TS1000/TS1200/TS1500

High Temperature Heating Stages

High Temperature
Accurate temperature control from ambient up to 1500°C at rates from 0.1°C to 200°C/min

Enclosed Sample Chamber
The heated cup and heat shield provide an enclosed micro-oven

Imaging Techniques
Compatible with light microscopy, Raman, X-ray and more

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Introducing the TS Series

Linkam's TS series of high temperature stages 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 sample is placed inside the heated cup where it is heated from underneath as well as from the sides. A ceramic heat shield is placed over the top to prevent heat escaping from this micro-oven. The temperature can accurately be heated up to an impressive 1500°C at a maximum rate of 200°C/min. The stage 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.

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

Application-specific versions of the stage that are vacuum compatible, or have electrical connections, are also available.

Features

High Temperature
Optimised for the study of ceramics, composites, metals and geological samples with temperatures ranging from ambient up to 1500°C. The stage body is water-cooled for work above 300°C.

Heating Rates
Wide range of heating rates from 0.1°C up to 200°C/min, ideal for state transition experiments.

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

Electrical Connections and gas ports
Alternative versions with electrical connections for sample measurement are available. Simple and easy stage purging with quick-release gas ports to allow atmospheric composition control.

Vacuum
Alternative versions with vacuum connectors and a Pirani vacuum gauge are available enabling the vacuum value to be displayed on the LinkPad screen or through NEXUS software.

Ellipsometer
Developed in collaboration with world leading ellipsometer manufacturers the TSEL1000 variant is also available.

Custom Options
Please contact us with details of your requirements.

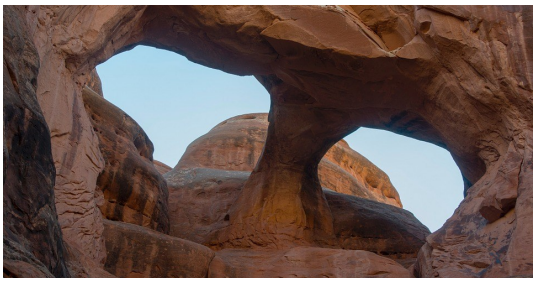
Application Examples

Linkam's TS series can be used to safely recreate a high temperature environment where rapid heating rates and accurate temperature control is essential. Application examples include:

Earth Sciences and Geology

The TS stages are used extensively in geological research, including the study of volcanic matter or igneous rock formation. The TS series provides precision high temperature control in combination with many microscopy and spectroscopic characterisation techniques.

Fluid Inclusions | Thermal Maturation | Volcanology



Materials and Metallurgy

From ceramics to metal composites, alloys and ores, Linkam's TS series can characterise the high temperature properties of all types of metallic and ceramic materials.

Iron Ore | Ceramics | Oxidation

Plastics and Polymers

Use Linkam's TS series to observe and characterise the behaviour and degradation of thermoplastics or polymeric samples designed to withstand high temperatures.

Melting Point Analysis | Powder Composition | Degradation

Technical Specification

	TS1000	TS1200	TS1500
Temperature Range	Ambient to 1000°C	Ambient to 1200°C	Ambient to 1500°C
Heating/Cooling Rates	0.1°C to 200°C/min	0.1°C to 200°C/min	0.1°C to 200°C/min
Temperature Stability	< 1°C	< 1°C	< 1°C
Heated Cup Sizes	17mm ø x 3mm	10mm ø x 5mm	7.9mm ø x 2.5mm 7.9mm ø x 5.2mm
Objective Lens Working Distance	7.0mm	8.5mm	6.0mm 9.0mm
Light Aperture	1.7mm	1.7mm	1.7mm

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Discover More...

Control Options

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

Both NEXUS software and a LinkPad can be used to control and monitor temperature and many other parameters including vacuum and humidity (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.

NEXUS software enhances this with data-logging, rewind logged data and images to review whilst still recording, data run comparison tools, advanced triggering functions and real-time graphical feedback. Optional modules to enhance your system include the NEXUS Imaging Module for synchronised image capture, the NEXUS Extended Measurements Module to measure key image features, the NEXUS 21CFR11 Module for data regulatory compliance, the NEXUS Reporting Module to create reports in Microsoft Word and the NEXUS TASC Module for 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.

CCR1000

The CCR1000 Catalyst Cell Reactor is a versatile stage that has been designed to study catalytic reactions at high temperature and pressure.

The stage is designed with optical access to the reaction chamber making it ideal for use with reflected light microscopy and spectroscopic techniques including Raman and FT-IR microscopy such as Operando.

Temperature is accurately controlled by the Linkam T96-S controller (via the S-type platinum/rhodium thermocouple) which can heat samples up to an impressive 200°C/min.

Contact Details

Linkam Scientific Instruments Ltd.
Unit 9 Perrywood Business Park
Honeycrock Lane
Salfords
RH1 5DZ
United Kingdom

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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