

Coating Assurance Gauge

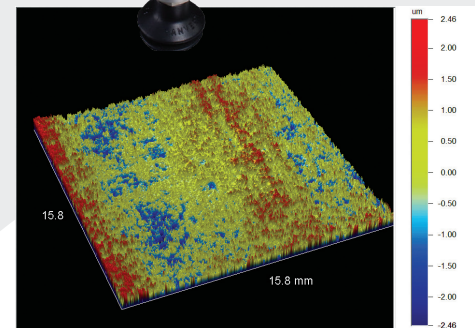
- Drive Consistent Results Throughout the Coating Process
- Measure All Raw Substrates, E-Coats and Coated Surfaces
- Take Fast 3D Surface Measurement at Nanometer Scale
- Qualify Large Components Directly, on the Shop Floor

The 4D SurfSpec provides everyone in the coating supply chain with quantifiable surface information that can be used for end-to-end process control. The 4D SurfSpec has high lateral resolution, capturing information from all wavelength bands that affect appearance. Its large 16x16 mm (0.6"x0.6") field of view ensures the sample area is large enough to be conclusive. With a robust design—and at only 3 kg—the system is portable, and can be used to measure parts on the shop floor, including vertical door panels. Use it hand-held or mount on a robotic system for full automation.

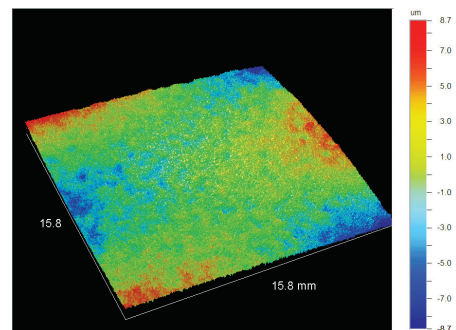
Taking measurements is simple. Place the instrument on the surface to be measured, activate the vacuum switch to couple the surface to the instrument, and then the system will automatically focus, measure and produce results. Measurements typically take under 30 seconds. As the system measures, the operator sees a real-time 3D-view of the surface being built as the scan progresses, providing easy visual feedback that everything is operating correctly. Moving to a new location is as simple as deactivating the vacuum switch and placing the system on the next area.

The 4D SurfSpec is the only appearance-measuring system that can quantify raw substrates of any material (plastic, composite, metal, rubber), e-coated surfaces, and final-painted surfaces, creating consistency of results throughout the process. With nm-level resolution, it quantifies fine surface details. Analyze the data using 4D's analysis software, or export it to common applications like the 3D Bandify software¹. Review the Wa, Wb, Wc, Wd—or custom—bands, in exactly the same parameters as with other instrumentation. Feature-finding analyses automatically detect high areas as well as pinholes, counting and flagging the density, heights, volumes, and lateral dimensions of any user-defined defects.

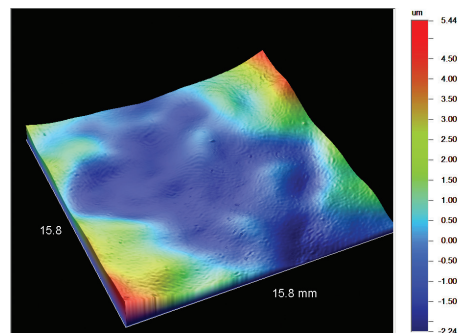
With the 4D SurfSpec, comprehensive, quantified results can be made on any surface at any stage of coating so that the entire process can be monitored—and any deviations from ideal corrected—before multiple failed parts are produced. The instrument has been developed in partnership with key industry experts, and so it is tailored to provide the most relevant information to the operator.



Raw Substrates



E-Coated surfaces



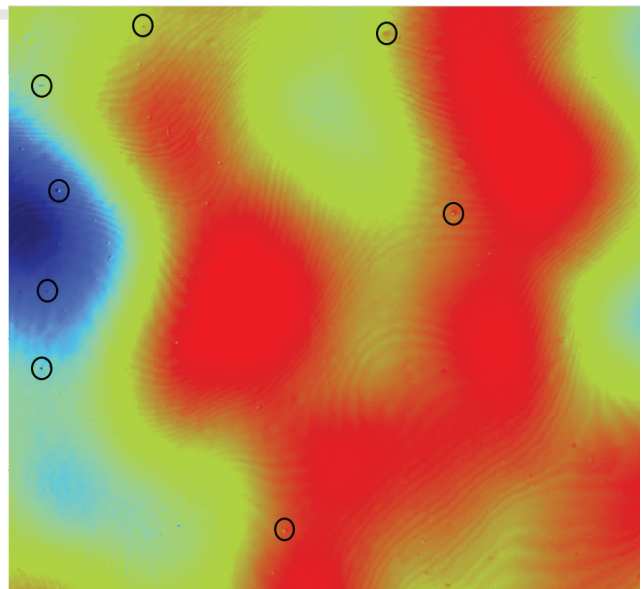
Final paint qualification.

4D SurfSpec™ Coating Assurance Gauge

Specifications

Description	4D SurfSpec Coatings Surface Gauge
Performance	
Measureable Materials	Metal, e-coated, and painted surfaces. Composites, glass, plastics, rubber, fabric
Measureable Surfaces	Vertical, horizontal, tilted and curved surfaces.
Field of View	16 x 16 mm (0.63 x 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 allows system to adhere to most any component. Use hand-held or via robotic automation
Data Processing	
Computer	Latest Intel processors running Windows 10, 64 bit Professional. Laptop or all-in-one configurations
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 Bandify Interface)
Shape Removal	Remove low-order shape as needed for proper appearance analysis
Electrical/Mechanical	
Weight	3 kg (6.6 lbs) instrument only
System Cabling	Single ethernet cable for power and data
Sensor	1200x1200 pixels, 12-bit scientific CMOS camera
Operating Temperature	50–80° F (10–26° C)
Operating Humidity	Up to 100% non-condensing
Warranty	One Year, limited

Find and quantify
pinholes and protrusions



Patents US 7777895, 7489408 and US 7230717. Others pending.

All specifications subject to change without notice.

4D Technology Corp is a Nanometrics business unit



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