HANDHELD LASER METROLOGY 3D SCANNER

FreeScan Trio

Marker-Free Handheld Laser 3D Scanner

INNOVATION MEETS EVERY INSPECTION

A handheld laser scanner that works without markers. 98 laser lines and three industrial 5 MP cameras position the scanner from the part itself, so you skip target prep. Switch to marker modes for 0.02 mm accuracy, and built-in photogrammetry keeps large parts accurate.



0.02 mm	98	3.01 M
ACCURACY	LASER LINES, NO MARKERS	POINTS / SEC



Scanning a turbofan engine on a maintenance stand. Large, complex parts like this are what the Trio was built for.

Innovation Meets Every Inspection

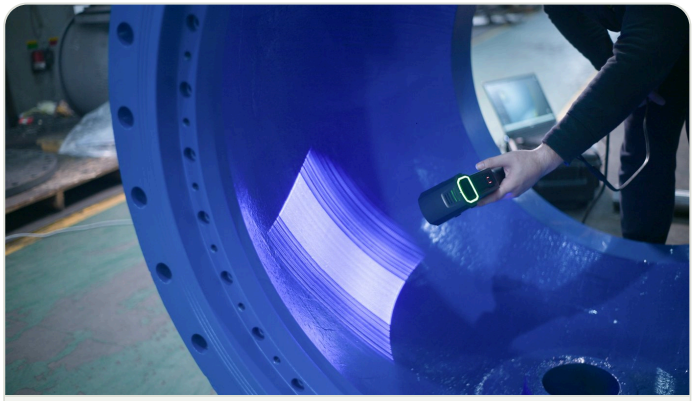
FreeScan Trio is a marker-free handheld 3D scanner. It pairs 98 laser lines with three industrial 5 MP cameras for fast scanning and reliable, precise data, with far less preparation time.

Built-in photogrammetry. Patented technology raises volumetric accuracy on large objects.

One scanner, many jobs. Marker-free, high-speed, detailed and deep hole modes cover a wide range of inspection tasks.



The Trio working inside a turbine casing. In no markers mode, nothing has to be stuck to the blades first.



Laser lines sweep the inside of a large valve body. Edges, bores and cast features come through in the data.

Intelligent Self-Positioning

With 98 laser lines, the Trio positions itself from the part's own features, so no markers are needed. It scans at up to 3,010,000 points per second.

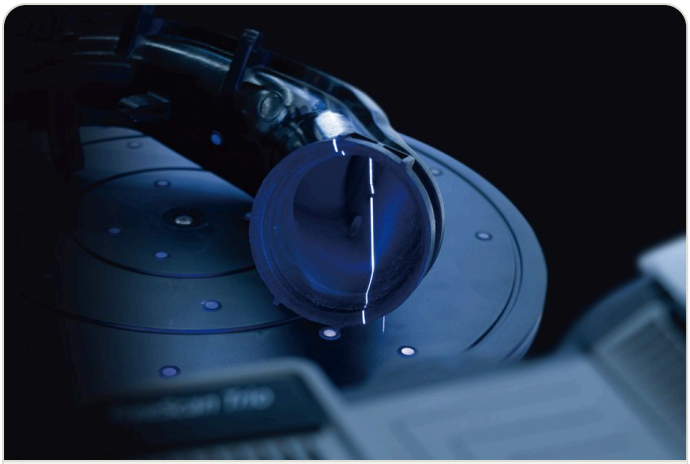
98	3
laser lines no markers	industrial 5 MP cameras

Perfect High Details Capture

The Trio captures fine detail with or without markers.

Without markers. Intricate features captured with no target prep.

With markers. 0.02 mm accuracy for the most critical parts.



A single laser line reaching into a deep bore. One line gets data where a wide laser pattern cannot see.



Built-in photogrammetry on a full-size train nose section. The Trio sets up the reference frame itself, with no separate camera kit.

Deep Hole Mode

Both the 26-line mode and the single laser line reach holes, deep pockets and fin walls, thanks to optimized camera angles and dedicated scanning modes.

26 laser lines high speed	**1** laser line deep holes

Patented Binocular Photogrammetry

Unlike traditional photogrammetry, the Trio's binocular photogrammetry needs no coded targets. It cuts preparation time by at least half and keeps volumetric accuracy high on large objects.

Certified Accuracy: ISO/IEC 17025 Laboratory

Accuracy claims on this page are not marketing numbers. The SHINING 3D Accuracy Lab is accredited to ISO/IEC 17025 by CNAS, and its calibration procedures follow VDI/VDE 2634 and ISO 10360. Every FreeScan Trio is acceptance tested there to VDI/VDE 2634 Part 3 and ISO 10360. That is the document your quality manager, and your customer's auditor, will ask to see.



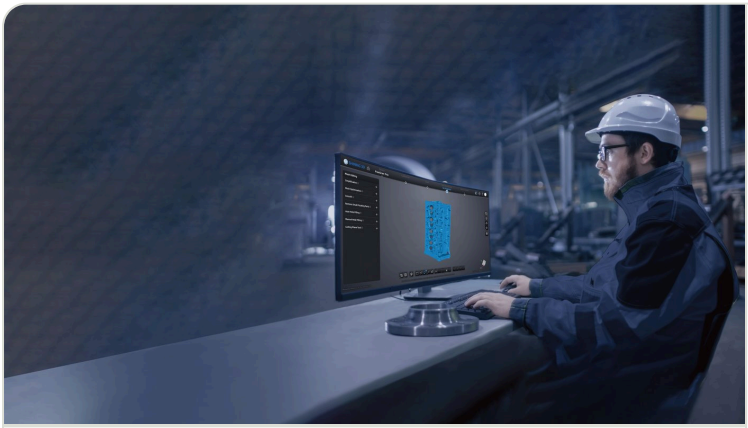
Large-volume hall: reference scale bars set the traceable length standard for volumetric accuracy tests.



Long-range rail: depth-of-field and working-distance performance verified along a calibrated track.



Calibration benches: instruments are verified to VDI/VDE 2634 and ISO 10360 before a certificate is issued.



Reviewing a scanned engine block in FreeScan. The mesh displays as you scan, so there is no long meshing step later.

FreeScan Software

Flexible resolution. Change it later without restarting the project.

Real-time mesh display. Better visual quality and less meshing time afterward.

Data quality visualization. See data quality directly in the software.

Custom scanning templates. Consistent settings with no manual setup.

AI feature recognition. Round holes, rectangular holes and slots measured fast and precisely.



Scanning parts clamped in a production fixture, right where they are built.

Versatile On-Site Inspection

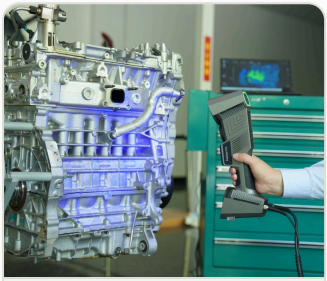
Simple operation and fast quality checks for on-site inspection tasks.

Volumetric accuracy. 0.02 + 0.03 mm/m, or 0.02 + 0.015 mm/m with photogrammetry.

Light and compact. 985 g and 331 × 120 × 76 mm, on a single USB 3.0 connection.

Proven Across Industries

Where the Trio is already working: big, complex parts where target prep used to eat the schedule.



Automotive powertrain: an engine block scanned on its stand, with the result on screen.



Heavy industry: the inside of a large flanged pipe section scanned on the shop floor.



Marine: a complete boat hull captured on its trailer in the shop.



Classic cars: a vintage body shell scanned in the workshop.

Specifications

Specification	High speed scan	Deep hole scan	Detailed scan	No markers scan
Light source	26 laser lines	26 / single laser lines	7 parallel laser lines	98 laser lines
Working distance	300 mm	300 mm	200 mm	300 mm
Scan accuracy	0.02 mm			—
Scan speed	Up to 3,010,000 points/s			
Scan depth	360 mm			
FOV	650 × 580 mm			
Volumetric accuracy*	0.02 + 0.03 mm/m (0.02 + 0.015 mm/m with photogrammetry)			
Point distance	0.01 – 3 mm			
Laser class	Class II (eye-safe)			
Connection standard	USB 3.0			
Dimensions	331 × 120 × 76 mm			
Weight	985 g			
Power input	12 V, 5.0 A			
Working temperature	0 – 40 °C			
Working humidity	10 – 90%			
Certifications	CE, FCC, RoHS, WEEE, KC, FDA, UKCA, IP50, TiSAX			
Accuracy certification	VDI/VDE 2634 Part 3, ISO 10360 (certified in the ISO/IEC 17025 accredited accuracy lab)			
Recommended PC	Windows 10 (64-bit) · NVIDIA GTX/RTX series, GeForce RTX 4060 or higher · Video memory ≥ 8G · Intel i7-13700H · Memory ≥ 64 GB			

* Based on VDI/VDE 2634 Part 3: sphere-spacing error assessed with traceable length artefacts and markers at different locations and orientations in the working volume, in the accuracy lab at 20 ± 0.5 °C and 40 – 60% RH.

VDI/VDE 2634 PART 3 · ISO 10360 · ISO/IEC 17025 ACCREDITED LAB · IP50

See it on your parts.

Book a live demo or a free sample scan. US-based metrology team, fast turnaround.

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