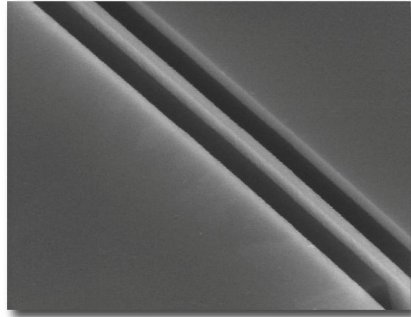


NanoCD Standards For Mask Handling Tools

STAY IN LINE WITH SUB-100 NM ACCURACY. The NanoCD™ (NCD) is the first commercially available standard to provide line width accuracy calibration at the 130 nm, 90 nm, and 45 nm nodes. Use it for tool matching, calibrating the width CD-AFM tip or diagnostics a CD-SEM, and prevent bias from ever leaving the mask shop.

On the left is an isometric view of a NanoCD 70 nm line, which extends to 3 mm total certified length. At right, the NanoCD is shown mounted into a 6" x 6" x ¼" aluminum carrier, compatible with all reticle loaders and storage.



PRODUCT DESCRIPTION

The NanoCD consists of a small chip containing a single isolated line 4 mm long, offering thousands of distinct measurement sites. Chips are fabricated at VLSI Standards using a patented technique that results high uniformity and low associated uncertainty lines, unachievable through conventional lithography methods. For compatibility with reticle loaders, the chip is mounted to an aluminum replica of a quartz photomask. Global alignment marks, rulers and pattern recognition features extending from the chip to the reticle ensure that the target is always located, and measurements can be repeated.

The width of the line, or the Critical Dimension (CD), is certified with TEM and is traceable to NIST and to the international system of units (SI) through the atomic lattice spacing of single crystal silicon.

- **Accuracy**

25 nm \pm 0.5 nm, 70 nm \pm 0.7 nm, 110 \pm 0.8 nm

- **Material of CD line**

Amorphous Silicon

- **Length of Line**

3 mm certified

- **Defectivity of Line**

5% Max. (150 μ m of total 3,000 μ m)

- **Traceability**

Traceable to the SI units through the atomic lattice spacing in the silicon crystal by TEM

- **Substrate**

152 mm x 152 mm x 0.25 mm Aluminum.

Specifications subject to change.

PRODUCT SPECIFICATIONS

- **Nominal Available CD Values**

25 nm, 70 nm, or 110 nm.