

# LTS120/PE100/PE120

Thermoelectric Cooling Systems



## Temperature Control

T96-P LinkPad controller allows fast and accurate temperature programming

## Thermoelectrically Cooled

Cooling below ambient temperatures without the need for liquid nitrogen

## Easy To Use

Straightforward temperature control for microscopy, spectroscopy and more

# Introducing the LTS120

Linkam's LTS120 Peltier stage is an easy-to-use thermoelectrically cooled device which provides a straightforward means of temperature control with minimal setup required. It does not require liquid nitrogen to cool below ambient temperature and provides a simple turnkey solution with  $\pm 0.1^{\circ}\text{C}$  temperature stability and control. It also offers rapid sample loading and precise sample positioning in the temperature range of  $-40^{\circ}\text{C}$ , (optional F250 re-circulating cooler required for temperatures below  $-25^{\circ}\text{C}$ ), to  $120^{\circ}\text{C}$ .

The sample is easily mounted on a standard microscope slide in direct contact with the polished heating element and can be controlled over 15mm of travel in both X and Y directions via the precision ground manipulators. Other features of the stage include gas valves to enable purging with inert gas and a swing-out stage lid for rapid sample changeover.

The LTS120 is supplied as part of a system that includes a T96-P controller, LinkPad touch screen display to control experiment parameters, and an ECP water circulator. These systems are also compatible with our optional LINK software to add features such as data logging, charting, data export options and modules for adding further capability, including imaging and image analysis.

The LTS120 Liquid Crystal System is a system specifically designed for the study of liquid crystals. The system includes the LTS120E version of the stage which supports electrical connections, a liquid crystal cell holder and liquid crystal cells.



## Features

### WIDE TEMPERATURE RANGE

The temperature range spans from  $-40^{\circ}\text{C}$  (optional F250 re-circulating cooler required for temperatures below  $-25^{\circ}\text{C}$ ) to  $120^{\circ}\text{C}$ .

### SWING-OUT LID

The swing mechanism of the lid allows easy access and loading of samples.

### XY SAMPLE MANIPULATION

Sample position can be controlled over 15mm of travel in both X and Y directions via the stainless steel manipulators.

### QUICK-RELEASE GAS PORTS

Simple stage purging to allow atmospheric control in the chamber.

### HIGH DEGREE OF ACCURACY AND STABILITY

Temperature stability of  $0.1^{\circ}\text{C}$  is ensured by the platinum resistor sensor, guaranteeing accuracy when monitoring small sample changes.

### ELECTRICAL CONNECTIONS AND PROBES

Optional electrical connections and probes enable electrical measurements to be carried out on the sample.

### INVERTED MICROSCOPE SUPPORT

Instruments for inverted microscopes are available.

### CUSTOM OPTIONS

Please contact us with details of your requirements.

# Introducing the PE120 and PE100

Linkam's PE100 and PE120 Peltier stages are easy-to-use thermoelectrically cooled devices. They are ideally suited to basic temperature control application and do not require liquid nitrogen to cool below ambient temperatures.

All systems include a stage (either PE100 or PE120), a T96-P LinkPad controller which allows fast and accurate temperature programming via touch screen control, and an ECP water circulator. They are also compatible with our optional LINK software, adding features such as data logging, graphing, data export options and modules for adding further capability, including imaging and image analysis.



## PE120 Features

### WIDE TEMPERATURE RANGE

-25°C (dependent on water temperature) to 120°C with a control stability of +/- 0.1°C.

### OBJECTIVE LENS WORKING DISTANCE

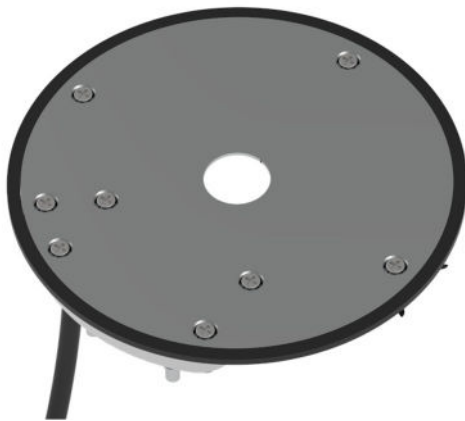
The open-face stage design accommodates objectives of all working distances down to 0.1mm.

### CUSTOM OPTIONS

Please contact us with details of your requirements.

The PE120 is designed to control the temperature of microscope slides. A PE120XY version is also available with a base plate designed to fit into the adapter plate recess of many types of XY microscope stages, including those of Marzhauser and Prior.

Manufacturer-specific versions of the PE120 series are available for Leica, Nikon, Olympus and Zeiss microscopes, please contact us with your microscope details before purchasing.



## PE100 Features

### WIDE TEMPERATURE RANGE

-10°C (dependent on water temperature) to 99°C with a control stability of +/- 0.1°C.

### OBJECTIVE LENS WORKING DISTANCE

The open-face stage design accommodates objectives of all working distances down to 0.1mm.

### CUSTOM OPTIONS

Please contact us with details of your requirements.

The PE100 is designed to fit into the table of your inverted microscope. Linkam's inverted Peltier stages are used in cell biology labs worldwide in applications ranging from IVF and sperm motility to blood viability and low temperature cell preservation.

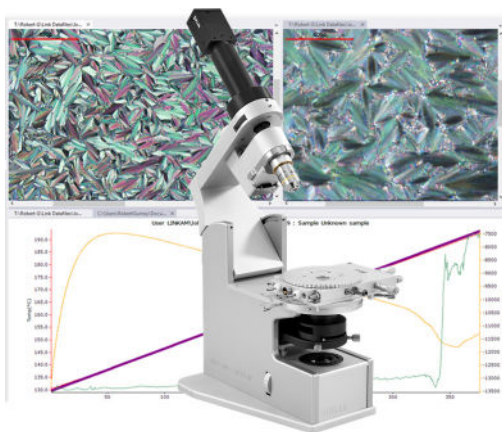
The stage's planar design allows complete access to the sample and facilitates the use of petri dishes, microscope slides and well plates.

Manufacturer-specific versions of the PE100 series are available for Leica, Nikon, Olympus and Zeiss microscopes, please contact us with your microscope details before purchasing.

# Technical Specification

	PE100	PE120	LTS120
<b>Temperature Range</b>	-10°C to 99°C (dependent on water temperature)	-25°C to 120°C (dependent on water temperature)	-40°C to 120°C (optional re-circulating cooler required below -25°C)
<b>Heating/Cooling Rates</b>	0.01°C to 10°C/min	0.01°C to 20°C/min	0.01°C to up to 30°C/min
<b>Aperture</b>	16mm	5mm	2.5mm
<b>Objective Working Distance</b>	0.1mm	0.1mm	5.8mm
<b>Sample Area</b>	108mm diameter	32 x 35mm	40 x 40mm
<b>Stage Size</b>	Circular $\varnothing$ 108 or $\varnothing$ 110mm Rectangular 110 x 160mm	PE120 105 x 150mm PE120XY 110 x 160mm PE120XY 86 x 128mm	90 x 166 x 24mm
<b>Compatibility</b>	Leica, Nikon, Olympus and Zeiss inverted microscopes	Nikon, Olympus and Zeiss general purpose upright and inverted microscopes	Clamping options are additionally available for most microscopes

## Discover More...



### 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.

## 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)