



# **TENSILE TEST CHAMBER TORONTTC™ 60-300**

Tensile Test Chamber ToronTTC™ 60-300 is designed to meet precise temperature requirements for material testing. It features a fully enclosed compressor refrigeration system and utilizes a PID-controlled temperature system for exceptional accuracy and minimal temperature fluctuations. A centrifugal fan ensures consistent airflow, maintaining uniform conditions within the chamber.

This high-performance testing equipment is ideal for universities, research institutions, and industrial material testing facilities. It integrates seamlessly with testing machines without requiring modifications and includes a track system for easy operation. During standard temperature tests, the high-temperature chamber can be moved effortlessly.

The chamber supports a wide range of material tests, including tensile, compression, bending, and shear evaluations under various temperature conditions. It is well-suited for specialized industries such as plastics and rubber, ensuring reliable performance in diverse applications.

## APPLICATIONS

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### 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

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### Key Features

1. **Low-temperature operation** utilizes compressor refrigeration, while thermal compensation is managed through a heater with PID-controlled heating.
2. **Durable construction** features an electrostatically coated exterior and a mirror-finish stainless steel interior. The front door includes an observation window with a demisting function and built-in lighting for easy monitoring during tests.
3. **Precision temperature control** with a PID system ensures stability and accuracy, displaying temperatures with a precision of 0.1°C.
4. **Optimized airflow** is achieved with a centrifugal fan, ensuring uniform temperature distribution to meet testing standards.
5. **Smooth integration** with a guide rail system allows effortless movement of the chamber in and out of the testing machine's workspace.
6. **Convenient access** is provided through U-shaped openings on the top and bottom, equipped with a sealing mechanism for seamless entry and exit within the testing space.

## TECHNICAL SPECIFICATIONS

|                               |                                             |
|-------------------------------|---------------------------------------------|
| Temperature control range     | -60℃ 300℃                                   |
| Temperature control accuracy  | ≤±1℃                                        |
| Temperature uniformity        | ≤±2℃ Axial center 200mm                     |
| Cooling speed (25℃ room temp) | 1℃ 2℃/min Free load                         |
| Heating speed                 | 1℃ 3℃/min Free load                         |
| Internal Dimensions           | 250 × 530 × 430 mm (width x height x depth) |
| Chamber External Dimensions   | 370 × 670 × 640 mm (width x height x depth) |
| Tensile rod hole size         | Φ 50 mm                                     |
| Dimensions                    | Please reference the dimensions picture     |

|                                          |                                       |
|------------------------------------------|---------------------------------------|
| <b>Voltage</b>                           | AC220V, 50HZ (110V is also available) |
| <b>Power</b>                             | 2.6 kW                                |
| <b>Operating environment temperature</b> | 5°C□ 30°C                             |

## Configuration

1. **Observation Window:** Hollow electric-heated glass with a demisting function for clear visibility during low-temperature tests.
2. **Temperature Control:** PID automatic temperature regulation for precise adjustments.
3. **Exterior Material:** Cold-rolled iron plate with electrostatic coating.
4. **Interior Material:** Mirror-finish stainless steel.
5. **Insulation:** Aluminum silicate flame-retardant insulation.
6. **Illumination:** One strategically placed light 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 Method:** Stainless steel electric heater with forced ventilation and internal circulation.
  4. **Cooling Method:** Compressor-based refrigeration.
  5. **Temperature Sensor:** Platinum resistance sensor for accurate measurements.
8. **Sealing & Reliability:** Welded cooling system piping ensures a secure and reliable seal.
9. **Door & Chamber Sealing:** High-quality silicone strips provide an effective seal.
10. **Mobility:** Equipped with guide rails for smooth and linear movement, making installation and removal easy.
11. **Refrigeration System:**
  1. **Compressor:** Two high-performance Embraco fully enclosed compressors (each with a serial number) for long-term stability.
  2. **Condensation:** High-efficiency fin condenser with an outer rotor fan for optimal cooling.
  3. **Refrigerant:** Eco-friendly, fluorine-free refrigerant.

4. **Heat Exchanger:** One stainless steel plate-type heat exchanger.

12. **Safety Features:**

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

## Dimensions

Tensile Test Chamber ToronTTC-60-300



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