

Proscan 2200

PRECISE NON-CONTACT 3D SURFACE MEASUREMENT

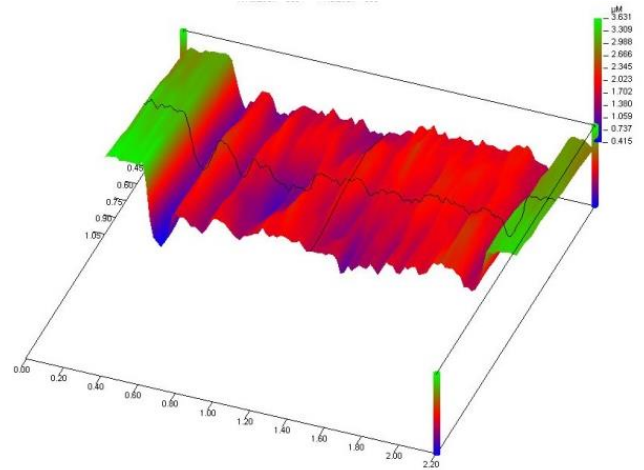
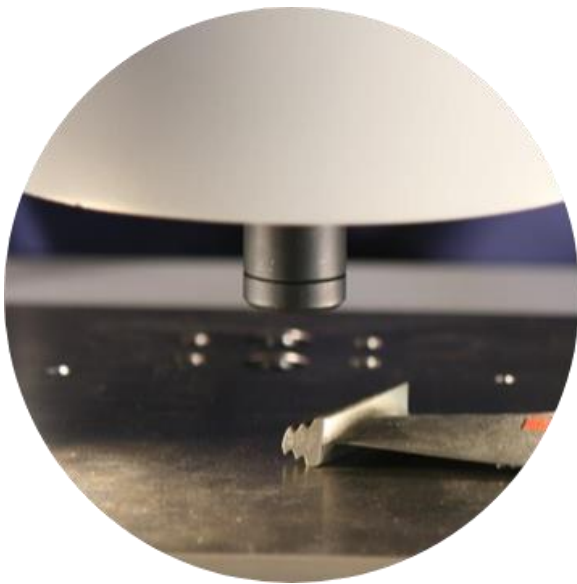


HIGH PERFORMANCE MEASUREMENT

The Proscan 2200 profilometer uses a patented chromatic confocal sensor with up to 3nm axial resolution. White light is transmitted through a lens with a precisely manufactured spectral aberration built in. It is this effect that takes the white light and divides it into the full spectral field, focusing each different colour frequency at a slightly different point through a defined measuring range. When an object is placed within this range, only one particular colour wavelength reflects back from the surface. This information passes back into a processor where a spectrometer analyses the signal and converts it to a measurement. The Proscan 2200 combines these measurements with the precise location of a moving X and Y linear table, giving three co-ordinates from which, a three-dimensional profile is created.

Chromatic sensor technology provides accurate non-contact measurement without the need for vertical scanning, even on mirror-polished, transparent or soft materials. Detailed technical information on how this works is available on request.

The Proscan 2200 scans the surface of specimens over an area of up to 150x100mm at a rate of up to 1,000 measurements a second. A graphical 3D representation of the scanned data is shown on screen. Using surface analysis tools within the software, the specimen is accurately quantified according to roughness standards.



Abrasion of material in a reciprocating wear test

VERSATILITY

Proscan 2200 offers unrivalled versatility in measurement by allowing rapid interchanging of sensors based on the geometry of the target material, using a single controller unit. As standard, the unit is outfitted with chromatic sensors. Optional laser triangulation sensors are also available for applications where even faster scanning of larger objects is desired. The unit can equally be fitted with interferometric sensors on special request.

A typical range of sensors are detailed below, others are available on request.

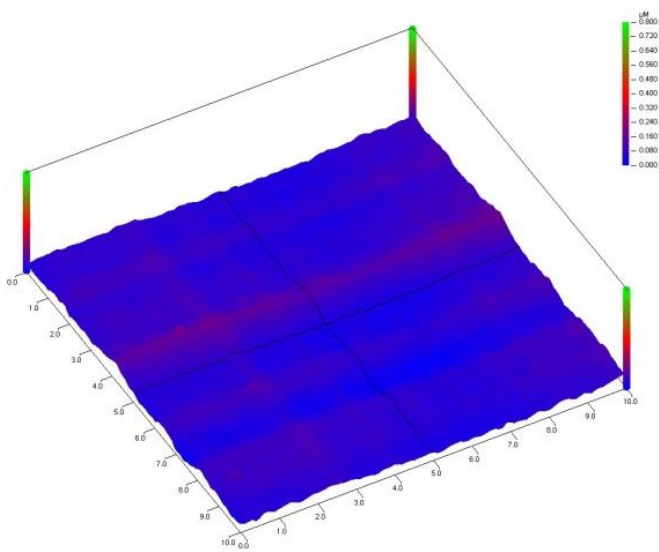
Sensor Model	Measuring Range	Stand-off Distance	Axial Resolution	Spot Size
S3/015	150µm	3.3mm	0.036µm	1.8µm
S11/04	400µm	10.8mm	0.12µm	5.2µm
S12/1.4	1.4mm	12.2mm	0.3µm	6.8µm
S16/4	4mm	16.5mm	0.66µm	12.3µm
S27/12	12mm	26.6mm	2.22µm	24.3µm
S20/24	24mm	20mm	4.5µm	26.8µm

SPECIFICATION

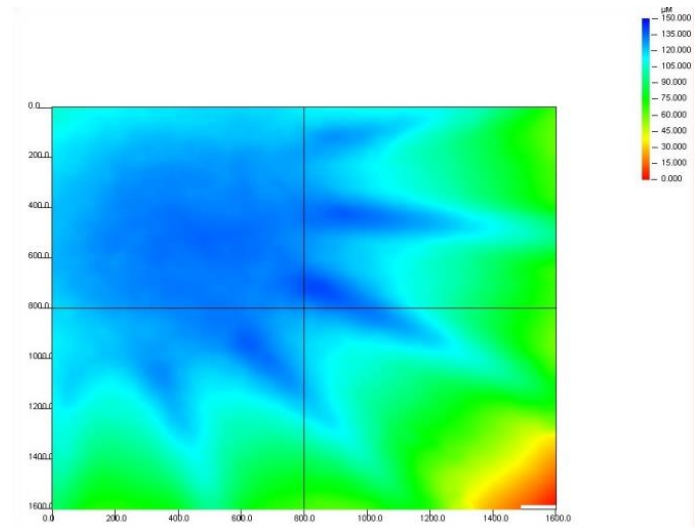
Scanner Dimensions (w×h×d)	1130×600×450mm
Scanner Weight	120kg
Scanning Baseplate Dimensions	380 x 240mm
X and Y Travel	150 x 100mm
X and Y Step Size	100nm
Data Collection Rate	1kHz
Maximum Scanning Speed	80mm/s
Scanning Plate to Sensor Clearance	100mm nominal

SOFTWARE OVERVIEW

- Colour 2D, 3D, X & Y axis presentation
- Auto or manual scaling
- Selectable view orientations
- Matrix scanning – multiple scans on single components, or automatic scanning of multiple samples in a fixture
- Customisable scripts for easy processing of scan data
- Various filters including warpage, surface and spike filters
- Measurement functionality includes cross section, surface area and volume
- Data export to multiple types (xyz, MATLAB, zzzz...)
- 2D X & Y plane visual fitting
- 3-point user defined plane correction



Measurement of sub-micron polished finishes is made simple



Measurement of roughness and fibre orientation on a composite sheet

SURFACE FORM AND ANALYSIS

- Arithmetic Mean
- Ra – Average Roughness
- Rz (DIN) – Mean peak to valley height
- Rz (ISO) – Ten-point height
- Rmax – Maximum peak to valley height
- Rp – Mean peak height
- Rq – Root mean square average roughness
- Rqm – Maximum peak height
- Rvm – Maximum valley depth
- R3z – Mean third peak to valley height
- Wt – Total waviness depth
- Pt – Total profile depth
- Nr – Normalised peak count
- Tpa – Material ratio
- D – Peak density
- S – Mean peak profile spacing
- Sm – Mean peak local spacing
- Lm – Sample length
- Warpage filter removes surface roughness to leave form
- Surface filter removes surface form to leave roughness
- Point editing
- Interpolation
- Radius calculation
- Cross-section area calculation

ADDITIONAL OPTIONS

Granite table – sturdy and well-manufactured steel framed table, complete with a granite top to ensure optimal performance from the system.

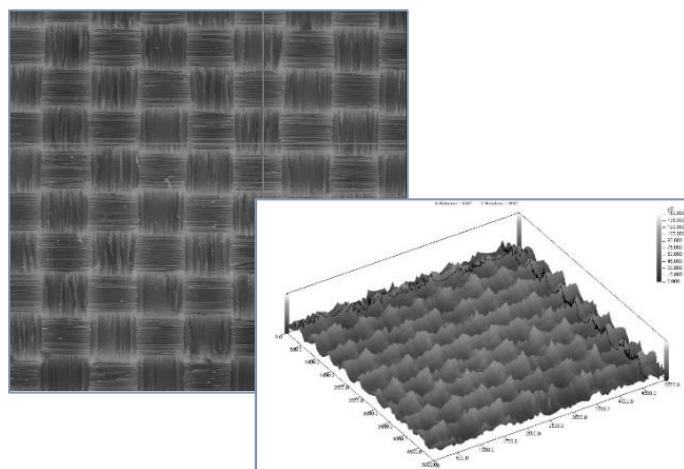
Camera – available to help position small components or detect small features on a part. Supplied with separate control software.

Additional sensors – wide range of sensors are available to cover all types of scanning work or sample size. These can be calibrated and operated from a single control unit.

Radial sensors – many of the sensors on offer are also available in a radial format, at a 90° angle to the z-drive. Allows for imaging in holes and certain sample geometries where scanning parallel to the z-drive is not an option.

Stainless cladding – Proscan's tough construction and high-end anti-vibration table allows its use in factory floor environments. In these cases, upgrade cable cladding to protect sensitive components.

Calibration – calibration and certification of all sensors is provided as standard.



Measurement of transparent/soft media
e.g. polymer diaphragm

Scantron are specialists in non-contact inspection, detection and measurement systems.
Our capabilities include ...

- defect detection
- displacement
- flatness
- shape
- surface roughness
- thickness
- diameter
- distance
- length
- straightness
- speed
- width

SCANTRON INDUSTRIAL PRODUCTS LTD

Monarch Centre, Venture Way, Taunton,
Somerset, England, TA2 8DE

Telephone: +44-(0)1823 333343

Facsimile: +44-(0)1823 333684

Email: scantron@scantronltd.co.uk

Website: www.scantronltd.co.uk