
## Scantech iReal 3D - 3D Digitization Explorer

Scantech is one of the earliest high-tech companies starting to research and develop handheld 3D visual measurement devices across the world. The presence of our distributors and international sales and technical support teams has been expanded all across the globe, providing industrial frontier 3D measurement solutions for prominent enterprises and research institutions like Boeing, NASA, COMAC, BMW, Volkswagen, GM, Apple, Siemens, JCB and Sany.

Leveraging advanced strong R&D technology, our product lineup includes metrology-grade online and offline equipment and consumer-grade color 3D scanners. We offer innovative and cutting-edge 3D digital solutions for customers in areas of aerospace, automotive transportation, mechanical manufacturing, mold making, energy engineering, medical care, education, etc.

**SCANTECH (HANGZHOU) CO., LTD (HQ.)**
Building 12, No.998, West Wenyi Road, Yuhang District, Hangzhou, Zhejiang Province, China
Tel : 0086-571-85852597 Fax : 0086-571-85370381
E-mail : info@3d-scantech.com

**SCANTECH DIGITAL GmbH.**
Dieselstrasse 18, 70771 Leinfelden-Echterdingen, Echterdingen industrial park
Tel : 0711 31013901
E-mail : info@3d-scantech.com

**SCANTECH DIGITAL Inc.**
611 Gateway Blvd. Suite # 120.South San Francisco, CA 94080
E-mail : info@3d-scantech.com

Website Linkedin Youtube

SCANTECH IREAL 3D

# IREAL 2E
# Color 3D Scanner

## Infrared Light, More User-friendly

# IREAL 2E Color 3D Scanner

iReal 2E 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.

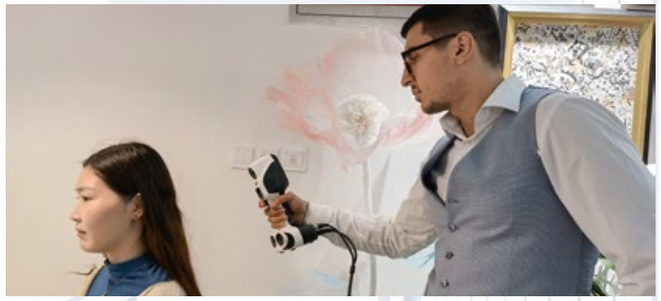
### Infrared | Invisible Light | Large Field of View (FoV)

- 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



# Entry-Level Professional-Grade 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.

# Smooth Alignment, Easy to Use

## Powerful Data Capture

Using a new generation of 3D sensor and algorithm optimization system, the data collection speed is as high as 1,500,000 points per second.

## Deep Depth of Field

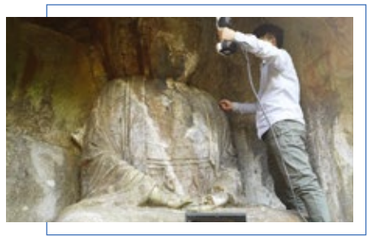
A scanning Depth of Field of 720 mm gives the operation process more freedom and sets fewer requirements for users.

## Intelligent Algorithm

The iReal 3D scanning software will be updated constantly on the 3D reconstruction algorithm and alignment algorithm based on user feedback.

## Large Scanning Area

Large wide-angle Field of View (FoV), up to 580 mm x 550 mm, allows for fast and accurate scanning of medium to large-sized items.



## Various Alignment Modes

Feature, texture, mixed and marker alignment (the first three modes are suitable for scanning objects with rich geometric features or texture features).

## Without Markers

When objects are full with continuous, non-repetitive and richly varied geometric/textural features, scan them directly without markers.



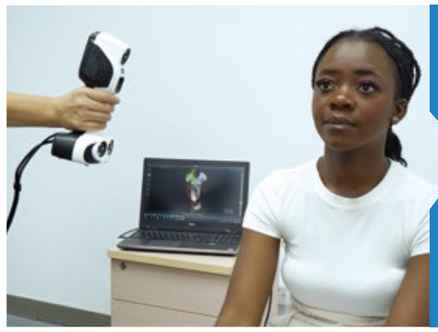

# Made for Human Body Scan

## Invisible Scanning

The LED off mode avoids the discomfort brought by the strobe of the fill light system to the scanned person, realizing eye-safe and comfortable 3D scanning.

## Dark Environment Adaptability

When scanning artistic portrait/patients' body parts, iReal 2E supports dark environment scanning for a more comfortable experience for the scanned person.



## Remove Overlapping Layers

The non-rigid surface fitting algorithm can automatically remove multiple sets of data caused by slight shaking and finally aligned data together, greatly reducing the cost of data restoring.

## Hair Scanning Ability

It is adaptable to over 90% of hair styles and different hair colors. This ensures the integrity of the portrait 3D scanning data and greatly reduces the cost of data repair for portrait hairstyles.

# Constantly Updated Software

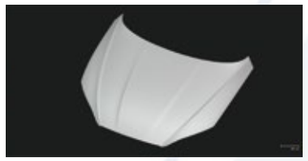
## More Professional, More Intelligent

### Smart Color Map

When scanning an object, a green color map indicates high-quality data capturing, and red shows the opposite. This color difference helps check the data quality and adjust scanning position.

### Real-time Scan on Parts

This can effectively reduce alignment errors by allowing users to position the 3D scanner closer to the scanned areas, which can help reduce the scanning time.

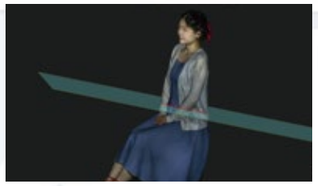


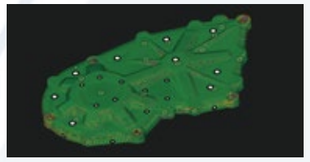
### Undo Data by Frame

When a scanning error occurs, we can recall the wrong data by every frame to save on-site working time greatly and make the scan experience more friendly.

### 3D Identification and Measurement

It can measure the length between points, the angle between lines, and the curved area of triangular meshes for 3D models, which can smooth the edge of 3D mesh data.





### Small Thin-wall Castings Scanning

It can finish the alignment of small thin-wall castings under its marker alignment mode. Stick enough markers, then stick a mark point on the three sides of the edge respectively.

### Seamless Switch to GOM Inspect

After obtained STL data, it can directly perform data detection, comparison, analysis and processing through direct reading interface with GOM Inspect.



# Brand-new Functions

## User-friendly and Practical

### 01 Matcap Function

The matcap function allows you to change the material display of STL model, which makes the 3D model more interesting and rich-in-color.

### Smart Diagnosis 02

It allows users to see if the current computer configuration, 3D scanner configuration file, authorization status and hardware connection meet the requirements of the software.

### 03 Automatic Saving and Data Recovery

The suspended scanning process can be proceed once the previous file is imported again. When the scanning is done, the project file will be saved automatically.


### Seamless Switch 04

When processing data, it supports seamless switch among project file, point cloud, mesh data and texture. Users can experience the different result under different parameters .

### 05 N-Point Registration

When it is necessary to scan and splicing in sections, it supports the N-Point registration. When two color point cloud projects are spliced, the complete color texture can be retained, and a high-definition color 3D model can be obtained after fusion.

### Universal Data Format 06

It supports universal formats: point cloud format (.asc), triangular mesh formats (.obj, .stl, .ply) and marker data (.mk2).

# 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 specification

| iReal 2E | | |
|---|---|---|
| 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.