

CHARPY IMPACT TEST SPECIMEN LOW TEMPERATURE CHAMBER - CHARPY- LTC80



Charpy Impact Test Specimen Low Temperature Chamber - CHARPY-LTC80 is a state-of-the-art compressor refrigeration system developed in accordance with the requirements for low-temperature devices outlined in ASTM E23-2018, ISO 148, and DIN EN 10045 standards.

This chamber utilizes compressor refrigeration technology along with heat balance principles and a circulating stirring method to ensure uniform, automatic cooling and stable temperature control for test specimens.

The CHARPY-LTC80 is equipped with microcomputer technology, offering a digital temperature display, automatic temperature control, precise timing functions, and alarm features. With its fast cooling speed, large volume, and high temperature control accuracy, it is the ideal solution for cooling and heat preservation of material samples in low-temperature impact tests. This chamber is also versatile enough to be used for other low-temperature detection and testing applications, providing simple, safe operation and exceptional performance in accordance with international standards.

Charpy Impact Test Specimen Low Temperature Chamber

APPLICATIONS

Applicable Standards

- **ASTM E23-2018** - Metallic materials: Notched specimens impact test method
- **ISO 148-1-2016** - Metallic materials: Charpy pendulum impact test — Part 1: Test method
- **DIN EN 10045-1-1991** - Charpy impact test on metallic materials; Part 1: Test method
- **JB-5376-1991** - Technical requirements of low temperature constant temperature tank

FEATURES

Performance Characters

- **User-Friendly Design:** The machine is divided into two sections, forming an "L" shape. The upper section is dedicated to the control unit for easy observation, temperature settings, and operation, while the lower section houses the freezing tank, ideal for placing and clamping samples. The height is perfectly aligned with impact testing machines for quick and efficient sample placement.
- **High-End Refrigeration System:** Equipped with an fully enclosed compressor and high-quality core components, this system ensures long-term stability and extended equipment life. It also includes a condensing fan, offering both long service life and low noise, while using environmentally-friendly refrigerants.
- **Precise Temperature Control:** The unit features a high-precision temperature control instrument with automatic PID adjustments for constant temperature maintenance. A high-performance platinum resistance sensor and stainless steel probe ensure stable and accurate temperature measurements. The equipment also includes a fully enclosed, low-noise magnetic induction stirring motor capable of working in low-temperature, high-humidity environments. The tank's medium is efficiently agitated, ensuring optimal fluidity and uniformity, while the high-quality stainless steel heater provides durability and safety.
- **Large Sample Capacity:** The system can accommodate up to 60 standard 10 * 10 * 55mm samples in three sample baskets at once. Smaller sample sizes, such as 7.5 * 10 * 55mm, 5 * 10 * 55mm, and 2.5 * 10 * 55mm, can also be processed in larger quantities.
- **Ease of Operation:** The unit is equipped with universal casters, making it easy to move. The sample baskets simplify sample placement and removal, and a liquid discharge port allows for easy recycling of the cooling medium and cleaning. The unit also includes temperature alarms and insulation timing, ensuring efficient work scheduling for operators.
- **Comprehensive Protection Features:** The equipment is designed with multiple protection mechanisms, including overload protection, leakage protection, grounding protection, compressor overload protection, and medium over-temperature (anti-drying) protection.

Configuration

- 1. Compressor:** Two fully enclosed compressors (with serial numbers) in original packaging.
- 2. Condensing Device:** Two high-efficiency finned condensers, each with an condensing fan in original packaging.
- 3. Heat Exchanger:** One stainless steel plate-type heat exchanger.
- 4. Heat Insulation:** Rigid polyurethane foam insulation for effective thermal protection.
- 5. Shell:** Cold-rolled sheet metal folded and electrostatically sprayed for durability and corrosion resistance.
- 6. Stirring Device:** One complete stirring device for optimal fluid agitation in the cooling medium.
- 7. Temperature Control Device:** One high-precision temperature control device to ensure accurate temperature regulation.
- 8. Stainless Steel Sample Basket:** Three stainless steel sample baskets for holding test specimens during low-temperature testing.

TECHNICAL SPECIFICATIONS

Temperature control range	+30 -80°C
Temperature control accuracy	≤±0.5°C
Temperature uniformity	≤1°C
Cooling speed (when room temperature is 25°C)	Room temperature - 0°C: 1.5°C/min 0°C - -20°C: 1.3°C/min -20°C - -60°C: 1.0°C/min -60°C - -80°C: 0.8°C/min

Heating speed	3°C/min
Size of cooling tank	275×160×120mm (Length x Width x Height), 5L
Effective size of cooling tank	150×140×110mm (Length x Width x Height)
Specimen capacity	60 pieces (impact specimen size:10×10×55mm)
Digital timer	1minute ~ 9999 minutes, resolution: 1minute
Cooling medium	Absolute ethyl alcohol
Dimensions	905×505×920mm (Length x Width x Height)
Voltage	AC220V□ 50HZ (110V is also available)
Power	2.2kW
Operating environment temperature	5°C□ 30°C

Dimensions

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