



Artec 3D 60664-1 Scanner Small Objects Micro User Manual

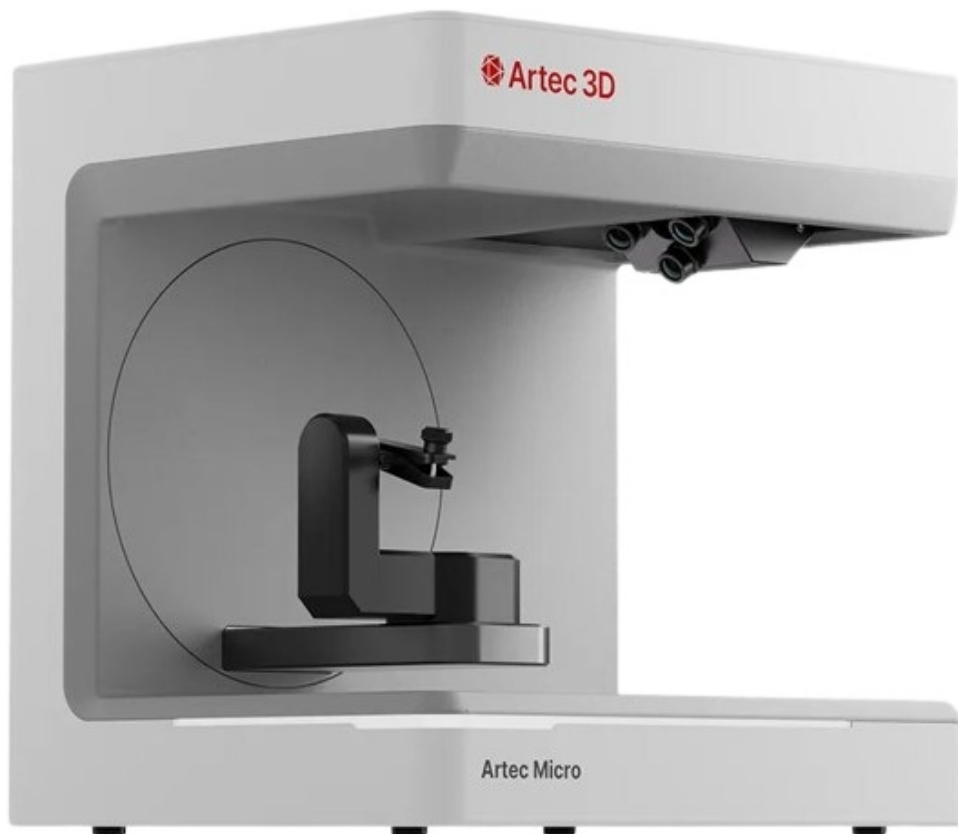
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Artec 3D 60664-1 Scanner Small Objects Micro



Product Information

Specifications

- CE marking according to EMC Directive 2014/30/EU, Low Voltage Directive 2014/35/EU, RoHS Directive 2011/65/EU

FAQ

- **Q:** Where can I get customer support for technical issues?
 - **A:** For technical problems, please contact the Artec 3D Support Team at support@artec3d.com.
- **Q:** Can children operate the scanner?
 - **A:** No, only trained personnel should work with the scanner. Keep children away from the 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 scanner), 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 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 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

Warnings


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 arm and warns of a possible crushing hazard between the scanner and the swivel arm.

Labeling

The scanner is clearly identified by the contents of its nameplate. CE marking according to:

- EMC Directive 2014/30/EU
- Low Voltage Directive 2014/35/EU
- RoHS Directive 2011/65/EU

Customer service

- In case of technical problems, contact Artec 3D Support Team using support@artec3d.com email.

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 when parking after transport.
- 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 arm, as it performs a reference run when switched on.
- Keep children away from the scanner. Only trained personnel may work with the scanner.
- The optical 3D 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 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 are prohibited.

Warning

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

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

Intended environment

The limits of use for the scanner are restricted as follows:

- To be operated indoors only
- **Ambient temperature:** 5 °C to 35 °C
- **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-condensing
- 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
- 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 legible. 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.

- The optical scanner must be disconnected from the power supply before cleaning, maintenance 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.).

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.

Select a setup area

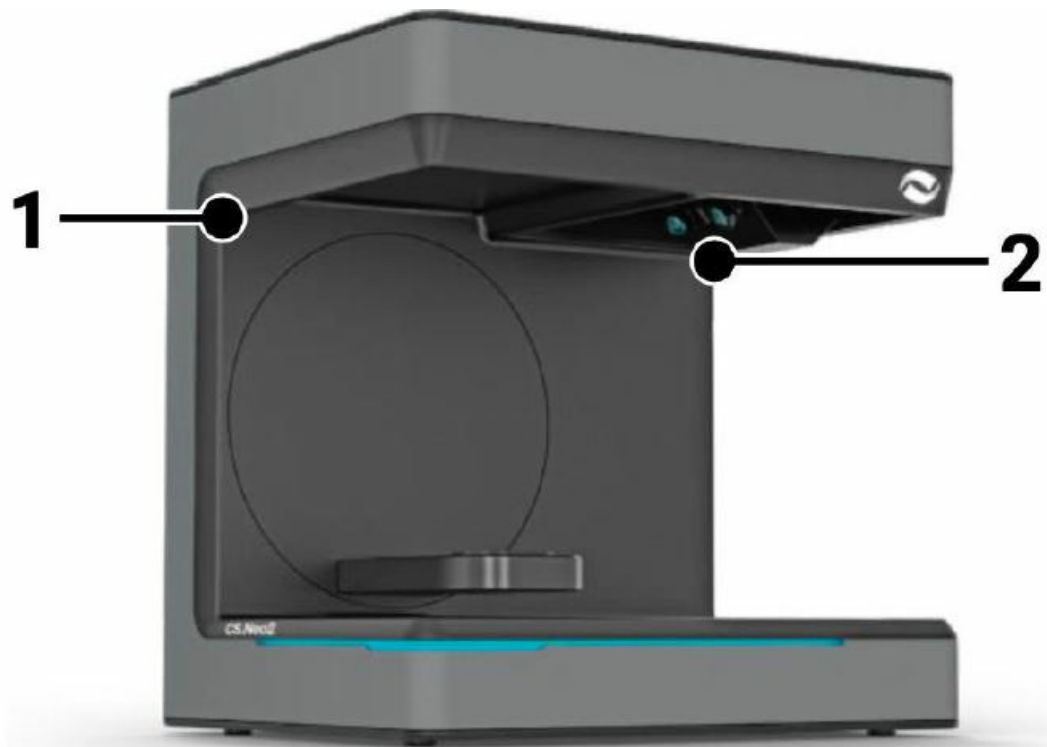
Since the environment of the scanner has a significant influence on the product, you should be careful when selecting its location and observe the following:

- 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 replaces, 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.g. 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.

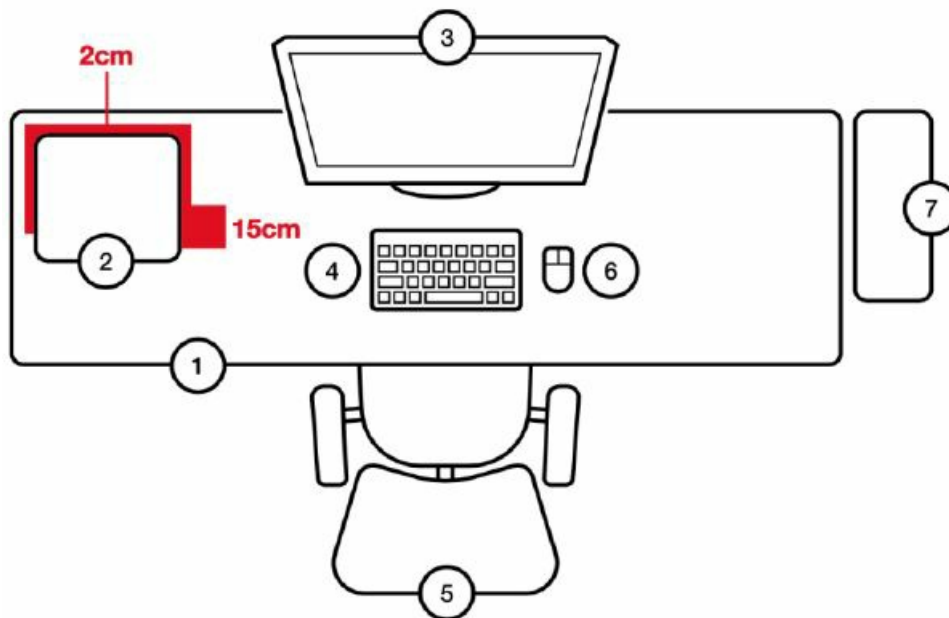
Carrying points



- 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

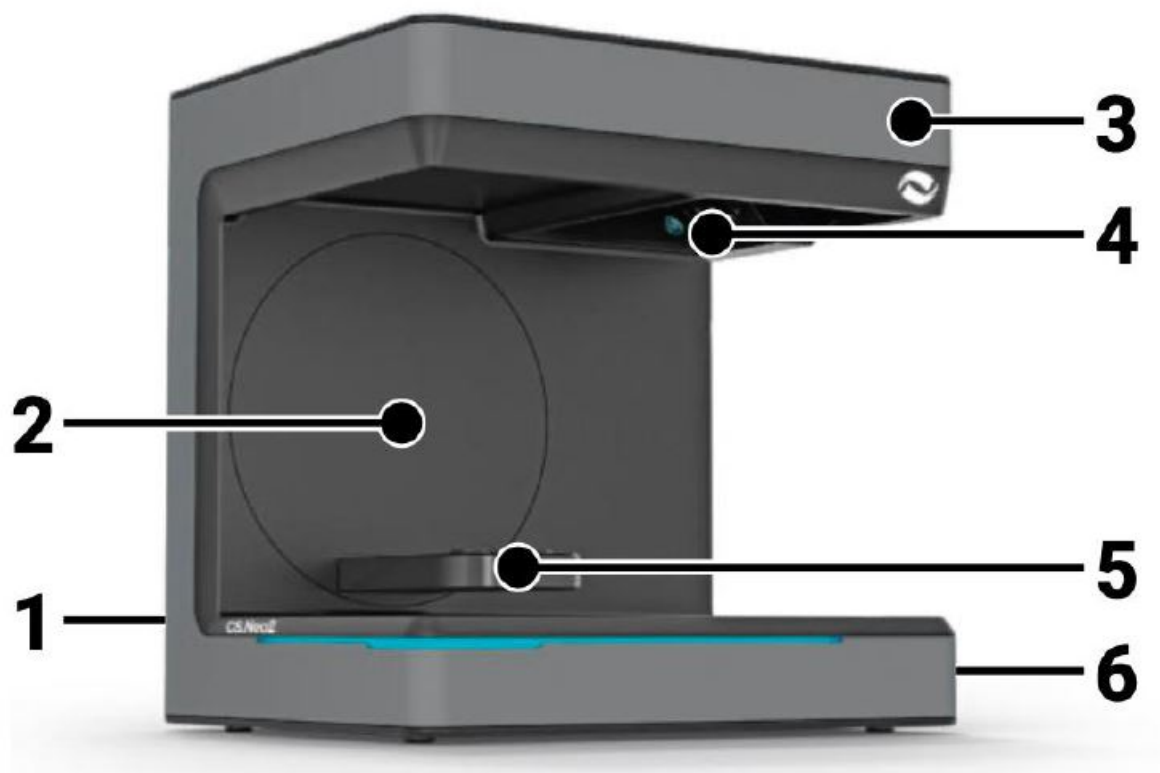
Note

- 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:




Nº	Description
1	24V DC power supply socket
2	USB C 3.0 Port Master Unit

Power supply unit

Technical data of the power supply unit

	Manufacturer	MEAN WELL
	Type	GST90A 24 – P1M
	Input	90 ~ 264VAC 127 ~ 370 VDC 47 ~ 63Hz
	Power	90W
	Output	24 V, 3.75 A

Warning

- 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.

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

This optical 3D scanner is designed to digitize small parts of different objects (metal, art, etc.) with metrology-grade accuracy in three dimensions. Based on the principle of “fringe light scanning”, a fringe light pattern is projected by a projector onto an object to be measured. 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.

Warning: 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.

Note: 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:

1. Open Artec Studio.
2. Access the Scan panel.
3. Click Scan with Artec Micro.

Artec Studio will automatically identify the number of calibration board and perform calibration. After successful calibration, you can start scanning using the Scan panel in Artec Studio.

Note: 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.

Warning: 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.

- White pulsating > No software connection
- Red > Error
- Rainbow > Calibration
- Blue progress bar > Scan progress indicator

Switching off the scanner

Note: 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](#)

Scanner is not recognized on the PC:

- Be sure to use a proper USB cable with a maximum length of 1.5m.
- Check to ensure the USB port meets the USB3.0 specifications
- Check the driver status in the device manager to ensure it is up-to-date
- Check if the LEDs on the device are on
- 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

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 optical 3D scanner must be put out of operation. To do so, unplug the scanner. Use only dry cloths 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”).

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

Repair / Troubleshooting

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

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

Disposal And Technical data

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 x 405 x 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)

Electrical systems

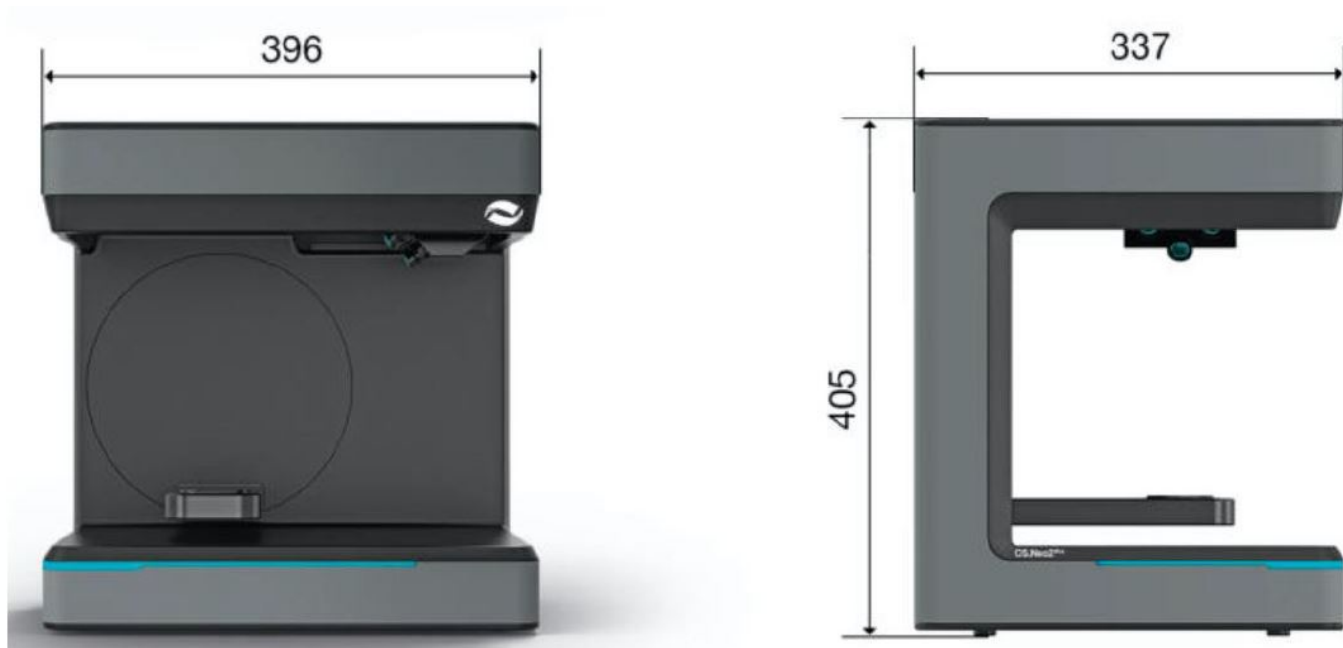
Mains voltage	90 – 264VAC
Mains frequency	47 – 63Hz
Power supply unit	0-2000 m
Scanner voltage	24V DC +-10%
Power consumption operation	35 Wh
Power consumption standby	1 Wh
Camera	4x 6Mpix

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 x 100 x 100 mm
Maximum object size	200 x 200 x 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



Contact


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- +352 2 786-1074

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Documents / Resources

	<p>Artec 3D 60664-1 Scanner Small Objects Micro [pdf] User Manual 60664-1 Scanner Small Objects Micro, 60664-1, Scanner Small Objects Micro, Small Objects Micro, Objects Micro, Micro</p>
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References

-  [Professional 3D Scanners | Artec 3D | Best Industrial Laser 3D Scanning Solutions](#)
- [User Manual](#)