



Linkam Scientific Instruments

PE120-AFM

Temperature Controlled Peltier Stage

USER GUIDE

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Before Setting Up Your Equipment

Please register your products by going to www.linkam.co.uk and click on the product/software registration button.

You will need to register your equipment with us to:

- Activate your warranty and technical support
- Access the online setup videos
- Permanently unlock the Linksys32 software (if purchased)

If you have purchased Linksys32 software, please install the software first. This process will guide to register all of your products.

See Linksys32 manual for further installation instructions.

A CD with a setup videos is supplied with your system.

Important Notice

Please check that your Linkam equipment has not been damaged during transit. If there is any evidence of external damage DO NOT SWITCH ON ANY ELECTRICAL ITEMS.

Contact LINKAM SCIENTIFIC or their appointed distributor immediately. Your warranty may be impaired if Linkam is not informed of any transport damage within 7 working days of delivery.

NO attempt should be made to repair or modify the equipment in any way, as there are **no user replaceable parts**.

No attempt should be made to open the case except by qualified personnel as hazardous voltages are present.

In order to use this equipment successfully, please take time to read this manual all the way through before using it.

Warranty

This equipment has a warranty against defects in material and workmanship for a period of 12 months. Linkam will either repair or replace products that prove to be defective. For warranty service or repair, this product must be returned to Linkam or a designated service facility.

The warranty shall not apply to defects resulting from interfacing, unauthorized modification or misuse, operation outside of the environmental specifications for the product, or improper site preparation or maintenance.

Technical Support

Any technical questions or queries should be addressed to the Technical Support Department at the address shown on the back of this manual.

Equipment Maintenance

Use a small quantity of isopropyl alcohol with a soft cloth and gently wipe the surface. To clean the stage, use isopropyl alcohol (IPA) and cotton swabs. Take great care not to touch the platinum temperature sensor protruding from the side of the heating element. The sensor is very fragile.

Product Registration

Register your Linkam instrument and software; please go to www.linkam.co.uk to fill in the Product / software Registration form. After registration, you can login to our website to download manuals and access 'How To Videos'.

Feedback

Your feedback will be greatly appreciated, please go to www.linkam.co.uk to fill in the Feedback form.

Safety Precautions

- 1) Read this guide before using the equipment. Save these instructions for later use.
- 2) Follow all warnings and instructions which may be placed on the programmer or stage.
- 3) If for any reason the mains fuse needs to be replaced then it must be replaced by one of the same type and rating as shown in the equipment ratings.
- 4) To prevent electric shock, do not remove the cover of the controller or associated electronics.
- 5) Never use the equipment if a power cable has been damaged. Do not allow any heavy objects to rest on the power cables. Never lay the power cables on the floor.
- 6) Do not obstruct any ventilation holes. Do not attempt to insert anything into these openings. Provide adequate ventilation of at least 75mm all around the equipment.
- 7) Do not expose the equipment to water. If for any reason it gets wet then unplug it from the mains and contact Linkam Scientific Technical Support.
- 8) The equipment is not intended to be used outdoors.
- 9) Each product is equipped with a 3-wire grounded (earth) mains plug or a free-end 3 wire mains lead. The plug only fits into a grounded-type outlet. The free-end mains lead should be connected to a correctly grounded 3-wire mains outlet. Do not defeat the purpose of the grounded (earth) type plug.

Free - end mains leads are colour coded as follows :

Colour	Function
Brown	Live
Blue	Neutral
Green/Yellow	Earth (Ground)

- 10) If any problems occur then unplug the equipment from the mains outlet and contact Linkam Scientific Technical Support.
- 11) Do not remove the cover from the equipment unless the mains inlet has been removed. Any servicing should be carried out by qualified service personnel.

Symbol References

Caution:

This safety symbol is on the back panel of the equipment and warns:-



The user must not make or remove any connections while the unit is powered on.
To avoid electric shock do not remove the cover. Refer servicing to qualified service personnel.

Caution:



This warning symbol indicates that the surface labelled with this symbol may be hot.

Introduction

Thank you for purchasing the PE120-AFM Heating and Freezing stage system. Please take the time to read through the manual as it will help you to make the most out of the equipment.

PE120-AFM Stage Specifications

Maximum temperature: 120°C
Minimum temperature: -25°C with ECP
(-40°C with water chilled at 5°C)
Maximum heating rate: 30°C/min
Weight (without tubing): 254g



PE120-AFM with T95-PE LinkPad
Picture shown without ECP water circulator pump

PE120-AFM System

The system consists of a PE120-AFM stage, T95-PE-LinkPad System Controller and an ECP water circulator pump.

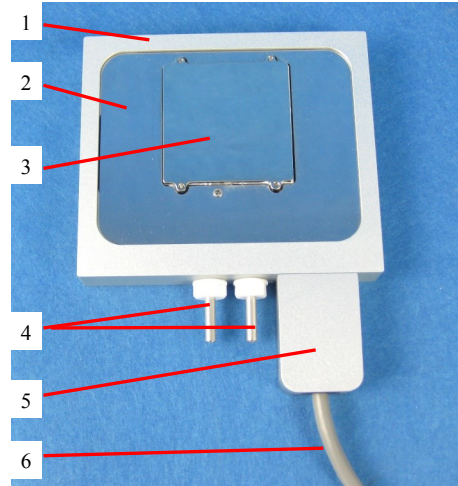
Linksys32 software be added as an option to use a PC to control the temperature.

If you have Linksys32 software, please refer to Linksys32 manual for instruction to use a PC to control the temperature.

Stage Anatomy

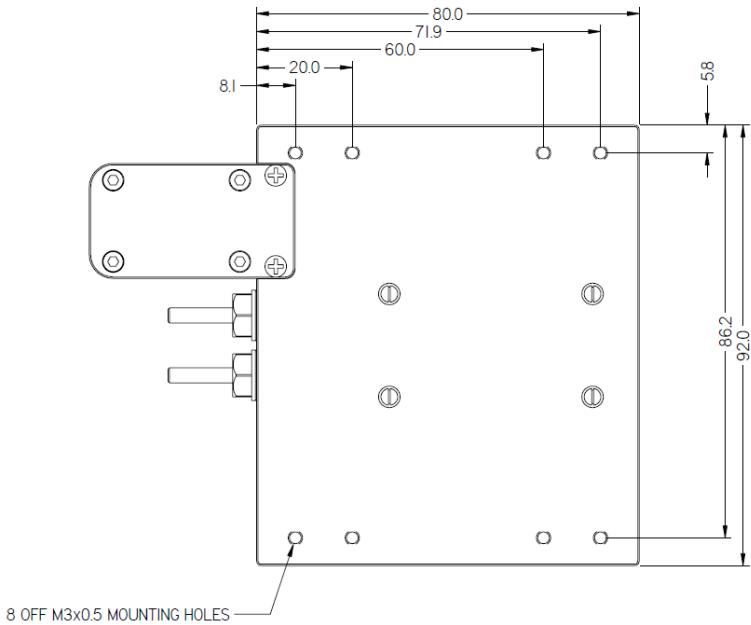
Top

1. Stage Body
2. Metal cover
3. Heater/cooler block (40x40mm)
4. ECP water connectors
5. Stage Lead Cover
6. Stage Lead



Base

Note: dimensions are in millimetre (mm).

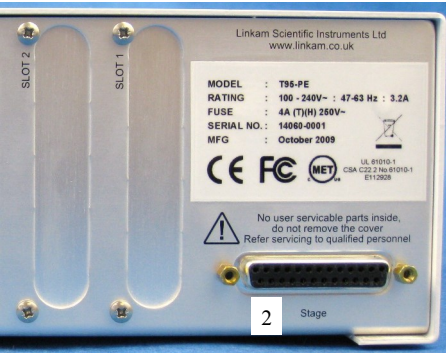
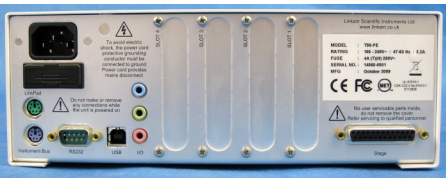


Connecting the Instruments

System Controller Cable Connections

For more details on the T95-PE System Controller please refer to the PE95 System Controller manual to setup it up and to use LinkPad to program the temperatures

From the stage, connect the Stage Cable labelled **T95 STAGE** (1) connector to the socket labelled **Stage** (2) on back of the system controller



Setting up ECP Water Circulator Pump

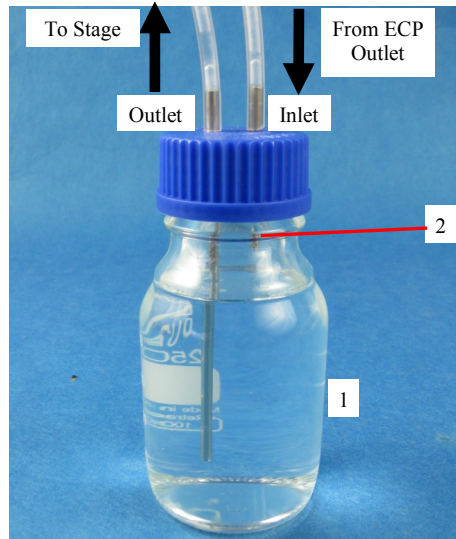
The ECP Water Circulator Pump (1) supplied with your stage is used to circulate water at ambient temperature to provide the temperature gradient needed to make the Peltier heat and cool.

The ECP must be connected to the stage. See the ECP manual for instruction setting up the ECP.

Connect the tubing from the ECP to the Anti-vibration Bottle (1) as shown.

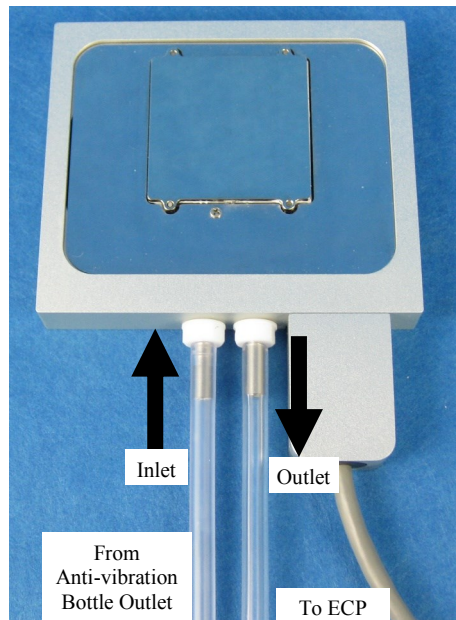
Note: make sure the blue lid is screwed on tightly for the water pressure to push the water out of the bottle.

Note: make sure the Inlet is connected to the shorted metal tube (2)



The tube from the Anti-vibration Bottle is pushed directly on to the water Inlet and Outlet connectors.

Note: the ECP must be switched on first and circulating water before the stage is used.



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Linkam Scientific Instruments Ltd

Tel: +44(0)1737 363 476

Fx: +44(0)1737 363 480

info@linkam.co.uk

Unit 8 Epsom Downs Metro Centre

Tadworth, Surrey, KT20 5LR, UK

www.linkam.co.uk

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