

# Metric – The measuring software for video microscopes

## Metric – simple to use!

Measurement software shouldn't result in the user losing time. The Metric measurement software is an alternative to other available programs, which are often complicated to use.

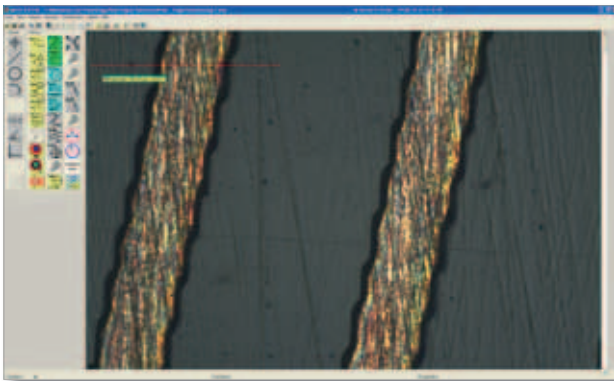
## Why Metric?

The fact that Metric can measure in the live image saves an enormous amount of time, given that images need not be saved first and subsequently retrieved again. Through the use of our USB 2.0 camera, the software can be installed on as many computers as desired. Metric is enabled wherever the camera is connected. On the one hand, this removes the need for the troublesome USB dongle, and on the other, it is extremely practical for mobile systems such as the Cellcheck Series, given that everyone who wants to share a microscope already has the software installed on their computer.



Metric can be switched between 25 different languages, a feature which has led to the program being used all over the world. This is not only of interest to international clients. In large companies with staff from many different nations, software training is made much easier.

Updates for Metric measurement software are generally free of charge. With the corresponding serial number, the user is immediately taken to the correct version in our download area. This saves time-consuming update contracts and ensures that users can always keep their systems up to date.



It is always possible to carry out an upgrade from Metric PE Standard to Metric Plus or MT at the original update price. Your old version will not lose its value.

Of course, we cannot forget the telephonic support: The Metric header bar contains our normal telephone number, not the Nirvana hotline.

## Versions:

Metric is available in four configurations. Metric BE is intended only to display and save images and generate cross-hairs for positioning (see function list). The DoubleCheck function enables two live images with cross-hairs to be automatically launched beside each other when two cameras are used..

Metric PE contains basic measuring functions, such as distance, radius and circular measurements, angle measurements and some other basic measuring functions (see function list). For users who prefer to allocate functions to hot keys, Metric PE has the option of creating 30 hot keys.



Metric Plus contains all available measuring functions: Special circular measurements, measuring functions for the PCB area, thickness measurements, drill, milling and thread measurements, DFX overlay, focus calculation and many other special functions. It would take too long to list all of the functions here; therefore they are detailed in the function list below.

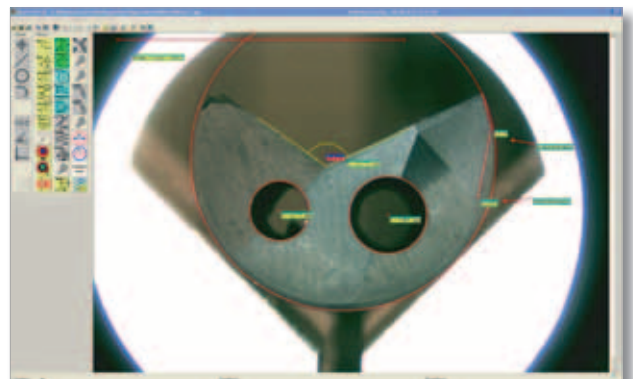


Metric MT has two additional functional levels: The buttons located in the left column activate the measurements point, line, circle and circle segment. The three buttons below are intended for the distance, angle and best-fit line. With the four upper measuring functions, all relevant objects or measuring points are marked. Afterwards, measurements can be linked in the computer window (button with PC).

The second is the readout function of X, Y and Z values. Metric MT can generally be combined with practically every measurement system. Regardless of whether the measuring tables are from Märzhäuser, Uhl, Prior, Steinmeyer or others, the XY axis are read and calculated in Metric MT. If no direct USB or RS-232 connection is possible, it may be necessary to transfer data via a suitable interface. Data from measuring spindles such as Mitutoyo, Sylvac, Heidenhain or integrated measuring systems, for instance from Schneeberger, on or in guidance systems is also processed. The X, Y and Z values are permanently displayed in an additional window in Metric. Below is a list of the measuring systems which can currently be read out. If you have a system which is not included in the list, please do not hesitate to ask us.

The scope of features included with Metric Plus and Metric MT is virtually unbeatable in relation to the price. If a specific measuring function which you require for your company is not included in Metric: we would be happy to program a special measuring function for you.

If this has awakened your interest, please feel free to download and test the demo version. If you have any questions, please do not hesitate to call us.



**Alternatively**, the navigation bar for Metric PE, Metric Plus and Metric MT contain a comprehensive help menu with a large number of screenshots and the corresponding detailed explanations of all functions included in the function overview list.

**Controls** for motorised cross tables which are read in in Metric MT:

- Tango, Märzhäuser
- CNC-Axis Board, Metronic Heidenhain
- MCU-28, Fa. Zeiss
- WCB DCDCDrive 6, Winecke & Sinske
- Pro Scann 2, Prior
- L-Step, Lang
- SMC Serie (Corvus, Pollux, Basic), ITK Dr. Cassen
- Motor Driver, Navitar Inc.



**Interfaces**, read in by Metric MT:

- IK-220, Heidenhain
- IM BUS, all common signals, IBR
- Sylvac via RS-232 or USB
- Digimatic DMX-1, via RS-232 or USB Mitutoyo
- Digimatic DMX-2, via RS-232 or USB Mitutoyo
- Digimatic DMX-3, via RS-232 or USB Mitutoyo
- S-Box 25, MUX/USB Bobe/Mitutoyo
- B-Box 3, via RS-232 or USB Bobe/Mitutoyo
- AK-1 and IK-2, Winecke & Sinske
- QC-100, QC-200, QC-300, QC-5000, Metronic, Heidenhain
- SCD 2-Kanal, 3-Kanal, Märzhäuser
- I-Counter, Hitec
- USB-302, Carmar
- SC-212, Nikon
- KA-Counter, Mitutoyo
- DC-HI-NET, Steinwald Datentechnik

All standard measurement transducers can be operated with the aforementioned interfaces and read in in Metric MT. Other signals can be integrated at any time on request.



# *System requirements for PC's and laptops*

## Supported operating systems:

- Windows 2000 as of ServicePack 4 - **only framegrabber - analogue cameras!**
- Windows XP all versions ServicePack 2 \*)
- Windows VISTA all versions ServicePack 1 \*) \*\*)
- Windows 7 all Versions \*) \*\*) \*\*\*)

## Supported PC-Hardware

- Pentium III 1 GHz or higher
- AMD K7 „Athlon“ or higher
- 256 MByte RAM (Observe minimum requirements for operating system!)
- 200 MByte free space on hard disc
- USB 2.0 for digital cameras (fully supported = 500 mA power supply) \*\*\*\*)
- PCI port for framegrabber (on older systems as close as possible to graphic board)
- Separate graphic board (or Intel 945G or newer graphics chip set) DirectX 9.0c compatible, min. 512 MByte RAM for digital cameras, min. 128 MByte RAM for framegrabber (Observe BIOS settings for graphics chip set)
- Graphic board min. AGP 2x (special CAD graphic boards can cause problems)
- Please do not use ATI graphic boards if possible, because „overlay mode“ of Metric measuring software may not work properly.

## Monitors

- Minimum resolution 1600 x 1200 pixels (native resolution)
- When 16:9 monitors are used it is necessary to either increase the resolution to display the software mask at a ratio of 4:3 or to set it to 4:3 to prevent circles being displayed as ovals.
- When HDMI interfaces are used it is necessary to ensure that all drivers are installed correctly to prevent the image from “freezing up”.
- Monitors with a frequency of 200 Hz or with tweening (interframe calculation) are not recommended, because otherwise the picture “lags behind” which can be very disturbing especially at high magnification factors. Moreover the graphic board installed must support HDMI.
- Single channel DVI interfaces only support resolutions up to 1900 x 1200 pixels. For this reason it must be dual channel.
- The monitor must always be operated at its native resolution.

## Image sources

- Framegrabber (PCI)
  - IDS Falcon (also PCIe and low profile) or IDS Eagle (also PCIe), 32- and 64bit drivers
  - Leutron PicPort Color (drivers are provided by us exclusively, no 64bit drivers)
- Card bus grabber (Laptop add-on slot)
  - HaSoTec FG33-II(drivers are provided by us exclusively, no 64bit drivers)
- Digital cameras \*\*\*\*)
  - IDS uEye all versions  
(drivers up to 2.40 for older board versions, 64bit drivers only as of version 3.50)
  - ABS UK all versions  
(drivers provided exclusively by us, 64bit drivers included automatically)

## Recommended systems

- Windows XP Professional ServicePack 3 or higher
  - Hardware as of approx. 2007 (min. 2GHz for digital cameras, Image processing features and high speed DXF overlays for MT versions)
  - Graphic board PCIe 16x (moderate performance, not HighEnd)
- Spreadsheet programs (Microsoft Excel™ or OpenOffice as of Version 3.0) are required for special evaluation features and protocol layouts with the PLUS and MT versions.
- \*) 64 bit operating systems sometimes require special hardware drivers, which are not available for the image sources listed.
- \*\*) A side effect of the special security systems used by Window VISTA and Windows 7 is that it is not possible for all users to change the program default settings. Administrator rights are required for storage in any case.
- \*\*\*) In some cases it may be necessary to use the XP mode. This requires special hardware with virtualization features and installation of the (free) XP mode.
- \*\*\*\*) Speeds can be checked with CheckUSB.exe on the CD.

# Metric Functions

			Yes	No	Option	
PE	Plus	MT	<i>Functions</i>			<i>Subfunctions</i>
						Right mouse button
						Context menu
						Linkk objects
						via button bar
						Analyse sensor
						Engine controls
						File
						Load image
						Save image
						Save image sequence
						TWAIN Acquire
						TWAIN
						Print image
						Print log
						Printer setup
						Video
						On / Off
						Freeze frame
						Display
						Select Video source
						if more than one source available
						Measure
						Distance
						Point to point
						Point to point with subsidiary lines
						Point to line
						Circle to circle
						Circle to line
						Chain dimension
						Distance to DXF
						Hardness measurement
						Circular area difference
						Circular area difference 3 circles
						Pinhole
						Polygon difference
						Angle
						3 point
						4 point
						A dimension
						Z dimension
						Area
						Circle
						Polygon
						Freehand figure
						Special cicle measurements
						Diameter MCC
						Diameter MIC
						Gaussian form deviation
						Tschebyscheff form deviation
						Diameter LSC
						Wall thickness
						Borers – Cutters
						Measurement WQ
						Measurement SU
						Effektive diameter
						Angle in circle
						Crosshairs, simple and rotatable
						Distance PP (subsidiary circle)
						Angle 4C
						Distance PP plus angle
						Measurement RZ
						Clearance angle I
						Clearance angle II
						Clearance angle I plus chip angle
						Clearance angle II plus chip angle
						Chip angle
						Layer thickness
						Layer thickness acc. with DIN EN 1071-2
						Radius
						Diameter

Yes No Option

PE	Plus	MT	Functions	Subfunctions
			Freehand circle	
			Circle segment	
			Numbering	
			Material fraction	
			Shut down	
			Reference	
			Crosshairs	Fixed
				Simple
				Simple, rotatable
				Doubled
				Doubled, rotatable
				Variable angle
				V angle
				Off
			Scale	On / Off
			Screen	Reticule
				Tolerance rings
				Multiforn screen
				Overlay
				DXF Overlay
			Text with circle	
			Text with arrow	
			Text input	
			Draw sharp	
			Settings	
			Character color	6 different
			Line thickness	1 to 3 pixels
			Font	
			Measurement systems	up to 100 items
			Calibrate	manual
				automatic dot matrix
				automatic ring structure
			Scale vertical	
			Program options	see table Program options
			Menu selection	
			Quick select buttons	
			Load settings	
			Change password	
			Save settings	
			Table	
			Add object	
			Remove object	
			Dimension object	
			Show table (Button on table window)	Save as ASCII table
				Save as DXF file
			Display Excel / Open Office table	If program is installed
			Draw table	
			Load table	
			Save table	
			Table new	
			Help	
			Show help	
			About the program	
			Archive	if available
			Launch archive	
			Transfer new image to archive	
			Return current image to archive	
			Other function buttons	Copy (to clipboard)
				Insert (from clipboard)
			Pixel magnifier	
			DoubleCheck	
			DXF quick load window	
			Exceltable Plus (Open Office)	if program is installed

# Metric *Program options*

PE	Plus	MT	<i>Program option</i>	<i>Subfunction</i>
			<b>General</b>	Language selection
				Launch DoubleCheck automatically
				Save Font
				Confirm lens
				Preferred image format
				Display MT functions
				End warning re. changed configurations
			<b>Measuring functions</b>	Table entry with right mouse click
				Distance measurements in XY coordinates
				Automatic edge finding (no live picture)
				Angle in degree-minute-second
				Excel- / Open Office (Keywords) per line
				Excel- / Open Office (Keywords) several images
				Digital places
			<b>Analyse object</b>	Diameter
				Circularity
				Circumference
				Surface area
				X extension
				Y extension
			<b>Live image window</b>	Reflect live picture horizontally ( <i>Hardware dependant</i> )
				Reflect live picture vertically ( <i>Hardware dependant</i> )
				Display measurement values
				Display date / time
				Mouse pointer in measurement window
				Crosshair line type
			<b>Extras</b>	SU measurement with subsidiary line
				Storage location for Excel / Open Office tables
				Enter table name in 'new table'
				Show crosshair measurements
			<b>DXF loading window</b>	Show DXF file name