MICROSCOPE WARM STAGE SYSTEM

LEC 916

USER & INSTRUCTION MANUAL

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LEC916 MICROSCOPE WARM STAGE
USER AND INSTRUCTION MANUAL

Our products are sold with the understanding that the user will test the instrument in actual use and determine their adaptability to his/her intended use.

FEATURES:

- Temperature is set digitally
- Visual and audible over/under temperature alarms
- Over/under temperature alarms set by user
- Large LCD display
- Display shows the actual and set temperature of the stage and pad
- Compatible with all LEC stage warmers manufactured since 1988
- Error and warming up/down messages are displayed on the LCD
- In alarm state, the audible signal may be switched off by pressing any switch
- Alarms can be disabled by setting them to 0.0 ºC
- If the alarms are enabled a faulty sensor/cable will cause an alarm.

The LEC916 microscope warm stage system is designed to provide an even, stable temperature to a microscope stage and warming pad situated on top of the temperature controller.

The temperature control circuit uses the latest pulse width modulation (PWM) control technique. The use of a unique heating element which prevents vibration of the stage gives a clear image at high microscope magnifications. The stage and pad temperature, monitored by the temperature indicator on the front panel, can be set using the front panel switches.

TEMPERATURE ADJUSTMENT:

Pressing any switch located on the front panel will prompt you to set either STAGE or PAD temperature. By pressing the (+) or (-) switch will move the cursor between PAD and STAGE. Adjustment of any values in option is to be made by pressing SET switch to allow changes. Sequential pressing of the SET switch will prompt you to select the set temperature, High/Low alarm points and Enable/Disable of fail detect sensor. The set temperature allows you to pre-set the value of the temperature to be stable within. The High/Low alarm points are the differential temperature between the pre-set value and the value that you set which would give you an alarm warning for High/Low temperature. Enable of Fail detect sensor would let you know if there is any sensor/cable which is not connect to the warm stage within a certain time thus causing alarm sound to user. In case if any button is not press, it will go back to start mode which indicated in the flow chart.
FLOW CHART

START

STAGE/PAD Display Temperature

Press (-) Switch

STAGE Display

Press Set switch

Yes

Adjust STAGE temperature with (+) or (-) Switch

Press Set switch

Yes

Adjust Low Alarm with (+) or (-) Switch

Press Set switch

Yes

Adjust High Alarm with (+) or (-) Switch

Press Set switch

Enable/Disable Fail Detect sensor/cable

PAD Display

Press Set switch

Yes

Adjust STAGE temperature with (+) or (-) Switch

Press Set switch

Yes

Adjust Low Alarm with (+) or (-) Switch

Press Set switch

Yes

Adjust High Alarm with (+) or (-) Switch

Press Set switch

Enable/Disable Fail Detect sensor/cable
The stage is made of copper with a large thermal mass to prevent hot-spots. The temperature is measured in one place only and in some large stages a temperature gradient exists.

Consideration should be given to thermal coupling between the warm stage/pad and the type of slide or vessel used. Air temperature and velocity circulating around the microscope will cool the specimen. As temperature loss of around 2°C can be expected, the warm stage/pad temperature should be elevated accordingly.

Furthermore, the warming stage/pad depends on room temperature for cooling; therefore the temperature control will only work from 5°C above ambient temperature. The internal circuitry in the temperature controller generates heat, some of which is passed on to the pad, thus restricting the low temperature control range.

No attempt has been made to accurately calibrate the surface temperature of the stage/pad because of varying heat losses involved in thermal coupling the vessel to the stage/pad. The LCD readout is the temperature of the stage/pad where the sensor is mounted. Great care has been taken to design the instrument so that it will maintain the stability of a long-term temperature control of the set temperature.

**INSTALLATION:**

The warm stage is fixed to the microscope stage with high friction rubber strips (similar to double-sided tape) which can be easily removed and re-used. If the plastic strips become dirty, thereby losing their friction, simply wash all contacting surfaces with mild detergent and water.

Inverting Microscopes: Remove the original round disk and place the warm stage in its place.

**SPECIFICATIONS:**

- Temperature range: 20°C to 40°C
- Temperature control: +/- 0.25°C
- Temperature indication: 0.1°C resolution
- Temperature alarm set points: 0 to +/- 5°C
- Resolution for temperature setting: 0.1°C
- Heating time of stage/pad: 15 minutes
- Heater voltage: 12V DC
- Size of warming pad: 210 x 130 mm
- Size of Temperature Controller: LWH 150x220x90 mm
- Power: 120/240V AC 50/60 Hz 60W
MAINTENANCE:

Clean with mild detergent. Please use alcohol with caution as it may dissolve the painted surface.

Note: LEC (wholly owned by LabIVF) now offers a range of varying sizes, shapes of warming stages suitable for different microscopes and enquiries for which are most welcome. The range is continually being upgraded and expanded.

Enquiries are welcome for other LEC Instruments’ products as listed below:

- Portable incubator;
- Liquid nitrogen low level alarm system;
- Test tube warmers;
- Dry blocks and heaters;
- Warming trays;

Email: sales@lecinstruments.com / sales@labivf.com
Web: www.lecinstruments.com / www.labivf.com
WARRANTY

LabIVF Asia Pte Ltd warrants to the buyer that this product is free from defects in material or workmanship at the time of purchase. If such a defect is found during the warranty period of two years, the product will be either replaced or repaired without charge when returned, shipping prepaid, to LabIVF Asia Pte Ltd or an approved repairer. This warranty does not extend to any person obtaining the product from the buyer.

This warranty does not cover:

1. Repairs or alterations to the product by unauthorized persons.
2. Damage caused by power failure, accident, abuse or failure to use the product in accordance with the user and instruction manual.
3. Any consequent loss or damage arising from the use of the product.

In order to qualify to claim under warranty as the original purchaser, please fill in and forward your details as set out below to:

LabIVF Asia Pte Ltd
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Singapore 658054,  OR
Fax: +65-6896 7096 or Email: sales@lecinstruments.com

Warm stage temperature controller Serial No: ..........................
Name of supplier: ..............................................................
Date of purchase: ..............................................................
Name and address of Purchaser: ..................................................