



THERMAL CHAMBERS FOR MECHANICAL TESTS AT DIFFERENT TEMPERATURES



Model CTE-1

Thermal Chamber **to perform physical-mechanical tests inside it at different temperatures** in ranges between -80°C and $+280^{\circ}\text{C}$ ($+350^{\circ}\text{C}$ optional) such as tensile, compression, bending, adhesion, shear ..., this chamber being integrated within the zone of tests **in Universal Testing**

TECHLABSYSTEMS

GENERAL INFORMATION

CTE-1 standard model with temperature range between -80°C and + 280°C (optional + 350°C)

Internal dimensions: 220 x 220 x 580 mm

External dimensions: 360 x 480 x 766 mm

- CTE-1 standard model with temperature range between -80°C and + 280°C (optional + 350°C)
- Internal dimensions: 220 x 220 x 580 mm
- External dimensions: 360 x 480 x 766 mm
- Self-supporting double wall frame made of stainless steel
- Heating power 2.3 kW (220 Volts)
- Temperature range from -80°C + 280°C (optional 350°C)
- Air circulation through a fan located in the center
- The front door contains 4 glass plates, between the internal glass plates there are electric resistances to heat the glass and thus eliminate the frost deposited on the glass. (Option to put one light on the door and another light inside)
- The upper and lower cavities have a tubular Teflon gasket. Inserts can be added to reduce to a smaller diameter the space used by the connecting bars of the test jaw and the frame of the Universal Machine
- Standard Temperature Controller with 0.1°C reading resolution
- Optional Omron (RS232) or Eurotherm (RS485) controllers, analog input and output
- 19-inch control rack with 4 meters of cable and a connector on the back of the Thermal Chamber
- Frame with rails to move the chamber in and out of the Universal Testing Machine with adjustable legs.
- The camera is moved by bearings and can be moved to a distance of 611 mm.
- Heating at a rate of + 15°C per minute (from +20 to +80 °C without grips)

100°C	0,11	kWh/h
200°C	0,24	kWh/h
300°C	0,38	kWh/h

- Standard chamber power consumption without grips:
- The cooling system requires Liquid Nitrogen which is controllable by a magnetic valve located at the rear of the chamber.
- Frost build-up on the internal glass panel can occur from opening the door and can be resolved using standard supply electric heaters.
- To cool down to -80°C, 4 kg of liquid Nitrogen is required.
- To maintain the temperature of -80°C, a flow of 0.5 kg of liquid Nitrogen per hour is required.
- Standard model size: Internal dimensions 220mm x 220mm x 580mm, External dimensions 360mm x 480mm x 766mm
- Net weight approx. 60 Kg

OPTIONS:

- Door light on (alternative to heating coils)
- RS232 controller with RS232
- RS485 controller with RS485
- T350 elevated temperature range
- WT heat exchanger
- SSR special hinge
- ESP Antireflex glasses
- Long LHB hole in the back for extensometer

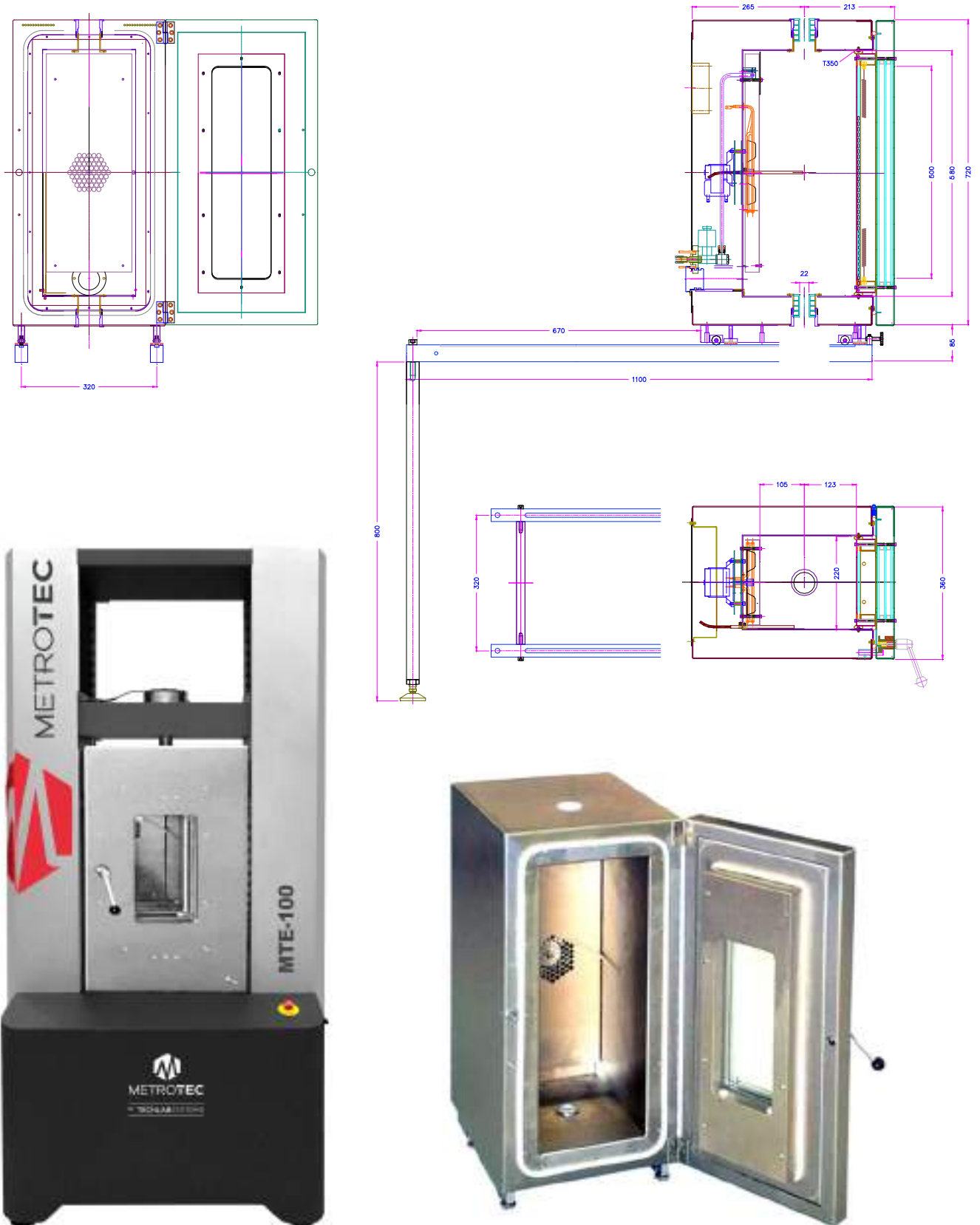


THERMAL TESTING CHAMBER with removable inserts to easily move the frame

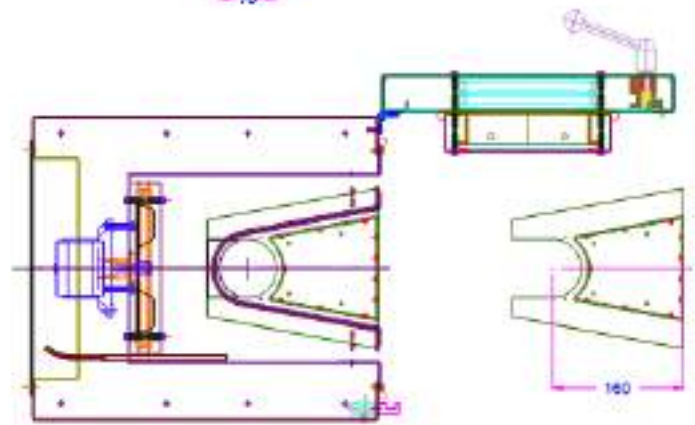
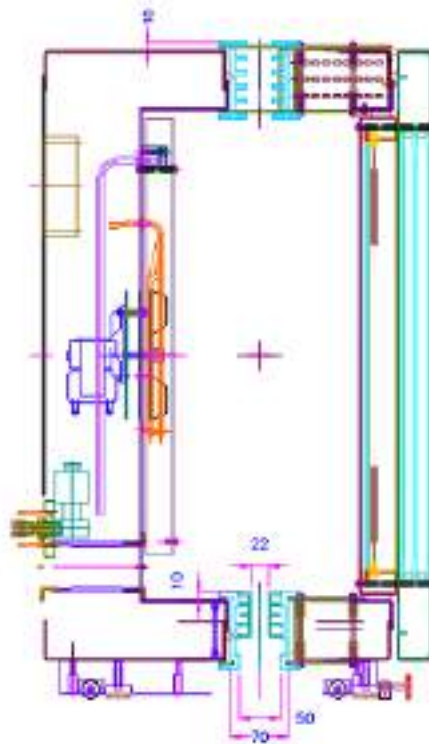
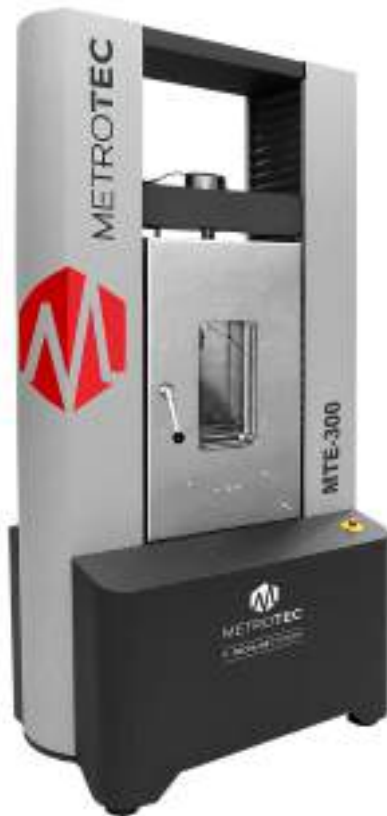


THERMAL TEST CHAMBER with removable inserts to easily move the frame and with special hinges (with extension) so as not to increase the frame size when the front door is opened

DIAGRAMS AND DIMENSIONS OF THE STANDARD MODEL THERMAL TESTING CHAMBER:



DIAGRAMS AND DIMENSIONS OF THE CHAMBER THERMAL TESTS with removable inserts to easily move the frame



**THERMAL TESTING CHAMBER OF DIMENSIONS:
220 X 250 X 480 mm
With light + inserts + Special extended hinges
With 2 extra windows (left and right side)**

SMALL DIMENSIONS CHAMBER with cooler and heating on the right side.



SPECIAL THERMAL CHAMBER with interior height of 850mm with light (220x220x850mm) option SAI



SPECIAL THERMAL CHAMBER for use up to +500 °C



SPECIAL SUPPORT TROLLEY with counterweight

GRIPS, ADAPTER ELEMENTS, PNEUMATIC HOSES AND ADAPTERS FOR THERMAL CAMERAS:



10 kN Pneumatic Grips
for range between -80°C



100 kN Pneumatic Wedge Grips
for range between -70°C and + 350°C



10 kN Pneumatic Wedge Grips
for range between -70°C and + 350°C

TEST TEMPERATURE CONTROLLERS:

- ✓ **SIKA TLK96 basic model (included in standard supply)**



- ✓ **OMRON advanced model with RS-232 communication interface to PC, with:**

- Illuminated display with a good viewing angle
- 3 indicators in different colors
- 2 Points or PID regulation
- Power supply options: 24 V DC / 24 V AC or 100-240 V AC
- Simple connection to industrial PC to configure, save and copy parameters
- Simple programming and operation via buttons on the front
- Clear diagnostics and alarm indication
- Safety in use thanks to password protection and adjustable menu



- ✓ **EUROTHERM advanced model with RS-485 communication interface to PC:**

- Model 2404
- PID controller function (CC)
- Power supply Power supply voltage (VH) 85-264VAC
- Logic output heating module 1 (LH)
- Module 2 (YC) of the SPDT relay
- Communication 1 (YM) RS485 MODBUS protocol
- Input sensor (Z) Pt100 (DIN 43760)
- Minimum range -70 °C
- Maximum range of + 280 °C
- Unit of reading on the screen in (°C) centigrade

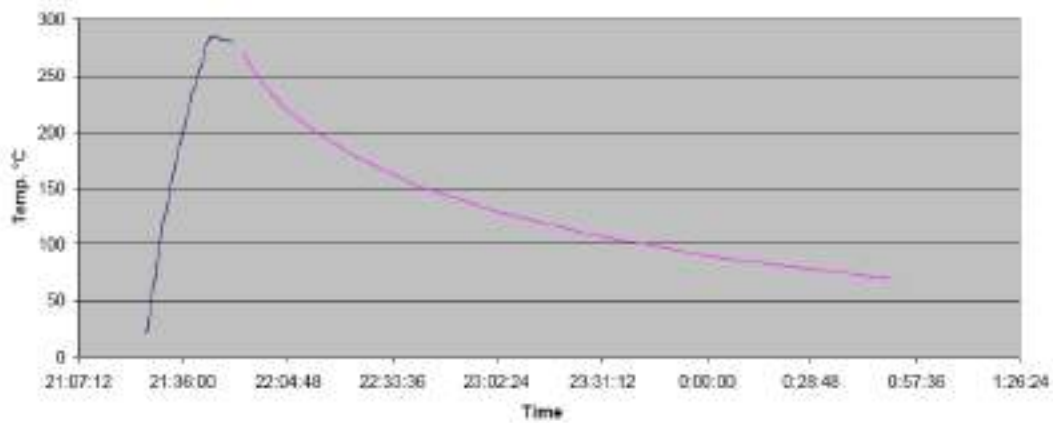


ACCESSORIES FOR TESTING AT LOW TEMPERATURES:

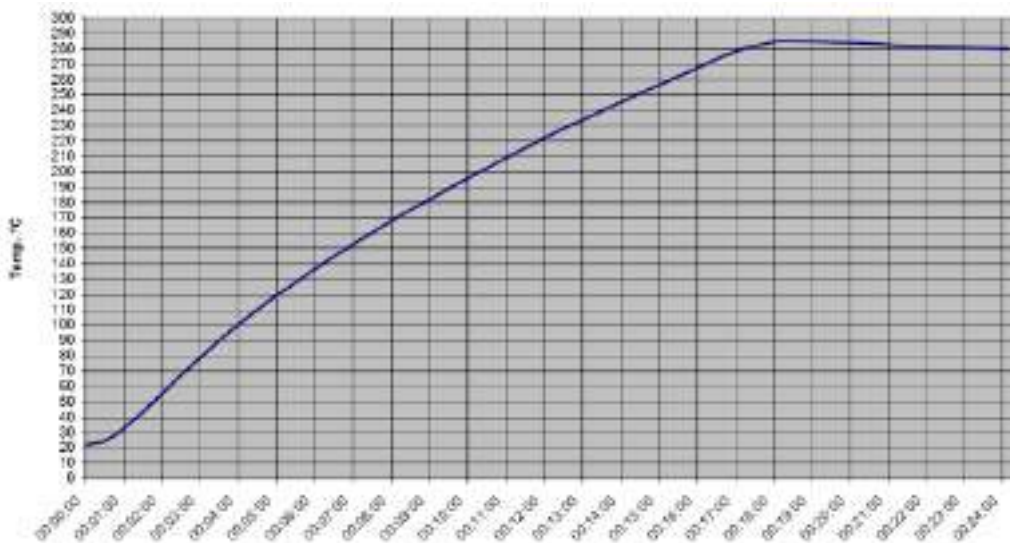


LIQUID NITROGEN DEPOSIT FOR COOLING IN SHORT PERIODS OF TIME

Via standard solenoid valve connection
Temperature range from -70°C to + 280°C

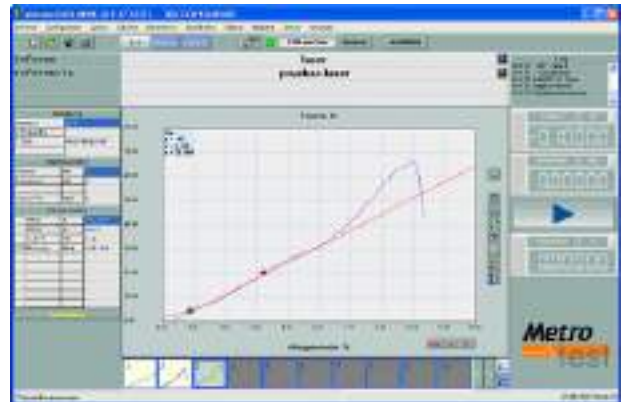


CHAMBER HEATING AND COOLING DIAGRAM WITHOUT GRIPS



CHAMBER HEATING TIME WITHOUT GRIPS STANDARD CHAMBER

Recommended Testing Machines:



MetroTEST Testing Software



CONTENTS OF THE STANDARD SUPPLY:

- Thermal Test Chamber and requested accessories