Premium performance compact ultrasound

Philips **CX50 xMATRIX** CompactXtreme for cardiology

PHILIPS

Philips CX50 xMATRIX for cardiology

"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."

Field

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

Satellite locations

The CX50 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.
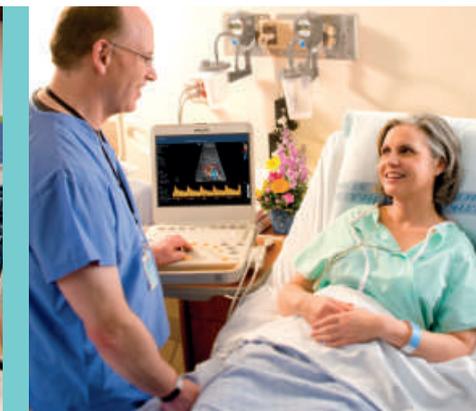
Bedside

The compact size of the CX50 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 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.

Philips, a leader in cutting-edge ultrasound development, has integrated premium, innovative technologies into the CompactXtreme family. The 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.

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.

NICU

The neonatal capabilities of the CX50 deliver speed and image quality for even the smallest critically ill patients. Users can easily navigate the CX50 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 unparalleled solution for echocardiographic guidance of basic and complex structural interventions.
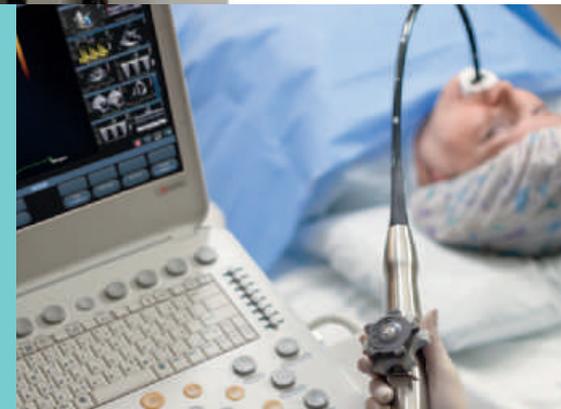
OR

The CX50 xMATRIX features Live 3D TEE imaging using the clinically proven X7-2t TEE transducer. 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 X7-2t TEE may be shared with iE33 xMATRIX systems, allowing one transducer to be used for multiple systems and applications.

Diagnostic excellence

Extreme performance is built into the CX50 system, making portable echo studies easier than ever. Philips has migrated clinically proven premium technologies to a highly mobile platform. The system adapts to your workflow, with intuitive tools designed around your needs, whether you're in the critical care unit, at the bedside, or at a remote location. The result is echo on the go with ease of use, exceptional image quality, and sophisticated analysis.

PureWave everywhere

PureWave technology, previously available only on the Philips iE33 system, has been integrated into the CX50 xMATRIX system. Clinicians can rely on improved far field resolution and the ability to image a wide variety of patients with one transducer. PureWave technology is an award-winning breakthrough in piezoelectric transducer technology, providing a radical leap forward in compact image quality. Millions of exams have been performed using PureWave technology. It's just one of the premium technologies available for your portable studies.
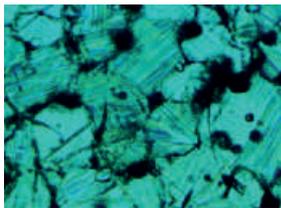
Conventional   **PureWave**

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 on your patients, especially the technically difficult.

Digital broadband beamforming on a compact

The CX50 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.

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 clear well-defined image in real time. SonoCT displays striking levels of tissue differentiation that are virtually free of artifact. Advanced XRES adaptive image processing reduces speckle, haze, and clutter, resulting in images virtually free from noise, with extraordinary clarity 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.

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.

One-button controls are logically placed on the CX50 control panel for quick selection and optimization during every exam. An example: iSCAN automatically samples data for quick optimization of 2D and Doppler performance.

Elegant workflow solutions

Reduce exam time by up 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 system features a high resolution monitor for optimal 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 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, allowing for shorter exam times, and reducing the need for repeat studies.

Quantify and analyze

The CX50 offers quantitative assessment of cardiac anatomy and function using clinically proven QLAB quantification software. For adult echo studies, Cardiac Motion Quantification (CMQ) plug-in provides a method for assessing global and regional cardiac function. CMQ is based on 2D speckle tracking technology and offers a suite of measurement and parametric displays to analyze trans-myocardial mechanics without tissue Doppler angle dependency limitations. Using the 17-segment ASE left ventricular model, CMQ provides additional information for many clinical applications such as ventricular wall motion and mechanical synchrony assessments.
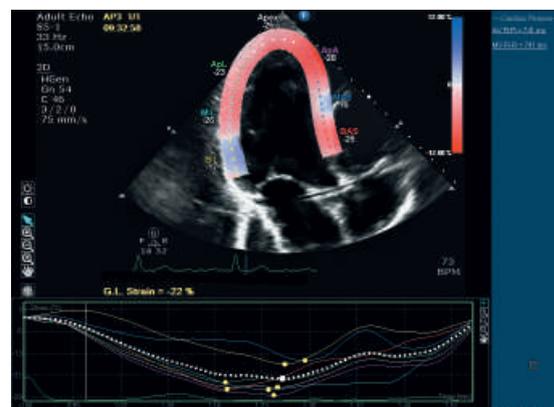
The premium image quality of CX50 xMATRIX, along with CMQ analysis, allows robust tracking of the left ventricle.

Premium echo for interventional cardiology

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 on the CX50 xMATRIX supports complex structural heart disease interventions.

Live 3D TEE goes portable

Philips xMATRIX 3D technology was delivered on premium cart-based systems ten years ago. Five years later, Philips miniaturized xMATRIX for TEE application, and since then Live 3D TEE has been clinically proven in over a million exams and procedures. Now, Live 3D TEE is available on the CX50 xMATRIX premium compact echocardiography system.

Live 3D TEE is supported on the CX50 X7-2t TEE transducer, 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.
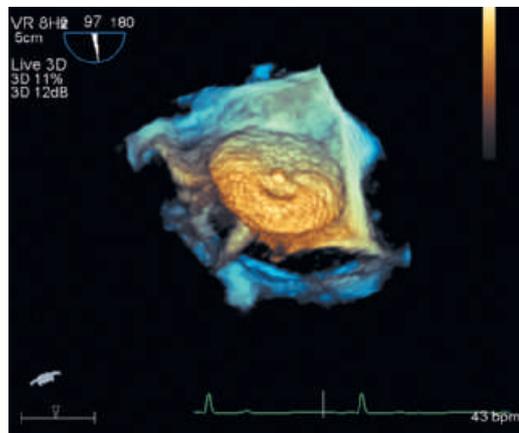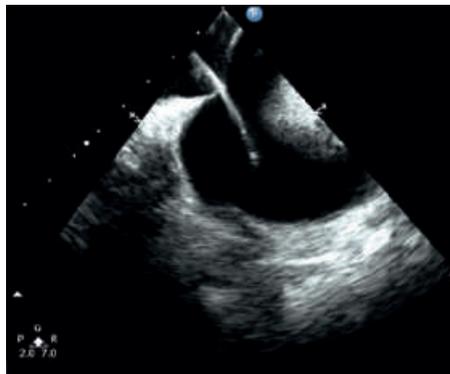

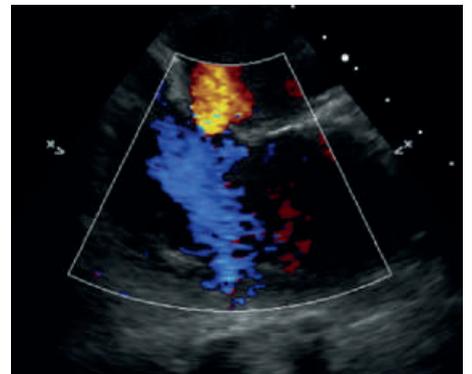Live 3D TEE image clearly showing deployment of ASD occluder device.

Breakthrough 2D ICE solution for cath and EP labs

Interventional cardiologists and electrophysiologists who use 2D ICE require a catheter with thoughtfully designed ergonomics and providing great images of cardiac structures. The CX50 xMATRIX supports the new ViewFlex Xtra catheter, which provides excellent imaging performance, 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. The CX50 xMATRIX and ViewFlex Xtra together provide a powerful solution for imaging for atrial ablations, LAA closures, and structural heart interventions such as basic ASD and PFO closures.

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.

Premium vascular imaging

The 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).
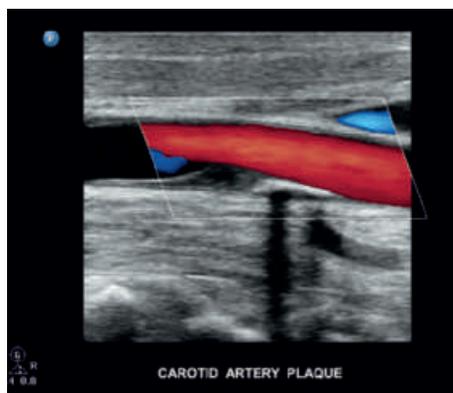
The size and location of plaque and blood flow in the carotid artery are easily appreciated in this image with the L12-3 linear array transducer.
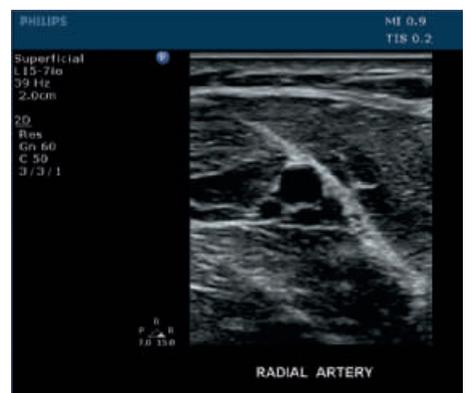
L15-7io provides exceptional imaging of access sites such as for transradial intervention (TRI).

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

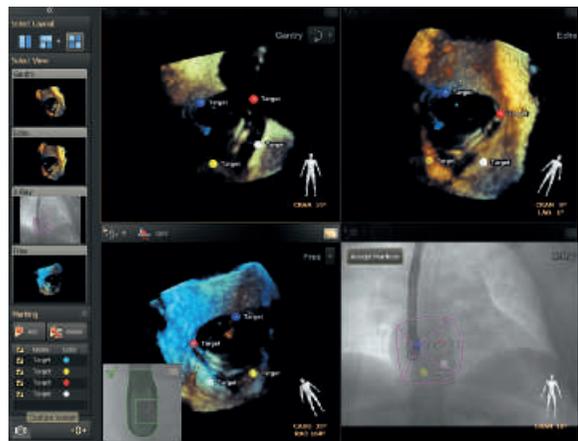## Fully integrated echo for your interventional lab

The 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 Allura Xper systems. In this application the CX50 xMATRIX may be positioned away from the sterile field and operated with the lid closed, tucked under the exam room monitor bank.

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

EchoNavigator – advanced integration

Live 3D TEE and Live xPlane images have been integrated in a highly innovative way to support advanced structural repairs. The EchoNavigator option available for Allura 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.

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.

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

Extreme imaging for surgery

The CX50 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.

Live 3D TEE – wherever you need it

Philips introduced Live 3D TEE more than five years ago and clinicians have trusted it in more than a million exams and procedures. Now Live 3D TEE is available on the CX50 xMATRIX.

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 quantification (MVQ) 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. MVQ offers protocols to assist in defining the 3D landmarks on the MPR views. And MVQ 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.
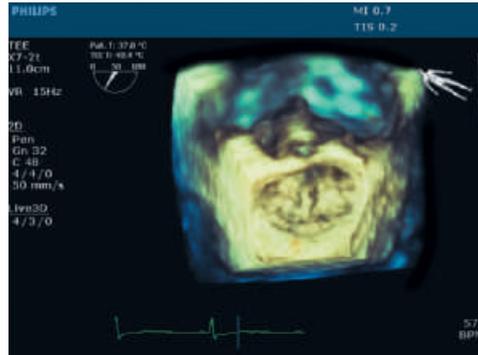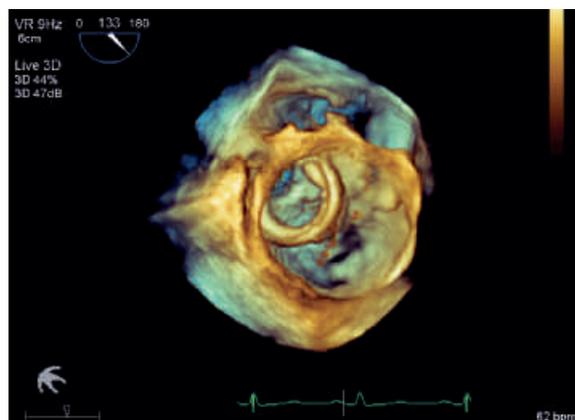

Live 3D TEE image of the mitral valve.
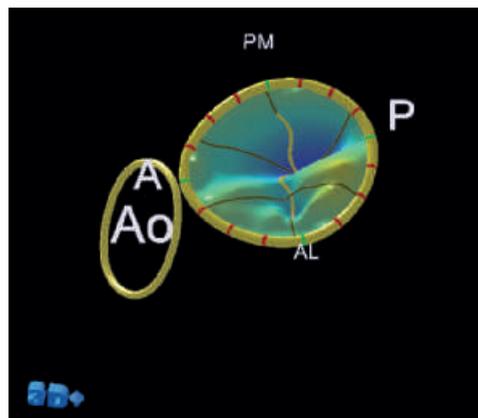
MVQ model derived from Live 3D TEE of the mitral valve.
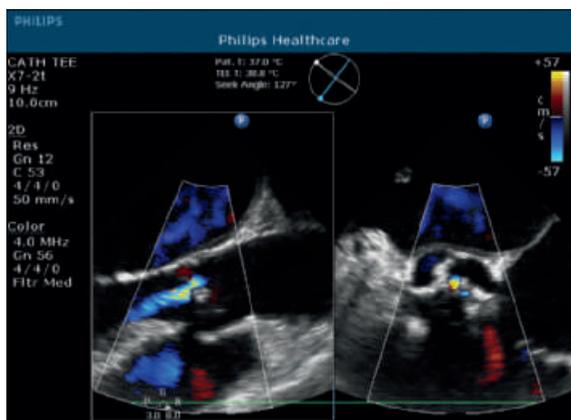
Live xPlane imaging provides real-time simultaneous longitudinal and short-axis views of this aortic insufficiency.

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

The CX50 X7-2t transducer is a fully functional TEE probe with 2D, Live 3D, Live xPlane, color flow, and Doppler modes.

Compact linear array for surgery

The CX50 xMATRIX now supports the L15-7io compact linear array transducer. The L15-7io has been designed specifically for imaging vasculature with its extremely small footprint and unique handle. With SonoCT real-time compound imaging, the L15-7io provides images of exceptional quality.

Philips offers a choice of Live 3D TEE echo systems – portable and cart. Compact X7-2t TEE may be shared between CX50 xMATRIX and iE33 xMATRIX systems to increase clinical and operational efficiency.

Increase communication

Live 3D TEE and quantification provide important information for cardiologists, surgeons, anesthesiologists, and echocardiographers throughout the entire patient care cycle, including surgery follow-up and on-going care. As well, the 3D views may be more easily understood by patients and their families, facilitating communication of procedures.

Philips L15-7io linear array transducer provides excellent imaging for cardiac and vascular surgery, as well as vascular access sites for percutaneous procedures in the hybrid OR.

# 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 system around the bedside, crib, or isolette without interfering with support equipment. Sector array 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.

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

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.
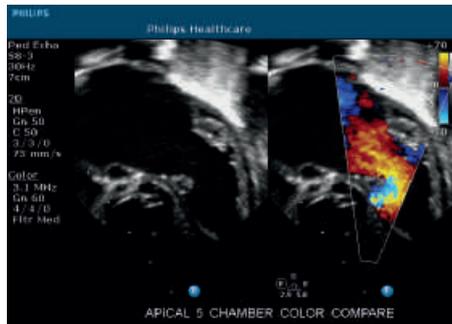
Apical five-chamber with color compare using the Philips S8-3 sector array transducer.
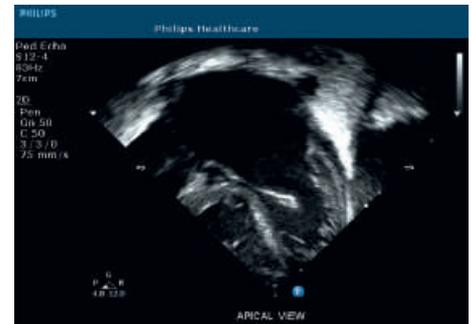
2D apical view using the Philips S12-4 sector array transducer.

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

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

Our portfolio of services is as innovative, flexible, and comprehensive as your Philips system. From consulting in preparation, installation, and networking, to providing clinical and biomedical engineering training, education, and e-learning, to sourcing financial options, we have the expertise to assist you in finding the best solution for your specific needs.

World-class customer service

Philips Customer Service agreements deliver the flexibility and choice you need to provide patient care based on the latest advances in system technology, successfully manage your financial performance, promote uptime, lower the cost of ownership, and increase your productivity. Philips delivers the full spectrum of services quickly through dedicated, highly trained clinical and technical specialists focused on providing unparalleled customer service. Year after year, customers rank Philips Ultrasound #1 in overall service performance – check the web for details:
www.healthcare.philips.com/ultrasound

Bringing expertise and vision to your ultrasound education

Philips offers a wide array of clinical and technical education, online resources and training courses to meet the increasingly complex needs of healthcare professionals and staff members. Whatever your need, there is a medical education course or resource available that is specifically tailored to fulfill the learning requirements of you and your organization.

Innovative financial solutions

Philips Medical Capital delivers flexible financial solutions to place state-of-the-art Philips medical products in healthcare facilities around the world. Our financial experts understand your unique financial needs and provide flexible solutions that optimize asset utilization, reduce costs, and increase financial flexibility.

## Partnering to provide security solutions

Philips is committed to addressing your privacy and security concerns. Your partner in prevention, response and compliance, Philips Product Security provides online security resources, answers to security-related questions, and access to dedicated security professionals who can assist with your IT department's compliance efforts and risk assessments.

Philips SmartPath assures you easy access to solutions and innovations for the full life of your ultrasound system, so you can boost your clinical and operational potential and achieve your organizational goals.

Optimize your system's performance both now and in the future with regular and ongoing updates, including functionality improvements and remote technical support.
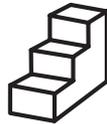
Optimize

Enhance your equipment with regular technology upgrades, and take advantage of the newest features and capabilities.

Enhance

Transform your investment at the end of your system's life by transitioning seamlessly to a next-generation solution or refurbished option.

Transform

Please visit www.philips.com/CX50cardiology