

# Temperature Chamber

-150°C to 600°C

4.2kW heating power guarantees full temp. range use  
Temperature control & profiling from Horizon



- Removable top and bottom chamber wall components to allow movement of chamber in and out of the test area without disturbing specimen grip configurations and tie rods.
- Optional enhanced chamber temperature control using a twin thermo couple measurement and feedback system.
- Supports use of contacting and non-contacting extensometers.
- Eurotherm programmable controller managed automatically from Horizon test methods.
- Internal lighting

# Specifications



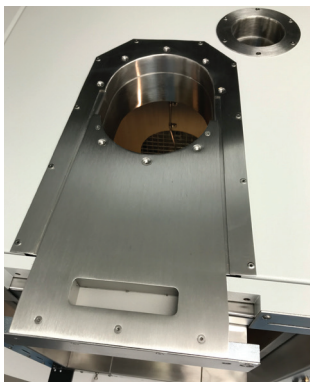
Part#	See the table on next page
Temperature range:	-150 to 600°C
Heating process:	Heating element surrounding rear mounted recirculating fan. Heating/cooling time to maximum temperature from ambient typical <80min depending on masses in chamber.
Cooling process:	LN2 injection through rear mounted cooling system comprising of a solenoid valve, internal connection hoses, pressure relief valve, external 3m exhaust and 2m inlet hose; LN2 dewar separate supply as required
Temperature measurement:	Optional factory configured; 1. Single temperature sensor in a fixed optimised position within the chamber air flow. 2. Dual temperature sensor with two temperature sensors; one fixed optimised position within the chamber air flow and a second mounted to the test specimen by the user. The user may select either cascade mode to use both thermocouples in the control loop or non-cascade mode using only the fixed thermocouple and turning cascade mode OFF.
Temperature stability:	±2°C
Measurement inputs:	Accuracy ±0.1% of reading when subjected to an appropriate field calibration. 50ms ramp.
Sample time:	Thermocouple 62.5ms (16Hz)
Sensor break:	AC sensor break. Break detected within 30 seconds, worst case
Input filtering:	OFF to 60 seconds filter time constant
Calibration:	2 point input adjust (offset/gradient), transmitter output scaling
Measuring sensor:	Thermocouple type K
Temperature control:	Eurotherm controller. Type PID with gain scheduling function. Configured to achieve optimal temperature increase ramp with nominal oscillation. Temperature targets and profiling enabled from Horizon test methods. The control system features an integrated over temperature alarm and push buttons for fan, heat, cool and light.
Construction:	Stainless steel 316 interior . External painted mild steel frame and panels.
Door:	Left hinged. Safety interlock operated by door hinge cut heating process when door is opened.
Viewing window:	Central to door 350mm high by 170mm wide. supports use of non contacting extensometer and deflectometers. The window is heated during chamber cold temperature use to minimise frosting. Whilst the window is heated for sub ambient operation it does not guarantee optical clarity across the whole working range of the chamber as this is test conditions situational.
Instrumentation port:	Located top of chamber 65mm diameter supports use of temperature control and monitoring thermocouples and or contacting type extensometers. Fitted with insulated plug when not in use.
Lighting:	Two internal lights, left and right inside chamber
Digital integration:	With Tinius Olsen Horizon materials testing software and relevant test methods
Mechanical integration:	With Tinius Olsen ST, L and SL materials testing machines and frames
Removable components:	Chamber wall components in support of chamber location with grips in situ. Tie rod aperture 55mm (Optional up to 125mm on request)
Testing modes:	Tensile, Shear, Peel, Flexural, Compression
Internal dimensions:	Height 610mm, width 240mm, depth 230mm
External dimensions:	Height 760mm, width 350mm, depth 650mm
Integration:	The chamber is supplied with a rail mounting system compatible with Tinius Olsen material testing machine/ frames which allows the chamber to be easily moved in & out of the test zone as required.
Power:	4kW
Power supply:	230V, single phase, 50Hz
Connector type:	32Amp (supplied as standard)
Recycling capability:	Up to 70% of this product can be recycled: metals & cabling
System environment:	10-40°C (50-100°F), for use & storage; 20-80% relative humidity non condensing environments
Typical ROI	10 months when integrated into a Tinius Olsen materials testing system
Component defect warranty	12 months
Weight	65 Kg
Manufactured	UK



### Tinius Olsen part numbers:

99-1011493	Environmental Chamber - EC2368 - Int HWD 610x240x230mm - 4kW -150 to 600°C
99-1011335	Chamber Rail Assy EC2007/EC2368 (Ext Length Rails)
99-1010922	Environmental Chamber Thermocouple for on "Test Piece" Control/Monitoring-EC2368
99-1011346	Door Mount Kit for Vector Extensometer on EC2007/EC2368 Chamber

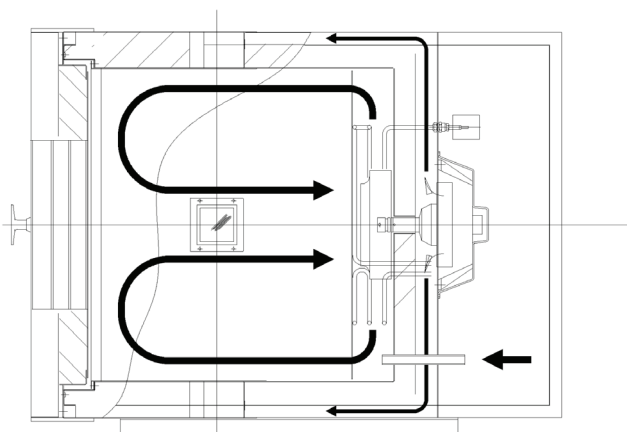
## Features



- Removable top and bottom chamber wall components in support of efficient use enabling the chamber to be moved in and out of the testing machine/frame test area.
- Tie rod aperture 125mm



- Stainless steel interior eliminates risk of high temperature oxidization.
- Internal lighting, set as on or off as required, illuminates test area for observation by user or web cam



### Uniform heating is provided by forced air recirculation.

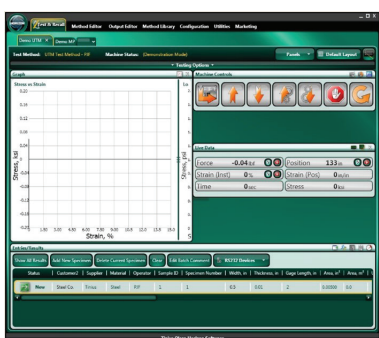
- Air is forced over the heating elements located in an insulated enclosure protecting the user and forced into the working chamber area top and bottom. It is then drawn back through the centre of the chamber, through a baffle to the heating elements and recirculated.
- A secondary fan forces air between the inner chamber insulation and the outer skin to minimise the outer chamber surface area temperature when testing at elevated temperatures and frosting when testing at low temperatures.



Controller type Eurotherm model 3016 for single thermocouple temperature control configuration.



Controller type Eurotherm model 3508 for dual thermocouple temperature control configuration.



Integration with Tinius Olsen Horizon material testing software allows for test temperature setting and profiling from test methods in support of tensile, shear, peel, flexural and compression testing.

# Tinius Olsen



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