

 **Artec 3D**
Micro II Automated
Desktop 3D Scanner



Artec 3D Micro II Automated Desktop 3D Scanner User Manual

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Artec 3D Micro II Automated Desktop 3D Scanner






Safety and general information

- This operation manual is structured in accordance with the applicable EU regulations and contains safety instructions. Individuals are responsible for compliance with safety instructions.
- This chapter contains a general introduction to the safety instructions. It also contains important information on accident prevention.
- This optical 3D scanner (hereinafter referred to as the Micro II), is a state-of-the-art product in terms of safety for operating personnel and operational reliability. The scanner may nevertheless present hazards if it is used by inadequately trained personnel, or if it is used improperly or not as intended. We refer to possible dangers explicitly in the chapter "Safety and General Information", as well as elsewhere in the operation manual.
- This operation manual contains the relevant information for the installation, commissioning, operation, maintenance and disposal of the scanner
- This operation manual is intended to enable the user to work safely with the scanner. Observing the instructions in this document will help to avoid hazards and prevent damage to the scanner.
- All persons working on and with the scanner must have read the operation manual and observed the information and notes relevant to them. This operation manual must always be complete and fully legible.
- Artec 3D is not liable for any typographical errors and omissions in this manual. Likewise, no liability is assumed for damages that are directly or indirectly attributable to the delivery. Even after taking the utmost care in the design and construction of the scanner, and even after taking all issues relevant to safety into account, residual hazards may still exist. These have been evaluated by means of a risk assessment. This chapter lists all residual risks and warnings from the risk assessment.
- The information in this document is subject to change without notice. Every effort has been made in the preparation of this document to ensure the accuracy of its contents. Any statement, information or recommendation in this document does not constitute a promise of characteristics of any kind, either expressed or implied.

Symbols and means of representation


Warnings and additional information

The sections marked “NOTE”, “CAUTION” and “DANGER” in this document do not include all safety instructions to be followed. They are only supplements to the general safety instructions. Artec 3D assumes no liability for any consequences caused by the violation of general safety requirements or design, production and usage safety standards. This document distinguishes between the following warning levels, depending on the severity and probability of the danger:

Warning symbol	Description
 DANGER	Indicates a significant hazard that will result in death or serious injury if not avoided.
 CAUTION	Indicates a minor hazard that may result in minor injury if not avoided.
 NOTE	A NOTE is used to explain practices that are not related to personal injury or to improve operations with the product.

Safety sticker on the scanner

Safety instructions are attached to the scanner, which draw attention to possible dangers, and residual dangers. The instructions on the safety sticker on the scanner must be followed under all circumstances. If the safety labels become faded or damaged during the life of the scanner, they must be replaced immediately with new stickers. They must be checked at regular intervals to ensure they are complete and legible. As soon as the signs are not immediately recognizable or comprehensible at first glance, Artec Micro II must be taken out of operation until the new signs are installed. The pictograms for warnings, prohibitions and requirements on the scanner and their meaning:

Symbol	Meaning
	Crushing hazard: This pictogram is located in the area of the swivel bracket and warns of a possible crushing hazard between the scanner and the swivel bracket.

Safety instructions for individual operating phases

Transport and installation

- The scanner may only be transported if it has been properly packed and secured.
- When handling the scanner, ensure that the scanner does not bend, especially after transportation.
- The scanner is designed to be set up at an ergonomic height. (Observe the employee protection regulations in your country).
- When laying the cables, ensure that they do not pose a tripping hazard. Always lay the cables along walls. Under no circumstances may the cables be routed so that they are under tension or sagging
- The location of the scanner must be chosen so that there are no vibrations during scanning operation, i.e. the load capacity of the chosen base (workbench, table, etc.) must be at least twice the value listed in the Technical Specifications and must absorb all vibrations.
- The ambient light must be taken into account when setting up the device. There must not be any change in the ambient light during the scan operation, such as might occur due to shadows from trees or blinds. Neon lights or direct sunlight should also be avoided.
- The scanner must not be operated in damp rooms.

- No liquids should come into contact with the scanner. Do not place any vessels with liquid on the scanner.

Installation and operation

- The operating and maintenance personnel must be instructed regularly on the operation of the system and on potential hazards. They are required to read the operation manual.
- Before each start-up, make sure that there are no parts in the swivel range of the bracket, as it performs a reference run when switched on.
- Keep children away from the scanner. Only trained personnel may work with the scanner.
- Micro II scanner may only be operated when it is in perfect and clean condition.
- Power supply and feeder cables must not be damaged or crushed by other objects.
- Malfunctions or damage must be reported to the operator immediately.
- Removing, modifying, bypassing or circumventing any protective, safety or monitoring devices is prohibited.
- Be aware of possible crushing hazards when operating the scanner inserts.
- If the Micro II scanner is not in use for a longer period of time, disconnect it from the power supply.
- Do not place any objects or tools on the scanner.
- Ensure that the area around the scanner remains clear and organized. All objects and containers not required for the workflow must be removed from the area of the scanner.
- Climbing on the scanner, as well as sitting or standing on the scanner is prohibited.



- The swivel bracket will move when the scanner is switched on. Do not reach into the danger area as finger injuries may occur.



- The swivel bracket moves during scanning. Do not reach into the danger area as finger injuries may occur.
- Micro II is equipped with a compact LED projector. Avoid staring directly into the light source of the projector. Micro II is designed to minimize the risk of accidental exposure when the operator adheres to the provided instructions and safety precautions. However, accidental exposure can still cause discomfort, irritation, or even injury. If you experience any discomfort after accidental exposure, please consult your healthcare provider.

Improper maintenance, modifications, and repairs

The subsequent installation of additional devices from other manufacturers is not permitted, nor is the modification of protective devices without consulting Artec 3D. Repairs to the scanner may only be performed by authorized Artec 3D Service Centers.

Intended use

The intended use of the scanner is the digitizing of small parts of different objects (metal, art, etc.) with metrology-grade accuracy in combination with Artec Studio. Various objects can be inserted with a maximum weight of 2000 g and dimensions W x L x H: 200 mm x 200 mm x 150 mm. Only accessories recommended by Artec 3D may be used. Improper use of this scanner may endanger persons and damage the scanner. The product is not an automatically functioning device; it must be loaded manually. Furthermore, any liability and warranty claims are excluded in the event of non-compliance with the intended use.

Potential misuse

The information in this documentation describes the properties of the product but does not guarantee them. No liability and warranty claims will be accepted for damages caused by

- Improper use of the scanning
- Disregarding the operating instructions
- Unauthorized changes to the scanning
- Improper work on and with the scanning
- Improperly performed repairs
- Unauthorized, improper modification of operating parameters
- Catastrophic events, impacts due to foreign objects, and force majeure.

Intended environment

The scanner is intended to be used in industrial/ commercial electromagnetic environments.

Class A equipment according to the CISPR 11 Standard : Industrial scientific and medical equipment – Radio-frequency disturbance characteristics.

Class B digital device, pursuant to part 15 of the FCC Rules.

- The limits of use for the scanner are restricted as follows
- To be operated indoors only
- Ambient temperature: 18 °C to 35 °
- Relative humidity: up to 31°C 20 % – 80 % at temperatures up to 35°C maximum 20-50% linear decreasing – not suitable for humid rooms, non-condensin
- No flickering light (e.g. fluorescent lighting; moving blinds; shadows from trees in the wind
- Maximum ambient brightness 500lux. No direct sunlight in the scanning area^{3/4}
- Clean and dust-free environment
- Horizontal installation site on a stable, vibration-absorbing workstation
- Maximum installation altitude <2000m above sea level

Duties of the operator

The operator is responsible for the safe operation of the scanner.

- Make sure that only trained, educated or qualified persons work with the scanner.
- Make sure that every person working on the scanner for the first time has read and understood this operating manual.
- Draw special attention to the safety instructions in this manual and on the scanner.
- Keep the operation manual in the area near the scanner and pass it on to new personnel.
- Make sure that no one works on the scanner without having the professional expertise necessary to do so.
- Operating personnel must be instructed at regular intervals on how to work safely with the scanner.
- Please observe national regulations for the protection of female employees.
- When servicing, maintaining or cleaning the scanner, it must be disconnected from the power supply.
- Repairs may only be carried out by Artec 3D.

- Make sure that the notices attached to the scanner when it is delivered remain 1.9 Qualifications of personnellegible. Missing and damaged warning signs must be replaced immediately.

Qualifications of personnel

This manual is addressed to the operating and maintenance personnel of the scanner. The operating and maintenance personnel are to be named by the operator and must have the following qualifications: Maintenance personnel:

- Basic technical knowledge
- Reading and understanding these operating and maintenance instructions is a prerequisite.
- The person must be strong enough to lift the unit and place it in its final location.
- Inspection and cleaning may only be carried out by technical specialists with product-specific training or under the guidance of the customer service department. Operators:
- Product Training
- Regular safety instruction

Duties of personnel

- The safety instructions and operating instructions contained in this operating manual must be observed at all times.
- This scanner may only be operated by appropriately qualified personnel. These personnel must be familiar with all safety instructions and with the corresponding measures contained in this operating manual and on the scanner for operation, maintenance, and cleaning.
- Micro II scanner must be disconnected from the power supply before cleaning, maintenance,e and repair work.

Personal protective equipment

The 3D scanner is designed in such a way that the persons working on the scanner do not require any additional protective equipment beyond the required standard of the operator (e.g. work clothing, work shoes, etc.). Persons performing cleaning and maintenance work must observe the prescribed measures for the corresponding cleaning agents (e.g. gloves for cleaners; splash protection, etc.).

Photosensitivity/Epilepsy seizures

Read this notice before using the 3D scanner.

- A small percentage of individuals may experience epileptic seizures or blackouts when exposed to certain visual stimuli, such as the structured light patterns and flashing lights emitted by 3D scanners. This risk applies even to those with no prior history of epilepsy or seizures.
- If you or any of your family members have a history of epilepsy or seizures, it is strongly recommended to consult a physician before using a 3D scanner that utilizes structured light or flashing patterns.
- Immediately discontinue use and seek medical attention if you or anyone under your care experiences any of the following symptoms: dizziness, altered vision, eye or muscle twitching, involuntary movements, loss of awareness, disorientation, or convulsions.
- To minimize the risk of photosensitive epileptic seizures, follow these precautions: limit exposure to the scanner's light patterns, ensure the environment is well-lit, and take regular breaks if you feel fatigued or

experience discomfort during scanning.

Transport and installation





First of all, check to ensure the packaging is undamaged. If this is not the case, document the damage and contact the seller. Pay attention to the warnings on the packaging during transport. The device must be transported or stored so that it is well-protected, dry and upright in a package. In case of longer storage, the device should be stored in a dry place in the original packaging. Care must be taken to comply with the storage requirements as stated in the specification.

NOTE!

Transport the scanner only in the original packaging to avoid damage to the device.

Unpacking and setting up the device

First, open the top of the box and remove the top foam cover with the optional accessories. Then you can hold the scanner by the two recesses and pull it out of the box. Now the fixation for the arm can be removed, the standard accessories are inside the fixation.

-  Save the packaging for future transport (relocation, service, etc).
-  Dispose of waste materials in an environmentally friendly manner.


Scope of delivery:

- 1x Artec Micro II Scanner
- 1x Power Supply
- 1x USB Cable
- 1x Calibration plate
- 1x Object holder
- 1x Object holder with clamp
- 1x Object holder with 3-axis
- 1x Object holder with a flat surface (reusable putty included)
- 1x Box

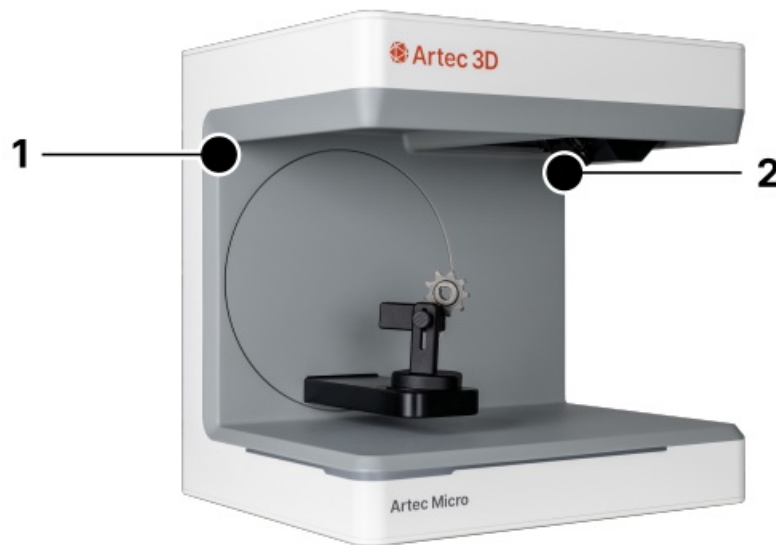
Select a setup area

Since the environment of the scanner has a significant influence on the product, you should be careful when selecting its location and observe the following: Avoid rapidly changing lighting conditions such as moving shadows, office lighting that flickers (fluorescent lamps, LED...).

- Never expose the scanner to direct sunlight.
- Avoid direct proximity to heat sources (e.g. radiators, other electrical appliances, fire replacements, etc.).

- Ensure that the installation site is level and vibration-free.
- It must be ensured that there is no extraordinary exposure to dust, poisons or corrosive gasses at the installation site.
- Select a mounting or installation location where liquids or objects cannot get into the scanner under any circumstances (e.a. condensation, roof leaks, watering water. etc.).
- Ensure that the mains plug of the power supply unit is always accessible.
- The scanner may only be operated indoors.
-  Info: Strong external light or sunlight may affect the scan result. This can lead to poor scan quality or to undesired deviations of the measurement result.

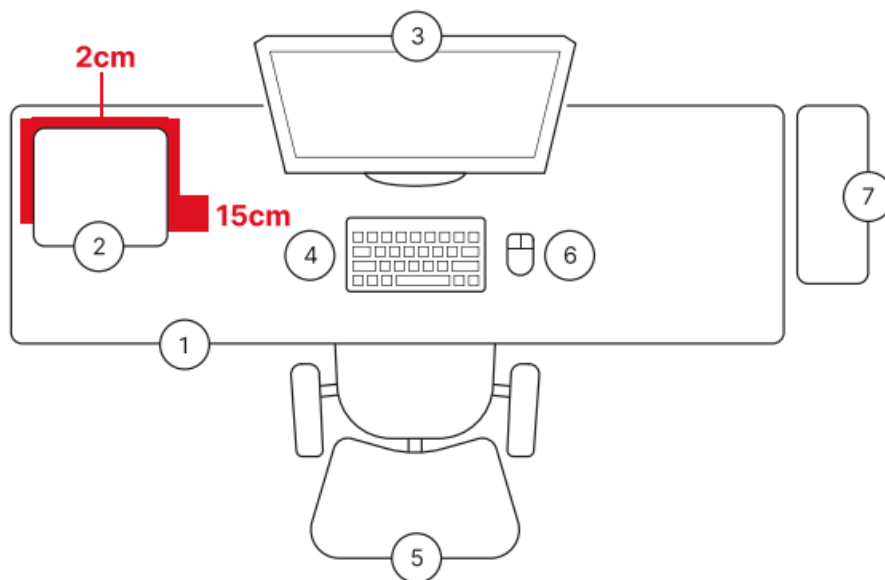
Carrying points





The two carrying points (1) and (2) are provided to carry the scanner. Hold the scanner at these two points with your left and right hands. The scanner weighs 11-13 kg and can be carried by one person. The open side of the scanner should face away from the body.

Installation example

The following figure is merely a schematic representation intended to provide an illustration of the overall system. Pay attention to an ergonomic arrangement as well as to the minimum distances for the scanner as shown (red).

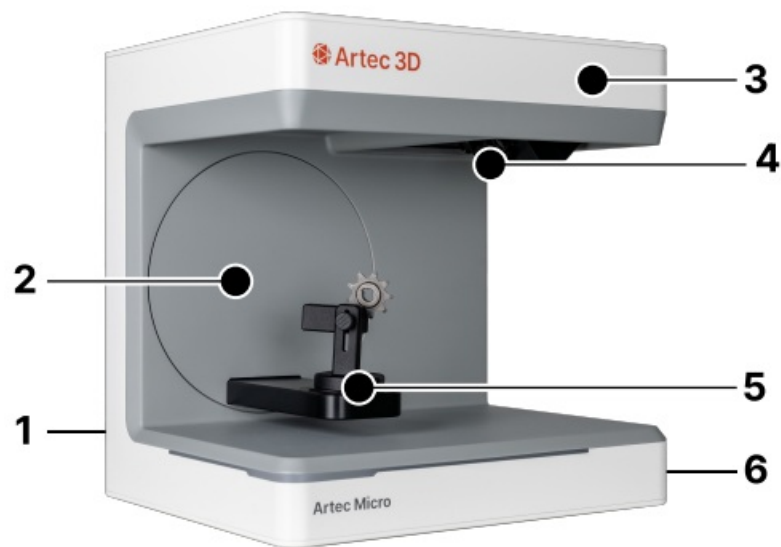


Nº	Description
1	Desk
2	Artec Micro II scanner
3	Computer screen
4	Keyboard
5	Desk chair
6	Computer mouse
7	PC/Laptop
	The power supply unit may only be connected to a socket with protective contact.
	The cables should be laid along walls.

Device overview and connections

Components of the scanner

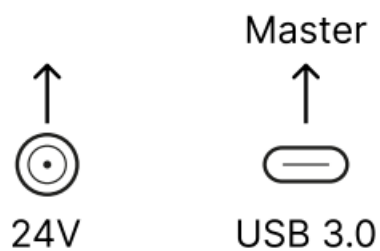
These are the main components of the scanner:



Nº	Description
1	Connector strip (rear side)
2	Swivel bracket
3	Housing
4	Optical scan unit
5	Model support
6	On/Off button

Scanner connector strip

The connector strip is located on the back of the scanner and is designed as follows:



Description

- 24V DC power supply socket
- USB C 3.0 Port Master Unit

Power supply unit



Manufacturer	MEAN WELL
	Output
Type	GST90A 24 – P1M
Input	100 ~ 240VAC +-10%
	50 ~ 60Hz
Power	90W
Output	24 V, 3.75 A
Max Sea Level	2000m



Use only the supplied power supply and power cord. The power supply unit may only be connected to a socket with a protective contact. Do not use the Leo charger for Artec Micro II, as they are not compatible with each other.

USB cables



If possible, use the supplied cable. If you use your own USB cable, pay attention to the following properties. Full 5Gbit USB C cable with shielding maximum 1.4m. For extensions beyond 1.4m, an active USB extension must be used.



External equipment connected via the available USB-C port shall be in compliance with IEC 60950-1 or IEC 62368-1 and provided at least double insulation between primary and secondary parts.

Accessories

Each scanner is delivered with the standard accessories. Further accessories can be purchased for certain functions.

-  **NOTE!** Only use original accessories. Otherwise, warranty provisions and product liability risks could be affected.
-  Take care of the calibration plate so that the surface is not damaged.

Function and installation

Micro II scanner is designed to digitize small parts of different objects (metal, art, etc.) with metrology-grade accuracy in three dimensions. Structured light scanning involves projecting a light pattern onto the object to be measured using a projector, following the principle of structured light. The distortion of the light pattern caused by the structure of the model is registered by four high-resolution cameras installed in the scanner unit, processed and thus digitized into a virtual and three-dimensional model.

Installing the scanner

After setting up the scanner, connect it with the USB cable, then connect the 24V supply to the external power grid and plug in the power supply.

Installing the computer

The scanner software requires at least Windows 10 or newer. Make sure that all drivers are up to date (graphics card, USB host, motherboard, etc.). Observe the recommended minimum PC workstation requirements to ensure smooth scanner operation.



Refer to the user manual of the PC.

Installing the software

Artec Micro II requires Artec Studio 18 (and later) software which allows it to scan and process scanned data. Artec Studio 18 (and later) should be purchased separately, to obtain software, contact Artec 3D Sales Team or Authorized Reseller at sales@artec3d.com

Note that an Internet connection must be available to download and license the software.



Administrator rights are required for the installation.

Working process

After you have started the software, you must calibrate your Micro II scanner. Also, consider recalibrating the machine if you move it or leave it unused for a long period. To perform calibration:

- Open Artec Studio
- Access the Scan panel
- Click Scan with Artec Micro II button
- Artec Studio will automatically identify the number of calibration boards and perform calibration.
- After successful calibration, you can start scanning using the Scan panel in Artec Studio.



- For further details, please refer to the Artec Studio manual.

ID recognition

Each accessory has its own ID recognition by which the scanner can determine what is currently in the scanner and thus perform appropriate functions

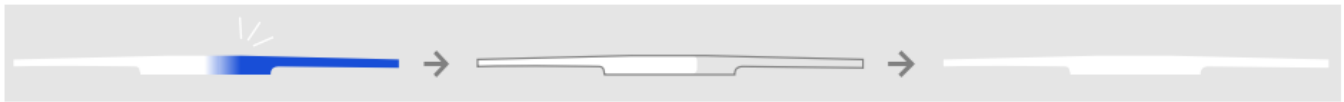


Watch out for the exposed gold pins (24V). Do not short-circuit them!

LED indication bar

The LED bar is used to indicate states in the software:

- No software connection: White, pulsating
- Scanning: White; acts as a progress bar, gradually filling with white LEDs as frames are captured until fully
- Scanning completed: White



- Error: Red



Switching off the scanner



To switch off the scanner, press the On/Off button for at least 1 second.

FAQ Troubleshooting

Scanner does not start

- If the scanner does not light up at startup, check the power supply and check whether the AC adapter is connected to the scanner
- Contact Artec 3D Support Team

The scanner is not recognized on the PC

- Be sure to use a proper USB cable with a maximum length of 1.5
- Check to ensure the USB port meets the USB3.0 specification
- Check the driver status in the device manager to ensure it is up-to-date
- Check if the LEDs on the device are
- Restart the PC and the scanner
- Contact Artec 3D Support Team

Stripes are visible on the scan result




- Watch out for changes in the light during a scan, as this can cause streaking. This is often caused by blinds that move during the scan or sunlight that changes due to trees or reflections on windows[
- Flickering light that can be emitted, for example, neon tubes or LED lighting. You can record a slow-motion video with your smartphone to check this. If flickering light is visible, look for and eliminate the cause.

Cleaning and maintenance work for the operator

To ensure long product life and scanning accuracy, it is necessary to regularly clean and calibrate the device.

Cleaning

Before cleaning, the Micro II scanner must be put out of operation. To do so, unplug the scanner. Use only dry clothes for cleaning. The scanner may be vacuumed or blown out. However, pay attention to the optical elements so that they do not become misaligned (camera focus). To prevent damage to the optical sensors located in the upper part of the scanner, they may only be dusted gently using a microfiber cloth.

-  **NOTE!** The optical sensor system in the top part of the scanner is extremely sensitive.
-  **DANGER!** Accidentally turning on the scanner during cleaning.
-  **Do not** use water, steam or cleaning agents for cleaning.

Recalibration

To guarantee a consistent scan result, it is recommended to use the supplied calibration plate to perform a calibration once weekly. The scanner should also be calibrated after transport or if it is moved to a different location. Instructions for recalibrating your scanner can be found in our software manual. Start the scanning process using Artec Studio and proceed step by step according to the software instructions. If anything is unclear, contact Artec 3D Support Team (see chapter “Customer service”).



Make sure that the circles on the glass plate are not damaged, otherwise, calibration is no longer possible.

Repair / Troubleshooting

Micro II scanner contains sensitive components and sensor technology. Repair work may therefore only be carried out by authorized Artec 3D Service Centers.

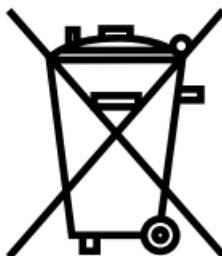


In case of malfunctions that cannot be solved by restarting the scanner, contact our support (see the chapter “Customer service”)

Disposal

The scanner can be returned to the dealer or manufacturer for disposal. Therefore, if you have any questions regarding proper disposal, please contact our support (see the chapter “Customer service”)

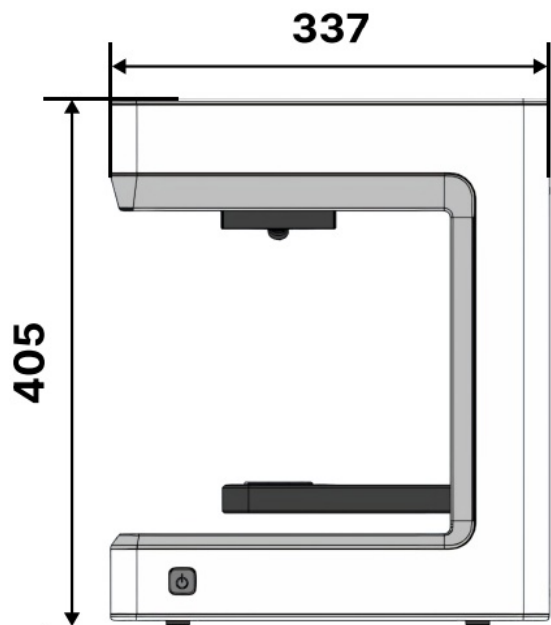
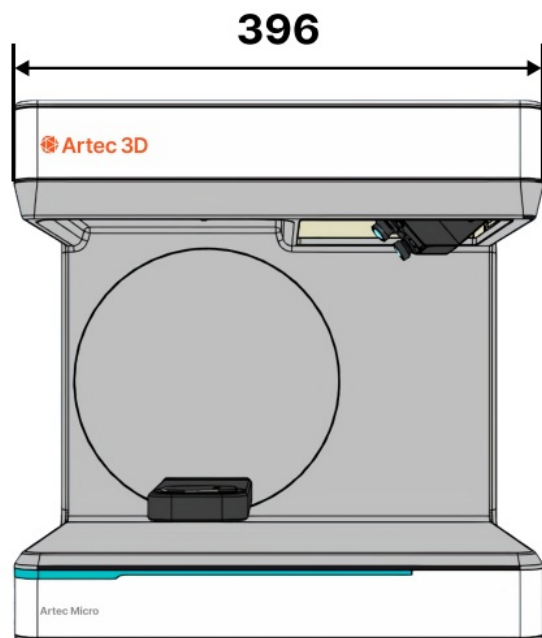
Please note that the scanner is an electronic device intended for use in commercial/industrial environments only. Disposal via public waste management authorities is therefore not permitted.



Technical data

General information	
Manufacturer	ARTEC EUROPE S.à r.l.
Weight	11.50 kg
Dimensions (W x H x D)	396 × 405 × 337 mm
Environment	
Working temperature range	18 °C to 35 °C
Storage temperature range	-15 °C to 50 °C
Altitude	0-2000 m
Pollution degree	2 (according to IEC 60947-1 and IEC 60664-1)
Premises type	Industrial/ commercial
Electrical systems	
Mains voltage	100 - 240VAC +-10%
Mains frequency	50 - 60Hz
Overvoltage	Overvoltage Category II
Power supply unit	0-2000 m
Scanner voltage	24V DC +-10%
Power consumption operation	35 Wh
Power consumption standby	1 Wh
Camera	4× 6Mpix
Type of USB connection	USB 3.0 TYPE-C (5Gbit/s)
Number of USB connections	1
Scanner	
Measuring range (W x H x D)	100 × 100 × 100 mm
Maximum object size	200 × 200 × 150 mm
Maximum object weight	2 kg
Absolute accuracy	<5 μ
Repeat accuracy	<2 μ
Output format	.a3d, .scan, .stl, .ply, .wrl, .obj

Product diagram & clearance



Regulatory information

The European Union

- This product is in compliance with applicable EU regulations and CE mark is properly affixed on the scanner.
- Applicable EU Directives as outlined in the CE declaration of conformity.
- EMC Directive 2014/30/EU
- Low Voltage Directive 2014/35/EU
- RoHS Directive 2011/65/EU
- Attention: Micro II is a Class A equipment according to the CISPR 11 Standard: Industrial scientific and medical equipment – Radio-frequency disturbance characteristics.



FCC STATEMENT

The U.S.

FCC Rules and Regulations.

This equipment has been tested and found to comply with the limits for a Class B digital device, according to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver

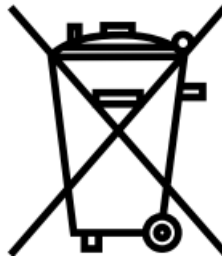
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help.

Other certifications and compliance information may be updated by Artec 3D from time to time. Please refer to Artec 3D Support Team (support@artec3d.com) for more information

Regulatory information

Canada

Micro II is a Class A equipment according to the ICES-001 — Industrial, Scientific and Medical (ISM) Equipment. Disposal of Electrical and Electronic Equipment in Private Households In the European Union, Norway, Iceland and Liechtenstein: This symbol on the product, in the manual and in the warranty, and/or on its packaging indicates that this product shall not be treated as household waste. Instead it should be taken to an applicable collection point for the recycling of electrical and electronic equipment.\



The Regulatory Compliance Mark (RCM) shows that a product complies with the relevant requirements in Australia and New Zealand.



- Manufacturer ARTEC EUROPE S.à r.l., 4 Rue Lou Hemmer, L-1748 Senningerberg, Luxembourg
- UK representative ARTEC 3D (UK) LTD, 71-75 Shelton Street, Covent Garden, London, WC2H 9JQ, United Kingdom

Customer service


In case of any technical problems, contact the Artec 3D Support Team.

CONTACT

- 2024 ARTEC EUROPE S.à r.l.

- www.artec3d.com
- 4 Rue Lou Hemmer, L-1748 Senningerberg, Luxembourg
- +352 2 786-1074

Documents / Resources

<div data-bbox="132 96 284 112"><div>Artec Micro II</div><div>User Manual</div><div>Version 2.0</div></div> <div data-bbox="244 96 284 107"><div>Artec 3D</div></div> <div data-bbox="132 143 284 313"></div>	<div data-bbox="319 159 1181 190">Artec 3D Micro II Automated Desktop 3D Scanner [pdf] User Manual</div> <div data-bbox="319 194 1469 259">Micro II Automated Desktop 3D Scanner, Micro II, Automated Desktop 3D Scanner, Desktop 3D Scanner, Scanner</div>
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References

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- [User Manual](#)

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