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3D Scanning and 3D Printing

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Artec 3D

ARTEC LEO

The world's first wireless and AI-driven 3D scanner

EDISON AWARDS
2020 AWARD WINNER

tct AWARDS
2019 HIGHLY COMMENDED

GOLDEN MOUSETRAP AWARDS
2019 GOLD AWARD WINNER

NED
2018 INNOVATION AWARD WINNER

MADE IN LUXEMBOURG

Wireless freedom. Smart data capture

Artec Leo is a wireless and fully standalone professional 3D scanner designed to make scanning as easy and effortless as possible. With embedded AI computing, 5” HD built-in display and battery, it’s the ultimate all-in-one solution for fast, accurate, and high-quality 3D data capture.

Engineers, product designers, CAD technicians, VFX artists, archeologists, game designers, VR app developers, and many other professionals choose Artec Leo to streamline and speed up their workflows, and to create precise and workable 3D models out of a diverse range of physical objects and surfaces.

Fully mobile

Artec Leo is a wireless and fully standalone professional 3D scanner designed to make scanning as easy and effortless as possible. With embedded AI computing, 5” HD built-in display and battery, it’s the ultimate all-in-one solution for fast, accurate, and high-quality 3D data capture.

Proven quality & accuracy

Leo remains at a stable and optimal temperature throughout the scanning process to bring your accuracy to the next level, while a calibration certificate and Leo Calibration Kit guarantee top quality is maintained every step of the way.

Speed & power

Powered by the most power-efficient embedded NVIDIA Jetson TX2 processor and state-of-the-art algorithms, Leo is like no other scanner when it comes to performance, speed, and durability.

Easy to use

Interactive real-time scanning hints, hybrid target-free tracking system, smart scanning modes for faster data processing – just a few things that make our Leo the easiest 3D scanner to use. Just pick it up, point at whatever you want to scan, and hit that start button. Leo will take care of the rest.

Color capture capabilities

We’ve packed Leo with advanced tech to capture rich texture, adjust to lighting conditions, and perform precise texture-to-geometry mapping. Leo has a two-in-one optical system, an integrated supercomputer on a module, position sensors with 9 degrees of freedom, and VCSEL light technology that varies flash intensity.

HD Mode for thin and fine elements

Easily capture thin, intricate, and fine elements, and hard-to-reach areas, with minimal noise and in ultra-high-resolution with Leo and Artec's AI-powered HD Mode.

Versatile, reliable software

Powered by Artec Studio and Artec Cloud integration, Leo provides a fully autonomous scanning experience. The software enables you to scan directly to the cloud, remote-control the scanner, and even build your own functionality with a dedicated API and SDK. The scanner is regularly updated with performance enhancements and stability improvements.

One scanner, countless applications

A versatile and all-round scanning solution, Leo is used in a wide range of industries and applications. Across everything from manufacturing to healthcare to art and design, it helps thousands of businesses and professionals do their jobs faster, better, and more efficiently.

Reverse engineering

From race cars to airplanes, Artec Leo slips into areas once difficult to reach, making reverse engineering easier than ever.

Quality inspection

Take your QI to the next level with the power of 3D scanning – the ideal solution when you need results that are not only accurate but super fast.

Industrial and manufacturing

Inaccessible pipes in offshore rigs or R&D for perfectly fitting skinsuits become an achievable reality with Leo's onscreen display and ease of use.

Healthcare

Leo excels at capturing human body parts and entire bodies for creating custom prosthetic and orthotic devices, providing the right fit and support.

Science and education

Taking museums directly to the screens of students with scanning giant dinosaurs, or stepping into the world of forensic anthropology, digitally? No big deal for Leo.

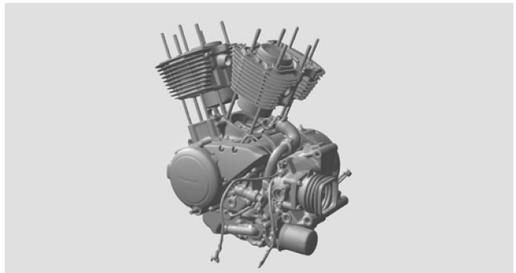
Art and design

From creating ultra-realistic 3D models for video games to digitizing sculptures and monuments, Artec Leo brings art and design to the next level.

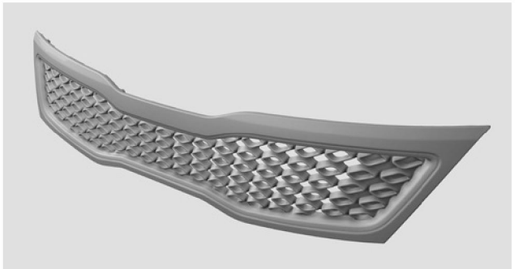
Capture both fine details and larger parts with a single scanning solution

With a 160,000 cm-cubed capture zone, Leo is truly versatile when it comes to size. It excels at capturing both medium-sized (20-50 cm) and large (50-200 cm) objects and surfaces. When paired with a powerful computer, it can take on even very large objects (200 cm+) or even entire spaces, such as rooms or crime scenes.

Typical objects for Leo:



Gearboxes, castings



Automotive parts

Turbines, ship propellers, small boats

Statues, and the human body

Furniture and room interiors

Crime scenes

Tech Specs

ACCURACY & RESOLUTION	3D point accuracy, *up to*	0.1 mm
	3D resolution, *up to*	0.2 mm
	3D accuracy over distance, *up to*	0.1 mm + 0.3 mm/m
ALGORITHMS	HD Mode	Yes
	Hybrid geometry and texture tracking	Yes
	Data processing algorithms	Geometry and texture based
FIELD OF VIEW	Auto background removal	Yes
	Working distance	0.35 – 1.2 m
	Volume capture zone	160,000 cm³
	Linear field of view, *H×W @ closest range*	244 × 142 mm
	Linear field of view, *H×W @ furthest range*	838 × 488 mm
TEXTURE	Angular field of view, *H×W*	38.5 × 23°
	Ability to capture texture	Yes
	Texture resolution	2.3 mp
	Colors	24 bpp
CAPTURE RATE	Ability to use Photo Texture	Yes
	3D reconstruction rate for real-time fusion, *up to*	22 fps
	3D reconstruction rate for 3D video recording, *up to*	44 fps
	3D reconstruction rate for 3D video streaming, *up to*	80 fps
	Data acquisition speed, *up to*	35 mln points/s
	3D exposure time	0.0002 s
	2D exposure time	0.0002 s
LIGHT SOURCE	3D light source	VCSEL
	2D light source	White 12 LED array
	Position sensors	Built-in 9 DoF inertial system
	Display / touchscreen	Integrated 5.5" half HD, CTP. Optional Wi-Fi / Ethernet video streaming to external device
	Multi-core processing	Embedded processors: NVIDIA® Jetson™ TX2 Quad-core ARM® Cortex®-A57 MPCore Processor NVIDIA Maxwell™ 1.33 TFLOPS GPU with 256 NVIDIA® CUDA® Cores
	Interface	Wi-Fi, Ethernet, SD card
	Internal hard drive	512 GB SSD

COMPUTER REQUIREMENTS	Supported OS	Scanning: No computer required Data processing: Windows 7, 8, 10 × 64
	Recommended computer requirements	Intel Core i7 or i9, 64+ GB RAM, NVIDIA GPU with 8+ GB VRAM, CUDA 6.0+
	Minimum computer requirements	HD: Intel Core i7 or i9, 32 GB RAM, NVIDIA GPU with CUDA 6.0+ and at least 4 GB VRAM SD: Intel Core i5, i7 or i9 and 32GB RAM, GPU with 2 GB RAM A computer is needed only for data processing. Scanning does not require a computer.
OUTPUT FORMATS	3D mesh	OBJ, PLY, WRL, STL, AOP, ASC, PTX, E57, XYZRGB
	CAD	STEP, IGES, X_T
	Measurements	CSV, DXF, XML
POWER SOURCE & DIMENSIONS	Power source	Built-in exchangeable battery, optional AC power
	Dimensions, *HxDxW*	231 × 162 × 230 mm
	Weight	2.6 kg / 5.7 lb