

Technical Data Sheet

Chessy Test Specimen

#79503-01

About the Chessy Test

With more than 1.6 million gold squares of sized $1\mu\text{m}$, the Chessy Test forms a 4-fold checkerboard pattern on silicon in an area of 5mm square, with the smallest metric checkerboard size of $10 \times 10\mu\text{m}$. These checkerboard designs form even larger metric checkerboards of up to $100 \times 100\mu\text{m}$, forming 1mm square. Furthermore, the 1mm squares are organized in the same fashion, covering an area of 5mm square. The edges of the corners that are empty are conveniently marked. Note that the surrounding frame is of $10\mu\text{m}$ in width and 5.04mm in length (outer side).

The Chessy Test in Applications

Motorized Stages

- Calibration of stage orthogonality
- Measurement of reproducibility using stored positions
- Measurement of absolute positioning accuracy
- Calibration of readings in X and Y

Experimental Electron Lithography

- Check of defocusing in outer areas
- Generation of metric writing fields between $10\mu\text{m}$ AND 5mm square via mark recognition and alignment
- Measurement of SEM distortion at any magnification via mark recognition on different places
- Imaging
- Check of orthogonality and distortion
- Calibration of SEM magnification in all ranges between 20x and 50,000x
- Check of equal scaling in X and Y
- Resolution test at high magnification on the edges of the gold squares