Anton Paar

TTK 600

TTK 600 Low-Temperature Chamber

The TTK 600 Low-Temperature Chamber is a versatile XRD sample stage for in-situ X-ray diffraction from -190 °C to 600 °C. Accurate temperature control along with fast heating and cooling in reflection or transmission geometry make this chamber equally well suited for routine measurements and scientific research.

The all-rounder for in-situ X-ray diffraction!

The right choice for your application

TTK 600 offers several configurations for a variety of in-situ XRD studies at low and high temperatures. Depending on the required temperature range, TTK 600 can be operated with liquid nitrogen cooling (to -190 °C) or compressed-air cooling (to -10 °C).

To ensure maximum flexibility concerning sample types and measuring geometries, TTK 600 can be used with three types of sample holders. The standard sample holder allows studies of samples in reflection geometry. With the optional capillary sample holder, powder samples can also be measured in transmission geometry. For foils and pastes another optimized transmission sample holder is available.

Outstanding temperature control

TTK 600 combines accurate measurement of the sample temperature with excellent temperature stability under various operating conditions. The sample temperature is measured with a high-precision Pt100 sensor located close to the sample. The heat transfer between the heater and any sample holder is optimized by design. The capillary sample holder and the transmission sample holders both work with additional convection heaters that minimize temperature gradients and enable fast temperature changes.

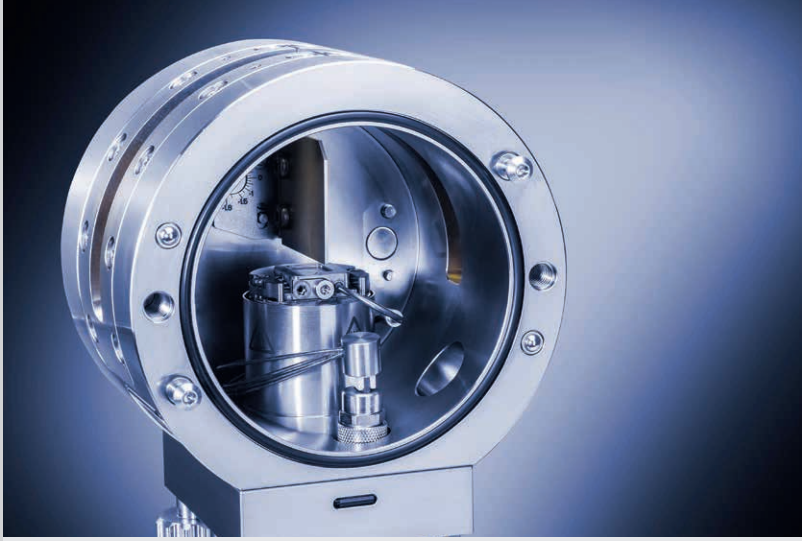
The CCU Combined Control Unit is optimized for maximum temperature stability and economical use of liquid nitrogen or compressed air.

Easy to use

TTK 600 is very compact and features liquid nitrogen hoses which remain flexible down to -190 °C. The sample holders can be easily exchanged without extensive realignment. Air-sensitive samples can be safely transferred into TTK 600 by using an antechamber. Most standard laboratory diffractometers have integrated remote control of TTK 600 (via an RS232 interface) in their software.

Applications

- In-situ characterization of pharmaceutical substances and other organic and inorganic materials
- Phase analyses and polymorph screening
- Lattice parameter measurements
- Crystal structure determination



Features and benefits

- Fast heating and cooling and excellent temperature stability
- Accurate temperature measurement with a sensor close to the sample
- Different sample holders for reflection and transmission studies
- Sample conditioning in vacuum, air or inert gas
- Easy handling and exchange of samples
- Zero-background holder for X-ray transparent samples
- Beam knife to minimize background at low 2θ angles
- Fits to almost all 2-circle diffractometers

Technical specifications	
Temperature range with liquid-nitrogen cooling	-190 °C to +600 °C (in vacuum)
Temperature range with compressed-air cooling	-10 °C to +600 °C (in vacuum)
Atmospheres	Air, inert gas, N_2, vacuum
Pressure range	10^{-2} mbar to 2 bar rel.
Sample size (L x W)	14 mm x 10 mm
Sample holder depth	0.8 mm, 0.2 mm, flat
Scan range	0° to 164° 2θ for standard sample holder (reflection)

Your distributor:

www.anton-paar.com