



## DHS 1100 Domed Hot Stage Heating Attachment for Four-Circle Goniometers

The DHS 1100 is an advanced heating attachment for in-situ X-ray diffraction studies on four-circle goniometers up to 1100 °C.

**Compact power!**

The new DHS 1100 Domed Hot Stage for four-circle goniometers is another step forward for material scientists working in the field of non-ambient X-ray diffraction. This novel heating attachment for investigations up to 1100 °C can be fitted to all common four-circle goniometers.

### Access to new applications

The DHS 1100 can be applied in temperature-induced phase transition investigations, texture measurements and stress analysis at elevated temperatures. The unique dome-shaped X-ray window made of graphite allows you to analyze samples under vacuum and under inert gas to avoid oxidation or other chemical reactions of the sample at high temperatures.



### Extremely high temperatures

As in all non-ambient attachments from Anton Paar, the specially designed heater provides extremely high sample temperatures with a highly uniform temperature distribution across the sample. The temperature is measured precisely with a thermocouple located right underneath the sample. Together with a high-end temperature control unit this guarantees reliable temperature control and measurement.

### Cooling without water

Extensive cooling of the dome and the housing of the DHS 1100 heating attachment is achieved by using compressed air. The way of directing the cooling gas onto the DHS 1100 housing is optimized so that even at 1100 °C no heat is transferred to the goniometer.

### A strong core

The sample holder plate of the DHS 1100 Domed Hot Stage is made of aluminum nitride (AlN), a material with outstanding thermal conductivity and high chemical resistance. The sample holder plate is replaceable.

The sample is easily mounted with two clamps, a setup that does not restrict the accessible angular range for the measurements. Even grazing incidence investigations are possible.

### Small, yet powerful

The DHS 1100 has a high working temperature and excellent mechanical stability – and is still extremely light. Due to the compact design with a minimum of supply hoses, the DHS 1100 Domed Hot Stage does not restrict the movements of the goniometer.

### Features and benefits

- ▶ Allows you to perform temperature-dependent measurements across the whole orientation space
- ▶ Temperature range from room temperature to 1100 °C
- ▶ High temperature uniformity
- ▶ Extremely compact
- ▶ Allows investigations in air, inert gas or vacuum
- ▶ No water cooling required
- ▶ Very lightweight
- ▶ Samples can be easily exchanged
- ▶ Free of poisonous beryllium
- ▶ For flat samples and powder samples

### Technical specifications

Operating temperature	Ambient to 1100 °C
Temperature measurement	Pt-Pt10Rh thermocouple
Atmospheres	Air, inert gas, nitrogen, vacuum (10 <sup>-1</sup> mbar)
Max. operating pressure	0.3 bar above atmospheric pressure
Temperature control unit	TCU 200

### Dimensions/Weight/Materials

Stage diameter	135 mm
Stage weight	approx. 500 g
Sample size	max. 25 mm diameter
Housing material	Anodized aluminum
Sample holder material	Aluminum nitride
X-ray window material	Graphite

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