

Sample Certificate (non-traceable) for 300nm 2D calibration standard; #16475-1 thru #16475-1R

CERTIFICATION

Serial Number: 3711L061

Pitch Period: 297 nm (+/- 1 nm)

Standard deviation of individual pitch values < 2 nm (measured in 10 μm image, using DiscTrack Plus™. Point to point measurements will be less precise, due to surface and edge roughness).

Instructions

Background Information

Composition: Aluminum posts/bumps on Silicon substrate about 4x3 mm. The pattern covers the entire specimen.

General appearance: shiny silver-gray to pale gold in reflected light. Diffracted light is yellow-green to blue, depending on orientation.

Bump height: about 100 nm. Note: this is not a step height reference specimen. Height is not specified or certified. This specimen can be scanned in SEM, AFM, FIB (focused ion beam), SAM (scanning Auger microscope) and other instruments.

Appearance and usage

If you received an unmounted specimen, please see the Mounting Instructions below.

There may be a number of visible defects on the surface of this specimen, such as pits, scratches and dust. Defects can help you focus on the surface of the specimen. After focusing, for best results, make images that exclude such defects. **Color variations are not defects.** Defects are more common close to the edges. We recommended imaging areas at least 0.5 mm from any edge.

To see diffracted light, view either edge of the sample with light coming over your shoulder. Tilt and rotate the sample until you see colored light. The 300-2D specimens diffract blue and green light when viewed nearly edge on (about 20° from the horizontal).

Storage and handling

Store in a dry environment at room temperature or below.

CAUTION:

- Do not touch the surface.
- Do not expose the surface to liquid or vapor of any material that reacts with Aluminum or Silicon

Although we believe this specimen can be scanned in liquid in a suitable AFM, we have not verified this.

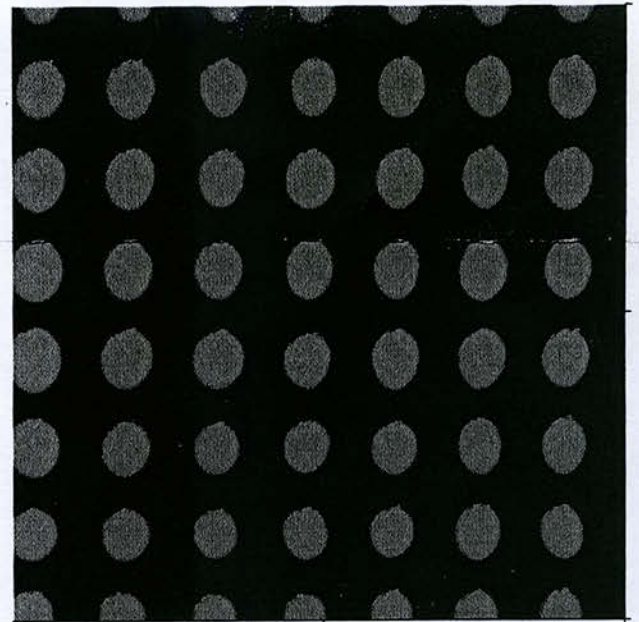
Cleaning

We recommend "do not try to clean the specimen." There is sufficient usable area on the calibration standard to make tens of thousands of measurements without reusing any areas altered or contaminated by previous scans. Therefore, we recommend that you do not attempt to remove any contamination which occurs during normal use. Having said that, we have had good success using

CO₂ Snow Cleaning and we can do this for you at our own lab.

Durability

Strict adherence to the storage, handling and cleaning procedures outlined above should preserve the standard for a period of years. However, since we cannot control the conditions of use, neither Advanced Surface Microscopy, Inc. nor its distributors assume any responsibility for damage to this standard by improper handling and storage or by attempts to clean or refurbish it.



2 μm AFM height image