

Total Reflection Apparatus, Shaft-Mounted U17030

Instruction sheet

12/08/DML



1. Safety instructions

To observe total internal reflection with this equipment it is necessary to use a laser.

Caution: German schools are only allowed to use lasers of class II at most (long-term power output max. 1 mW for wavelengths 400 – 700 nm). Make sure you observe the locally applicable safety guidelines.

2. Description

The total internal reflection model demonstrates how light can be guided by means of total internal reflection at the internal wall of an acrylic glass tube curved into the shape of a hook with an additional curve at one end.

The model represents a fibre optic cable and is to be mounted vertically on an optical plate with a mounting shaft. This can be set up on an optical bench or on a retort stand so that it can be moved freely on the lab bench.

3. Technical data

- Fibre optic tube:
- Material: transparent acrylic
 - Dimensions: 180 mm x 10 mm dia. approx.
 - Hook diameter: 100 mm approx.
- Plate: 130 mm dia.
- Stem: 85 mm x 10 mm dia.
- Weight: 200 g approx.

4. Operation

In order to conduct this experiment, the following apparatus is additionally required.

- | | |
|---------------|------------|
| 1 Diode laser | U16040-230 |
| or | |
| 1 Diode laser | U16040-115 |
| or | |
| 1 He-Ne-Laser | U21840 |
| 2 Stand base | U8611200 |

- Set up the experiment as in fig 1.
- Darken the room if necessary.
- Turn on the light source and observe the total internal reflection.

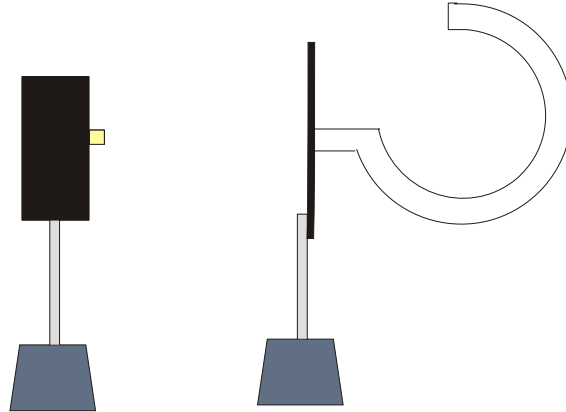


Fig. 1 Experiment set-up with diode laser (U16040)