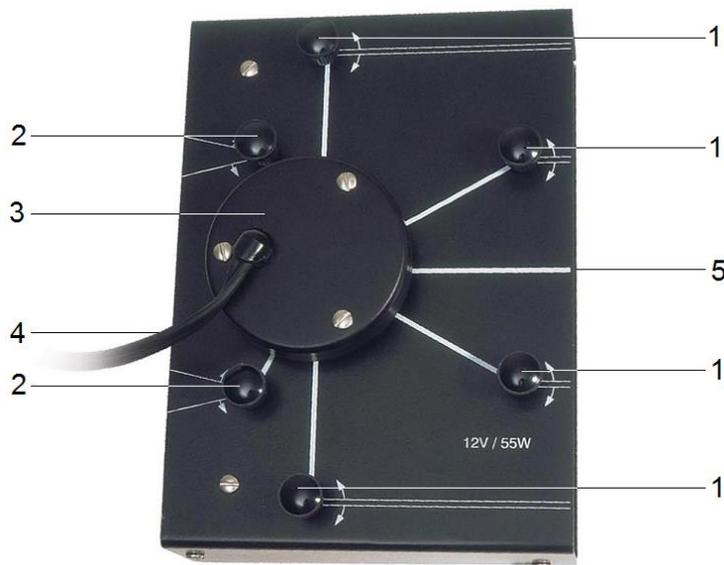


Multiple Beam Lamp 1003321

Operating instructions

06/18 ALF



- 1 Rotary mirror for focused, parallel light beams
- 2 Rotary mirror for divergent light beams
- 3 Protective cover
- 4 Electrical power cable with a 4-mm plug
- 5 Central ray

1. Safety instructions

- Caution: Lamps heat up during extended periods of operation.
- Do not touch the glass bulb of the lamp with your bare hands when changing the bulb, for example. Lamp bulbs are clouded by fat deposits on the skin

2. Description

The multiple beam lamp allows a wide range of experiments demonstrating ray optics when used with the equipment set for optics on magnetic boards (1000604). The demonstrations include casting of shadows, reflection laws, refraction laws, total reflection, minimum angle of deflection in a prism, ascertaining the focal

length of mirrors and lenses, lens laws and aberrations.

The device comprises a halogen lamp in a metal housing lined with magnetic foil. The light source emits up to 5 narrow beams which are deflected by rotary mirrors so as to emerge parallel, convergent or divergent. Up to 2 divergent light beams whose area of overlap can be adjusted by means of mirrors are available on the rear of the multi-beam lamp.

3. Technical data

Lamp:	12 V, 55 W
Power cable:	1.5 m long with a 4-mm plug
Dimensions:	150 x 200 x 50 mm ³
Weight:	0.9 kg

4. Accessories

Spare bulb for the multiple beam lamp 1003322

5. Operation

5.1 Setting a parallel light beam

- Attach the lamp to the board.
- Plug the lamp into a power supply unit.
- Adjust the beam via rotary mirror 1.

5.2 Setting a divergent light beam

- Attach the lamp to the board.
- Plug the lamp into a power supply unit.
- Adjust the beam via rotary mirror 2.

5.3 Bulb replacement

- Loosen the screws, remove the round protective cover (A) and the spacers.
- Remove the flat plug (E), loosen the knurled screws (B), remove the plate (C) and the lamp (D).
- Insert a new lamp. Fasten the plate again with knurled screws such that the lamp can still be moved.
- Do not touch the glass bulb of the lamp with your bare hands when changing it. Lamp bulbs are clouded by fat deposits on the skin.
- Insert the flat plug.
- Place the lamp on a level tabletop, turn all rotary mirrors outward, and connect the lamp to a 6 V source.
- Adjust the lamp so that all beams are equally bright.
- Tighten the knurled screws.
- Install the spacers and the protective cover, and tighten the screws

6. Storage, cleaning and disposal

- Keep the lamp in a clean, dry and dust-free place.
- Before cleaning the lamp, disconnect it from its power supply.
- Do not use any aggressive cleaning agents or solvents to clean the equipment.
- Use a soft, damp cloth for cleaning.
- The packaging should be disposed of at local recycling points.
- Should you need to dispose of the lamp 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.

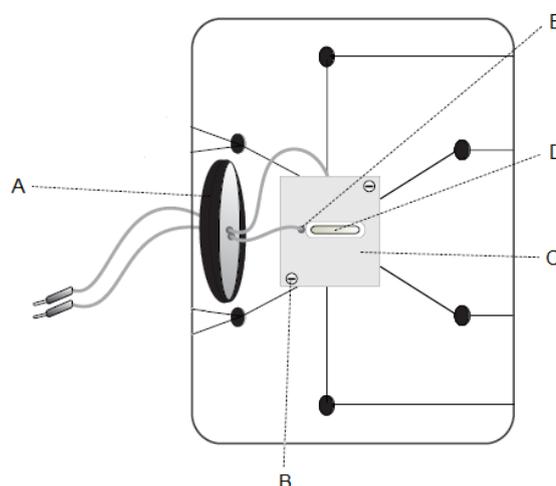
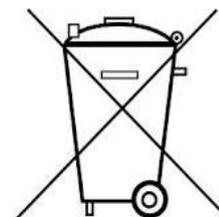


Fig. 1 Bulb replacement

A Protective cover, B Knurled screw, C Plate, D Lamp, E Flat plug