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Veradius Unity

Enjoy straightforward image guidance

Our Veradius Unity mobile C-arm with ClearGuide helps you carry out open surgery and advanced minimally invasive procedures with ease and confidence. Thanks to its user interface that is as intuitive as a tablet computer, and ClearGuide that provides a common language for positioning the system, this is the easiest Philips flat detector mobile C-arm to work with ever.

Veradius Unity is our third generation of flat detector systems with rotating anode and 15 kW generator, providing superb image quality. We've further enhanced image and dose settings, so clinicians can enjoy extra confidence during advanced interventions as well as routine procedures.

Key advantages

- Enhance workflow in the OR with the intuitive user interface.
- Reduce miscommunication during positioning through our innovative ClearGuide and color coding on the C-arm.
- Confidently perform complex procedures with superb image quality achieved at excellent dose efficiency.

Easy to operate and transport, the system consists of a mobile C-arm stand with optimized geometry for enhanced patient access and a compact Mobile View Station with two 19" LCD monitors for image processing, review, archiving and display. The system is equipped with an intuitive touchscreen user interface on the C-arm.

Better user experience to promote consistency and efficiency

No matter what level of experience a surgeon, X-ray technician, or nurse has, it's important that the surgical team works together efficiently and understands each other to perform consistent procedures every time.

An operator and physician who use the same language to describe system movements can reduce the time and number of images needed for a surgical procedure. Just as important, working in sync with each other can make procedures more pleasant for everyone.

Convenience at your fingertips

Operators gain new ease with our 15" touchscreen user interface on the C-arm. It's as easy to use as a tablet computer. For example, just touch the screen to drag the shutters and iris into position on Last Image Hold. All high level functions are clearly displayed on one screen. You don't have to work your way through multiple menus to find what you need. When you activate a function, the intuitive menu shows you only the relevant features and guides you each step of the way. So less experienced users can quickly find the basic functions they need and experienced users can access all the advanced features they prefer.

The user interface can be rotated, so the operator can easily access it from where ever he stands.

Better communication for easier positioning

Our unique ClearGuide functionality and the color coding on the C-arm provides a uniform reference for the operator and physician during surgical imaging. It can enhance communication during orthopedic procedures and others that require a number of position changes. It works like a clock face to indicate a direction. A set of numbers (3, 6, 9, and 12) on the flat detector corresponds to the same set of numbers displayed on the clinical image. That means the physician can give unambiguous instructions, like 'Rotate orange towards 3' and the operator knows exactly which movement and direction is meant. The numbers on the image always match up, even if the image is rotated, flipped, or mirrored.

Easy patient access

Experience flexibility and comfort when performing procedures with the optimized C-arm design that enables easy patient access. The shape of the counterbalanced C-arm provides more room to easily access and image normal sized and obese patients. There is more space for the surgeon to work around patients. It is easy to position the C-arm, even for difficult projections. Plus, you have room to maneuver and reposition your instruments.

C-arm stand:

- Ultra-compact foot, with rear-wheel steering, including push bar and steering handles for easy maneuverability and positioning of the stand
- Deep C-arm with 73 cm immersion depth for optimal access even to obese patients
- 140 degrees rotation (+90/ -50 degrees) for increased projection flexibility
- Extended vertical movement to fit desired working height, especially for obtaining low lateral positioning
- Dedicated parallel movement for easy positioning along operating table.
- Automatic cable deflectors
- Flat, easy to clean, user-friendly control desk with lighted display and soft-buttons for flexible application-driven control
- Hand switch, foot switch to enable X-ray, select zoom size, switch between subtracted/unsubtracted images, review images and select X-ray modes
- Hand held remote control that enables easy access to fluoroscopy mode selection and main image processing functionality for an optimized workflow
- Radiation indicator
- System lock (requires a key to enable or disable X-ray control)
- Privacy protection: protects patient information from unauthorized access by the means of a password

Greater insight and confidence in finding and treating the problem

See more with our third generation Flat Detector system

Our third generation Flat Detector system provides high quality fluoroscopy, subtraction runs, and roadmap guidance to support orthopedic, cardiac and vascular surgeons in performing the most challenging procedures. From pacemaker lead insertions to abdominal aortic aneurysm repair, from hand surgery to vertebroplasty, the Trixell Flat Detector delivers undistorted, consistent, edge-to-edge image quality and superb contrast resolution to support critical decision making. Take a high resolution digital exposure with the SharpShot feature to check device placement after procedures. Get high-quality cardiac images with the 30 frames per second fluoroscopy setting.

- Visualize complex bone structures and place screws with confidence, guided by the undistorted, high-contrast images that the advanced Flat Detector imaging can provide
 - Control your cardiovascular workflow seamlessly using dedicated vascular protocols, the system's wireless foot switch, and remote control
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- Provide visualization and confidence for endovascular repairs with high quality fluoroscopy, subtraction runs and roadmap guidance. Images have superb contrast thanks to high dynamic range of the Flat Detector
- View dynamic trans-aortic aneurysm anatomy with high quality images using pulsed exposure mode
- Use Metal Correction to adjust the contrast and brightness of images to enhance image quality when metal objects are present in the field of view

Lower barriers for minimally invasive interventions

Comprehensive X-ray dose management

With the Veradius Unity, you benefit from highly evolved X-ray technology with comprehensive dose management features. Philips was the first company to market the mobile C-arm and has over half a century of experience in developing mobile C-arm systems for the surgical environment. That translates into a full range of radiation management features that allow low X-ray dose for lengthy surgical procedures, while providing exceptional quality images:

- ClearGuide and Position Memory option – when tested during a simulated spinal surgery, these features cut the number of scout images nearly in half, compared to not using it
- Independent shutters – position shutters independently to better match anatomy in the field of view without using radiation
- Efficient beam filters – our beam filters, with an additional 0.1 millimeter of copper and 1 millimeter of aluminum, increase the quality of the X-ray beam and reduce the skin entrance dose by 40%.
- Monoblock design – delivers sharp pulses to provide excellent radiation dose management
- Removable grid – easily removed to visualize small anatomy and extremities with radiation dose savings of up to 60%.
- Integrated laser – position the C-arm with confidence without applying radiation

Increased dose awareness

All Philips mobile C-arms provide radiation dose awareness features which aid in the documentation, analysis, and awareness of radiation dose in the OR. These include DICOM Structured Dose Reporting, dose indication during the procedure, and a dose alert when the examination dose exceeds a preprogrammed level.

Flat detector imaging system:

- Trixell amorphous silicon detector
- Cesium Iodide Scintillator
- Active detector size: 28.7 x 26.2 cm
- Field of view: 26.2 x 26.2 cm
- Matrix: 1560 x 1420 pixels
- Pixel pitch 184 µm
- Three user selectable zoom formats (field input sizes: 27, 18, 13 cm)
- Automatic dose-rate control
- Grid 70 lines/ cm, grid ratio 13:1
- Integrated FD laser for easy positioning without X-ray

X-ray modes:

- Low Dose Fluoroscopy (from 3 up to 15 fps, optional up to max 30 fps optional)
- Normal Fluoroscopy (from 3 up to 15 fps, optional up to max 30 fps optional)
- Increased Dose Fluoroscopy (from 3 up to 15 fps, optional up to max 30 fps optional)
- High Level Fluoroscopy (from 3 up to 15 fps, optional up to max 30 fps optional)
- Exposure run to produce high quality images of virtually every patient
- Single shot exposure, for high-quality single snapshot images
- Blur reduction and noise reduction buttons to adjust the level temporal noise reduction to the amount of movement in the region of interest
- 15 kW Microprocessor controlled X-ray converter generator
- Rotating anode X-ray tube for the most demanding interventional procedures
- Slim tank unit with 0.3/0.6 IEC dual focus
- X-ray tank designed for increased cooling capacity, allowing lengthy procedures
- Automatic setting of fluoroscopy parameters based on anatomy (Anatomical Programmed Fluoroscopy) provides superb image quality for each procedure type

X-ray collimation:

- Full-lead shutters are independently, asymmetrically rotatable and movable on the C-arm touch screen user interface. Drag them in position one by one for optimal adjustment to the anatomies
- Both iris and shutters can be set on Last Image Hold, avoiding the need for unnecessary radiation, or during fluoroscopy
- Philips' unique Automatic Shutter Positioning feature. The shutters can be optimally adjusted to the anatomy of interest with one push of a button to produce superb image quality

Image processing:

- 12-bit Digital Fluoroscopy Imaging unit, with dedicated video pipeline processor. Featuring the SmartVision imaging chain, providing the optimal image quality with low X-ray dose
- Body Smart anatomic adapting measuring field, allows free positioning of the anatomy, even at the edge of the image by providing automatic image adjustment
- Adaptive noise reduction with pixel based movement detection, to reduce motion blur
- Digital rotation, mirror left/right and up/down on last image hold at the touch of a finger
- The system automatically adjusts image contrast and brightness to provide excellent image quality
- Post-processing edge enhancement, contrast and brightness
- Annotation
- Video invert
- Digital zoom and roam (factor 2x real-time magnification, freely movable to any section of an image), applicable in all detector zoom formats
- Measurement (to quantify lengths and angles in images)
- Automatic Electronic Blanking, digitally making the area of the lead shutters black during live imaging to improve image quality
- Electronic shutters (to block-out overexposed image areas in post processing)

Mobile view station:

The ultra-compact Mobile View Station perfectly fits in the surgical workflow. The unique intelligent viewing concept of the Mobile View Station provides the user with easy transportation, easy system set-up and viewing capabilities.

- Monitors rotate 180 degrees for increased viewing angle
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- Monitor height can be increased or decreased up to 25 cm (10") to conveniently adjust to the surgeon's position. For easy transport and storage, simply fold the monitors and move them to their lowest position
- Digital Video out (2 DVI connectors) to display the images on additional monitors without loss of resolution
- Video in (1 BNC connector) enables display of external video signals like endoscopy or ultrasound on the right C-arm monitor
- Easy storage to USB flash-drive (bmp format)
- Storage of 2.000 images on hard disk
- Mosaic - overview of 16 images on one monitor
- Run loop
- Designed to integrate Medical DVD Recorder (optional), video paper/transparency printer (optional) and to build in ViewForum workstation (optional)
- Wireless data connection for image and worklist transfer to PACS/RIS systems and Remote Proactive Support capabilities

LCD Monitors:

Two 19" High Brightness Color LCD monitors for diagnostic image quality

- TFT technology for 160 degrees viewing angle in both horizontal and vertical direction
- Resolution: horizontal: 1280 dots, vertical: 1024 lines
- Maximum light output: 650 cd/m²
- Contrast Ratio: >700:1
- Backlight stabilization

Touch screen user interface: infra-red technology permits touch-screen access to the graphical user interface on the live monitor (left monitor) without sacrificing image quality. Patient administration, post-processing or export functionality are intuitively accessed at the tip of your finger

DICOM:

The DICOM software converts the digital images of the C-arm into DICOM compatible image formats to send them to PACS systems, PC environment, and/or to a printer within the network. DICOM is seamlessly integrated into the system for digital image to DICOM translation. A highly intuitive user interface simplifies the use.

- DICOM Print
- DICOM Store - enables image transfer to DICOM compliant workstations for off-line processing of images, dynamic reviewing of runs, store images/ runs on CD-R to PACS systems and to a PC environment
- Modality Worklist Management (MWL) for communications with the RIS/HIS system
- Modality Performed Procedure Steps (MPPS)
- Storage Commit (SC)

Full Compliance to the IHE Scheduled Workflow integration profile as an Acquisition

The DICOM image formats are:

Secondary Capture (SC) with/without text and X-ray Angiography (XA - multi frame)

Clinical Education Program for Unity Surgery Systems:

Initial Handover Education: Clinical Education Specialists will provide sixteen (16) hours of Surgery OnSite Education for up to four (4) students, selected by customer, including

technologists from night/weekend shifts if necessary. CEU credits may be available if the participant meets the guidelines provided by Philips. Depending on your system configuration, the first four (4) hours onsite may be spent configuring new equipment for specific clinical needs, as well as reviewing important safety features and quality procedures. Please refer to the Clinical Education Training Guidelines supplied at the time of scheduling.. Note: Site must be patient-ready. Philips personnel are not responsible for actual patient contact or operation of equipment during education sessions except to demonstrate proper equipment operation.

Follow-Up OnSite Education: Clinical Education Specialists will provide sixteen (16) hours of tailored XR OnSite Education for up to four (4) students, selected by customer, including technologists from night/weekend shifts if necessary. CEUs are not available in all cases. Note: Philips personnel are not responsible for actual patient contact or operation of equipment during education sessions except to demonstrate proper equipment operation.

Education entitlement expires one (1) year from equipment installation date (or purchase date if sold separately). Ref#622562262308-141120

Results obtained during user tests performed by Use-Lab GmbH, 2013. The tests involved 30 USA based clinicians (15 physicians teamed up with 15 nurses or X-ray technicians), who performed simulated procedures in a simulated OR environment. None of them had worked with a Philips C-arm or with each other before.

IEC 60601-2-43: 2010 specifies minimum filtering of 3 mm aluminum. Data was obtained from non-clinical testing using PMMA phantoms.

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**Video Paper/Transparency
Printer**

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Thermal multimedia printer for printing images from live (= left) monitor onto paper or blue transparency.

Features:

- Multiformat 1 2 4 6 images to be printed on one page in both landscape and portrait format
- Hard copies of clinical images available for archiving
- Full size image printed in about 20 seconds

Comprising:

- Printing unit UP-990AD integrated in the Mobile View Station of the system
 - Printing paper roll (UPP-210HD)
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