

MetraSCAN3D™

FAST AND ACCURATE
3D SCANNER AND PORTABLE CMM
FOR THE SHOP FLOOR



CREAFORM

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AMETEK®
ULTRA PRECISION TECHNOLOGIES

MetraSCAN3D™

SPEED AND ACCURACY COMBINED WITH VERSATILITY

Fast, accurate, and versatile, the MetraSCAN 3D™ optical CMM scanner line-up is designed for manufacturing and metrology professionals who want to deliver approved quality parts quickly and efficiently.

Insensitive to shop floor vibrations, part movement, and environmental instability, the MetraSCAN 3D significantly increases the efficiency, reliability, and versatility of measurement processes. Engineered to work both in the metrology lab and on the production floor, the MetraSCAN 3D is optimized to perform metrology-grade measurements and 3D surface inspections on a large variety of parts regardless of size, material, finish, or complexity. Simply put, the MetraSCAN 3D is the ideal metrology tool for quality control and quality assurance applications.

When paired with the HandyPROBE™, which offers optional probing capability, users can harness the power of both 3D scanning and probing for a complete, streamlined inspection process.



ACCURACY OF
0.025 mm (0.0009 in)



PATENTED
TECHNOLOGY



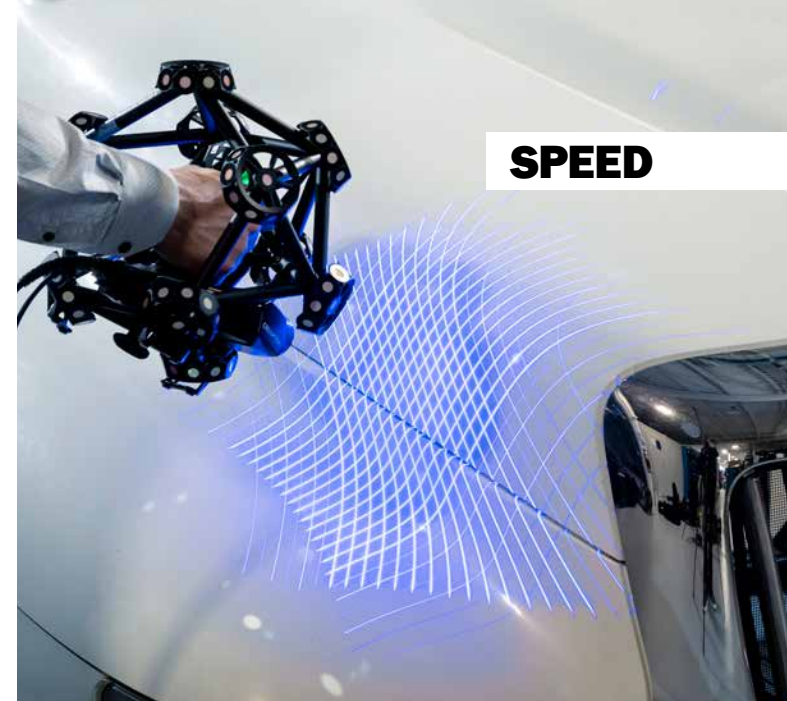
CERTIFIED
ISO 17025



WORLDWIDE
SUPPORT



- 1 High-performance optics
Optimal scan quality
- 2 Extra single laser line
Easy capture of hard-to-reach areas
- 3 Blue laser technology
High-resolution capability
- 4 Stand-off distance
color indicator
Maximizes scanning performance
- 5 Multifunction buttons
Quick access to frequently used
software functionalities
- 6 Visibility indicators
Scanner, probe, and reference
visibility
- 7 Continuous environment
monitoring
Tracking of calibration artifacts
- 8 HandyPROBE
Optional probing capability



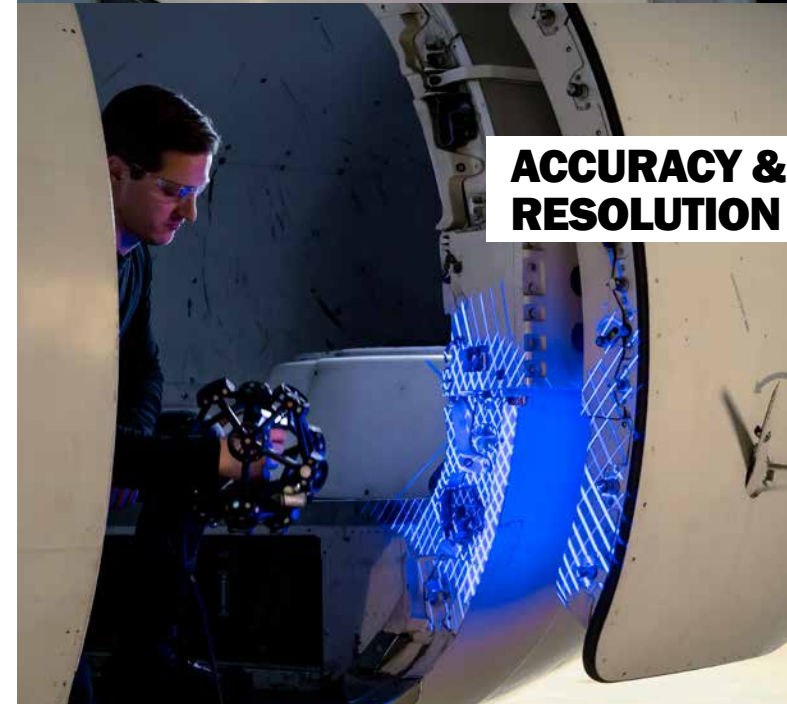
SPEED

The MetraSCAN 3D features 15 laser crosses and a high measurement rate to provide accelerated scanning time. From quick setup to real-time meshing and ready-to-use files, the measurement workflow has never been faster. The time savings in data measurement, acquisition, and analysis is simply impressive!

High measurement rate
Up to 1,800,000 measurements/second

Large scanning area
15 laser crosses

Quick setup
Up and running in less than 2 minutes
No warm-up time



ACCURACY & RESOLUTION

Free from any rigid measurement setup requirements, the MetraSCAN 3D is designed specifically for use on the shop floor. Accredited ISO 17025 and compliant with the VDI/VDE 2634 part 3 standard, the MetraSCAN 3D delivers accurate results, regardless of the measurement setup quality and the user's experience level. Thanks to the C-Track™ optical tracker that enables dynamic referencing, the scanner, the part and the optical tracker can move during inspection and still provide accurate measurements.

Accuracy
0.025 mm (0.0009 in)

Volumetric accuracy
0.064 mm (0.0025 in)

Reliable acceptance test
Based on VDI/VDE 2634 part 3 standard
ISO 17025 accredited laboratory

Shop floor accuracy with dynamic referencing
Measurement accuracy insensitive to environmental instabilities

High resolution
Masters complex and highly detailed parts



VERSATILITY

Highly versatile, the MetraSCAN 3D can be used to scan various part sizes and surface finishes in real time—all with the same device. With its extendable measurement volume, parts of any shape, complexity, and geometry can be measured easily without loss in accuracy or conventional leapfrog. When combined with the HandyPROBE, the measurement system acquires even more versatility: probing for geometrical entities and 3D scanning for complete surface inspection.

Blue laser technology
Ideal for shiny and reflective surfaces

Large and easily extendable measurement volume
Wider than other portable CMMs
No leapfrog required

Optional HandyPROBE
Combination of both 3D scanning and probing
No target required

TECHNICAL SPECIFICATIONS

Innovating technology that provides accuracy, simplicity, portability as well as real speed to your metrology-grade applications.

	MetraSCAN 357™	MetraSCAN BLACK™	MetraSCAN BLACK™ Elite
ACCURACY ⁽¹⁾	Up to 0.040 mm (0.0016 in)	0.035 mm (0.0014 in)	0.025 mm (0.0009 in)
VOLUMETRIC ACCURACY ⁽²⁾	9.1 m ³ (320 ft ³)	0.086 mm (0.0034 in)	0.064 mm (0.0025 in)
	16.6 m ³ (586 ft ³)	0.122 mm (0.0048 in)	0.078 mm (0.0031 in)
VOLUMETRIC ACCURACY WITH MaxSHOT Next™ Elite ⁽³⁾	0.060 mm + 0.015 mm/m (0.0024 in + 0.00018 in/ft)		0.044 mm + 0.015 mm/m (0.0017 in + 0.00018 in/ft)
PROBING ACCURACY WITH HandyPROBE Next ⁽⁴⁾	Up to 0.030 mm (0.0012 in)	0.030 mm (0.0012 in)	0.025 mm (0.0009 in)
MEASUREMENT RESOLUTION	0.100 mm (0.0039 in)	0.025 mm (0.0009 in)	
MESH RESOLUTION	0.200 mm (0.0078 in)	0.100 mm (0.0039 in)	
MEASUREMENT RATE	480,000 measurements/s	800,000 measurements/s	1,800,000 measurements/s
LIGHT SOURCE	7 red laser crosses	7 blue laser crosses	15 blue laser crosses (+ 1 extra line)
LASER CLASS	2M (eye safe)		
SCANNING AREA	275 x 250 mm (10.8 x 9.8 in)	310 x 350 mm (12.2 x 13.8 in)	
STAND-OFF DISTANCE	300 mm (11.8 in)		
DEPTH OF FIELD	200 mm (7.9 in)	250 mm (9.8 in)	
PART SIZE RANGE (recommended)	0.2–6 m (0.7–20 ft)		
SOFTWARE	VXelements		
OUTPUT FORMATS	.dae, .fbx, .ma, .obj, .stl, .txt, .wrl, .x3d, .zpr, .3mf		
COMPATIBLE SOFTWARE ⁽⁵⁾	3D Systems (Geomagic® Solutions), InnovMetric Software (PolyWorks), Metrolog Group (Metrolog X4), New River Kinematics (Spatial Analyzer), Verisurf, Dassault Systèmes (CATIA V5, SOLIDWORKS), PTC (Creo), Siemens (NX, Solid Edge), Autodesk (Inventor, PowerINSPECT)		
WEIGHT	Scanner: 1.38 kg (3.0 lb) Probe: 0.5 kg (1.1 lb) C-Track: 5.7 kg (12.5 lb)	Scanner: 1.49 kg (3.28 lb) Probe: 0.5 kg (1.1 lb) C-Track: 5.7 kg (12.5 lb)	
DIMENSIONS (LxWxH)	Scanner: 289 x 235 x 296 mm (11.4 x 9.3 x 11.7 in) Probe: 68 x 157 x 340 mm (2.7 x 6.2 x 13.4 in) C-Track: 1031 x 181 x 148 mm (40.6 x 7.1 x 5.8 in)		
OPERATING TEMPERATURE RANGE	5–40°C (41–104°F)		
OPERATING HUMIDITY RANGE (non-condensing)	10–90%		
CERTIFICATIONS	EC Compliance (Electromagnetic Compatibility Directive, Low Voltage Directive), compatible with rechargeable batteries (when applicable), IP50, WEEE		
PATENTS	FR 2,838,198, EP (FR, UK, DE, IT) 1,492,995, US 7,487,063, CA 2,529,044		

(1) MetraSCAN BLACK and MetraSCAN BLACK|Elite (ISO 17025 accredited): Based on VDI/VDE 2634 part 3 standard. Probing error performance is assessed with diameter measurement on traceable sphere artefacts.

MetraSCAN 357: Typical value for diameter measurement on a calibrated sphere artefact.

(2) MetraSCAN BLACK and MetraSCAN BLACK|Elite (ISO 17025 accredited): Based on VDI/VDE 2634 part 3 standard. Sphere-spacing error is assessed with traceable length artefacts by measuring these at different locations and orientations within the working volume.

MetraSCAN 357: Value for sphere spacing measurement on calibrated length artefacts.

(3) The volumetric accuracy performance of the system when using a MaxSHOT 3D cannot be superior to the default volumetric accuracy performance for a given model.

(4) HandyPROBE Next and HandyPROBE Next|Elite performance assessment (ISO 17025 accredited) is based on partial procedure per ISO 10360-12 standard: *Probing size error* (6.2) and *Length error* (6.4). Performance is assessed on traceable sphere and length artefacts.

(5) Also compatible with all major metrology, CAD, and computer graphic software through mesh and point cloud import.



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