

TECHNICAL SPECIFICATIONS

| Model | BetaScan S1 | BetaScan Elite S1 | |
|-------------------------------|---|------------------------------|------------------------------|
| Scanning mode | High-speed scanning | 26 crossed blue laser lines | 50 crossed 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 0.020mm | | |
| 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) | | |
| Working distance | 300mm (200mm fine mode) | | |
| Depth of field | 550mm | | |
| Output formats | STL, PLY, TXT etc. | | |
| Operating temperature | -10°C to 40°C | | |
| Product dimensions | L×W×H: 340×145×70mm | | |
| Product weight | 1.15kg | | |
| Interface type | USB 3.0 | | |
| Minimum 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 | | |

※ According to the VDI/VDE 2634 part 3 standard and the JJF 1951-2021 calibration specification for optical Three-dimensional measurement systems based on structured light scanning.



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The Company reserves the right to interpret and modify the information contained in this manual.



BetaScan

AI Metrology-Grade Handheld 3D Scanner

BetaScan

AI Metrology-Grade Handheld 3D Scanner

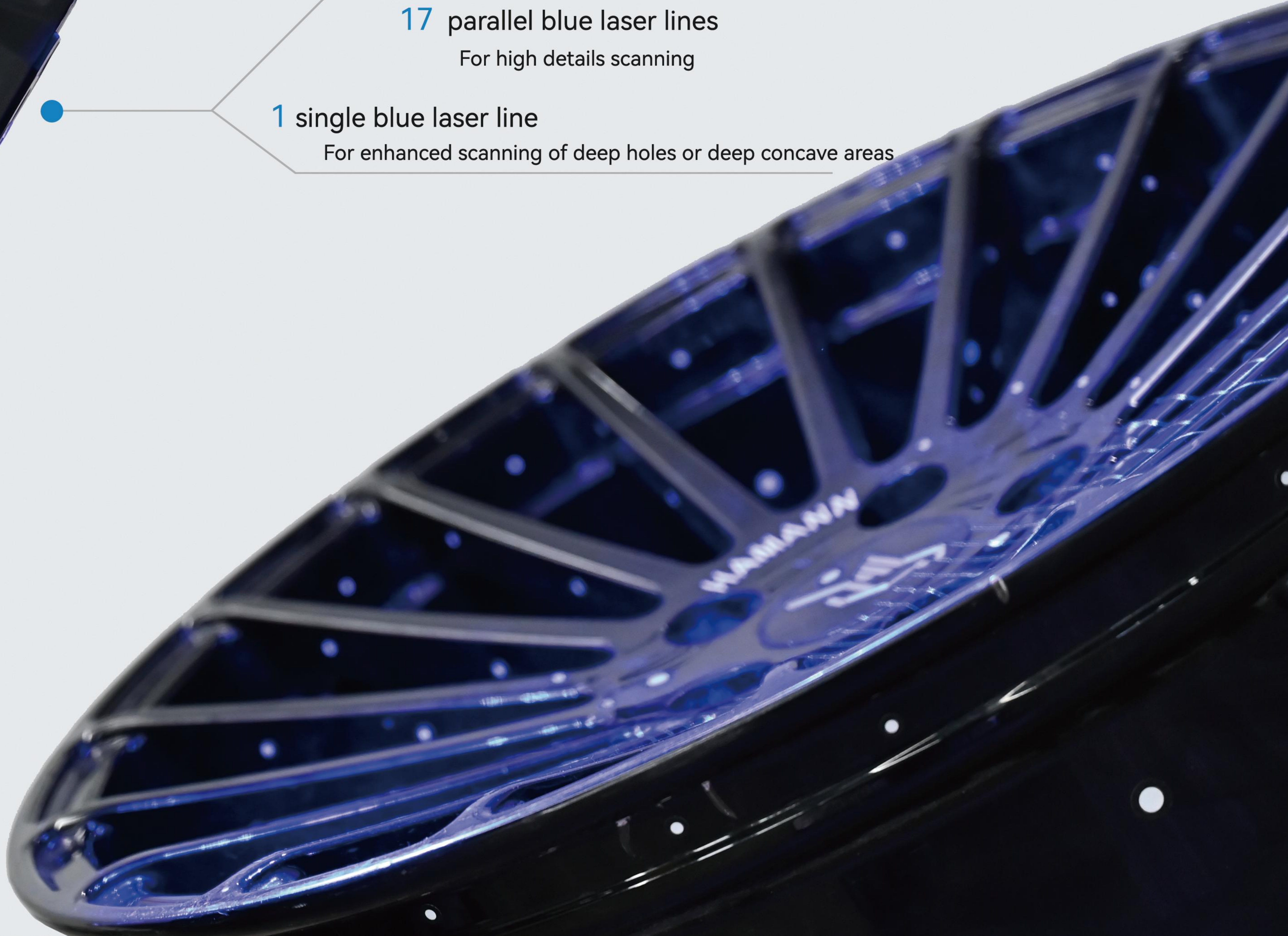


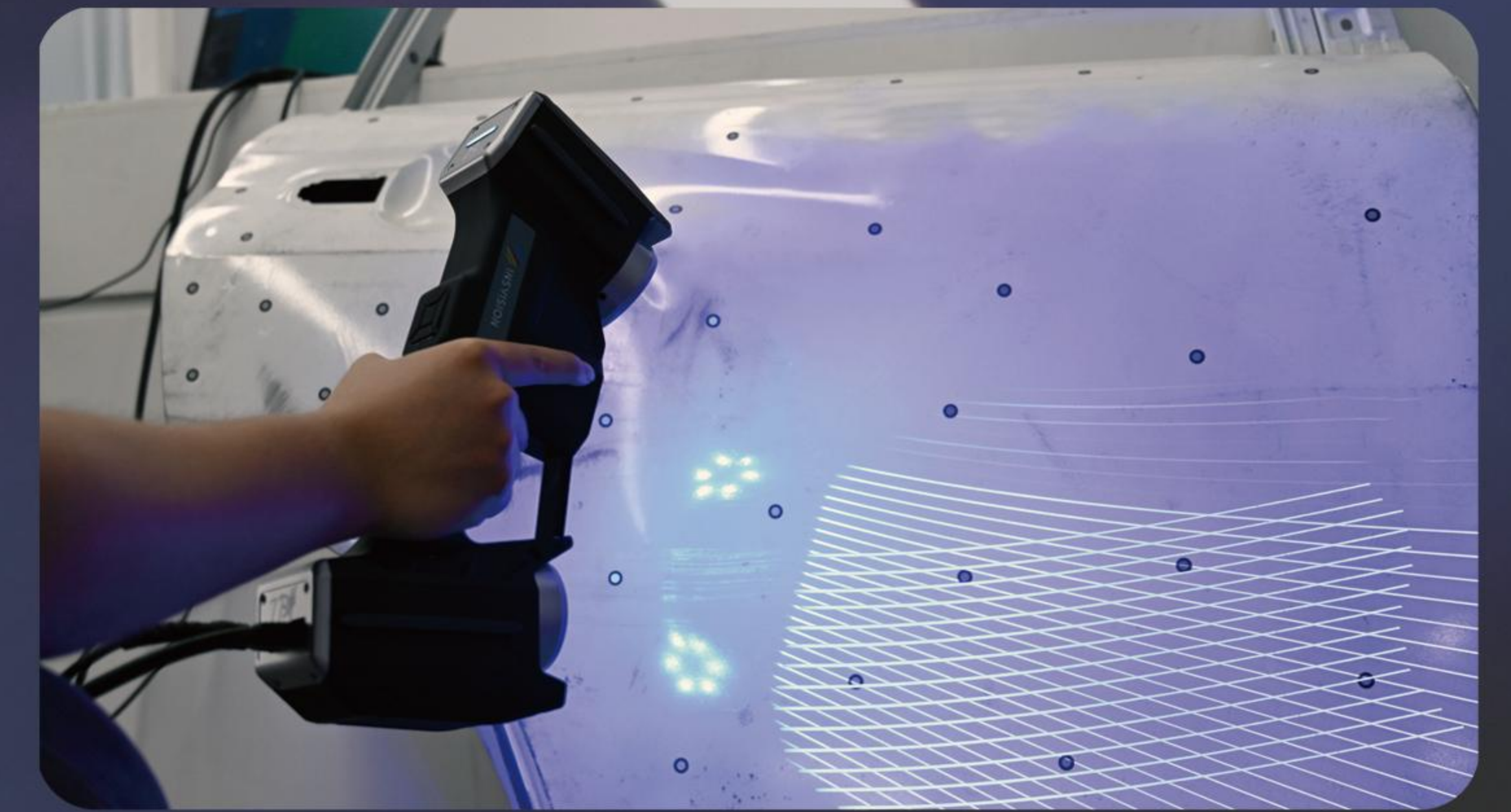
The BetaScan S1 Series is purpose-built for industrial scenarios, offering easy and smooth scanning. It combines the advantages of high accuracy, Fine Details, high speed, and Large scanning area. Multiple blue laser modes work together to enable fast data capture of large workpieces, while capturing fine features and edge contours without omission. Efficient, accurate, reliable—significantly improving inspection efficiency.

26 / 50 crossed blue laser lines
For standard and large-area fast scanning

17 parallel blue laser lines
For high details scanning

1 single blue laser line
For enhanced scanning of deep holes or deep concave areas





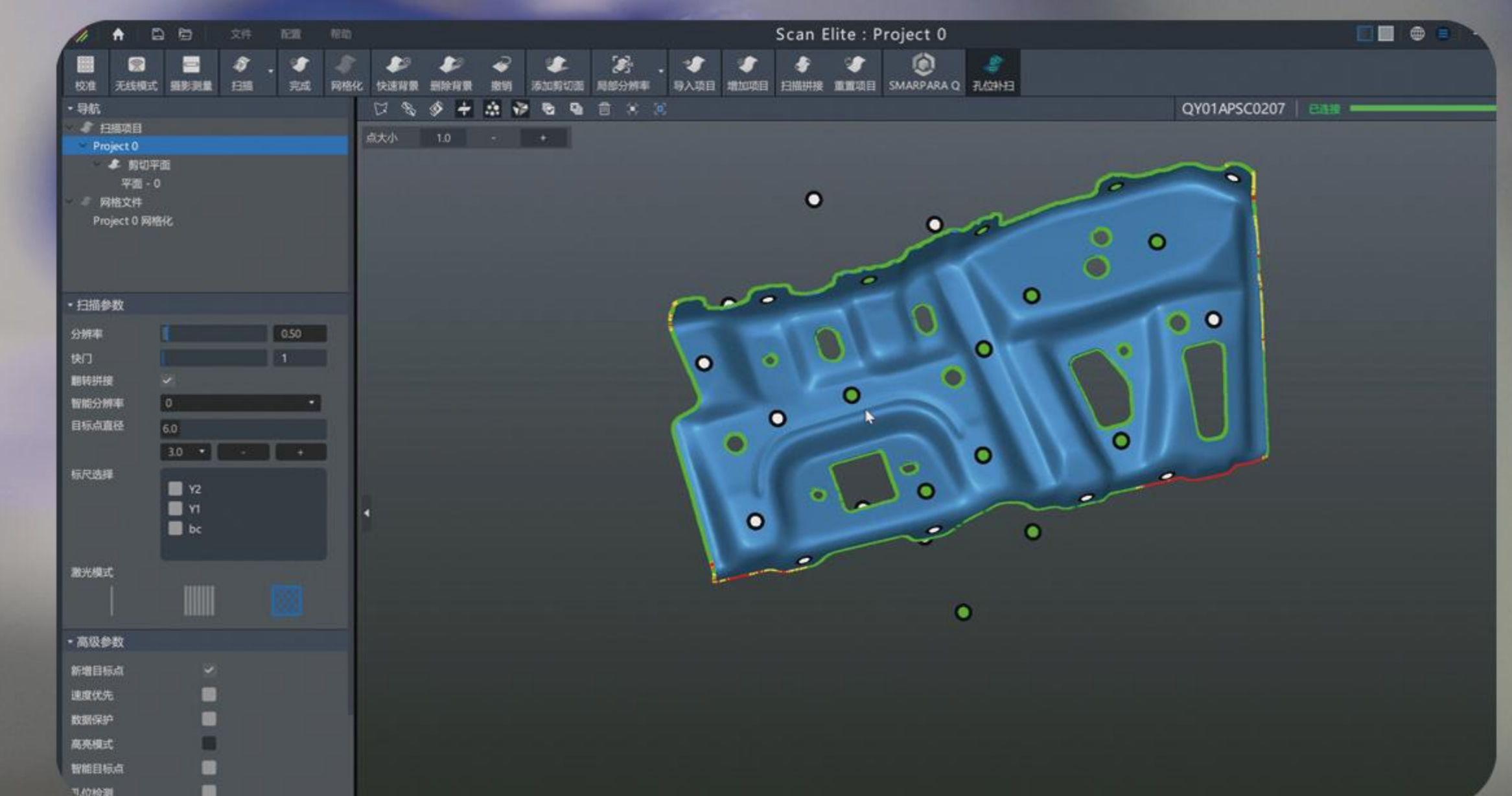
Fast scanning high quality

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

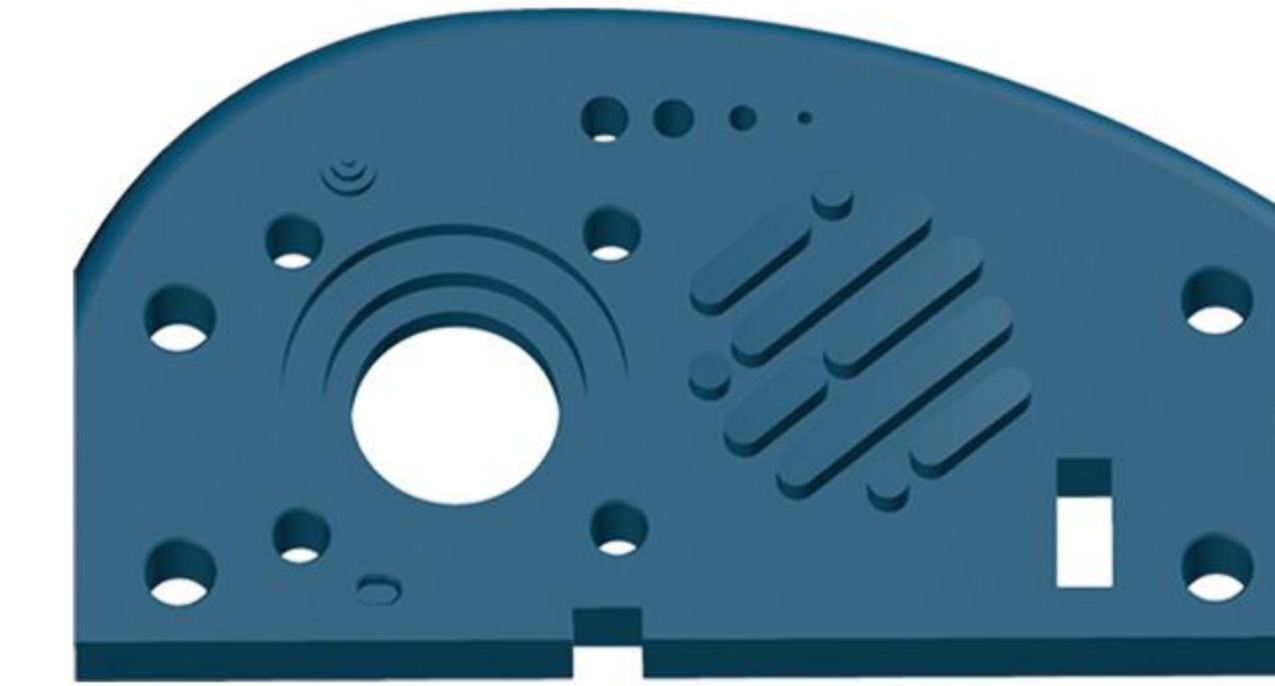
The software features a built-in hole rescanning function. It intelligently fills the geometric information of the holes



3D INSPECTION PROCESS

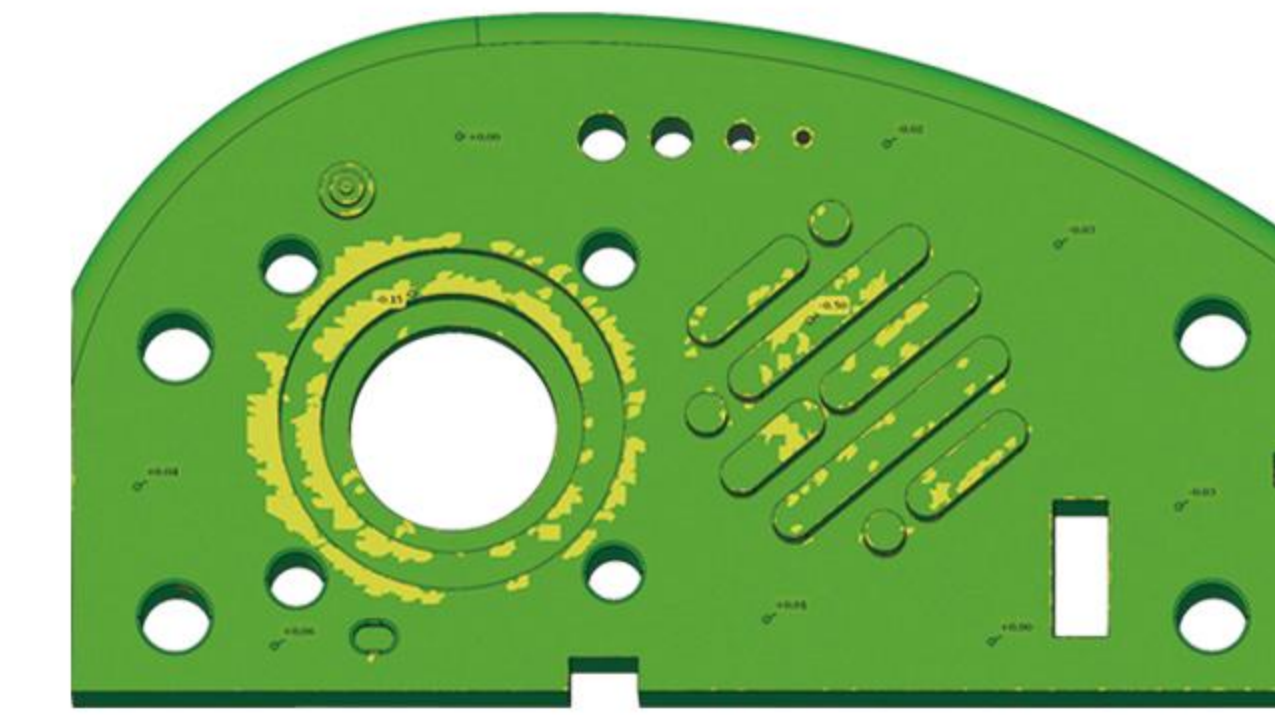
① Data integration optimization

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



③ Multidimensional quality verification

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



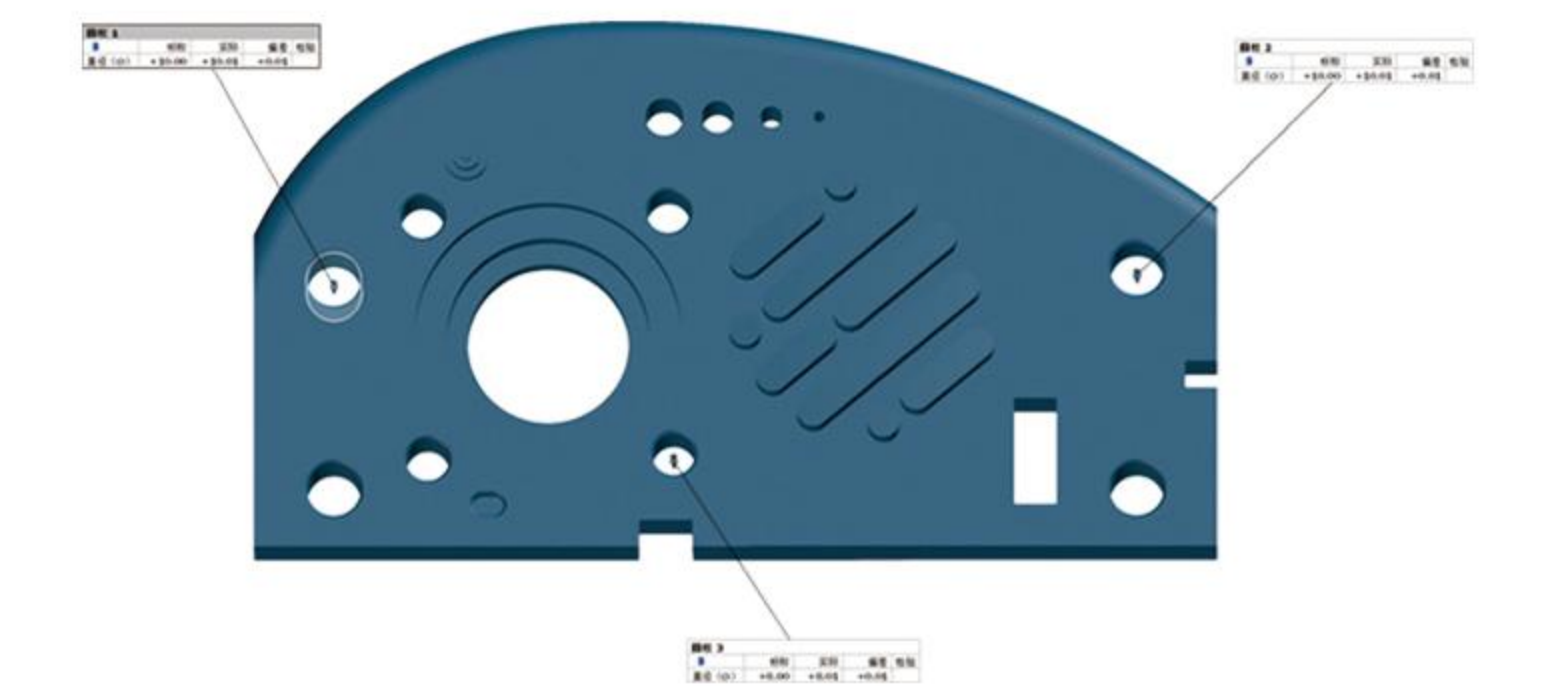
② Intelligent comparison and analysis

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.

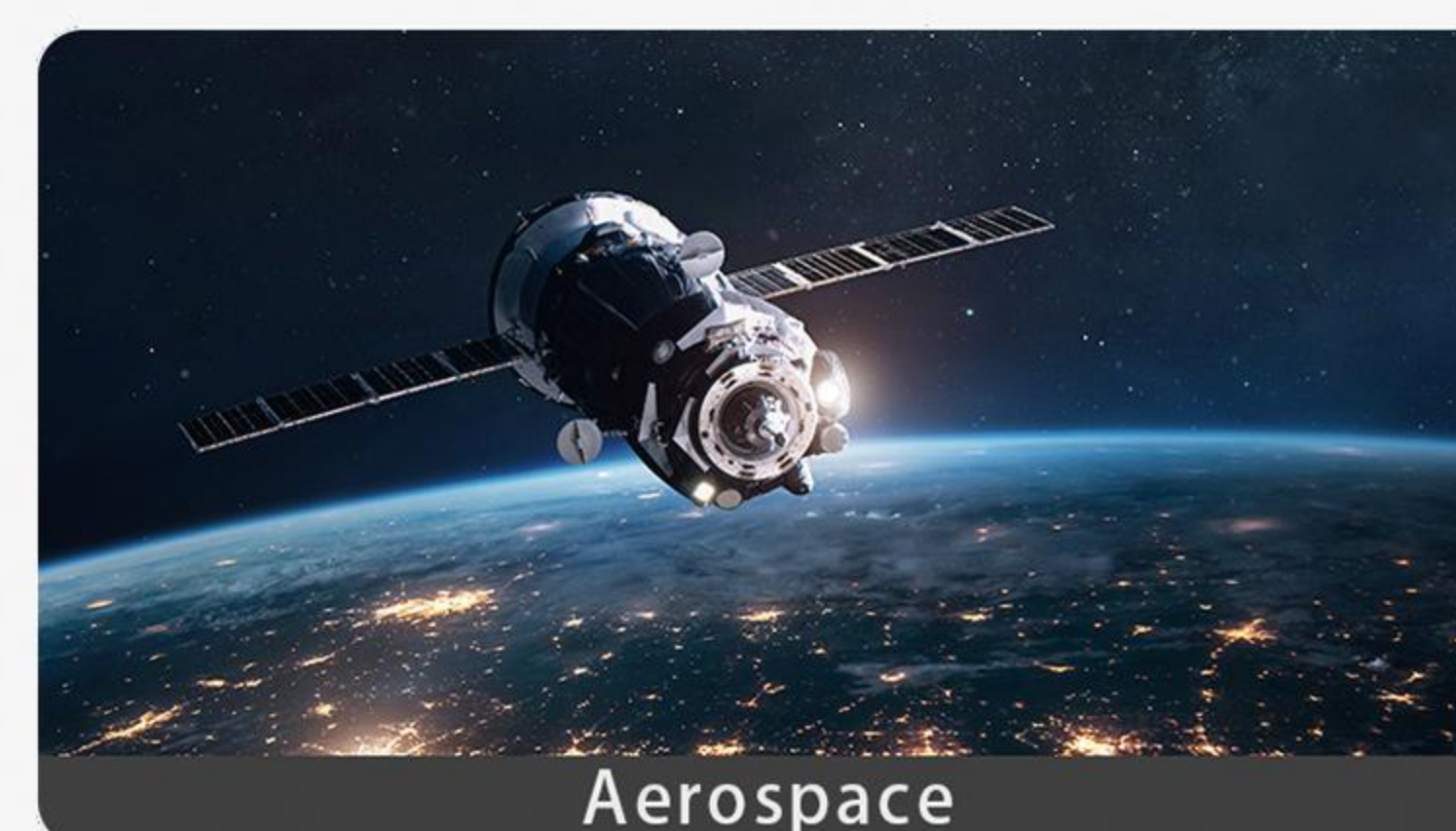
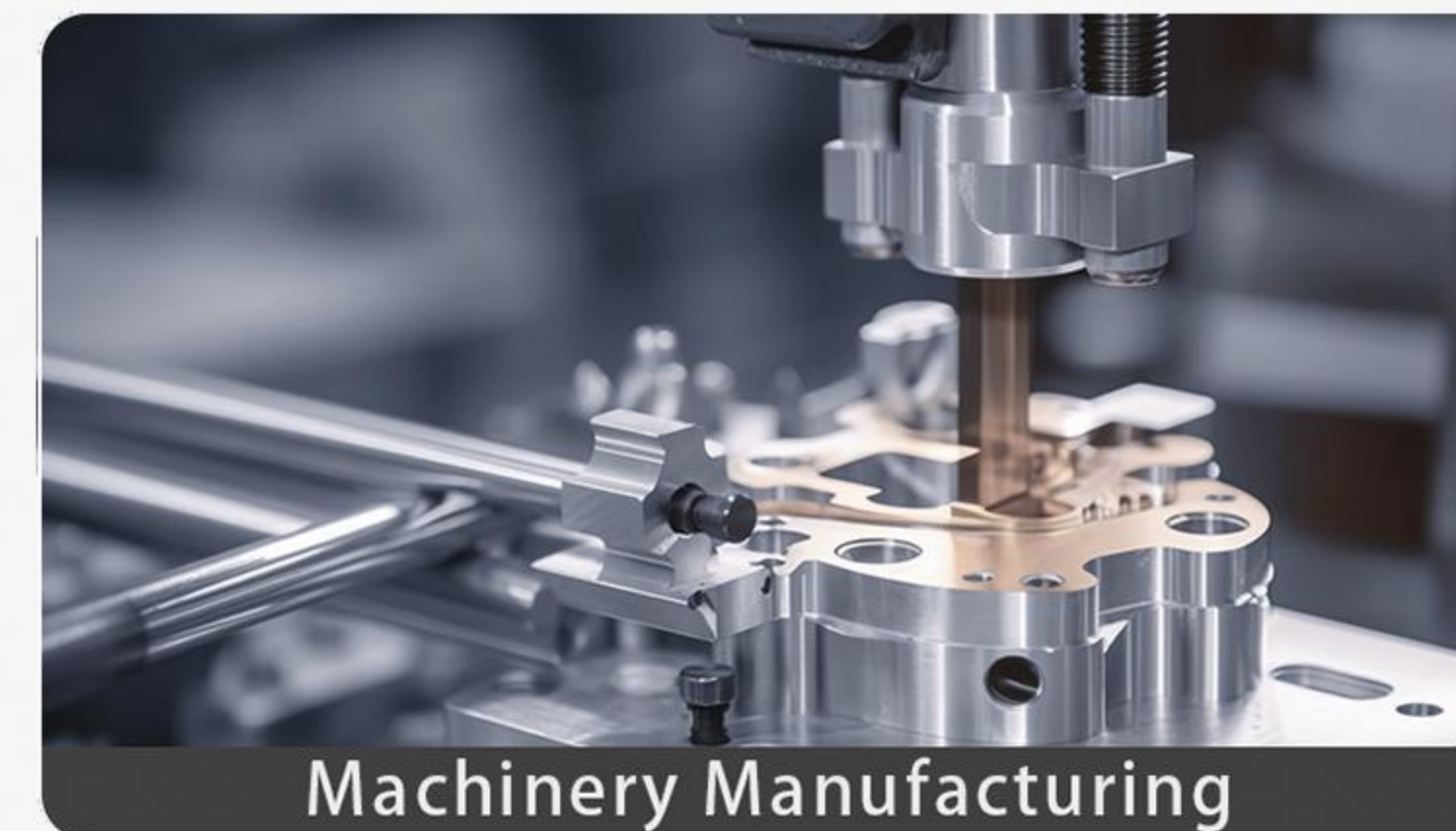
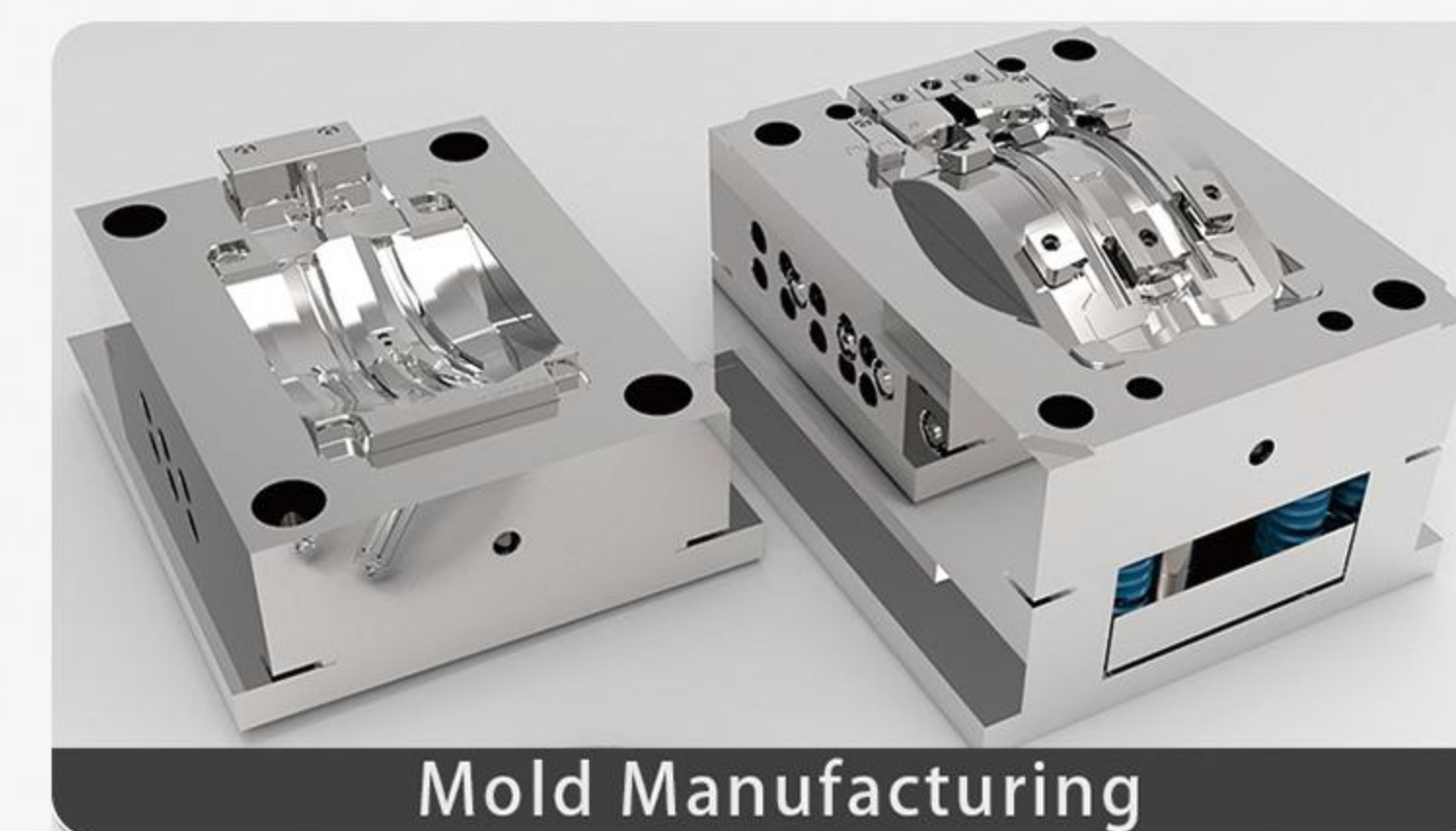


④ Smart reporting system

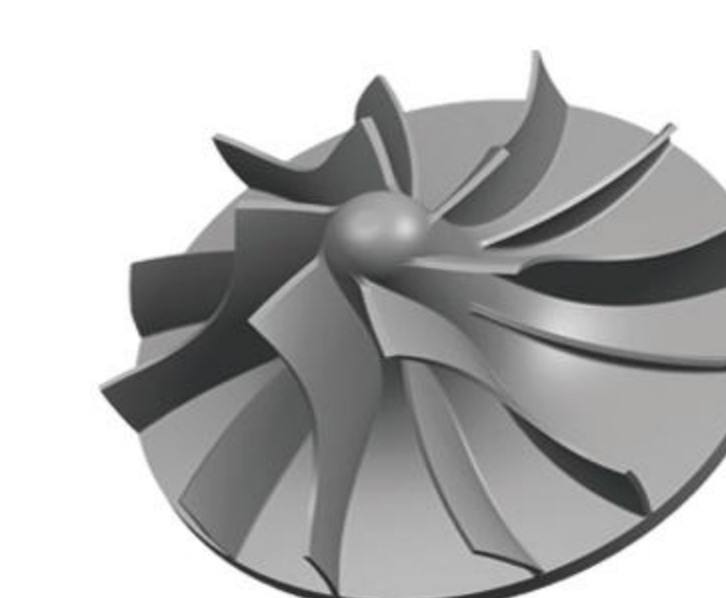
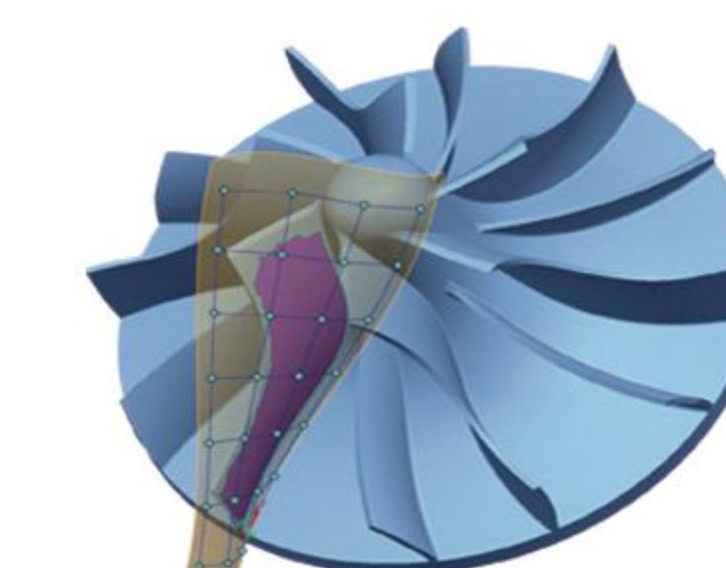
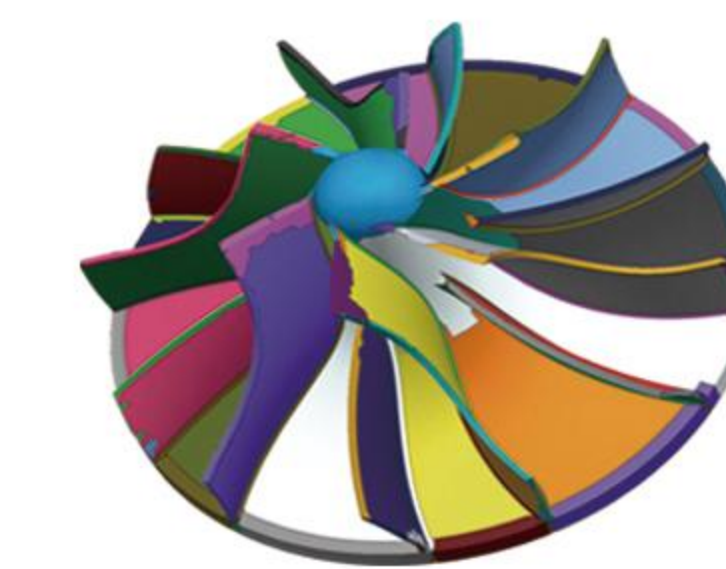
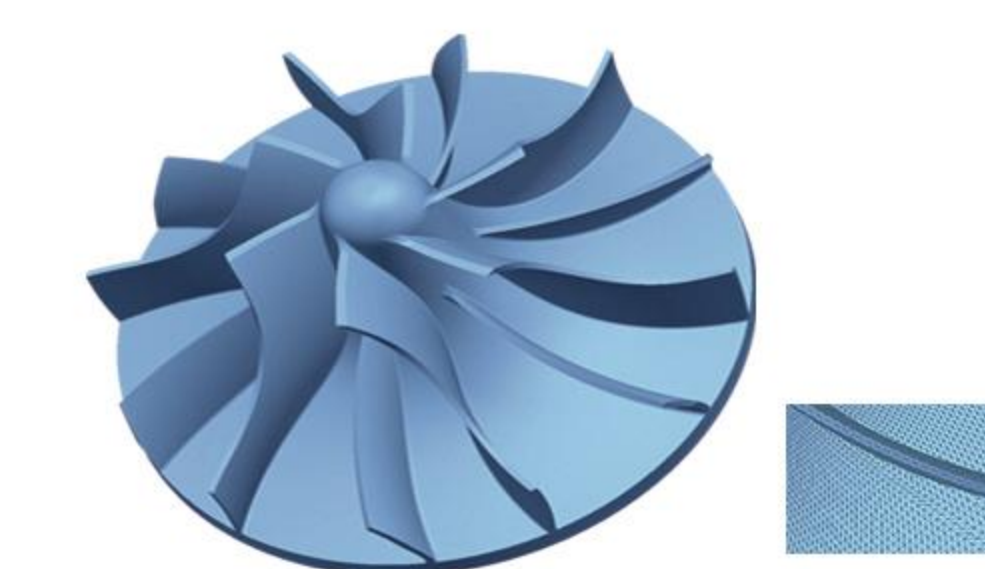
Generate inspection reports with one click. Through visualized analysis data, it helps quickly identify issues and improve quality control efficiency.



APPLICATIONS



REVERSE ENGINEERING PROCESS



① Data Processing

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

② Domain Segmentation

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

③ Precise 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.

④ CAD Conversion

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