



TORONTECH



COMPACT TEMPERATURE CYCLING CHAMBER FOR OPTICAL FIBRE CABLES - TTOFTCC- 1000 SERIES

Compact Temperature Cycling Chamber for Optical Fibre Cables – TTOFTCC-1000 Series is purpose-built to perform temperature cycling on optical fiber cables. This process evaluates how the cables' attenuation responds to varying temperatures, ensuring stability and reliability. The chamber is equipped with a spacious testing area, advanced temperature control, and minimal temperature variations for accurate and consistent results.

APPLICATIONS

The chamber is specifically designed to perform temperature cycling on optical fiber cables and related components, enabling the evaluation of attenuation stability under temperature changes. It features a spacious test chamber, precise temperature regulation, and minimal fluctuations to ensure reliable results.

Attenuation changes in optical fiber cables are typically caused by buckling or tension due to differences in the thermal expansion rates of the fibers, cable strength elements, and jacketing materials. To address these challenges, the test simulates the most demanding conditions for temperature-dependent measurements.

This test can be used to monitor cable behavior within typical temperature ranges encountered during storage, transportation, and usage. Additionally, it can evaluate attenuation stability within an expanded temperature range, ensuring a microbend-free environment for fibers within the cable structure.

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FEATURES

- **Enhanced Visibility:** Designed with a large glass window, offering a full viewing angle, anti-condensation technology, and a hollow electric plating film. Built-in lights enable real-time observation of test samples during testing.
- **Energy-Efficient Insulation:** Equipped with high-density PU foam and glass fiber cotton for heat preservation, minimizing unnecessary energy loss.
- **User-Friendly Interface:** Features a large LCD display for simple operation, program editing, and an automatic PID calculation function. Displays failure messages for troubleshooting.
- **Premium Material Construction:** The inner chamber is crafted from SUS304 mirror-finished stainless steel, while the outer box is made of steel with a durable painted finish. Precision CNC machining ensures a sleek and durable design.
- **Advanced Communication and Expandability:** Includes an RS-232 interface with recorder compatibility for enhanced functionality and dynamic testing capabilities.
- **Comprehensive Safety Features:** Equipped with multi-level security protections and power-cut memory for uninterrupted operations.
- **Efficient Refrigeration System:** Uses a compressor with eco-friendly refrigerants (R134a, R404a, R23). Incorporates a dual-loop low-temperature refrigeration system for enhanced performance.
- **Optimized Airflow:** Uses a powerful wing-blower air supply cycle, eliminating dead zones to ensure uniform temperature and humidity distribution. The wind cycle design stabilizes conditions quickly after the door is opened.
- **High-Performance Climate Control:** The independent heating, cooling, humidification, and dehumidification systems improve efficiency, reduce costs, extend the equipment’s lifespan, and lower failure rates.

This chamber provides precision, durability, and efficiency, making it ideal for reliable temperature cycling tests in various applications.

TECHNICAL SPECIFICATIONS

Model	TTOFTCC-1000 Series
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Temp. Range	A: -20°C ~ 95°C B: -40°C ~ 95°C C: -60°C ~ 95°C D: -70°C ~ 95°C
Temperature Measuring Accuracy	± 0.5°C
Temperature Fluctuation	± 2°C
Temperature Uniformity	≤ 2.0°C
Heating Up Speed (Empty)	1 - 3.0°C/min
Cooling Down Speed (Empty)	0.7 - 1°C/min
Interior Dimensions (W×D×H mm)	450×450×500 600×600×700 700×800×900 800×1000×1000 1000×1000×1000 <i>or upon request</i>
Exterior Dimensions (W×D×H mm)	650×1100×1450 800×1200×1700 1200×1400×2000 1300×1600×2100 1500×1600×2100
Open Door (One of a Pair)	1000mm×1000mm (Width × Height)
Chamber Weight	Approx. 1000 kg
Interior Material	Stainless Steel Plate (SUS304)
Exterior Material	Stainless Steel Plate (SUS304)
Insulation	Rigid Foam
Refrigeration System	Hermetic Compressor, Single Stage Refrigeration System

Display	LCD
Safety Devices	No fuse breaker refrigerator overload relay, Refrigeration high-pressure switch, Over Temp Protector, Protection relay, Protection fuse, Water level protector, Overheat protector, Alarm
Accessories	Viewing Window, Shelves (freely adjustable 2 pcs.), Cable Port (Ø20mm), Chamber Lamp
Voltage	AC380V ±10 percent 50/60Hz
Note	X* = Temp. Range (A/B/C/D) XXX* = Interior Width (W mm), 450/600/700/800/1000



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