

HS1500

Stage for Continuous Observation at High Temperature



Rapid Heating Rates

From ambient to 1500°C at a rate of up to 150°C/min

High Temperature

Accurate temperature control between ambient and 1500°C

Rotating Quartz Window

Continuous sample observation and high resolution imaging

Introducing the HS1500

Linkam's HS1500 high temperature stage is optimised for sample characterisation where volatile compounds are released from the samples when heated. It can be used in a wide range of high-temperature applications including metallurgy, ceramics, geology, structural composites and high-temperature polymers.

When imaging a sample that releases volatile compounds a common experimental problem is that the observation window may fog up, thus obscuring the view of the sample. The HS1500 features a unique 55mm rotatable quartz observation window which can be easily rotated to expose a clear area to enable continuous viewing and imaging of the sample.

The HS1500 features a ceramic heating cup which, together with the ceramic cover, creates a micro-oven around the sample and heats at an impressive rate of up to 150°C/min reaching a maximum temperature of 1500°C. The stage is supplied with a water circulatory pump to ensure that the stage body remains at a safe temperature

A system requires both an HS1500 stage and a T96-S temperature controller, which is available with either LINK software for computer control, or a LinkPad touch screen for stand-alone control.



Features

ROTATABLE QUARTZ WINDOW

The stage features a rotatable quartz window which prevents condensates obstructing the field of view and allows continuous observation. The high optical quality quartz window enables high resolution imaging of samples.

HIGH TEMPERATURE

The stage is optimised for the study of metals, ceramics and geological samples with temperatures ranging from ambient up to 1500°C.

HEATING RATES

Wide range of heating rates between 0.01°C/min and 150°C/min, ideal for state transition experiments.

TEMPERATURE CONTROL ACCURACY

The T96-S controller accurately controls temperature to one degree.

QUICK-RELEASE GAS PORTS

Simple and easy stage purging to allow atmospheric composition control.

WATER-COOLED

Water-cooled stage body for work above 300°C.

CUSTOM OPTIONS

Please contact us with details of your requirements.

Application Examples

The HS1500 is uniquely suited to the research of a broad range of materials that require high-temperature analysis or release volatile gases. It is used throughout academic, industrial and commercial research for a wide variety of applications including:

Earth Sciences and Geology

The HS1500 is used by leading universities and institutes to advance paleoclimatic research, including studies of prehistoric geological samples, materials from below the ocean bed, volcanic matter, and rock fragments from within the earth's mantle.

Fluid inclusions

Thermal Maturation

Volcanology



Materials and Metallurgy

Within metallurgy and ceramics research, gaseous volatile compounds can be released during reaction processing such as the release of H₂O or SO₃ during ceramic glazing, or the roasting of sulphide ores, releasing gases such as sulphides or chlorides.

Ceramics

Powder Composition

Grain Analysis



Space Research

The HS1500 can be used for thermal analysis of the structure and degradation of composites used in spacecraft and other machinery that must withstand high temperatures. It can also be used to analyse extra-terrestrial samples with microscopic or spectroscopic techniques.

Temperature Resistance

Degradation

Composite Materials



Technical Specification

Temperature Range

Ambient to 1500°C

Heating/Cooling Rates

0.01°C to 150°C/min

Temperature Stability

< 1°C

Sample Size

5.5mm diameter, a mass of up to 70 - 100mg

Objective Lens Working Distance

6.6mm

Compatibility

Reflected light microscopes and Raman.
Clamping options are additionally available for most microscopes.



Discover More...

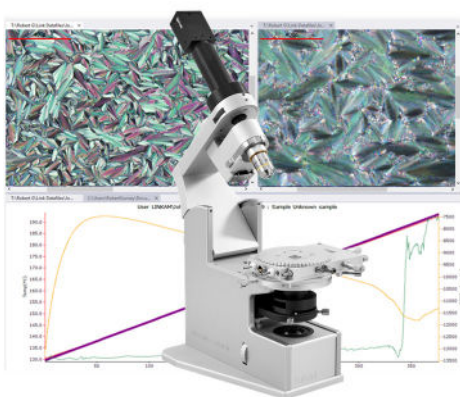


Control Options

Take control of your experiment with LINK software, or the stand-alone LinkPad touch screen, alongside the T96 temperature controller.

Both LINK software and LinkPad share a unified user interface that can control and monitor temperature and many other parameters including vacuum, humidity, tensile and shear force (dependent on system). The LinkPad provides an easy-to-use interface to the T96, for total control without a PC. Profiles with up to 100 ramps can be programmed, allowing simulation of complex processes.

LINK software enhances this with data-logging functions and real time graphical feedback. Optional modules to enhance your system include the LINK Imaging Module for synchronised image capture, the LINK Extended Measurements module to measure key image features, the LINK 21CFR11 Module for data regulatory compliance, and LINK TASC providing image-based thermal analysis.



Imaging Station

The Imaging Station provides a digital imaging platform compatible with Linkam temperature and environmental control systems. Use our high-resolution camera to capture images and videos of your samples while controlling the temperature and environmental conditions.

The Imaging Station has been specially designed with a pivoted mechanism to allow greater access to your Linkam stage, making it quick and easy to access the chamber and change samples. It has a built-in LED light source for transmitted light with further options available for reflected light, polarisation and phase contrast imaging.

The Imaging Station is also compatible with a range of long working distance objective lenses which can be easily switched with the quick-release mechanism.



TS Series

Our high temperature stage series provides the perfect platform for the characterisation of samples such as ceramics, alloys, high temperature polymers and geological fluid inclusions, and can be used with light microscopy, Raman and X-ray.

The ceramic sample cup and lid creates a micro-oven ensuring the sample is evenly heated from all sides. The temperature can be accurately raised up to an impressive 1500°C at a maximum rate of 200°C/min.

The device body and large diameter quartz lid window are kept at a safe temperature by sealed circulating water. Precision quick-release gas connectors at the sides of the stage body can be used to purge the sample chamber with inert gas.

Contact Details

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We make scientific instruments that help characterise materials from polymers to biological tissue and metals to composites. Our instruments are used for research by the world's most advanced scientific organisations and companies. Each of our instruments are designed and manufactured in-house by our team of highly experienced electronics, software and mechanical design engineers. We design and develop solutions for sample characterisation by collaborating with the best scientists in the world. Will you be next?

Linkam products are constantly being improved, hence specifications are subject to change without notice.
TASC products are a family of techniques developed by Prof. Mike Reading (Cyversa) and Linkam.



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