

## 2.2.03-00 Interference at a mica plate according to Pohl



## What you can learn about ...

- Interference of equal inclination
- Interference of thin layers
- Plane parallel plate
- Refraction
- Reflection
- Optical path difference

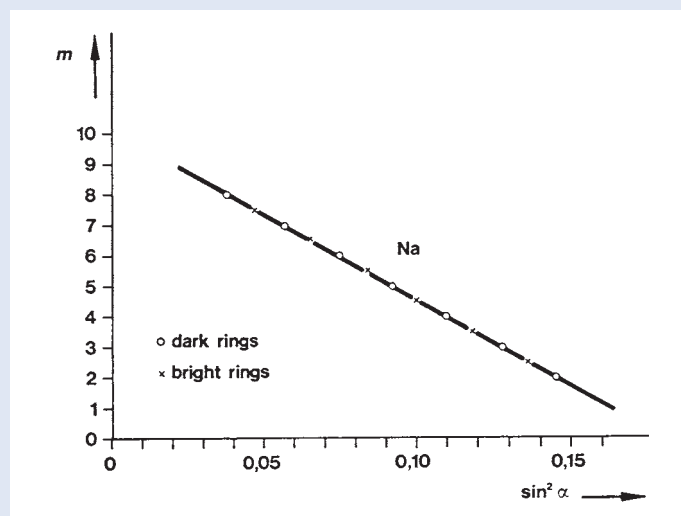
## Principle:

Monochromatic light falls on a plane parallel mica plate. The light rays, reflected at the front surface as well as at the rear surface, will interfere to form a pattern of concentric rings. The radii of the rings depend on the geometry of the experimental set-up, the thickness of the mica plate and the wavelength of the light.

## What you need:

Mica plate	08558.00	1
Colour filter, 440 nm	08411.00	1
Colour filter, 525 nm	08414.00	1
Colour filter, 580 nm	08415.00	1
Spectral lamp Hg 100, pico 9 base	08120.14	1
Spectral lamp Na, pico 9 base	08120.07	1
Lamp holder, pico 9, for spectral lamps	08119.00	1
Swinging arm	08256.00	2
Plate holder with tension spring	08288.00	2
Screen, metal, 300 mm x 300 mm	08062.00	2
Stand tube	02060.00	2
Optical profile bench, $l = 600$ mm	08283.00	1
Base for optical profile bench, adjustable	08284.00	2
Slide mount for optical profil bench, $h = 80$ mm	08286.02	2
Bench clamp -PASS-	02010.00	2
Measuring tape, $l = 2$ m	09936.00	1
Power supply for spectral lamps	13662.97	1

Complete Equipment Set, Manual on CD-ROM included  
Interference at a mica plate according to Pohl P2220300



Interference order  $m$  as a function of  $\sin^2 \alpha$  for Na-light.

## Tasks:

The experiment will be performed with the light of a Na-lamp and with the light of different wavelengths of a Hg-vapour tube.

1. The thickness of the mica plate is determined from the radii of the interference rings and the wavelength of the Na-lamp.
2. The different wavelengths of the Hg-vapour tube are determined from the radii of the interference rings and the thickness of the mica plate.