

## TS1400XY System

As an addition to the Linkam family of high temperature stages, the TS1400XY includes the ability to move the sample in the X and Y directions. The chamber is fitted with quick-release gas valves for control of the sample atmosphere at temperatures from ambient to 1400°C.

### Features and Benefits

The ceramic tube heater completely encases the sample in a uniform temperature controlled environment enabling high accuracy control right up to 1400°C within a gas sealed chamber.

Samples are mounted on a sapphire sample slide that can be moved in 6mm in XY directions to explore your sample.

Fluid inclusion geologists and material scientists interested in high speed quench cooling can add a special manipulator that enables rapid transfer from the heater to a much colder platform resulting in ultra fast cooling rates of up to 240°C per second.

The sample temperature is accurately controlled by the T95 system controller which enables the stage to heat samples at an incredible **200°C/min.** (See more information on the 'T95 System Controller' on our website).

Please note that hydrogen gas cannot be used. Please see the CCR1000 Catalyst Reactor Cell for info on using hydrogen in a hot stage.

### System Options

#### T95-LinkPad or T95-Linksys

There are two controller options available:-

The T95 LinkPad has an LCD touch screen data input display and can be used as a standalone system controller.

The T95-LinkSys is a PC computer interface controller and requires Linksys32 control software (supplied) to input a temperature profile. It cannot be used standalone.

#### Linksys 32-DV (Digital Image Capture) and Digital Camera

Add system control with digital capture software and one of the range of Q-Imaging digital cameras to enable multiple ramp temperature profiles with time lapse image and data capture. All T95 controller data is saved with the image. Quickly find single or groups of images by dragging a box around an area of the time/temperature graph or scrolling through the gallery. Create movies of experiments and add scale bar, annotations and measurements. (See 'Software and Image Capture' on our website for more information).

#### QImaging Cameras

Linkam supports the entire range of Q-Imaging CCD firewire cameras.

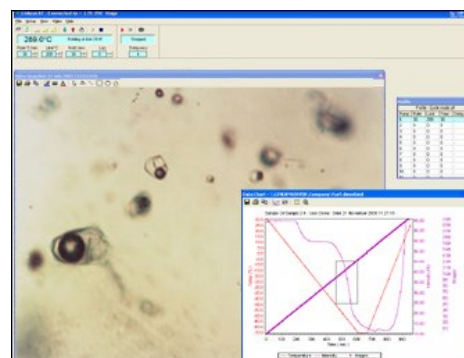
The QICAM fast 1394 shown here is designed for high resolution brightfield scientific and industrial applications. The 1.4 megapixel CCD sensor is capable of 10fps at full resolution and 165 fps when using



The TS1400 XY heating stage



High Temperature System with T95-LinkPad controller



Linksys 32-DV software.



QICAM fast 1394 camera cooled and non-cooled options (shown with Nikon lenses for

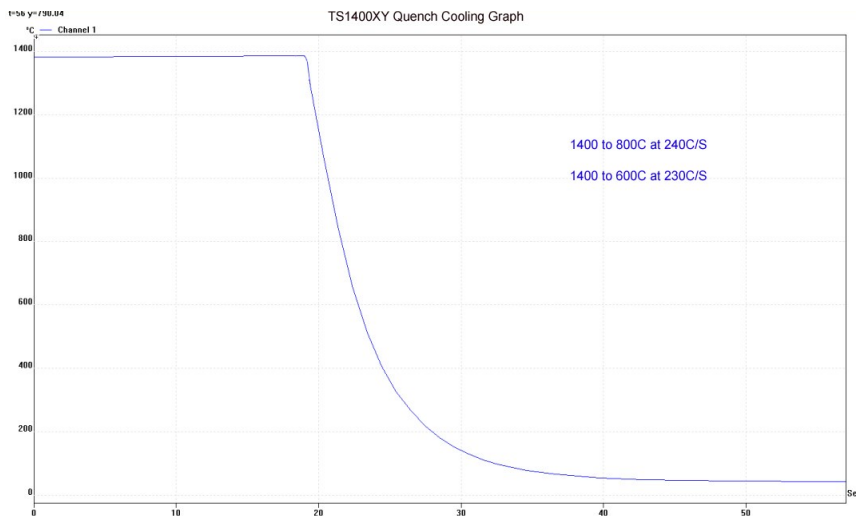
## Specifications

- Temperature Range ambient to 1400 °C
- Heating rates from 1 to 200°C/min
- Temperature stability 1°C
- Type S Pt-10% Rh/Pt thermocouple
- Max Sample sizes: 5x5mm, 0.5mm thick
- Objective lens minimum working distance: 6mm
- Condenser minimum working distance: 12.5mm
- Light aperture: 1.7mm for accurate sample temperature
- Suitable for transmitted and reflected light
- Gas tight chamber for atmospheric control
- Clamps directly to microscope substage
- Water cooling connections for stage lid and body
- Low mass for fast response in both heating and cooling
- Selection of different window materials and thicknesses available



## Ultra fast quench cooling manipulator

This special manipulator replaces the standard sample manipulator and can be used for either very rapid heating or quench cooling similar to a Vernadsky stage. The sample can still be manipulated in XY directions so that the exact area of interest can be found and then heated to 1400°C at a rates up to 200°C/min. When at the desired temperature, the sample is quickly withdrawn from the heater. The heater can now be programmed down to the desired temperature and the sample can be reinserted into the heater to view changes in the sample resulting from the quench.



The graph shows the cooling curve when a fine wire thermocouple was bonded to the sapphire sample window and withdrawn from the heater at 1400°C. Cooling from 1400 to 800°C was in excess of 240°C/s.