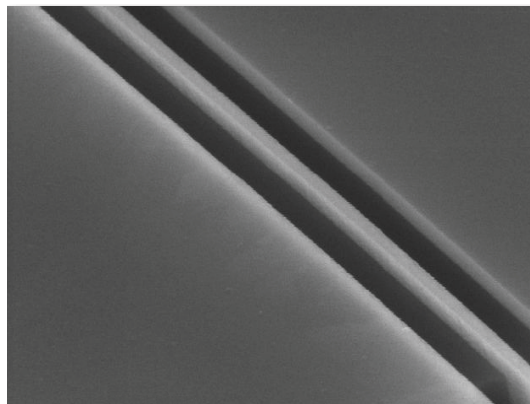


NanoCD Standards

IN LINE WITH SUB-100 NM ACCURACY. The NanoCD™ (NCD) is the first commercially available standard to provide line width accuracy calibration at the 45 nm, 65 nm, 90 nm and 130 nm nodes. Use these standards for tool matching, calibrating the width of a CD-AFM tip, or CD-SEM diagnostics.

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 300 mm carrier wafer.



PRODUCT DESCRIPTION

The NanoCD consists of a small chip containing a single isolated line 4 mm long (3 mm certified), offering thousands of distinct measurement sites. Chips are fabricated at VLSI Standards using a patented technique that results in lines with high uniformity and low associated uncertainty, unachievable through conventional lithography methods. For compatibility with wafer handlers, the chip is mounted to an etched pocket of a silicon wafer carrier. Global alignment marks, rulers and pattern recognition features extending from the chip to the wafer 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.

PRODUCT SPECIFICATIONS

- **Nominal CD Values**
25 nm, 45 nm, 70 nm, or 110 nm
- **Accuracy**
25 nm \pm 0.5 nm, 45 nm \pm 0.7 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
- **SEMI Specification Silicon Wafers**
200 and 300 mm diameter wafers available in X or X,Y configuration



NCD

NanoCD Standard

Application: Line Width Calibration
 Equipment: CD-AFM and CD-SEM
 Features: Amorphous Silicon Isolated Line
 Traceability: NIST
 Product Range: 25 nm to 110 nm

Wafer Diameter Layout	200 mm		300 mm	
	X	XY	X	XY
Line Width (nm)				
25	NCD8-25X	NCD8-25XY	NCD12-25X	NCD12-25XY
45	NCD8-45X	NCD8-45XY	NCD12-45X	NCD12-45XY
70	NCD8-70X	NCD8-70XY	NCD12-70X	NCD12-70XY
110	NCD8-110X	NCD8-110XY	NCD12-110X	NCD12-110XY