INSVISION

INSVISION

Industrial 3D Machine Vision

AI-Powered Metrology-Grade 3D Digitization Solutions

PRECISION IS OUR PROFESSION

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SINCE 1976

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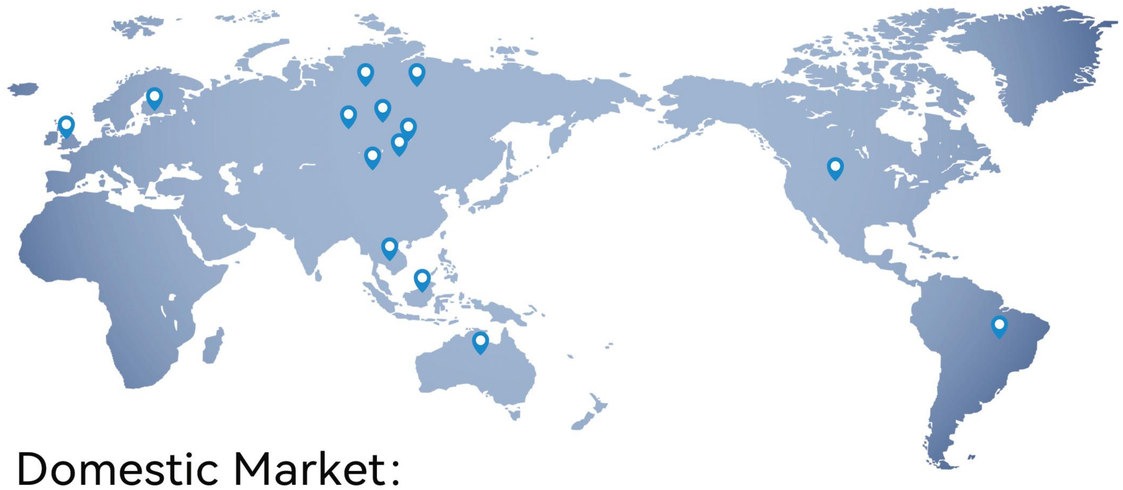
ABOUT INSVISION

INSVISION is a high-tech enterprise specializing in the fields of 3D machine vision and artificial intelligence. The company is dedicated to providing high-precision 3D face recognition, 3D digitization, and 3D measurement products and industry-specific solutions, promoting the widespread adoption of metrology-grade 3D vision technology.

Our core team comprises veterans from leading industry players, who have long focused on the high-precision measurement sector. With over a decade of deep-rooted experience in AI-powered metrology, the team possesses distinctive advantages in the R&D and application of AI algorithms.

The company currently holds more than 50 patents and software copyrights. It has passed the ISO9001:2015 Quality Management System certification and has obtained international authoritative qualifications such as the EU CE, US FCC, and RoHS certifications. These achievements signify the company's high level of national recognition in technological innovation, intellectual property, product development, and service quality.



Domestic Market:

The company has established sales and technical service centers in six major regions across China: East China, South China, North China, Central China, Southwest China, and Northwest China. These centers provide 24-hour responsive support to ensure prompt and efficient service.

Global Presence:

The product has obtained CE and FCC certifications, with service teams established in over 20 countries including the United States, Mexico, Turkey, Thailand, Australia, India and Korea.

Software Ecosystem:

Multi-language interface support.

CONTENTS

AlphaScan S1

AI Metrology-Grade Handheld 3D Scanner

Free and flexible

The entire device weighs only 1070g

Improved ergonomic grip for enhanced comfort

Effortless extended handheld operation

Large scanning

Broader field of view enables a more

efficient and seamless scanning experience

Easily handles large-sized workpiece scanning

Large aperture

Industrial HD Optical Camera

Captures even the finest details

without omission

Enhanced device robustness

Deep holes, blind spots

and complex grooves

Accurately acquires complete data

from complex surfaces

TECHNICAL SPECIFICATIONS

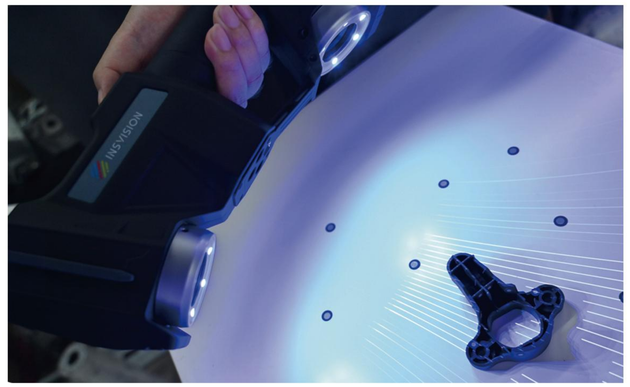
Model		AlphaScan S1	AlphaScan Elite S1
Scanning mode	High-speed scanning	26 crossed blue laser lines	50 crossed blue laser lines
	Precision scanning	7 parallel blue laser lines	7 parallel blue laser lines
	Deep hole scanning	1 single blue laser line	1 single blue laser line
Accuracy		up to 0.02mm	
Measurement rate		6,000,000 measurements/s	8,100,000 measurements/s
Scanning area		up to 650mm×550mm	
Laser class		Class II (Eye Safe)	
Resolution		up to 0.01mm	
Volumetric accuracy		0.015mm+0.035mm/m 0.015mm+0.025mm/m (working with photogrammetric scale bar)	
Stand-off distance		300mm (200mm fine mode)	
Depth of field		550mm	
Output formats		obj,stl,ply,txt etc.	
Operating temperature		-10℃ to 40℃	
Product dimensions		L×W×H: 340×140×75mm	
Interface type		USB 3.0	
Computer requirements		OS: Windows 10 or later (64-bit required) GPU: NVIDIA GTX/RTX series (e.g., RTX 4060 or higher) VRAM: 8 GB or more CPU: Intel Core i7-13700H or better RAM: 32 GB or higher	

BetaScan S1

AI Metrology-Grade Handheld 3D Scanner

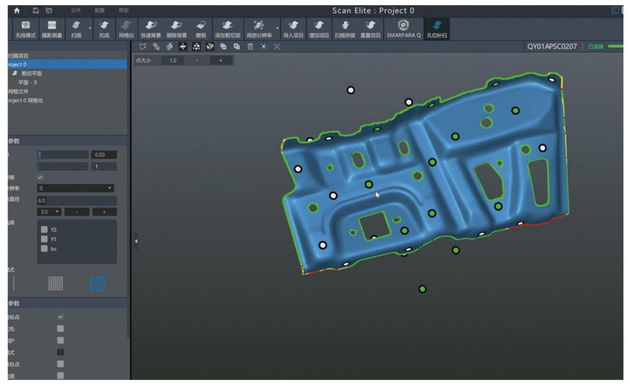
Fast scanning·high quality

50 crossed blue laser lines
up to 8,300,000 measurements/s
Rapid data capture for large workpieces



High resolution·fine details

17 parallel lines for fine scanning
No missing details on micro-features, edges, or contours



Rescan hole positions for intelligent closed-loop feedback

The software features a built-in hole rescanning function.It intelligently fills the geometric information of the holes

TECHNICAL SPECIFICATIONS

Model		BetaScan S1	BetaScan Elite S1
Scanning mode	High-speed scanning	26 crossed blue laser lines	50 crossd blue laser lines
	Precision scanning	17 parallel blue laser lines	17 parallel blue laser lines
	Deep hole scanning	1 single blue laser line	1 single blue laser line
Accuracy		up to 0.02mm	
Measurement rate		6,000,000 measurements/s	8,300,000 measurements/s
Scanning area		up to 650mm×550mm	
Laser class		Class II (Eye Safe)	
Resolution		up to 0.01mm	
Volumetric accuracy		0.015mm+0.035mm/m 0.015mm+0.025mm/m (working with photogrammetric scale bar)	
Stand-off distance		300mm (200mm fine mode)	
Depth of field		550mm	
Output formats		obj,stl,ply,txt etc.	
Operating temperature		-10℃ to 40℃	
Product dimensions		L×W×H: 340×145×70mm	
Interface type		USB 3.0	
Computer requirements		OS: Windows 10 or later (64-bit required) GPU: NVIDIA GTX/RTX series (e.g., RTX 4060 or higher) VRAM: 8 GB or more CPU: Intel Core i7-13700H or better RAM: 32 GB or higher	

AlphaVista

AI Metrology-Grade Handheld 3D Scanner

Large depth of field

Wide scanning area

Real time calibration

Build-in photogrammetry

High speed and efficiency

Flexible operation

Light weight and portable,easily to start your 3D inspection journey, one-handed operation,simple,flexible and comfortable for long time holding.

Large scanning area

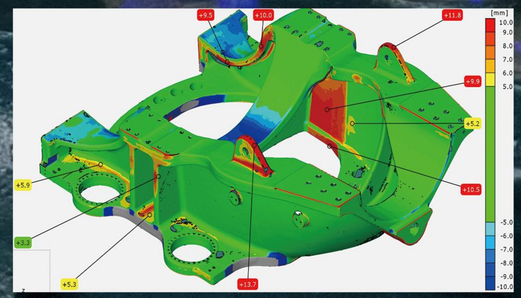
Suitable for 3D inspection and reverse engineering of large workpieces,with scanning area up to 2200×2200mm.

Fast scanning speed

Scanning speed up 7,100,000 measurements/s.

High accuracy

Accuracy up to 0.073 mm
Volumetric accuracy: 0.1 mm ± 0.015 mm/m



Rich detail

50 crossed blue laser lines
Accurately restore details.
One-click data export for reverse engineering.

TECHNICAL SPECIFICATIONS

Model	AlphaVista
Measurement rate	7,100,000 measurements/s
Light source	50 blue laser lines
Laser class	Class II (Eye Safe)
Resolution	Minimum 0.5mm
Accuracy	up to 0.073mm
Volumetric accuracy	0.1mm+0.015mm/m
Scanning area	up to 2200mm×2200mm
Working distance (min.)	400~900mm
Working distance (mid.)	900~1800mm
Working distance (max.)	1800~2500mm
Weight	1.38kg
Dimensions	L×W×H：430×135×90mm

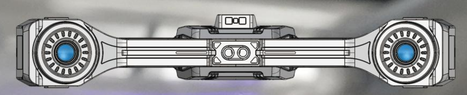
V-TRACK

Laser Tracking 3D Digitization System

Equipped with the industry-leading 108 laser lines, it integrates portable tracking 3D scanning and large-format laser handheld scanning. With a larger single-scan coverage area, higher point cloud density, and faster measurement speed, it accurately captures details of complex curved surfaces, deep holes, and micron-level features.

TECHNICAL SPECIFICATIONS

Model		V-Track
Scanning mode	High-speed scanning	50 crossed blue laser lines
	Precision scanning	7 parallel blue laser lines
	Deep hole scanning	1 single blue laser line
	Tracker scanning	50 crossed blue laser lines
Laser Line bundle		108 beams
Accuracy		Up to 0.020mm（Scanner）、Up to 0.025mm（Tracker）
Measurement rate		Up to 7,100,000 measurements/s
Scanning area		Up to 1100mm×800mm（Scanner）、Up to 2600mm×2200mm（Tracker）
Laser class		Class II （Eye-Safe）
Data security		Facial Recognition
Resolution		Minimum 0.010mm
Volume accuracy	$10.0m^3$	0.060mm（3.2m）
	$25.0m^3$	0.083mm（4.2m）
	$37.0m^3$	0.105mm（5.2m）
Volume accuracy （working with photogrammetry system）		0.044mm+0.012mm/m
Recommended scan size range		10~8000mm
Stand-off distance		300mm
Depth of field		650mm（Scanner）、2300mm（Tracker）
Output formats		stl, .ply, .igs, .asc, etc., can be customized
Operating temperature		-10℃ ~ 40℃
Via ethernet		Via Wireless Wi-Fi 6.0



Dual-Core Intelligent Adaptation Multi-Purpose Machine

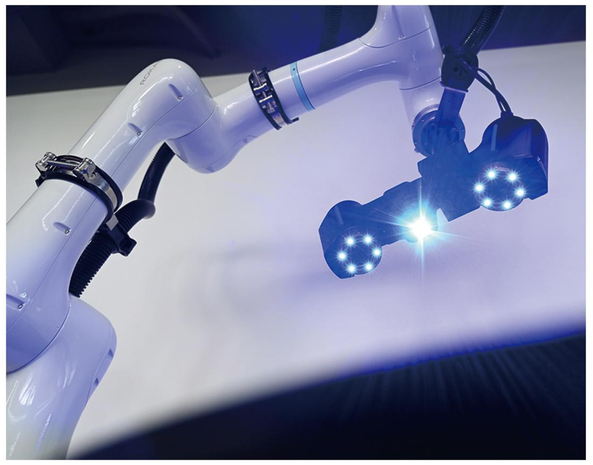
V-Track adopts a modular split design. The scanner and tracker can work in a network collaboratively or independently. It switches freely between working modes for different scenarios while maintaining high-precision capture. One device covers the entire workflow.

AlphaAutoScan-400

Automated Industrial 3D Measurement System

Compact Design
Simple Operation

The product meets standardized levels of performance
Device weight is reduced to just 30% of the original
Footprint decreased by 60%
Installation and commissioning time shortened to 2 days
Efficiency improved by over 200%
(more than double the original)



Modular Concept
Flexible Deployment

Employs a functional modular structural design
Compact layout with minimal footprint
Enables effortless deployment of multiple measurement solutions
Adapts to diverse production conditions
Features standard industrial expansion interfaces
Allows flexible integration with various systems
Achieves seamless incorporation into production lines
Supports the development of smart factories

TECHNICAL SPECIFICATIONS

	AlphaAutoScan-400
Working radius	919mm
Turntable load capacity	50kg
Total weight	250kg
Maximum footprint	1200*700*1600mm（L×W×H）
Operating temperature range	0℃ to 50℃
Power supply	48VDC
Total power consumption	900W
IP rating	IP54
Communication interface	Ethernet RJ-45, USB 3.0
Expandable items	Supports interactive development with MES and third-party system databases

Manufacturing workshop

The equipment features strong anti-interference capability, remaining unaffected by ambient light and temperature variations. It maintains high-precision 3D measurement even in complex workshop environments.

Dimensional inspection room

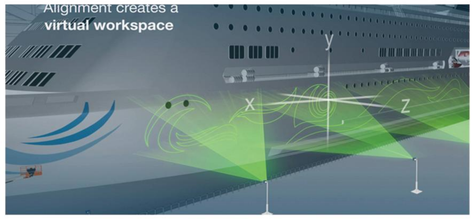
No special environmental controls are required, and a protective enclosure can be added as needed. This ensures safe, stable laboratory measurements and user-friendly operation.

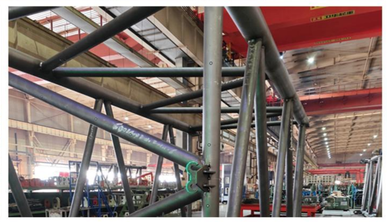
Hands-on training

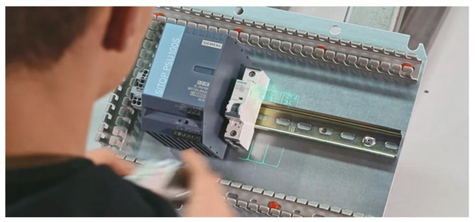
Multiple programming support | enables non-specialists to complete measurement tasks easily and efficiently, promotes the integration of industry, academia, and research, and fosters ecosystem development.

Alpha-Projector

Dynamic 3D Laser Projection Positioning System





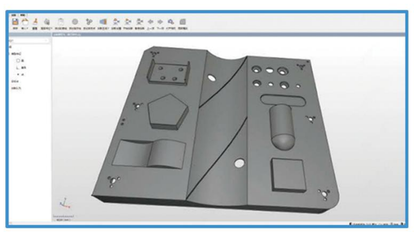


TECHNICAL SPECIFICATIONS

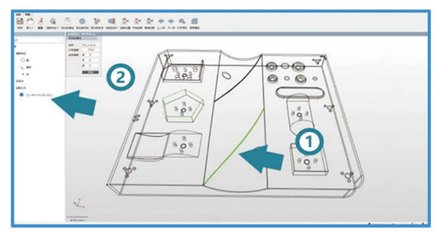
Technical specifications	ALPHA-PROJECTOR
Dimensions	L×W×H：580×185×170mm
Weight	9.5kg
Sensor	High-precision binocular vision system
Working distance	1.5-5.5m
Projection accuracy	Up to 0.25 mm
Maximum projection angle	60°×60°
Beam focusing	N/A
Environmental conditions	-5~40°C, 10-90% Relative Humidity (Non-condensing)
Laser class	3R、<5mW (Do not stare into beam; can be customized)
Laser wavelength	520nm
Interface	USB 3.0 or Ethernet
Voltage	220V
IP rating	IP54
Supported data types	IGES, STP, DXF, DWG. Compatible with FiberSIM and CATIA CPD software formats (Format support is customizable)

The Alpha-Projector Dynamic 3D Laser Projection and Positioning System utilizes a high-precision binocular machine vision system, achieving a maximum positioning accuracy of up to 0.25 mm. Additionally, the system features dynamic tracking capability, where the binocular vision system tracks the workpiece in real time. When relative movement occurs between the workpiece and the projector, the system continuously tracks and repositions, projecting the laser lines accurately onto the correct positions of the workpiece.

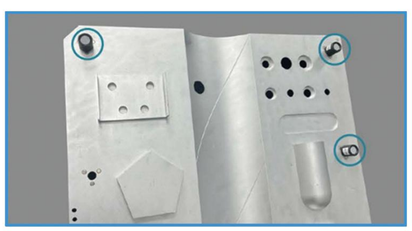
The Alpha-Projector software interface is clean and user-friendly, with an intuitive operation logic. Users can quickly select features or contours from CAD models (2D or 3D CAD) to create projection tasks, assisting in the efficient and highly accurate execution of complex positioning operations.



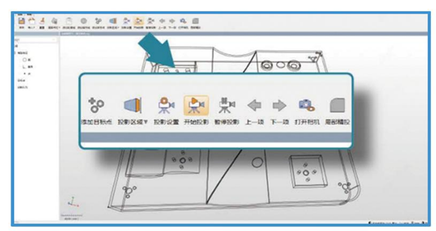
① Import CAD model or contour lines



②Generate a projection task



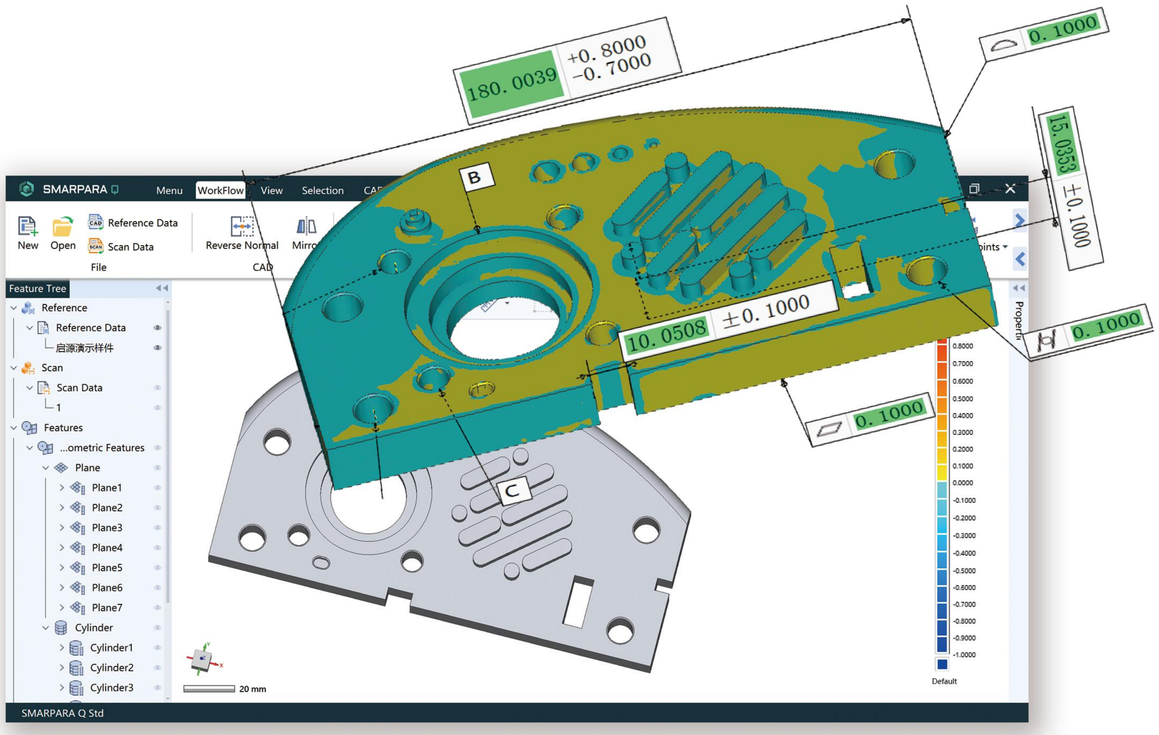
③Place target points on the workpiece (Optional)



④Start projection

SMARPARA Q——3D Digital Inspection Software

A powerful computer-aided 3D measurement and analysis software, embedding a wide range of standardized and high-end tools required by the industry. SMARPARA Q, based on underlying high-precision algorithms and an intuitive, streamlined workflow, delivers accurate and rapid measurement and analysis for components with complex surfaces and numerous features. It provides a high-precision, highly reliable, and intelligent industrial-grade professional measurement and analysis software tool for comprehensive product quality control.



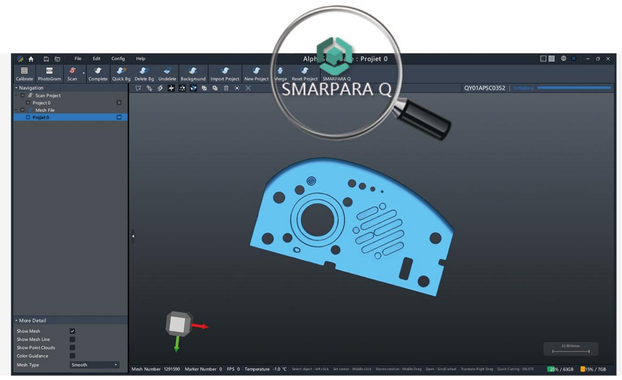
Certified by PTB

This signifies that SMARPARA Q meets stringent requirements in terms of measurement accuracy, stability, and security. In the field of metrology, this certification provides users with a guarantee of "correctness" and "reliability."

Work Process

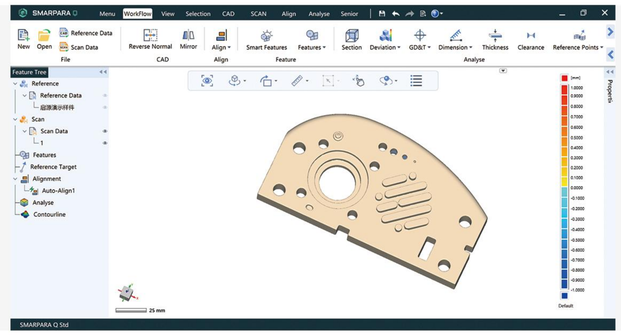
Direct Access

The scanned workpiece data can be directly accessed in 3D INSVISION software with one click.



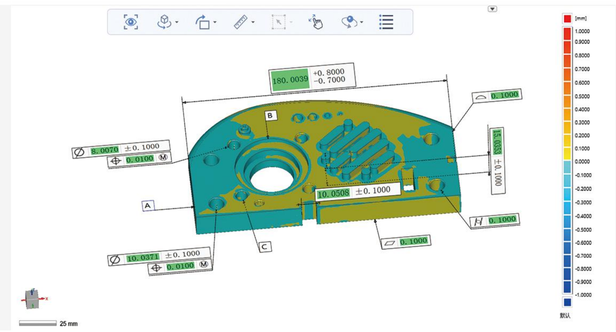
Data Import

Supports importing scan data files in STL and ASC formats, and can normally display the model in the rendering window.



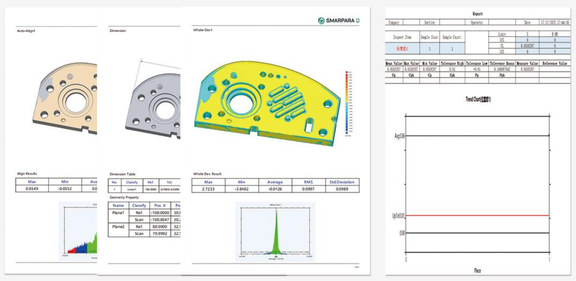
Inspection & Analysis

①Diversified Alignment Functions (Automatic, Datum, RPS, etc.)
②Auxiliary Geometry Creation (Point, Circle, Plane, Cylinder, etc.)
③Comparative Deviation Analysis
④Geometric Dimensioning & Tolerancing



Project Report

①Customizable Templates
②Screenshot Output with Feature-Locked Viewpoint
③Grouped Geometric Tolerance Reports
④Customizable Output Objects and Sequence



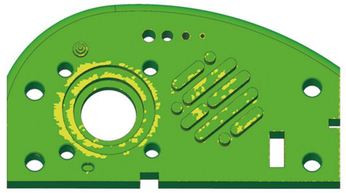
3D INSPECTION PROCESS

①Data integration optimization

After scanning is complete, the point cloud data or 3D model is imported into specialized inspection software, preparing for subsequent processing.

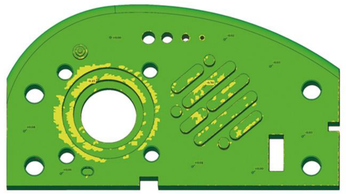
②Intelligent comparison and analysis

The imported scan data is aligned with the reference standard part coordinates. After alignment, a color deviation map is generated to assist in error analysis.



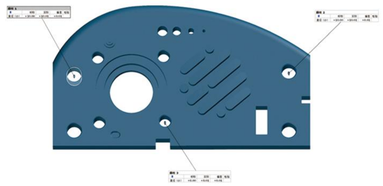
③Multidimensional quality verification

Based on the completed alignment, detailed dimension measurement and tolerance analysis are performed to determine whether the product meets design specifications.

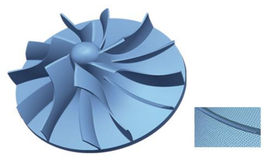


④Smart reporting system

Generate inspection reports with one click. Through visualized analysis data, it helps quickly identify issues and improve quality control efficiency.

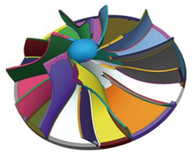


REVERSE ENGINEERING PROCESS



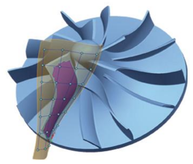
①Data Processing

Performs operations such as merging, combining, optimizing, hole-filling, smoothing, and decimating on scanned data to produce a high-quality faceted model.



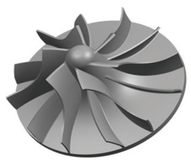
②Domain Segmentation

Automatically categorizes faceted models into distinct segmented domains based on curvature and features, extracts design parameters, and generates sketch profiles autonomously.



③Precise Fitting

Creates NURBS surfaces using a mesh-based fitting algorithm, enabling quick and seamless generation of 3D free-form surface bodies from unstructured mesh shapes.



④CAD Conversion

Creates CAD features from scan data, employing hybrid solid and surface modeling to accommodate various part types while preserving model accuracy.

APPLICATIONS