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Artec Leo

A smart professional 3D scanner
for a next-generation user experience

Artec 3D

Industrial design and manufacturing / Healthcare
VR / E-commerce / Science and education
Forensics / Art and design

NED 2018 INNOVATION AWARD WINNER

CERTIFIED Solution Partner
SOLIDWORKS

Easy 3D

See your object projected in 3D directly on the HD display

The first 3D scanner to offer onboard automatic processing, Artec Leo is able to provide the most intuitive workflow, making 3D scanning as easy as shooting a video. As you scan your object, see the 3D replica being built in real time on Leo's touch panel screen. Rotate the 3D model, see if you have captured all areas, and fill in any parts you have missed.

Breakthrough 3D scanning speed

The 80 frames-per-second 3D reconstruction rate makes Artec Leo the fastest professional handheld 3D scanner on the market. Furthermore, with its wide field of view, Artec Leo can 3D scan and process even large objects and scenes fast and accurately. And for even greater precision, users can move the scanner closer to the object to pick up more intricate detail, just as they would zoom in with a video camera.

The smartest 3D scanner on the market

Artec Leo contains state-of-the-art technologies, including the NVIDIA® Jetson™ platform, which is the scanner's own internal computer, featuring Quad-core ARM® Cortex®-A57 MPCore CPU and NVIDIA Maxwell™ 1 TFLOPS GPU with 256 NVIDIA® CUDA® cores; a built-in 9 DoF inertial system — accelerometer, gyro and compass — which allows the scanner to understand its position and environment; and a two-in-one optical system designed to spec for the most exact texture-to-geometry mapping.

scanning

A fully mobile scanning experience

Thanks to the powerful embedded processor and the built-in battery, Artec Leo gives you true freedom in 3D scanning. With no need to connect to a computer or plug into an AC power source, you can hold Leo in one hand and walk around freely, scanning your object unhampered by any wires or additional equipment. Purchase supplementary battery modules for unlimited 3D scanning on expeditions or in remote areas with no power supply.

Designed for usability

With a built-in battery, touch panel screen and wireless connectivity, Artec Leo takes handheld 3D scanning to the next level. Have complete freedom of movement when you scan, stream to a second device, if an additional display is needed, and upload your data at the touch of a button. Add to these features a carefully balanced, ergonomic design, developed to make 3D scanning in one hand both easy and comfortable, and you have a next-generation professional 3D scanner, built with usability in mind.

Applications

Since the user is able to capture both expansive areas and fine detail, Artec Leo can scan a wide range of objects, from small mechanical parts to the human body, cars, boats or crime scenes. As with all Artec 3D scanners, the applications are wide and far-reaching, including industrial manufacturing and quality control, healthcare, forensics, VR and e-commerce. Furthermore, Artec Leo's new wireless functionality and internal processor allow for a wealth of integration possibilities, making it even easier to streamline your application, regardless of industry.

Artec Leo

What you need to know

Built-in touch panel screen and simple interface

See your 3D model being built directly on the scanner itself. Check your model, change the settings, or use some simple tools in the intuitive interface on the touchscreen. Wirelessly connect to a second screen for ease of scanning or collaborative work.

Unparalleled texture to geometry mapping

Features a unique optical system developed by Artec 3D, with the 3D camera and color camera combined and directed through the same lens. This technology provides the most advanced texture to geometry mapping.

Built-in 9 DoF inertial system

The internal accelerometer, gyro, and compass mean that Artec Leo is the only handheld 3D scanner to be able to precisely pinpoint its position within its surroundings, even differentiating between horizontal and vertical surfaces, such as floors and walls.

Enhanced color capture

Using disruptive VCSEL light technology, Artec Leo excels in its ability to digitize hard to scan textures, including skin, and can scan well even in bright conditions. This technology also allows you to regulate the intensity of the flash to improve color capture even further.

3D scan and process even large objects quicker than ever before

With its large field of view and up to 80 FPS 3D reconstruction rate, Artec Leo can capture huge volumes in minimum time.

No need for targets

As with every Artec full powered 3D scanner, Leo uses advanced hybrid geometry and texture tracking, meaning you can really just point at your object and shoot. No need to stick targets on it (and then remove them later!)

A wealth of integration possibilities

The head of the scanner can be mounted on a robotic arm or conveyor system for automated 3D scanning, or synced with multiple devices and used in multi 3D scanner installations.

Large, professional grade lens system

Collects the maximum volume of data with pinpoint accuracy from right across the field of view, resulting in the most precise 3D model.

Built-in SSD drive

Store up to 256 GB in the SSD drive. You can also extend the capacity, storing unlimited data on micro SD cards. Ideal for 3D scanning in the field!

Capture even small details

Sweep over large areas fast, zoom in on detailed areas for increased precision.

3D HDR

Now with 3D HDR, Artec Leo makes it even easier to scan black and shiny objects, normally tricky areas for 3D scanners to capture.

	LEO	EVA	SPACE SPIDER
Working distance	0,35 – 1,2 m	0,4 – 1 m	0,2 – 0,3 m
Volume capture zone	160,000 cm^3	61,000 cm^3	2,000 cm^3
Linear field of view, H × W @ closest range	244 × 142 mm	214 × 148 mm	90 × 70 mm
Linear field of view, H × W @ furthest range	838 × 488 mm	536 × 371 mm	180 × 140 mm
Angular field of view, H × W	38,5 × 23°	30 × 21°	30 × 21°
3D resolution, up to	0,5 mm	0,5 mm	0,1 mm
3D point accuracy, up to	0,1 mm	0,1 mm	0,05 mm
3D accuracy over distance, up to	0.03 % over 100 cm	0.03 % over 100 cm	0.03 % over 100 cm
Ability to capture texture	Yes	Yes	Yes
Texture resolution	2.3 mp	1.3 mp	1.3 mp
Colors	24 bpp	24 bpp	24 bpp
3D reconstruction rate for real-time fusion, up to	22 fps	16 fps	7.5 fps
3D reconstruction rate for 3D video recording, up to	44 fps	16 fps	7.5 fps
3D reconstruction rate for 3D video streaming, up to	80 fps	—	—
Data acquisition speed, up to	3 mln points / sec.	2 mln points / sec.	1 mln points / sec.
3D exposure time	0,0002 s	0,0002 s	0,0002 s
2D exposure time	0,0002 s	0,00035 s	0,0002 s
3D light source	VCSEL	Flash bulb	Blue LED
2D light source	White 12 LED array	White 12 LED array	White 6 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	USB streaming through an external computer	USB streaming through an external computer
Multi core processing	Embedded processors: NVIDIA® Jetson™ TX1 Quad-core ARM® Cortex®-A57 MPCore Processor NVIDIA Maxwell™ 1 TFLOPS GPU with 256 NVIDIA® CUDA® Cores	On external computer	On external computer

	LEO	EVA	SPACE SPIDER
Interface	Wi-Fi, Ethernet, SD card	1 × USB 2.0, USB 3.0 compatible	1 × USB 2.0, USB 3.0 compatible
Internal hard drive	256 GB SSD	—	—
Supported OS	Scanning: No computer required Data processing: Windows 7, 8, 10 x 64	Windows 7, 8, 10 x64	Windows 7, 8, 10 x64
Minimum computer requirements *(Please refer to www.artec3d.com for detailed hardware requirements.)*	Scanning: No computer required Processing: i5, i7 or i9 recommended, 32GB RAM	i5, i7 or i9 recommended, 12GB RAM	i5, i7 or i9 recommended, 18GB RAM
3D mesh formats	OBJ, PLY, WRL, STL, AOP, ASC, Disney PTX (PTEX), E57, XYZRGB	OBJ, PLY, WRL, STL, AOP, ASC, Disney PTX (PTEX), E57, XYZRGB	OBJ, PLY, WRL, STL, AOP, ASC, Disney PTX (PTEX), E57, XYZRGB
CAD formats	STEP, IGES, X_T	STEP, IGES, X_T	STEP, IGES, X_T
Formats for measurements	CSV, DXF, XML	CSV, DXF, XML	CSV, DXF, XML
Power source	Built-in exchangeable battery, optional AC power	AC power or external battery pack	AC power or external battery pack
Dimensions H × D × W	231 × 162 × 230 mm	262 × 158 × 63 mm	190 × 140 × 130 mm
Weight	2.6 kg / 5.7 lb	0.9 kg / 2 lb	0.8 kg / 1.8 lb

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