SHINING 3D®

EinScan® HX

Hybrid Blue Laser & LED Light Source
Handheld 3D Scanner

EinScan HX

SHINING 3D

Based on years of 3D measurement experience and market demand, SHINING 3D innovatively integrates blue LED light and blue laser into EinScan HX handheld 3D scanner. The hybrid laser and LED light sources make EinScan HX compatible with a wider range of object sizes, meeting multiple needs of users. High efficiency and reliable result give EinScan HX more application possibilities.
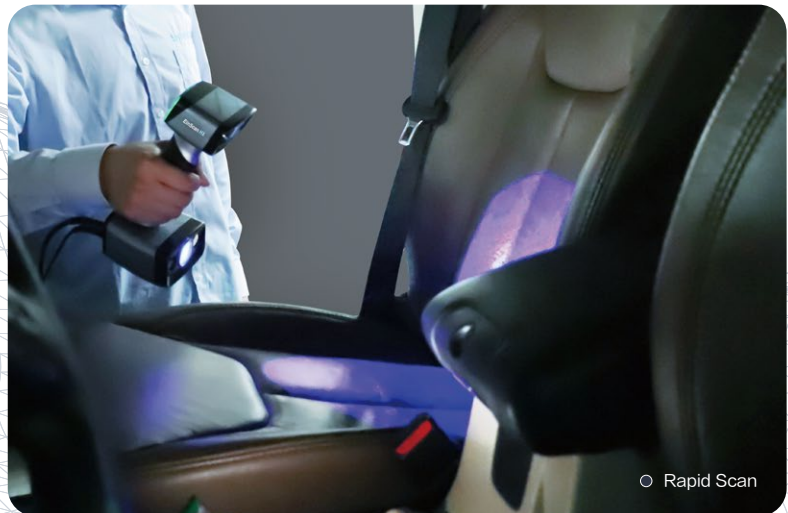

○ Laser Scan

○ Rapid Scan

Hybrid Blue Laser & LED Light

Innovatively integrated with dual blue LED light and blue laser, improves scanning materials adaptability with less limitation for a wider range of applications.
LED light scanning allows rapid 3D scanning.
Laser scanning, which is less sensitive to ambient light, gives better performance to reflective and dark color surface.

High Efficiency

Processing speed of EinScan HX under Rapid Scan Mode is up to 1,200,000 points/s, and multiple blue laser lines under Laser Scan Mode makes scanning of most objects in minutes for reverse engineering, CAD/CAM, 3D printing and etc.
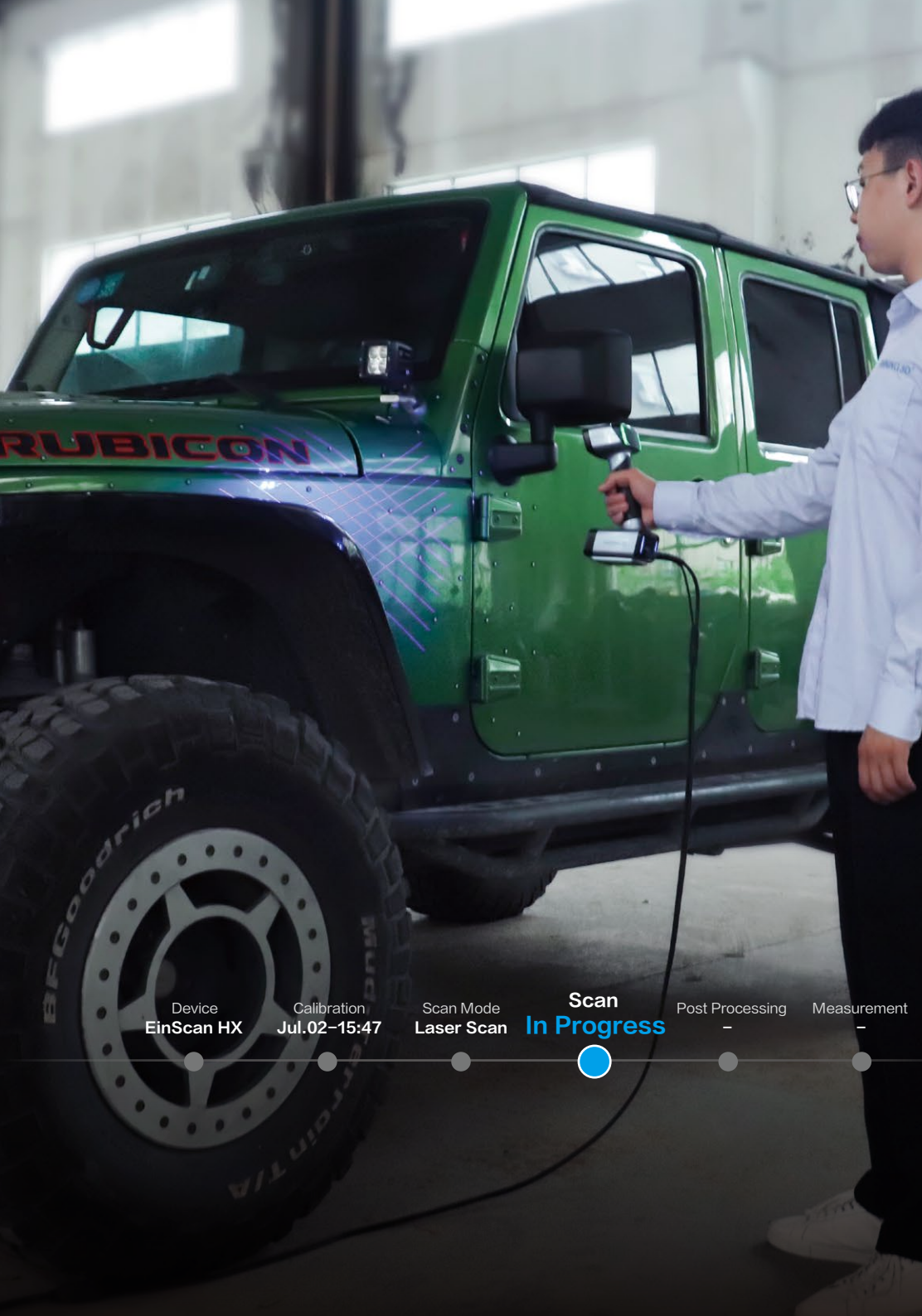
0.04mm

Reliable Results

The high resolution and accuracy meet the needs of most industrial application for reverse engineering and measuring.
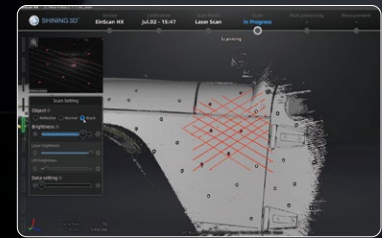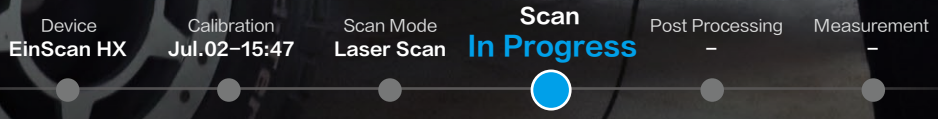
Minimum point distance of **0.05**mm; accuracy up to **0.04**mm under laser mode

Portable & Easy Operation

EinScan HX is plug and play with user friendly software, which is easy to operate, no matter you are newbie or with professional experience in 3D scanning. The portability and flexibility use of EinScan HX has been considered to its ergonomic design for a more efficient and comfortable scanning experience.

Device	Calibration	Scan Mode	Scan	Post Processing	Measurement
EinScan HX	Jul.02−15:47	Laser Scan	In Progress	–	–

Full Color

With built-in color camera, it supports full color texture capturing and tracking by texture.

APPLICATIONS

Automotive

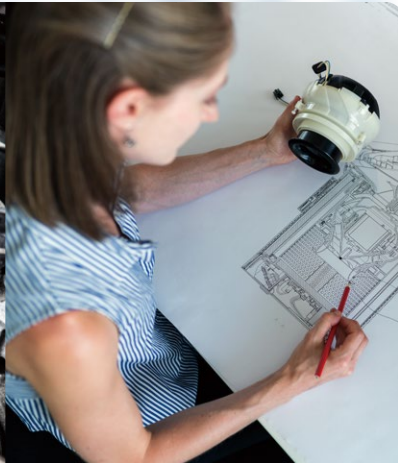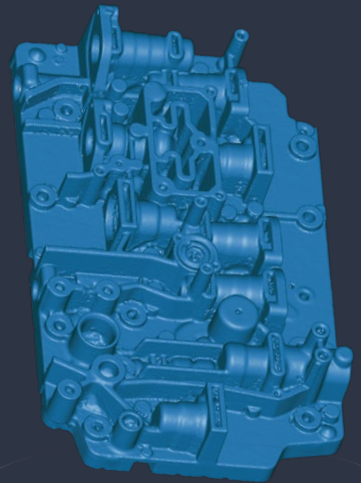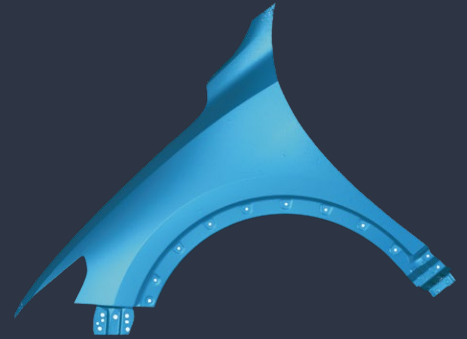**Shipbuilding**
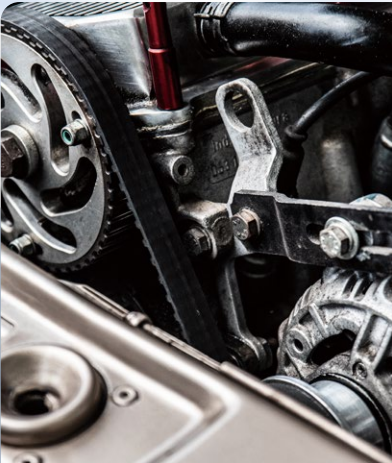
Machining

Education and Research

TECHNICAL SPECIFICATIONS
EinScan HX

Scan Mode	Rapid Scan	Laser Scan
Scan Accuracy	Up to 0.05mm	Up to 0.04mm
Volumetric Accuracy*	0.05+0.1mm/m	0.04+0.06mm/m
Scan Speed	1,200,000 points/s 20FPS	480,000 points/s 55FPS
Camera Frame Rate	55FPS	55FPS
Align Mode	Feature Alignment, Markers Alignment, Texture Alignment, Hybrid Alignment	Markers Alignment
Working Distance	470mm	470mm
Depth of Field	200mm–700mm	350mm–610mm
Max FOV	420mm*440mm	380mm*400mm
Point Distance	0.25mm – 3mm	0.05mm–3mm
Light Source	Blue LED	7 Blue Laser Crosses
Safety	Eye–safe	Class I（Eye–safe）
Built–in Color Camera	Yes	
Texture Scan	Yes	No
Connection Standard	USB3.0	
Output Formats	OBJ; STL; ASC; PLY; P3 ; 3MF	
Dimensions	108mmx110mmx237mm	
Weight	710g	
Certifications	CE，FCC，ROHS，WEEE，KC	
Recommended Configuration	OS：Win10，64 bit；Graphics card：NVIDIA GTX1080 and higher；Video memory：≥4G；Processor：I7-8700；Memory：≥32GB	

* Volumetric accuracy refers to the relationship between 3D data accuracy and object size; the accuracy is reduced by 0.1mm（rapid scan)/0.06mm(laser scan) per 100cm.The conclusion is obtained by measuring the center of sphere under marker alignment.

EinScan Pro HD

HIGH DEFINITION, MULTI-FUNCTIONAL HANDHELD 3D SCANNER

Improves the Efficiency of High-quality 3D Modeling

· Impressive high resolution for fine details

· Handle dark or casting metal surface with less limitations

· Fast scan speed for high efficiency

EinScan Pro HD

Inherited multi-functional and modular design of EinScan Pro series handheld 3D scanner, EinScan Pro HD delivers unparalleled performance in capturing high resolution and accuracy by handheld scanning. Exceptional versatility and powerful optimizations come together for the ultimate high-efficiency and professional-grade 3D scanning experience. It is reliable assistant for designers and engineers who care about high quality 3D modeling.

32cm

Handheld HD Scan Mode

Impressive High Resolution for Fine Details

By adopting a new structure light projection modular, the stripe pattern scanning which was traditionally used in Fixed Scan Mode is now utilized to Handheld HD Scan Mode. By 0.2mm minimum point distance setting with optimized algorithm, it brings high resolution and accuracy in handheld scanning as good as under fixed scan.
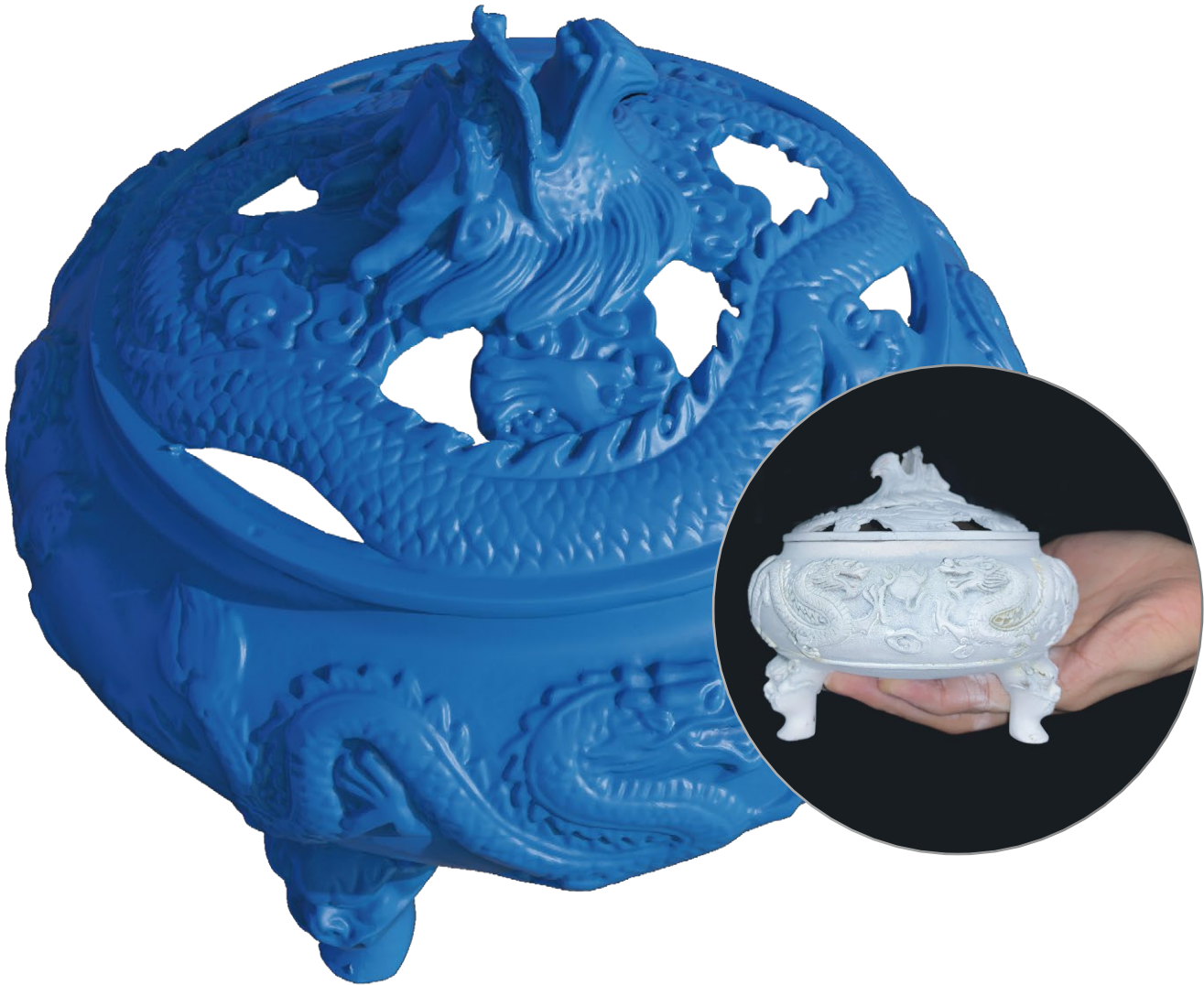
Modular Design for a Wide Range of Applications by Multi Scan Modes and Data Alignments

Modular designed Color Pack, Industrial Pack as optional add-ons to EinScan Pro HD extend your scanning experience for more applications. Multiple positioning methods, including feature alignment, marker alignment, turntable coded targets alignment, manual alignment and texture alignment (with Color Pack) , greatly enhance the scanning efficiency without additional preparation.

*Optional Add-on
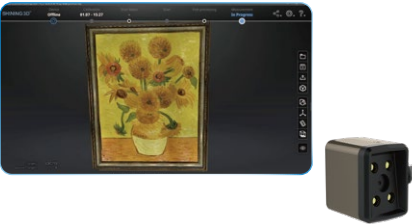
Color Pack

Gets the full-color texture with geometry.
Improves scanning efficiency through texture alignment.

Industrial Pack

Makes a static automatic scan on a turntable possible for a better accuracy.

Less Limitations of Scan Objects

With new lighting projection hardware and software algorithm, EinScan Pro HD is capable to scan a wider range of objects of dark or black color and casting metal surface, enriching the capability for 3D scanning of materials.

220cm

71cm

Scanning Time < 1 min
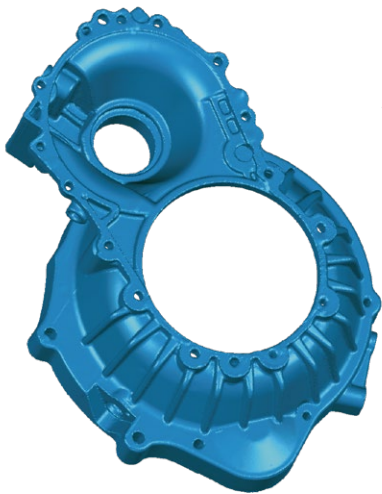
Fast Scanning Speed and Data Transmission

EinScan Pro HD has a dramatic breakthrough in scanning capability, processing up to 3,000,000 points per second under handheld scan mode, and less than 0.5s for every single frame in Fixed Scan Mode. USB 3.0 provides high speed data transmission.

High Accuracy for High Quality 3D Modeling

By kinds of positioning methods, both scanner or objects can be moved during scanning. It delivers accuracy up to 0.04 mm in Fixed Scan Mode. Under handheld scanning mode by marker alignment, the volumetric accuracy is up to 0.045mm+0.3mm/m.

Take the Portable EinScan Pro HD Anywhere You Go

Ergonomic designed EinScan Pro HD with a light weight, you can easily take the scanner anywhere you go; easy plug-and-play lets you run the scanner without complex installation; the compact size allows scanner to move freely with unlimited scanning experience.

Software : ExScan Pro & Solid Edge SHINING 3D Edition

ExScan Pro: Developed by SHINING 3D, ExScan Pro is a professional software for 3D scanning and data processing with a collection of both scan and mesh editing tools for generating high-quality 3D models. Either novice or experienced users can easily scan for high quality 3D data. ExScan Pro software and upgrade are free to all users.

· **Clear work guide process**   · **User friendly interface**

· **Data post processing: simplification, hole filling, smooth, sharpen, delete, etc**

· **Data measuring: Coordinate adjustment, feature creation, and measurement**

· **High compatibility**

Output file formats include STL, OBJ, PLY, ASC, 3MF and P3(global markers file). Compatible with most mainstream 3D design softwares in the market. By saving watertight models, seamlessly connect to 3D printers for 3D printing.

Solid Edge SHINING 3D Edition: EinScan Pro HD, including Solid Edge SHINING 3D Edition with the mainstream 3D CAD design functions, brings a convenient and powerful 3D design tool to help achieve your creative ideas.

Complete Reverse Engineering Solution
— EinScan RED Bundle

SHINING 3D EinScan series 3D scanners, integrated with Geomagic Essentials and Solid Edge SHINING 3D Edition, combined with 3D printer, provide users the solution covering "3D Digitize — Design & Simulate — Additive Manufacture" to generate more high-quality 3D data for production.

Solid Edge
SHINING 3D Edition

Geomagic® Essentials™

VERSATILE APPLICATIONS

For Higher Efficiency & Quality
· Manufacturing & Reverse Engineering
· 3D Modeling for Customized Product and Service via 3D Printing

For A Healthier Life
· Digital Medical Analysis
· Orthotics & Prosthetics

For Unlimited Inspiration
· Art & Heritage
· Design

For Creative Imagination
· Virtual Display

For More Shining Ideas, Explore Unlimited Applications…
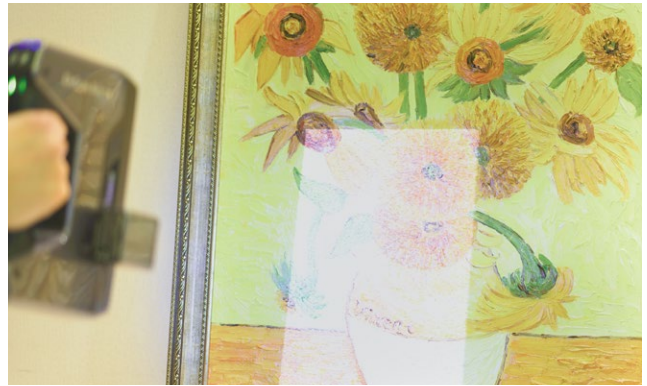
TECHNICAL SPECIFICATIONS

EinScan Pro HD [Including Solid Edge SHINING 3D Edition]

Scan Mode	Handheld HD Scan	Handheld Rapid Scan	Fixed Scan with Turntable (with Add-on: Industrial Pack)	Fixed Scan without Turntable (with Add-on: Industrial Pack)
Scan Accuracy	up to 0.045 mm	up to 0.1 mm	0.04 mm (Single Shot Accuracy)	
Volume Accuracy[1]	0.3 mm/m (Markers Alignment)	0.3 mm/m (Markers Alignment)	/	/
Scan Speed	10 frames/s 3,000,000 points/s	30 frames/s 1,500,000 points/s	Single Scan<0.5 s	
Point Distance	0.2 mm-3 mm	0.25 mm-3 mm	0.24 mm	
Single Scan Range	209*160mm-310*240mm			
DOF	±100 mm			
Working Center Distance	510 mm			
Light Source	LED			
Align Mode	Marker Alignment, Feature Alignment [2], Hybrid Alignment [3]	Marker Alignment, Texture Alignment [4], Feature Alignment, Hybrid Alignment	Turntable Coded Targets, Feature, Marker, Manual Alignment	Marker, Feature, Manual Alignment
Texture Scan	Yes (with Add-on: Color Pack)			
Outdoor Operation	Set up the shelter or cover to avoid direct sunlight			
Special Scan Object	For the transparent or highly reflective objects, please spray powder before scanning.			
Software Included	ExScan Pro, Solid Edge SHINING 3D Edition			
Data Format	OBJ, STL, ASC, PLY, P3, 3MF			
Scan Head Weight (include a USB cable)	1.13 kg			
OS System Support	Win10, 64bit			
Recommended Configuration	Graphics card: NVIDIA GTX1080 and higher; video memory: >4G, processor: I7-8700, memory: 64G;interface: high-speed USB 3.0			
Required Configuration	Graphics card: Quadro card P1000 and above or NVIDIA GTX660 and higher; processor: Intel (R) xeon E3-1230, Intel (R) I5-3470, Intel (R) I7-3770; interface: high-speed USB 3.0; memory: 8G			

[1]. Volumetric accuracy refers to the relationship between 3D data accuracy and object size; the accuracy is reduced by 0.3mm per 100cm.
The conclusion is obtained by measuring the center of sphere under marker alignment.
[2]. Select this alignment when scanning objects with rich geometrical features on the surface.
[3]. Hybrid alignment means marker alignment and feature alignment can be switched automatically.
[4]. This alignment needs Color Pack assisting, and requires rich color texture information on the surface of the object.

SHINING 3D reserves the right to explain any alteration of the specifications and pictures. Please refer to einscan.com to find more information.

FreeScan UE

SIMPLE HIGH
PRECISION INSPECTION

SHINING 3D®

Product Model	FreeScan UE7	FreeScan UE11
Scan Mode	Multiple Lines Scan, Single Line Scan	
Scan Accuracy	Up to 0.02mm	
Volumetric Accuracy	0.02 mm+0.04 mm/m	
Volumetric Accuracy with DigiMetric*	0.02 mm + 0.025 mm/m	
Scan Speed	650,000 points/s	1,020,000 points/s
Working Distance	500mm	
Scan Depth (Depth of Field)	300mm-700mm	
Max. Scan Range	510mm x 520mm	
Point Distance	0.05mm-3mm	
Light Source	14 lines+1 line blue laser	22 lines +1 line blue laser
Laser Class	Class 2M (eye safe)	
Connection Standard	USB 3.0	
Dimensions	298mm x 90mm x 74.5mm	
Weight	670g	
Powering	DC: 12V, 5.0A	
Operating Temperature Range	0 °C-40 °C	
Operating Humidity Range	10%-90%	
Certifications	CE, FCC, ROHS, WEEE	
Inspection Module	Compatible with multiple inspection software solutions such as EINSENSE Q, Geomagic Control X/Control X Essentials, Polyworks, Catia etc.	
Output Formats	OBJ ; STL ; ASC ; PLY ; P3 ; 3MF	
Data Compatibility Software	3D System (Geomagic Solutions), InnovMetric Software (PolyWorks), Dassault Systemes (CATIA V5 & SolidWorks), PTC (Pro/ENGINEER), Siemens (NX & Solid Edge), Autodesk (Inventor, Alias, 3ds Max, Maya, Softimage) etc.	
Recommended Computer Configuration	OS: Win10, 64 bit; Graphics Card: NVIDIA GTX/RTX series cards, higher or equal to GTX 1080; GPU Memory: ≥4G; Processor: I7-8700; Memory: ≥32GB	

Volumetric accuracy is the relationship between the accuracy of the 3D data and the size of the object, with a reduction in accuracy of 0.04 mm per 100 cm⬚a reduction in accuracy of 0.025 mm per 100 cm with DigiMetric.The standard above is determined by measuring the sphere centre distance by splicing the marker points.

VERSATILE AND USER FRIENDLY

PORTABLE AND LIGHTWEIGHTED

The device weights only 670g, facilitating handheld scanning and avoiding fatigue due to long working time.

SEAMLESS DOCKING TO INSPECTION SOFTWARE

The scan data can be imported into inspection softwares like Geomagic Control X, Verisurf Inspect and Einsense Q with one click, increasing the inspection efficiency.

EASY OPERATION

User-friendly operating system with simple software setup and guidance through the whole workflow process, allowing users to master the operation at ease.

SMART AND STREAMLINED INSPECTION DEVICE

METROLOGY-CLASS HIGH PRECISION

Accuracy up to 0.02mm, Volumetric accuracy 0.02mm+0.04mm/m.

STABILITY OF REPETITIVE MEASUREMENT

When measuring the same workpiece repeatedly, FreeScan UE delivers consistent results, proving stability and reliability.

HIGH EFFICIENCY

The scan area can reach 510*520mm, providing larger field of view for a smoother and more efficient scanning experience.

WIDE RANGE OF MATERIAL ADAPTATIONS

Supporting the scan of black and reflective surfaces to accommodate a wider range of scanning applications.

SIMPLE HIGH PRECISION INSPECTION

As the blue laser handheld 3D scanner of the FreeScan series, FreeScan UE inherits the iconic features of "high precision" and "stable repeatability". At the same time ergonomic and lightweight equipment design make it easier to hold and operate, providing metrology-grade, high-precision inspection solutions for the automotive, transportation, aerospace industry, moulding inspection, energy generation, machinery manufacturing etc.
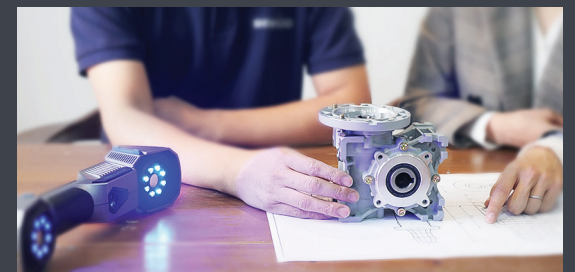
FREESCAN-UE

SHINING 3D
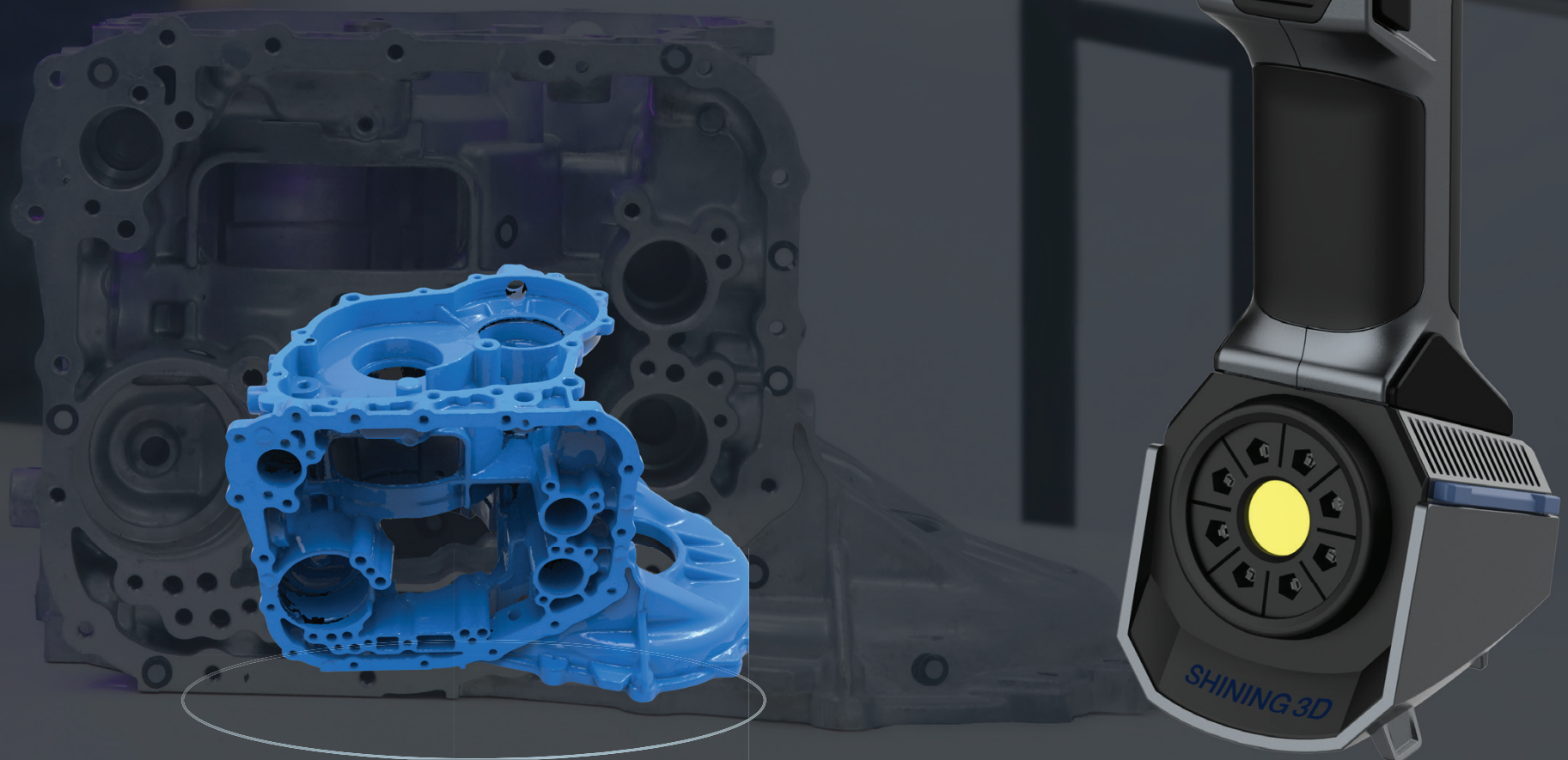
DATA PRESENTATION
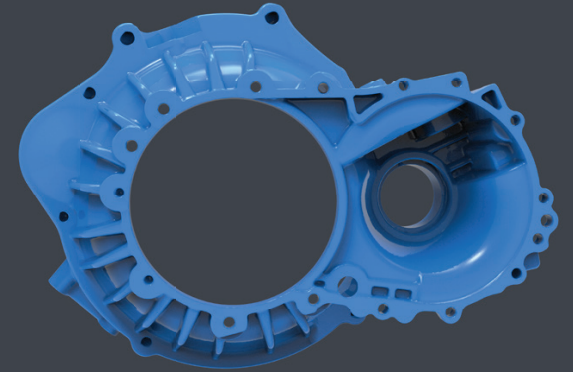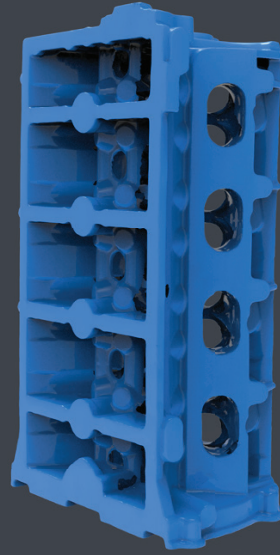
APPLICATIONS

AUTOMOTIVE INDUSTRY

TRANSPORTATION

MOULD INSPECTION

ENERGY MANUFACTURING

AEROSPACE INDUSTRY

MACHINE MANUFAC-TURING