DIMENSIONAL

VLSI Standards

Surface Topography Standards

STAY ON TOP OF 3D PROBE CALIBRATION. The Surface Topography Standard (STS) uses a combination of step height and pitch to enable three-dimensional calibration of optical interferometric microscopes and AFMs. Multiple pitch gratings take calibration further, allowing characterization of scan linearity. On high resolution tools such as the Atomic Force Microscope, NIST-traceable calibration can be achieved, driving your equipment to its full potential.

The Surface Topography Standard, shown at right, consists of an etched silicon dioxide “waffle pattern” on a silicon substrate.

PRODUCT DESCRIPTION

The Surface Topography Standard consists of a 12 mm x 8 mm silicon die with a pitch cluster patterned in a layer of silicon dioxide. The pitch cluster contains three distinct grid patterns. Each grid pattern measures approximately 270 µm x 270 µm and consists of an array of alternating bars and spaces with an extremely uniform pitch in both the X and Y direction. Two models are available: the STS2 has pitches of 1.8 µm, 3 µm, and 5 µm; the STS3 has pitches of 3 µm, 10 µm, and 20 µm. Each model is available with vertical step heights of either 18 nm, 44 nm, 100 nm or 180 nm. Our precise manufacturing technique ensures a very regular topographic pattern, allowing accurate measurement across the entire working area of the standard.

PRODUCT SPECIFICATIONS

- **Dimensions**
  12 mm x 8 mm silicon die
- **Materials**
  Silicon Dioxide on Silicon coated with Platinum (except STS2-1000S & STS2-1800S models)
- **Nominal Pitch Values (X and Y)**
  STS2: 1.8 µm, 3 µm, and 5 µm (all on one standard)

  STS3: 3 µm, 10 µm, and 20 µm (all on one standard)
- **Nominal Height Values (Z)**
  18 nm, 44 nm, 100 nm, 180 nm
- **Traceability**
  NIST

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Specifications subject to change.

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