

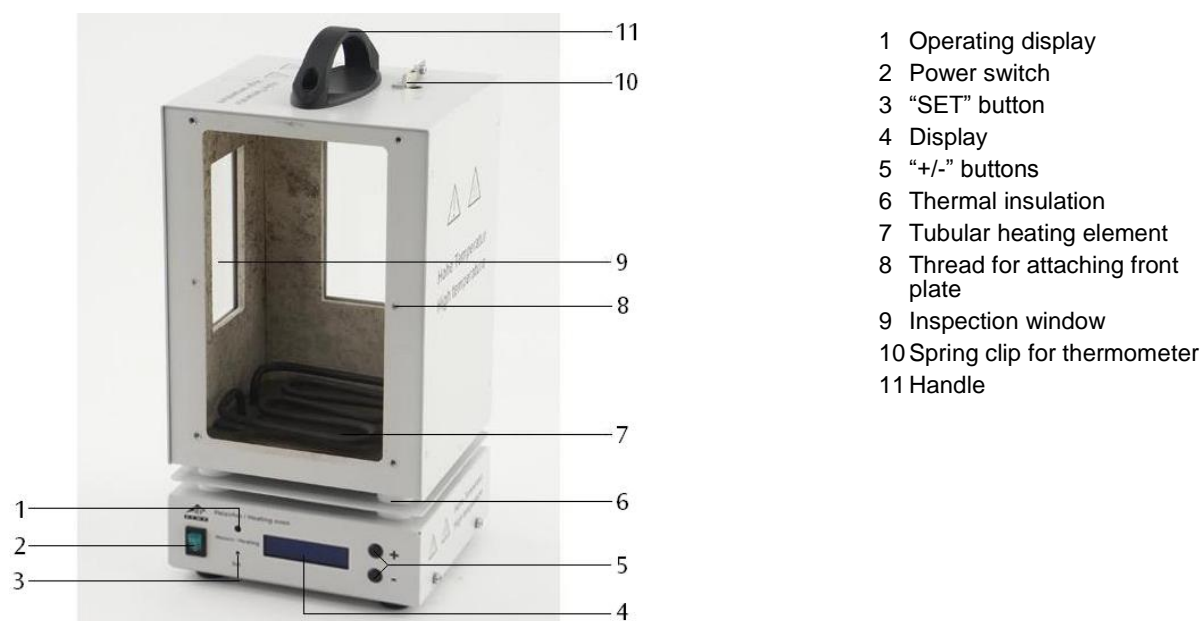
## Heating Chamber

1006796 (115 V, 50/60 Hz)

1012820 (230 V, 50/60 Hz)

### Instruction sheet

10/15 ALF



- 1 Operating display
- 2 Power switch
- 3 "SET" button
- 4 Display
- 5 "+/-" buttons
- 6 Thermal insulation
- 7 Tubular heating element
- 8 Thread for attaching front plate
- 9 Inspection window
- 10 Spring clip for thermometer
- 11 Handle

### 1. Safety instructions

The apparatus conforms to the safety regulations for electrical test, control and laboratory equipment as specified in DIN EN 61010 Part 1. Its protection classification is deemed to be class I. It is intended for use in dry rooms suitable for electrical equipment or installations.

Safe operation of the equipment is guaranteed, provided it is used correctly. However, there is no guarantee of safety if the equipment is used in an improper or careless manner. If it is deemed that the equipment can no longer be operated without risk (e.g. visible damage has occurred), the equipment should be switched off immediately and secured against any inadvertent use.

In schools and training institutions, operation of the apparatus is to be responsibly supervised by trained personnel.

- Before putting the equipment into operation, confirm it is compatible with the local mains voltage.

- Before setting up or starting any experiments, check the apparatus for any damage.
- In the event of any malfunction/defect or visible damage, switch off the equipment immediately and secure it against any inadvertent use.
- The instrument may only be connected to the mains via a socket that has an earth connection.
- Only trained electricians are permitted to open up the apparatus' housing.
- Use all six knurled screws to affix the front plate to the heating chamber.

**Beware: Risk of burns!** The viewing windows and the walls of the heating chamber can reach temperatures of up to 300° C during operation.

- Set up the heating chamber on a heat-resistant surface.
- Only move or transport the equipment by using the insulated handle.
- Allow the apparatus to cool before dismantling the experiment.

## 2. Description

The heating chamber can be employed to conduct the Franck-Hertz experiment or the sodium resonance fluorescence experiment in safety.

It consists of a powder-coated sheet steel casing with two viewing windows. The front plate is attached via six knurled screws.

The chamber is heated via a tubular heating element in the chamber floor. Temperature measurement and regulation is carried via an integrated micro-controller and a PT 100 thermocouple. A digital temperature display allows you to read off the temperature set-point and the actual temperature value. The "SET" button can be used to toggle the display between ° Celsius and ° Fahrenheit. The "+/-" keys allow you to set the set-point for the temperature in steps of 1 K.

There is an opening at the top with a spring clip for holding a thermometer and a thermally insulated carrying handle.

The heating chamber can accommodate both the Franck-Hertz tube with Hg filling and the sodium fluorescence tube on furnace wall (1000913).

The heating chamber 1006796 is for operation with a mains voltage of 115 V ( $\pm 10\%$ ), and the unit 1012820 is for operation with a mains voltage of 230 V ( $\pm 10\%$ ).

## 3. Technical data

Mains voltage:	See back of case
Dimensions of front opening:	230 x 160 mm <sup>2</sup> approx.
Heating power:	800 W (230 V, 50/60 Hz) 400 W (115 V, 50/60 Hz)
Maximum temperature:	300° C (230 V, 50/60 Hz) 250° C (115 V, 50/60 Hz)
Temperature constancy:	$\pm 1^\circ$ C approx.
Dimensions:	335x180x165 mm <sup>3</sup> approx.
Weight:	5.6 kg approx.

## 4. Operation

- Attach the front plate holding the Frank-Hertz tube with mercury filling or the sodium resonance fluorescence tube to the open side of the heating chamber and secure it in place with the 6 knurled screws.
- Set up the corresponding circuit for the experiment to be conducted.
- Turn on the heating chamber.
- Use the "SET" button to choose between a temperature display in ° Celsius or ° Fahrenheit.
- Use the "+/-" keys to set the desired temperature set-point.

The actual temperature (T-actual) is display on the top line of the display, while the set temperature (T-nominal) is shown on the bottom line. The most recent set-point will be saved when the equipment

is turned off so that it is ready to be used again when the equipment is next turned on.

## 5. Care and maintenance

- Before cleaning the equipment, disconnect it from its power supply.
- Use a soft, damp cloth to clean it.

## 6. Disposal

- The packaging should be disposed of at local recycling points.
- Should you need to dispose of the equipment itself, never throw it away in normal domestic waste. Local regulations for the disposal of electrical equipment will apply.

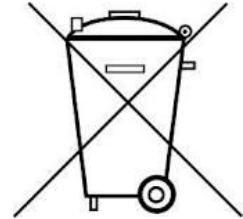


Fig. 1 Heating Chamber with Franck-Hertz tube with Hg filling (115 V: 1006794, 230 V: 1006795)



Fig. 2 Heating Chamber with sodium fluorescence tube (1000913)