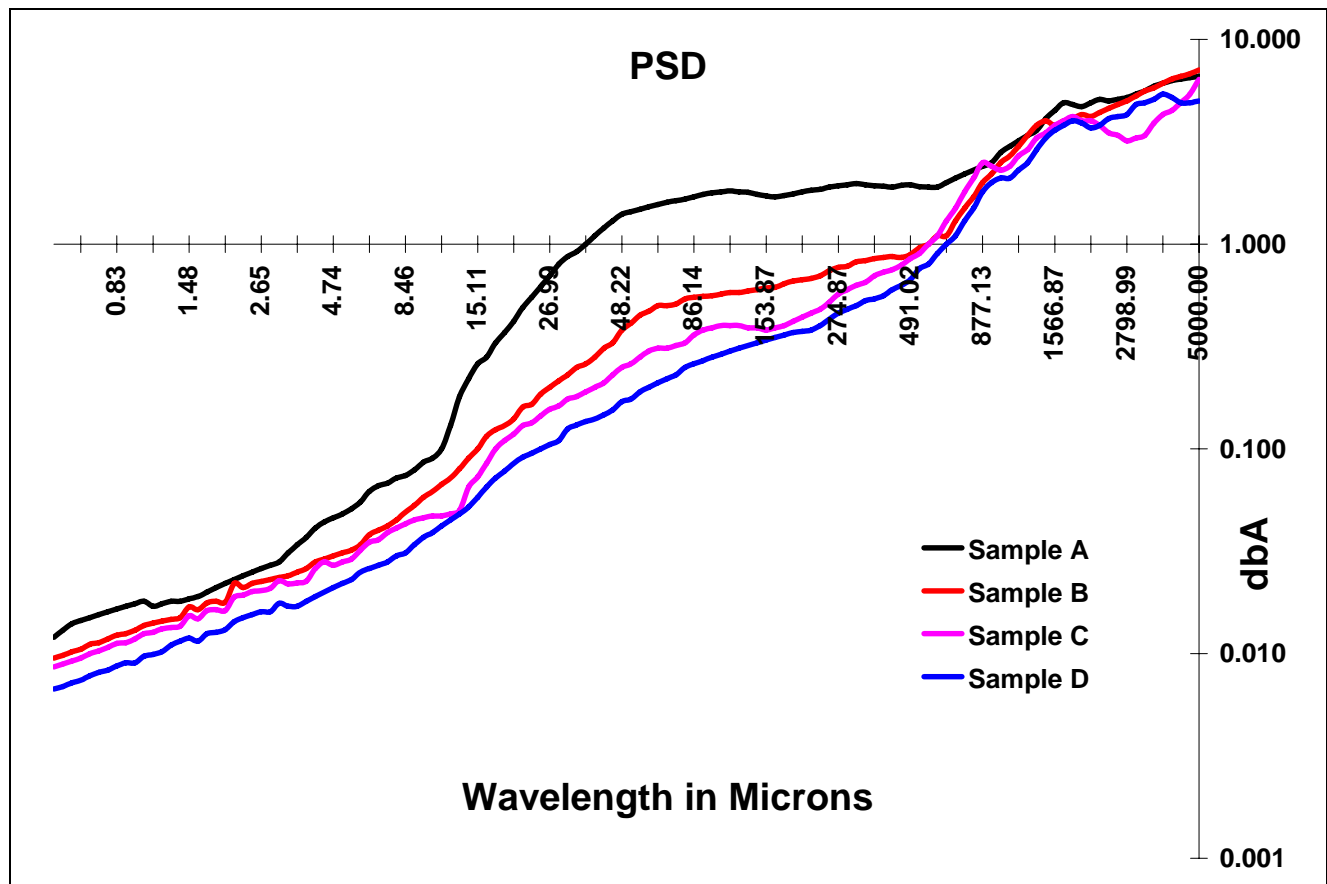


Power Spectral Density (PSD) Test Option

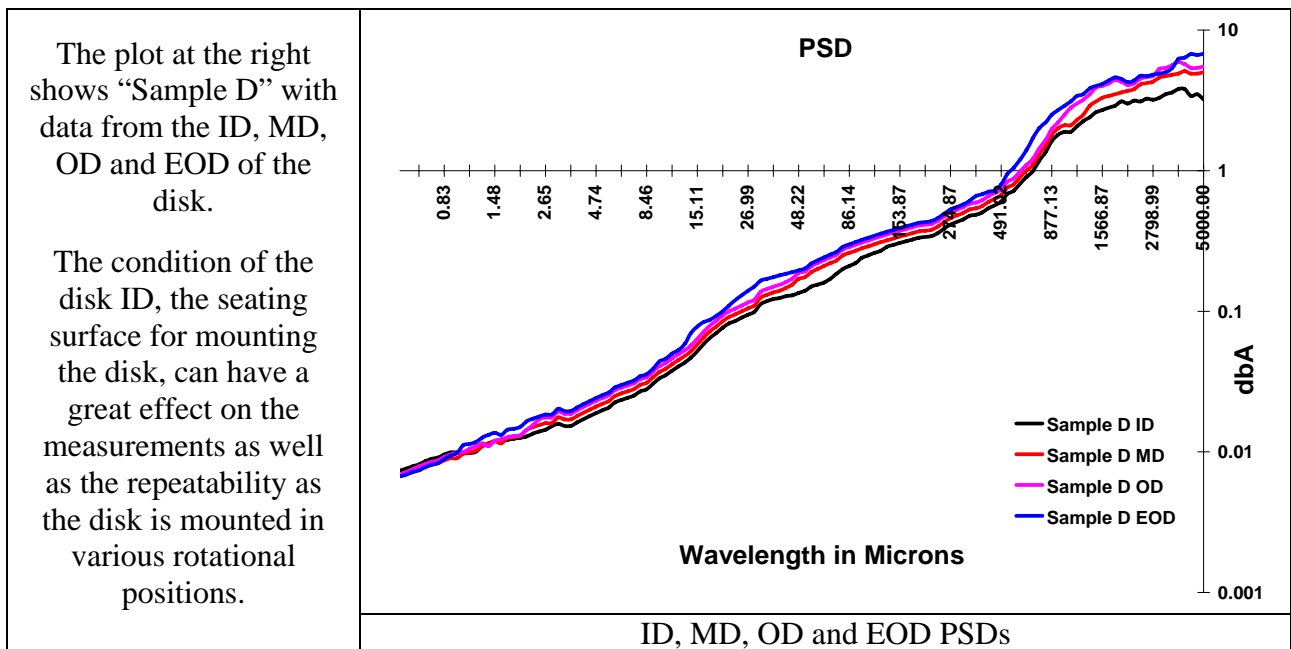
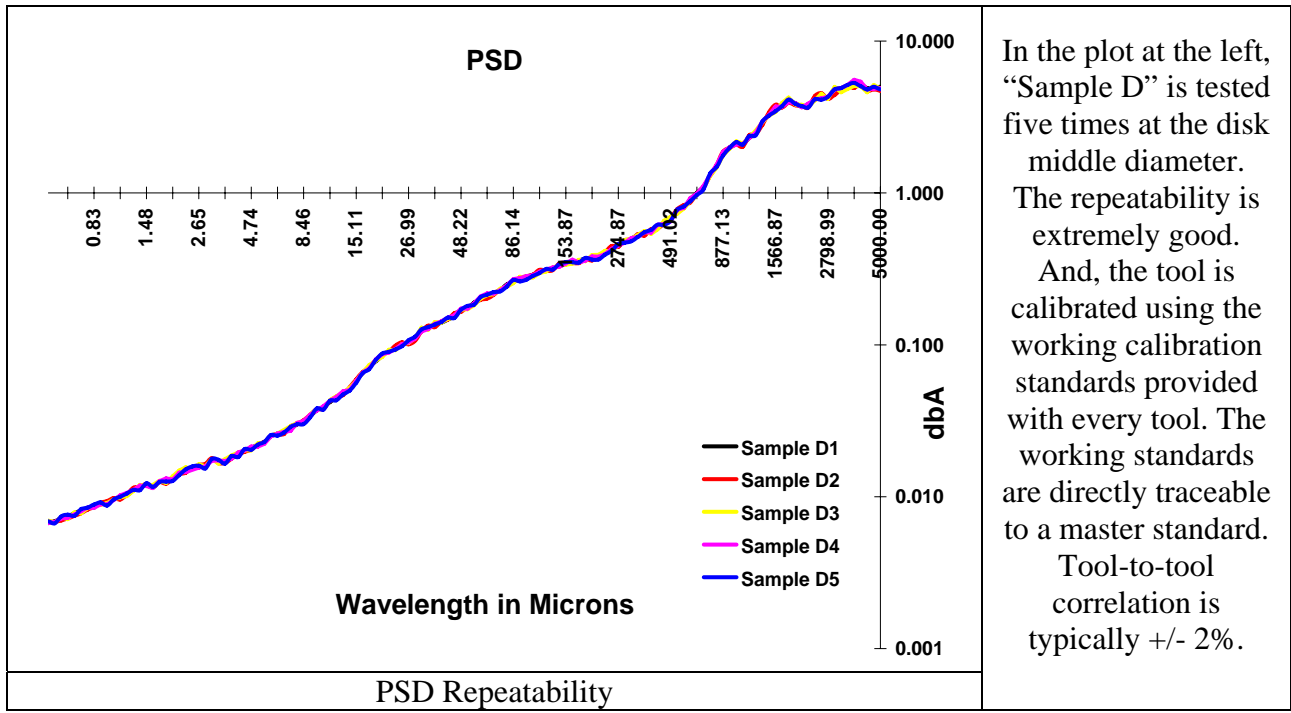
The Power Spectral Density test is a very powerful tool for process control of surface morphology. A programmable band-pass filter is used to examine 128 separate wavelengths with the surface RMS averaged value for the wavelength saved in a text file. Up to four programmable radii can be selected for a single test. These are normally set for the disk inner diameter (ID), the middle diameter (MD), the outer diameter (OD) and the extreme outer diameter (EOD).

The graph below shows a comparison of four samples, all tested at the MD. It is very easy to see the differences in the surfaces, especially in the critical 25um to 1000um wavelengths that have a very high impact on fly height modulation.



“Sample A” above is an LMR (Longitudinal Magnetic Recording) disk. “Samples B, C and D” are PMR (Perpendicular Magnetic Recording) disks. The improvements from “B” to “C” and “C” to “D” are obvious.

PSD tests are valuable because they can show even minute improvements over the entire spectrum of the processes used to polish the surface. Short wavelength variations caused by different slurry compounds are easily seen in the PSD plot. Longer wavelengths that are affected by the pads, polish time and tools can also be seen on the same graph. By examining the PSD plot it is easy to target wavelengths of interest and program the band-pass filter to execute a full surface examination of the disk at those wavelengths.



Note: The Power Spectral Density (PSD) option requires that the tool be equipped with the Filtered Waviness / Roughness Test (FWT) option.



THoT Technologies, Inc

271 East Hacienda Avenue, Campbell, California 95008
 Tel: +1-408- 370-4600 / Fax: +1-408-70-4609 / www.thot-tech.com