

**Light sources and propagation of light**  
*Light and shadow*How a shadow is formed  
Optical bench, S1 profile**Object of the experiment**

1. Demonstrate how a shadow arises behind an opaque object

**Setup**

- Darken the room.
- Place a piece of cardboard (about 10 cm x 12 cm) as an opaque body in the plate holder and line it up about 60 cm from the halogen lamp.

**Apparatus**

1 Optical bench, S1 profile, 1m.....	460 310
2 Clamp riders with fixing column .....	460 313
1 Optical rider with clamp, 45/65 .....	460 311
1 Halogen lamp, 12 V/20 W.....	459 032
1 Plate holder on rod .....	459 30
1 Transformer, 6/12 V.....	521 210
1 Pair of connecting leads, 19 A, 50 cm, black.....	501 451

**Evaluation**

Due to the straight-line propagation of light, a well defined, unlit area arises behind an opaque object. This is called a shadow.

**Remark:**

The condition for a well defined shadow to emerge is that a point-like source of light needs to be present.

**Procedure**

- Turn on the halogen lamp and view the screen.

**Observation**

Behind the opaque object, a well defined, unlit area can be seen on the screen.