



TENSILE TEST CHAMBER TORONTTC™ 30-300

Tensile Test Chamber ToronTTC™ 30-300 is designed to meet rigorous temperature requirements for material testing. It features a fully enclosed compressor refrigeration system and a PID-controlled temperature regulator, ensuring minimal temperature overshoot and high precision. A centrifugal fan circulates airflow within the chamber, providing excellent temperature uniformity. This advanced testing equipment is ideal for universities, research institutions, and industrial material testing facilities.

Designed for seamless integration with testing machines, the chamber operates independently without requiring modifications to the main testing unit. It is equipped with a track system for easy repositioning, allowing normal temperature tests to be conducted without obstruction. Capable of performing tensile, compression, bending, and shear tests on both metal and non-metal materials under extreme temperature conditions, it meets the needs of specialized industries such as plastics and rubber.

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. Low-temperature control is achieved through compressor refrigeration, while thermal compensation utilizes a heater with PID-controlled heating.
- 2. The chamber's exterior features an electrostatically sprayed finish, while the interior is constructed from mirror-finish stainless steel. The front door includes an observation window with a demisting function, and built-in lighting allows for easy monitoring during testing.
- 3. The temperature control system uses PID regulation with a display precision of 0.1°C, ensuring accurate and stable temperature management.
- 4. A centrifugal fan enables forced air circulation within the chamber, maintaining uniform temperature distribution to meet testing standards.
- 5. A built-in guide rail system allows smooth movement of the test chamber in and out of the testing machine's test space.
- 6. The test chamber features "U"-shaped openings on both the top and bottom ends, sealed with fitted components for easy positioning within the testing machine’s test space.

TECHNICAL SPECIFICATIONS

Temperature control range	-30 300°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 (width × height × depth)
Chamber External Dimensions	370 × 670 × 640 mm (width × height × depth)
Tensile rod hole size	Φ 50 mm
Dimensions	Please reference the dimensions picture

Voltage	AC220V, 50HZ (110V is also available)
Power	1.8 kW
Operating environment temperature	5°C□ 30°C

Configuration

1. **Observation Window:** Hollow electric-heated glass window prevents condensation during low-temperature tests.
2. **Temperature Control:** PID automatic temperature regulation.
3. **External Material:** Cold-rolled steel plate with electrostatic coating.
4. **Internal Material:** Mirror-finish stainless steel.
5. **Insulation:** Flame-retardant aluminum silicate insulation.
6. **Lighting:** Single illumination lamp, positioned for optimal visibility with an external control switch.
7. **Air Regulation System:**
 - a. **Temperature Control:** PID automatic regulation.
 - b. **Air Circulation:** Centrifugal fan for consistent airflow.
 - c. **Heating:** Stainless steel electric heater with forced ventilation and internal circulation.
 - d. **Cooling:** Compressor-based refrigeration.
 - e. **Temperature Sensor:** Platinum resistance sensor for accurate measurement.
8. **Sealing & Reliability:** Welded cooling system piping ensures strong, leak-proof sealing.
9. **Door Sealing:** Silicone strips provide a secure and airtight seal.
10. **Guide Rails:** Built-in system enables smooth movement for easy installation and removal.
11. **Refrigeration System:**
 - a. **Compressor:** High-performance Embraco fully enclosed compressor (serial-numbered) for long-term stability.
 - b. **Condensation System:** High-efficiency finned condenser with an external rotor fan for enhanced cooling.
 - c. **Refrigerant:** Eco-friendly, fluorine-free refrigerant.
12. **Safety Features:**
 - a. Power overload and short-circuit protection.

- b. Ground fault protection.
- c. Leakage protection.
- d. Compressor overheat protection.
- e. Equipment over-temperature protection.

Dimensions

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