



iScan Series

iScan3D



iScan
Magic



iScan Lite



API's iScan Series

API's iScan Series represents our commitment to providing fast, accurate, compact, easy-to-use measurement solutions for every manufacturing application and tolerance.

As manufacturing deadlines grow tighter and their tolerances more demanding, 3D laser scanning has become one of the most sought-after quality control processes across all industries. The ability to capture hundreds of thousands of points per second has made 3D laser scanning a fast and efficient tool for rapid point-cloud generation, 3D CAD modeling, part inspection, and Building Information Modeling (BIM). The variety of applications that scanners are needed for across every major industry has created a very diverse set of tolerances, distances, and features that scanners need to be able to capture.

In response to this variety of need, API has developed a complete portfolio of handheld

scanners suitable for all manufacturing environments, from the color and texture mapping of the iScan Lite all the way to the premiere 6DoF Radian-tracked accuracy of the industry-leading iScan3D.

iScan3D is the third generation of API's advanced hand-held probing and scanning solutions for inspection applications. Integrated with Radian Plus and Pro Laser Trackers, iScan3D's crossed blue laser lines are capable of scanning in any direction and surface texture/finish with ease.

API's iScan Magic is a Composite 3D Scanner designed for hybrid scanning and probing measurements at high speeds and accuracies. API's iScan Lite is a compact, portable 3D Blue Laser Line Scanner for part measurement in every manufacturing environment.

The iScan Series is ideal for:

- Reverse Engineering
- Flush and Gap
- Surface Contours
- Product Development
- Prototyping
- Architectural Modeling
- Cultural Heritage Preservation
- Education and Training
- Art and Sculpture Digitization

For resolutions of 0.1mm all the way down to a handful of microns, API's iScan Series of handheld scanners provide application solutions at any accuracy and price point.



iScan3D



iScan Lite



iScan Magic



iScan3D - Laser Line Scanner

iScan3D is API's third-generation handheld laser-line scanner, representing the pinnacle of speed and accuracy, with 6DoF Radian Laser Tracking for all applications. Dual stylus-mounting locations for probing of hidden features provide measurement flexibility with precise results. iScan3D can scan a wide variety of surface textures, including high-gloss and contrast areas. It also provides unique probing ability for hidden-point measurements.

Features And Benefits

- **Large Scanning Volume** - iScan3D works in tandem with API's Radian Laser Trackers to scan large areas. Its rotating head provides flexibility by allowing complete 360° rotation.
- **Automatic Probe Recognition (APR)** - Automatic Probe Stylus Recognition to identify probe length and tip size, eliminating user probe selection during measurements.
- **Smart Buttons** - Pre-programmed buttons for better hardware and software interaction minimize user computer interaction with full measurement control at their fingertips.
- **Blue Crossed-Lines Scanner** - Crossed laser lines provide the ability to scan a surface in any direction with ease and flexibility.
- **Tactile Probing** - A variety of probe styli (up to 500mm supported) to suit every application provide the ability to probe profound features.
- **Dense Point Cloud** - Blue lasers and high-resolution camera provide dense point cloud with fine details of the features in real-time.
- **Dynamic Stability** - Advanced electronics, gyroscopes and level sensors compensate for small perturbations and hand vibrations during measurement.
- **Controllerless** - The versatility of iScan3D makes large-scale scanning quick and simple.



Product Specifications

System Accuracy			
	2 -7 Meters	7-15 Meters	Above 15 Meters
Spatial Length (2σ)	± 50μm	± 80μm	± (20μm + 4μm/m)
Sphere Radius (2σ)	± 50μm	± 80μm	± (20μm + 4μm/m)
Surface (2σ)	± 60μm	± 100μm	± (40μm + 4μm/m)
Probing			
	MPE		
Vertical Probe (100mm)	±75μm	±100μm	± (75μm + 4μm/m)
Horizontal Probe (100mm)	±125μm	±150μm	± (125μm + 4μm/m)
Attributes			
Angle Acceptance	±45°(Pitch and Yaw) 360° Roll		
Sampling Frequency	100Hz		
Max. Scanning Speed	200,000 pts/sec		
Laser Class	II (eye safe)		
Laser Line Width	150μm		
Laser Line Color	Blue		
Min. Point Spacing	70μm		
Stand Off Distance	170mm ±40mm		
Depth of Field	±40mm		
Field of View	110mm x 100mm		
Size and Weight	H 265mm x W 110mm x L 110mm / 1.03kg		
Working range	Up to 50m (using 50m cable)		
Autolock			
iVision Field of View	30° (diagonal)		
Acquisition Range	2m – 40m		
Environmental			
IP Rating	IPX0		
Pollution Degree	II		
Operating Temperature	+5°C to +35°C		
Storage Temperature	-10°C to +45°C		
Relative Humidity	10% – 95% (non-condensing)		
Power			
Power Supply Voltage	110v/230v ±10%		
Supply Voltage Fluctuation	±10%		
Over Voltage	Category 2		
Power Consumption	100w		
Operational Voltage & Current	12Vdc, 1.67A		



iScan Magic - Composite 3D Scanner

iScan Magic uses a combination of infrared and blue laser technologies to create highly detailed 3D models of objects. It features a built-in photogrammetry system, intelligent edge detection, and contact probing to fulfill diverse measurement application needs in industries from Aerospace to Automotive to Energy and more.

Features And Benefits

- **High Precision** - The iScan Magic boasts a resolution of 0.010 mm, enabling highly accurate measurements.
- **Rapid Scanning** - Scans at speeds between 1,350,000 to 1,650,000 measurements per second, facilitating quick data capture.
- **Dual Laser Technology** - Integrates infrared and blue lasers, allowing for versatile surface scanning capabilities.
- **Multiple Scanning Modes** - Offers large area, fast, fine, and deep hole scanning modes for diverse applications.
- **Photogrammetry Integration** - Features a built-in photogrammetry system for enhanced measurement accuracy over large areas.
- **Environmental Adaptability** - Performs reliably in varying conditions, including temperature changes and vibrations.
- **Lightweight Design** - Weighing just 1.19 kg, it is highly portable and easy to handle.
- **User-Friendly Software** - Powered by ScanViewer, it offers advanced data editing and manipulation options.
- **Large Scanning Area** - Capable of scanning areas up to 1440 mm × 860 mm, suitable for a wide range of object sizes.
- **Industrial Versatility** - Ideal for sectors like manufacturing, heritage preservation, and research, demonstrating its wide-ranging utility.

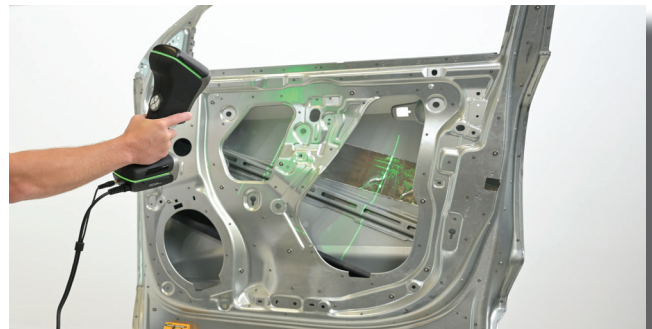


Product Specifications

Type		iScan Magic
Scan mode	Ultra-fast scanning	17 blue laser crosses
	Hyperfine scanning	7 blue parallel laser lines
	Large area scanning	11 parallel infrared laser lines
	Deep hole scanning	1 extra blue laser line
Accuracy ⁽¹⁾		Up to 0.020 mm
Scanning rate		Up to 4,150,000 measurements/s
Scanning area		Up to 1440 mm x 860 mm
Laser class		Class II (eye-safe)
Resolution		Up to 0.010 mm
Photogrammetry System	Scanning area	3760 mm × 3150 mm
	Depth of field	2500 mm
Volume accuracy ⁽²⁾	Work alone	0.015 mm + 0.030 mm/m
	Standard	0.015 mm + 0.020 mm/m
	Paired with MSCAN-L15	0.015 mm + 0.012 mm/m
Stand-off distance		300 mm
Depth of field		925 mm
Output formats		.stl, .obj, .ply, .asc, .igs, .txt, .mk2, .umk and etc.
Operating temperature range		-10°C - 40°C
Interface mode		USB 3.0
Dimensions		12.5" x 5.5" x 3.5"
Weight		1190 g
Patents		CN204329903U, CN104501740B, CN104165600B, CN204988183U, CN204854633U, CN204944431U, CN204902788U, CN105068384B, CN105049664B, CN204902784U, CN204963812U, CN204902785U, CN204902790U, CN106403845B, CN209197685U, CN209263911U, CN106500627B, CN106500628B, CN206132003U, CN206905709U, CN107202554B, CN209310754U, CN209485295U, CN209485271U, CN305446920S, CN209991946U, US10309770B2, KR102096806B1, KR102209255B1, US10914576B2

(1) ISO 17025 accredited: Based on VDI/VDE 2634 Part 3 standard and JJF 1951 specification, probing error (size) (PS) performance is evaluated.

(2) ISO 17025 accredited: Based on VDI/VDE 2634 Part3 standard and JJF 1951 specification, sphere spacing error (SD) performance is evaluated.



iScan Lite - 3D Blue Laser Line Scanner

iScan Lite's compact size and portability are designed for single-handed control and measurement flexibility in narrow spaces. iScan Lite features a much shorter camera distance of 130mm, allowing for a steeper view angle to capture accurate data in deep grooves in part measurement.

FEATURES AND BENEFITS

- **High Precision** - The iScan Lite boasts a resolution of 0.020 mm, enabling highly accurate measurements.
- **Rapid Scanning** - Scans at speeds up to 1,250,000 measurements per second, facilitating quick data capture.
- **Ultra-Compact Design** - The iScan Lite fits in the palm of your hand, making it highly portable for fieldwork.
- **Multiple Scanning Modes** - Offers fast, fine, and deep hole scanning modes for diverse applications.
- **Full-Metal Housing** - Ensures durability and reliability even in demanding work environments.
- **Eye-Safe Lasers** - Class II laser technology ensures safety during operation.
- **Lightweight Design** - At just 0.57 kg, it's one of the lightest professional 3D scanners available.
- **User-Friendly Software** - Powered by ScanViewer, it offers advanced data editing and manipulation options.
- **One-Hand Operation** - Designed for easy handling, allowing for scanning in narrow spaces.
- **Industrial Versatility** - Ideal for sectors like manufacturing, heritage preservation, and research, demonstrating its wide-ranging utility.



Product Specifications

Type		iScan Lite-22	iScan Lite-42
Scan mode	Ultra-fast scanning	7 blue laser crosses	17 blue laser crosses
	Hyperfine scanning	7 blue parallel laser lines	
	Deep hole scanning	1 extra blue laser line	
Accuracy ⁽¹⁾		Up to 0.020 mm	
Scanning rate		Up to 1,250,000 measurement/s	Up to 2,800,000 measurement/s
Scanning area		Up to 650 mm x 550 mm	Up to 700 mm x 600 mm
Laser class		Class II (eye-safe)	
Resolution		0.020 mm	
Volume accuracy ⁽²⁾	Standard	0.015 mm + 0.035 mm/m	
	Paired with MSCAN-L15	0.015 mm + 0.012 mm/m	
Stand-off distance		300 mm	
Depth of field		550 mm	
Output formats		.pj3, .asc, .igs, .txt, .mk2, .umk, .stl, .ply, .obj	
Operating temperature range		-10°C - 40°C	
Interface mode		USB 3.0	
Dimensions		203 mm x 80 mm x 44 mm	
Weight		570 g	
Patents		CN204329903U, CN104501740B, CN204854633U, CN204944431U, CN204902788U, CN105068384B, CN105049664B, CN204902784U, CN204902785U, CN106403845B, CN110030946B, CN111833392A, CN212300269U, CN211904059U, CN211696268U, CN306053019S, CN212606697U, CN111932465A, CN111694665A, CN306321502S, EP3392831A4	

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(2) ISO 17025 accredited: Based on VDI/VDE 2634 Part3 standard and JJF 1951 specification, sphere spacing error (SD) performance is evaluated.







**Scan Here for
More Info on the
iScan Series**

About API

For more than 30 years, API has pioneered advancements in laser-based metrology equipment for industrial inspection and calibration. API is continually developing products to deliver innovation and automation to the manufacturing floor. API's advanced 6DoF Laser Trackers, Scanners, and 9D LADAR provide customers from every industry with tools to complete complex production tasks with next-level speed and efficiency. Our customers can perform in-line inspection, automated measurement, and precision robot verification to increase production and decrease costs. API is a partner to our customers, providing custom, Globally Local automated metrology solutions for integrated smart manufacturing.

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