Artec 3D

OFFICES

20 rue des Peupliers,
L-2328, **Luxembourg**

2880 Lakeside Drive, #135,
Santa Clara, CA 95054, **USA**

SHOWROOM

2880 Lakeside Drive, #135,
Santa Clara, CA 95054, **USA**

info@artec3d.com
www.artec3d.com

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Artec 3D

PROFESSIONAL 3D SCANNING SOLUTIONS

CERTIFIED Solution Partner
SOLIDWORKS

Artec 3D

MULTI-AWARD WINNING SOLUTIONS

As the 2019 Best 3D Scanning & Metrology Company (3D Printing Industry), our 3D scanners & software are user-friendly enough for beginners to pick up and use, yet powerful enough for even the most demanding of scanning pros. Whether you need to 3D scan tiny mechanical parts or a massive industrial warehouse, our full range of 3D scanning solutions has you covered.

BEST-IN-CLASS TARGET-FREE TECHNOLOGY

Based on target-free technology, all our 3D scanners and software are plug and play and require only a minimum of training.

OVER 12 YEARS ON THE MARKET

With over 12 years on the market, our award-winning professional 3D scanners are being used in 146 countries, everywhere from Australia to Zimbabwe, throughout industries such as manufacturing, reverse engineering, quality control, aerospace, healthcare, scientific research, and others.

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DIGITALLY CAPTURE OBJECTS OF ALMOST ANY SIZE

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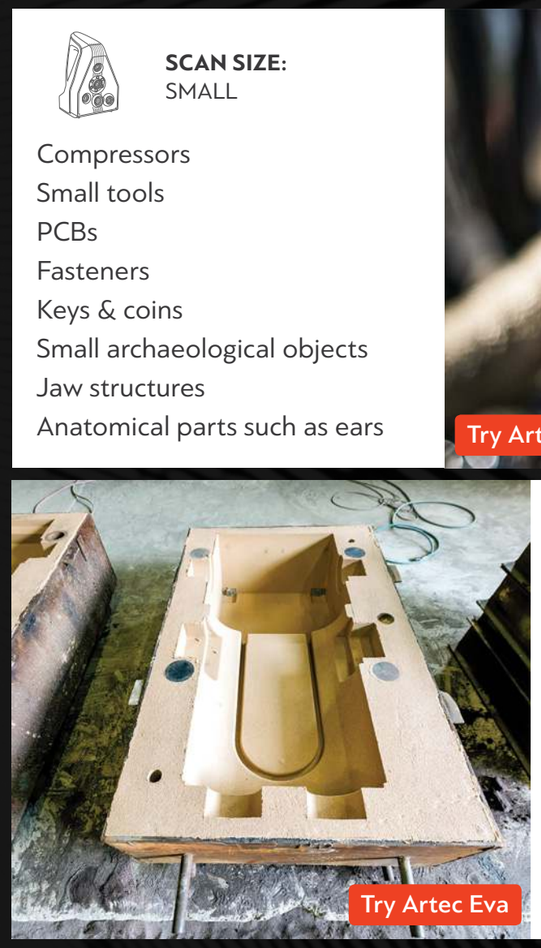
Digitally capture objects of almost any size

SCAN SIZE:
VERY SMALL

Engine valves
Connectors
Small parts
Watch gears & parts
Electronic components
Human teeth & jewelry

SCAN SIZE:
SMALL

Compressors
Small tools
PCBs
Fasteners
Keys & coins
Small archaeological objects
Jaw structures
Anatomical parts such as ears

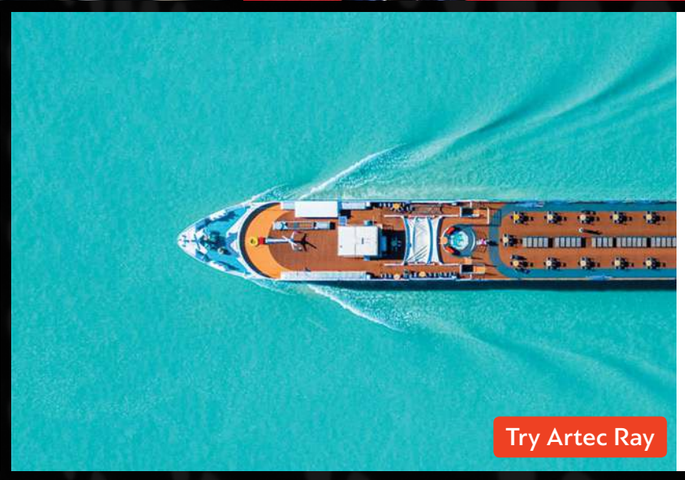


SCAN SIZE:
MEDIUM

Gearboxes
Construction equipment
Castings
Alloy wheels
The human body
Furniture
Statues

SCAN SIZE:
MEDIUM-LARGE

Auto bodies
Industrial equipment
Vehicle interiors
Ship propellers
Small boats
Human body scans
Furniture and room interiors



SCAN SIZE:
LARGE-VERY LARGE

Airplanes
Small and large vehicles
Ships
Wind turbines
Warehouses
Factory floors
Archaeological sites
Aircraft hangars

Use a combination of scanners to digitize a whole environment

Artec's scanners can easily be combined for high-accuracy and high-resolution captures of complex environments with objects of varying sizes and detail. For example, a modern airplane hangar with aircraft, service vehicles, and equipment.

SCAN SIZE:
MEDIUM-LARGE

SCAN SIZE:
SMALL

SCAN SIZE:
LARGE-VERY LARGE

Hangar architecture & overall aircraft exterior, fuselage, wings, service vehicles.

Artec Ray

Aircraft landing gear, doors, engines, flaps, interiors of plane and service vehicles.

Artec Leo

Instrument panels, circuits, hydraulics, avionics, antennas, gearboxes.

Artec Space Spider

The Artec 3D SCANNER RANGE

DESKTOP 3D SCANNING

AUTOMATED & METROLOGY-GRADE

If you're looking to 3D scan a number of small objects with the highest precision, then most likely a desktop scanner will be your best choice. You simply mount the object onto the scanning platform, and with a few mouse clicks, the scanner will start the automatic scanning process.

Artec **Micro**

Easy-to-use desktop 3D scanner with a point accuracy of up to 10 microns, Artec Micro is an ideal choice for tasks such as quality inspection, reverse engineering, product design, manufacture, jewelry and dentistry.

ACCURACY:
up to 0.01 mm

SCANNING OBJECT SIZE: VERY SMALL

€27,900

LONG-RANGE 3D SCANNING

FAST METROLOGY-GRADE CAPTURE OF LARGE OBJECTS

A long-range scanner has a very large field of view and is the ideal solution for digitally capturing large areas fast and with maximum accuracy. Tripod mounted, the scanner should be moved to different positions around the object in order to scan from multiple angles.

Artec **Ray**

A long-range laser scanner that quickly delivers submillimeter accuracy. Designed for the highest precision and clean data capture, Ray is ideal for inspection/quality control as well as reverse engineering.

ACCURACY:
up to 0.7 mm @15 m

SCANNING OBJECT SIZE: LARGE TO VERY LARGE

€50,000

HANDHELD 3D SCANNING

PORTABLE, FAST AND INTUITIVE

A professional handheld 3D scanner is portable and user-friendly, making it fast to capture objects and detailed areas from all angles and in almost any environment. Handheld 3D scanners are also the best tool for digitizing hard-to-scan areas such as black or shiny surfaces.

Artec **Space Spider**

An ultra-high-resolution 3D scanner that excels at precisely capturing small objects and complex details for reverse engineering.

ACCURACY:
up to 0.05 mm

SCANNING OBJECT SIZE: SMALL

€19,700

Artec **Eva**

Long-time industry-favourite, this versatile 3D scanner makes fast 3D scans of objects such as the human body, furniture, industrial machinery and ancient artifacts.

ACCURACY:
up to 0.1 mm

SCANNING OBJECT SIZE: MEDIUM

€13,700

Artec **Eva Lite**

Budget version of Artec Eva for capturing organic shapes. Good entry level option for healthcare, universities or schools. No color capture for tracking, align or texturing.

ACCURACY:
up to 0.1 mm

SCANNING OBJECT SIZE: MEDIUM

€6,700

Artec **Leo**

Next generation 3D scanner. Tetherless, with a built in screen and onboard processing, Leo makes professional 3D scanning as simple as taking a video on a cell phone. Powerful technology, which even captures under direct sunlight.

ACCURACY:
up to 0.1 mm

SCANNING OBJECT SIZE: MEDIUM TO LARGE

€22,700

ARTEC STUDIO.
3D SCANNING AND DATA PROCESSING SOFTWARE

Creating professional 3D models requires smart and powerful software to capture, process, analyze, and edit large volumes of 3D data.

EASY 3D SCANNING WITH ARTEC STUDIO

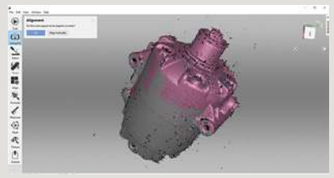
All Artec scanners, with the exception of Artec Leo, capture 3D data via the comprehensive Artec Studio and its proprietary algorithms.

- User-friendly and intuitive interface for smooth, expertly guided 3D scanning
- Quick and easy start-up process
- 3D Radar guides you to hold the scanner at the optimal distance from the object
- Get high quality scans every time with a smart tracking system that ensures correct movement of the scanner and object capture
- Stop or pause scanning and continue exactly where you left off by using the smart auto-continue feature

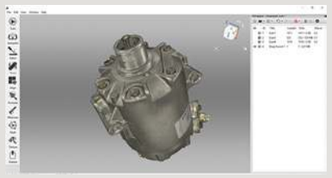
SMART, FAST AND AUTOMATED POST-PROCESSING

AUTOPILOT.
CREATE PROFESSIONAL 3D MODELS IN JUST A FEW CLICKS

Answer a few easy questions about the object you have scanned, indicating its size, geometry and texture. All the questions are illustrated with clear examples.



Based on the info provided, Autopilot automatically chooses the right algorithms and settingsto deliver the best possible result.



Fast and accurate application of automatically selected settings for all the processing stages: Creates a high precision 3D model in no time.

ADVANCED TOOLS
FOR 3D MODELLING

- Smart geometry and texture editing
- Automatic glare removal based on PBR algorithms
- Organically patch and seal holes with bridges

THOROUGH ANALYSIS
IN ARTEC STUDIO

- Get all the measurements you need, including surface size and the volume of your model
- Compare your scans and models
- Annotate your 3D object

DIRECT EXPORT TO CAD IN ONE CLICK

- Export files directly to 3D Systems Design X, AutoCAD and SOLIDWORKS software
- Export unlimited numbers of open and closed contours as CSV or DXF files

Export your 3D models over to a wide range of popular software

AUTODESK. SOLIDWORKS Geomagic blender

NEW SOFTWARE FEATURES AND MAJOR UPDATES RELEASED ANNUALLY.

A new version of Artec Studio is released yearly, with new features and major updates, making your investment into 3D scanning a long-term, cutting edge solution.

Reverse engineering & product design

FAST

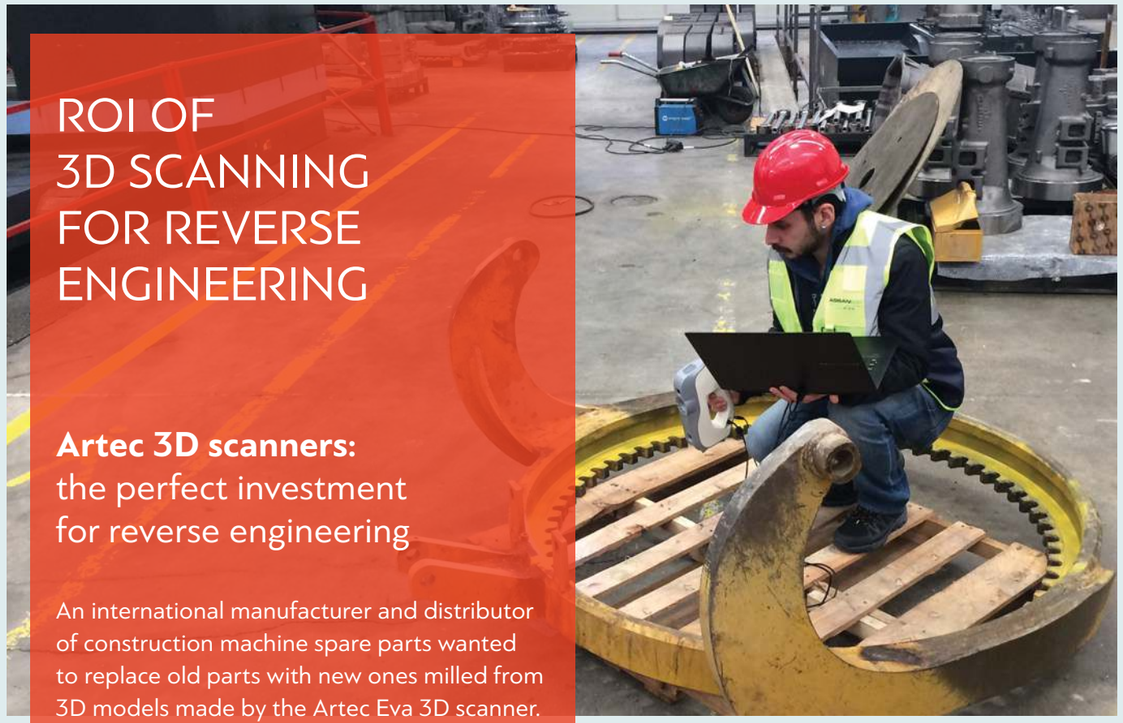
HIGHLY ACCURATE

GREAT TIME SAVER

3D scanning has proven itself to be a highly crucial tool in the reverse engineering process. It essentially eliminates the need to design a product from scratch. Not only that, but by having an incredibly precise 3D model of an existing part, with all of its surface measurements and unique characteristics, it's the ideal reference from which to start.

When it comes to improving a part or changing the design of it in some way, 3D scanning makes it possible for you to understand the original design intent. With that in mind, you'll be that much better equipped to design your new part.

3D scanning for reverse engineering gives you the fastest and most accurate path for product development as well as improving your production workflow itself. It guarantees that your new components will fit perfectly with existing parts and structures, including legacy parts that are no longer available or even those without drawings or CAD files. And when it comes to parts with highly challenging surface features and intricate geometries, this is where 3D scanning truly shines.



ROI OF 3D SCANNING FOR REVERSE ENGINEERING

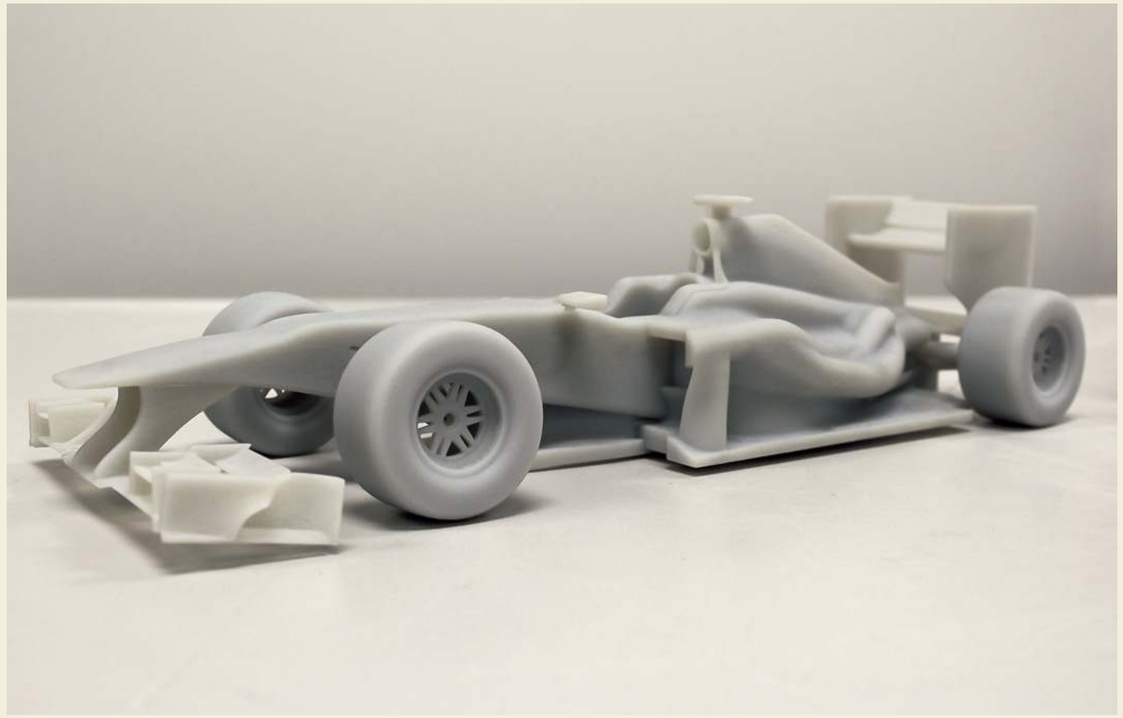
Artec 3D scanners:
the perfect investment for reverse engineering

An international manufacturer and distributor of construction machine spare parts wanted to replace old parts with new ones milled from 3D models made by the Artec Eva 3D scanner.

	TRADITIONAL METHOD **Manual Measurement**	NEW METHOD **High-Speed 3D scanning with Artec Eva**
Time	Approximately 2 weeks to complete each 3 m part + production time.	11 hours total: 30–40 mins to scan each part, 3–4 hrs to create 3D model, 7–8 to convert to solid models.
Cost	Approximately 80 hours at $50/hour = $ 4000.	11 hours at $50/hour = over 85% cheaper than the manual method.
Method	Using measurement tools including tape measures, calipers, angle meters, protractors and thread gauges. Then the final drawing is created in CAD software.	3D scanning each part in detail, top and bottom, using Artec Eva, 3D data processing in Artec Studio and CAD conversion using Geomagic Design X.
Level of accuracy	High risk of inaccuracy, since it is very difficult to measure such parts by hand.	Up to 0.1 mm 3D accuracy.

ROI per 3 m part	**Manual + CAD**	**3D scanning + CAD**
Time	80 h	**11 h** (85% saving)
Cost	$4000	**$550** (85% saving)

! THE COMPANY ACHIEVED OVER 85% REDUCTION IN TIME AND COST **USING 3D SCANNING**



Rapid prototyping

COST-EFFECTIVE

FAST

FLEXIBLE

For a broad variety of industrial applications, rapid prototyping with 3D scanners is a reliable and cost-effective path to creating 3D models of products, parts, and even entire machines. Prior to manufacturing in large quantities, engineers can use such 3D models for testing existing parts as well as variations of the same parts, in addition to unique product designs based upon the original models. This step-by-step verification is a crucial phase during which testing is conducted that factors in size and shape, as well as the characteristics of different materials.

In recent years, the combination of 3D scanning and 3D printing (additive layer manufacturing) has become a popular option for companies making prototypes, opening up the range of possibilities for industrial manufacturing even more. Having the flexibility to confidently create and test prototypes in diverse materials in a matter of hours has been a long-standing dream come true for engineers and product designers worldwide.

SIGNS **YOU REALLY NEED 3D SCANNING**

If you haven't started leveraging this rapid non-contact measurement technology yet, here are the key warning signs that indicate it's time to dive into the world of scanning.

- You need to measure complex parts
- You need to measure soft parts
- Measuring parts takes too much time
- You need to re-measure parts you don't have access to
- You are not sure why some parts fail
- You think you might be scrapping perfectly good parts
- You need to measure things in more places

Quality control

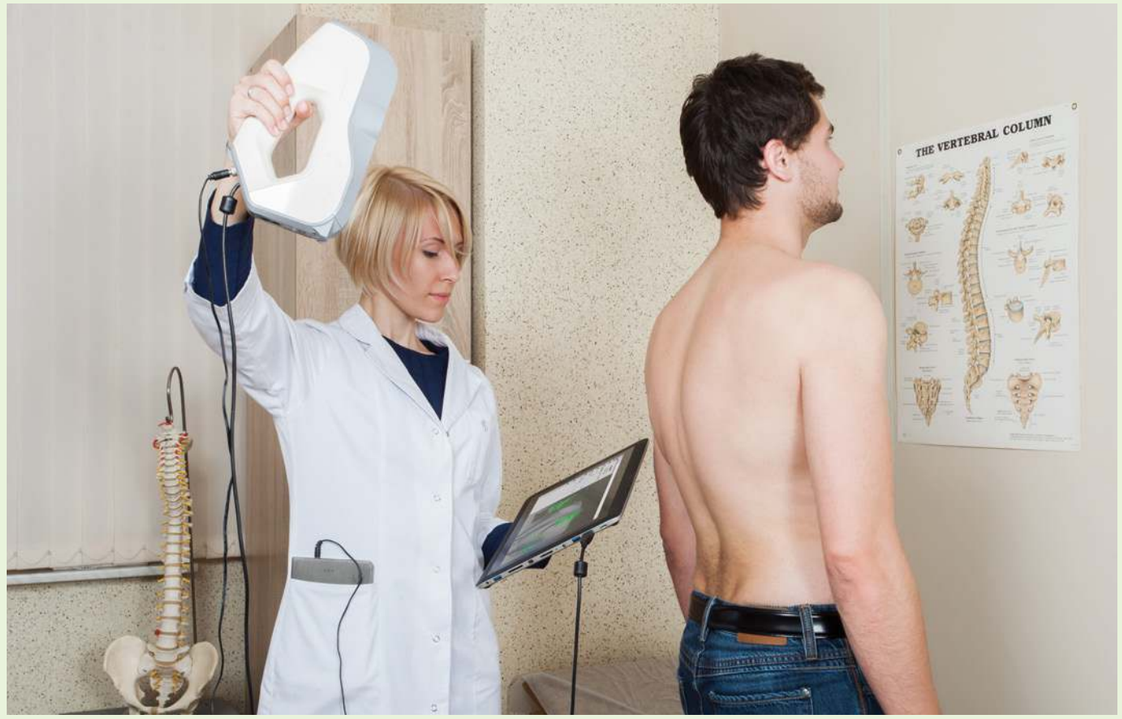
MEASURE TRICKY / HARD TO ACCESS AREAS

REDUCE PRODUCTION TIME

INCREASE THE QUALITY OF YOUR OUTPUT

Even the most highly precise production facilities manufacture parts with slight variations from the original CAD design. The question is whether those deviations are acceptable or not. 3D scanning lets you create precise models of your parts, and then via either first article inspection or in-line inspection, you can use these models to confirm if your parts are within specified tolerances. By doing so, you can significantly reduce production time, slash production costs, as well as limit liability issues related to product failure.

Non-contact 3D scanning does what manual inspection simply cannot. Digital inspection can precisely and fully document disparities well beyond the level of pass/fail. When working with a 3D scanner that offers submillimeter accuracy, you can easily create 3D models for CAD reports that clearly show the full spectrum of deviations across the part's surfaces.



Healthcare

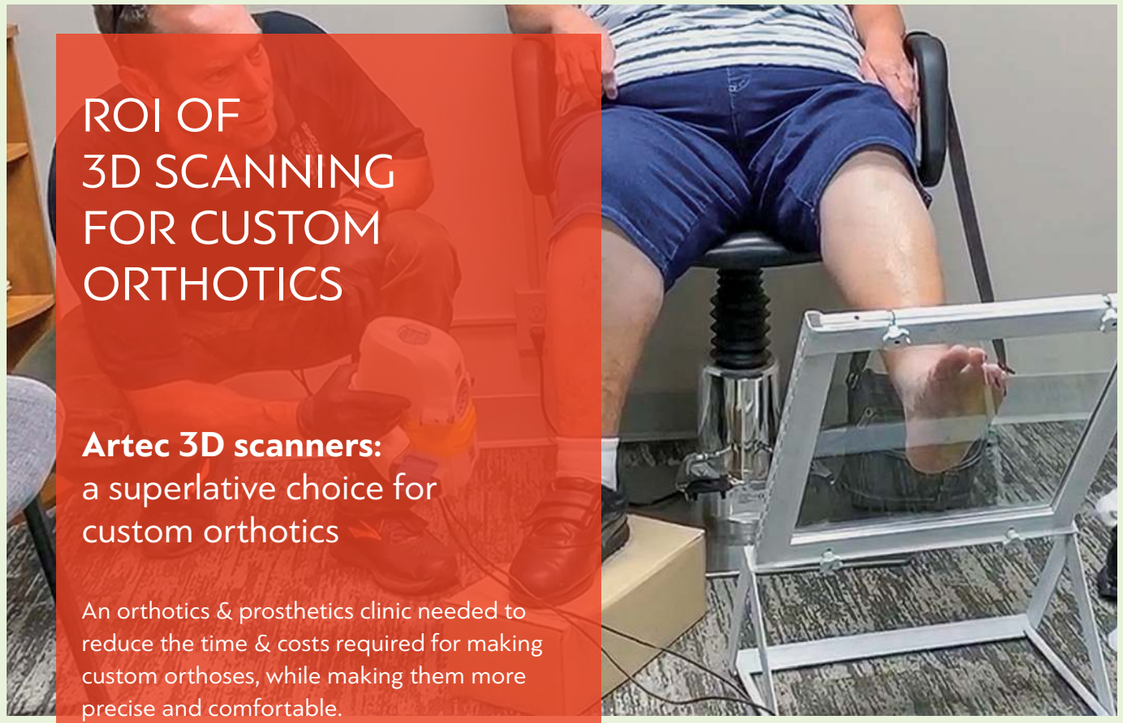
NON-CONTACT

FAST

CUTTING-EDGE, IMAGE-MAKING TECHNOLOGY

In recent years, 3D scanners have seen more and more widespread use throughout the healthcare industry. Whether that's for making prosthetic limbs, 3D-printed knee replacements, 3D-printed organs using stem cells, custom orthotics, or precise dental implants, 3D scanners have enabled healthcare professionals worldwide to do what they only dreamed of in the past. Not to mention the safety record of 3D scanners, which use either photos or structured white light and therefore pose no risk as do X-rays and MRIs, with their use of radiation.

One of the most basic yet at the same time most beneficial uses of 3D scanning in healthcare is that it allows doctors to quickly and safely visualize a range of various solutions for a patient without having to directly test them. Such applications include using 3D scanning to digitally capture a patient's unique anatomy, then export the model to a CAD program and create a prosthetic limb that is comfortable from day one. Another application is in making fast and accurate diagnoses at earlier stages than ever before.



ROI OF 3D SCANNING FOR CUSTOM ORTHOTICS

Artec 3D scanners:
a superlative choice for custom orthotics

An orthotics & prosthetics clinic needed to reduce the time & costs required for making custom orthoses, while making them more precise and comfortable.

	TRADITIONAL METHOD **Manual Measurement**	NEW METHOD **High-speed 3D scanning with Artec Eva**
Time	30 minutes for casting, 1 hour for measurement, 3 hours CAD design, 30 minutes milling and finishing.	3 minutes for 3D scanning, 20 minutes post-processing & CAD, 30 minutes milling and finishing.
Cost	Approximate time: 5 hours.	Approximate time: 1 hour = 80% time savings compared to traditional method.
Method	Plaster casting together with tape measures and calipers, with the final drawings being created in CAD software and sent to the milling machine.	3D scanning patient's feet from all sides with Artec Eva, post-processing in Artec Studio, converting to CAD, then sending to milling machine.
Level of accuracy	Slow and messy, as well as uncomfortable for patients. High risk of inaccuracy.	Up to 0.1 mm 3D accuracy.

ROI per orthosis	**Traditional + CAD**	**3D scanning + CAD**
Time	5 h	**1 h (80% less time)**
Cost	Full cost	**69% cheaper**

THE CLINIC ACHIEVED 80% REDUCTION IN TIME AND 69% REDUCTION IN COSTS **USING 3D SCANNING**

Science & Research

HIGHLY ACCURATE

EASILY SHAREABLE DATA

NON-CONTACT

Scientists in fields from anatomy to zoology, and everything in between, have been embracing 3D scanning for years now. 3D scanning is unequalled when it comes to rapidly and precisely gathering digital data about objects as well as environments. This has allowed scientists to reduce the time for data collection and measurement down to a bare minimum, thereby maximizing their time and energy for analysis and collaboration.

To focus on the field of paleontology, for example, researchers using 3D scanning use captured digital data to gain clear windows into a specimen's biological structure, as well as its genetic influences, evolutionary changes over time, its environment, and much more.

With its ability to capture millions of points per second, and precisely measure even the most organic and elaborate of objects, 3D scanning gives researchers a pivotal tool for use in a myriad of applications, both in the laboratory and out in the field. On top of that, due to the fragile nature of many specimens and objects, a key requirement in many scientific fields is that of non-contact with the specimens being studied. 3D scanning answers this demand perfectly, as it allows the high resolution digital capture of objects at submillimeter levels of accuracy, without the need for any physical contact with the specimen itself.

CGI

CREATE A HIGH POLY MODEL IN MINUTES

REPLICATE THE EXACT GEOMETRY

EASILY MAKE CHANGES OR ADDITIONS TO AN EXISTING OBJECT

CGI has been used to inject unforgettable scenery and jaw-dropping special effects into movies as far back as 1973. CGI and VFX have allowed movie makers worldwide to bring their dreams to life on the big screen, and 3D scanning has played an integral part in that, especially in the past decade. Rather than spending countless hours on creating new computer graphics and scenery from scratch, artists and designers can simply use a handheld 3D scanner to digitally capture props, actors, and even entire scenes in a matter of minutes. From there, it's a short process to converting these scans into 3D models, which can then be modified and integrated using a variety of cinematic technologies. The resulting digital models that we eventually see on the screen are breathtaking, often indistinguishable from the real actors, props, and locations.

3D scanning has also found its way into the video game arena. Game companies can quickly 3D scan new characters, props, and locations in mere weeks, rather than the months it used to take the traditional way. This has allowed them to release new versions faster than ever before, with a level of realism that has turned millions of users around the world into raving fans anxiously lining up for the newest release.

A more recent use of 3D scanning for CGI has been that of digitally capturing furniture and home interiors and clothing for creating online catalogs as well as lifelike VR and AR (augmented reality) websites. Users can view products in different colors, and in the case of VR/AR, navigate, explore, combine, and interact with various 3D models and environments in different configurations.

Heritage Preservation and Virtual Museums

NON-CONTACT

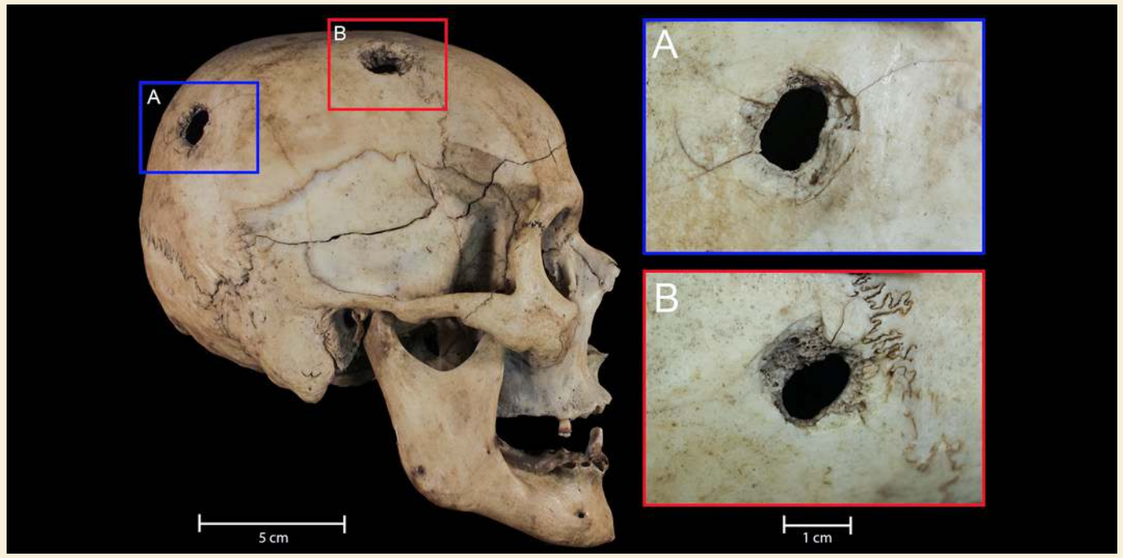
EASY TO MAKE PRECISE DIGITAL COPIES OF OBJECTS OR SITE

BRILLIANT COLOR-CAPTURE

The application of 3D scanning in the field of heritage and cultural preservation is growing increasingly popular in recent years. Typically performed via desktop 3D scanners for scanning very small objects, handheld, structured-light scanners for small to medium objects, or tripod-mounted laser (LiDAR) scanners for very large objects or an entire site. With all three kinds of scanners delivering up to sub-millimeter accuracy, 3D scanning gives you what nothing else can: color, highly-interactive, exact digital models of buildings, landscapes, and all the objects within and surrounding them.

Whether for VR or AR or simply archival preservation of historical architecture, monuments, sculptures, reliefs, artifacts, topography, etc., 3D scanning allows the non-contact digital cataloging of priceless, fragile objects. Additionally, in the case of future repairs or reconstruction, for example, following a fire or other disaster, such exact digital models can truly save the day.

Beyond the preservation aspect, 3D scanning has made possible what was once only dreamed of: virtual tours and fly/walk-throughs of historical buildings and locations. These are being made available for visitors and researchers both near and far. The educational and cultural outreach benefits of these kinds of experiences extend well beyond the present day. As technology progresses, the 3D data gathered today will be utilized to an even greater extent, in museums, research labs, classrooms, and elsewhere.



Forensics

FAST

PORTABLE & BATTERY OPERABLE

COLOR AND GEOMETRY CAPTURE

Today as never before, forensics investigators have a wide array of cutting-edge tools available for crime scene analysis and investigation. Traditionally, the use of cameras, tape measures, and other approximate methods of forensics investigation requires hours if not days at the crime scene itself, with each passing hour increasing the chance of evidence disappearing or the scene itself being compromised. As well, it can be extremely difficult for investigators to understand which aspects of a scene contain relevant evidence that needs to be identified and documented. 3D scanning addresses all of the above issues and more.

Using a handheld structured-light scanner, or a tripod-mounted laser scanner, or together in unison, a forensics team can digitally capture a crime scene in its entirety in minutes rather than hours. The resulting scans will be geometrically precise, with all the colors, depths, and textures present at the scene itself, not to mention the exact spatial relationships between everything captured, up to submillimeter levels of accuracy.

A more recent development in 3D scanning in forensics is that of creating 3D-printed bones and other evidence for use in the courtroom as well as ongoing investigations. Such 3D-printed replicas, if created via the use of a professional high-resolution 3D scanner, will be virtually identical to the original forensic object, and thus ideal for presentation in court to a jury, or for use during active investigations, even taken out into the field for forensic comparisons.

ARTEC 3D SCANNER
COMPARISON TABLE

	Micro	**Space Spider**	**Eva / Eva Lite**	**Leo**	**Ray**
Scanner type	Desktop	Handheld	Handheld	Handheld, tetherless	Long Range
Size of scanning object / area	Very small	Small	Medium	Medium to large	Large to very large
Accuracy	Up to 0.01 mm	Up to 0.05 mm	Up to 0.1 mm	Up to 0.1 mm	0.7 mm @15 m
Resolution	Up to 0.029 mm	Up to 0.1 mm	Up to 0.5 mm	Up to 0.5 mm	0.0125°
Target free technology	Yes	Yes	Yes	Yes	Yes
Color + geometry tracking	Yes	Yes	Yes / No	Yes	Yes
Color capture	Yes	Yes	Yes / No	Yes	Yes
Scanning software	Artec Studio	Artec Studio	Artec Studio	On board software	Artec Studio or Artec Remote App
Data processing software	Artec Studio	Artec Studio	Artec Studio	Artec Studio	Artec Studio
Computer requirements	i5 or i7 recommended, 32GB RAM	i5 or i7 recommended, 18GB RAM	i5 or i7 recommended, 12GB RAM	i5 or i7 recommended, 32GB RAM	i5 or i7 recommended, 32GB RAM
Export formats					
3D mesh	OBJ, PLY, WRL, STL, AOP, ASC, PTX, E57, XYZRGB				
3D point cloud	BTX, PTX				
Formats for measurements	CSV, DXF, XML				
Price	€27,900	€19,700	€13,700 / €6,700	€22,700	€50,000

ARTEC STUDIO
LICENSES

	Annual subscription	**Lifetime** subscription
1 License	€800	€2,000
3 Licenses	€2,000	€5,000

Subscribe to Artec Studio and its yearly new features and major updates to keep your 3D scanner and 3D data processing workflow at the cutting edge of 3D technology.

GLOBAL SUPPORT
AND **TRAINING**

We offer global support, training, and integration via our extensive reseller network as well as online by Artec 3D's dedicated support team. And we stand behind all our 3D scanners with a 2-year guarantee.

EVERY ARTEC 3D SCANNER COMES WITH A **2-YEAR GUARANTEE**

GET A FREE DEMO
AND **TRY ONE OUT**

Get a free demo at one of our **150 distribution centers** worldwide and see how well Artec 3D scanners can scan the types of objects you need digitizing.

www.artec3d.com/where_to_buy