



# VGMETROLOGY

System Requirements

If you have any questions regarding our products and services, do not hesitate to contact us:

**Europe, Australia, Latin America (without Mexico), Africa:**

Volume Graphics GmbH, 69115 Heidelberg, Germany

**Sales:**

E-mail: [sales@volumegraphics.com](mailto:sales@volumegraphics.com)

Phone: +49 6221 73920 60

**Support:**

E-mail: [support@volumegraphics.com](mailto:support@volumegraphics.com)

Phone: +49 6221 73920 80

**Japan:**

Volume Graphics Co., Ltd., Nagoya 464-0858, Japan

**Sales:**

E-mail: [sales@volumegraphics.jp](mailto:sales@volumegraphics.jp)

Phone: +81 52 508 9682

**Support:**

E-mail: [support@volumegraphics.jp](mailto:support@volumegraphics.jp)

Phone: +81 50 5305 1829

**North America (Canada, USA, Mexico):**

Volume Graphics, Inc., Charlotte, NC 28217, USA

**Sales:**

E-mail: [sales-us@volumegraphics.com](mailto:sales-us@volumegraphics.com)

Phone: +1 704 248 7736

**Support:**

E-mail: [support-us@volumegraphics.com](mailto:support-us@volumegraphics.com)

Phone: +1 704 248 7736

**China, including Mainland China, Hongkong, Macao, and Taiwan:**

Volume Graphics (Beijing) Technology Co., Ltd., Beijing 100600, China

**Sales:**

E-mail: [sales@volumegraphics.cn](mailto:sales@volumegraphics.cn)

Phone: +86 10 8532 6305

**Support:**

E-mail: [support@volumegraphics.cn](mailto:support@volumegraphics.cn)

Phone: +86 10 8532 6305

**Singapore and other parts of Asia (except China and Japan):**

Volume Graphics Pte. Ltd., Singapore 068914

**Sales:**

E-mail: [sales@volumegraphics.sg](mailto:sales@volumegraphics.sg)

Phone: +65 6665 0310

**Support:**

E-mail: [support@volumegraphics.sg](mailto:support@volumegraphics.sg)

Phone: +65 6665 0311

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VGMETROLOGY is a software package providing a universal metrology solution. It works with industrial CT data, CAD models, meshes, and point clouds with a special focus on metrology-related applications, providing a wide range of measurement and GD&T functionalities.

TABLE 1-1: PRODUCT DETAILS

FEATURE	DESCRIPTION
Product name	VGMETROLOGY, VGMETROLOGY ES, VGMETROLOGY VIEWER
Release	3.3
Optional modules <sup>a</sup>	<ul style="list-style-type: none"> <li>• Manufacturing Geometry Correction</li> <li>• CAD Import<sup>b,c</sup></li> <li>• CAD Import with PMI<sup>d,e</sup></li> </ul>
Document ID	SystemRequirements-231-v003-001-en

<sup>a</sup> Available at surcharge. May not be part of your installation. Contact Volume Graphics for details.

<sup>b</sup> CAD translation technology supplied by Tech Soft 3D. Supported CAD formats are: CATIA V5 (up to V5-6 R2019 (R29)), Creo (up to 6.0). In beta status: CATIA V4 (up to 4.2.5), JT (up to 10.2), Pro/ENGINEER (up to 19.0), Unigraphics/NX (V11.0 to NX 12.0 and 1847), Solid Edge (V19–20, ST–ST10, 2019), SolidWorks (from 97 up to 2019).

<sup>c</sup> Available for Windows operating systems only.

<sup>d</sup> CAD translation technology supplied by Tech Soft 3D. PMI import is supported for CATIA V5 and Creo. In beta status also for Pro/ENGINEER and Unigraphics/NX.

<sup>e</sup> Available for Windows operating systems only.

## OPERATING SYSTEM

The software has been tested and approved for the following operating systems:

TABLE 2-1: SUPPORTED OPERATING SYSTEMS

PLATFORM	OPERATING SYSTEM
Windows:	Windows 7 Professional SP1 64 bit
	Windows 8.1 Professional 64 bit
	Windows 10 Professional 64 bit

## PROCESSOR

- Minimum:  
Intel® Core™2 Penryn, Intel® Core™ i, or AMD Bulldozer.
- Recommended:  
Latest Intel or AMD multi-core processors, e.g., Intel® Core™ i7 or Xeon® E5 processors with 2.4 GHz or higher.

## RAM

- Minimum:  
VGMETROLOGY requires a minimum of 2 GB free memory. However, the actual main memory needed for creating or loading a complete project might be significantly higher since it depends on the size of the data set, on the number of objects per project, on the analyses to be performed, and on whether the import functionality will be used.
- Recommended for professional use:  
If your tasks include the import of CT data sets without advanced surface determination, the free main memory should at least be 2.5 times the size of the data set to be imported. If your computer has less free main memory, the import will be performed block-wise which, however, will reduce performance. Be aware that block-wise processing during import is not available when the **Starting contour healing** option (removal of voids and/or particles) is used.  
  
If your CT data sets already have an advanced surface determination (either automatically from prior import into VGMETROLOGY or from prior processing with VGSTUDIO MAX), you will not use **File > Import**, but **File > Open** instead. Importing CT data sets is not available in VGMETROLOGY ES or VGMETROLOGY VIEWER. The amount of data when opening a project is usually relatively small and should be handled by any state-of-the-art off-the-shelf computer. However, if a project contains a large number of data sets, the memory requirements will be increased accordingly.

## GRAPHICS CARD

- Minimum:

Dedicated NVIDIA or AMD graphics cards with at least 512 MB VRAM and OpenGL 3.3 support.



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Importing FARO point clouds requires graphics cards that support at least OpenGL 4.1.

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- Recommended:
  - NVIDIA® Quadro® K2000 or higher
  - NVIDIA® GeForce® GTX 770 or higher
  - AMD FirePro™ 3D V5900
  - AMD FirePro™ 3D V7900
  - AMD Radeon™ HD 7950
  - AMD Radeon™ HD 7970
  - AMD Radeon™ PRO WX 7100
- Drivers tested by Volume Graphics:
  - NVIDIA® Quadro® 2000: driver version 335.23 (for Windows 7)
  - NVIDIA® Quadro® K2100M: driver version 332.50 (for Windows 7)
  - NVIDIA® Quadro® K600: driver version 331.82 (for Windows 8.1)
  - NVIDIA® Quadro® K620: driver version 340.66 (for Windows 7)
  - NVIDIA® GeForce® GTX 680: driver version 340.52 (for Windows 7)
  - NVIDIA® GeForce® GTX 970: driver version 344.75 (for Windows 7)
  - NVIDIA® GeForce® GTX 980: driver version 347.52 (for Windows 8.1)
  - NVIDIA® GeForce® RTX 2080 Ti: driver version 419.35 (for Windows 7)
  - AMD FirePro™ D700: driver version 13.25 (for Windows 8.1)
  - AMD Radeon™ HD 7970: driver version 14.50 (for Windows 7)
  - AMD Radeon™ R9 290X: driver version 13.25 (for Windows 7)
  - AMD Radeon™ R9 M290X: driver version 14.20 (for Windows 7)

Onboard graphics chips are generally not recommended and should be thoroughly evaluated if no dedicated graphics card is available.

If your computer has more than one graphics card, make sure to switch off the SLI mode.

## DISPLAY

The minimum resolution is 1400 x 1050, the recommended resolution is 1920 x 1080.

## SWAP SPACE

The available swap space should have the same order of magnitude as the RAM. If available, we recommend to place the swap partition on an SSD.

## DISK SPACE

Make sure to have sufficient free disk space in the directory for temporary files (see **Preferences > General > Expert** in the **Edit** (for Windows/Linux) or **VGMETROLOGY** menu (for Mac)). If there is less than 1 GB available in this directory, a warning message will be issued. This message is also issued if this directory has been deleted.

## USER RIGHTS

Make sure every user either has user or administrator rights. The license might not work when using guest accounts.

## RECOMMENDED SETUP

Optimum for industrial usage is a PC with

- two current Intel® Xeon® processors and 32 GB RAM,
- 64-bit hardware,
- 64-bit operating system, and
- 64-bit version of VGMETROLOGY.



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Virtual machines are not supported. VGMETROLOGY should be executed on your local machine.

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## THIRD PARTY SOFTWARE

- Reporting via Excel  
The optional reporting functions using an Excel Add-In support the following Microsoft® Excel versions:
  - Microsoft® Excel 15 (part of Microsoft® Office 2013), 32 bit
  - Microsoft® Excel 16 (part of Microsoft® Office 2016), 32 bit



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64-bit versions of Microsoft® Excel are not supported.

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Using the Excel Add-In for reporting is currently only supported for Windows.

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- Floating licenses  
Floating licenses need to be installed using the FlexNet Licensing Server. During installation of the FlexNet Licensing Server, Java Runtime Environment (64-bit version) 1.6 or later or OpenJDK 9 (64-bit version) is required, which is not part of the license or installation package.



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The installation of the FlexNet Licensing Server requires a 64-bit version of Java Runtime Environment.

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## GENERAL

- When working with CT data, you usually have to handle large amounts of data with high requirements on the computer system. For VGMETROLOGY the data handling has been optimized for most tasks which makes it possible to employ computers with lower performance. However, performing an import with surface determination using VGMETROLOGY (standalone product only) will still make higher demands on the computer performance. On starting the application, system resources such as main memory and number of processors are checked since these may be insufficient, especially if several applications are run at a time. If your system resources are not sufficient, a warning message will be displayed. Under certain conditions, starting the application may be prevented.
- You need a 3-button mouse with a scroll wheel to use the software. 3D mouse functionality is supported for the 3D window for 3DConnexion mouse devices.
- Problems may arise when running more than one instance of the application. Typical effects are, e.g., problems with the user interface, such as incomplete or misplaced interface elements or errors in the display of images. User settings like presets or workspace layout may inadvertently be overwritten. Processor capacity and main memory will be shared between instances of the application and may prove insufficient. This may result in a dramatically low system performance or even application crashes, especially if parts of the information need to be swapped to disk due to high memory consumption.

## GRAPHICS CARD

- Make sure to have the latest driver version for your graphics card installed.
- Graphics card drivers for laptops available from the laptop manufacturer may be out of date. Check the graphics card manufacturer's website for the latest graphics card drivers.
- Onboard graphics chips are not recommended.
- Volume Graphics uses platform-independent, industry-standard APIs like OpenGL or OpenCL for GPU programming. Vendor-specific APIs like CUDA or DirectX are currently not supported.

## RAM

- If data is to be imported that is saved in compressed files, e.g., in the JPEG 2000 format (.jp2), it has to be considered that the size of the data set on the hard disk may be significantly smaller than the size of the data set when loaded into the RAM.
- Do not deactivate the swap space. If more RAM is needed than available and there is no swap space, this may cause the system to crash.

## REMOTE ACCESS

Remote access to VGMETROLOGY is not supported. You should run the software locally on your own computer. If you use remote access to run VGMETROLOGY, you may encounter problems such as a corrupt display of the user interface, low performance, application crashes, and more.



The table below lists some common problems and their solutions.

TABLE 4-1: TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTIONS
Rendering problems occur, e.g., the 3D window is not (correctly) displayed, saved images are faulty.	<ul style="list-style-type: none"> <li>An outdated graphics card driver is installed.</li> </ul>	Download and install the latest driver for your graphics card.
	<ul style="list-style-type: none"> <li>An onboard graphics card is installed.</li> </ul>	An onboard graphics card might be insufficient to run your VG product.
Only part of the 3D window is updated when moving an object.	No Aero theme is selected in Windows.	In the <b>Personalization</b> window of the Windows <b>Control Panel</b> , switch to an Aero theme.
The performance is low.	There is not enough RAM available due to other applications running at the same time.	Close all other applications when running VGMETROLOGY.
The performance is extremely low with large data sets.	The size of the data sets exceeds the installed RAM, data is swapped on hard disk.	<ul style="list-style-type: none"> <li>If possible, install more RAM.</li> <li>Reduce the size of the data set, e.g., using suitable import settings.</li> </ul>
The application crashes when working with large data sets.	The size of the data sets exceeds the installed RAM, the swap space is not activated or too small.	<ul style="list-style-type: none"> <li>Activate the swap space.</li> <li>Enlarge the size of the swap space to about the order of magnitude of the RAM.</li> <li>Install more RAM.</li> <li>Reduce the size of the data set, e.g., using suitable import settings.</li> </ul>
The application crashes when saving large image stacks (NVIDIA graphics card).	There is an incorrect implementation of OpenGL in the graphics card driver.	Download and install a more recent driver for your graphics card.
On a notebook with two graphics cards: The application crashes before or while showing the splash screen.	Automatic switching between the graphics cards does not work properly.	Deactivate the onboard graphics card in the BIOS in order to use the dedicated graphics card of the notebook.

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTIONS
An installed codec is not visible in the codec selection when saving a .avi file.	<ul style="list-style-type: none"> <li>The codec is not compatible with the selected settings of the avi.</li> </ul>	<ul style="list-style-type: none"> <li>Change the settings for the .avi file, e.g., frame size, frame rate (fps). In many codecs, the width and height of the image must be a multiple of 2.</li> <li>Select a different codec.</li> </ul>
	<ul style="list-style-type: none"> <li>A 32-bit version instead of a 64-bit version of the codec is installed.</li> </ul>	<ul style="list-style-type: none"> <li>Install the 64-bit version of this codec.</li> <li>Select a different codec.</li> </ul>
The application crashes when trying to save an animation to a .avi file using a third-party codec package.	Most codecs are continuously being developed and are not always free of bugs.	<ul style="list-style-type: none"> <li>Select a different codec of this codec package to save the animation to a .avi file.</li> <li>Use a different codec package.</li> <li>Render the animation as an uncompressed .avi file or an image stack and convert it to a compressed .avi file using a third-party software (e.g., VirtualDub).</li> </ul>
The dongle manager does not resume working after the operating system returns from sleep mode.	Known problem of the dongle manager.	Remove the dongle and reboot the computer.
When double-clicking a .mvgl file in the Windows Explorer, it is not opened by VGMETROLOGY.	.mvgl files are not linked to the executable of VGMETROLOGY.	Re-install the software.
VGMETROLOGY does not start for a user with administrator rights.	The message “Do you really want to run the program as administrator or elevated process?” was answered with No and the Never show this dialog again checkbox was checked.	Delete the settings_vgmetrology3.3.ini file in the C:\Users\ <user name>\AppData\ Roaming\ Volume Graphics\ directory.
Importing a CAD file format supported by the CAD Import or CAD with PMI Import add-on module fails on a computer with Windows 7 operating system.	SP1 of Windows 7 is not installed on the computer.	Install SP1 of Windows 7.

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## TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTIONS
When installing the Flexera License Server, an error message related to Java appears.	A 32-bit version instead of a 64-bit version of Java Runtime Environment is used.	Install the 64-bit version of Java Runtime Environment 1.6 or later.