal efficiency.
- 6. **Illumination:** One strategically positioned lamp with an external control switch.
- 7. **Air Regulation System:**
 - 1. **Temperature Control:** PID automatic regulation.
 - 2. **Air Circulation:** Centrifugal fan for uniform airflow.
 - 3. **Heating:** Stainless steel electric heater with forced ventilation for consistent internal temperature.
 - 4. **Cooling:** Compressor-based refrigeration.
 - 5. **Temperature Sensor:** Platinum resistance for accurate readings.
- 8. **Sealing & Reliability:** Welded cooling system with high-quality seals for durability.
- 9. **Door & Chamber Sealing:** Secured with silicone strips to ensure airtight performance.
- 10. **Mobility:** Guide rails facilitate easy movement for installation and removal.
- 11. **Refrigeration System:**
 - 1. **Compressor:** Two fully enclosed Embraco compressors (serial-numbered) for long-term stability.
 - 2. **Condensation:** High-efficiency fin condenser with an outer rotor fan for improved cooling.
 - 3. **Refrigerant:** Eco-friendly, fluorine-free refrigerant.
 - 4. **Heat Exchanger:** Stainless steel plate-type design for effective thermal transfer.

12. **Safety Features:**

1. Power overload and short circuit protection.
2. Grounding protection.
3. Leakage protection.
4. Compressor overheat protection.
5. Over-temperature protection.

Dimensions

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