PORTABLE OPTICAL COORDINATE MEASURING SYSTEM

FreeScan Trak Pro2

Optical 3D Measuring and Dynamic Tracking Without Markers

A portable optical CMM for quality control and 3D inspection. The FreeTrak tracker follows the TE25 scanner in real time, so nothing gets stuck to the part. It scans up to 3,070,000 points per second at up to 0.023 mm, and the optional FreeProbe adds contact probing to the same workflow.



0.023 mm	0.072 mm	3.07 M
ACCURACY	VOLUMETRIC @ 17.6 M³	POINTS / SEC

- **Accurate** Up to 0.023 mm
- **High-Speed** Scanning
- **Tested in ISO** 17025 Lab
- **3D Scanning Modes** for Versatility
- **Intuitive Software** Full Toolkit



Scanning inside a large casting mold on the foundry floor. The FreeTrak on its tripod tracks the TE25, so the part needs no markers.

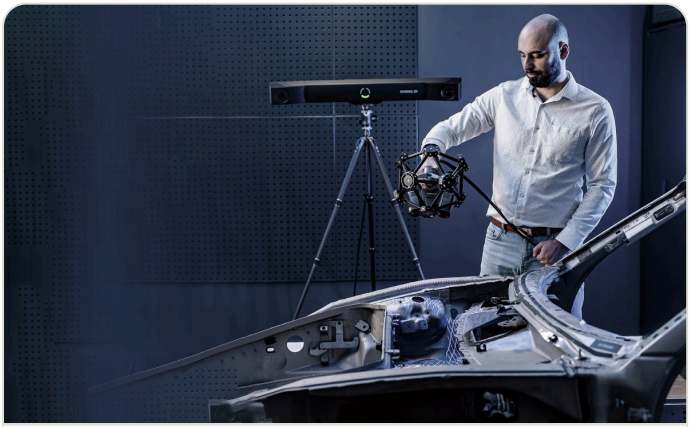
Portable Optical CMM

The FreeScan Trak Pro2 is a metrology tool for quality control and 3D inspection. High precision and repeatability give fast, accurate inspection across many part types and surfaces, with no markers on the part.

FreeTrak. Dual-camera tracking bar that locates the scanner in real time.

TE25. Handheld blue-laser scanner with two 5.0 MP industrial cameras.

FreeProbe (optional). Contact probing in the same inspection workflow.



The FreeTrak bar sees the tracking targets on the TE25 frame and locates the scanner as it moves around a car body shell.

Dynamic Referencing, No Markers

The FreeTrak bar tracks the TE25 through the targets on its carbon fiber frame. No one has to place markers on the part, which saves setup time and keeps the scan moving.



The TE25 projecting its blue laser on a part. Results hold to 0.023 mm, verified to VDI/VDE 2634 Part 3.

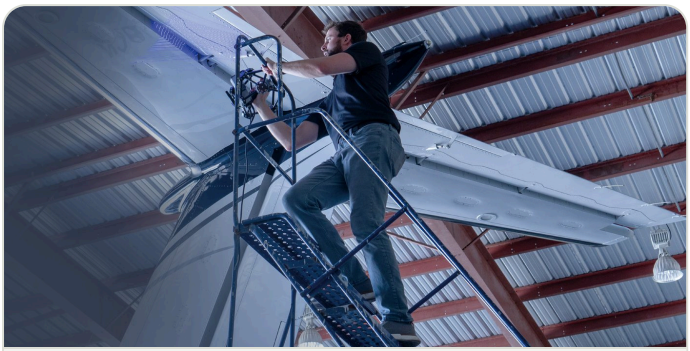
Exceptional Accuracy

The Trak Pro2 delivers metrology-grade results with accuracy up to 0.023 mm, and volumetric accuracy of 0.072 mm across a 17.6 m³ volume.

High-Speed Scanning

Fifty blue laser lines and two 5.0 MP industrial cameras capture up to 3,070,000 points per second, so scanning stays smooth. Pick the laser mode that fits the feature.

50	crossed lines fast, accurate scan	**7**	parallel lines fine HD detail	**1**	single line deep holes (1:4)



Scanning an aircraft tail from a rolling stair while the FreeTrak tracks the TE25 from the hangar floor below.



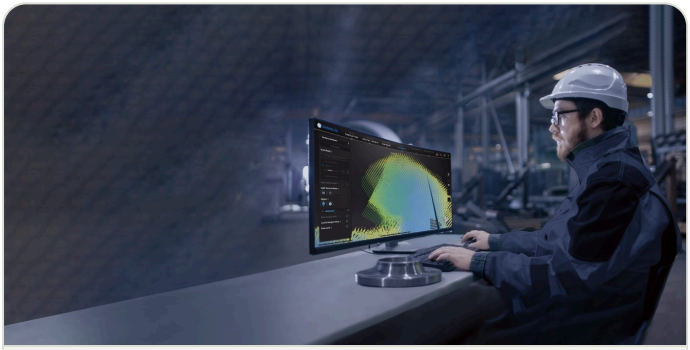
A full car body on a rolling fixture in a large hall. The operator can track optically or switch to marker scanning for the job.

Wide Measuring Range

A wide, expandable tracking range measures large volumes and surfaces without losing accuracy. Maximum field of view is 650 × 580 mm, and you skip the leapfrog moves that relocate a device to extend its working volume.

Optical Tracking or Markers

Switch between optical tracking and marker scanning to suit the part and the surface. Having both modes covers a wider range of applications.



The mesh builds on screen while the part is scanned, and the colors show which areas still need data.



FreeProbe's ruby tip touching off a hole on a cast aluminum frame part, measured in the same coordinate system as the scan.

Robust, Intuitive Software

Real-time mesh display. Mesh data appears as you scan, so there is no separate point cloud meshing step later.

Data quality visualization. Laser line color shows if the scan distance is right, and a built-in indicator flags areas that are still incomplete.

FreeProbe (Optional)

When you only need specific data, use the probe to create geometric features for quick inspection, with no mesh. Ergonomic and sturdy, with a multifunction button. Works with PolyWorks and Geomagic Control X for fast inspection.

Certified Accuracy: ISO/IEC 17025 Laboratory

The accuracy numbers in this brochure are lab results. Every Trak Pro2 is acceptance-tested to VDI/VDE 2634 Part 3 in SHINING 3D's ISO/IEC 17025 accredited accuracy lab, using traceable length artifacts at controlled temperature and humidity. That is the record 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: working distance and depth performance checked along a calibrated track.



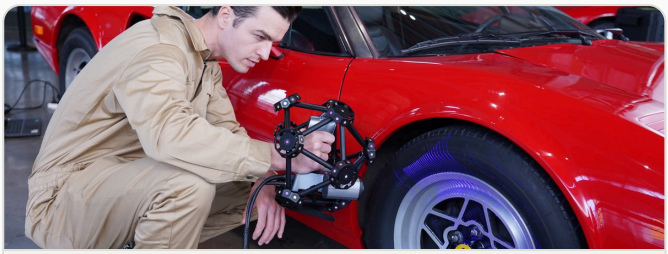
Calibration benches: each system is verified to VDI/VDE 2634 Part 3 before it ships.

Proven Across Industries

Where the Trak Pro2 is already working: large parts, finished paint and assemblies that can't go to a CMM.



Civil aviation: a turboprop nacelle scanned in the hangar, with no markers on the aircraft.



Classic car work: body panels scanned without markers, so the paint is never touched.



Powertrain: an engine and exhaust assembly captured on its stand for inspection and reverse engineering.



Automotive: laser lines across a glossy body side, measured for surface deformation checks.

Specifications

Specification	FreeTrak (tracker)	TE25 (scanner)	FreeProbe (Optional)
Accuracy	0.023 mm (0.0009 in)		0.025 mm (0.001 in)
Volumetric accuracy*	9.6 m³: 0.062 mm (339 ft³: 0.0024 in) 17.6 m³: 0.072 mm (622 ft³: 0.0028 in)		
Volumetric accuracy* with photogrammetry	0.044 mm + 0.012 mm/m (0.0017 in + 0.00014 in/ft)		
Scan speed	Up to 3,070,000 points/s		100 measurements/s
Max. FOV	650 × 580 mm (25.6 × 22.8 in)		—
Point distance	0.01 – 10 mm (0.0004 – 0.39 in)		—
Scan depth	400 mm (15.7 in)		—
Recommended object size	0.1 – 10 m (3.937 – 393.7 in)		—
Weight	7.2 kg (15.9 lb)	1.47 kg (3.2 lb)	0.5 kg (1.1 lb)
Dimensions	1079 × 237 × 110 mm (42.5 × 9.3 × 4.3 in)	281 × 283 × 290 mm (11.1 × 11.1 × 11.4 in)	70 × 150 × 340 mm (2.8 × 5.9 × 13.4 in)
Light source	Infrared LED	50 cross laser lines 7 parallel laser lines 1 single laser line	—
Laser class	Class II		
Working distance	300 mm (11.8 in)		
Connectivity	USB 3.0, IEEE 802.11n/ac, IEEE 802.3ab		
Output formats	stl, obj, ply, asc, 3mf		
Operating temperature	-10 – 40 °C (14 – 104 °F)		
Operating humidity	10 – 90% RH		
Certifications	CE, FCC, RoHS, WEEE, KC, FDA, UKCA, TiSAX		
Accuracy certification	VDI/VDE 2634 Part 3 (certified in an ISO/IEC 17025 accredited accuracy lab)		
Recommended PC	Windows 10 Pro or 11 Pro (64-bit) · 13th Gen Intel Core i7-13650HX 2.6 GHz or above · NVIDIA GeForce RTX 4060 or above · 8 GB video memory · 64 GB DDR5 dual-channel RAM · USB 3.0		

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

VDI/VDE 2634 PART 3 · ISO/IEC 17025 ACCREDITED LAB · CLASS II LASER · TISAX

See it on your parts.

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hello@rev1tech.net · rev1tech.com

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