

3D Analysis of Paper Surfaces



The Proscan non-contact surface profilometer for 3D analysis of paper offers fast accurate data capture for exact measurement of surface texture.

This allows the quality and performance of finished paper to be qualified and controlled. Roughness, frictional properties, porosity, periodic marks and embossing are all easily measured with the Proscan.

PROSCAN 2000

- **Single button operation for surface analysis of board, pulp sheet and paper surfaces**
- **Auto calculation of a wide range of standard surface analysis parameters including Ra, Rz, Rmax, Rvm, Rpm, Sm and Material Ratio**
- **Proven technology has enabled users to improve quality and functionality of their products**
- **Resolutions of 3 nanometers afford excellent proven repeatability and reproducibility of measurement from sensors with 80 micron to 10 mm measurement ranges**
- **Ultra fast measurement sampling capable of scanning over 80mm per second**
- **Unique measurement technology allows almost any material to be measured including those with transparent properties**

Key Features & Benefits

- Designed to meet the demands of the mill process engineer with setting available for GO/NOGO outputs
- R&D tool offering a wide variety of analysis parameters at the press of a button
- Configurable to take the average value of more than one line of measurement and output the overall roughness value for the area
- Optional measurement area from 150mm X 150mm to 300mm X 300mm accommodating a large range of paper footprint sizes and includes precision vacuum parts holding for true and accurate alignment.
- Qualified absolute measurements with supporting graphical and numeric data with traceability to NIST (National Institute of Standards and Technology)
- Offers felt makers the advantage of quantifying what effect a visible surface mark has and its' significance

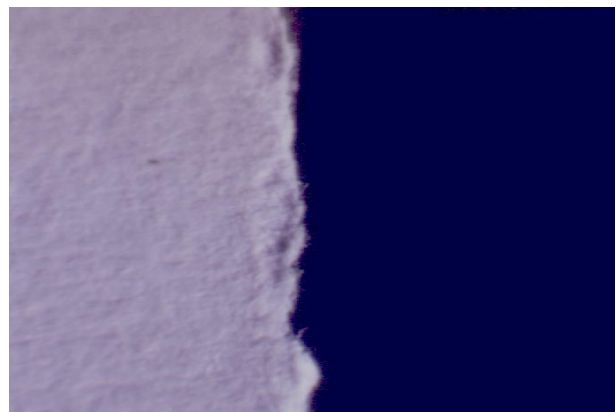
- The relationship to printability or frictional properties of paper can be referenced against irregularities such as periodic marks
- Scanned data is easily configured for export into FFT (Fast Fourier Transforms) band pass filtering giving a range of roughness at different scales
- Selectable scaling, cut off filters, levelling and zoom facilities
- Importable part referencing via log file or bar code reader input
- On-line help for step by step system operation and control, means minimum operator training

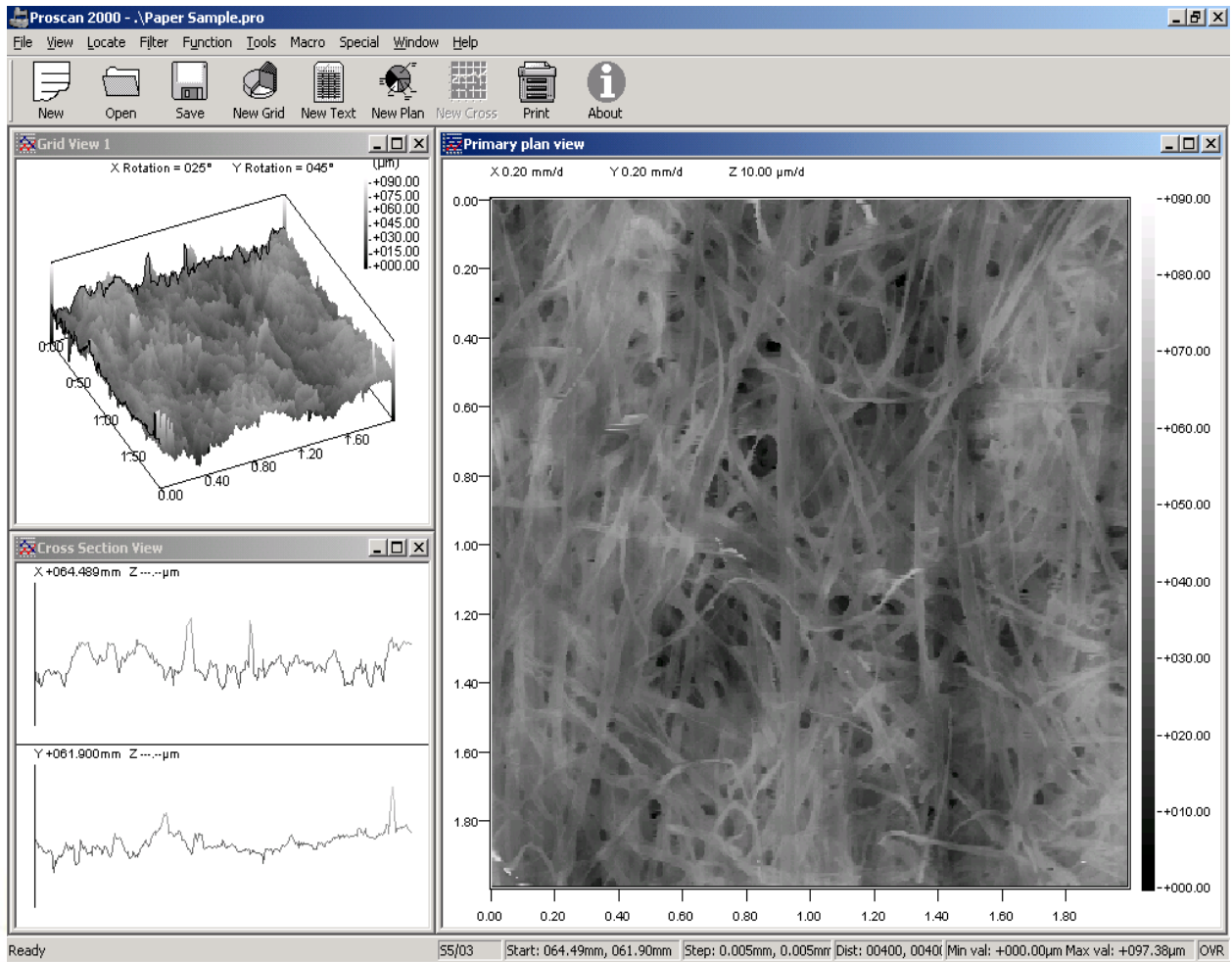
Options

- Camera for feature location offering magnification up to 30 times
- Vacuum tables for accurate alignment and holding
- Verification procedure for system measurement traceability

Unique High Resolution Sensing Technology

The S type sensors used on the Proscan 3D surface profilometer has a unique patented measurement technique with unmatched measuring performance. Utilising the natural frequency range of transmitted





light, this completely safe technique offers resolutions of only 3 nanometers and measurement ranges of 80μm to 10mm.

By transmitting white light through a lens with abundant chromatic aberration built in, it's possible to focus each colour frequency at a slightly different distance through the range of the sensor. As a part is placed in the measurement field a particular colour frequency is reflected back and analysed by a spectrometer. As the part is moved under the sensor, changes in surface shape are recorded as the colour frequencies change. Precise 3D images are generated by combining displacement to the sample surface with the accurate location of an X/Y linear positioning stage.

Roughness parameter	Description	Standard
Ra	Roughness average	DIN / ISO
Rz(DIN)	Mean peak to valley height	DIN
Rmax	Maximum peak to valley	DIN
Rz(ISO)	Ten point height	ISO
R3z	Mean third highest peak to valley height	DB (Damiler Benz)
Rq	Mean peak height	DIN
Rvm	Maximum valley depth	DIN
Rpm	Maximum peak height	DIN
Pt	Total profile depth	DIN
Nr	Normalised peak count	DIN
D	Peak density	DIN
Sm	Mean peak spacing	DIN

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