

## Examina Temperature Control Systems

Optimised for sample characterization these systems feature fast response temperature control, high rates of heating and less than 0.1°C stability.

To extend temperature range below ambient (to -196°C) the systems require a cooling option to be added.

### Examina Pro

The high speed heating and automated sample manipulation make the examina pro one of the most advanced precise temperature control systems in the world. The precision stepper motors enable micron accurate sample manipulation throughout the -196 to 600°C temperature range. The motors can be set to automatically scan the sample.

The sample is loaded on a 0.17mm cover slip on a highly polished silver heating element to ensure excellent heat transfer and extremely sensitive temperature measurement. There is virtually instant sample response as opposed to other hotstage systems which show considerable thermal lag.

Both temperature and sample position are controlled by the intuitive Linksys software with simple clicks on direction buttons for movement and 'heat' 'cool' 'hold' for temperature.

A Class B Pt100 1/10 Din resistor ensures that temperature can be displayed to 0.01°C and controlled to better than 0.03°C

The patented design of the temperature control element and cooling tubes enable perfect physical stability imperative to confocal microscopy applications and important to high magnification brightfield microscopy.

### Specifications

- Can be used with standard light microscopy, IR, X-ray, Confocal, and Raman applications
- Temperature Range -196°C to 600 °C (requires cooling pump)
- Heating and cooling rates of 0.01 to 130°C/min
- PC control using LinkSys software
- 100 ramp temperature programming
- Online temperature/time plot
- Positional resolution of motors 0.05µm
- Position repeatability <3µm
- 150 X,Y coordinates can be stored
- Simple to fit fine focus attachment- Z axis (dependent on microscope)
- Max. 15mm motorized X,Y travel
- Manual & PC operation
- Definable sample scan area
- 7, 10 or 16mm (G7, G10 or G16) sample holders available
- Sample vibration eliminated over entire range of speeds
- Designed for use with the Linkam RTVMS software



- Ventilated bottom window to eliminate condensation
- Novel low profile lid design for rapid lens change
- Extremely efficient use of liquid nitrogen
- Stage body size - 160 x 80 x 24 mm
- Mounts directly on microscope substage using stage-clamps
- Objective lens working distance - 0.1mm to 4.9mm
- Gas tight sample atmosphere
- Light aperture - 1.3mm Ø for accurate sample temperatures
- Optional lid and cooling jacket for high magnification lenses

### System Includes

MDS600 motorized hotstage  
CI94 Computer Interface Temperature Programmer  
Linksys Temperature and Motor Control Software  
MDS Motor Controller

Linkam Scientific Instruments Ltd ·  
info@linkam.co.uk  
www.linkam.co.uk  
(+44)(0) 1737 363 476.  
FAX (+44)(0) 1737 363 480

## Examina Dynamic

The THMS600 is one of the most widely used heating and freezing stages on the market. Over 800 stages have been sold around the world to date, it is used in many applications where high heating/freezing rates and 0.1°C accuracy and stability are needed.

The sample is loaded on a 0.17mm cover slip on a highly polished silver heating element to ensure excellent heat transfer and extremely sensitive temperature measurement. There is virtually immediate sample response as opposed to other hotstage systems which show considerable thermal lag.

A platinum resistor sensor, accurate to 0.01°C provides far more accurate and stable temperature signal that can be achieved with a thermocouple.

The temperature is programmed by the standalone TMS94 temperature programmer. Sophisticated temperature profiles of up to 32 ramps can be set up with ranges of heating rates from 0.1 to 130°C/min.

The TMS94 can be used as a standalone programmer with simple one touch controls, or connected via RS232 to PC enabling use of further features within the Linksys software. TMS94 firmware can be updated via email using the RS232 connection.

Samples can be quickly characterized by heating to within a few degrees of the temperature of interest at a rate of 130°C/min then slowed down to 0.1°C/min to closely examine sample changes utilising a variety of microscopy techniques. The entire experiment can be saved as an online plot or exported to a spreadsheet application.

## Specifications

- Temperature range -196° to 600°C (cooling option required)
- Up to 130°C/min heating
- 32 ramp temperature profile programming
- No PC required
- Temperature stability <0.03°C
- 16 mm X,Y sample manipulation
- Sample area 22 mm diameter
- Gas tight chamber for atmospheric control
- Clamps directly to the microscope substage for stability
- 100ohm platinum resistor sensor. 1/10th Din Class B to 0.1°C
- Light aperture - 2.4mm Ø
- Silver heating block for high thermal conductivity
- Direct injection of the coolant into the silver block
- Single ultra thin lid window - 0.17mm
- Objective lens working distance - 0.1mm to 4.5mm
- Condenser lens minimum working distance 12.5mm
- Range of condenser extension lenses available

## System Includes

THMS600 Stage  
TMS94 Temperature Programmer



Examina Dynamics System with cooling option



Linkam Scientific Instruments Ltd ·  
info@linkam.co.uk  
www.linkam.co.uk  
(+44)(0) 1737 363 476.  
FAX (+44)(0) 1737 363 480

## Examina Computer Ready

This is a computer ready hotstage system including the THMS600 hotstage, CI94 computer interface and Linksys software. The THMS600 is one of the most widely used heating and freezing stages on the market. Over 6000 stages have been sold worldwide to date. This stage is used in many applications where high heating/freezing rates and 0.1°C accuracy and stability are needed.

The sample is loaded on a 0.17mm cover slip on a highly polished silver heating element to ensure excellent heat transfer and extremely sensitive temperature measurement. There is virtually instant sample response as opposed to other hotstage systems which show considerable thermal lag.

A platinum resistor sensor, accurate to 0.01°C provides far more accurate and stable temperature signal that can be achieved with a thermocouple.

The temperature is programmed by the intuitive Linksys software and controlled via the CI94 computer interface controller. Highly sophisticated temperature profiles of up to 100 ramps can be set up with ranges of heating rates from 0.1 to 130°C/min. Temperature profiles can be saved for different experiments.

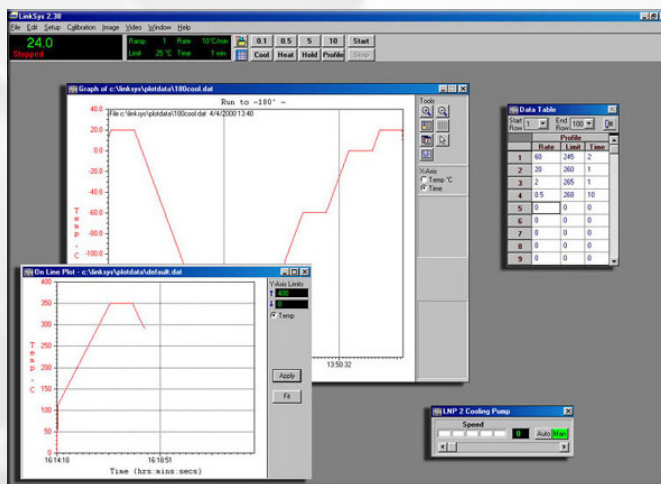
Samples can be quickly characterized by heating to within a few degrees of the temperature of interest at a rate of 130°C/min then slowed down to 0.1°C/min to closely examine sample changes utilising a variety of microscopy techniques. The entire experiment can be saved as an online plot or exported to a spreadsheet application.

## Specifications

- Temperature range -196° to 600°C (cooling option required)
- Up to 130°C/min heating
- 100 ramps per temperature profile programming
- Online temperature plot
- Temperature stability <0.03°C
- 16 mm X,Y sample manipulation
- Sample area 22 mm diameter
- 100ohm platinum resistor sensor. 1/10th Din Class B to 0.1°C
- Light aperture - 2.4mm Ø
- Silver heating block for high thermal conductivity
- Direct injection of the coolant into the silver block
- Single ultra thin lid window - 0.17mm
- Objective lens working distance - 4.5mm
- Range of condenser extension lenses available
- Can be used with all microscope techniques
- Water cooled stage body for high temperature work (>300°C)
- Sample side loading without removing the stage lid
- Gas tight sample chamber for atmospheric control
- Stage body size - 137 x 92 x 22 mm

## System Includes

THMS600 Hotstage  
CI94 Computer Interface Temperature Programmer  
Linksys Temperature Control Software



Linkam Scientific Instruments Ltd ·  
info@linkam.co.uk  
www.linkam.co.uk  
(+44)(0) 1737 363 476.  
FAX (+44)(0) 1737 363 480

## Examina Standard System

This system is designed to offer the precision and stability of the THMS600 hotstage with a simpler temperature programmer than the TMS94 or CI94.

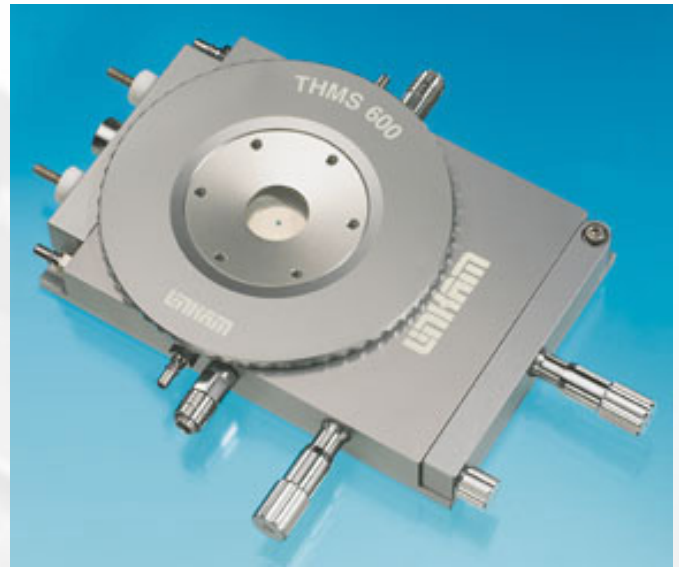
The THMS600 is one of the most widely used heating and freezing stages on the market. Over 6000 stages have been sold world wide to date. The stage is used in many applications where high heating/freezing rates and 0.1°C accuracy and stability are needed.

The sample is loaded on a 0.17mm cover slip on a highly polished silver heating element to ensure excellent heat transfer and extremely sensitive temperature measurement. There is virtually instant sample response as opposed to other hotstage systems which show considerable thermal lag.

A platinum resistor sensor, accurate to 0.01°C provides far more accurate and stable temperature signal that can be achieved with a thermocouple.

The temperature is controlled by the TP94 controller which has a simple single line display and one ramp program consisting of a limit temperature and the rate of heating/cooling, limit temperature holding time is 999 minutes or when exit button is pressed. Heating rates are limited to 90C/min.

The Examina system is designed for those who require a basic temperature control microscopy system but refuse to compromise on temperature accuracy and control.



## Specifications

- Temperature range -196° to 600°C (cooling option required)
- From 0.1 Up to 90°C/min heating
- Temperature stability <0.1°C
- Single ramp temperature control
- 16 mm X,Y sample manipulation
- Sample area 22 mm diameter
- Gas tight sample chamber for atmospheric control
- Clamps directly to the microscope substage for stability
- 100ohm platinum resistor sensor. 1/10th Din Class B to 0.1°C
- Light aperture - 2.4mm Ø
- Silver heating block for high thermal conductivity
- Direct injection of the coolant into the silver block
- Single ultra thin lid window - 0.17mm
- Objective lens working distance - 4.5mm
- Condenser lens minimum working distance 12.5mm
- Range of condenser extension lenses available
- Can be used with all microscope techniques
- Water cooled stage body for high temperature work (>300°C)
- Suitable for Confocal, Laser Raman and X-Ray
- Sample side loading without removing the stage lid
- Stage body size - 137 x 92 x 22 mm

## Examina system includes:

THMS600 stage

TP94 computer interface controller

Linkam Scientific Instruments Ltd ·  
info@linkam.co.uk  
www.linkam.co.uk  
(+44)(0) 1737 363 476.  
FAX (+44)(0) 1737 363 480