PHILIPS

Ultrasound

EPIQ CVx Release 5.0



Designed for cardiology. Built for better care.

EPIQ CVx cardiovascular ultrasound system

Designed for you, designed for echo

Now is the time to upgrade performance beyond what your iE33 ultrasound system can provide. Philips EPIQ CVx cardiovascular ultrasound system is our most advanced cardiovascular platform ever, delivering extraordinary image quality, as well as providing outstanding exam efficiencies with robust, reproducible TOMTEC quantifications to aid diagnosis or to guide interventional procedures. The system features an exceptional level of clinical performance for diagnostic and interventional echo exams across a wide range of patients to meet the challenges of today's demanding practices.



Philips EPIQ CVx allows for confident diagnostic decisions, easy workflow and seamless collaboration in the ever-more complex world of cardiovascular care.

Increasing challenges call for new tools

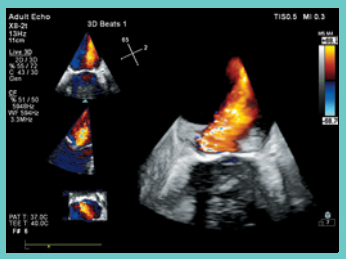
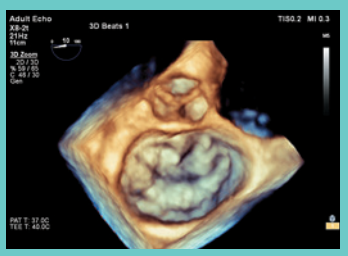
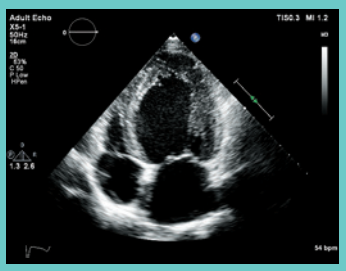


Moving to the most advanced Philips echo ultrasound platform ever means keeping Philips advances you value, while gaining access to improved clinical information from each scan for a high level of confidence, even for technically difficult patients. EPIQ CVx offers the exceptional image quality you expect in a premium Philips ultrasound system, along with exam efficiencies and an interface designed specifically for cardiology.

EPIQ CVx is next generation

Maximize next-generation clinical capabilities

Philips pioneered groundbreaking technologies such as xMATRIX and PureWave. The revolutionary ***n***SIGHT Imaging architecture and accelerated graphics processing unit (GPU) capabilities of EPIQ CVx make xMATRIX and PureWave even more powerful, providing for advanced visualization through photorealistic 3D rendering with moveable light source, our highest frame rates with Hyper 2D, and a system that's ready for the next generation of transducers and algorithms.

	Conventional	EPIQ CVx ***n***SIGHT Imaging	
Frame rate	 Users must choose between frame rate and image quality.	 More than doubles the frame rate without impact to image quality. Creates focused images with fewer transmit operations so you can experience both highly detailed ultrasound images and extraordinary temporal resolution.	 High volume rates in one-beat color zoom
Uniformity	 Best resolution is limited to transmit focal zone.	 Corrects focus during beam reconstruction for uniformity. Achieves uniformity through coherent beam reconstruction algorithms that apply mathematical focal correction coefficients continually at all depths of the image.	 Live 3D volumes with good image quality throughout
Penetration	 Exhibits penetration limitations and poor sensitivity to weak signals.	 Superb penetration across full range of frequencies. Reinforces weak tissue signals with the ultra-wide dynamic range and unique beam reconstruction of the architecture, allowing enhanced penetration at higher frequencies, even on difficult patients.	 X5-1 apical four-chamber view



75% of clinicians who saw the new EPIQ CVx felt the EPIQ CVx monitor provided an enhanced user experience.*[1]

OLED monitor for outstanding visualization of anatomy

Philips ***n***SIGHT Imaging goes beyond conventional ultrasound performance for new levels of definition and clarity, with superb resolution down to the pixel. This is now complemented by the latest organic light-emitting diode (OLED) monitor technology to bring to life the detail delivered by ***n***SIGHT Imaging, including greater sharpness and clarity, improved color display and 180° of viewing.

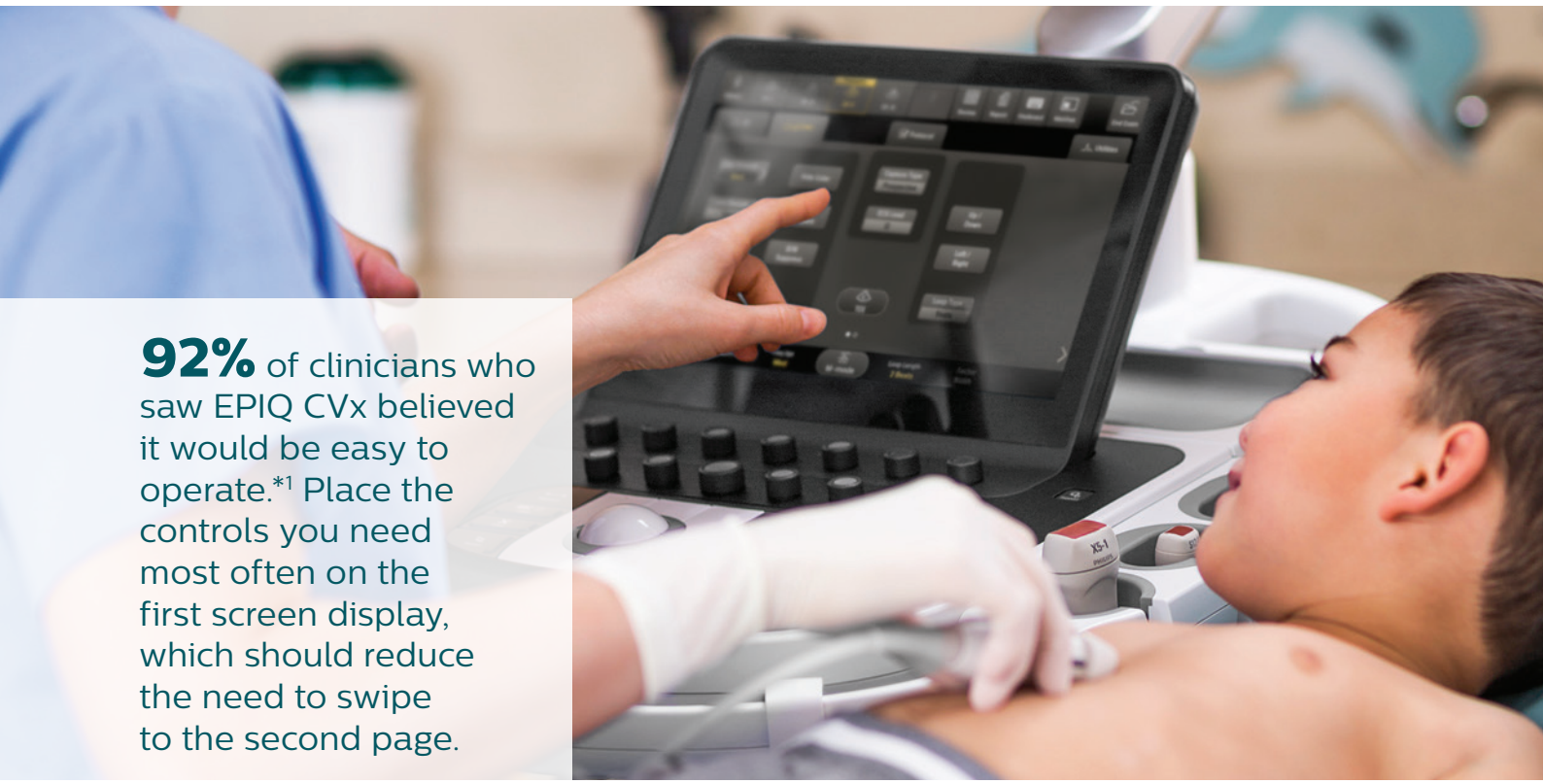


EPIQ CVx has an OLED monitor with greater dynamic range

* Based on responses from 41 respondents.

Customizable interface designed for cardiology

- Your most-used controls are right where you want them
- Available as a user-defined preset to enable a user interface designed for you and your needs: adult echo or pediatric echo, transesophageal or transthoracic
- Aimed to drive efficiency, in any exam



92% of clinicians who saw EPIQ CVx believed it would be easy to operate.*[1] Place the controls you need most often on the first screen display, which should reduce the need to swipe to the second page.



EPIQ CVx features a user-configurable touchscreen which can be preset for your needs

* Based on responses from 42 respondents.

Our most leading-edge, versatile transducer technology

Philips offers the widest range of 2D and 3D transthoracic and transesophageal diagnostic transducers to meet your echo needs across your patient population, from fetal to adult congenital, from echo to vascular. Depth of imaging capability combined with streamlined cardiac workflow reduces the steps and time needed for these especially challenging exams.

Only EPIQ systems can run the complete suite of Philips most innovative ultrasound transducers. With the touch of a button, xMATRIX offers most modes in a single transducer: 2D, M-mode, color Doppler, Doppler, iRotate, Live xPlane, Live 3D, Live 3D Zoom and Live 3D Full Volume.

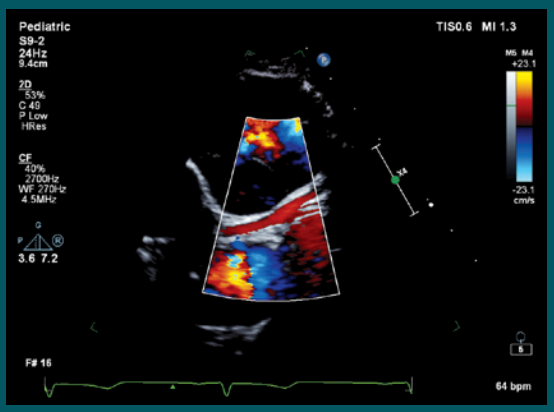




EPIQ CVx enables next-generation transducers

New sub-mode for coronary imaging

92% of clinicians who work with pediatric patients and saw the new EPIQ CVx thought the coronary sub-mode on EPIQ CVx would enable them to evaluate coronary arteries and flow more quickly and more easily.*[1]



Subcostal view of PFO using the S9-2 transducer



PureWave comes to pediatrics with the S9-2 transducer, featuring a single-button coronary sub-mode for fast, easy coronary artery visualization.

X5-1

A true one-transducer solution for 2D and 3D transthoracic imaging

The X5-1 transducer offers expanded performance through the EPIQ CVx platform compared to the iE33 platform.

X8-2t

A next-generation xMATRIX 3D TEE transducer

The X8-2t Live 3D TEE transducer brings true one-beat acquisitions and our highest volume rates in Live 3D and Live 3D color flow to TEE without compromise to image quality. The handle of the transducer features a real-time configurable function button.

S9-2

The first PureWave transducer for pediatrics

The S9-2 TTE 2D PureWave transducer is designed to reveal tiny cardiac structures in stunning detail, offering comprehensive information to enhance an exam.

S8-3t

The first Philips transducer for neonatal TEE imaging

The S8-3t microTEE transducer, with a diameter of just 5.2 mm, was primarily developed for use in infants weighing as little as 2.5 kg (5.5 lb), but is also very useful in adolescents and adults for procedure assessment such as left atrial appendages (LAA) and TAVI, providing a quick look with minimal sedation.

eL18-4

An ultra-broadband transducer for an ultimate ultrasound solution in vascular imaging

The eL18-4 transducer is the first Philips transducer to feature ultra-broadband PureWave crystal technology to support carotid vascular applications.

X6-1

The first xMATRIX transducer for fetal imaging

The X6-1 transducer offers superb early echo imaging for the fetal exam, including 2D, Live xPlane and Live 3D imaging for advanced fetal echo applications.

C9-2

The first PureWave high-frequency transducer for fetal imaging

The C9-2 transducer provides PureWave crystal technology for fetal echo exams.

XL14-3

The first xMATRIX linear array transducer

The XL14-3 transducer offers multi-dimensional focusing for ultra-thin slice imaging to enhance diagnostic confidence when assessing vascular disease.

L12-3 Ergo

Advanced scanning with advanced comfort

The L12-3 Ergo transducer, ergonomic and lightweight, offers superb vascular imaging for carotid and upper and lower arterial and venous exams, and also supports advanced MicroFlow Imaging for vascular applications.

* Based on responses from 13 respondents.

Intelligence and automation to drive results

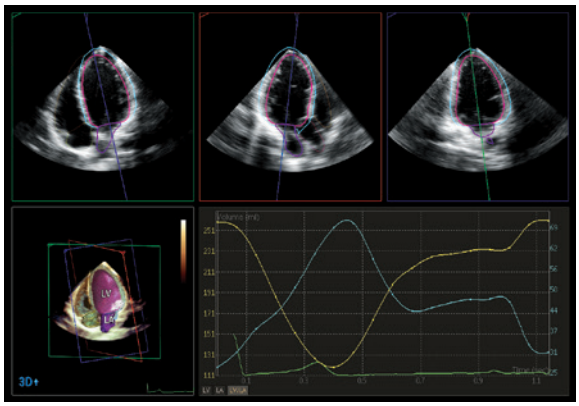
Artificial intelligence keeps you at the forefront
More data is available than ever before, requiring tools to simplify and quicken the process of acquiring reproducible data to turn it into valuable information to guide diagnosis and treatment. Artificial intelligence drives automation through anatomic knowledge, with less manual interaction for more reproducible results. Fast processing speeds allow for the efficient quantification results required by newer algorithms and applications such as HeartModel[A.I.].*

Dynamic HeartModel[A.I.]* for full cycle cardiac quantification
Dynamic HeartModel[A.I.]* is a leap that provides fast, robust and reproducible 3D left ventricle (LV) quantification along with several new 3D measurements and enhanced visualization of border positions to elevate clinical confidence.

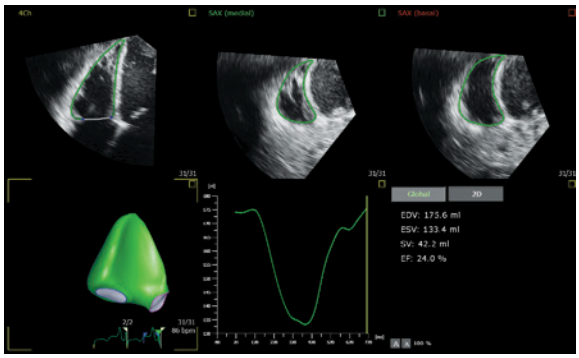
TOMTEC 3D Auto RV
3D Auto RV is the first fully automated 3D right ventricle (RV) quantification utilizing combined innovations in artificial intelligence from Philips and TOMTEC. The automation and streamlined workflow on the ultrasound system allow fast and reproducible 3D RV volumes and ejection fraction (EF) measurements. It also provides measurements on 2D images derived from the 3D data sets.

TOMTEC AutoStrain LV, LA and RV
AutoStrain LV, LA and RV, developed by using advanced automation technologies, deliver one-button-push, fast and reproducible longitudinal strain measurements for LV, LA and RV. AutoStrain LV, LA and RV provide more parameters to assist physicians in better evaluating overall heart function without adding more exam time to everyday clinical practice.

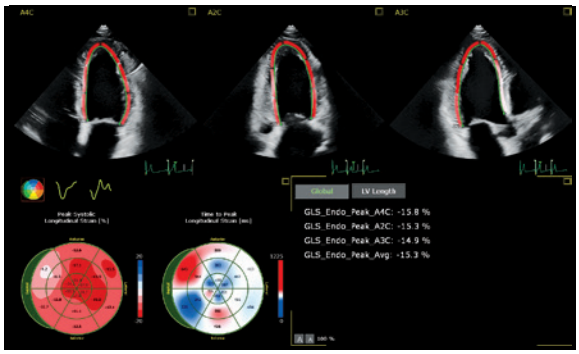
97% of clinicians who saw the new EPIQ CVx believed quicker left-heart quantification would result in increased lab throughput.**[1]



Dynamic HeartModel[A.I.]*



3D Auto RV



AutoStrain LV



EPIQ CVx offers capabilities powered by artificial intelligence

* A.I. refers to Anatomical Intelligence.
** Based on responses from 41 respondents.

Advances in quantification and analysis





iE33	EPIQ CVx	Advantages
3DQ/3DQA	• HeartModel[A.I.]* • Dynamic HeartModel[A.I.]* • TOMTEC 3D Auto RV	HeartModel[A.I.]* is a 3D tool that can provide robust, reproducible EF in just seconds. This intuitive and validated application is designed to deliver the confidence of cardiac chamber quantification that fits into everyday workflow. Dynamic HeartModel[A.I.]* shows moving contours for LV and LA volumes and LV mass. It also offers LV and LA cardiac indices. A multi-beat analysis allows the user to analyze different beats from the same acquisition and average the results with one acquisition. 3D Auto RV is the first fully automated 3D RV quantification powered by artificial intelligence for automated image alignment, RV border and landmarks position to fast measure 3D RV volumes and EF.
Cardiac Motion Quantification	• TOMTEC AutoStrain LV, LA and RV • Automated Cardiac Motion Quantification[A.I.] (aCMQ[A.I.])*	TOMTEC AutoStrain LV, LA and RV, developed by using advanced automation technologies, delivers one-button-push fast and reproducible longitudinal strain measurements for LV, LA and RV. aCMQ[A.I.]* uses speckle mechanics to provide 2D global longitudinal strain (GLS) speckle measurements. An EF is also calculated for a holistic evaluation of the LV function.
2D Cardiac Quantification	Automated 2D Cardiac Quantification[A.I.] (a2DQ[A.I.])*	a2DQ[A.I.]* is the ideal tool for every echo lab and provides rapid access to proven 2D EF and volumes. Auto EF is available during the study, and so fits in with an everyday echo protocol.
No MVN with Mitral Valve Quantification (MVQ)	• Mitral Valve Navigator[A.I.] (MVN[A.I.])* • TOMTEC 4D Mitral Valve Assessment (MVA)	MVN[A.I.]* is a Q-App designed to take a Live 3D volume of the mitral valve (MV) and turn it into an easy-to-interpret model in eight guided steps, providing access to a comprehensive list of MV measurements and calculations. Internal comparison of Mitral Valve Quantification (MVQ) to MVN[A.I.]* Q-Apps measured 89% fewer clicks, meaning essential data can be captured more efficiently. The MVQ application on the iE33 is fully manual with no guidance. The 4D MVA is a TOMTEC application designed to take a Live 3D volume of the MV and turn it into an easy-to-interpret dynamic model in just few simple steps, providing access to a comprehensive list of MV measurements and calculations.
Manual selection for advanced quantification	Flexible acquisition and export for advanced quantification	Improved workflow by enabling on-the-fly acquisition of various data types to provide the best format for quantification without interrupting everyday workflow and allowing for improved management of file sizes.
Rigid report structure	Flexible reporting to fit clinical needs	Flexible report package structure allows for user configuration of layout and content, including the ability to add institution logo and to export report as PDF document or establish a network share for EMR.

* A.I. refers to Anatomical Intelligence.



Visualize like never before

New tools for an added dimension
Fast, efficient exams save clinician time and provide for an excellent patient experience. With an interface designed specifically for cardiology and new 3D workflow tools, we have reduced the number of steps needed to get the data you want from any volume acquisition and for greater capabilities during interventional exams.

“Truly live” 3D echo
From transthoracic to transesophageal echo, EPIQ CVx helps you bring Live 3D to the forefront of your diagnostic and interventional echo research and practice. Start in the 2D space and seamlessly move into “truly live” Live 3D Echo. For all patients, even in arrhythmia, from assessing EFs to flow dynamics, Philips helps you incorporate 3D throughout the entire care cycle. EPIQ CVx is ideal for 3D.

Making 3D a reality





iE33	EPIQ CVx	Advantages
Multi-beat triggered acquisition for 3D with low volume rates	High volume rate (HVR) with true one-beat acquisition	Provides true one-beat volume acquisitions with HVRs to visualize either wall function or flow dynamics more effectively in all 3D modes, improving both workflow and quality of 3D volumes.
Low volume rate	New 3D HVR imaging mode	The lack of need for EKG triggering simplifies the use of Live 3D imaging because it eliminates the issue of stitching artifacts inherent while imaging patients in arrhythmia or with breathing difficulties.





89% of clinicians who saw the new EPIQ CVx perceived it as able to drive improved confidence during procedure guidance due to improved image quality advanced workflow* and advanced visualization tools.**[1]

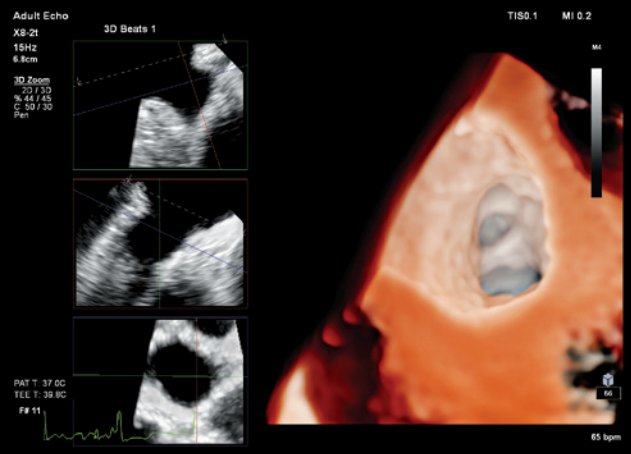
True illumination

TrueVue photorealistic rendering

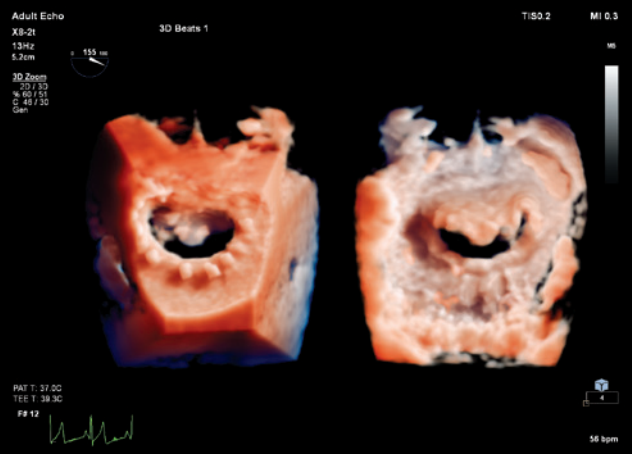
TrueVue photorealistic 3D rendering aids communication of complicated echo images in the interventional suite, enhancing procedural confidence. By illuminating tissue detail and creating depth perception like never before, TrueVue can help with the communication of complicated echo images among caregivers in the interventional suite, providing greater viewing context than previously realized with Vision Map H on the iE33.

Fingertip control with TouchVue

The touchscreen user interface has been designed to improve 3D workflow, and allows users to pinch, zoom and rotate the 3D data set via fingertip control.



MultiVue visualization of LAA



3D dual volume of mitral valve

* MultiVue – Live 3D cropping and MPR alignment tool. Based on responses from 38 respondents.
** TrueVue and the OLED monitor. Based on responses from 38 respondents.

Leap ahead in workflow





iE33	EPIQ CVx	Advantages
No specific image option for the technically difficult patient (TDP)	EchoPEN preset	A new imaging preset that not only provides one-button access to the settings that work best for the TDP, but also provides a preset that provides a new “look” to the 2D image that clinicians may prefer.
No variable XRES	Variable XRES	Variably reduces noise in the image for less impact to images that don’t require it.
iSCAN only	AutoSCAN	Provides automatic control of the main parameters that influence image quality, including gain, and reduces the need to tweak additional controls to get a good image.
No ability to use full screen for image	MaxVue	Allows you to make your image 38% larger than the traditional ultrasound image with no loss of resolution. At the touch of a button, Philips MaxVue allows you to experience ultrasound imaging in 16:9 full high definition, displaying 1,179,648 more image pixels than standard format mode. This display helps optimize viewing from a distance during interventional procedures, as well as enhances viewing of side-by-side, color compare, Live xPlane, Live 3D, MPRs and stress echo images.
Not available	Image on touchscreen	When the system monitor is rotated to show the image to another clinician, the scanning clinician can still see the image being acquired.
Box crop only	QuickVue	Intuitive workflow allows easy cropping of a Live 3D data set during imaging review or during interventional procedures, providing for two-click cropping.
Box crop only	AutoVue	A single click to obtain specific and standardized views of cardiac structures during Live 3D imaging.
3DQ for stored images only	MultiVue	Allows one-click cropping of a Live 3D image for maximum flexibility during interventional procedures, and one-click alignment of the catheter within cardiac anatomy. This was previously not possible using manual tools. Get better visualization of cardiac structures for procedure guidance in fewer steps, confidently visualize the ROI for echo-guided interventional procedures such as mitral valve repair, and obtain faster 3D measurements for device sizing.
No specific mode for coronary imaging	Coronary mode setting	Aids easy and fast imaging of coronaries and is available on all sector transducers. 92% of clinicians who work with pediatric patients and saw the new EPIQ CVx thought the coronary sub-mode on EPIQ CVx would enable them to evaluate coronary arteries and flow more quickly and more easily.*[1]

* Based on responses from 13 respondents.



Value beyond the image

Amazing mobility and nearly silent while running
Easily transport the lightweight EPIQ CVx on both carpet and tile floors. The monitor folds down to reduce overall system height for transport, and the integrated cable hooks and catch tray are ideal for portable studies. Wireless DICOM allows studies to be sent to the reading station or PACS while mobile. Multiple degrees of articulation for both the control panel and monitor with 720° of freedom allows for ergonomic alignment, whether sitting or standing.

Wireless
EPIQ CVx offers improved end-to-end workflow while performing mobile echoes, allowing studies to be sent to the reading station or PACS while mobile.

Lightweight
Easily transport the lightweight EPIQ CVx on both carpet and tile floors.

Transport mode
Place EPIQ CVx in sleep mode, move it, and boot up in seconds. The 10-second boot-up time when in standby mode offers time savings of around five minutes per bedside exam.

Library quiet
EPIQ CVx is almost silent while running (37-41 dB, which is equivalent to the sound of a library). This is extremely welcome in small scanning or examination rooms and does not interfere with auscultation.



EPIQ CVx gives you state-of-the-art mobility and environmental features

Count on us as your patients count on you

The value of a Philips ultrasound system extends far beyond technology. With every EPIQ CVx system, you get access to our award-winning service organization,* competitive financing and educational tools that help you get the most out of your system.**

Always there, always on
We work as one with your team to keep your EPIQ CVx system running smoothly.

Remote service capabilities maximize efficiency
Easy, rapid technical and clinical support through remote desktop enables a virtual visit with a Philips expert. If you prefer to keep your know-how in-house, the OmniSphere Remote Technical Connect application† allows your BioMed team remote access to Philips systems on your network so that you can have remote service capabilities your way.

Proactive monitoring solutions maximize uptime
Philips proactive monitoring increases system availability by predicting potential system disruptions and proactively acting on them, letting you focus on what is most important – your patients.

Immediate support request at your fingertips
The support request button allows you to enter a request directly from the control panel, for a fast and convenient communication mechanism with Philips experts without leaving your patient, minimizing workflow interruption.

On-cart transducer test provides confidence in your transducer quality
On-cart transducer test provides a non-phantom method to test EPIQ transducers at any time, giving you confidence in your diagnostic information.

Sharing risk, increasing the return on your investment
Partner with us to maximize utilization and uptime of your EPIQ CVx system.

Utilization reports for confident decision-making
Data intelligence tools can help you make informed decisions to improve workflow, deliver quality patient care and decrease the total cost of ownership. The on-board utilization tool provides individual transducer usage data and the ability to sort by exam type. The OmniSphere Utilization Optimizer takes this a step further by providing easy-to-use charts and graphs for all of your applicable† networked Philips systems.

Understanding your needs, designed for you
Our flexible RightFit service agreements, education offerings and innovative financing solutions can be adapted to meet your needs and strategic priorities.

- **Technology Maximizer Program:** helps keep your system performing at its peak by continuously providing the latest software from Philips at a fraction of the cost of the same upgrades purchased individually over time.
- **Xtend Service Coverage:** lets you choose additional service coverage for your ultrasound equipment at the time of purchase to more easily calculate your total cost of ownership.
- **Clinical education solutions:** comprehensive, clinically relevant courses, programs and learning paths designed to help you improve operational efficiency and enhance patient care.

ISSL technology

- This industry-standard protocol meets global privacy standards and provides a safe and secure connection to the Philips remote services network using your existing Internet access point.
- Business optimization tools such as OmniSphere allow you to use the power of data and connectivity to generate actionable insights and enhance productivity to improve your return on investment.

Defense in depth

EPIQ CVx offers a defense-in-depth strategy, implementing a suite of security features designed to help clinical IT professionals and healthcare facilities provide additional patient data privacy and virus protection, as well as protection from unauthorized access via the ultrasound systems on hospital networks.

* Philips is rated number one in overall service performance for ultrasound for more than 20 years in the annual IMV ServiceTrak survey in the USA.
** Optional. Not all services available in all geographies; contact your Philips representative for more information. May require service contract.
† Check with your Philips representative for system compatibility.

References

1. Results obtained during user demonstrations performed in December 2017 with the EPIQ CVx and the iE33 systems. The research was designed and supervised by Use-Lab GmbH, an independent and objective engineering consultancy and user interface design company. The tests involved 42 clinicians from 17 countries. The various types of cardiac customer segments represented were adult diagnostics and interventional, adult diagnostics, and pediatric diagnostics and interventional.

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