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## **OPTIMAP3** PSD

### Optimap3 PSD

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

Manufactured by Rhpoint Instruments in the United Kingdom 

# Advanced Surface Metrology



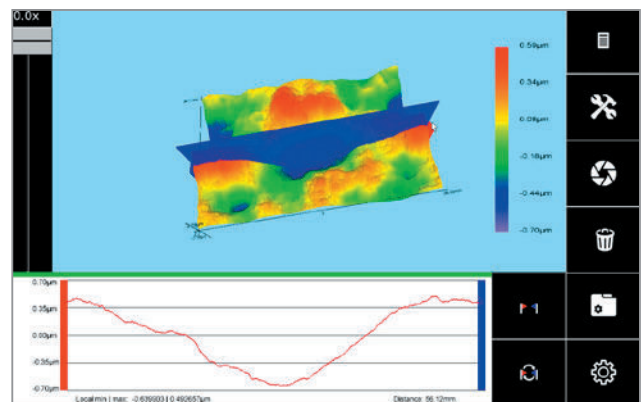
**Optimap3, the unique portable solution for surface inspection, allows rapid large area measurement and analysis of all types of coated or uncoated surfaces.**

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 homogeneous and free from defects.

The use of Optimap3 provides a unique solution to these measurement challenges providing quantifiable data for improved production control.

In one fast operation Optimap3 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.



**The Optimap 3  
can measure:**

- Orange Peel
- Waviness
- DOI
- Overspray
- Inclusions
- Blistering
- Sagging
- Waterstains



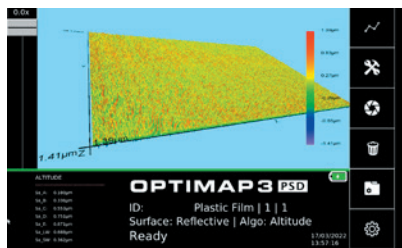
# Representative surface analysis

Optimap3 objectively measures and characterises many aspects of surface quality including texture, waviness and local defects including orange peel, inclusions, dents and scratches.

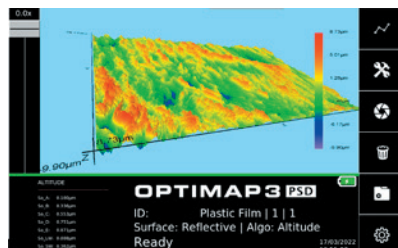


Its large measurement area (65 x 54mm) and speed of operation (under 10 secs) provides rapid measurement with results that are more representative than those made with profilometers or other optical scanning instruments and can be reported in traceable SI units or other industry specific units.

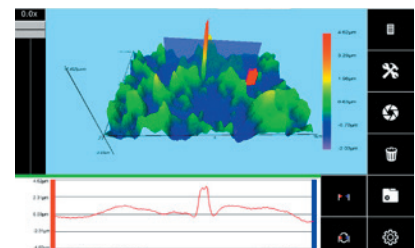
With a lateral resolution of <37um Optimap3 has the power to capture surface defects that are invisible to the human eye.



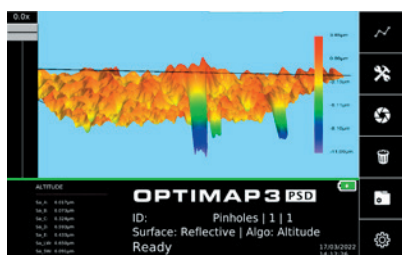
3D Surface View



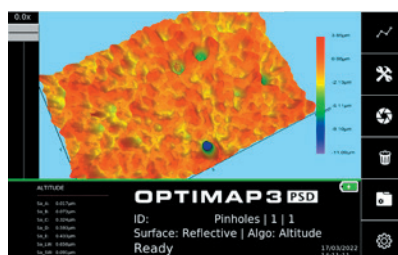
Magnify



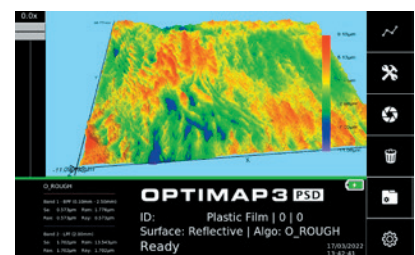
Cross Section View (anywhere on surface)



View Surface Underneath



Rotate Surface



Zoom in on Surface Features



# A unique measurement solution



**Next Generation Revolutionary Optimap surface analysis instrument.**

**NEW HIGHER Resolution Full Field Surface Mapping**  
( $<0.1\mu\text{m}$  Z- lateral,  $37\mu\text{m}$  X-Y resolution)

Allows full field measurement of surface areas to be measured in high detail

**NEW Dual focus system with reflected image analysis**

Automatically detects the reflectivity level of the surface and adjusts the setup to suit

**NEW On board surface roughness / waviness**

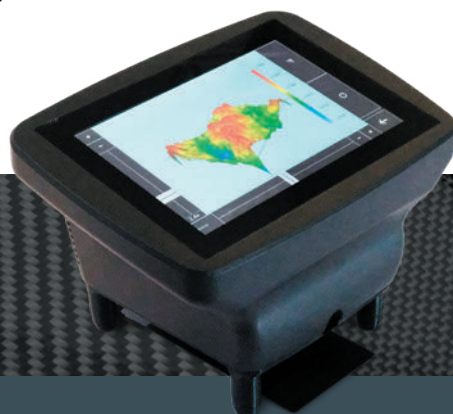
Results comparable to profilometry and other optical measurement techniques

**NEW Non-contact measurement for wet paint**

The ONLY product that can measure the formation of orange peel of wet paint

**NEW Compatible with visual appearance scales**

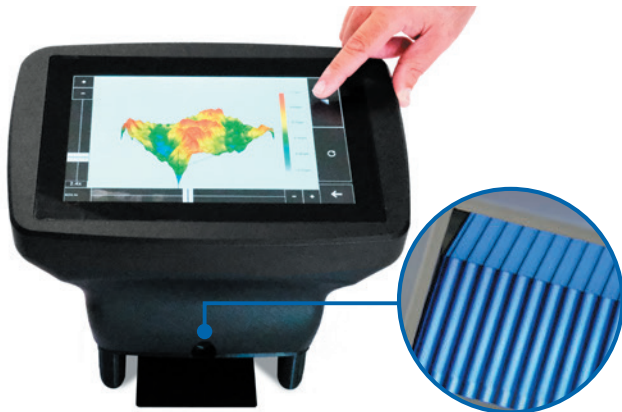
(TAMS and Wavescale values) used in automotive and high end applications



## Benefits of using the Optimap3

- ✓ Fast, reliable and portable
- ✓ Intuitive user interface
- ✓ Flexible screen view features
- ✓ Powerful offline analysis
- ✓ Instant 3-D maps of surface features
- ✓ On screen visualization and analysis of texture and defects
- ✓ Easy to understand parameters highly correlated to human perception
- ✓ Results correlated to interferometry measurements

# How does the Optimap3 measure and analyse surfaces?



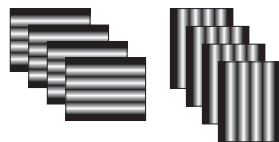
## Phase Measurement Deflectometry (PMD) is used to map surface topography

Fringe patterns are displayed on an internal target screen.

The Fringe Patterns are animated (phase stepped) in X & Y directions.



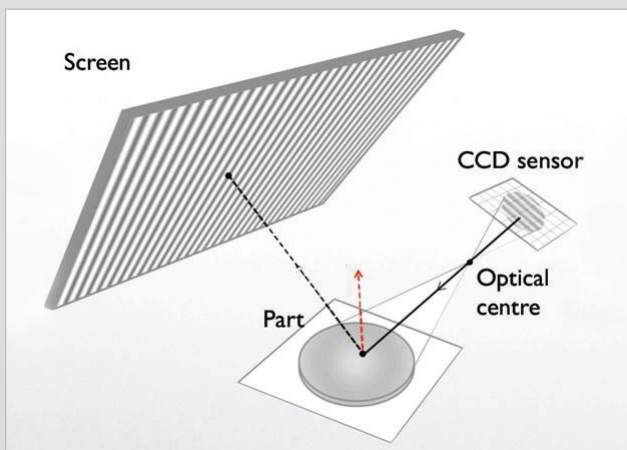
Dull surface



Reflective surface

## The Optimap3 has two modes - reflective and dull

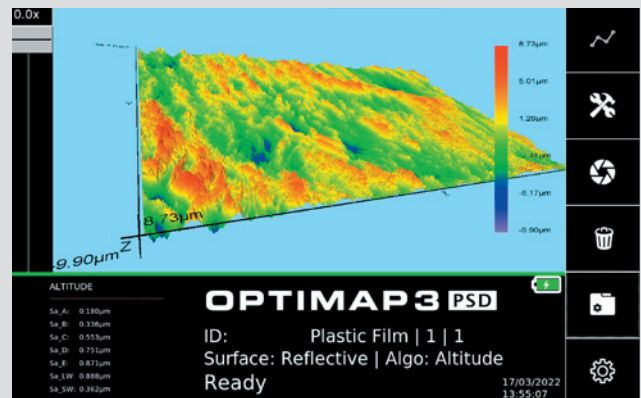
High frequency fringes are used to measure reflective surfaces - low frequency for dull surfaces.



## The PMD is a non contact technique using white light reflection

The fringe patterns are reflected by the surface- the reflection is distorted by surface texture and defects.

The reflected images are captured by an internal variable focus camera.



## High resolution maps show surface texture and defects

The built in PMD surface mapping engine combines data from 8 reflected fringe patterns to create a highly representative map of the measured surface.

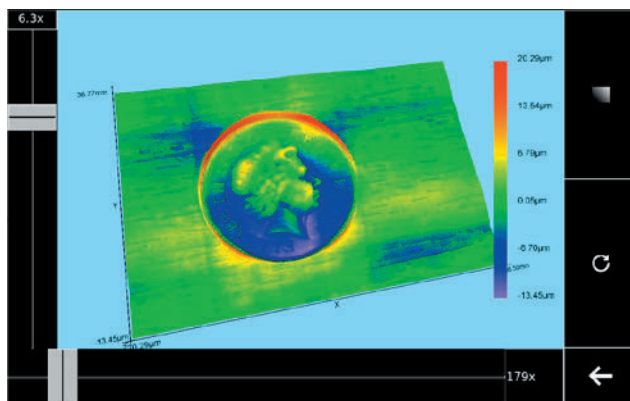
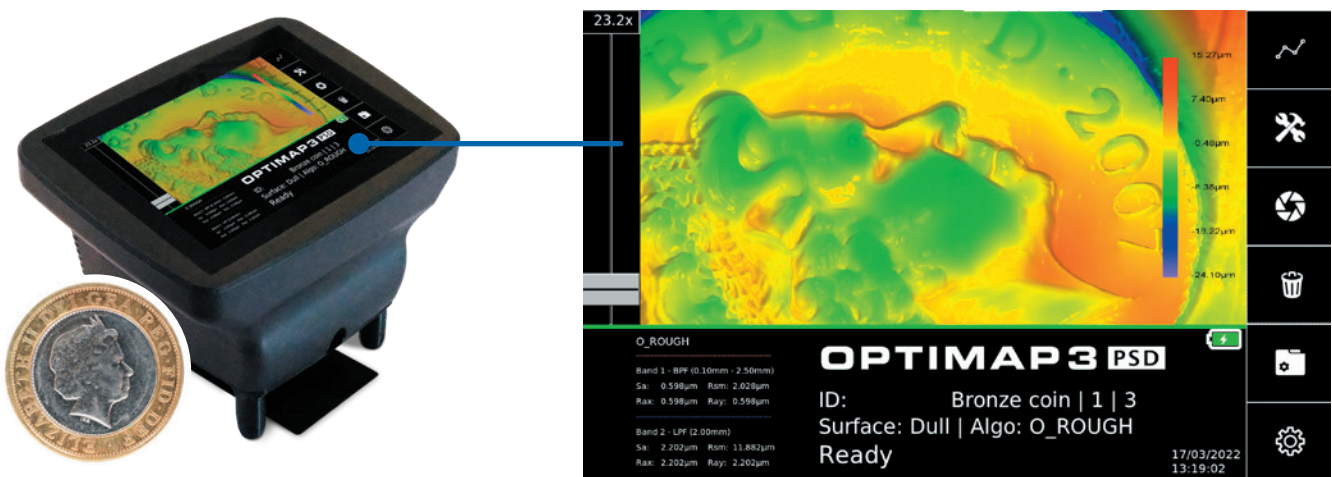
Maps of surface curvature or altitude can be displayed. High resolution maps show surface texture and defects. Built in profile tool can be used to measure the height and size of surface features.



# Intuitive user interface

Optimap3's intuitive user interface provides operation, setup and display of measurement results.

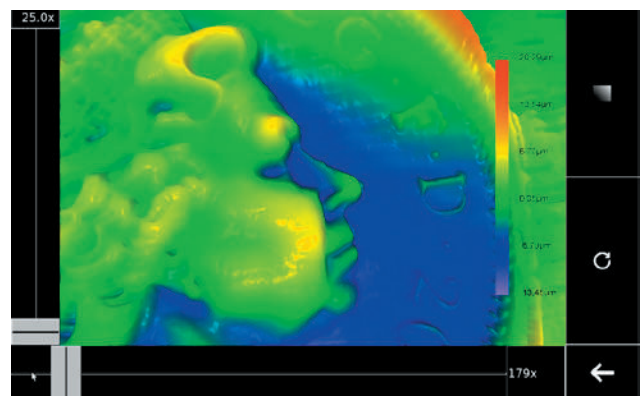
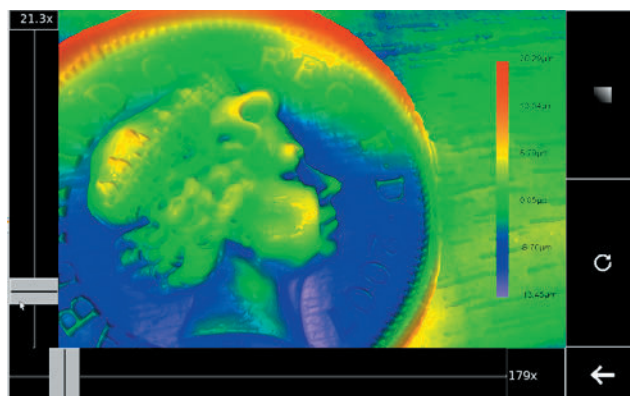
The icon based touch screen allows ease of use by simply pressing the relevant active areas on the screen.



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.

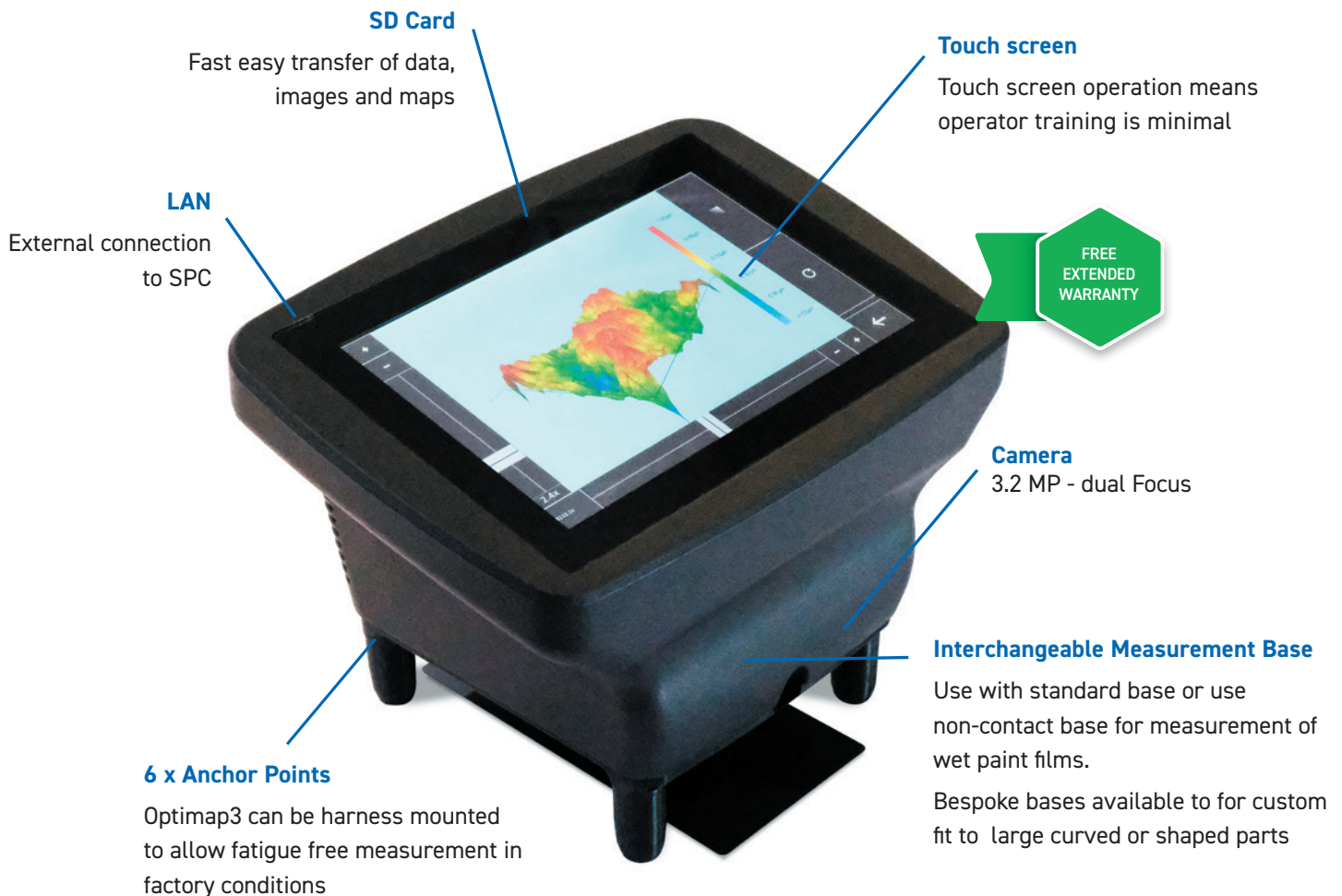
The cross section is active and can be moved over the image in X and Y to view changes across the surface.

The magnification of the image can be adjusted via magnification slider.



# Features

Rugged and accurate, the Optimap3 is suitable for laboratory, factory or on-site inspection.



## Static operation

No movement required during measurement, preventing any damage during operation



## Sees what the eye cannot

A lateral resolution of  $<37\mu\text{m}$  that has the power to capture surface defects which are invisible to the human eye



## Rapid large area measurement

A large area is mapped in a single operation (65 x 54mm) in under 10 secs

# Measurement Surfaces and Applications

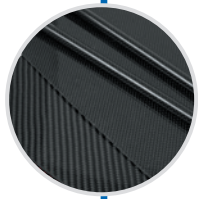
The Optimap3 can be used on a wide range of surfaces from ultra low gloss to mirror finish



## Automotive

*Substrate, Steel, Aluminium, Plastics, E-Coat, Primer, Clearcoat, Vinyl Wrap, Chrome parts*

Measurement of surface texture, appearance and detailed analysis of defects.



## Plastics and Composites

*Moulded parts - surface quality, primer quality and final appearance.*

Defect detection, characterisation and analysis. Process optimisation to improve final appearance quality.



## Furniture

*Lacquered and painted wood surfaces*

Defect detection, characterisation and analysis. Process optimisation to improve final appearance quality.



## Paints and Coatings

*Exterior, interior, wood and metal paint including non contact measurement of wet paint.*



## Displays

*Display Films and plastics*  
Reflective Appearance and surface texture.



## Aerospace

*Exterior paint quality and appearance.*



## Yacht Coatings

*Painted parts and substrates.*





# Accessories

## Included accessories:

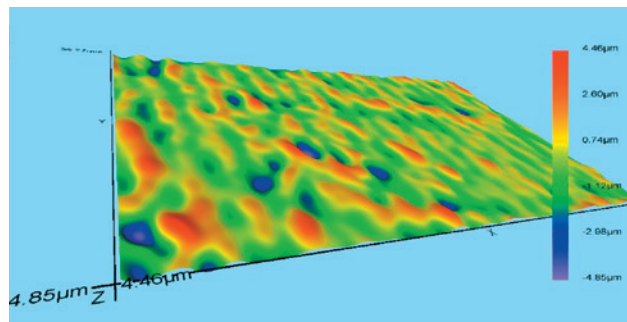
- Verification tile
- USB key
- Instruction manual
- Optimap Reader software
- Measurement base x 2



## Optimap Reader software

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

- Pinholes
- Inclusions
- Scratches



## Instrument verification:

Due to the PSD measurement principle, the Optimap requires no calibration.

It is recommended however that a verification check is performed periodically (about once every 3 months) using the reference tile included with the instrument.

Verification check is simple requiring one measurement to be made and comparing the result obtained with the values indicated on the tile.

If the measured values are within the agreed tolerance then the instrument can be used. If they are outside the tolerance please contact your nearest Rhopoint Authorised Service Representative for advice.

**Free extended 2 year warranty:** Requires registration at [www.rhopointinstruments.com/instrument-registration](http://www.rhopointinstruments.com/instrument-registration) within 28 days of purchase. Without registration, 1 year standard warranty applies.

**Calibration and service:** Fast and economical service via our global network of accredited calibration and service centres. Please visit [www.rhopointinstruments.com/support](http://www.rhopointinstruments.com/support) for detailed information.



# Specifications

Measurement	Detail
Compatibility	Optimap 1&2, TAMS, RoboTAMS
Field of View	65 x 54mm
Measurement Focus	Dual Focus - Target Images and Surface
Spatial Resolution	37 um/pixel
Measurement Techniques	<ul style="list-style-type: none"> <li>• Phase Measurement Deflectometry</li> <li>• Optical Transfer Function</li> <li>• Line Deformation Analysis</li> <li>• Surface Imaging</li> </ul>
Measurement Time	10 Seconds
Topographical Output	<ul style="list-style-type: none"> <li>• Curvature Map</li> <li>• Altitude Map</li> </ul>
Filter Options	<ul style="list-style-type: none"> <li>• Wavescan Band Filtering</li> <li>• User Definable ISO GPS</li> <li>• High Pass, Low Pass, Band Pass</li> </ul>
Profile Analysis	Yes
Measurement Parameters	K, Ka,Kb,Kc,Kd,Ke,KLW,KSW T, Ta,Tb,Tc,Td,Te,TLW,TSW,Q,H,S,W,D, C, RaX, RaY Sa, Rsm

Hardware	Detail
Processor	Intel i7 Gen 5
Memory	256 GB
Battery	Rechargeable Lithium ion 12000mAh
Typical Use/Charge	3 - 4 hours / charge
Camera	3.2 MP- dual Focus
Output Data	Maps/CSV/Results database
Data Transfer/Speed	SD Card - 12.5 MBs
Display	10.1 Capacitive Touch 1280 x 800
Dimensions	233 x 314 x 235 (W x H x D)
Carry options	6 Point harness anchors
Fixture	Removable Measurement Base
Optional Extra	<ul style="list-style-type: none"> <li>• Wet paint measurement Base</li> <li>• Customisable jigs and fixtures</li> </ul>
Weight	3.5Kg

Interface	Detail
HMI Interface	Optimap3 GUI- 10 point touch
SPC Integration	Yes
Connectivity	LAN USB

Order codes - detail	Code
Optimap3 PSD	A7000-003
Optimap3 non-contact base for wet paint measurement	B7000-050



**TRY BEFORE YOU BUY**

**We offer two options for you to try out the Optimap3 PSD before buying.**

**1**

**Online demonstration:** Online presentation of the Optimap3 PSD with your samples measured LIVE on Zoom, Microsoft Teams or Skype. Includes a consultation with an application specialist.

**2**

**Factory sample testing:** Send in samples of your material for testing and receive a comprehensive test report.

[Arrange a demo](#)

**Ready to receive a quote?**

[Click here](#)

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