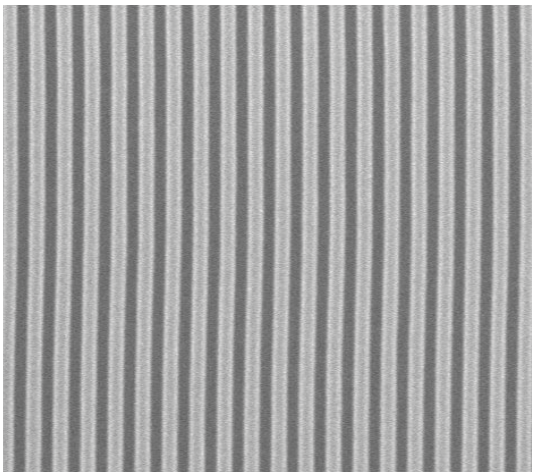
DIMENSIONAL

VLSI Standards

NanoLattice Pitch Standard for Mask Handling Tools

SET THE SCALE FOR ADVANCED LITHOGRAPHY. The NanoLattice™ (NLSM) 100 nm pitch standard utilizes gratings with near perfect periodicity to calibrate magnification and scan linearity of CD-SEM and Atomic Force Microscopes (AFM). Make the grade, with the only pitch standard of its kind available below the 130 nm node.

On the left is a 2µm FOV CD-SEM micrograph of a NanoLattice Standard. The image on the right shows a 6" reticle with optional gratings, mounted in perpendicular XY configurations.



PRODUCT DESCRIPTION

The NanoLattice standard is a 1.2 mm x 1 mm etched silicon grating with a nominal pitch of 100 nm. Each grating is continuous over a large certified area, permitting tens of thousands of measurements. Global alignment marks on both sides of the chip can be used to assist pattern recognition and automation. Each standard is individually mounted on a 6" x 6" x ¼" carrier reticle, compatible all photomask handlers.

PRODUCT SPECIFICATIONS

- **Substrate**
  152 mm x 152 mm x 0.25 mm Al carrier
- **Certified Pitch Values**
  100 nm, 200 nm, 400 nm, 800 nm, 1000 nm
- **Uncertainty of 100 nm Pitch Metrology**
  < 1 nm
- **Nominal Pitch Value**
  100 nm ± 2 nm
- **Material**
  Silicon <100>
- **Pattern Defect Density**
  Less than 1 defect size > 0.2 µm per 50 image frames of size 1.5 µm x 1.5 µm
- **Certified Area**
  800 µm x 800 µm
- **Traceability**
  Traceable to SI units through NIST

Revision MaskNLSM 041512
Specifications subject to change.

Five Technology Drive, Milpitas, CA 95035-7916 phone 800.228.8574 fax 408.428.9555 www.vlsistandards.com