



Coating Assurance Gauge

- Identify Defects Early, to Reduce Scrap and Rework Later
- Measure All Raw Substrates, E-Coated and Painted Surfaces
- Take Fast 3D Surface Measurements at High Resolution
- Fingerprint the Coating Process for Consistent Results

Assure quality of paint surfaces from substrate to clearcoat

The 4D SurfSpec is the first surface measurement system for process control of coatings from substrate to clearcoat. Comprehensive, quantified results let you fingerprint the entire process to ensure final coating quality—and to prevent further processing on parts which will lead to unacceptable quality.

Portable, robust production measurement

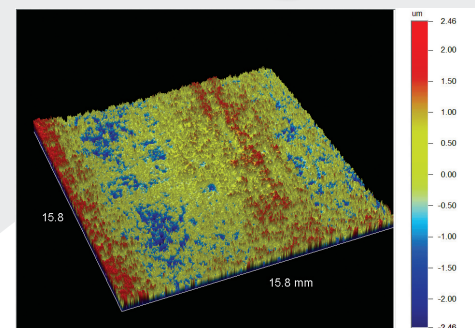
At only 3 kg (6.6 lbs), the portable 4D SurfSpec can be used throughout the shop, either handheld or robot-mounted. Test any of the common locations-of-concern on a body in white, then retest the same locations after coating to trace results throughout the process. The 4D SurfSpec measures in any orientation, even upside-down, on verticals, and on curved surfaces.

Measurement with the gauge is simple, and fast, producing results in just seconds.

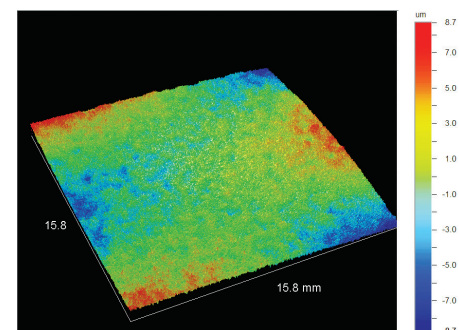
Go/no-go feedback and deep analysis

The 4D SurfSpec is production-ready, providing a simple go/no-go signal and real-time, 3D view for immediate operator feedback. The included software also provides deep, experimental analysis. Automatic feature-finding detects high areas, pinhole quantity, density, height and volume, and lateral dimensions of user-defined defects. You can even export data to common software such as Bandify3D¹ for further analysis or to correlate with other instruments.

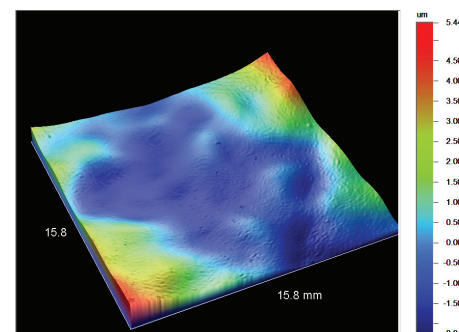
The 4D SurfSpec has been developed in partnership with key industry experts to provide real-world usability and the most relevant information. It is the only system that measures surfaces on all common materials, at every coating stage. It provides the reliable data you need to control every step of the coating process and produce high-quality final coatings.



Raw Substrates



E-Coated surfaces



Final paint qualification

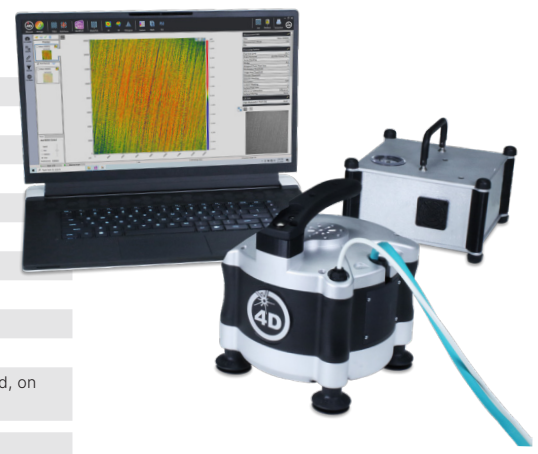
¹ www.digitalmetrology.com



4D SurfSpec™ Coating Assurance Gauge

Specifications

Description	4D SurfSpec Coating Assurance Gauge
Performance	
Measurable Materials	Metal, e-coated, and painted surfaces. Composites, glass, plastics, rubber, fabric
Measurable Surfaces	Vertical, horizontal, tilted and curved surfaces
Measurable Range	RMS roughness from < 1 nm to > 2 µm RMS surface roughness
Field of View	16 × 16 mm (0.63 × 0.63 inches)
Scan Range	Contiguous surface height changes up to 10 mm (0.394 inches) deep/tall
Lateral Resolution	15 µm (0.00059 inches)
Vertical Resolution	<15 nm (0.59 µin)
Data Density	1.4 million data points per measurement
Measurement Time	<30 seconds
System Mounting	Integrated vacuum feet allow system to adhere to most any component. Use handheld, on stand, or via robotic automation
Data Processing	
Computer	Laptop with latest Intel processors running Windows 10, 64-bit Professional
Software Analyses	Surface Roughness Parameters (Ra, Rq, Rz, Sa, Sq, etc); Power spectral density, 2D and 3D plots with traces, surface slope, Wa, Wb, Wc, Wd bands (via Bandify3D Interface)
Shape Removal	Remove low-order shape as needed for proper appearance analysis
Electrical/Mechanical	
System Cabling	Single ethernet cable for power and data
Sensor	1200×1200 pixels, 12-bit scientific CMOS camera
Dimensions	Instrument: 15.3 × 16.5 × 20.1 cm (6.0 × 6.5 × 7.9 in); Vacuum module: 19.1 × 19.1 × 11.2 cm (7.5 × 7.5 × 4.4 in)
Weight	3 kg (6.6 lbs) instrument only; vacuum module: 2.5 kg (5.5 lbs)
Power Consumption	<200W with laptop
Operating Temperature	50–80° F (10–26° C)
Operating Humidity	Up to 100% non-condensing
Warranty	One year, limited



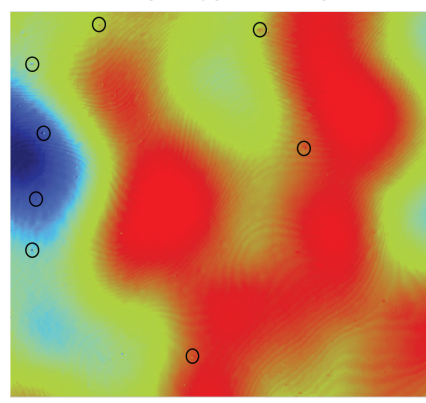
Measure surfaces of:

- Plastic
- Composite
- Metal
- Rubber
- e-coated surfaces
- final-painted surfaces

Why you should have 4D SurfSpec:

- Measure on the production line to maintain process stability
- Quantify surface structures pre- and post-paint
- Correlate measurements of each layer to final coating quality
- Establish process protocols that leads to best-of-the-best finished coatings
- Develop a metrology process that reduces scrap and rework

Find and quantify pinholes and protrusions



4D Technology

An Onto Innovation Subsidiary



Patents US 7777895, 7489408 and US 7230717. Others pending.
 All specifications subject to change without notice.
 Bandify3D is a registered trademark of Digital Metrology Solutions.
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