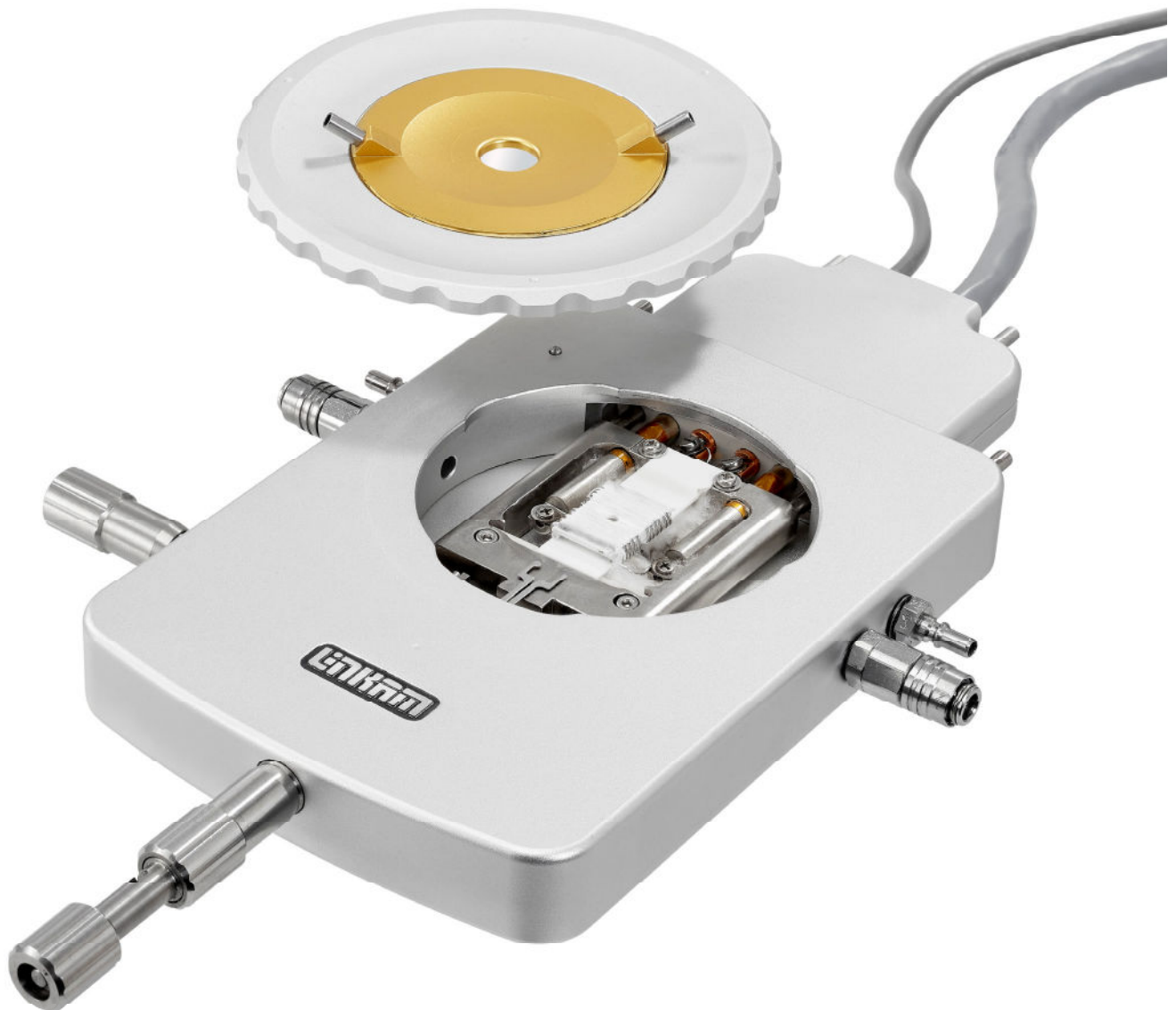


# TS1400XY

High Temperature Sample Characterisation Stage



## Unique Sample Manipulation

Ability to move the sample 4.5mm in X and 14mm in Y directions

## High Temperature

Temperature range from ambient to 1400°C

## Quench Cooling

Ultra-fast quench cooling or heating similar to a Vernadsky stage

# Introducing the TS1400XY

The TS1400XY is part of Linkam's TS series of high temperature stages, featuring sample manipulators with the ability to move the sample 4.5mm in X and 14mm in Y directions. The XY mechanism also enables the sample to be quenched by moving it from the heater to a much colder platform, allowing rapid heating or cooling (depending on direction), similar to a Vernadsky stage.

Samples are mounted on a sapphire slide within a ceramic tube heater, completely encasing the sample in a uniform temperature controlled environment which can be accurately controlled between ambient and 1400°C, at heating rates of up to 200°C/min. Additionally the sample chamber is fitted with quick-release gas valves for atmospheric composition control.

Our LINK software can be used to record the entire experiment and associated images, which can then be displayed as a chart or exported for further analysis. The TASC image analysis module can be used to analyse structural changes as the sample evolves with temperature.

A system requires a TS1400XY 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

### HIGH TEMPERATURE

The stage is optimised for the study of metals, ceramics and geological samples with temperatures ranging from ambient up to 1400°C.

### HEATING RATES

Wide range of heating rates from 0.1°C up to 200°C/min make the TS1400XY ideal for state transition experiments.

### SAMPLE MANIPULATOIN

Unique sample carrier and precision-ground manipulators allow travel of 4.5mm in X and 14mm in Y directions.

### QUENCHING

Move the sample from the heater to a colder platform, or vice versa, for rapid heating or cooling similar to a Vernadsky stage.

### 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 TS1400XY can be used to safely recreate a high temperature environment where rapid heating rates, accurate high temperature control, rapid quenching and sample manipulation are essential. Application examples include:

## Earth Sciences and Geology

The TS1400XY is used extensively in geological research, including the study of volcanic matter or igneous rock formation. It 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, the TS1400XY can be used to characterise the high temperature properties of all types of metallic and ceramic materials. The unique quenching system allows simulation of rapid cooling environments.

Iron Ore

Ceramics

Oxidation



## Plastics and Polymers

Use Linkam's TS1400XY 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

## Temperature Range

Ambient to 1400°C

## Heating Rates

From 0.1°C to 200°C/min

## Temperature Stability

< 1°C

## Max Sample Sizes

5.5mm Ø, 0.5mm depth

## Objective/Condenser lens working distance

6.3mm / 12.2mm

## Compatibility

Clamping options are additionally available for most microscopes



## Discover More...

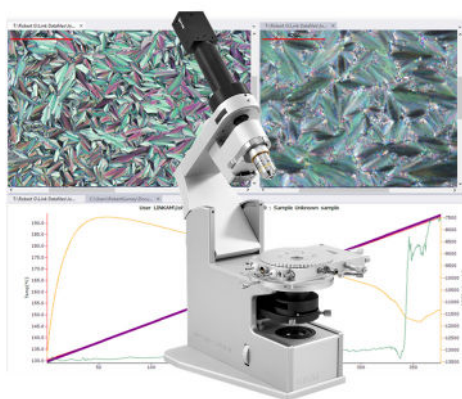


### Control Options

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.



### THMSG600

The THMSG600 is based on the design of Linkam's highly successful THMSG600 stage with modifications specifically for geological applications. It offers unrivalled temperature accuracy and control and can be found in fluid inclusion laboratories worldwide.

Inside the THMSG600, the sample is placed on a 7mm quartz cover slip, over which a pure silver lid can then be placed to create an oven to heat the sample from all sides and ensure a perfectly uniform temperature. The sample position can be precisely controlled in X and Y by precision ground manipulators.

With a temperature range of  $< -195^{\circ}\text{C}$  to  $600^{\circ}\text{C}$ , the THMSG600 is a versatile heating and cooling stage suitable for a wide range of geological and earth science research.

## Contact Details

Linkam Scientific Instruments Ltd.  
Unit 8 Epsom Downs Metro Centre  
Waterfield  
Tadworth  
KT20 5LR  
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.



 [www.linkam.co.uk](http://www.linkam.co.uk)

 +44 (0)1737 363476

 [info@linkam.co.uk](mailto:info@linkam.co.uk)