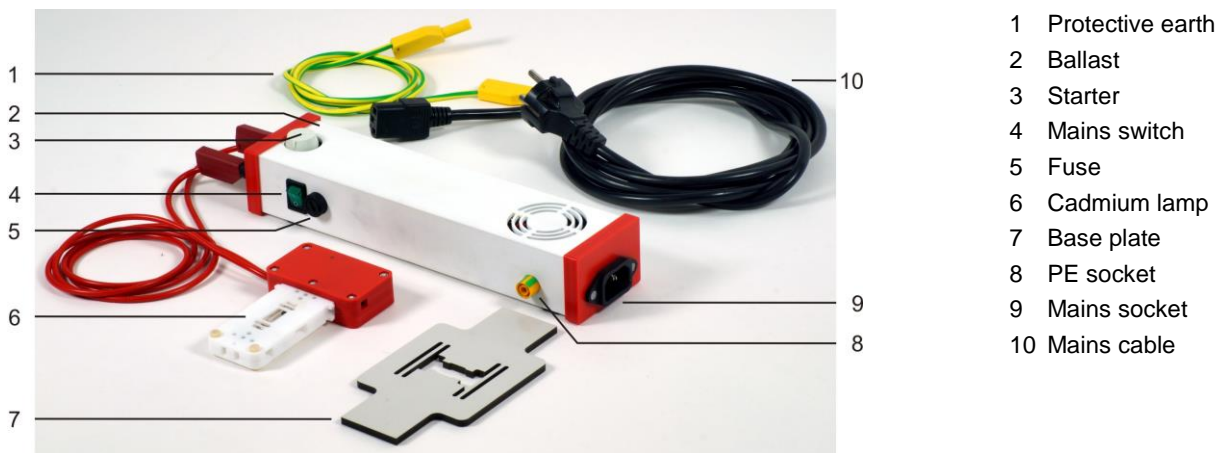


**Cadmium Lamp with Accessories @230 V 1021366**  
**Cadmium Lamp with Accessories @115 V 1021747**

## Instruction manual

11/17 TL/UD



### 1. Safety instructions

This cadmium lamp is exclusively intended for use in rooms which are dry and not subject to any danger of explosion.

Operation of the cadmium lamp is only permissible under supervision in educational, training and research establishments.

Should the cadmium lamp or its accessories become damaged, its continued use is not permitted.

Repairs to the cadmium lamp or its ballast may only be carried out by the customer service department of 3B Scientific GmbH.

- The cadmium lamp may only be operated using the supplied ballast unit.
- Before using the cadmium lamp it is necessary to connect the protective earth. This means connecting the PE socket to both the ballast and the pole piece of the electromagnet accessory for demonstrating the Zeeman effect (1021365) by means of the supplied yellow and green safety experiment lead (protective earth conductor).
- Avoid looking directly into the beam of the

cadmium lamp at all times.

- Do not touch the glass of the cadmium lamp.
- Protect the cadmium lamp from any mechanical impact.
- Never open the cadmium lamp.
- Before lifting the cadmium lamp away from its base plate, always turn the ballast unit off via its mains switch.
- Allow the cadmium lamp to cool for several minutes before switching it back on again.

### 2. Description

Cadmium lamp and accessories make up a special kit intended for the experiment to demonstrate the normal Zeeman effect. The casing of the lamp is made of heat-resistant plastic and has both longitudinal and lateral openings, such that it is only necessary to rotate the electromagnet by 90° when swapping from transverse to longitudinal configuration. Power is supplied from the ballast unit specifically designed for the cadmium lamp. Protective earth-

ing is provided by connecting the protective earth socket to both the ballast unit and the pole piece of the electromagnet accessory for the Zeeman effect (1021365) by means of the supplied yellow and green safety experiment lead (protective earth conductor). The cadmium lamp is positioned in the air gap of the electromagnet by securing the lamp's base plate to the pole pieces of the magnet with the help of the clamp for the Zeeman effect electromagnet (1021365). The 115 V version of the lamp is connected to the mains by means of the supplied 120 V voltage converter (1003649).



Fig. 1: Cadmium lamp mounted on electromagnet.

### 3. Equipment supplied

- 1 Cadmium lamp
- 1 Ballast
- 1 Mains cable
- 1 Protective earth lead
- 1 Base plate
- 1 120 V voltage converter (115 V version only)

### 4. Technical data

#### Cadmium lamp:

- Electric power output: max. 15 W
- Operating temperature range: 5 – 40°C
- Warm-up time (90% light output): 5 min approx.
- Case dimensions: 110 x 70 x 20 mm<sup>2</sup> approx.
- Weight: 160 g approx.

#### Ballast:

- Electrical power consumption when in operation with lamp: 110 W approx.
- Starter: S10 4 – 65 W
- Fuse: 0.63 A slow-blow, 250 V
- Dimensions: 260 x 60 x 45 mm<sup>3</sup> approx.
- Weight: 930 g approx.

#### Base plate:

- Dimensions: 130 x 80 x 5 mm<sup>3</sup> approx.
- Weight: 55 g approx.

**Protection class:** II

### 5. Additionally required equipment

- |   |         |
|---|---------|
| 1 U-shaped magnet core D                    | 1000979 |
| 2 Coils D, 900 turns                        | 1012859 |
| 1 Electromagnet accessory for Zeeman effect | 1021365 |

### 6. Set-up and operation

- Assemble the electromagnet as described in the instructions for the electromagnet accessory for the Zeeman effect (1021365) as far as attaching the pole pieces to the U-shaped core.
- Position the base plate on the pole pieces (Fig. 1).
- Use the clamp to attach the base plate and the pole pieces to the U-shaped core in such a way that it is still possible to move the base plate.
- Insert the cadmium lamp into the slot of the base plate as shown in Fig. 1.
- Align the base plate such that it is flush with the U-shaped core.
- Tighten the clamp as far as possible by hand.
- Connect the PE socket to the ballast and pole piece with the protective earth lead.
- Connect the cadmium lamp to the ballast with the 4-mm safety lead.
- Connect the ballast to the mains power with the help of the mains cable.
- Turn on the ballast and wait for about 5 minutes.

After warming for about 5 minutes, the cadmium lamp will have reached some 90% of its nominal light output.

### 7. Changing fuses

- Turn off the ballast via its mains switch and unplug it from the mains.
- Use a suitable screwdriver, applying gentle pressure in an anti-clockwise direction, to unscrew the fuse holder and remove it.
- Check the fuse.
- If the fuse is blown, replace it with another one of the same rating.
- Put the fuse holder back in.

### 8. Changing starter

If the cadmium lamp fails to light up, it is necessary to change the starter.

- Turn off the ballast via its mains switch and unplug it from the mains.
- Use gentle pressure to turn the starter anti-clockwise and remove it.
- Replace the starter with another one of the same rating.

### 9. Storage, cleaning and disposal

- Keep the equipment in a clean, dry and dust-free place.
- Before cleaning the equipment, disconnect it from its power supply.
- Do not use any aggressive cleaning agents or solvents to clean the equipment.
- It is not usually necessary to clean the cadmium lamp.
- To clean the accessory, use a slightly dampened soft cloth.
- 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. If being used in private households it can be disposed of at the local public waste disposal authority.
- Comply with the applicable regulations for the disposal of electrical equipment.

