

HIGH-PRECISION, LIGHTWEIGHT



SMARTSCAN

Handheld 3D Scanner

PMT Technologies (Suzhou) Co.,Ltd.



SMARTSCAN Handheld 3D Scanner

Metrology DNA, Defining Precision

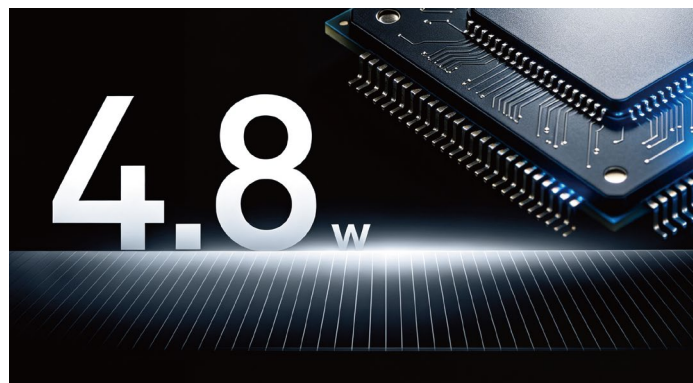
Designed for all industrial environments, the PMT SMARTSCAN is a lightweight, handheld 3D laser scanner that redefines portable measurement. Featuring fully proprietary hardware, algorithms, and software, it supports continuous upgrades to match your custom needs.

Its innovative design delivers exceptional precision, a lightweight body, and low power consumption. Free from rigid fixtures, SMARTSCAN enables high-speed, on-site scanning across workshops, labs, and outdoors—generating complete 3D data instantly and truly breaking environmental limits.



High Precision, High Efficiency

Backed by PMT's deep expertise in precision metrology, SMARTSCAN delivers higher accuracy, superior performance, and easier operation. With an accuracy of up to 0.015 mm, it is built for demanding on-site measurement tasks.



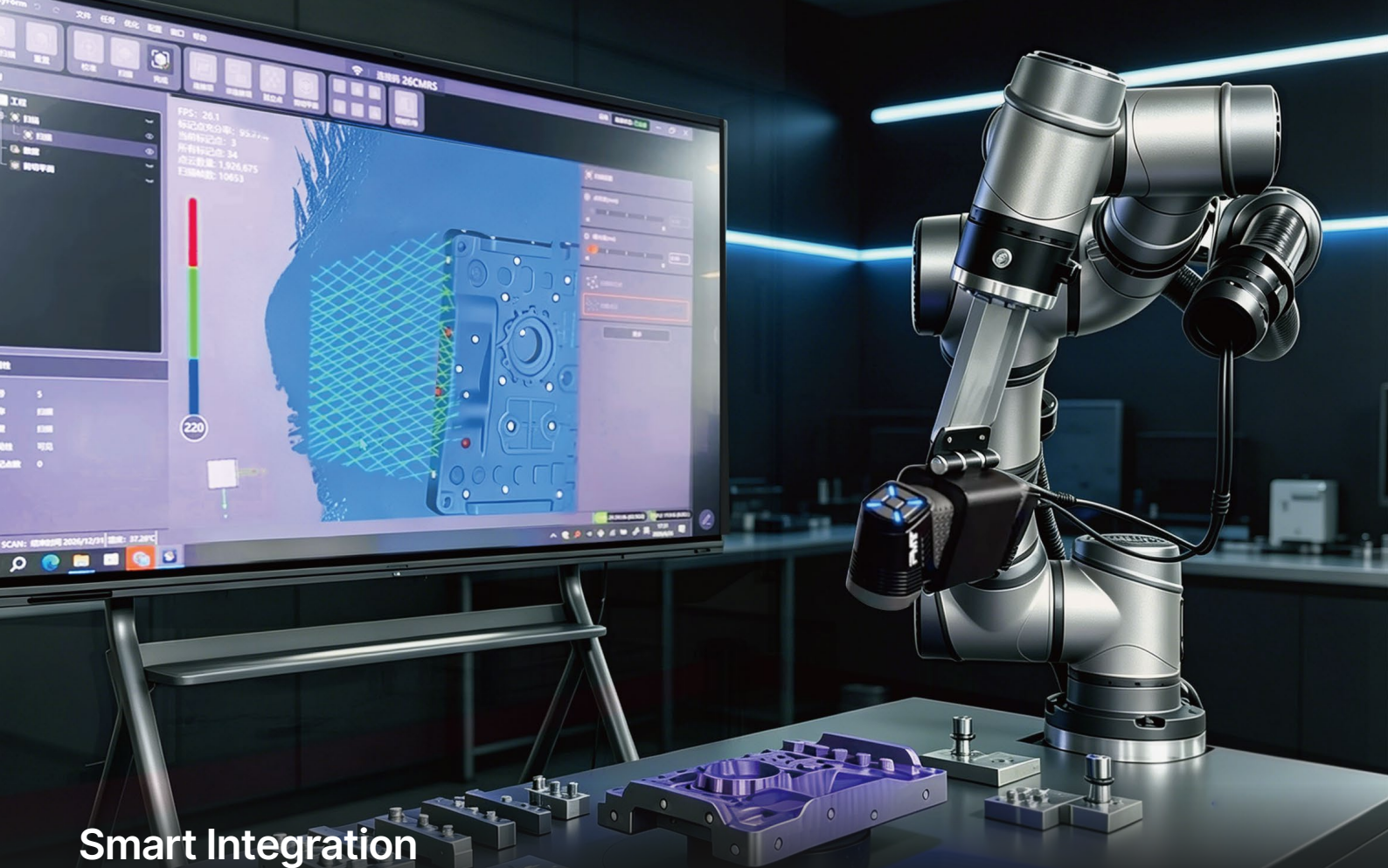
Low Power, High Performance

Powered by our proprietary algorithms, the SMARTSCAN consumes as little as 4.8W. This significantly reduces energy use and thermal drift, ensuring long-term measurement accuracy and system stability.

Compact & Lightweight

Weighing just 530 g with compact dimensions of 76×50×201 mm, SMARTSCAN features an optimized ergonomic grip. It dramatically reduces operator fatigue to effortlessly handle complex, long-duration tasks across any industry.



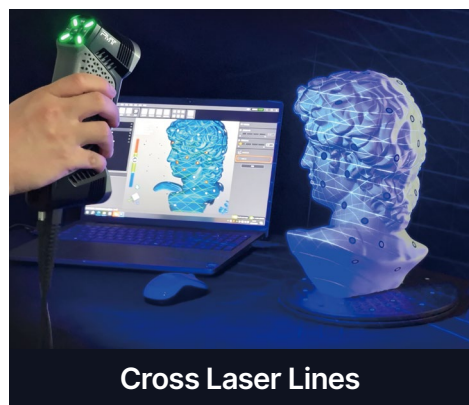


Smart Integration

PMT SMARTSCAN easily connects with industrial robots and tracking systems for automated production lines. Whether for a single part or batch quality checks, it combines flexibly to help you build a smarter 3D measurement system.

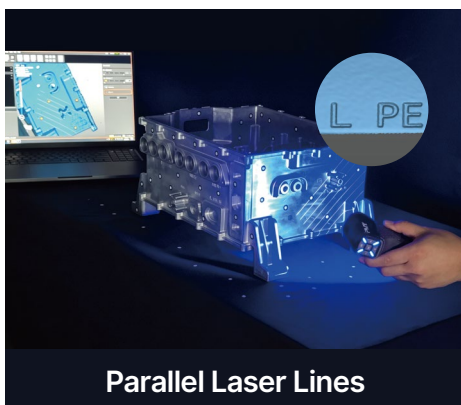
Multiple Scanning Modes

Featuring a flexible multi-laser system, SMARTSCAN covers a wide range of measurement needs—from large castings and standard parts to deep holes, inner cavities, and narrow slots. It balances efficiency and detail, eliminating the need to switch devices across different scenarios.



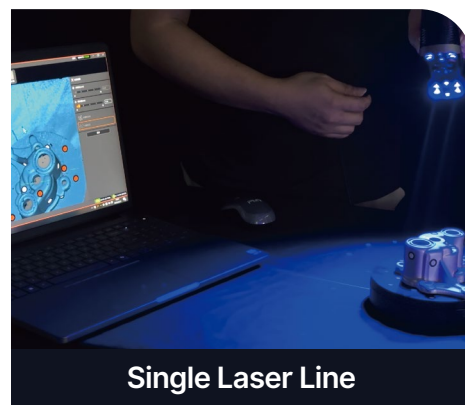
Cross Laser Lines

51 blue laser crosses deliver ultra-fast scanning and outstanding data collection rates. It quickly captures the overall surface data of large components, significantly reducing total scanning time.



Parallel Laser Lines

Using 7 parallel blue laser lines, it captures fine mold textures and intricate contours. This increases sampling density to deliver high-density, high-precision 3D point clouds for demanding inspection tasks.

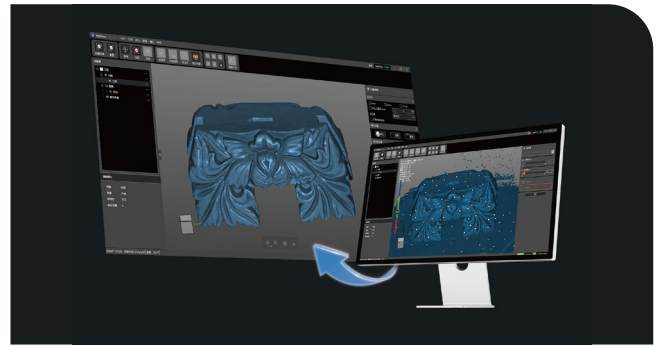


Single Laser Line

A single blue laser line provides deeper reach, acting like a fine probe to access deep holes, inner walls, and complex cavities, capturing data in areas where multiple laser lines cannot reach.

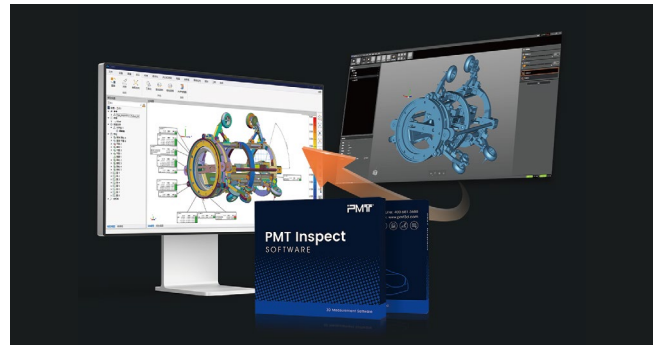
Proprietary Software, Instant Processing

Our self-developed SkyForm software features smart mesh optimization algorithms to automatically optimize 3D model topology, quickly producing highly accurate, lifelike solid models. Real-time rendering visualizes the scanning and modeling process instantly—what you see is what you get.



Seamless Workflow, One-Click Inspection

For wear analysis, assembly inspection, and more, a single click imports data into the PMT INSPECT 3D measurement platform. It enables quick evaluation of GD&T, dimensions, and other parameters, streamlining your workflow and boosting overall efficiency.



Industry Fields



Automotive Manufacturing

Styling R&D, mold development, body-in-white (BIW) welding, parts production, final assembly inspection, maintenance check, etc.



Heavy Machinery

Inspection of large or hard-to-move parts; local interference and clearance checks for large assemblies.



Aerospace

Model digitization, reverse engineering, wing inspection in composite workshops, and surface deviation analysis for 3D additive manufactured parts.



Biomedical

Implantable devices, dental scanning, medical accessory reverse engineering, biological specimen inspection, dimensional analysis, and manufacturing defect detection.



Heritage Preservation

Digital archiving and restoration of historical relics, sculptures, and ancient architectures.



Education & Research

Reverse engineering instruction, biological morphology research, helping students and researchers intuitively understand complex 3D structures.

Versatile Scenarios

Quality Control

CAD Comparison: Compare point cloud data scanned by SMARTSCAN with original CAD models to quickly identify deviations and locate issues.

Dimensional Inspection: Scan and measure critical dimensions to ensure compliance with design tolerances, perfect for first-article inspection (FAI) and batch verification.

Virtual Assembly: Virtually assemble scanned parts to pre-verify clearances, interference, and fit before physical assembly.

Component Inspection

GD&T Analysis: Check geometric tolerances (such as flatness, roundness, position, etc.) and analyze data to ensure compliance with quality standards.

Wear Detection: Regularly scan worn components to analyze dimensional changes and wear levels, supporting maintenance planning and service life prediction.

Deviation Analysis: Compare multi-measurement data to trace machining errors and provide data support for process optimization.

Reverse Engineering

Product Re-creation: Rapidly acquire 3D data of complex workpieces to generate high-quality point clouds or meshes, facilitating drawingless part reproduction or product upgrades.

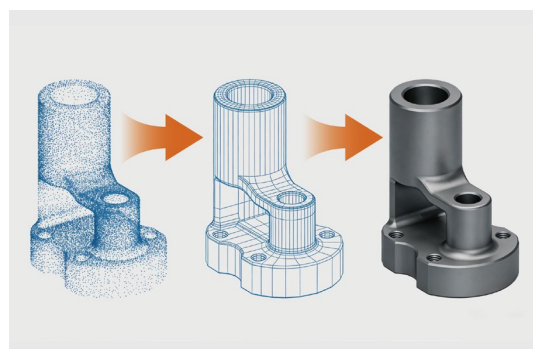
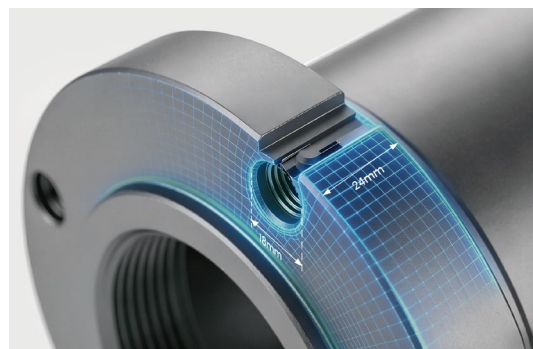
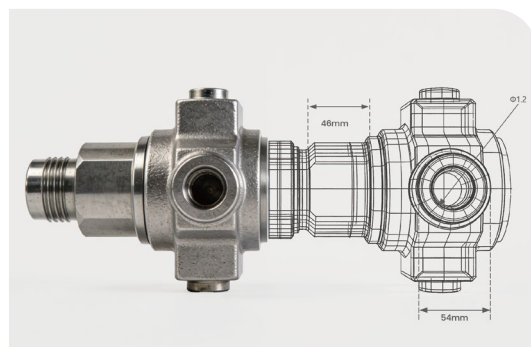
Styling Design: Reconstruct surfaces based on scan data to support industrial design optimization, appearance improvements, and secondary development.

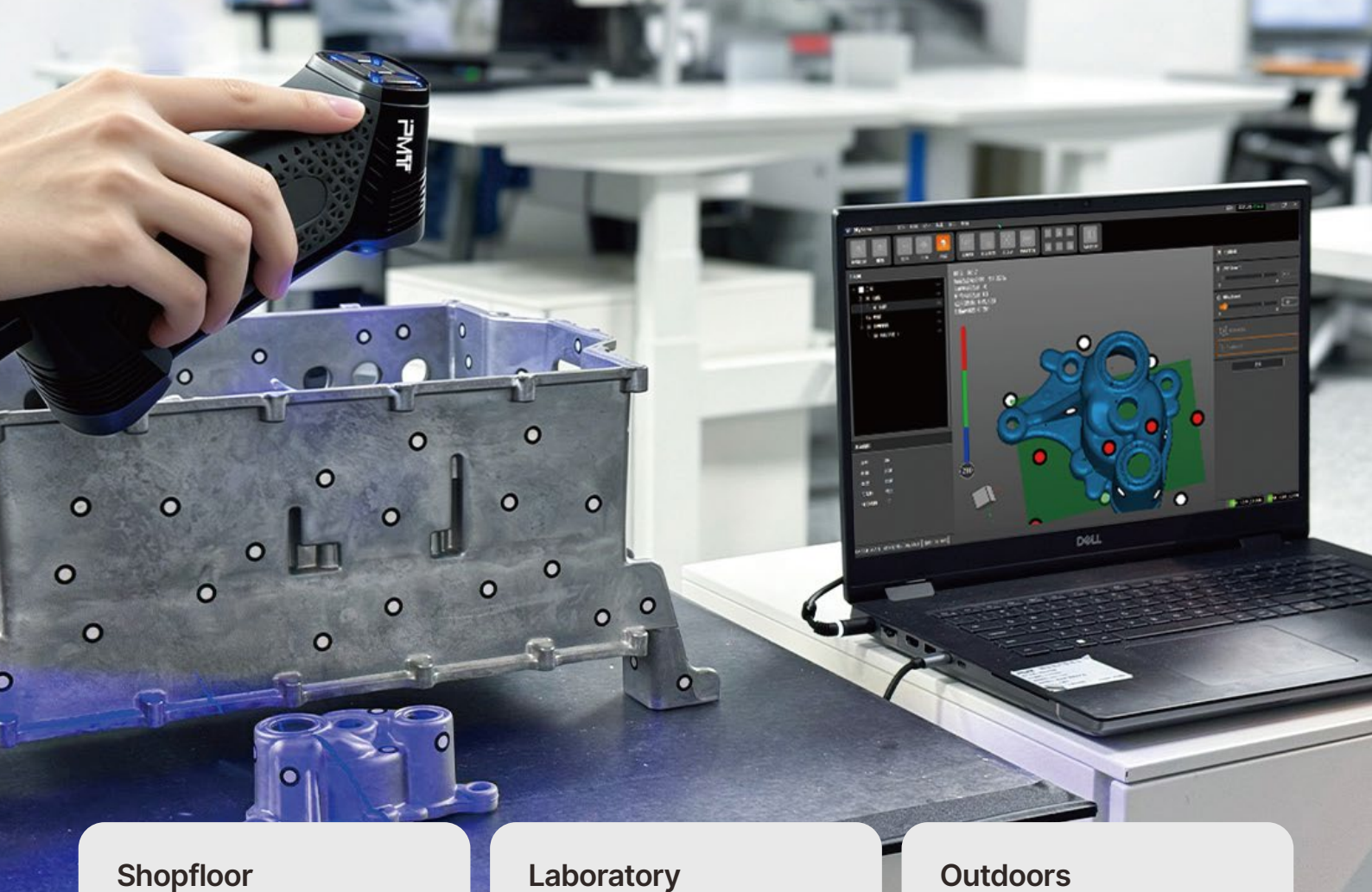
Fixtures & Gauges: Scan actual parts to quickly design custom-matched fixtures, jigs, and inspection gauges.

Design & Digitization

Heritage Digitization: Perform high-precision 3D scans of cultural relics or artwork for permanent digital archiving, supporting restoration and research.

3D Visualization: Generate high-fidelity 3D models for 3D printing, product showcases, virtual exhibitions, creative product design, marketing, and digital twins.





Shopfloor

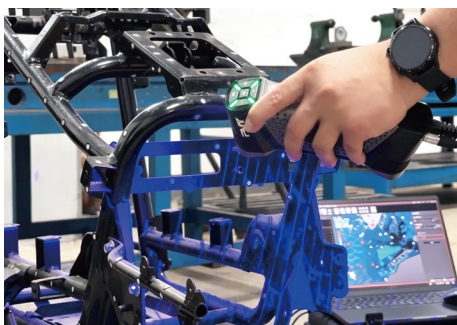
Mobile Quality Control

Laboratory

Precision Lab Research

Outdoors

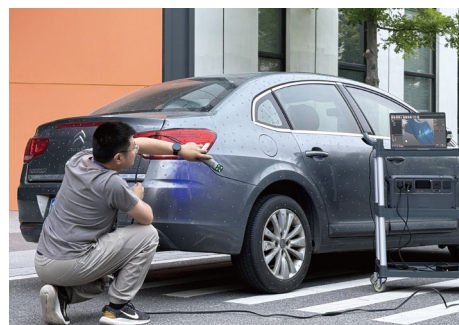
On-Site Data Acquisition



On the shop floor, SMARTSCAN delivers fast, full-dimensional inspection for large parts, complex surfaces, and fine features. It upgrades traditional sampling to 100% real-time quality control. For legacy parts lacking drawings, it provides precise reverse engineering to ensure reliable repairs and redesigns.



In the lab, SMARTSCAN supports advanced research and high-fidelity digitization. From aerospace blade deformation analysis and biological specimen imaging to cultural heritage preservation, it provides the precise 3D data needed to drive interdisciplinary studies.



Outdoors, SMARTSCAN thrives in challenging environments with its vibration-resistant and thermally stable design. From on-site inspections of wind turbine blades and large vehicles to archaeological field surveys, it provides the rapid, high-precision 3D data needed for demanding field tasks.

All-Condition Adaptability

Ready for Any Environment

Built to withstand shop floor variables like temperature shifts, light fluctuations, and dust, the PMT SMARTSCAN ensures consistent accuracy anywhere. From machining workshops and outdoor fields to precision labs, it delivers stable, high-precision point clouds—acting as your ultimate bridge between the physical and digital worlds.



Technical Specifications

Model		SMARTSCAN ^P	SMARTSCAN ^M	SMARTSCAN ^E
Scan Mode	Fast Scanning	51 blue laser crosses		
	Fine Scanning	7 blue parallel laser lines		
	Deep Hole Scanning	1 blue laser line		
Max. Accuracy		0.015 mm	0.020 mm	0.030 mm
Max. Resolution		0.015 mm	0.020 mm	0.030 mm
Max. Volumetric Accuracy		Standard		
		0.015 mm + 0.030 mm/m	0.015 mm + 0.035 mm/m	0.020 mm + 0.040 mm/m
		With Global Photogrammetry System		
		0.015 mm + 0.012 mm/m	0.015 mm + 0.015 mm/m	0.020 mm + 0.025 mm/m
Max. Scan Rate		5,508,000 measurements/s		
Max. FOV		700 mm × 600 mm		
Stand-off Distance		300 mm		
Depth of Field (DoF)		550 mm		
Laser Class		Class II (Eye-safe)		
Output Formats		.stl, .obj, .ply, .asc, .igs, .txt, .mkpts, etc.		
Interface		USB 3.0		
Input Voltage/Current		24V/3A		
Dimensions		76 mm × 50 mm × 201 mm		
Weight		530g (battery not included)		
Power Consumption		4.8W		
Operating Temperature		-10°C-40°C		
Operating Humidity (non-condensing)		10%RH-90%RH		
Recommended System Requirements		OS: Win10 or above (64-bit); Graphics: NVIDIA RTX 4060; VRAM: 8GB; CPU: Intel Core i7-13700H or above; RAM: ≥64GB		

The Global Measurement Leader

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