

MicroCT Bar Pattern NANO Phantom

BarPattern NANO V2 - Redesigned Chip

For the determination of in-plane and axial spatial resolution in industrial and medical micro-CT imaging.

The MicroCT BarPattern Phantom is used for a direct visible measurement of spatial resolution in Micro-CT.

The chip offers an alternative for indirect methods to evaluate spatial resolution in high resolution X-ray imaging modalities.

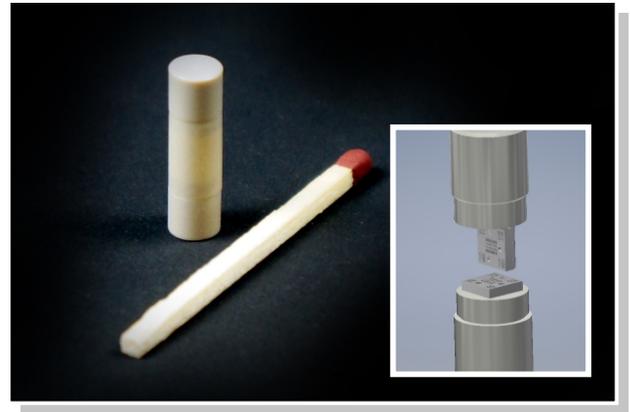
The BarPattern-NANO provides two silicon chips, perpendicularly aligned and placed on a solid plastic support.

Both 3 x 3 mm² chips have several line and point patterns representing lines and points of 1 to 10 µm width. In addition a slanted edge and a so-called Siemens-star (actinomorphic star) are placed on the chip.

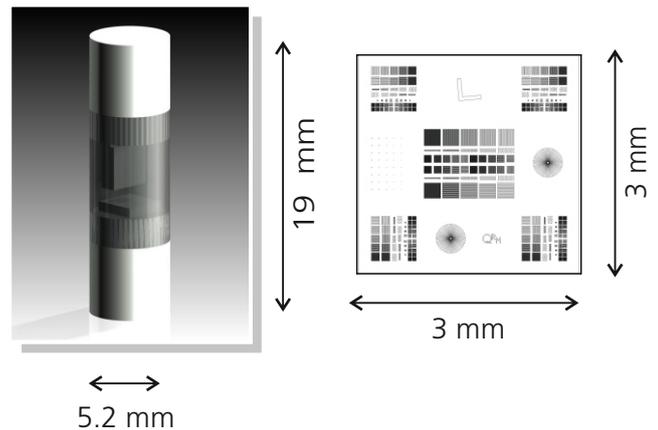
- Evaluate 3D, in-plane and axial high spatial resolution in preclinical and industrial Micro-CT
- Bar and point structures down to 1 µm (NANO)
- Corresponds to 50 to 500 LP/mm
- Provides high resolution contrast

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

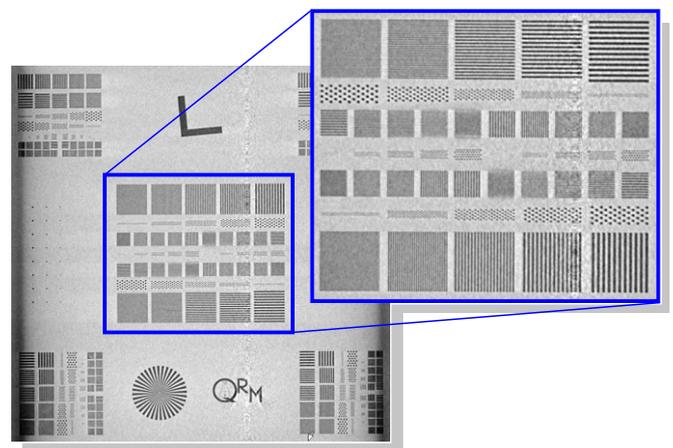
line- and Pointpattern on the chip:



QRM-MicroCT-Barpattern-NANO



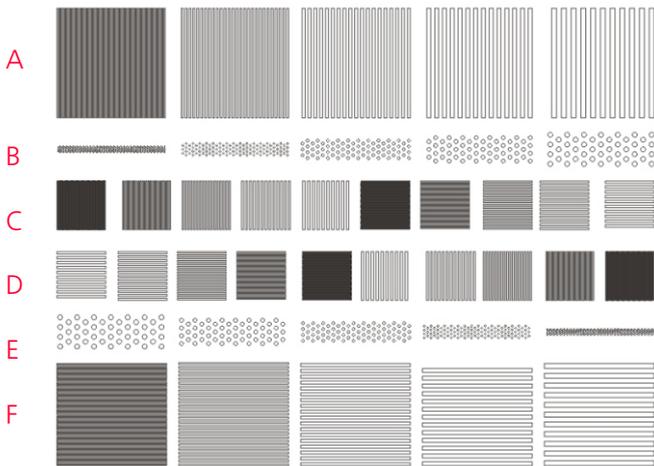
pattern of 1 to 10 µm structures



*Micro-CT scans (3.5 µm voxel size)
Images courtesy of Carl Zeiss Industrielle Messtechnik.*

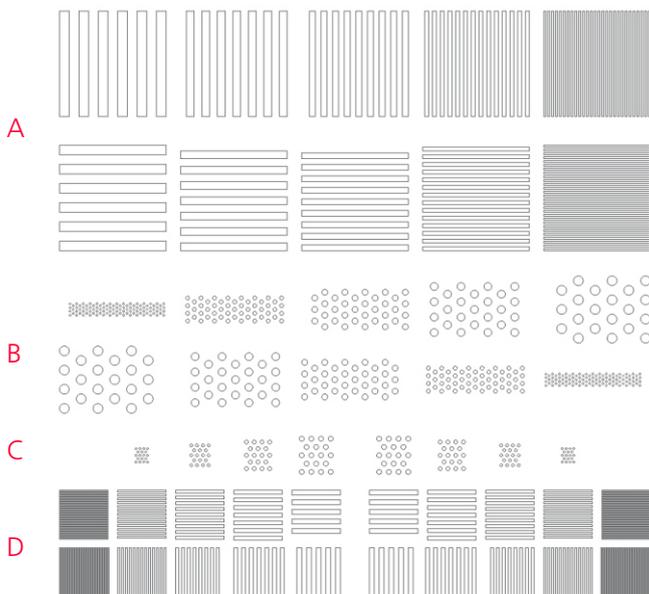
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Section 1



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	100 - 500	
E			2, 4, 6, 8, 10
F	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			2, 3, 4, 5
D	1, 2, 3, 4, 5	500 - 100	

Specifications

QRM-MicroCT-Barpattern-NANO (air)

Phantom housing:

Diameter 5.2 mm
 Height 19.1 mm
 Material solid plastic

Chips (fixed in phantom):

Diameter 2.96 mm
 Height 0.66 mm
 Material silicon
 Structures on the Chip 1 - 10 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 - 10 µm structures
2 a-d	corner section providing several bar and point pattern in different orientation	1 - 10 µm structures
3	slanted edge section, 15° tilted edge for MTF	
4	36 actinomorphic star - test pattern	going down from 17.5 µm
5	point grid point-to-point center distance 100 µm	2 - 10 µm points

