# Solutions optics model 1 – Total reflection

## Example solution for construction task



*Figure 1 – Protractor with slot aperture*

## Angle measurement solution: “Angle of incidence equals angle of reflection”

The law of reflection states that the measurement of the angle α to the axis of incidence is equal to the angle of reflection α‘ to the axis of incidence. This is easy to see in this experiment.

Other principles of the law: The light path can be reversed. If the light path for the incident beam is the same as for the reflected beam, it will be reflected within itself.



|  |  |
| --- | --- |
| Einfallslot | Axis of incidence |
| Einfallswinkel | Angle of incidence |
| Ausfallswinkel | Angle of reflection |

*Figure 2 - Total reflection*

## Example solution

Solutions for α = 45°, 60° and 0°



**α**

**α‘**

*Figure 3 – Solution for* α = α‘ = *45°*



**α**

**α‘**

*Figure 4 – Solution for* α = α‘ = *60°*



*Figure 5 – Solution for* α = α‘ = *0*

For the angle α to the axis of incidence, we can see that the angle of incidence on the axis of incidence is 0°, and the light beam is reflected within itself.