PHILIPS

Ultrasound

CX50 xMATRIX

Premium performance compact ultrasound

Philips CX50 xMATRIX CompactXtreme for cardiology

CX50 xMATRIX for cardiology

Philips, a leader in cutting-edge ultrasound development, has integrated premium, innovative technologies into the CompactXtreme family. CX50 xMATRIX has been designed specifically for diagnostic, interventional, surgical and pediatric echocardiography applications. We're taking premium class compact echo performance to new levels and new arenas.

"While doing portable studies, I really need to be able to count on my compact ultrasound system when encountering large or difficult-to-image patients. I can't afford time to redo the study with my premium echo system, or turn to a different modality. I need to be able to make quick and confident diagnoses at the bedside for these patients."

Connect up to three transducers to the CX50 xMATRIX system and be ready for a variety of environments – bedside, CCU, NICU – anywhere portable premium performance is needed.

Field and satellite locations

CX50 xMATRIX travels easily to screening events, disaster sites, rural visits and anywhere else you need premium image quality to deliver results efficiently and confidently.

CX50 xMATRIX is ideal for satellite offices that are supported on a rotational basis. The system is easily transported in its specially designed carry case, allowing you to use premium echo imaging for your entire patient population.

Bedside

The compact size of CX50 xMATRIX allows you to have premium performance for your portable exams. Easily perform cardiac and vascular exams at the bedside, and take advantage of premium image quality for your critically ill patients.

CCU

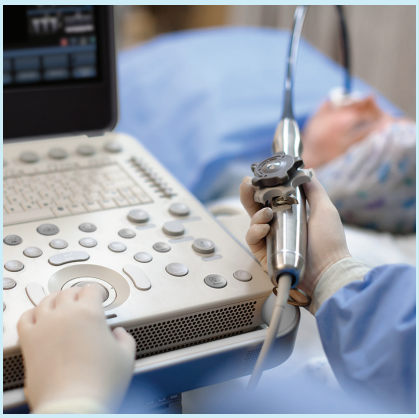
Because of its premium image quality, the CX50 xMATRIX system is the ideal choice for imaging your critically ill patients. Its lightweight, small and highly mobile cart allows you to easily maneuver in the confined CCU environment.

NICU

The neonatal capabilities of CX50 xMATRIX deliver speed and image quality for even the smallest critically ill patients. Users can easily navigate the CX50 xMATRIX system in the NICU, and the outstanding images delineate tiny structures for greater diagnostic confidence.

Cath lab and hybrid rooms

The compact size and excellent image quality of the CX50 xMATRIX system, along with Philips Allura X-ray system integration, provide an outstanding solution for echocardiographic guidance of basic and complex structural interventions.



OR

CX50 xMATRIX features Live 3D TEE imaging using the clinically proven X8-2t and X7-2t TEE transducers. The compact size of the system makes it easier than ever to deliver premium TEE imaging within the surgical suite for pre- and post-assessment of valvular and other procedures. Designed for clinical and operational efficiency, the CX50 X8-2t and X7-2t TEE transducers may be shared with EPIQ systems, allowing one transducer to be used for multiple systems and applications.

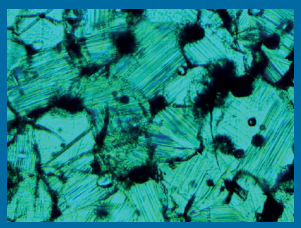
Diagnostic **excellence**

Extreme performance is built into the CX50 xMATRIX system, making portable echo studies easier than ever. Philips has migrated clinically proven premium technologies to a highly mobile platform.

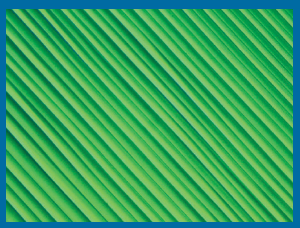
Premium imaging performance

PureWave everywhere
PureWave technology, originally available only on our premium cart-based systems, has been integrated into the CX50 xMATRIX system. The exceptional performance of the PureWave transducer technology results in improved diagnostic confidence, especially on technically difficult patients.

Digital broadband beamforming on a compact system
CX50 xMATRIX combines the broadband capabilities of a digital beamformer with the broadband signals produced by PureWave transducers. Now, even on a compact system, complete tissue signatures are captured, preserved and displayed. The level of image quality is exceptional, allowing you to fully appreciate subtle anatomical details.

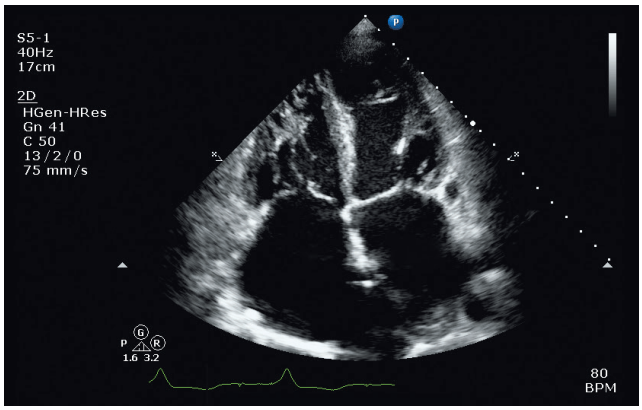


Conventional (x800)

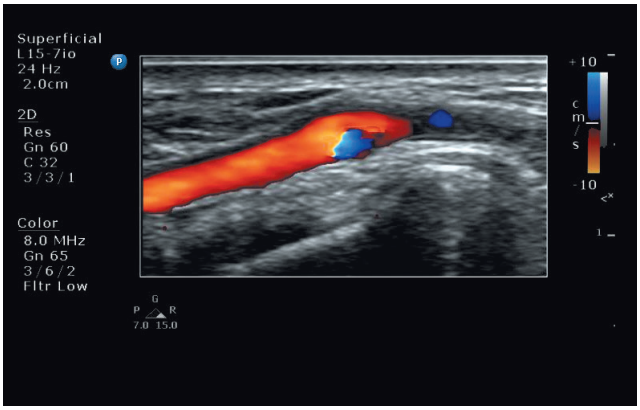


PureWave (x800)

PureWave crystals have virtually perfect uniformity for greater bandwidth and twice the efficiency of conventional ceramic materials. The result is excellent imaging and Doppler performance.



Transthoracic imaging using the S5-1 demonstrates excellent visualization of the entire heart.



The fine resolution and highly sensitive color flow of the L15-7io compact linear array capture this abnormal vasculature.

SonoCT and XRES technologies bring a new level of clarity to compact ultrasound

Philips SonoCT is a clinically proven premium technology that acquires up to nine lines of sight and combines the individual images into one well-defined image in real time. SonoCT displays striking levels of tissue differentiation that are virtually free of artifacts.

Advanced XRES adaptive image processing reduces speckle, haze and clutter, resulting in images virtually free from noise, with extraordinary quality and edge definition. When SonoCT and XRES work in tandem, the subtlest of diagnostic features are enhanced, making it even easier to achieve high clinical accuracy in portable studies.

One-button controls are logically placed on the CX50 xMATRIX control panel for quick selection and optimization during every exam.

Elegant workflow solutions

Reduce exam time by up to 50% with SmartExam

SmartExam protocols are easy-to-use, customizable guides that help you perform complete studies. The on-screen menu guides you through the required views for a specific exam type, automatically enters annotation and builds your report. Save time, reduce repeated moves and increase efficiency and consistency of exams.

Compact ultrasound designed for your environment

The CX50 xMATRIX system features a high resolution monitor for exceptional viewing in the most difficult portable environments, and fast system start-up allows you to quickly begin your studies. Wireless and wired DICOM allow flexibility when connecting to your PACS. You can also export your data by DVD and USB media with integrated DICOM viewer.

Fine-tune exams with active native data

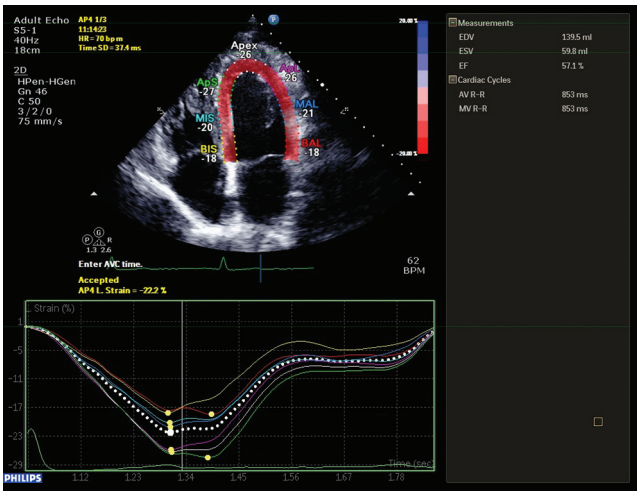
The CX50 xMATRIX system stores active native acoustic data, giving you the ability to adjust virtually all scanning parameters on single images, clips or stored 2D and Doppler data. Images can be readjusted during or after the exam, enhancing diagnostic details and allowing for shorter exam times.

Intelligence
turning images into answers

Quantify and analyze
The CX50 xMATRIX system offers quantitative assessment of cardiac anatomy and function using clinically proven QLAB quantification software.

Automated Cardiac Motion Quantification (aCMQ[A.I.])
Automated Cardiac Motion Quantification (aCMQ[A.I.]) uses speckle mechanics to provide reproducible 2D Global Longitudinal Strain (GLS) speckle measurements. A proven EF is also calculated by using the Auto-ROI that drives the automation within the aCMQ[A.I.] Q-App.

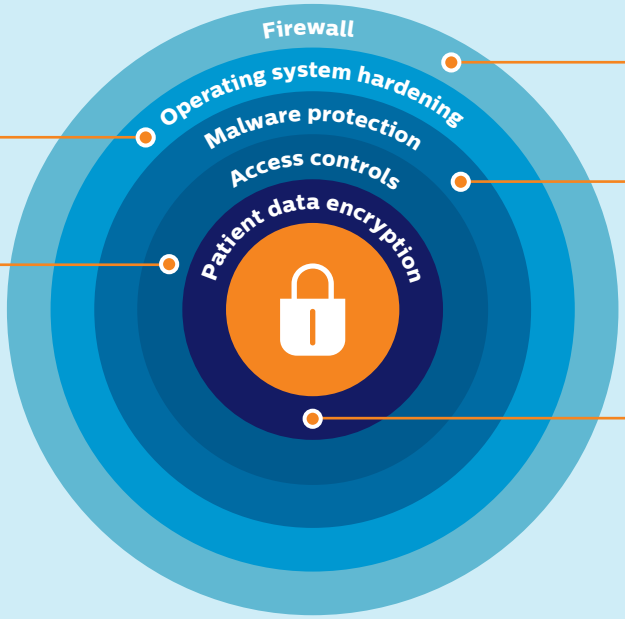
Mitral Valve Navigator[A.I.] (MVN[A.I.])
MVN[A.I.] is designed to take a Live 3D volume of the mitral valve and turn it into an easy-to-interpret model in eight guided steps, providing access to a comprehensive list of MV measurements and calculations.



The premium image quality of CX50 xMATRIX, along with aCMQ[A.I.] analysis, allows robust tracking of the left ventricle.

The gold standard for security

Philips recognizes the importance of securing your ultrasound system and protecting your patient data. The security feature on CX50 is a defense-in-depth strategy that comprises five layers: firewall, operating system hardening, malware protection, access controls and patient data encryption.



Blocks unnecessary ports
Limits the attack profile

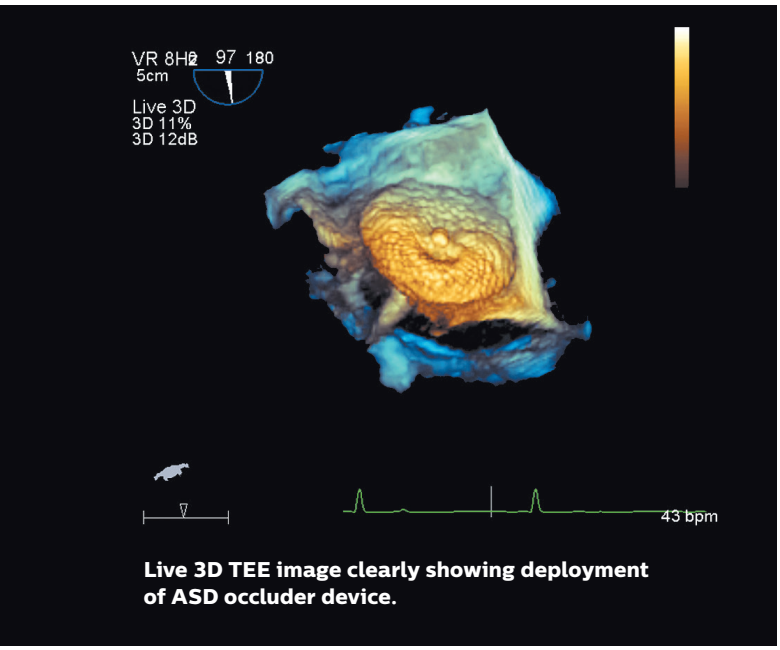
Disables unnecessary services
Reduces the attack surface

Whitelisting
Allows only known and trusted applications and libraries
Requires fewer updates

Three levels
Customizable

At rest and in transit
Based on your requirements

Premium echo
for interventional cardiology



Live 3D TEE image clearly showing deployment of ASD occluder device.

As a recognized leader in echocardiography, Philips continually advances the science with innovations and breakthrough technologies that extend the application of ultrasound to new clinical areas. Now premium performance is available on a portable system designed for the cath lab and hybrid OR.

Live 3D TEE goes portable

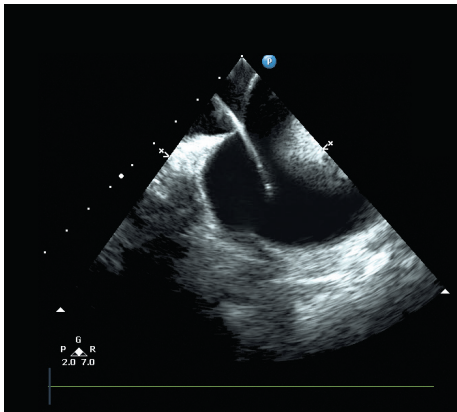
Live 3D TEE is supported on the CX50 X8-2t and X7-2t TEE transducers, combining the 3D power of xMATRIX and the exceptional image quality of PureWave crystals to capture and display stunning views of the heart that are not available with 2D echo. Intuitive manipulation tools allow you to measure, rotate, crop and slice data to derive the views most appropriate for your diagnoses, planning and follow-up.

With Live 3D TEE, you can diagnose, plan, assist and assess patients with new levels of confidence. The 3D views and data provide more information than traditional echo, and may change how you manage some patients, including their treatment options. Rely on Live 3D TEE's exceptional image quality for increased visibility during guided catheter procedures, such as placement of closure devices for multi-fenestrated ASDs and left atrial appendage (LAA), mitral edge-to-edge repair, TAVR and paravalvular leak (PVL) repair and more.

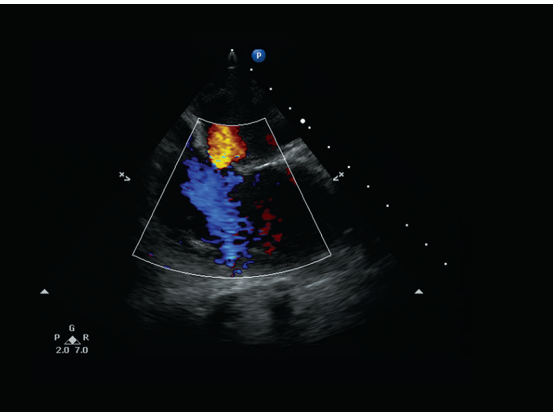
Live 3D TEE on CX50 xMATRIX supports complex structural heart disease interventions.

Breakthrough 2D ICE solution for cath and EP labs

The St. Jude ViewFlex Xtra 2D ICE catheter can be controlled with one hand. Imaging can be controlled tableside using the Xper Module (Philips Allura Xper/AlluraClarity systems).



2D ICE image offers excellent visualization of transeptal puncture of interatrial septum (IAS).

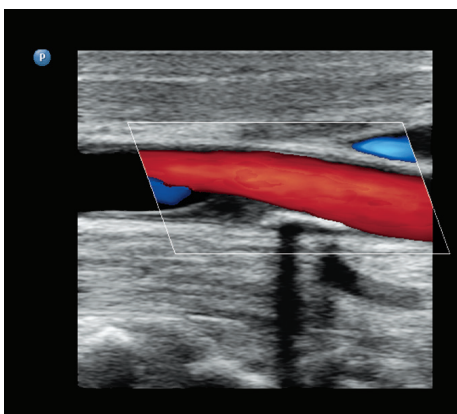


ICE on CX50 xMATRIX displays high quality color flow for ASD evaluation.

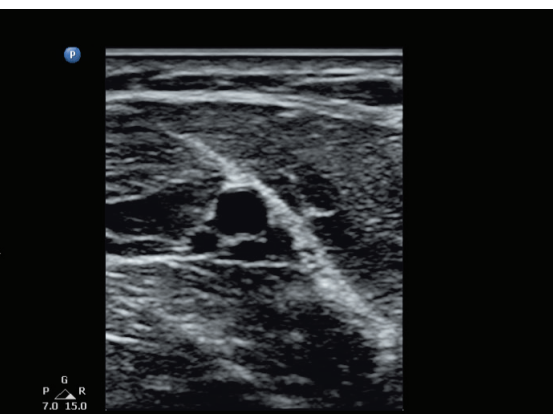
Interventional cardiologists and electrophysiologists who use 2D ICE require a catheter with thoughtfully designed ergonomics and providing great images of cardiac structures. CX50 xMATRIX supports the ViewFlex Xtra catheter, which provides excellent imaging performance and four-way steering and offers the unique benefit of single-hand control. CX50 xMATRIX is a portable system that is very compact, designed to fit into crowded cardiac cath and EP labs. CX50 xMATRIX and ViewFlex Xtra together provide a powerful solution for imaging during atrial ablations, LAA closures and structural heart interventions such as basic ASD and PFO closures.

Premium vascular imaging

CX50 xMATRIX has a selection of linear transducers optimized for vascular imaging, including the L15-7io compact linear array transducer, designed specifically for superficial vascular imaging such as intrajugular (IJ access) and transradial interventions (TRI).

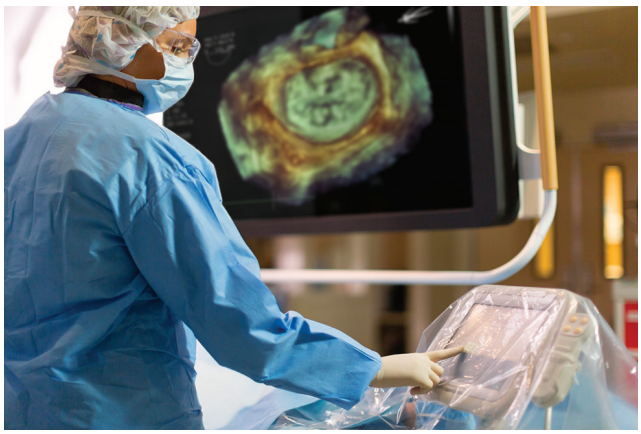


The size and location of plaque and blood flow in the carotid artery are easily appreciated in this image with the L12-3 linear array transducer.

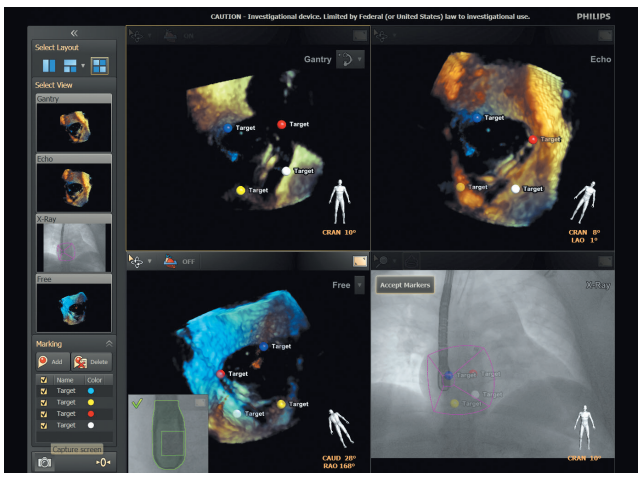


L15-7io provides exceptional imaging of access sites such as for transradial intervention (TRI).

CX50 xMATRIX may be positioned away from the sterile field and operated with the lid closed.



Imaging can be controlled tableside using the Xper Module (Philips Allura and Azurion Xper systems).



EchoNavigator 2.0 offers multiple real-time 3D views of soft tissue anatomy and placement of anatomical markers, all carefully registered with fluoro images.

Fully integrated echo for your interventional lab

CX50 xMATRIX was designed specifically to improve workflow in interventional procedures. The system has been designed to be fully integrated with Philips interventional X-ray systems. 2D imaging can be controlled tableside using the same Xper Module that controls Philips Azurion and Allura Xper systems. In this application, CX50 xMATRIX may be positioned away from the sterile field and operated with the lid closed, tucked under the exam room monitor bank.

EchoNavigator 2.0 – advanced integration

Live 3D TEE and Live xPlane images have been integrated in a highly innovative way to support advanced structural repairs. The EchoNavigator 2.0 option available for Allura and Azurion Xper systems digitally links Live 3D or Live xPlane echo images with fluoroscopy images. The system then presents the interventionalist with real-time views of soft-tissue anatomy that may be viewed and controlled independent of what is presented by the echocardiographer. Anatomical markers may be placed on the Live 3D TEE image and they appear in the correct position on the fluoro screen of EchoNavigator 2.0.

Interface to third-party systems

Digital video output in DVI-I format offers premium video quality to be delivered to interface with Philips or third-party cath and EP labs that have VGA, DVI-I or HDMI inputs.

The CX50 xMATRIX system is ideal for many operating environments. Its size, maneuverability, ease of operation and premium imaging performance are a great fit. Live 3D TEE and comprehensive quantification provide tools for planning, monitoring and assessing cardiac surgeries.

Extreme imaging
for surgery

Live 3D TEE – wherever you need it
Since Philips introduced the Live 3D TEE, clinicians have trusted it in more than a million exams and procedures. Now X8-2t, the next generation of 3D TEE with Live imaging, is available on the CX50 xMATRIX system.

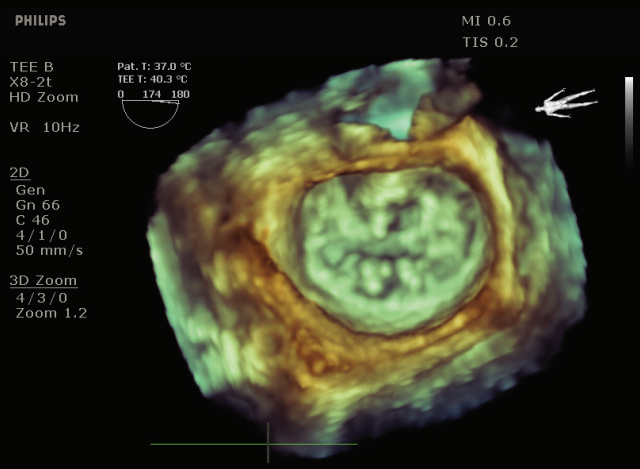
X8-2t xMATRIX transducer for next-generation Live 3D TEE.

More information for planning

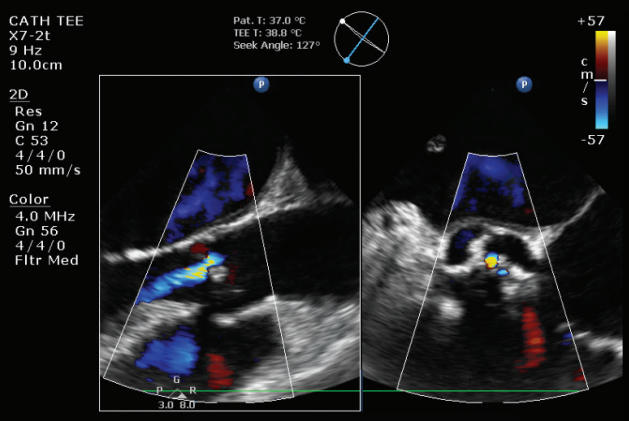
Live 3D TEE provides extensive information to assist surgeons and anesthesiologists with planning.
The 3D heart can be viewed while it's beating to assess function. The 3D data can be sliced for multiple 2D images, providing incremental details of structural defects, such as valves and leaflets. Enface views and the view of the left ventricle (not available with transthoracic echo) provide more perspectives for planning. These views are not available once surgery begins.

Quantify the mitral valve with new and objective data

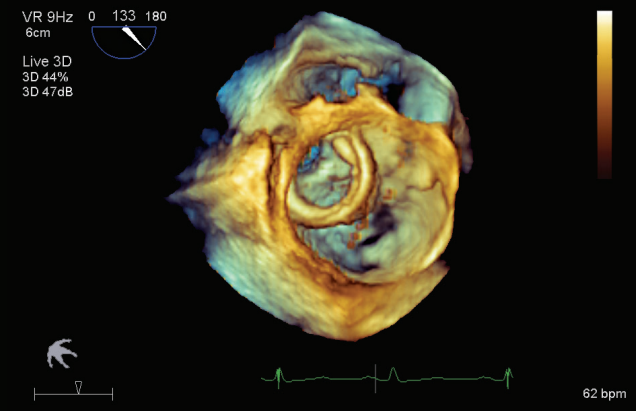
Mitral Valve Navigator[A.I.] (MVN[A.I.]) provides precise 3D multiplanar reconstruction (MPR) measurements of the mitral valve anatomy and associated structures obtained with Live 3D TEE. The result is a clinical decision support tool for surgical planning. MVN[A.I.] offers protocols to assist in defining the 3D landmarks on the MPR views. And MVN[A.I.] helps build a 3D model of the mitral valve annulus, leaflets and aorta, showing the spatial relationship between the mitral valve, papillary muscles and aortic valve.



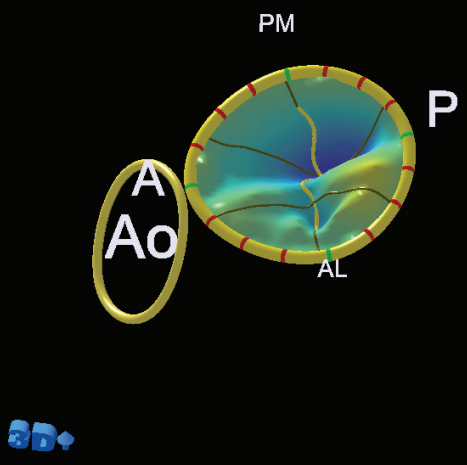
3D zoom TEE image of the mitral valve with the X8-2t transducer



Live xPlane imaging provides real-time simultaneous longitudinal and short-axis views of this aortic insufficiency



Live 3D TEE supports a clear appreciation of catheter positioning in this hybrid OR procedure



MVN model derived from Live 3D TEE of the mitral valve

Share transducers
across Philips systems

Sharing TEE transducers across Philips ultrasound systems from the echo lab to the cath lab to the ICU can have significant workflow and economic benefits across the continuum of care.

Philips EPIQ

Philips Affiniti

Philips CX50

Philips Sparq

Philips offers a choice of Live 3D TEE echo systems – portable and cart. The compact X8-2t and X7-2t TEE transducers may be shared between CX50 xMATRIX and cart-based ultrasound systems such as EPIQ, Affiniti and Sparq to increase clinical and operational efficiency.

Designed to guide you through every procedure

Philips TEE transducers are designed with key differences to ease workflow and enhance clinical confidence.

Philips TEE transducers have advances that matter day to day

- Easy intubation with a double-rounded tip
- Easy to maintain wall contact with proud lens and tip and easy flexion
- Excellent image quality from near to far field with wide frequency range
- Durable stainless steel handle

Live 3D TEE training and education

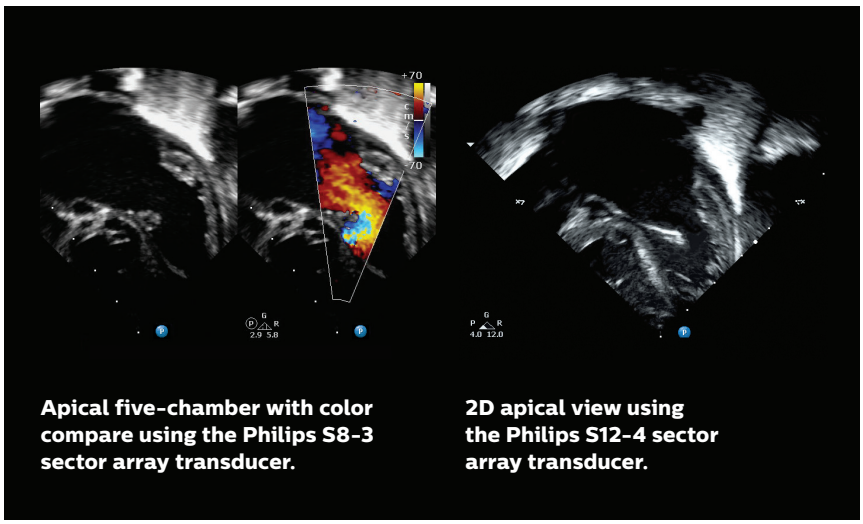
Philips sponsors physician-taught Live 3D TEE courses around the globe and can offer installation training courses configured to your needs, with on-site physician mentoring. Dedicated topic pages keep you up to date with the latest clinical discussions.

Pediatric and neonatal echo is supported on the CX50 xMATRIX system with small footprint transducers facilitating access of small acoustic windows and the need to capture images quickly.

Premium performance for **every patient**

Caring for your young patients

There are many challenges caring for patients in the NICU and PICU, but having access to premium performance echo is not one of them. You can easily maneuver the compact CX50 xMATRIX system around the bedside, crib or isolette without interfering with support equipment. Sector array and transesophageal transducers provide the 2D image quality and Doppler performance you need to see minute details and subtle anomalies in these tiny hearts. Our dedicated pediatric analysis package is designed so you can separately measure inflow and outflow, making it easier to follow your patients' progress.



Apical five-chamber with color compare using the Philips S8-3 sector array transducer.

2D apical view using the Philips S12-4 sector array transducer.

Transducers designed for **performance and comfort**

The CX50 family of transducers makes the system a complete solution for mobile imaging services in virtually all units throughout the hospital, addressing cardiac imaging across the patient population. Philips transducers are designed with extensive input from users like you to address imaging performance as well as comfort for you and your patients.

Transducer	Clinical use
C5-1	Deep abdominal vascular
C8-5	Peripheral vascular
L12-3	Superficial and deep vascular
L12-5 50	Superficial vascular
L15-7io	Surgery and superficial
S5-1	Adult 2D echo
S4-2	Adult 2D echo
S7-3t	Pediatric and adult 2D TEE
S8-3	Pediatric 2D echo
S12-4	Neonatal 2D echo
X8-2t	Adult 2D/3D TEE
X7-2t	Adult 2D/3D TEE

Versatile CX50 xMATRIX offers a family of transducers for imaging adult and pediatric patients in nearly any environment.

Count on us
as your patients count on you

The value of a Philips ultrasound system extends far beyond technology. With every CX50 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 CX50 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.

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 CX50 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 CX50 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.

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.

- **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.

Defense in depth

CX50 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 23 consecutive 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.

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Printed in The Netherlands.
4522 991 35931 * SEP 2018