

# Force modulation test grating



Anfatec Instruments AG  
Tel.: 037421 24212, www.anfatec.de

## Technical Data

Grating type	Si / 50 nm SiO <sub>2</sub> / PMMA
Height	< 300 nm
Chess Pitch	5 μm
Chess Area	500 μm x 500 μm
Line Pitch	20 μm
Line Length	500 μm

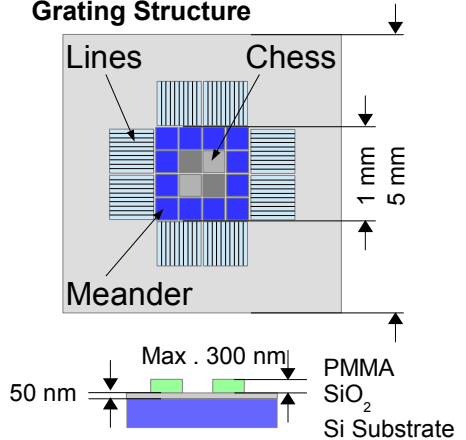
The active area of 1 mm x 1 mm is divided into 4 x 4 fields, each of them 250 μm by 250 μm large. The outer (blue) fields show meander structures of 10 μm pitch. The inner 2 x 2 fields are chesses of 5 μm pitch with 2 different aspect ratios.

## Typical Application

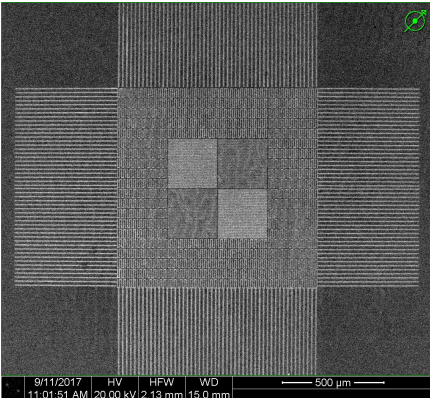
- Force modulation mode
- Lateral force mode

This grating has been developed for the test of the force modulation mode, as it shows excellent material contrast. It can also be used for Lateral Force Mode.

## Grating Structure



## SEM Image Full Structure



## Important Information

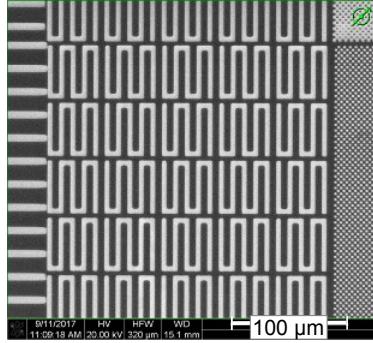
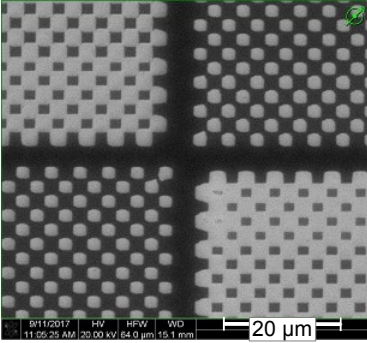
The edges of the structures are not 100% vertical.

PMMA is sensitive to

- Heat @ T > 100°C
- Plasma treatment
- Ebeam exposure
- Solvents, e. g. Acetone

**Do not treat the sample with any of these methods.**

## SEM Images



## AFM Images

Force Modulation Mode  
Cantilever: 0.2 N/m

### Topography



Scan Range: 20 μm

### T-B



### Amplitude



### Phase

