BLUE LIGHT STRUCTURED LIGHT SCANNER

OptimScan Q12

High-Precision 3D Inspection Scanner

A blue LED structured light scanner built for inspection. Four 12.3 MP cameras and two scan ranges, switched with one click, reach 0.005 mm accuracy on fine features. Use it by hand, on a turntable, or on a robot for fully automated inspection.



0.005 mm	4 × 12.3 MP	< 1 s
ACCURACY (SMALL RANGE)	CAMERAS	PER SHOT

- 4 × 12.3 MP Cameras
- Dual Scan Range
- Monocular-Stereo Fusion (MSF)
- Multiple Exposure
- Single Shot < 1 s



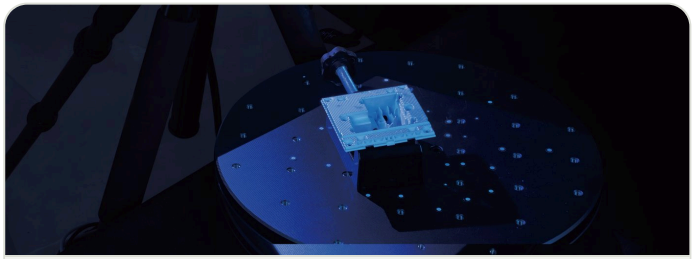
Manual scanning of a cast aluminum part. The operator aims the Q12 by its handle on a tripod head while the four cameras capture the surface.

Reliable High Performance

Four 12.3 megapixel cameras capture fine geometric detail on the part surface. Paired with strong on-board hardware and SHINING 3D's 3D reconstruction algorithms, the Q12 reaches up to 0.005 mm accuracy with stable repeatability, scan after scan.



The Q12 set over a turntable for a small part. One click moves it between the large and small scan range, with no lens or aperture changes.



Blue light projected onto a small part with inside corners. MSF fills the corners and joints that a stereo pair alone would miss.

Dual Scan Range, Easy to Operate

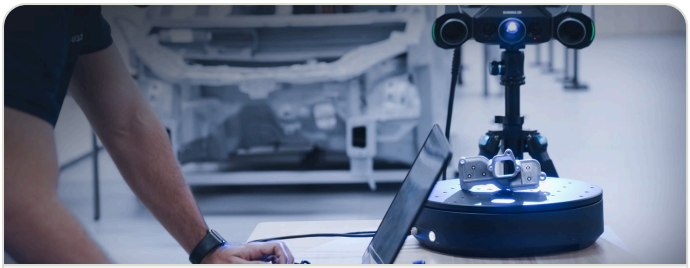
Switch between two scan ranges with a single click. There is no manual aperture or focus adjustment, and data from both ranges fuses in the software.

Large range: 430 × 300 mm field for whole parts.

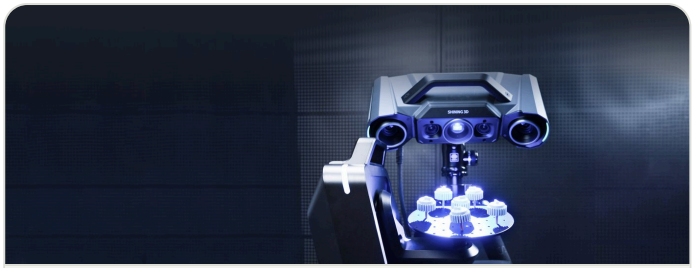
Small range: 160 × 110 mm field for fine features.

Monocular-Stereo Fusion (MSF)

MSF combines single-camera and stereo data. It increases coverage and completes the scan in the places industrial parts usually leave holes, such as inside corners and joints.



One operator at the laptop runs the scan of a cast bracket. Each shot takes under a second, and auto exposure handles the mixed surface.



The Q12 on the automatic dual-axis turntable with a fixture of small parts. The table tilts and rotates so every side gets scanned in one run.

Multiple Exposure, Faster Scanning

A built-in dual-chip computing module speeds up image capture and processing. Each shot takes less than 1 second and captures 12 million points. Multiple exposure modes, including intelligent auto exposure, cut scan time across different surfaces.

Automatic Dual-Axis Turntable

The dual-axis turntable runs multi-angle scans from one click in the scanning software. Intelligent add-scan planning finds missing data and plans extra passes to fill it.

Automated, simple operation. One click starts the full sequence.

Complete data. Add-scan paths fill the gaps.

Versatile and Highly Adaptable

The Q12 is compact and easy to carry. Scan by hand, add a fixed tripod and an automatic turntable with up to 20 kg load for repeatable batch work, or mount it on a robot for precise, repetitive inspection.



Manual: the operator positions the Q12 by hand for flexible, one-off parts.



Semi-automated: fixed tripod plus automatic turntable for consistent batch scanning.



Automated: the Q12 on a robot arm for repeatable inspection without an operator.



A SHINING 3D automated inspection cell: the Q12 on a robot arm beside a part fixture, running from path setup to report without an operator.

Automated Inspection Solution

The Q12 plugs into SHINING 3D's intelligent 3D inspection system for a fully automated workflow from scanning to report.

Robot path setup. Teach the scan path once.

Automated 3D scanning. The robot runs every part the same way.

Full-field inspection. Scan data is compared against CAD.

Customized report output. Results go straight to your report format.

Certified Accuracy: ISO/IEC 17025 Laboratory

The accuracy on this page is a tested number. Every Q12 is verified in the SHINING 3D Accuracy Laboratory, accredited to ISO/IEC 17025, against VDI/VDE 2634 Part 2 and ISO 10360 before it ships, with results traceable to international standards. That is the record your quality manager, and your customer's auditor, will ask to see.



Large-volume hall: reference scale bars set the traceable length standard for accuracy tests.



Long-range rail: working distance and depth of field verified along a calibrated track.



Calibration benches: systems are verified to VDI/VDE 2634 and ISO 10360 before sign-off.

Proven Across Industries

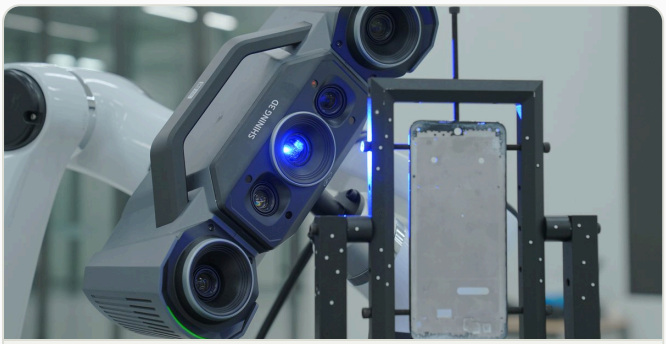
Where the Q12 is used today: machined and die-cast parts checked for GD&T, parts inspected in robot cells, and fine detail that has to be captured without touching the object.



Component GD&T: an aluminum transmission housing scanned for flatness, position and CAD comparison.



Die-cast parts: an engineer sets a thin-walled cast frame in front of the Q12 to capture its fine ribs and holes.



Automated in-line inspection: a robot presents the Q12 to a phone frame held in a fixture.



Cultural heritage: oracle bone inscriptions digitized with the Q12, capturing carved detail without touching the object.

Specifications

Specification	OptimScan Q12 · Large range	OptimScan Q12 · Small range
FOV	430 × 300 mm	160 × 110 mm
Accuracy	0.015 mm	0.005 mm
Point distance	0.1 mm	0.04 mm
Working distance	590 mm	210 mm
Depth of field	300 mm	60 mm
Resolution	4 × 12.3 MP	
Light source	Blue LED	
Weight	3.5 kg	
Dimensions	366 × 162 × 132 mm	
Data cable length	5 m	
Operating temperature	0 – 40 °C	
Operating humidity	10 – 90%	
Certifications	CE, FCC, RoHS, WEEE, KC, FDA, UKCA, IP50, TELEC, TiSAX	
Acceptance test	VDI/VDE 2634 Part 2 & ISO 10360 certified (ISO/IEC 17025 accredited lab)	

VDI/VDE 2634 PART 2 · ISO 10360 · ISO/IEC 17025 ACCREDITED LAB · IP50

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