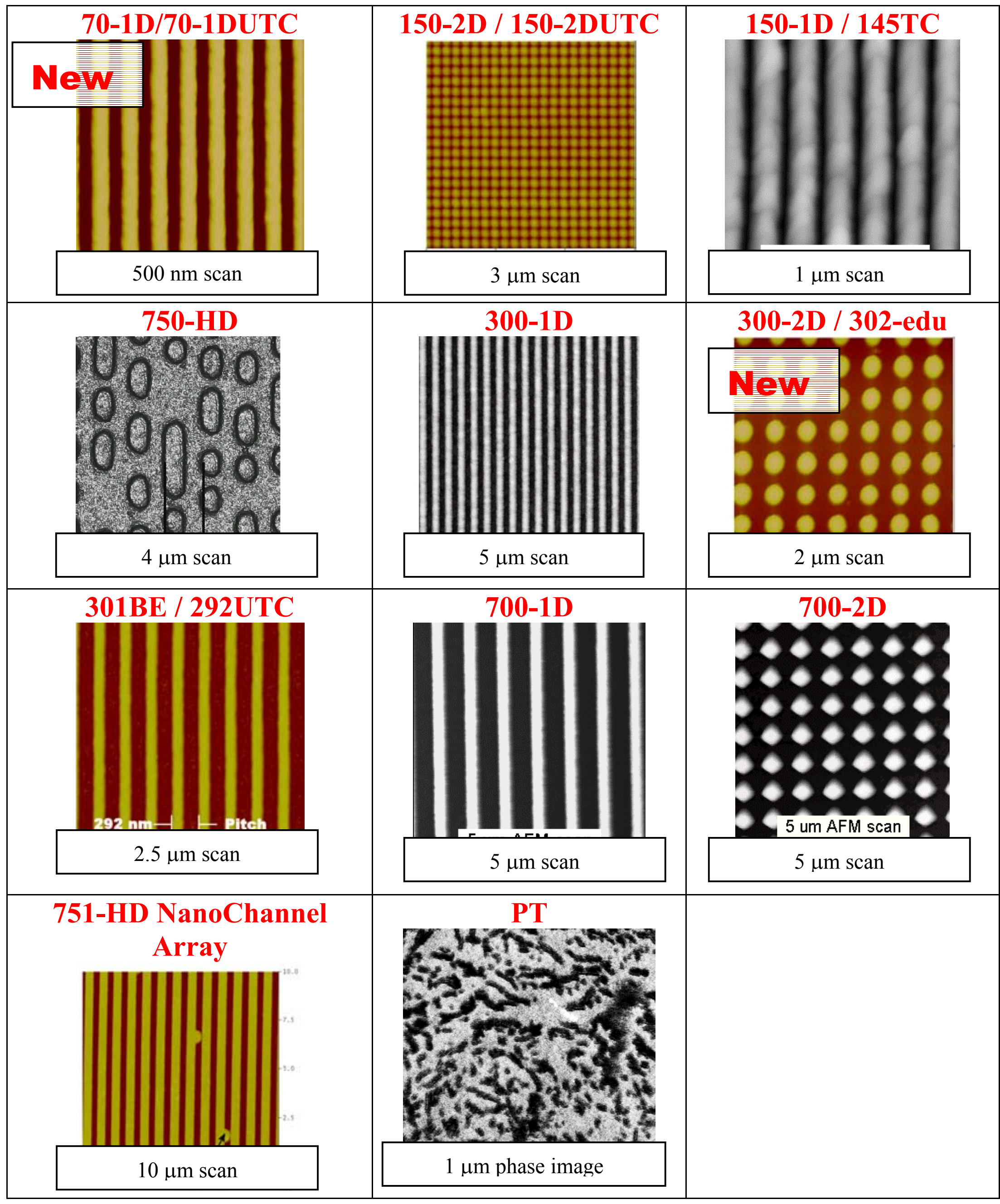
Guide to Magnification Calibration and other Test Specimens



Traceable Calibration is now available for the 301BE, 150-2D, 150-1D, and 70-1D specimens, as models 292 UTC, 150-2DUTC, 145 TC, and 70-1DUTC. This helps you achieve higher quality and meet ISO-9000 and 14000 requirements.

What does traceability mean?

The calibration certificate for ordinary specimens gives an average pitch value based on batch measurements. In contrast, the certificate of traceable calibration reports the average pitch value and the uncertainty of single pitch values, based on individual measurements of the actual specimen and the measurements are traceable to the international meter. Our traceability path for 70-1DUTC is via NIST. Our traceability path for 150-2DUTC, 145TC and 292UTC is via PTB, the German counterpart of NIST. This is equivalent to NIST traceability, based on a mutual recognition agreement for nanoscale measurements among NIST, PTB, and other leading national measurement labs.

Product Details

Application	Model	Pattern	Pitch (nm)[1]	Material	Mounting	Remarks
AFM, SEM, Auger, Etc.	70-1D and 70-1DUTC	parallel ridges	70	SiO2 lines on Si	Unmounted, on steel disk, or on an SEM stub (extra charge)	use contact or tapping mode. Works well in SEM.
AFM, SEM, Auger, etc.	150-2D and 150-2DUTC	Array of rounded bumps	144	Al bumps on Si	Unmounted, on steel disk, or on an SEM stub (extra charge)	use contact or tapping mode. Works well in SEM.
AFM,SEM[2], TOF-SIMS, Auger[2], Surface Potential, other material contrast techniques. SNOM[5].	150-1D and 145TC	Parallel ridges	144	Al lines on Glass	unmounted or on steel disk	use contact or tapping mode. Try it in SNOM and in two-photon or multi-photon confocal optical microscopy.
AFM,SEM, TOF-SIMS, Auger, Surface Potential, other material contrast techniques	301BE and 292UTC	parallel ridges	292	Ti lines on Si	unmounted, on steel disk, or on an SEM stub (extra charge)	use contact or TappingMode. Works well in SEM SEI and BEI modes. (secondary and back-scatter electron imaging)
AFM	300-1D	Parallel ridges	288	W-coated Photoresist on Si	15 mm steel disk	use contact or TappingMode.
AFM	300-2D and 302-edu	Array of Posts	297	Al bumps on Si	15 mm steel disk	use contact or TappingMode
AFM	700-1D	Parallel ridges	700	W-coated Photoresist on Si	15 mm steel disk	use contact or TappingMode
AFM	700-2D	Array of Posts	700	W-coated Photoresist on Si	15 mm steel disk	use TappingMode
AFM, SEM, extreme environments	750-HD	Array of flat bumps	750 (X), Z (100)	Ni	unmounted	High Durability: TappingMode, Contact Mode, STM, Liquid, High Temperature
AFM, nanomechanics and nanofluidics	751-HD	Parallel channels	channels 370 nm wide, 180 nm deep)	Ni	unmounted	High Durability: TappingMode, Contact Mode, STM, Liquid, High Temperature Not a calibration grating
AFM Phase Imaging	PT	random hard and soft domains as small as 10 nm	none	polymer	15 mm steel disk	test resolution and build confidence in phase imaging

Specimen Compatibility: SEM, AFM and STM scanning modes and Special Environments

	70-1D 70-1DUTC	301BE 292UTC	150-2D 150-2DUTC	300-2D 302-edu	150-1D 145TC	300-1D	700-1D	700-2D	750-HD	751-HD	PT
TappingMode™	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Contact Mode	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
STM	No	No	Yes[3]	Yes[3]	No	No	No	No	Yes	Yes	No
Liquid	Not tested	Not tested	Not tested	Not tested	Not tested	No	No	No	Yes	Yes	Yes
High Temperature	Not tested	Not tested	Not tested	Not tested	Not tested	No	No	No	Yes	Yes	No
SEM, Auger, etc.[4]	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No

Notes

[1]Pitch values are stated as a guide. Please refer to the calibration certificate shipped with each specimen.
[2]may require a conductive coating for SEM or Auger use.
[3]A conductive coating may be required for STM imaging.
[4]Available unmounted or mounted (extra cost - please specify desired stub).
[5]SNOM is Scanning Near-field Optical Microscopy, sometimes called NSOM (near-field scanning optical microscopy).

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