

API iSCAN SERIES

REAL | LITE | MAGIC | SHARP



iSCAN REAL



iSCAN LITE



iSCAN MAGIC



iSCAN SHARP



iSCAN REAL Color 3D Scanner

iSCAN - Real is a cost-effective color 3D scanner with large depth of field and scanning area, designed for medium and large objects and portrait scanning. With infrared VCSEL structured light, you can experience the safety and comfort of light-free scanning. It can quickly capture the color texture and geometry of the surface of the object without sticking markers. Cutting-edge algorithm, easy-to-use software, ergonomic design, easy to carry, the user can create an efficient, accurate, texture-rich color 3D scanning solution.



Infrared | Invisible Light | Large Field of View (FoV)

- ✓ Infrared 3D scanning, more user-friendly
- ✓ Invisible scanning to human eyes, more comfortable
- ✓ Larger Field of View, more smooth and easier to use
- ✓ Supports color restoration in high-quality
- ✓ Suitable for human hair 3D scanning (90% and above)
- ✓ Suitable for scanning on medium, large-sized objects and humans



Color 3D Scanner

Infrared 3D Scanning, More Friendly



Safe Light Source

The scanning projection light source (infrared VCSEL, invisible light) and the fill light (LED cold light source) around the scanning lens are all low-energy light sources.

Adaptability on Dark and Light Color

A strong ability to adapt to color contrast, and in case of dark color and light color appear in the same scan object, without multiple exposure, directly scan.



Black Material Adaptability

The combined array structured light has stronger adaptability, it can not only scan more black items, but also reduce the difficulty when scanning human hair.

Adaptability to the Light Environment

Better adaptability to the light environment which means you can have a direct scan to capture 3D data whether in the dark room or in the outdoor with sunlight.



API



3D Digitization Solutions

The 3D digitization system is composed of a handheld color 3D scanner, 3D data acquisition and post-processing software. You can scan medium and large-sized cultural relics, artworks, sculptures, portraits, human body parts, car modified parts and so on wherever you want. As for the post-processing part, the optimized algorithm of our self-developed 3D scanning software can be a great help for improving the work efficiency.

This system can easily obtain 3D data of the surfaces of the items, and generate standard 3D data formats (asc, stl, obj, etc.) through the software's own post-processing algorithm for data output. This facilitates engineers to use third-party software for model modification/design, reprocessing, or 3D printing directly from the scanned data if it is complete.

Digital Human

Customization and re-creation of artistic portraits
Film, video, game, VR, AR and other CG character modeling
Medical rehabilitation
Human body parts customization



3D Model Analysis

Plant growth morphology analysis
Forensic identification
Medical diagnosis
3D comparative analysis of local body



Art and Design

Medium and large sculptures (stone sculptures, urban sculptures, foam sculptures, clay sculptures, etc.)

More Application Exploration

Reverse engineering (car floor mat, luggage rack customization, etc.), 3D virtual display, digital museums, data acquisition for 3D printing, etc.

Technical Parameter - iSCAN REAL

iSCAN - REAL		
Light source	Category	Infrared VCSEL structured light
	Visibility	Invisible
	Safety	CLASS I (eye-safe)①
	Technology	Infrared linear-array structured light
	Color scanning	Support
Scanning features	Alignment modes without markers②	Texture/feature/mixed alignments
	Human body scanning	Invisible light/hair/dark environment scanning; automatically remove the layers of body shaking
	Medium/large-sized object③	Optimal scanning distance range 300 mm – 500 mm
		Effective working range 280 mm – 1000 mm
		Maximum single scanning area up to 580 mm x 550 mm
Measurement rate	Maximum④	1,500,000 points/s
Detail	Point distance	0.2 - 3 mm
Accuracy	Basic accuracy	0.100 mm
	Alignment accuracy⑤	0.300 mm/m
Data output	Output formats	.obj, .stl, .ply, .asc, .mk2, .epj, .apj, .spj, .sk
	3D printing	Support
Hardware	Working temperature	0 - 40°C
	Interface mode	USB 3.0
	Weight	850 g
	Dimensions	140×94×258 mm
	Structure	3 sets of invisible light sources & camera groups & auxiliary lights
	Working power supply	INPUT: 100 – 240VAC, 50 / 60Hz
		OUTPUT: 24 3.75A, 90W Max.

Description:

① Class1 LASER is a kind of low-energy light source, which has no biological hazards and will not cause damage to the human body or skin.

② When the item has continuous, non-repetitive, rich and varied geometric features/texture features, it can be directly scanned without sticking markers.

③ Maximum size of a single scan: recommended not to exceed 4 m. If the item size or data is too large, it can be registered after part scanning.

④ Scan speed is up to 1,000,000 points/second under standard mode while it can reach 1,500,000 points/second when the memory size of graphics card equals or exceeds 6G.

⑤ It supports marker alignment. Alignment deviation value (alignment accuracy value) refers to the deviation value obtained by measuring the centers of the two standard spheres under marker alignment mode.

*Material adaptability: when 3D scanning items with transparent/highly reflective/black and shiny surfaces, it is recommended to use contrast powder before scanning.

*Recommended computer configuration: i7-10750H and above, memory 32G and above, graphics card NVIDIA GTX1660Ti and above, discrete graphics 4G and above, USB 3.0 interface, Windows 10 64-bit.





Automated 3D Measurement

It can be paired with API automated 3D measurement system to achieve non-stop measurements. Automated high-batch measurement overcomes the limitation of traditional methods, and it significantly improves efficiency for all stages of manufacturing.

Cater to Needs of Various Sectors



Aerospace

Metrology-grade 3D scanning for product development and MRO workflow.



Automotive

Enhance work efficiency with precise 3D measurement instruments from concept design to manufacturing.



Mold

Portable 3D scanner to optimize mold design, mode corrosion detection and, archiving.



Energy & Heavy Industry

Empower the development of the energy industry and promote the upgrading of the heavy machine industry.



Rail Transport and Shipbuilding

Provide accurate measurement results for product development, virtual assembly, and repeatable analysis.



Non-industry

To meet the needs for 3D digitization for industries including medical field, architecture, science, education, and entertainment.

Technical Parameter - iSCAN LITE

Type		iSCAN - LITE
Scan mode	Ultra-fast scanning	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 2,800,000 measurements/s
Scanning area		Up to 700 mm × 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 × 80 mm × 44 mm
Weight		570 g

(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 - VIEWER

Integrated Scan & Inspection 3D Software

iSCAN - VIEWER is a free & powerful 3D software that includes inspection and scanning functions such as feature relationships, distance, GD&T and color mapping.

Scanned data can be used for rapid prototyping, reverse engineering, inspection comparison, 3D display, etc.

0.020 mm
Accuracy





iSCAN MAGIC

Best in class features

Built-in photogrammetry system, intelligent edge detection, contact probing and pipe measurement fulfill diverse application needs.



Anti-dust & fog markers

Ergonomic Design

Single point repeatability 0.030 mm



Technical Parameter - iSCAN MAGIC

Type		iSCAN-Magic	iSCAN-Magic II
Scan mode	Ultra-fast scanning	11 blue laser crosses	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	
Laser lines in total		41	45
Accuracy ⁽¹⁾		0.020 mm	
Scanning rate		Up to 2,700,000 measurements/s	Up to 4,150,000 measurements/s
Scanning area		Up to 1440 mm × 860 mm	
Photogrammetry system	Standard configuration	Built-in	
	Scanning area	3760 mm × 3150mm	
	Depth of field	2500 mm	
Laser class		CLASS II (eye-safe)	
Resolution		0.010 mm	
Volume accuracy ⁽²⁾	Work alone	Up to 0.015 mm + 0.030 mm/m	
	Work with 1m reference bar	Up to 0.015 mm + 0.020 mm/m	
	Work with MSCAN-L15	Up to 0.015 mm + 0.012 mm/m	
Stand-off distance		300 mm	
Depth of field		925 mm	
Portable CMM K-Probe	Optional	Support	
	Single point repeatability	0.030 mm	
	Tracking frequency	60 hz	
Intelligent edge inspection module	Optional	Support	
	Edge accuracy	0.030 mm	
Pipe inspection module	Optional	Support	
	Output formats	YBC / LRA / compensation value	
Output formats		.stl, .ply, .obj, .asc, .igs, .txt, .mk2, .umk, and etc.	
Operating temperature range		-10°C~40°C	
Interface mode		USB 3.0	

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iSCAN SHARP, consisting of a portable 3D scanner i-Scanner and an optical i-Tracker, is a brand-new generation of API's optical 3D measurement system for measuring large-scale parts. It brings optical measurement to a whole new level by offering a tracking distance of up to 6 meters, a volumetric range of 49 m³, and volumetric accuracy of up to 0.049 mm (10.4 m³).

Engineered with i-Tracker's on-board processor for pre-computation, 25-megapixel industrial cameras, and cutting-edge technologies, the iSCAN SHARP is ideal for measuring large-sized parts or multiple parts at the same time without the hassle of moving trackers frequently.



i-Scanner
21 blue laser crosses
2.6 million measurements/s

It supports wired and wireless data transfer to cater to different industrial uses, making scanning even easier. It can also work with an auxiliary light module to inspect holes and slots. iSCAN SHARP is optimal for efficient and stable measurements to enhance product development, quality control, and more.

i-Tracker

Pre-computation

Large-volume tracking

i-Probe

Wireless and portable

Singe-point repeatability 0.025 mm



API



Technical Parameter - iSCAN SHARP

Type		iSCAN SHARP 49
Scan mode	Ultra-fast scanning	21 blue laser crosses
	Hyperfine scanning	7 blue parallel laser lines
	Deep-hole scanning	1 blue laser line
Accuracy ⁽¹⁾		Up to 0.025 mm
Measurement rate		Up to 2,600,000 measurements/s
Scanning area		Up to 500 mm × 600 mm
Laser class		Class II (eye-safe)
Resolution		0.020 mm
Volumetric accuracy ⁽²⁾	10.4 m ³ (Tracking distance 3.5 m)	0.049 mm
	28.6 m ³ (Tracking distance 5.0 m)	0.067 mm
	49.0 m ³ (Tracking distance 6.0 m)	0.089 mm
Tracking Distance per i-Tracker		6000 mm
Volumetric accuracy (with MSCAN photogrammetry system)		0.044 mm + 0.012 mm/m (>6m)
Hole position accuracy		0.050 mm
Camera pixels of i-Tracker		25 megapixels
Stand-off distance		300 mm
Depth of field		400 mm
Part size range (recommended)		0.1 m-12 m
Operating temperature range		0 °C-45 °C
Operating humidity range (non-condensing)		10-90% RH
Interface mode		USB 3.0, Network Interface
Certification		CE, RoHS, WEEE

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Technical Parameter - i PROBE

Type		i - PROBE
Accuracy		0.025 mm
Volumetric accuracy	10.4 m ³	0.049 mm
	28.6 m ³	0.067 mm
Measurement rate		60 measurements/s
Part size range (recommended)		0.2 m-6 m
Weight		450 g
Dimension		345*55*121 mm
Operating temperature range		0 °C-40 °C
Operating humidity range		10-90 % RH







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