# Technical Parameter

| iReal M3 | | | |
|---|---|---|---|
| Dual Light Sources | Light Sources | Infrared Parallel Laser Lines | Infrared VCSEL Structured Light |
| | Technology | 7 Infrared Parallel Laser Lines | Infrared Linear-array Structured Light (Speckle) |
| | Visibility | Invisible | |
| | Safety of Lasers | EN 60825 Class I Certificate (Eye-safe) | |
| | Safety of LED Lighting | EN 62471 Photobiological Safety Certificate | |
| Scanning Characteristics | Ability to Capture Texture | Yes | |
| | Rapid Scan Mode | / | Feature/Mixed/Texture Alignments |
| | High-accuracy Scan Mode (on Object) | Markers Alignment | |
| | Human Body Scanning | / | With Four Highlights① |
| | Scanning Range | Optimal Scanning Distance: 400 mm (15.7 in) | |
| | | Optimal Scanning Distance Range: 300-650 mm (11.8 ~ 25.6 in) | |
| | | Effective Scanning Distance Range: 280-1000 mm (11.0 ~ 39.4 in) | |
| | | Max. Field of View: 400 x 240 mm (15.7 × 9.4 in) | Max. Field of View: 580 x 550 mm (22.8 × 21.7 in) |
| | Recommended Object Size | 0.05 ~ 4 m (2.0 × 157.5 in) | 0.3 ~ 4 m (11.8 × 157.5 in) |
| | Outdoor Scanning | Support | |
| Scanning Speed | Max. Scanning Speed | Up to 60 FPS | Up to 15 FPS |
| Fineness | Point Distance | 0.1-3 mm (0.0039 in ~ 0.1181 in) | 0.2-3 mm (0.0079 in ~ 0.1181 in) |
| Accuracy | Basic Accuracy | Up to 0.1 mm (0.0039 in) | |
| | Volumetric Accuracy | Up to 0.25 mm/m (0.0030 in/ft) | |
| Data Output | Output Formats | *.obj, *.stl, *.ply, *.asc, *.mk2, *.txt, *.epj, *.apj, *.spj, *.sk | |
| | The Ability for 3D Printing | Yes | |
| Hardware | Working Temperature Range | -10-40°C (14°F-104°F) | |
| | Interface | USB 3.0 | |
| | Scanner Dimensions & Weight | Dimensions: 140 × 94 × 258 mm (5.5 × 3.7 × 10.2 in), Weight: 856 g (1.9 lb) | |
| | Power Source | INPUT：100-240VAC，50/60Hz | |
| | | OUTPUT：24=3.75A，90W MAX | |
| Compliance | Certifications | CE-EMC, CE-LVD, FCC, RoHS, EN 60825, EN 62471, WEEE | |

① Invisible Light Scanning, Hair Scanning, Scanning in Dark Environments, Automatically Remove the Displacements Caused by Movements

* Accuracy: The deviation between the test value and the standard value is obtained by scanning a calibration reference sphere in the marker alignment mode.

*Our company reserves the right to explain and modify the described parameters and pictures in the brochure.


**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 : market@3d-scantech.com

Website : www.3d-scantech.com


Website Linkedin Youtube

IREAL 3D

# IREAL M3 Color 3D Scanner

## Dual-infrared Lasers
## Versatility at Your Fingertips

# IREAL M3

iReal M Series Color 3D Scanner (M stands for Master) is a brand-new professional 3D scanner series launched by SCANTECH (HANGZHOU) CO., LTD. Its infrared laser and structured-light modes enable smooth 3D data acquisition in different applications, be it scanning humans or objects, inside or outside. iReal M brings professional and highly cost-effective 3D digitization solutions to 3D engineers, 3D designers, and scientific researchers to fulfill their demands of industrial design, art design, medical design, human body digitization, etc.

## Dual-infrared Lasers Versatility at Your Fingertips

**Infrared Parallel Laser for Scanning Objects of Different Sizes and Materials**

- ✔ Different sizes (⩾0.05 m)
- ✔ Different materials (Including dark and reflective surfaces)

**Infrared Laser Speckle for Human Body Scanning and Medium-large Sized Objects (⩾30 cm )**

- ✔ Human body parts, busts or full-body figures
- ✔ Large and medium-scale sculptures (⩾ 0.3m)


FC CE RoHS COMPLIANT



# Professional 3D Scanner Safe and Comfortable


### Safe Light Source

Infrared VCSEL and infrared parallel laser have respectively passed the (EU) EN 60825 laser product safety standard: Class 1 Lasers (in compliance with human-eye safety standards).

The LED and infrared fill lights, which have respectively passed the EN 62471 photobiological safety certification, are safe light sources.

### “Invisible Light” Scanning

Infrared VCSEL structured light and infrared parallel laser are both invisible lights. Invisible light brings more friendly and comfortable scanning experiences than those of visible light.

### Intelligent and Independent-control Fill Light

These two fill lights can be controlled individually. When 3D scanning to capture monochrome 3D models, users can turn off the LED fill light to achieve “invisible light scanning” and enjoy eye-safe and comfortable 3D scanning experiences.

# Infrared Parallel Laser for CAD/3D Printing

## High-quality Data Capturing

iReal M3 features a basic accuracy of up to 0.1 mm, and a volumetric accuracy of up to 0.25 mm/m. It can meet needs of capturing 3D data in various scenes.

## Extremely High Resolution

With a resolution of up to 0.1 mm, iReal M3 can reconstruct high-resolution geometric structures and capture fine details of edges, easily handling scanning tasks for objects over 5cm.

## Better Material Adaptability

It is capable of 3D scanning industrial parts, automotive exteriors and interiors with black and reflective surfaces. No spray is needed for 3D scanning.

## Adapt to Different Colors

Compared to colored lasers, infrared light sources (invisible light) are absorbed relatively less when projected onto the surface of different colors. Thus, the New iReal M3, paired with infrared light, can bring smoother and more comfortable scanning experiences.

## High Efficiency

iReal M3's scanning rate is as high as 60 fps, which greatly improves scanning efficiency so that engineers can get high-quality 3D data quickly.

# Infrared VCSEL Structured-Light for Human Body Scanning, Art and Design

## Algorithmic Optimization on Human Body Scanning

- Invisible light scanning
- Hair scanning
- Automatically remove displacements caused by small movement of the scanned person
- Scanning in dark environments

## Hybrid Alignment Modes

When objects have inadequate geometric or textural features, we can use hybrid alignment mode (marker and feature alignments). Just stick several markers on featureless parts and you can align scans smoothly.

## Smoother, Easy to Use

Large Scanning Area: Large field of view (FOV), up to 580 mm x 550 mm, allows for fast and accurate scanning of medium to large-sized items.
Deep Depth of Field: 720-mm scanning depth of field and better operation smoothness help you get started easily.

## Without Markers

When objects are full of continuous, non-repetitive, and richly varied geometric/textural features, you can scan them directly with geometry and feature alignment mode. The marker-free 3D scanning and one-button start improve on-site working efficiency.

## Adaptability on Dark and Light Colors

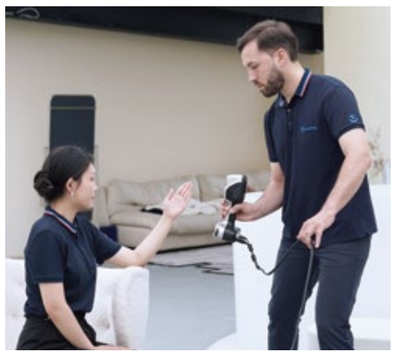
iReal M3 is optimized to scan objects with high color contrasts thanks to its unique decoding algorithm of structured-light. With its high adaptability to different colors, the software will automatically make the overall exposure as correct as possible when 3D scanning objects with dark and light colors. It is perfect for users to embrace simple and smooth 3D scanning.

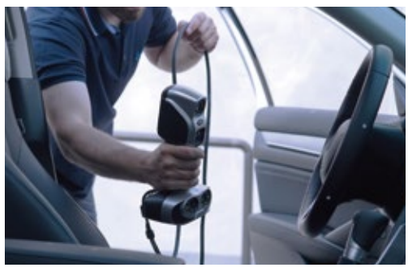
# Various Application

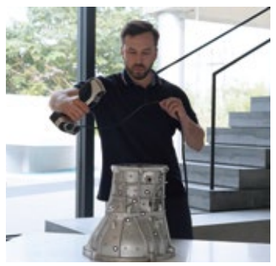
iReal M3 features infrared laser and structured-light modes, which enable smooth 3D data acquisition in different applications, be it scanning humans or objects, inside or outside. iReal M brings professional and highly cost-effective 3D digitization solutions to fulfill demands of industrial design, art design, medical design, human body digitization, etc.

**Human Body Scanning**

Medical rehabilitation (spinal orthopedics, prosthetics, orthopedic helmets, personalized surgical guides, etc.
Customization and re-creation of artistic portraits (3D printing portraits, body art, etc.);
Customization (clothing customization, film and television armor customization, mask customization, etc.)
Movie/game/VR, AR and other CG character modeling, etc.





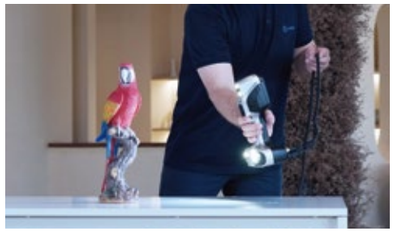


**Industrial Design and Engineering Design**

Reverse engineering, CAD mechanical design, product customization, automobile modification, 3D printing, MRO (maintenance, repair, operation), etc.

**Art and Design**

3D digital archiving, redesign, reprocessing of carvings (wood carving, stone carving, foam sculpture, clay sculpture, furniture, etc.), 3D digital display, archiving and restoration of cultural relics, cultural and creative design, footwear and clothing design, creative design and derivative product development, etc.



**Education and Research**

Teaching and training (reverse engineering, CAD mechanical design, 3D printing design, 3D maker innovation education, etc.), scientific research, etc.

**3D Measurement and Analysis**

Non-contact measurements (3D surface area, volume, deformation analysis, etc.). For example, plant growth morphology analysis (trunks and potted plants), forensic identification (human trauma area, footprint identification), medical diagnosis (spine correction screening), etc.



# 3D Solutions

iReal 3D has been committed to providing users with more professional and comprehensive 3D digital solutions to meet the different needs of various subdivided industries. There are relatively complete third-party commercial software supporting solutions in three main applications: high-precision, real-color 3D data acquisition, reverse engineering design, and 3D measurement analysis.

**High-precision, Real-color 3D Data Acquisition**

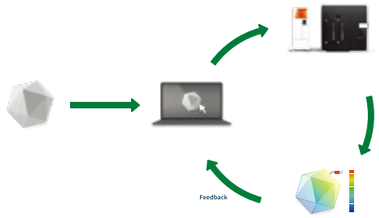
Complementary Software: iReal 3D Mapping

It is an independent 3D smart software specially developed by Scantech for 3D scanners. It will map the multi-angle photos taken by mobile phones/SLRs to the 3D scanning model through an intelligent and semi-automatic process to obtain a high-precision, high-definition, real-color 3D model. It is mainly used in high-definition color 3D archiving and 3D display, 3D digitalization of cultural relics/collections, analysis and detection of important samples on site (such as workpiece damage records, 3D records of vehicle damage and damage assessment, digital management of forensic evidence), creation of 3D databases for scientific research and teaching specimens (such as the establishment of medicinal material specimen libraries, Paleontological specimen database, etc.), VR e-commerce (such as 3D display of shoes), game digital asset production and other extended applications (3D texture expansion, etc.).

**Reverse Engineering Design**

Complementary Software: **Geomagic Design X, QUICKSURFACE, Mesh2Surface add-in**

Users can choose the appropriate reverse engineering software (commercial version), which combines history-based CAD and 3D scanning data (ASC 3D point cloud/STL triangle mesh) processing to reverse engineer physical parts and convert them into digital parametric CAD Models for redesign/production machining.




**3D Measurement, Inspection and Analysis**

Complementary Software: **GOM Inspect, GOM Inspect Pro, Geomagic Control X**

Users can choose supporting professional 3D measurement and analysis software to evaluate scanned data in more detail. For example, they can compare the scanned data with CAD data to create intuitive color maps, inspect and analyze, and generate analysis reports that include, images, tables, text, and more. Various detection items can also be measured, such as dimensions of specified features, volume, 3D surface area, lowest point measurement, thickness measurement, 2D section circumference, or section deviation, center distance, center distance, profile, flatness, etc. With rich and powerful functions, it can meet the daily needs of 3D measurement analysis/3D detection.