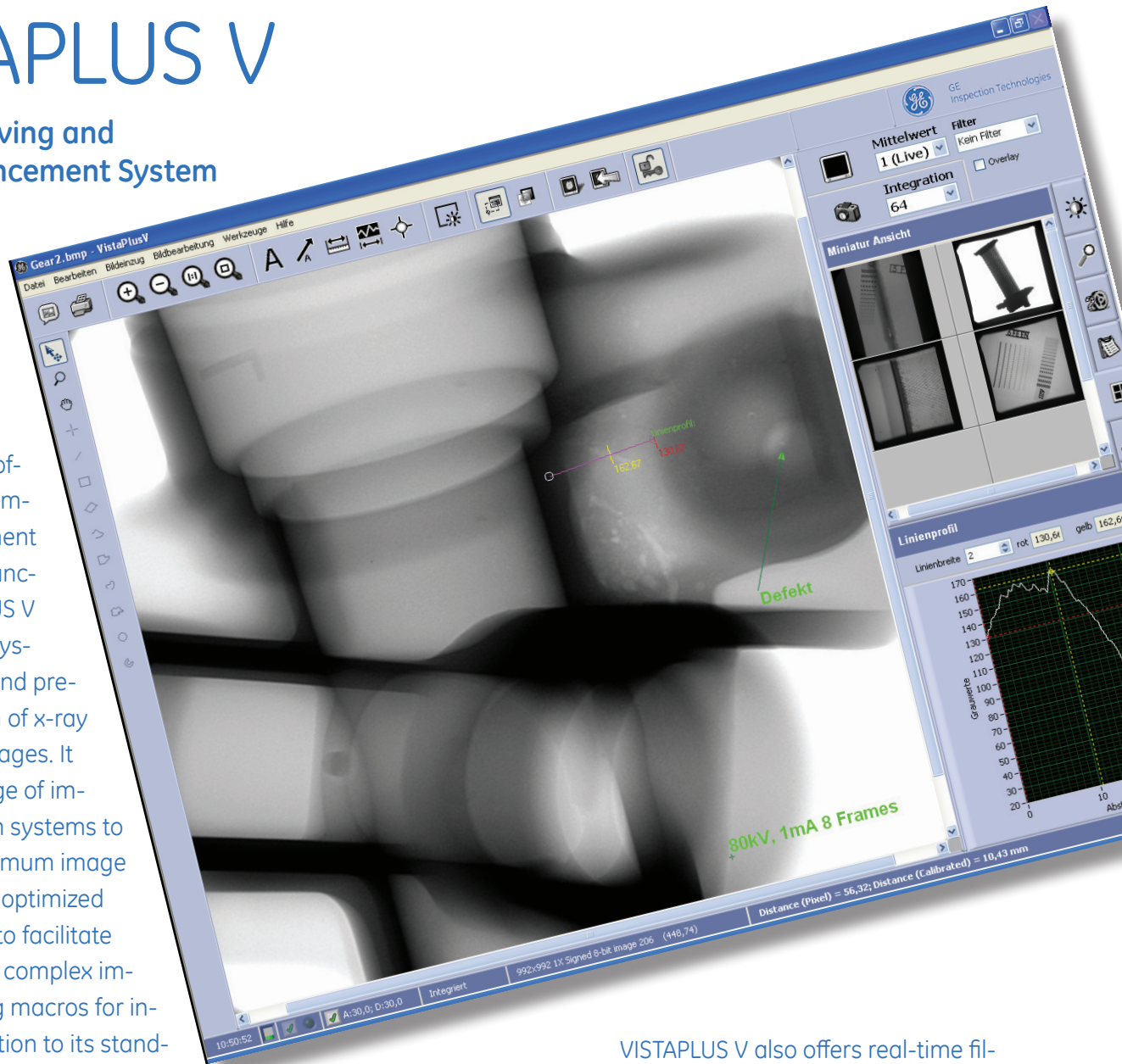


# VISTAPLUS V

## Digital Archiving and Image Enhancement System

With its state-of-the-art digital image enhancement and analysis functions, VISTAPLUS V is the perfect system for rapid and precise evaluation of x-ray radioscopic images. It features a range of image acquisition systems to guarantee optimum image quality and an optimized user interface to facilitate the creation of complex image processing macros for instance. In addition to its standard image processing functions,



VISTAPLUS V also offers real-time filtering of the live image, guaranteeing the best possible image representation also while inspecting in motion.



# VISTAPLUS V

In many applications, detail detectability is impaired, for instance by quantum noise in the x-ray radioscopic image.

The VISTAPLUS V image enhancement system employs image enhancement methods, such as image integration, special filters and grey scaling, to improve the detectability of these minute indications. It also has a number of measurement functions as standard to facilitate defect analysis, with semi-automatic defect recognition available as an option.

Due to the versatility of its functions, VISTAPLUS V is ideal for automated, repeatable inspections. VISTAPLUS V is a PC-based digital archiving and image enhancement system that runs on Microsoft Windows XP®.

The operator's interaction with the software relies on two basic input elements, the mouse and the keyboard function keys. You can select the language for the interactive graphical user interface individually even during operation. The intuitive nature of the VISTAPLUS V system is also reflected in the speed with which the different image processing functions can be used. The modular design of the VISTAPLUS V hardware and software supports customized solutions whenever needed. The VISTAPLUS V is compatible with a wide range of industrial radioscopic x-ray inspection systems.

## Main features

### • Image acquisition

- High-resolution 1k digital camera (12 Bit)

Depending on system set-up, VISTAPLUS V supports the following x-ray detection systems:

- Various GE flat-panel detectors (14 Bit, up to 2024 x 2024 Pixel)
- Perkin Elmer XRD1620 flat-panel detector (16 Bit, 2048 x 2048 Pixel)
- Perkin Elmer XRD0840 flat-panel detector (16 Bit, 512 x 512 Pixel)
- Varian PaxScan 2520V (12 Bit 1536 x 1920 Pixel)
- Further image acquisition systems currently in development

### • Supports two monitors (up to three as an option)

- User interface with display of the processed image
- Live image monitor
- Reference image display

### • Non-tearing live image with various monitors

A difference between the display rate and the monitor refresh rate can cause parts of two different images to be displayed at the same time, which results in a split in the displayed image. In Vistaplus V, the image display is synchronized to the refresh rate of the monitor and tearing is eliminated.

### • Real-time averaging for noise reduction in the live image without smearing effects

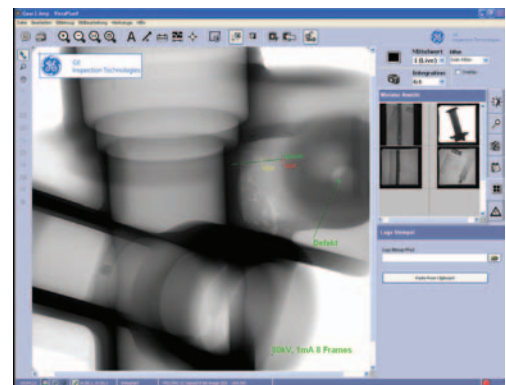
### • Real-time filtering of the live image

### • 33 predefined digital filter functions plus additional user-definable filters

### • Easy to set up image processing macros

24 hot keys for frequently applied image enhancement and analysis macros

### • Zoom (stepless from 0.1 to 8.0)



Predefined or customer-specific logos are quickly inserted into the image

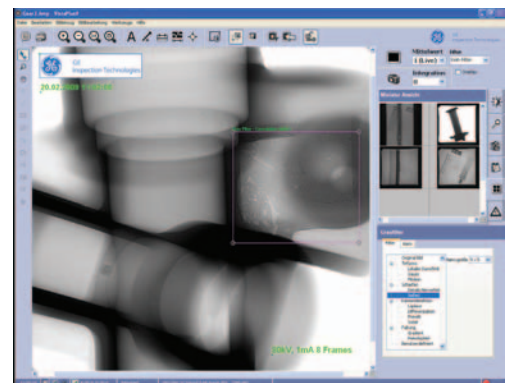
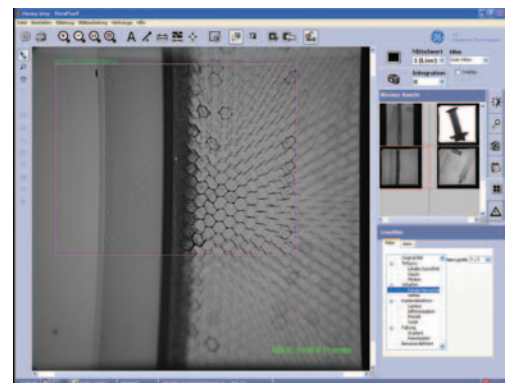


Image markings are easily incorporated and edited in the image



Effective image enhancement filters

- **Ergonomic user interface**

Fast zoom, contrast and brightness adjustment using combined mouse functions

- **Automatic and manual contrast and brightness adjustment**

- **Overlay tools for image annotation**

- Text marker
- Arrow marker
- User-defined logo stamp
- Time and date stamp
- Grey scale value information
- GE Sensing & Inspection Technologies x-ray inspection system machine data shown automatically

- **Automatic and manual storage of digital images in various formats (BMP, JPEG, JPG2000, PNG, TIFF)**

- Original
- Original with overlay
- Original with merged overlay for further processing using word processing or presentation software for instance

- **Calibration**

Pixel conversion into mm/inch

- **Image measurement/analysis**

- Line profile and histogram calculation functions
- Area and length measurement within the image
- Interactive determination of the signal to noise ratio and standard deviation in any surfaces
- Various surface tools for user-defined measurement and filter tasks
- Clear output of measurement results for all image measurements.
- Export function for outputting measurement results to a standard text file

- **Detector protection system**

During operation, the detector is monitored by an alarm system which is triggered in the event of blooming and damage to the x-ray detector. Excessive blooming will cause the x-ray source in integrated GE systems to switch off automatically.

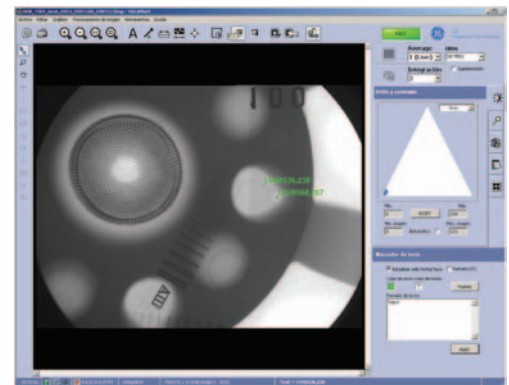
- **Control from GE Sensing & Inspection Technologies radiosopic x-ray systems**

- Access to more than 100 programmable scripts
- Transmit machine data (e.g. x-ray parameters)
- Prompt user decision about archiving inspection results
- Set minimum display time of an x-ray image at defined positions
- Time synchronization
- Automatic switch-off of x-ray source in the event of blooming (detector protection system).

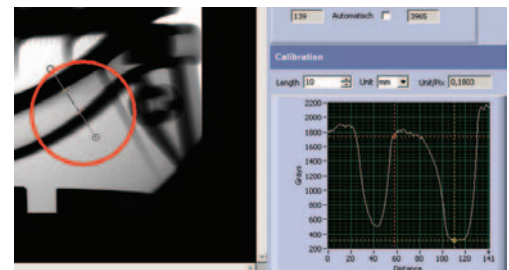
- **Password protection**

Individual access authorization

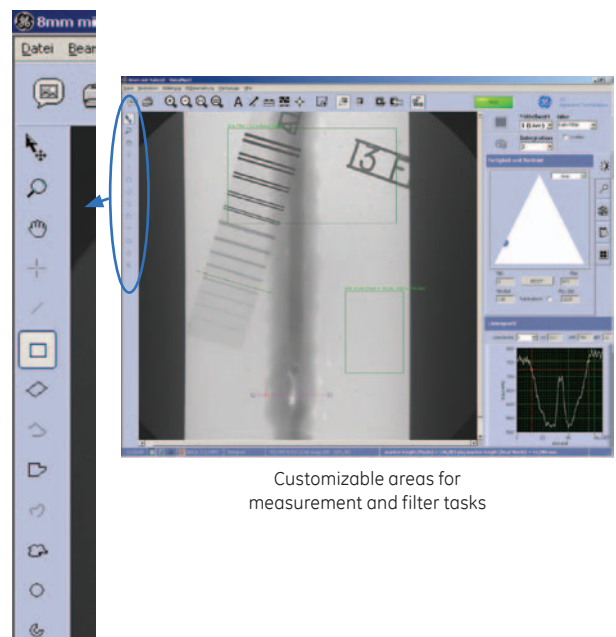
- **Integrated reference image function with user-definable display.**



Pixel marker function allows grey scale values and position coordinates to be quickly displayed in the image



Simple and precise line profile measurement



Customizable areas for measurement and filter tasks

- **Illumination mode**

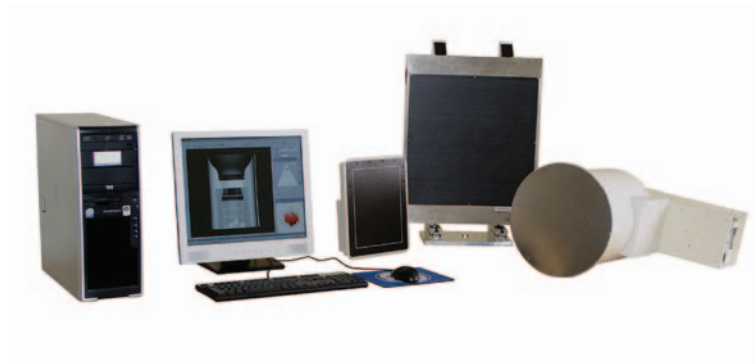
Illumination mode uses special functions in combination with the digital image intensifier VISTALUX 9S3 HR (1k) to considerably enhance the penetrability of dense materials. This function enhances the capabilities of standard image intensifiers and, in some cases, may eliminate the need to invest in more powerful x-ray sources, generators and accompanying radiation protection. This function can only be used in combination with the VISTALUX 9S3 HR (1k) GE image intensifier with digital camera technology.



# Technical specifications

## Standard delivery scope

<b>Recommended hardware</b>	Desktop computer with dual-core processor >2.4 GHz, >1024 MB RAM, PCIe graphic card 1600 x 1200
	Compatible frame grabber for the detector system being used
<b>Operating system</b>	Microsoft Windows XP®.
<b>Software licence</b>	VISTAPLUS V
<b>Options</b>	<b>Semi-automatic defect recognition</b>
	<b>Additional measurement functions</b>
	<b>Additional Ethernet network card</b>
	<b>Uninterruptible power supply (UPS)</b>
	<b>Additional customized modules</b>
	<b>Control panels with an IP54 protection rating for industrial or factory environments.</b>
	<b>19" industrial PC case</b>
	<b>Additional graphic card if 3 monitors are to be used in combination</b>
	<b>Various 19" and 20" monitors</b>

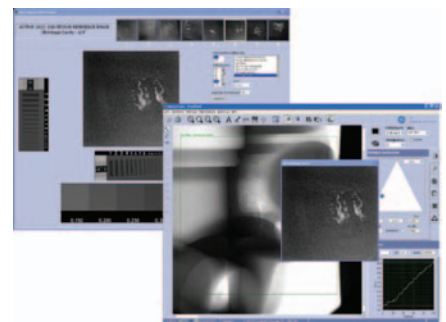


## Options

- **EZ-Compare 2422**

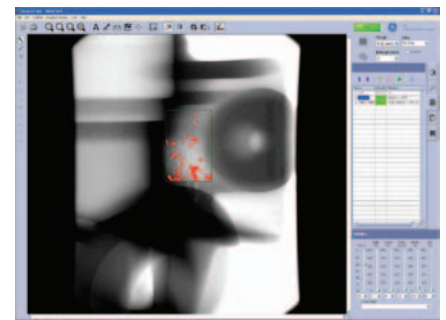
Straightforward comparison with official ASTM 2422 reference image catalogue

- Intuitive reference imagedisplay for simple comparison with official defect catalogue
- Frame-synchronous enhancement and magnification functions
- Predefined operations for efficient automation



- **Automatic defect recognition**

Automatic detection of potential anomalies to support the user (S-ADR).



[www.ge-mcs.com](http://www.ge-mcs.com)

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