

## Primo Vert

**Affordable. Easy-to-Use. Ergonomic.**

The inverted microscope Primo Vert is focused on the essentials: Excellent optical quality, ease of use, choice of high quality materials and an appealing design are all available at an affordable price.

Primo Vert addresses both routine and cutting-edge research laboratories which require compact and reliable microscopes for checking cells quickly and efficiently. The microscope can be also used by students in advanced course room settings.

Key customer benefits at a glance:

- Excellent price-performance ratio
- Easy-to-Use concept: auto on/off function, universal phase contrast
- Long-term mechanical and optical stability
- Attractive industrial design

In addition to the binocular tube and trinocular tube (photo) versions, Primo Vert offers an innovation that generates a new class of its own: The Primo Vert Monitor.

Ultimate convenient: Primo Vert Monitor

- Monitor allows multi-observation in training situations
- Adjustable monitor tilt (45° - 80°) for ergonomic and comfortable work
- Head is no more in a fixed position to the eyepieces; glasses are no longer a problem
- Integrated digital camera, SD memory card slot, USB port
- Remote control for the acquisition of images, remotely or through glass plates of flow boxes



The new fast and convenient solution for assessing and checking living cells.



We make it visible.

# Focused on Essentials – Ease of Use and Reliable Results

Primo Vert presents a number of attractive details to guarantee quick, easy and reliable handling. This makes Primo Vert the perfect tissue culture phase contrast microscope.

The walk away mode turns off the light automatically (in addition to manual on/off-function) after 15 minutes – to save energy and prolong lifetime of the bulb.

Modular illumination with halogen light or with longer lasting LEDs. The advantages of LEDs are the stable colour temperature, only one tenth in power consumption, significantly longer lifetime – therefore a lower cost solution.

Special Skin-friendly material coated on all operating elements.

Universal phase slider for all objectives: For ease of use there is one phase ring (Ph 1) available for 10x, 20x and 40x – this means no need to change phase positions when switching magnifications.

Increased working distance through easy removal of the condenser, e. g. for roller-bottles.

Objective-indicators for fast identification of magnification.

Carrying handle on the back of the scope.

High-quality optics through high-quality glass. Objectives with infinity optics for magnification up to 40x long working distance provide high-contrast and brilliant images.

Swivelling Siedentopf-tubes. The viewing height can be adjusted to an upper or a lower viewing height according to the preferences of the user. The inter-pupillare distance can be adjusted down to a minimum of 48mm.



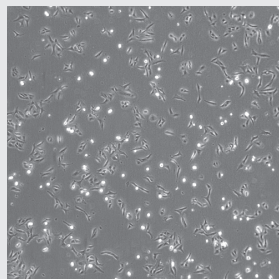
*Ease of use: Walk away mode and light push-button on the stage – makes a quick check of living cells more than easy.*



*Increased working distance through easy removal of the condenser, e. g. for use of roller-bottles.*

One example of the numerous applications is molecular oncology

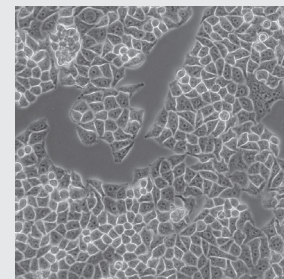
*Cancer cells are cultured in incubators for the purposes of research. Their stage of development can easily be assessed with Primo Vert – a routine step that requires a consistent workflow and fast results. The microscopic image must provide absolutely reliable information on whether the cells are adhering to the bottom of the vessel, which means they are intact and can be used in further experiments. On the other hand, if they are floating in the nutrient medium, they are stressed or already dead and thus unfit for further use.*



*U2OS cells:  
Magnification 4x Ph0*



*U2OS cells:  
Magnification 40x Ph2*



*HeLa-cells:  
Magnification 20x Ph2*

# The Primo Vert Monitor – A New Viewing Perspective

With the new Primo Vert Monitor\*, Carl Zeiss offers an ideal microscope for multi-observation purposes. Several users can look at and discuss the microscope image at the same time without having to adjust any eyepieces individually.

The new “pass by mode” in microscopy. Just walk and check your cell lines in the pass by mode:

- Easy inspection of living cells is possible, i.e. without having to look through eyepieces.
- Ergonomic quick check of living cells. The monitor can be tilted from 45° up to 80°. So users can easily adjust the LCD monitor to their individual posture.
- Convenient image storage by the push-to-save camera to SD memory card without PC connection. Additionally a computer can be connected to the USB port on the stand.
- No requirement to remove eyeglasses in order to check the microscopic images.

The main applications for Primo Vert are:

- Sterility checks
- Cell checks before protein, DNA or RNA preparation
- Cell checks in the framework of screenings after donation of substances (e. g. pharmacology)
- Differentiation of cell types
- Characterisation of cell lines (oncology)
- Growing of cells to produce artificial tissues or organs
- Documentation of the above test results

\*= For research only - not for medical diagnostic.



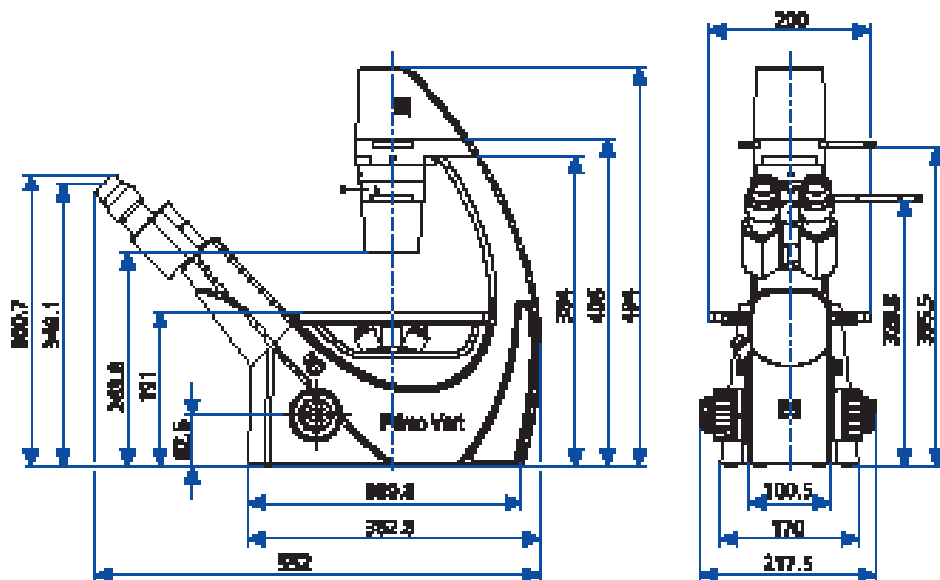
*Primo Vert enables discussion of the microscope image by several users.*



*The microscope image of the embedded camera can easily be stored on the SD card.*



*All Primo Vert versions fit well into hoods and flow boxes. The image acquisition of Primo Vert Monitor can optionally be operated by remote control.*



### Primo Vert – Optical and Mechanical Data

Objective change	Manual via quadruple objective nosepiece
Objectives	Infinity-corrected objective range with W 0.8 mounting thread Plan-Achromat: 4x/0.1, 4x/0.1 Ph0, 10x/0.25 Ph1 LD Plan-Achromat: 20x/0.3 Ph1, 40x/0.5 Ph1, 20x/0.3 Ph2, 40x/0.5 Ph 2
Phase-Slider	Universal phase slider for the objectives Ph1: Convenient and economical Phase slider for Ph2: Higher resolution
Eyepieces	WF-PL 10x/20 Br. foc.
Specimen stage	Fixed
Dimensions (width x depth)	200 x 239 mm
Specimen guide	Right side
Verniers with numerical and alphabetic scale	X direction: Numerical scale, readable from right to left Y direction: Alphabetic scale, readable in the mirror right side
Coaxial drive	
LD condenser 0.3	For magnifications 4x to 40x, WD = 72 mm
LD condenser 0.4	For magnifications 4x to 40x, WD = 55 mm
Binocular tube 45°/20	Viewing angle 45°, FOV 20
Interpupillary distance	Adjustable from 48 to 75 mm
Viewing height	360 to 397 mm
Trinocular (photo)tube 45°/20	Viewing angle 45°, FOV 20
Photo/video port	Tube factor 1x, 60 mm
Fixed beam splitting	50 % vis / 50 % doc
Primo Vert Monitor	Camera: 5 Megapixel CMOS Monitor size: 8.4" Display: 800 x 600 pixel Storage Medium: Secure Digital (SD) card Outputs/ports: USB 2.0 Camera driver for: AxioVision LE with special Microscopy software: Configuration tool
Light source	HAL: 6 V, 30 W LED: White light, 3 W



reddot design award  
winner 2010

- All optics in Primo Vert are anti-fungus treated
- Norms and standards met: CE, UL, CSA, IvD, DIN EN 61010-1 (IEC 61010-1), ISO 9001
- Available optional accessories: Object guide and several mounting frames for Petri dishes etc., stage inserts (metal or glass), stage enlargements, several camera adapters, eyepiece micrometer and eyepiece pointer, neutral density and green interference filters, cameras, AxioVision LE microscope software

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