RHOPOINT
INSTRUMENTS



www.rhopointinstruments.com

Optimap2 PSD

ADVANCED SURFACE METROLOGY

- Fast full field surface measurement
- Suitable for all finishes, from matt to mirror
- On-screen image analysis
- Powerful analysis with portability

POWERED BY VISUOL technologies

Rhopoint Instruments Limited is a member of the Rhopoint Group

Optimap2 PSD

Optimap2 , the unique portable solution for surface inspection, allows rapid large area measurement and analysis of all types of coated or uncoated surfaces. Powerful on-screen functionality includes cross-sectional viewing allowing detection and characterisation of common surface irregularities including defects and waviness.



In quality control, inferior surface evaluation methods are still commonplace. Many methods lack definition, are time consuming and subjective. Modern consumers demand high quality products with surface finishes that are homogenous and free from defects.

The use of **Optimap2** provides a unique solution to these measurement challenges providing quantifiable data for improved production control.

OPTIMAP 2 - A UNIQUE MEASUREMENT SOLUTION

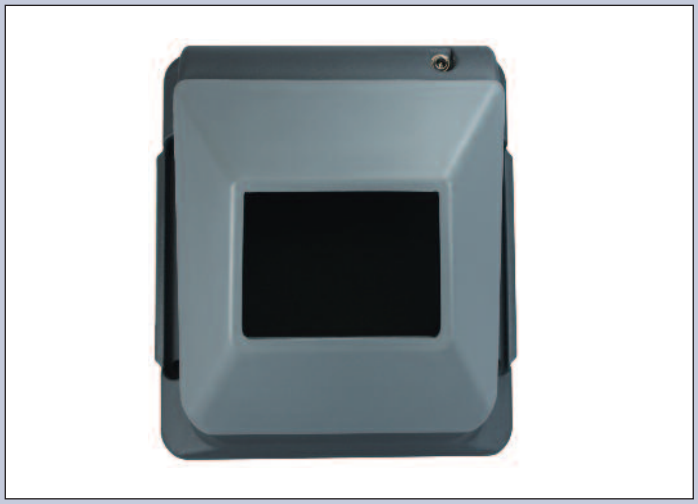
In one fast operation **Optimap2** maps the topography of a surface displaying defects and texture in incredible detail. Mapped information is processed into objective surface data that can be used to effectively control product quality.

REPRESENTATIVE SURFACE ANALYSIS

Optimap2 objectively measures and characterises many aspects of surface quality including texture, waviness and local defects including orange peel, inclusions, dents and scratches.

Its large measurement area (79mm x 57mm) and speed of operation (under 12 secs) provides rapid measurement with results that are more representative than those made with profilometers or other optical scanning instruments and can be reported in traceable SI units or other industry specific units.

With a lateral resolution of <75um **Optimap2** has the power to capture surface defects that are invisible to the human eye.

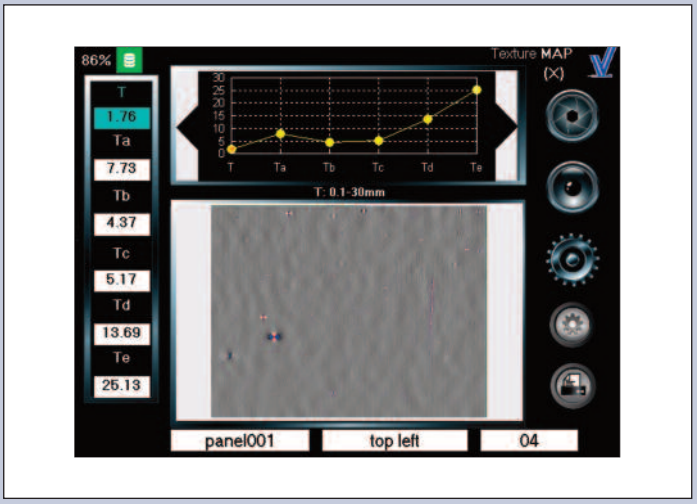


The Optimap's texture scale is correlated to the waviness scale using the same filtered bands commonly used in automotive and other high gloss applications. The global texture value can be used to objectively assess the amount of visible texture for a number of applications including plastics, metals and textiles.

Range	Wave Length (mm)	Curvature (m^{-1})
K	0.1 – 30.0	2.246
Ka	0.1 – 0.3	1.526
Kb	0.3 – 1.0	1.217
Kc	1.0 – 3.0	0.390
Kd	3.0 – 10.0	0.446
Ke	10.0 – 30.0	0.199

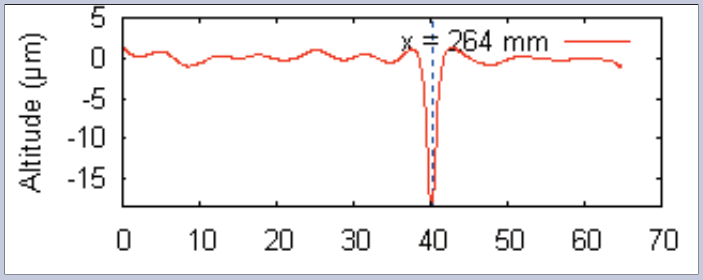
INTUITIVE USER INTERFACE

Optimap2's intuitive user interface provides operation, setup and display of measurement results. Its icon based touch screen allows ease of use by simply pressing the relevant active areas on the screen.



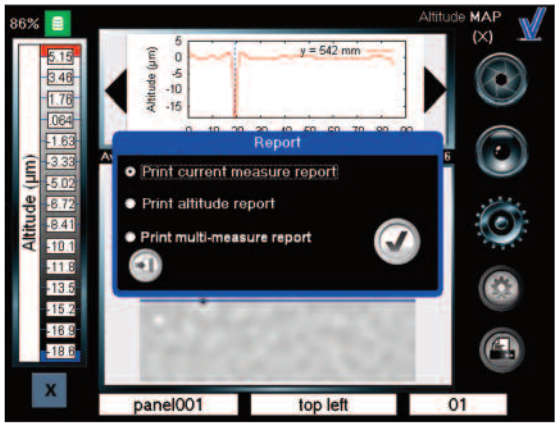
Measurement results are displayed as an image map, graphic and numeric formats, in either Altitude (um), or Curvature (m^{-1}). Cross sections can be created through the surface by touching the relevant point of interest on the displayed image and viewing the chart in the upper display. The cross section is active and can be moved over the image in X and Y to view changes across the surface.





OPTIMAP 2 - A UNIQUE MEASUREMENT SOLUTION

ADVANCED REPORT PRINTING



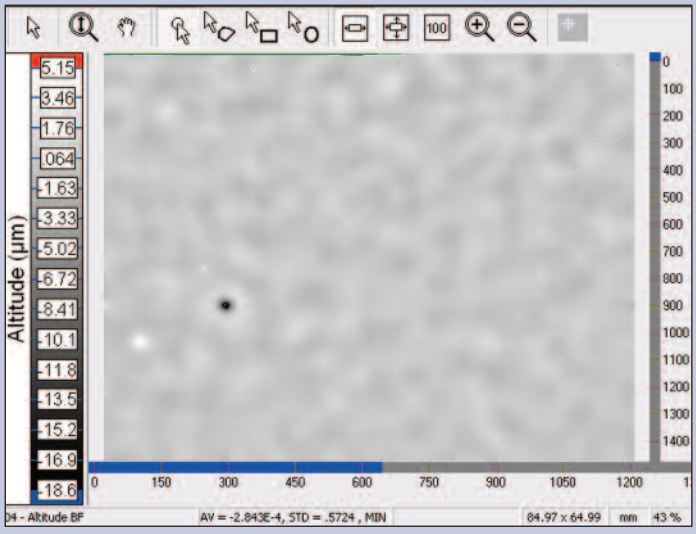
Optimap2 features direct printing of measurement results in pre-defined reports either to a connected USB key or to an external USB printer. Three different report formats are available accordng to the measurement parameters required.

ON-SCREEN IMAGE MANIPULATION

A variety of different shaped regions can be created actively on the screen image allowing areas inside or outside the region to be included or excluded.

This advanced functionality is useful for surfaces with complex shapes where areas fall outside the instruments field of view of measurement.

Once a region has been created and confirmed, measurement results adjust to the new image dimensions. Regions can be resized and moved to allow selection of a region of interest or deleted completely restoring the original image.

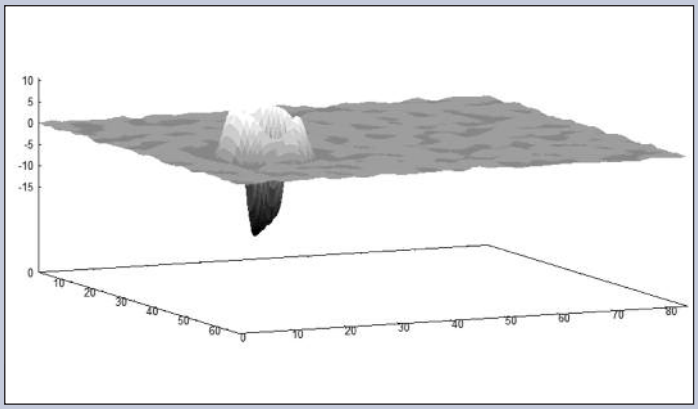


POWERFUL OFFLINE ANALYSIS - RHOPOINT ONDULO READER SOFTWARE

High resolution image maps can be easily transferred from the **Optimap2** to a PC allowing external processing in Rhopoint Ondulo Reader software or compatible third party software.

Data transfer is simple using the USB key provided.

Ondulo reader software offers advanced data analysis and reporting capabilities.



3D View

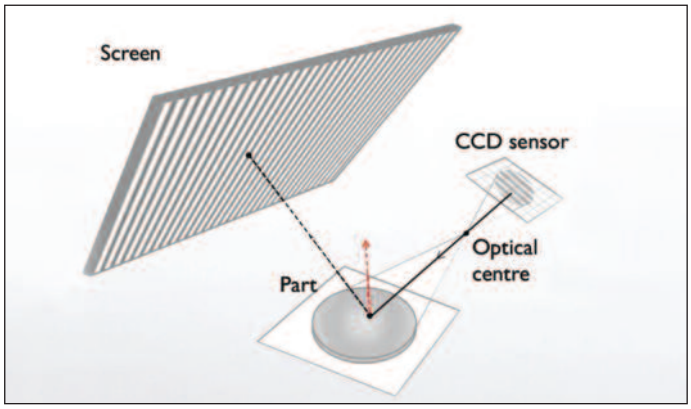
- Surface effects such as texture, flatness, number, size and shape of local defects can be identified, mapped and quantified
- Profiles of curvature, slope or altitude can be characterised
- Areas of interest within the 3D maps can be isolated and evaluated
- Drag and drop feature allows images and data to be easily transferred to Microsoft Word for reporting
- Flexible screen view feature allows the display of result maps in single, dual or 3D format
- 3D view allows full rotation of surface and X / Y cross sectional views
- Dual view allows comparison of saved result maps
- Scaling dimensioned in either curvature (m^{-1}) or µm.

A REVOLUTION IN SURFACE MEASUREMENT

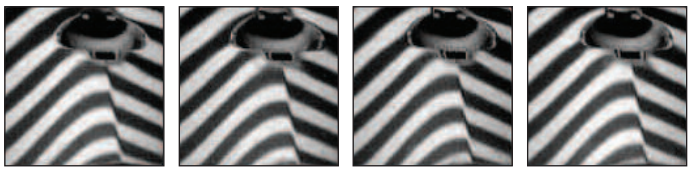
ADVANCED MEASUREMENT TECHNOLOGY

The **Optimap2** uses Phase Stepped Deflectometry (PSD), an advanced measurement technique that uses a periodic pattern of white light with a sinusoidal waveform to measure the profile of a surface. The waveform is presented to the surface using a high resolution display and the reflected pattern captured by a high resolution camera.

The sinusoidal waveform acts like a ruler on the surface allowing the X, Y and Z ordinates to be mapped as they are proportional to the spatial phase of the reflected sinusoidal pattern profile.



Shifting or "stepping" the waveform phase allows an accurate measurement of each point across the surface through the corresponding point per pixel on the camera. Using the geometric relationship between the display, surface and camera, reflected light rays are spatially modelled to calculate the direction of the normal at each point of the surface thereby allowing the profile at that point to be obtained.



By using the sinusoidal pattern profile orthogonally across the surface, multi-dimensional slope and curvature data is obtained.

By differentiating this data the curvature field can be calculated allowing an accurate characterisation of surface quality. This curvature field has a high sensitivity to local altitude variations caused by defects.

Unlike other instruments the **Optimap2** requires no movement over the surface as all measurements are performed optically using PSD thereby preventing any damage during operation.

SAMPLE APPLICATIONS



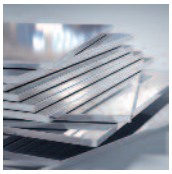
Paints and Coatings



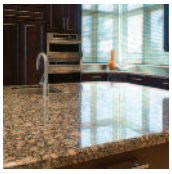
Yacht Manufacturers



Aircraft



Metal Polishers



Polished Stone



Automotive



Smart Phone, Tablet PC and Laptop Covers



Wood Coatings



Automotive re-finish

Optimap2 PSD

INSTRUMENT SPECIFICATION

Display
- 6.5 inch Colour VGA TFT Touch Screen

Camera
- 1.3 Megapixels, image resolution 1296 x 966

Measurement
- 79mm x 57mm

Lateral Resolution
- 75µm

Data storage
- 200 readings

Power
- Rechargeable lithium ion
- 4 – 8 hours operation / charge

Operate from
- Internal battery / mains charger

Recharge Time
- Mains charger 1 – 2 hrs

Memory
- 6GB compact flash

Data Transfer
- PC compatible
- USB connection

Dimensions & Weight
- 200mm x 218mm x 250mm (H x W x D)
- 3.0Kg
- Packed weight: 7.7kg
- Packed dimensions: 350mm x 550mm x 450mm (H x W x D)
- Commodity code: 9027 5000

Languages



INCLUDED ACCESSORIES

- Verification tile
- USB Key
  - Instruction manual
  - Ondulo Reader Software

EXTRAS

Ondulo Defects Detection Software

Featuring advanced tools for the identification, classification and quantification of surface defects including:

Local Defects:
- Pinholes
- Inclusions
- Scratches

FREE EXTENDED WARRANTY

CALIBRATION AND SERVICE

Fast and economical service via our global network of accredited calibration and service centres, please visit www.rhopointinstruments.com/support for detailed information.

ASTM INTERNATIONAL ORGANIZATIONAL MEMBER

PRA PAINT RESEARCH ASSOCIATION MEMBER

LOCAL AGENT

novasys
novasys group pty ltd
po box 1150 mountain gate 3156
tel: +61 3 9752 3766 fax: +61 3 9752 3977
website: www.novasys.com.au e-mail: info@novasys.com.au

00594/10/16

RHOPOINT INSTRUMENTS

Rhopoint Instruments Limited • Rhopoint House
Enviro 21 Park • Queensway Avenue South • St Leonards-on-Sea
East Sussex • TN38 9AG • UK • Tel: +44 (0) 1424 739622
sales@rhopointinstruments.com • www.rhopointinstruments.com