INSIZE

MEASUREMENT SOLUTION PROVIDER

LSM-L SERIES
HANDHELD 3D SCANNERS

CATALOGUE NO. LSM-E02

The newly upgraded LSM-L series handheld 3D scanner, with its high-density cross blue laser line array, Achieves accurate capture of details such as complex surfaces and deep hole positions has been achieved.

The device provides three scanning modes: high-speed, precision and deep hole. Flexible switching based on different workpiece characteristics and measurement requirements has significantly improved in various fields such as reverse engineering, quality inspection, and digitalization of cultural relics applicability of the scenario.

While continuing the advantages of lightweight body, high-speed scanning, and stable accuracy of the series products, this generation of products innovatively configures a new heat dissipation system in key parts of the host, effectively solving the problem of equipment heating caused by long-term continuous operation and ensuring measurement. The data is consistently stable and reliable.

Its enhanced modular design not only improves the structural strength of the equipment, but also expands the compatibility of accessories.Scalability of functionality brings highly adaptable and easy-to-use efficient 3D scanning solutions to users in various industries.

Technical Parameters

SPECIFICATION

Code		LSM-L340	LSM-L560
Scanning mode	high-speed scanning	26 cross blue laser lines	50 cross blue laser lines
	precision scanning	7 parallel blue laser lines	7 parallel blue laser lines
	deep hole scanning	1 blue laser line	1 blue laser line
Maximum scanning speed		5400000 measurements/s	7100000 measurements/s
Volume accuracy		0.015mm+0.035mm/m (standard configuration) 0.015mm+0.025mm/m (required optional photogrammetric rulers)	
Laser class		CLASS **II** (eye-safe)	
Maximum resolution		0.01mm	
Depth of field		550mm	
Reference distance		300mm (high-speed scanning, deep hole scanning), 200mm (precision scanning)	
Maximum scanning field		650mm×550mm	
Output format		stl, ply, obj, txt	
Operating temperature		-10°C~40°C	
Interface		USB3.0	
Power supply		100~240V, 50/60Hz	
Dimension (L×W×H)		335×140×70mm	

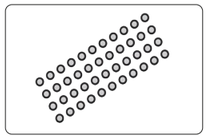
STANDARD DELIVERY

Main unit	1 pc
Scanning software	1 pc
Ø3mm mark	1000 pcs
Ø6mm mark	4000 pcs
Calibration plate	1 pc

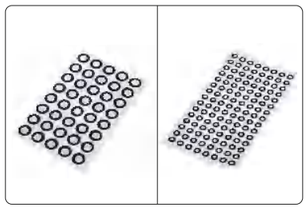
OPTIONAL ACCESSORY

3D measuring software	LSM-L-SW
Photogrammetric rulers	LSM-L340-RULER
Ø3mm mark (5000pcs)	LSM-L-RM3
Ø6mm mark (5000pcs)	LSM-L-RM6
Ø3mm magnetic target (500pcs)	LSM-L-MRM3
Ø6mm magnetic target (500pcs)	LSM-L-MRM6
Ø6mm magnetic target ball (10pcs)	LSM-L-MRB6
Ø12mm magnetic target ball (5pcs)	LSM-L-MRB12
Computer	provided according to customer requirements


magnetic target ball **(optional)**


magnetic target **(optional)**


calibration plate (included)


Ø3mm and Ø6mm marks (included)


photogrammetric rulers (**optional**)

Product Advantages

Features three scanning modes to adapt to diverse scenarios

Flexibly switch between precision, deep-hole, and high speed to handle operations in various scenarios.

High-speed scanning

LSM-L340: 26 crossed blue laser lines
LSM-L560: 50 crossed blue laser lines
large format efficient scanning
suitable for large-scale
rapid modeling.

Precision scanning

7 parallel blue laser lines
suitable for scanning complex
details or Small components.

Deep hole scanning

1 blue laser line, scanning deep
holes and other concealed areas
real time and efficient detection
of sheet metal,etcthin walled
component boundary.

Capable of ultra-high measurement speed, efficiently completing scanning tasks

Equipped with multiple cross blue laser lines, the scanning speed can reach up to 7.1 million times per second, with a scanning area of 650mm x 550mm. It can efficiently and stably complete scanning tasks.

Ultra large depth of field

Novices can quickly get started and operate easily from near to far.

Support optional photogrammetric function

Built in photogrammetric function, optional photogrammetric ruler can be activated,Can improve accuracy to 0.015mm+0.025mm/m.

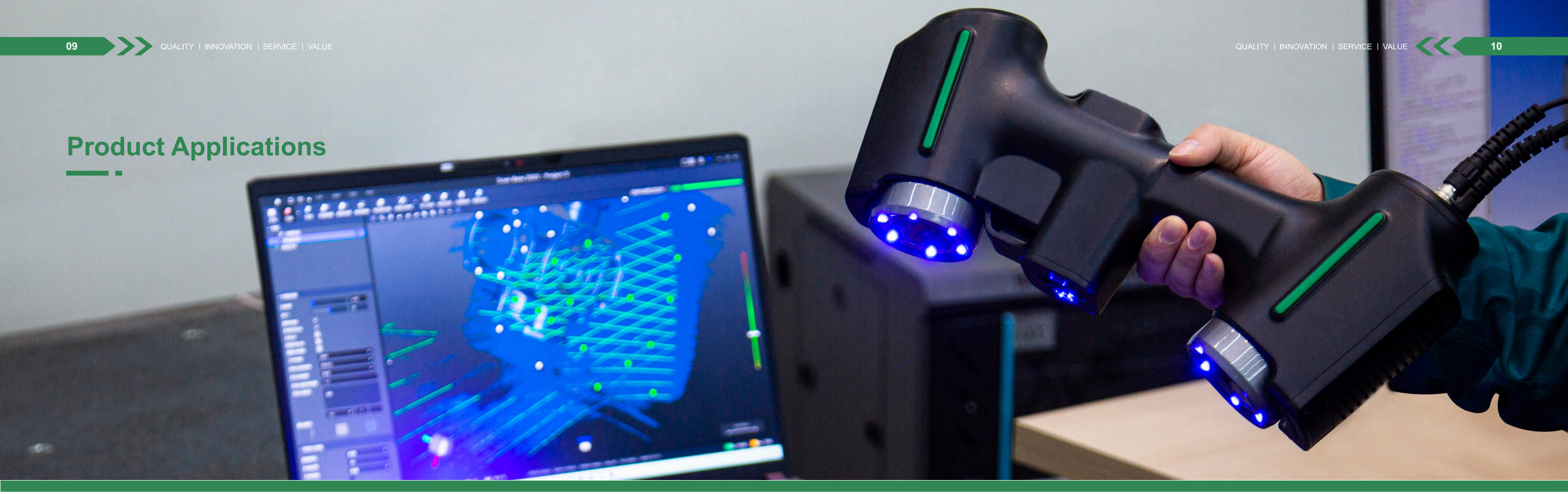
Having metrological measurement accuracy

High precision performance of 0.015mm+0.035mm/m.

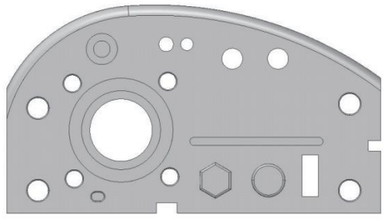
Equipped with AI algorithm module, significantly improving scanning efficiency

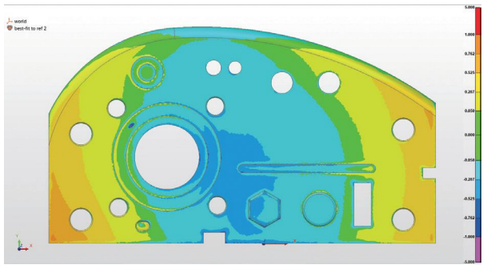
With the help of AI algorithm modules, it is possible to quickly remove outliers and achieve grid optimization with just one click.

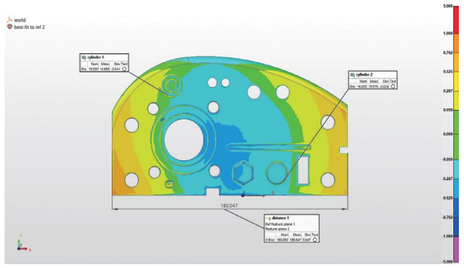
Product Applications



3D Inspection







Data integration optimization

After scanning is completed, import the point cloud data or 3D model into professional detection software for future reference be prepared for handling.

Intelligent comparative analysis

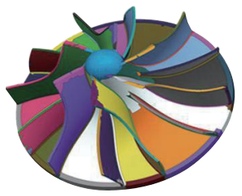
Align the imported scanning data with the reference standard parts and generate color after alignment deviation chart, assistin error analysis.

Reverse engineering process

It provides a complete set of advanced tools from point cloud data processing, mesh editing and repair, to NURBS based precise surface reconstruction, which can efficiently transform physical objects into high-quality 3D models that can be used for redesign and production.

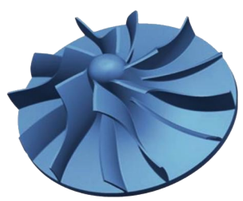
Data processing

Merge, combine, optimize, fill holes, smooth, and reduce scanned data to obtain high-quality small planar models.



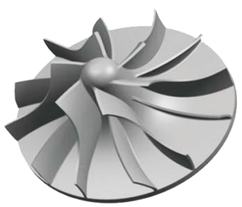
Domain division

Automatically classify small flat bodies into different set domains based on curvature and features.



Accurate fitting

Easily and quickly create 3D freeform surfaces from the free-form shapes of the mesh.



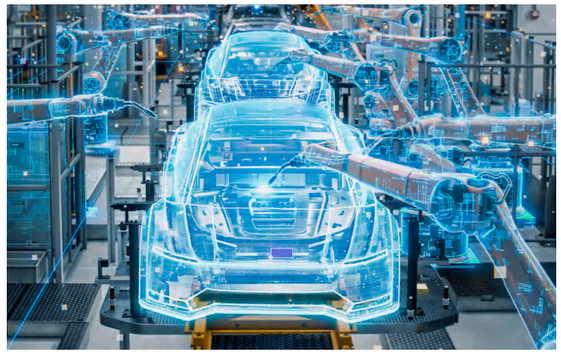
CAD Conversion

Creating CAD features from scanned data, blending and surface modeling covering different part types to ensure model accuracy.

Industry Applications

Automotive industry

Handheld 3D laser scanner is a digital core tool in the automo-tive industry, which runs through research and development, production, and sales production and quality control. It quickly obtains accurate 3D data for reverse engineering and assembly inspection testing and digital restoration significantly shorten the cycle, reduce costs, and improve product quality.



Traditional mechanical processing industry

Handheld 3D laser scanners inject new digital energy into traditional machining. It achieves margin analysis, process detection, and reverse engineering by quickly obtaining full-size 3D data, accurate positioning deviation. This technology signific antly improves detection efficiency, optimizes processes, and shortens cycles, helping enterprises achieve digital transformation.

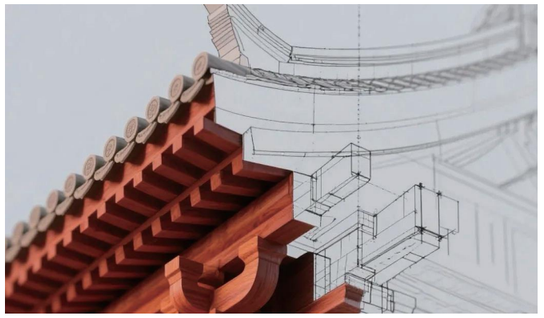
Aerospace industry

In the aerospace field, handheld 3D laser scanners, with their high precision and adaptability to complex environments, can quickly obtain complete 3D data of components and are widely used in shape inspection, fixture verification, and reverse design. By quickly comparing scanned data with CAD models, deviations can be detected, damage assessment and component replacement can be performed, providing strong data support for flight safety and significantly improving operational efficiency.

Emerging industry applications

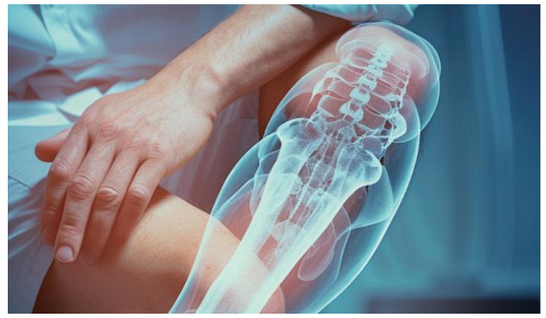
Cultural Heritage and Digital Archiving

By using non-contact 3D scanning technology, it is possible to establish millimeter level precision digital archives for precious cultural heritage such as sculptures, ancient buildings, and archaeological sites without touching the cultural relics themselves. On the premise of ensuring zero damage to cultural relics, not only can research and restoration be supported, but innovative applications such as virtual museums and 3D printing replicas can also be derived, allowing cultural heritage to achieve eternal life in the digital world and continue its vitality in creative dissemination.



Customized medical and rehabilitation engineering (medical industry, orthopedics, dentistry, plastic surgery)

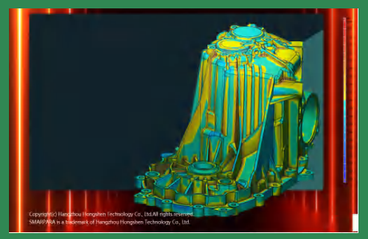
The LSM-L series is equipped with Class 2 lasers. which is relatively safe, has low power, and relatively low radiation compared to industrial grade lasers. At present, in the fields of dentistry, orthopedics, and rehabilitation, LSM-L Series can accurately scan patient body parts (such as missing teeth, residual limbs, and spinal morphology) with industrial grade and metrological accuracy. It can quickly obtain unique data required for design and production, accurately match dentures, prosthetics, orthotics, etc. promoting the development of precision medicine and personalized customization.

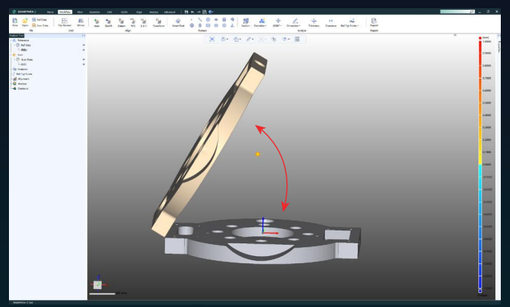


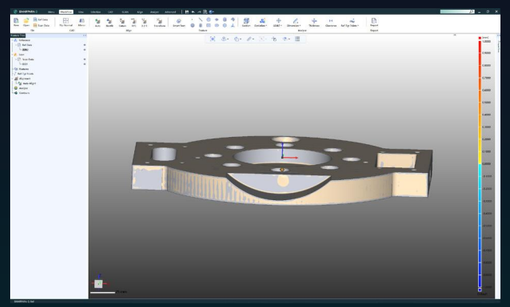
3D Measurement Software

3D Measurement Software **(LSM-L-SW)** is a powerful computer-aided 3D measurement and analysis software that incorporates a wide range of industry-standard and advanced tools. Based on high-precision algorithms and an intuitive, streamlined workflow, the software performs accurate and rapid measurement and analysis tasks on complex surfaces and parts with numerous features.

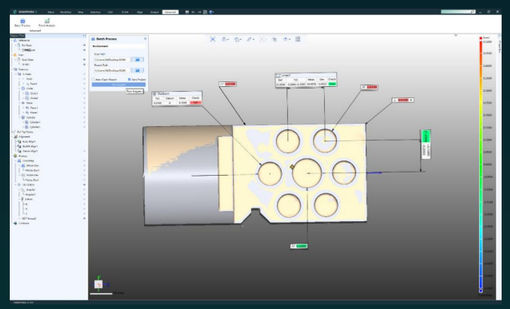
This software provides a high-precision, highly reliable, and intelligent industrial-grade professional measurement and analysis tool for comprehensive product quality control.



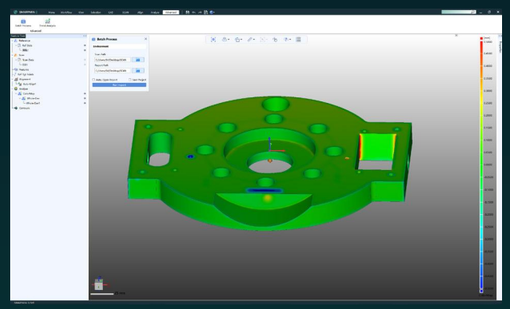




This software features versatile point cloud alignment capabilities, enabling fast and accurate registration between point cloud and CAD data, as well as between point clouds. It supports professional alignment methods including intelligent global alignment, high-precision best-fit alignment, datum alignment, 3-2-1 alignment, RPS reference point positioning alignment, and transform alignment, meeting high-precision positioning requirements in various scenarios.



The software provides comprehensive geometric feature and dimensional tolerance analysis functions. It supports the creation of abundant 3D/2D geometric features, allows automatic feature extraction from CAD and reference-based feature extraction, with open and editable parameters.
It also supports ANSI/ASME standard GD&T annotation, is fully compatible with 3D/2D features, and automatically calculates errors and determines qualification.



The software supports comprehensive comparison and deviation analysis, including 3D overall and local deviation analysis as well as point position deviation analysis, which intuitively displays inspection differences.
It also features batch measurement by specifying scan folders to realize automated batch measurement, effectively improving inspection efficiency and data processing speed.

We also support the following measurement software: Geomagic, Polyworks, Gom

Geomagic Control X | PolyWorks | GOM Inspect

Scanning Software (included)

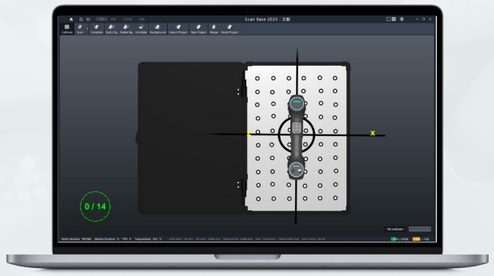
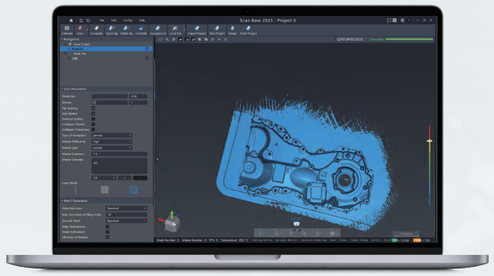


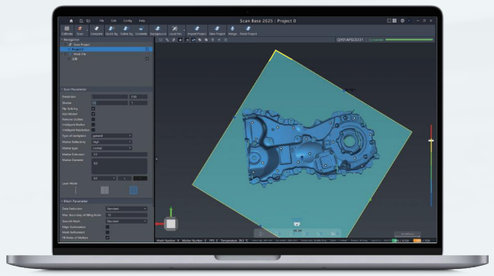
image guided calibration

You can refer to the device display position within the software window and the size of the center circle, quickly complete equipment calibration.



point cloud meshing

Software automatic recognition, one click grid processing.



exclude invalid point clouds

With the help of AI algorithm modules, clutter can be quickly removed or manually removed.

scanning splicing

If the size of the parts is too large and the computer load is too heavy, scanning can be carried out by project, and the projects can be quickly merged after the scanning is completed.

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