



## **HMM1 Heating mantle, multi-row**

*Please read the User Manual carefully before use, and follow all operating and safety instructions!*



# **user manual**

english

# User Manual



## HMM1 Heating mantle, multi-row

### Preface

Users should read this Manual carefully, follow the instructions and procedures, and beware of all the cautions when using this instrument.

### Service

If help is needed, you can always contact your dealer or Labbox via [www.labbox.com](http://www.labbox.com)

Please, provide the customer service representative with the following information:

- Serial number (on the back side)
- Description of the problem
- Your contact information

### Warranty

This instrument is guaranteed to be free from defects in materials and workmanship under normal use and service, for a period of 24 months from the date of invoice. The warranty is extended only to the original purchaser. It shall not apply to any product or parts which have been damaged on account of improper installation, improper connections, misuse, accident or abnormal conditions of operation.

For claim under the warranty, please contact your supplier.

# 1. Safety Instructions










	Connect the device to an earthed power supply to ensure safety of the machine and the experiment; connect the power as the machine requires it.
	The use of this instrument in inflammable, explosive, poisonous, or highly corrosive experiments is forbidden.
	Place the heating mantle on a horizontal, flat, stable table.
	The heating mantle must only be used by previously qualified staff that has read the instructions manual and knows how to operate it.
	Do not place the heating mantle near any heat source.
	During its functioning, dangerous materials such as flammable or pathological substances must be out of the device's safety area.
	An overfilling of the vessel could cause some working parts to overheat, which could dissolve flammable materials and start a fire.
	While the machine is working you must not touch the hot surface, nor the vessel or the solution to protect from high-temperature burns
	Read the instructions manual before using this device

Table 1

- When working, wear the necessary personal protective equipment to avoid the risk of:
  - Burns caused by splashing and evaporation of liquids
  - Intoxication caused by release of toxic or flammable gases.
- Set up the instrument on a spacious, stable, clean, non-slip, dry, and fireproof surface. Do not operate the instrument in explosive atmospheres, with hazardous substances or under water.
- In models with stirring function, gradually increase or reduce the speed if:
  - The stirring bar comes off because of a too high speed
  - The instrument is not running smoothly
- Temperature must always be set at least 25°C below the flash point of the media used.
- Beware of hazards due to:
  - Flammable materials or media with a low boiling temperature
  - Overfilling of vessels
  - Unsafe vessel
- Process pathogenic materials only in closed vessels.

- Check the instrument and accessories before handling for damage prior to every use. Do not use damaged components. Safe operation is only guaranteed with the accessories described in the “Accessories” chapter. Accessories must be securely attached to the device and cannot come off by themselves. Always disconnect the plug before the assembly or disassembly of accessories.
- The instrument can only be disconnected from the main power supply by pulling from the plug, not the cable.
- The voltage stated on the label must correspond to the main power supply.
- Ensure that the mains cable does not touch the heating base. Do not cover the device.
- Keep away from high magnetic fields.

## 2. Proper Use

The instrument is designed for heating and/or stirring mixtures of liquids in schools, laboratories or factories. It is not suitable for domestic use or for use in environments that can be hazardous for either the user or the instrument.

## 3. Inspection

### 3.1 Unpacking

Unpack the equipment carefully and check for any damages that may have arisen during transportation. If necessary, contact your supplier for technical support.



**Note:**

If there is any apparent damage to the equipment, please do not plug it into the power line.

### 3.2 Items list

The package includes the following items:

Items	Qty
Main unit	1
Power cable	1
User Manual	1
Rod support and clamp	1

Table 2

## 4. Description and Control

### 4.1 Heating Mantle, HMM1 series



Figure 1: HMM1 series

1. Heat: Green pilot that shows the temperature's intensity (the brighter the light is, the higher the temperature the sample has reached is).
2. Temperature adjustment knob with ON/OFF functions.

## 5. Trial Run

- Make sure the required operating voltage and the power supply voltage match.
- Ensure the socket is properly earthed.
- Ensure the power is OFF.
- Pour the liquid to be heated in a vessel.
- Put the vessel on the working space.
- Plug in the power cable and ensure the power is ON.
- Set the desired temperature; the equipment will start working.
- Observe the real temperature.
- Stop the heating function and power OFF the equipment.

*If the operations above cause no abnormalities, the device is ready to operate. Otherwise, the device may have been damaged during transportation. In that case, please contact your supplier. Note: Temperature is adjustable independently in each position.*

## 6. Operation

### 6.1 Heating Mantle, HMM1 series

- Put the heating mantle on top of a horizontal, flat, and stable table leaving at least 30 free cm on each side. Do not place it near any heat source.
- Plug the equipment into a power source.
- Turn the temperature knob (2) clockwise until you hear a “click”; this shows the heating mantle is ON. To adjust the temperature, keep turning the knob clockwise.
- Green pilot (1) – Working – shows the temperature variation. Thus, the more intense the light is, the higher the temperature of the sample is.



**Note:**

- The power used must match the machine's requirements.
- Make sure the power line is at a safety distance from the heating mantel.
- In case of any fault, cut off the electricity first.

## 7. Faults

- The equipment does not turn ON
  - Make sure the power line is plugged in
  - Check for bad connection of the cable
- Temperature cannot reach the set point or stirring cannot be started by adjusting the control knob
  - Check whether the heating wire broke during transportation
  - The heating resistance of the equipment may be damaged.

*If these faults are not resolved, please contact your supplier.*

## 8. Maintenance and Cleaning

- Proper maintenance can keep instruments working properly and lengthen their lifetime.
- Do not spray cleanser directly onto the instrument when cleaning.
- Unplug the power line before cleaning.
- Only use recommended cleansers:

Dyes	Isopropyl alcohol
Construction materials	Water containing surfactants / Isopropyl alcohol
Cosmetics	Water containing surfactants / Isopropyl alcohol
Food products	Water containing surfactants
Fuels	Water containing surfactants

Table 4

- Before using any other cleaning or decontamination methods, verify with the manufacturer that such method will not harm the instrument. Wear proper protective gloves when cleaning the instrument.
- In order to avoid contamination from hazardous substance, the instrument must be cleaned and put into the initial packaging before sending it in for repair.
- Use the instrument in a dry, clean room with a stable temperature.

## 9. Storage and transportation

- Keep the equipment in a dry and clean room with good ventilation and no corrosive gas.
- During transportation, protect it from wetting by the rain and avoid violent collision.

## 10. Working conditions

Ambient temperature: 5~40°C;

Relative humidity: ≤90%;

Voltage: 220V±10%, 50/60Hz

### **Nota importante para los aparatos electrónicos vendidos en España**

Instrucciones sobre la protección del medio ambiente y la eliminación de aparatos electrónicos:



Los aparatos eléctricos y electrónicos marcados con este símbolo no pueden ser eliminados en forma de residuos urbanos.

De conformidad con la Directiva 2012/19/UE, los usuarios de la Unión Europea de aparatos eléctricos y electrónicos, tienen la posibilidad de devolver sus RAEE para su eliminación al distribuidor o fabricante del equipo después de la compra de uno nuevo. La eliminación ilegal de aparatos eléctricos y electrónicos es castigada con multa administrativa.

### **Remarque importante pour les appareils électroniques vendus en France**

Informations sur la protection du milieu environnemental et élimination des déchets électroniques :



Les appareils électriques et électroniques portant ce symbole ne peuvent pas être jetés dans les décharges.

En réponse à la réglementation, Labbox remplit ses obligations relatives à la fin de vie des équipements électriques de laboratoire qu'il met sur le marché en finançant la filière de recyclage de ecosystem dédiée aux DEEE Pro qui les reprend gratuitement (plus d'informations sur [www.ecosystem.eco](http://www.ecosystem.eco)).

L'élimination illégale d'appareils électriques et électroniques est punie d'amende administrative.

### **Nota importante per le apparecchiature elettroniche vendute in Italia**

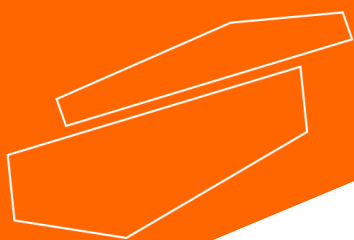
Istruzioni sulla protezione ambientale e sullo smaltimento dei dispositivi elettronici:



Le apparecchiature elettriche ed elettroniche contrassegnate con questo simbolo non possono essere smaltite come rifiuti urbani.

In conformità con la Direttiva 2012/19 / UE, gli utenti dell'Unione Europea di apparecchiature elettriche ed elettroniche hanno la possibilità di restituire i propri RAEE per lo smaltimento al distributore o al produttore di apparecchiature dopo averne acquistato uno nuovo. La rimozione illegale di apparecchiature elettriche ed elettroniche è punibile con una sanzione amministrativa.





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