

SHINING 3D  
METROLOGY

# OptimScan Q12 HD

High-Precision 3D Inspection Scanner



Accuracy  
0.004 mm



Minimum Point Distance  
0.02 mm



Two Scan  
Ranges



Monocular-Stereo Fusion  
(MSF)



Single Shot  
< 1 s



## Micron-Level Accuracy with Certified Metrology Confidence

OptimScan Q12 HD pushes beyond the performance limits of fringe projection optical scanning systems, delivering a new level of accuracy and fine-detail capture within its class.

With four high-resolution cameras and extreme high accuracy of 0.004 mm, the system excels at capturing minute features and complex surfaces with exceptional clarity, ensuring highly faithful 3D digitization of intricate geometries.

The system accuracy is rigorously validated according to international standards. All verification tests are conducted in an ISO/IEC 17025-accredited laboratory, guaranteeing full traceability and uncompromising confidence in every measurement result.



\*High-Pressure Turbine Blade



## Effortless Scan Range Switching

OptimScan Q12 HD features two scan ranges that can be switched with a single click, eliminating manual adjustment of aperture and focal length. Scanned data from different ranges can be seamlessly fused in the software, ensuring both efficiency and detail.



Large Range  
220 x 150 mm



Small Range  
80 x 50 mm



1.03 mm



## Flexible Operation Modes

OptimScan Q12 HD adapts to your scanning needs with three flexible operation modes.

- **Manual:** OptimScan Q12 HD is compact and easy to carry, giving operators full control and flexibility.
- **Semi-Automated:** Combine a fixed tripod with an automatic turntable supporting up to 20 kg for enhanced efficiency and repeatability.
- **Fully Automated:** Seamlessly integrates with industrial robots for precise, repetitive inspection tasks, making it perfect for series measurement tasks.

• Manual



• Semi-automated



• Fully Automated



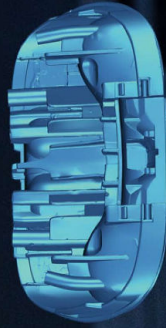


### Monocular-Stereo Fusion (MSF)

The monocular-stereo fusion function can effectively increase data coverage and improve the integrity of the scanned data, such as the common turning corners and joints of industrial parts.



Earbud case front data



Earbud case back data



### Dual-Axis Turntable (Optional)

An optional automatic dual-axis turntable supports up to 3 kg, enabling multi-angle automated scanning with a single click, significantly enhancing data acquisition efficiency.

With an intelligent supplementary scanning algorithm, the system automatically plans additional scan paths to capture any missing data, ensuring complete and efficient 3D data acquisition of your objects. Equipped with a dual-chip computing platform, each capture takes less than 1 second.

[Learn More](#)

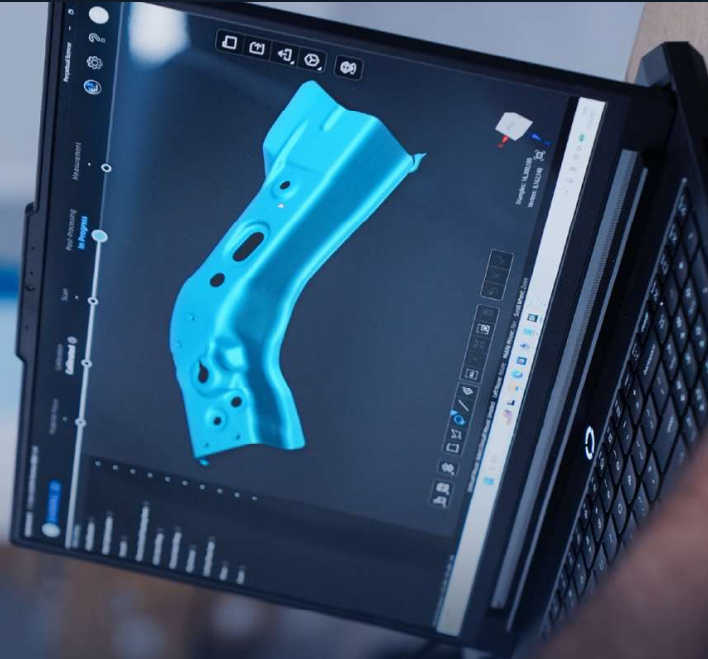




## OptimScan Software Enhancements

The OptimScan Q12 HD comes with powerful, continuously updated software. Scan as much as you want, all year round, with no hidden fees or additional costs.

- Scanning Template
- Vibration Detection
- Temperature Control
- Background Cutting



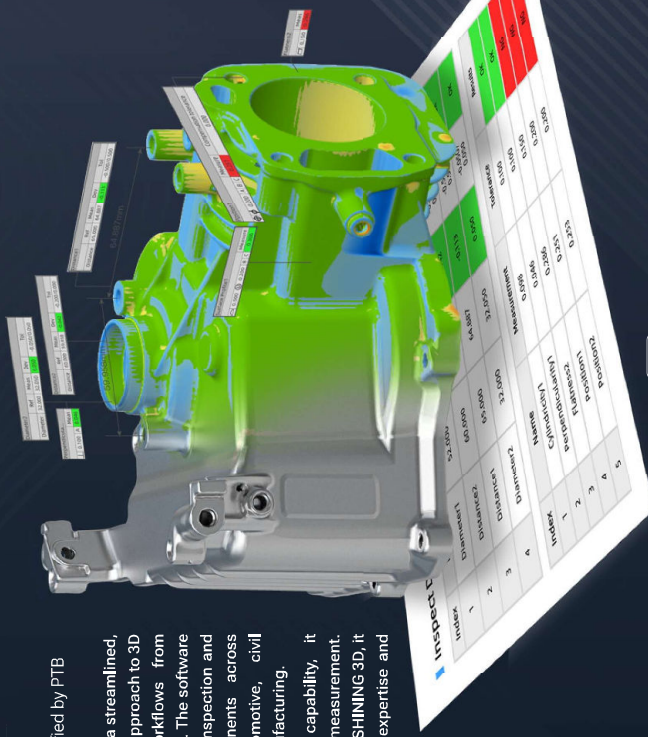
## SHINING3D Inspect (Optional)

3D Inspection Module Certified by PTB

SHINING3D Inspect delivers a streamlined, modular, and customizable approach to 3D inspection, simplifying workflows from data acquisition to reporting. The software is suitable for dimensional inspection and quality control of components across industries such as automotive, civil aviation, and precision manufacturing.

Backed by PTB-certified capability, it ensures traceability in every measurement. Independently developed by SHINING 3D, it represents strong in-house expertise and continuous innovation.

[Learn More](#)



Streamlined Workflow with Integrated Hardware and Software



Visualized Inspection Results with Customizable Reports



Industry-Specific Module Inspection



Advanced Dimension Functions



## Automated Inspection Solution

OptimScan Q12 HD can seamlessly integrate with intelligent 3D inspection system, enabling fully automated workflow from scanning to report generation.

[Learn More](#)

## Workflow



Path  
Teaching



Automated  
3D Measurement



Automated  
3D Inspection

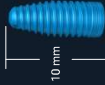


Automated  
Report Generation

## Data Display



59.5 mm

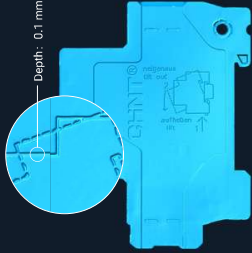
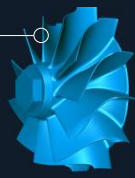


10 mm

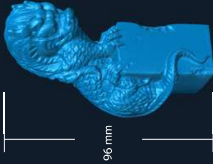


30.9 mm

Edge thickness: 1.1 mm



Depth: 0.1 mm



96 mm



25.8 mm

## Applications



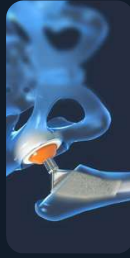
Civil Aviation



3C Electronics



Automotive Electronics



Medical Devices



Precision Injection Molding



Cultural Heritage

# SPECIFICATIONS

| OptimScan Q12 HD            |                                                                                    |             | OptimScan Q9 HD |             |
|-----------------------------|------------------------------------------------------------------------------------|-------------|-----------------|-------------|
| Scan range                  | Large range                                                                        | Small range | Large range     | Small range |
| FOV                         | 220 × 150 mm                                                                       | 80 × 50 mm  | 220 × 150 mm    | 80 × 50 mm  |
| Accuracy                    | 0.01 mm                                                                            | 0.004 mm    | 0.01 mm         | 0.004 mm    |
| Point distance              | 0.054 mm                                                                           | 0.02 mm     | 0.06 mm         | 0.03 mm     |
| Working distance            | 600 mm                                                                             | 200 mm      | 600 mm          | 200 mm      |
| Depth of field              | 120 mm                                                                             | 30 mm       | 120 mm          | 30 mm       |
| Resolution                  | 4 × 12.3MP                                                                         |             | 4 × 9MP         |             |
| Light source                | Blue LED                                                                           |             |                 |             |
| Weight                      | 3.6 kg                                                                             |             |                 |             |
| Dimensions                  | 366 × 162 × 132 mm                                                                 |             |                 |             |
| Data cable length           | 5 m                                                                                |             |                 |             |
| Operating Temperature Range | 0 ~ 40°C                                                                           |             |                 |             |
| Operating Humidity Range    | 10 ~ 90%                                                                           |             |                 |             |
| Certifications              | CE, FCC, ROHS, WEEE, KC, FDA, UKCA, IP50, TELEC, TiSAX                             |             |                 |             |
| Acceptance test             | VDI/VDE 2634 Part 2 & ISO 10360 (certified in ISO 17025 certificated accuracy lab) |             |                 |             |

## SHINING 3D Tech Co., Ltd.

- Hangzhou, China  
P: 400-0799-666  
No. 1398, Xiangbin Road, Wenyan,  
Xiaoshan, Hangzhou, Zhejiang,  
China, 311258

## SHINING 3D (HK) COMPANY LIMITED.

- Hong Kong, China  
P: 00852-23348468/23348568  
Room 303A, 3/F, Tower 2, Enterprise Square Phase 1,9  
Sheung Yue Road, Kowloon Bay, Kowloon, Hong Kong

## SHINING 3D Technology Japan Inc.

- Tokyo, Japan  
Tradepia Odaiba, 2-3-1 Daiba, Minato-ku, Tokyo

## SHINING 3D Technology GmbH.

- Stuttgart, Germany  
P: +49-711-28444089  
Breitwiesenstraße 28, 70565, Stuttgart, Germany

## SHINING 3D Technology Inc.

- California, USA  
P: +1415-259-4787  
2450 Alvarado St, Unit 7, San Leandro, CA 94577
- Florida, USA  
2807 W Busch Blvd, Suite 200, Tampa, FL 33618



Facebook



Instagram



LinkedIn



YouTube

**SHINING 3D**  
METROLOGY

[www.shining3d.com](http://www.shining3d.com)

[sales@shining3d.com](mailto:sales@shining3d.com)

OptimScan Q12 HD-EN 20260507-V1.0