

# MicroCT Bar Pattern NANO Phantom

NEW  
PHANTOM  
2012

The Micro-CT Bar Pattern NANO Phantom provides a comfortable and easy way to assess in-plane and axial spatial resolution of high resolution micro-CT systems.

As a further development of our popular MicroCT-BarPattern-Phantom we now can present the BarPattern NANO Phantom.

The easy and convenient to use phantom provides two silicon chips, perpendicularly aligned and placed on a solid plastic support.

Both 3 x 3 mm<sup>2</sup> chips exhibit several line and point pattern representing lines and points of 1 to 15 μm width.

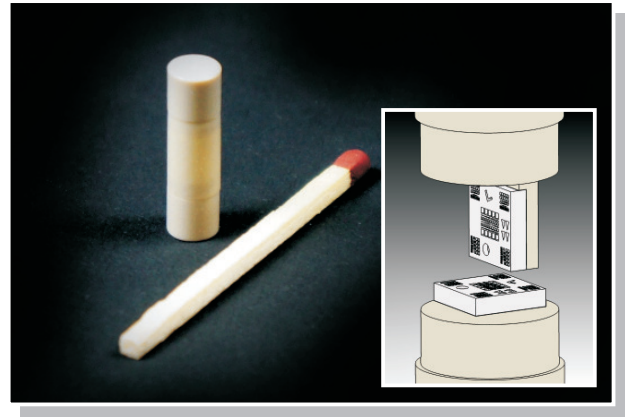
In addition a slanted edge (L) and a Siemensstar are also placed on the chip.

The depth of the structures varies within 5 and 15 μm.

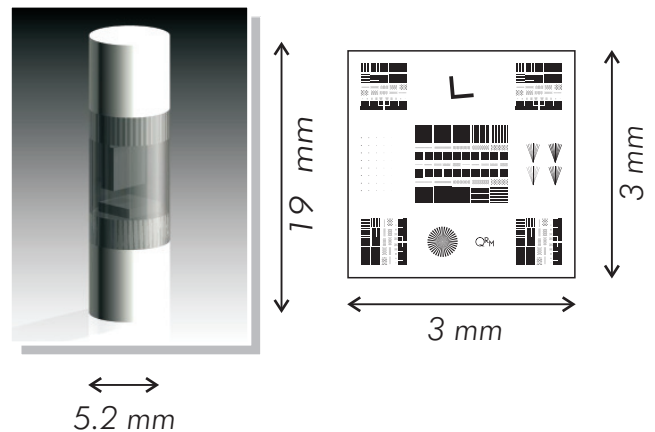
The different structures on the chip are arranged in such a way over the chip, that spatial resolution can be determined in the center as well as in the periphery of the image/chip with a single measurement.

## Line- and Pointpattern on the chip:

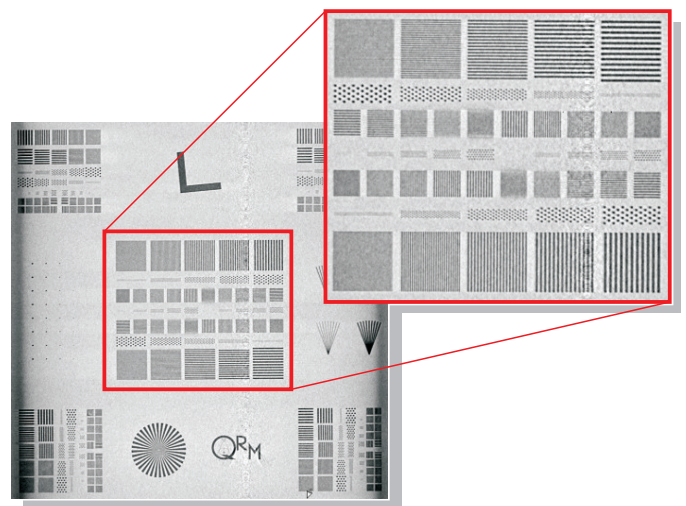
line/pointwidth [μm]	linepairs / mm
1	500
2	250
3	166.36
4	125
5	100
6	83.3
7	83.3
8	71.4
9	55.5
10	50
11	45.4
12	41.6
13	38.4
14	35.7
15	33.33



QRM-MicroCT-Barpattern-NANO



pattern of 1 to 15 μm structures

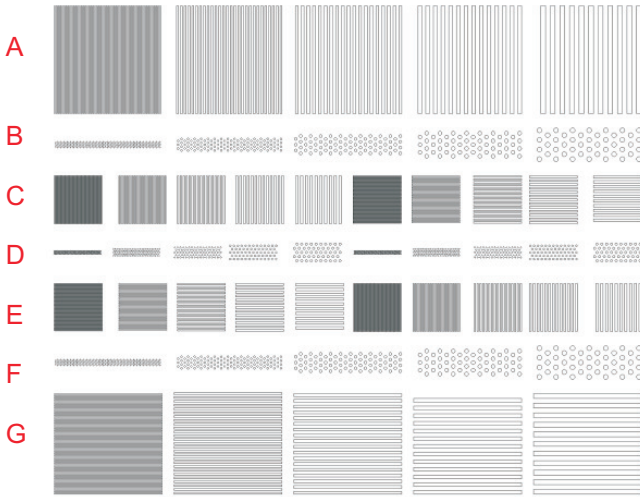


Micro-CT scans (3.5 μm voxel size)

Images courtesy of Carl Zeiss Industrielle Messtechnik.

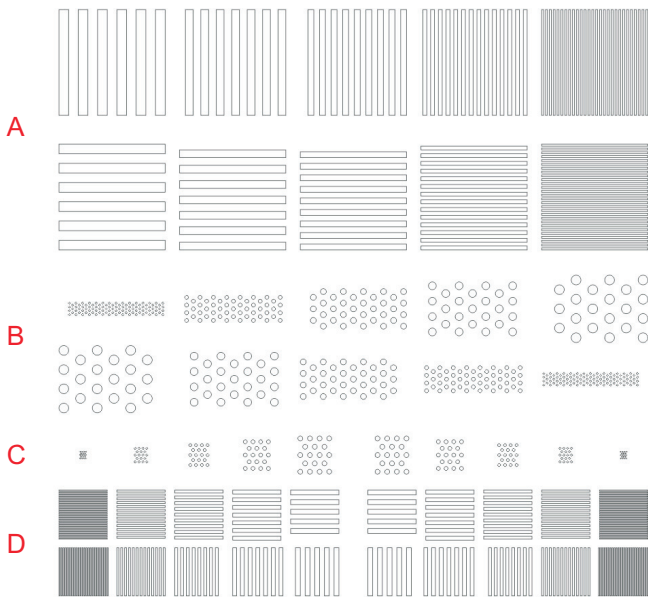
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## Section 1



section	line thickness (µm)	linepairs / mm	points (µm)
A	2, 4, 6, 8, 10	50 - 250	
B			2, 4, 6, 8, 10
C	1, 2, 3, 4, 5	100 - 500	
D			1, 2, 3, 4, 5
E	1, 2, 3, 4, 5	100 - 500	
F			2, 4, 6, 8, 10
G	2, 4, 6, 8, 10	50 - 250	

## Section 2



section	line thickness (µm)	linepairs / mm	points (µm)
A	2, 4, 6, 8, 10 (tilt 90°)	250 - 50	
B			2, 4, 6, 8, 10
C			1, 2, 3, 4, 5
D	1, 2, 3, 4, 5	500 - 100	

## Specifications

QRM-MicroCT-Barpattern-NANO (air)

### Phantom:

Diameter ..... 5.2 mm  
 Height ..... 19.1 mm  
 Material ..... stable plastic

### Chip:

Diameter ..... 2.96 mm  
 Height ..... 0.66 mm  
 Material ..... silicon  
 Structures on the Chip ..... 1 - 15 µm  
 Depth of structures ..... 5 - 15 µm  
 Contrast ..... silicon / air

Specific mount/holder for your micro-CT system on request!

section	description	pattern / resolution
1	center section providing several bar and point pattern	1 - 15 µm structures
2 a-d	corner section providing several bar and point pattern in different orientation	1 - 5 µm structures
3	slanted edge section, 15° tilted edge for MTF	
4	fan section	2 - 8 µm lines
5	36 actinomorphic star - test pattern	going down from 17.5 µm
6	point grid point-to-point center distance 100 µm	2 - 10 µm points

