North Carolina Department of Health and Human Services
Division of Health Service Regulation
Certificate of Need Section
2704 Mail Service Center ■ Raleigh, North Carolina 27699-2704

Beverly Eaves Perdue, Governor
Lanier M. Cansler, Secretary

www.ncdhhs.gov/dhsr

Craig R. Smith, Section Chief
Phone: 919-855-3875
Fax: 919-733-8139

January 9, 2012

Dee Jay Zerman
Planning and Development
UNC Hospitals
101 Manning Drive
Chapel Hill, NC 27514

RE: Exempt from Review / UNC Hospitals is requesting exemption from review to replace a Toshiba Infinx CCI, ceiling Suspended Cardiovascular System with a Phillips Allura Xper FD 10 single Plane Cardiovascular System. / Orange County

Dear Ms. Zerman:

In response to your correspondence of December 28, 2011, the above referenced proposal is exempt from certificate of need review in accordance with N.C.G.S 131E-184 (a)(7). Therefore you may proceed to acquire, without a certificate of need, one (1) Philips Allura Xper FD 10 Single Plane Cardiovascular System to replace a Toshiba Infinx CCI, ceiling suspended Cardiovascular System (Serial Number- 3582036). This determination is based on your representations that the existing unit will be removed from North Carolina and will not be used again in the State without first obtaining a certificate of need. However, you should contact the Construction Section to determine if they have any requirements for the development of this proposed project.

It should be noted that this Agency's position is based solely on the facts represented by you and that any change in facts as represented would require further consideration by this Agency and a separate determination. If you have any questions concerning this matter, feel free to contact this office.

Sincerely,

F. Gene DePorter, Project Analyst

Craig Smith, Chief
Certificate of Need Section

Cc: Construction Section, DHSR
Medical Facilities Planning Section, DHSR

UNC HOSPITALS

Gene

December 21, 2011

Mr. F. Gene DePorter
Certificate of Need Section
Division of Facility Services, DHHS
2704 Mail Services Center
Raleigh, NC 27699-2704

RE: Request for Exemption / Replacement of Cardiac Cath Lab "B" Machine / UNC Hospitals

Dear Mr. DePorter:

UNC Hospitals is planning to replace the Cardiac Cath machine, referred to as Cardiac Cath Lab "B", and is requesting a determination that the replacement of this equipment is exempt from review pursuant to 131E-184(7). The existing lab was placed in service in 2004, and is used on a daily basis. Since July 12, 2011 we have required 13 high or urgent severity calls for repair of the unit, most of which resulted in the lab being closed down for repairs. This in turn leads to long delays, and patient, staff and physician dissatisfaction issues.

We are supplying the following information that the CON Section has requested in the past as a part of its general information request for an equipment replacement.

1. A comparison of the existing and replacement equipment, using the format in the following table:

Equipment Comparisons

Cath Lab B	*Existing Equipment*	*Replacement Equipment*
Type of Equipment (List each component)	Toshiba Infinx CCI, ceiling Suspended Cardiovascular System	Phillips Allura Xper FD10 Single Plane Cardiovascular System
Manufacturer of Equipment	Toshiba America Medical Systems, Inc.	Philips Medical Systems, N.A.
Tesla Rating for MRIs	Not applicable	Not applicable
Model Number	Infinix CC-DFP8000D	Allura Xper FD10
Serial number	3582036	To be determined
Provider's Method of Identifying Equip	By model & serial #s	By model & serial #s
Specify if Mobile or Fixed	Fixed	Fixed
Mobile Trailer Serial Number/VIN #	Not applicable	Not applicable
Mobile Tractor Serial Number/VIN #	Not applicable	Not applicable
Date of Acquisition of Each Component	2004	To be 2012
Does Provider Hold Title to Equipment or Have a Capital Lease?	UNC Hospitals owns the equipment	UNC Hospitals will own the equipment

Specify if Equipment Was/Is New or Used When Acquired	New	Will be new
Total Capital Cost of Project (Including Construction, etc.) <See Exhibits 1 and 2>	Believed to be $851,935. Actual records are not available - records are not kept more than 5 years.	$1,863,506 includes $914,506 for equip and $949,000 for renovation and other costs. HVAC must be replaced to accommodate new equip.
Total Cost of Equipment	$851,935	$914,506
Fair Market Value of Equipment	Not available	$914,506
Net Purchase Price of Equipment	$851,935	$914,506
Locations Where Operated	UNC Hospitals	UNC Hospitals
Number of Days In Use/To be Used in N.C. Per Year	365 days	365 days
Percent of Change in Patient Charges (by Procedure)	*NA*	No change
Percent of Change in Per Procedure Operating Expenses (by Procedure)	*NA*	No change
Type of Procedures Currently performed on Existing Equipment	Diagnostic and Interventional Cardiac Catheterization Procedures	*NA*
Type of Procedures New Equipment is Capable of Performing	*NA*	Diagnostic and Interventional Cardiac Catheterization Procedures

2. A description of the basic technology and functions of the existing and replacement equipment, including the diagnostic and treatment purposes for which the equipment is used or capable of being used.

Response: The existing Toshiba Infinix CCI Single Plane Cardiovascular System will be replaced with a Philips Allura Xper FD10 Single Plane Cardiovascular System. Both systems are used to perform diagnostic and interventional heart procedures, otherwise known as cardiac catheterization, cardiac angioplasty, and coronary stent implantation. The current system allows for the provision of diagnostic and interventional procedures. The replacement lab will provide state-of-the-art imaging for diagnostic and interventional procedures.

The Allura Xper FD10 has a ceiling mounted stand and a digital imaging x-ray system. The system uses an integrated single-host concept. It is comprised of five functional building blocks: Geometry, X-ray Generation, User Interface, Image Detection and Viewing. This newer technology has more advanced imaging capabilities than the existing Toshiba Infinix CCI Single Plane Cardiovascular System.

3. Brochures or letters from the vendors describing the capabilities of the existing equipment and the replacement equipment.

Response: A copy of the exact Toshiba Infinix CCI system is attached as Exhibit 4. A copy of a brochure from the vendor describing the proposed replacement Phillips Allura Xper FD10 cardiovascular system is attached as Exhibit 5.

4. A copy of the purchase order for the existing equipment, including all components and original purchase price.

Response: A copy of the original purchase order and quote is not available. UNC Hospitals only retains such documentation for 5 years. However, a marketing brochure for the Toshiba Infinix CCI system is included in Exhibit 4.

5. A copy of the title, if any, for the existing equipment or the capital lease for the existing equipment.

Response: Not applicable. The equipment does not have a title and will not be leased.

6. If the replacement equipment is to be leased, a copy of the proposed lease that transfers substantially all the benefits and risks inherent in the ownership of the equipment to the lessee of the equipment, in accordance with criteria in Generally Accepted Accounting Principles (GAAP).

Response: Not applicable. The replacement equipment will not be leased.

7. If the replacement equipment is to be purchased, a copy of the proposed purchase order or quotation, including the amount of the purchase price before discounts and trade-in allowance.

Response: A copy of the quote received from Phillips for the replacement Cardiac Cath unit is attached as Exhibit 3.

8. A letter from the person taking possession of the existing equipment that acknowledges the existing equipment will be permanently removed from North Carolina, will no longer be exempt from requirements of the North Carolina Certificate of Need law, and will not be used in North Carolina without first obtaining a new certificate of need.

Response: The vendor, Phillips, will take possession of the unit and remove it from the site as Phillips installs the replacement unit. The unit will be taken out of state by Phillips and will not be used in NC without obtaining certificate of need approval.

9. Documentation that the existing equipment is currently in use and has not been taken out of service.

Response: UNC Hospitals currently has four operational Cardiac Cath labs as identified on the most Licensure Renewal Application form on file with DFS.

Also, on the following page, is a completed 'Proposed Total Capital Cost of Project' form which projects the total capital cost of this replacement project to be $1,863,506 for the Phillips Allura Xper FD10, including installation and the required replacement HVAC unit. The total capital cost includes all costs required to make the unit operational. Since the room already exists, equipment and furniture will be reused. Beyond the items included in this estimate, no additional renovations, equipment or furniture will be required for this project.

Should you require any additional information regarding the replacement of this equipment, please do not hesitate to contact me at 919-966-1129 or 5620.

Sincerely,

Dee Jay Zerman

Dee Jay Zerman, Associate Director
Planning & Program Development

PROPOSED TOTAL CAPITAL COST OF PROJECT

A. **Site Costs**			
(1) Full purchase price of land		$ 0	
Acres _____ Price per Acre $_____			
(2) Closing costs		$ 0	
(3) Site Inspection and Survey		$ 0	
(4) Legal fees and subsoil investigation		$ 0	
(5) Site Preparation Costs			
Sub-Total Site Preparation Costs		$ 0	
(6) Other (Specify)		$ 0	
(7) **Sub-Total Site Costs**			**$ 0**
B. **Construction Contract**			
(8) Cost of Materials			
Sub-Total Cost of Materials		$ 0	
(9) Cost of Labor		$ 0	
(10) Other (Specify)		$ 0	
(11) Sub-Total Construction Contract			**$ 730,000**
C. **Miscellaneous Project Costs**			
(12) Building Purchase		$ 0	
(13) Fixed Equip. Purchase (Phillips Allura Xper)		$ 914,506	
(14) Movable Equipment Purchase		$ 0	
(15) Furniture		$ 0	
(16) Landscaping		$ 0	
(17) Consultant Fees			
Architect & Engineering Fees	$ 109,500		
Legal Fees	$ 0		
Market Analysis	$ 0		
Other (Specify)	$ 0		
Sub-Total Consultant Fees		$ 109,500	
(18) Financing Costs (e.g. Bond, Loan, etc.)		$ 0	
(19) Interest During Construction		$ 0	
(20) Other (Project contingency 15%)		$ 109,500	
(21) Sub-Total Miscellaneous			**$ 1,133,506**
(22) Total Capital Cost of Project (Sum A-C above)			**$ 1,863,506**

I certify that, to the best of my knowledge, the above construction related costs of the proposed project named above are complete and correct.

Not applicable
Signature of Licensed Architect or Engineer

I assure that, to the best of my knowledge, the above capital costs for the proposed project are complete and correct and that it is my intent to carry out the proposed project as described.

Dee Jay Zerman
Dee Jay Zerman, Associate Director of Planning

Exhibit 2

UNC Hospitals 12/20/2011
Cath Lab Equipment Replacement
Room B

Estimated Construction Cost		
General Contract	$	200,000
Fire Protection Contract	$	3,000
Plumbing Contract	$	12,000
HVAC Contract	$	414,000
Electrical Contract	$	101,000
	$	**730,000**

Design Fees		
Original Agreement - Room B	$	58,000
DPCO 1B - Fee Adjustment Based on Increased Construction Cost	$	51,500
	$	**109,500**

DPCO 1B - Calculation:		
Construction Cost	$	730,000
A/E Fee Percentage		15%
	$	109,500

PHILIPS HEALTHCARE
A division of Philips Electronics North America Corporation
22100 Bothell Everett Highway
P.O. Box 3003
Bothell, Washington 98041-3003

PHILIPS

Quotation #: 1-OU0KWA	**Rev:** 17	**Effective From:** 09-Nov-11	**To:** 24-Dec-11

Presented To:

UNIVERSITY OF NORTH CAROLINA HEALTH CARE SYSTEM
101 MANNING DR
CHAPEL HILL, NC 27514

Tel:

Alternate Address:

Presented By:

Bethann Griffith-Subik
Account Manager
Tel: (919) 677-9046
Fax: (919) 677-9047

Steve Weiss
Regional Manager
Tel: (678) 924-6087
Fax: (678) 924-6003

Date Printed: 10-Nov-11

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IMPORTANT NOTICE: Health care providers are reminded that if the transactions herein include or involve a loan or discount (including a rebate or other price reduction), they must fully and accurately report such loan or discount on cost reports or other applicable reports or claims for payment submitted under any federal or state health care program, including but not limited to Medicare and Medicaid, such as may be required by state or federal law, including but not limited to 42 CFR 1001.952(h).

Quote Solution Summary

Line #	Product	Qty	Price
	100213 Allura Xper FD10	1	$914,506.18
		Equipment Total:	$914,506.18

Solution Summary Detail

Product	Qty	Each	Monthly	Price
100213 Allura Xper FD10	1	$914,506.18		$914,506.18

Buying Group: **MEDASSETS SUPPLY CHAIN SYSTEMS INC** **Contract #:** **Multi Modalitys GB Q4 11**

Addt'l Terms:

Each Quotation solution will reference a specific Buying Group/Contract Number representing an agreement containing discounts, fees and any specific terms and conditions which will apply to that single quoted solution. If no Buying Group/Contract Number is shown, Philips' Terms and Conditions of Sale will apply to the quoted solution.

Each equipment system listed on purchase order/orders represents a separate and distinct financial transaction. We understand and agree that each transaction is to be individually billed and paid.

Payment Terms: 0% Down, 80% Upon Delivery, 20% Due When the Product is Available for First Patient Use, Net due upon receipt

100213 Allura Xper FD10

System Type: New
Freight Terms: FOB Destination
Warranty Terms: Part numbers beginning with two (2) asterisks (**) are covered by a System 12 Months Warranty. All other part numbers are third (3rd) party items.
Special Notations: Contingencies must be removed 120 days before scheduled shipment to assure delivery on specified date. Any rigging costs are the responsibility of the Purchaser.
Additional Terms:

Line #	Part #	Description	Qty	Each	Price
1	**NNAE371	Allura Xper FD10 Ceiling R7.6	1	$577,335.30	$577,335.30

The Allura Xper FD10 (Ceiling) single-plane cardiovascular system is comprised of a ceiling mounted G-arm stand and digital imaging X-ray system for cardiovascular diagnostic and interventional procedures.

The Allura Xper FD10 system uses an integrated single-host concept. The system is comprised of five functional building blocks: Geometry, X-ray Generation, Image Detection, Viewing, and User Interface. Each functional building block is explained in further detail including accessories.

GEOMETRY
The Allura Xper FD10 Stand

The ceiling suspended geometry segment is comprised of the following features:

- A motorized, ceiling suspended Poly Diagnost G-arm, which can be ceiling rotated to allow a three-sided patient approach at maximum free floor space with full body coverage.
- All stand movements are motorized. The motorized and manual parking movement consists of ceiling rotation and a longitudinal movement. The counterbalanced Dynamic Flat Detector can also be positioned manually or motorized. Angulation and rotation of the Poly-Diagnost G-arm are motorized at high speeds.
- Parking and longitudinal movement of the Poly-Diagnost G-stand, can be performed either manually either motorized. The longitudinal movement comprises electronic auto-stop positions, to facilitate positioning in the iso-center with ease and accuracy.
- Single operator control of stand parking or longitudinal positioning provides motorized base rotation at 12 degrees per second from +90 to -90 degrees, and motorized longitudinal movement at 15 cm/s over a maximum range of 260 cm.
- The projection angles for the Poly-Diagnost G-arm in the head position (orientated parallel to the table) are:
  - Rotation 120 degrees LAO to 120 degrees RAO
  - Angulation 45 degrees cranial to 45 degrees caudal
- Motorized stand movements are variable speed with a configurable maximum speed, allowing:
  - rotation speed up to 25 degrees per second
  - angulation speed up to 18 degrees second
- The depth of the Poly-Diagnost G-arm is 105 cm.
- The stand features BodyGuard capacitive sensing collision avoidance for patient protection.
- The variable source image distance range between the x-ray tube foci and the Dynamic Flat Detector input screen is 86.5 to 123 cm.

Patient Support

Xper Table

- Patient support provided with a flat carbon fiber tabletop

- Tabletop length of 319 cm and tabletop width of 50 cm
- Floating tabletop movement of 120 cm longitudinal and 36 cm transverse
- Motorized height adjustment from 79 to 107 cm
- Maximum patient weight 250 kg plus 500 N for CPR (or 225 kg plus 1000 N) in any longitudinal position of the table top

Patient Support Accessories

- Three rail accessory clamps
- Mattress pad
- Translucent catheterization armrest
- IV Pole
- Set of Cable Holders
- Set of Arm Supports (FCV0248)
- Arm Support (FCV0258)
- Patient straps
- Table-mounted radiation shield
- Antifatigue Mat with Philips logo

X-RAY GENERATION

The Allura Xper FD10 comprises an integrated dedicated X-ray system, micro-processor controlled 100kW generator, based on high frequency converter technology. The user interface control of this X-ray Generator is incorporated into the Xper module, Xper Desktop Console, and the Xper on-screen displays.

The Velara CFD generator comprises:

- Voltage range is 40 - 125 kV.
- Maximum current 1250 mA at 80 kV
- Maximum continuous power for fluoroscopy: 2 kW for 8 hours, 2.4 kW for 0.5 hour.
- Program selection
- Acquisition frame rates 3.75, 7.5, 15, 30 frames per second
- Pulsed fluoroscopy frame rates 3.75, 7.5, 15, 30 frames per second.
- Minimum exposure time of 1 ms.
- Automatic kV and mA control for optimal image quality prior to run to safe dose
- An X-ray collimator with single semi-transparent wedged filter with manual and automatic positioning.
- SpectraBeam filtering of low energy radiation to optimize image quality and dose efficiency with the MRC-GS 0508 X-ray tube.
- Xper Beam Shaping, which means that, both shutters and wedges can be positioned on the Last Image Hold without the need for X-ray radiation.

Fluoroscopy

- Three programmable fluoroscopy modes can be selected from the Xper Imaging T.S.O. Each mode has a different composition of dose rate, pulse speed, filter setting, and image processing (noise reduction, adaptive contour enhancement, and adaptive harmonization).
- Xper Fluoro Storage, a grab function allows storage and archiving of a single fluoro frame or the last 20 seconds of fluoroscopy. These images or runs can be archived as a regular run.

Line #	Part #	Description	Qty	Each	Price

IMAGE DETECTION

The Allura Xper FD10 comprises the following image detection chain:

- A 25 cm (10 in.) diagonal triple-mode Dynamic Flat Detector. It comprises a 6"/8"/10" triple mode Dynamic Flat Detector
- The outer detector box diameter is 37 cm diagonal square
- The digital output of the Flat detector is a 1024 x 1024 matrix at 14 bit depth and the detector pixel pitch is 184 micron by 184 micron
- The DQE (0) is 75% providing high conversion of X-ray into a digital image, while maintaining a high MTF.

VIEWING

The Allura Xper FD10 comprises the following components in order to display the clinical images in the control and examination rooms:

Displays

Examination Room

Two 18-inch monochrome LCD monitors

- 18-inch monochrome TFT-LCD display
- Native format 1280x1024 SXGA
- 10-bit gray-scale resolution with gray-scale correction

These monitors are not delivered when FlexVision XL, EP Cockpit or EP Cockpit XL is selected.

The monitor ceiling suspension in the exam room can be configured to accommodate 2, 3, 4, 6, or 8 18"LCD monitors and includes motorized height adjustment. The height adjust feature is dependent on the room ceiling height. When FlexVision XL, EP Cockpit or EP Cockpit XL is selected the monitor ceiling suspension is configured for one of those options.

- The first reference channel is for the display of reference images or runs, controlled by infra-red remote-control Xper Viewpad.
- The On-Screen Display provides status information on stand rotation, angulation, display of system messages, X-ray tube load status, selected fluoroscopy mode, selected detector Field of View, and both the rate and accumulation of the dose area product and skin dose.

Control Room

One 19-inch color LCD monitor

- 19-inch color TFT-LCD display

Control Room

One 18-inch monochrome LCD monitor

- 8-inch monochrome TFT-LCD display

- Native format 1280x1024 SXGA
- 10-bit gray-scale resolution with gray-scale correction

These control room monitors are not delivered when EP Cockpit or EP Cockpit XL is selected.

Acquisition

The acquisition segment coordinates the parameters for automatic exposure control. The program is selected via the Xper module or Xper Desktop Console.

This Allura offers a storage capacity of:

- 100,000 images at matrix size of 1024 x 1024, 10-bit
- Maximum number of examinations is 999, with no limit to the maximum number of images per examination

Xres Image Processing and SPIRIT

- Xres is a multi-resolution spatial temporal noise reduction and edge enhancement filter. It exploits the full benefits of the digital detector to enhance sharpness and contrast and to reduce noise in the clinical images. The settings for both Xres and SPIRIT can be customized with regard to the image quality.
- SPIRIT harmonizes the background of clinical image to provide excellent visualization of coronary arteries projected in complex projections, such as arteries projected over the diaphragm or spine.

USER INTERFACE

Xper is comprised of three elements: 1) Xper Settings, which customizes the system to each user preferred settings; 2) Xper User Interface 3) Xper Integration, which makes advanced integration functionality available such as DICOM Query / Retrieve, background archiving, and Xper Fluoro Storage.

The Xper User Interface comprises a range of User Interface modules in the Examination Room, including On-Screen Display.

On-Screen Display

- X-ray indicator and X-ray tube temperature condition
- Gantry position in rotation and angulation and Source Image Distance
- Detector field size display
- Selected Frame speed
- Fluoroscopy mode
- Integrated fluoroscopy time
- Stopwatch
- Skin Dose: dose rate with X-ray, cumulated dose with no X-ray
- Dose Area Product: dose rate with X-ray, cumulated dose with no X-ray
- Graphical bars for indication of Body Zone specific dose rate and accumulated skin dose levels, related to the 2 Gy level

Remote Intercom

A separate intercom, which is connected independently from the system that allows separate placement of the intercom at the preferred working position in the control room and examination room.

Xper ViewPads

The Xper ViewPad contains the preprogrammed function settings. The system is provided with two Xper ViewPads. The following functions are provided:

- Run and image selection
- File and run cycle
- File overview
- Store to Reference image file
- Copy image to photo file
- Digital (fixed) zoom and panning
- Recall reference images, which means switching control of Xper ViewPad function from live to reference monitor
- Laser pointer, intended to point at regions of interest on the imaging monitors
- LED indication of laser pointer on/off and battery low

Tableside Modules

One Xper Module is provided for use at either the tableside or in the control room. This module uses a touch screen, which can be operated when draped with sterile covers. The Xper Module contains the following functionality:

- Acquisition settings
- Selection of Xper Setting allows the user to set frame rates and x-ray generation settings applicable for the type of the preferred intervention
- Automatic positioning recall to allow the stand position to match the reference image.
- Image Processing

The Xper Geometry T.S.O. module can be positioned on all sides of the patient table, while keeping the button operation intuitive. The Xper Geometry T.S.O. provides the following functionality:

- Tabletop float and table height position
- Source Image Distance selection
- longitudinal movement of the Gantry along the ceiling
- Gantry rotation in an axis perpendicular to the ceiling
- Store and recall of two scratch gantry positions including SID
- Emergency stop button

The Xper Imaging T.S.O. module can also be positioned at three sides of the patient table, while keeping the button operation intuitive. The Xper Imaging T.S.O. provides the following functionality:

- Fluoroscopy Flavor selection defined per Xper Setting
- Shutters and Wedge positioning
- Xper Fluoro Storage and Grab
- Selection of the Detector field size
- Shutters positioning
- Reset of the fluoroscopy buzzer

Pan Handle

The Pan Handle is an extension of the control facility for floating movements of the table top.

Control Room

The control room comprises an Xper Review Module, a keyboard, a mouse. The Xper Review Module offers the basic functions for review. The Xper Review Module contains the following functionality:

- Power on/off
- Tagarno wheel to control the review of a patient file
- File and run cycle
- Contrast, Brightness, and Edge enhancement settings
- File, Run, Image stepping and run and file overview
- Delete run
- Image invert and digital zoom
- Reset fluoroscopy timer and enable/disable X-ray

System information is displayed on the bottom of the data monitor:

- Stopwatch and Time
- System guidance information
- Dose Area Product (DAP), Skin Dose, and accumulative dose
- Frame speed settings, fluoroscopy mode, and accumulated fluoroscopy time
- Exposure and fluoroscopy settings as Voltage (kV), Current (mA) and pulse time (ms)
- Geometry information as rotation, angulation, and SID

The workflow is divided in scheduling, preparation, acquisition, review, and archive.

Scheduling

The patients can be added, listed and selected per date, physician, and intervention type. Previous DICOM patient studies can be uploaded with the DICOM Query Retrieve function.

Patient management protocols are flexible and allow for multiple studies to be selected under one patient identification number. This means that new studies can be appended to an earlier patient file. Furthermore, each study can contain multiple examinations to allow for split administrative purposes. Each examination contains multiple files, i.e. acquisition file, reference file, and QA results file.

Preparation

The preparation page provides the information of the room and patient preparation of each individual physician. The preparation page is customizable per Xper Setting and allows each physician to provide his or her own room protocols.

Acquisition

The acquisition page contains information on the current selected patient.

Review

The review page allows for reviewing of patient's:

- Previous examination cases
- Review of other DICOM XA or DICOM SC studies.

Archive

Continuous Autopush (NCVA090)

Continuous Autopush is an archive accelerator which ensures that background archiving continues with minimal disruptions.

Clinical studies can be archived to a CD or a PACS. The archive process can be completely automated and customized with Xper Settings. Parameters like multiple destinations and archive formats can be selected to the individual needs.

The Xper DICOM Image Interface enables the export of clinical images to PACS. The export formats are based on DICOM 3.0 protocols. The system exports clinical studies in Cardiac DICOM XA Multi-Frame or DICOM Secondary Capture formats.

- The export format is configurable in 512x512 or 1024x1024.
- The examination can be sent to multiple destinations for archiving and reviewing purposes.
- The Xper DICOM Image Interface provides DICOM Storage and DICOM Storage Commitment Services.
- The DICOM Query/Retrieve function allows older DICOM XA MF and DICOM SC studies to be uploaded in the system. Furthermore, additional information can be appended to a study, while keeping the patient identification the same.

Clinical Education Program for Allura Sys tems

Essentials OffSite Education:

Philips will provide up to two (2) Cardiovascular Technologists, Registered Technologists Registered Nurses, or other system operator as selected by customer, with in-depth didactic, tutorial, and hands-on training covering basic functionality and work-flow of the cardiovascular imaging system. In order to provide trainees with the ability to apply all fundamental functioning on their system, and to achieve maximum effectiveness, this class should be attended no earlier than two weeks prior to system installation. This twenty-eight (28) hour class is located in Cleveland, Ohio, and is scheduled based on your equipment configuration and availability. Due to program updates, the number of class hours is subject to change without notice. Customer will be notified of current, total class hours at the time of registration. This class is a prerequisite to your equipment handover OnSite Education. CEU credits may be available for each participant that meets the guidelines provided by Philips. Please refer to guidelines for more information. **Travel and lodging are not included, but may be purchased through Philips. It is highly recommended that 989801292102 (CV Full Travel Pkg OffSite) is purchased with all OffSite courses**

Handover OnSite Education:

Philips Education Specialists will provide twenty-eight (28) hours of education for up to four (4) students, selected by customer, including technologists from night/weekend shifts if necessary. Students should attend all 28 hours, and must include the two OffSite education attendees. CEU credits may be available for each participant that meets the guidelines provided by Philips. Please refer to guidelines for more information. Note: Site must be patient-ready. Philips personnel are not responsible for actual patient contact or operation of equipment during education sessions

100213 Allura Xper FD10

Line #	Part #	Description	Qty	Each	Price

except to demonstrate proper equipment operation. **It is highly recommended for systems that are fully loaded or for customers with a large number of staff members to also purchase 989801292099 (CV Add OnSite Clin Educ 24h).**

The above education entitlements expire one (1) year from equipment delivery date. Ref# 106107-071214

2	**NCVA013	MRC-GS 05/08 X-Ray Tube	1	$53,407.47	$53,407.47

Featuring:

- SpectraBeam pre-filter
- SyncraPulse Pulsed Progressive Fluoroscopy
- 2.4 MHU anode heat storage capacity
- 900 kHU/min heat dissipation

Comprising:

- Maximus ROTALIX Ceramic tube (MRC-GS 05/08 with Grid Switch for pulsed fluoroscopy)
- Tube Housing (ROT1001)
- Cooling Unit (CU3000)
- MRC Rotor Control
- High Voltage Cables

3	**NCVA105	Short L-arm	1	$11,608.77	$11,608.77

Low ceiling height adapter to install the ceiling mounted C-stand in a room with 270cm ceiling height.
Note:
-Not compatible with cine camera in combination with 30cm or 38cm Image Intensifier.

4	**FCV0588	Isolated Wall Connection Box	6	$1,465.53	$8,793.18

Isolated Wall Connection Box
This Isolated Wall connection Box facilitates connection of the video source via standard DVI cable/connector and lossless transfer of the video signal over the approximate 30 m cable distance.
. It can be mounted in
the exam room or in the control room, depending on the location of the video source.

The quantitiy of the VWCB's has to be calculated as follows:
For each video signal via MultiVision: 1 VWCB (max = 4)
For each video signal to FlexVision XL on Cardio System: 1 VWCB (max = 9)
For each video signal to FlexVision XL on Vascualr System: 1 VWCB (max = 8)
For each 3rd party video signal directly connected to an LCD in the MCS: 1x VWCB.

Note:
No VWCB is required in case a video signal

Line #	Part #	Description	Qty	Each	Price
		is connected directly to a dedicated LCD from the following sources: 1) Xper Live/ref Slaving 2) Interventional HW (XtraVision), ViewForum, Xcelera (only if workstations are powered by Allura Xper) 3)Xper IM			
5	**FCV0589	**Legacy Video Convertor** Legacy Video Convertor The Legacy Video Cenvertor enables conversion from VGA towards DVI. The Legacy Video Convertor enables conversion from VGA towards DVI for supported input resolutions, as listed in the table below. Signal type Native resolution Image Aspect Ratio VGA 640x480 4:3 SVGA 800x600 4:3 XGA 1024x768 4:3 SXGA 1280x1024 5:4 SXGA+ 1400x1050 4:3 UXGA 1600x1200 4:3 WXGA 1280x800 16:10 (8:5) WSXGA 1440x900 16:10 (8:5) WSXGA+ 1680x1050 16:10 (8:5) WUXGA 1920x1200 16:10 (8:5) 2K 2048x1080 19:10 TV1080I/P 1920x1080 16:9 TV 480I 720x480 4:3 TV 480P 704x480 4:3 TV 576I 720x576 4:3 TV 576P 704x576 4:3 TV 720P 1280x720 16:9	2	$1,270.13	$2,540.25
6	**FCV0589	**Legacy Video Convertor** Legacy Video Convertor The Legacy Video Cenvertor enables conversion from VGA towards DVI. The Legacy Video Convertor enables conversion from VGA towards DVI for supported input resolutions, as listed in the table below. Signal type Native resolution Image Aspect Ratio VGA 640x480 4:3 SVGA 800x600 4:3 XGA 1024x768 4:3 SXGA 1280x1024 5:4 SXGA+ 1400x1050 4:3 UXGA 1600x1200 4:3 WXGA 1280x800 16:10 (8:5) WSXGA 1440x900 16:10 (8:5) WSXGA+ 1680x1050 16:10 (8:5) WUXGA 1920x1200 16:10 (8:5)	1	$1,270.13	$1,270.13

Line #	Part #	Description	Qty	Each	Price
		2K 2048x1080 19:10 TV1080I/P 1920x1080 16:9 TV 480I 720x480 4:3 TV 480P 704x480 4:3 TV 576I 720x576 4:3 TV 576P 704x576 4:3 TV 720P 1280x720 16:9			
7	**FCV0589	**Legacy Video Convertor**	1	$1,270.13	$1,270.13
		Legacy Video Convertor The Legacy Video Cenvertor enables conversion from VGA towards DVI. The Legacy Video Convertor enables conversion from VGA towards DVI for supported input resolutions, as listed in the table below. Signal type Native resolution Image Aspect Ratio VGA 640x480 4:3 SVGA 800x600 4:3 XGA 1024x768 4:3 SXGA 1280x1024 5:4 SXGA+ 1400x1050 4:3 UXGA 1600x1200 4:3 WXGA 1280x800 16:10 (8:5) WSXGA 1440x900 16:10 (8:5) WSXGA+ 1680x1050 16:10 (8:5) WUXGA 1920x1200 16:10 (8:5) 2K 2048x1080 19:10 TV1080I/P 1920x1080 16:9 TV 480I 720x480 4:3 TV 480P 704x480 4:3 TV 576I 720x576 4:3 TV 576P 704x576 4:3 TV 720P 1280x720 16:9			
8	**NCVA089	**RIS / CIS DICOM interface**	1	$3,934.73	$3,934.73
		This package allows communication of the Allura Xper system with a local information system (CIS or RIS). The interface uses the DICOM Worklist Management (DICOM WLM) and Modality Performed Procedure Step (DICOM MPPS) standards. If a hospital has an Allura Xper system and an information system it can receive patient and examination request information from the information system and report examination results in order to: -Eliminate the need for retyping patient information on the Allura Xper -Prevent errors in typing patient names and registration numbers (ensuring consistency with IS information to prevent problems in archive clusters ortosearch fora name in case of later retrieval) -Inform the IS about the acquired images and radiation dose Upon request from the Allura Xper system the complete worklist with all relevant patient and examination data is returned from the IS to the Allura Xper system. For each patient the following information will be shown on the Allura Xper after it has been retrieved from the IS: Patient Identification: • Patient name			

Line #	Part #	Description	Qty	Each	Price

- Patient ID
- Birth date
- Sex

Examination/Request Information:

- Accession number
- Scheduled procedure step start time
- Scheduled performing physician's name

It is possible at all times to enter patient demographics information manually within the Allura Xper system in case of an emergency or in case the local Information System connection is down.

On request of the clinical user the Allura Xper will report the following information about the selected patient to the IS:
Patient Identification:

- Patient name
- Patient ID
- Birth date
- Sex

Examination/Request Information:

- Accession number
- Performed procedure step status start/end date and time
- Performing physician's name
- Referenced image sequence

Radiation dose:

- Total time of fluoroscopy
- Accumulated fluoroscopy dose
- Accumulated exposure dose
- Total dose
- Total number of exposures
- Total number of frames

Further detailed information can be found in the Allura Xper DICOM Conformance Statement.

The interface requires an EasyLink (hardware and software) if the IS is not compliant withDICOM Work List Management and Modality Performed Procedure Step.

9	****NCVA080**	**Automatic Position Control (APC)**	**1**	**$7,869.45**	**$7,869.45**

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Line #	Part #	Description	Qty	Each	Price

The Automatic Position Controller (APC) for Integris Allura Flat Detector systems provides two modes of operation:

- Preset Position Sequence; the sequence of projections is determined per Xper Settings. Each set contains a maximum of 10 positions. Positions can be recalled in sequence or directly. The projection sequence comprises rotation, angulation, and SID settings, related to the selected reference image.
- Reference driven positioning. The projections on the reference monitors can be recalled with the push of a button. The reference driven positioning recollects the rotation, angulation, and SID.

10	****NCVA086**	**Rotational Scan**	**1**	**$13,513.96**	**$13,513.96**

Rotational Scan provides real-time 3D impressions of complex vasculature and the coronary artery tree. It acquires multiple projections with just one contrast injection.

Rotational Scan can be used during screening procedures to quickly determine the optimal projection for the study as the angle (rotation/angulation) of the projection is indicated on each image.

Compared with traditional angiography Rotational Scan can save considerable time dose and contrast while providing image detail required for diagnostic and therapeutic decisions.

Rotational Scan is possiblewith the Allura Xper systems in the side position (ceiling mounted systems) and in the head position which provides the flexibility to perform procedures virtually from head to toe.

With Allura Xper FD20

C-arm in side position:

- Max. rotation speed: 30°
- Max. rotation angle: 180°

C-arm in head position:

- Max. rotation Speed: 55°
- Max. rotation Angle: 305°

With Allura Xper FD10:

Poly G in side position (ceiling version):

- Max. rotation Speed: 30°
- Max. rotation Angle: 90°

Poly G in head position:

- Max. rotation Speed: 55°
- Max. rotation Angle: 240°

Line #	Part #	Description	Qty	Each	Price

Maximum speeds are given by the framespeed specifications of the system configuration.

The speed and range of rotation are the highest available (see table). The very high speed allows using less contrast whereas the very wide rotation range provides a complete evaluation of the anatomy.

The stand is designed forvery high mechanical stability. It offers precise positioning and high reproducibility assuring you of high quality images and excellentstudies.

Operation of Rotational Scan is extremely easy. The procedure is selected set up and executed virtually within a matter of seconds supporting the highest patient throughput. A set of dedicated acquisition programs is available on the Xper Module and can be selected at the touch of a button. The rotation endand start positions are easily selected. The procedure is controlled from theexposure hand

- or foot-switch.

11	**NCVA780	Digtal subtracted Angio	1	$15,632.32	$15,632.32

The DSA-option allows to extend the application functions with additional vascular studies. DSA features real-time digital subtraction at low frame speeds of 0.5, 1, 2, 3, or 6 frames per second. The DSA prgrams can be selected per Xper Settings.
It offers exposure technique for uncompromised image quality of subtracted images.
In addition, this option also allows subtraction on run basis (run-subtract), which can be applied in the Rotational Scan and Bolus Chase Subtract options

This function will comprise following functionality:

- Fluoro-Trace
- Fluoro-Subtract
- Exposure subtract on individual image or run basis
- Mask selection
- Landmarking
- Pixel shift

Compatible with:
. Allura Xper FD10 Rel 3 onwards
. Allura Xper FD10/10 Rel 2 onwards

12	**NCVB209	Xper Swing	1	$7,363.18	$7,363.18

The XperSwing option is an extention of Rotational Scan, providing real-time 3D impressions of the coronary artery tree. It acquires multiple projections with just one contrast injection via a fast dual axis rotational scan of the region of interest. So, rotation and angulation movements are combined in one complete scan trajectory, using the maximum rotation and angulation speed of the system. (up to 55 resp 30 degr/sec)

Swing can be used during screening procedures to quickly determine the optimal projection for the study as the angle (rotation/angulation) of the projection is indicated on each image.

Compared with traditional angiography, XperSwing can save considerable time, patient dose and contrast medium, while providing image detail required for diagnostic and therapeutic decisions. In

Line #	Part #	Description	Qty	Each	Price

total seven pre-programmed trajectories are available: two for Right Coronary imaging, three for Left coronary imaging and two generic trajectories. The choice depends on size and weight of the patient. These trajectories are designed to fully cover most if not all conventional projections for a diagnostic coronary angiography, much more complete then the single axis Rotational Scan.

The Swing scan is possible both with the Allura Xper systems in the side position (ceiling mounted systems) and in the head position, providing the flexibility to perform procedures virtually from head to toe.

Max. Frame speeds are given by the framespeed specifications of the system configuration.

The speed and range of rotation are the highest available (see table). The very high speed allows using less contrast, whereas the very wide rotation range provides a complete evaluation of the anatomy.

The stand is designed for a very high mechanical stability. It offers precise positioning and high reproducibility, assuring you of high quality images and excellent subtraction studies.

Operation of the XperSwing is easy. The procedure is selected, set up and executed virtually in a matter of seconds, supporting the highest patient throughput.

The set of dedicated acquisition programs with the trajectories is available on the Xper Module and can be selected at the touch of a button. The rotation end- and start-positions are easily selected. The acquisition procedure is controlled from the exposure hand- or footswitch.

13	****NCVA121**	**FULL AUTOCAL**	**1**	**$3,717.12**	**$3,717.12**

The AutoCal option is a software package to be used in conjunction with quantitative analysis software packages. It provides an auto calibration procedure for an object to be analyzed that is placed in the iso-center. When the object to be analyzed (e.g. Left Ventricle Vessel Segment) is placed in the iso-center AutoCal avoids the need to:

- acquire an additional image series containing a sphere or grid for calibration purposes
- calibrate manually on a calibration object (e.g. catheter) displayed in the image or image series to be analyzed

14	****NCVA785**	**Coronary Quant.Sw pkg(Xper)**	**1**	**$4,139.01**	**$4,139.01**

Functions:

- diameter measurement along the selected segment
- cross sectional area
- %-stenosis
- pressure gradient values
- stenotic flow reserve
- calibration routines

In addition the package allows manual measurements of line lengths (absolute and ratio's) and angulations. Multiple measurements in one image are possible.

Comprising:

Line #	Part #	Description	Qty	Each	Price

- software license

Compatible with:
. Allura Xper FD 10 Rel 3 and FD10/10 Rel 2 onwards
. Allura Xper FD20 Rel 2, FD20/10 Rel 2 onwards

15 ****NCVA786** **Vascular Quant.Sw pkg(Xper)** **1** **$4,139.01** **$4,139.01**

Functions:

- vessel diameter / stenotic index
- automated vessel analysis
- calibration routines

In addition the package allows manual measurements of line lengths (absolute and ratio's) and angulations. Multiple measurements in one image are possible.

Compatible with:

- Allura Xper FD10 Rel 3 and FD10/10 Rel 2 onwards
- Allura Xper FD20 Rel 2 and FD20/10 Rel 2 onwards
- Allura CV20 R1 onwards

16 ****NCVA778** **2nd Xper Module pr** **1** **$9,197.31** **$9,197.31**

The second Xper Module is equal to the standard Xper Module and provides touch screen control of displayed functionality.
The following functions can be made availabe providing the relevant commercial options have been selected:

- Acquisition settings
- Image processing controls
- Automatic position control (optional)
- Channel selection for MultiVision
- Quantitative Analysis controls (optional)
- Xcelera and ViewForum viewing (optional)
- Interventional tool controls (optional)
- Allura 3D-RA, Dynamic 3D Roadmap
- StentBoost, Allura 3D-CA
- XperCT, XperGuide
- XIM physiomonitoring controls (optional)

Comprising:

- Xper Module with Cabling
- Mounting materials
- Software

Connectivity:
A maximum of 3 Xper modules can be connected to the Allura Xper system:

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Line #	Part #	Description	Qty	Each	Price

- one Xper module can on the XperTable
- one Xper module in the control room
- one Xper module on the Xper Pedestal

Compatible with:
Allura Xper FD20 Rel.3
Allura Xper FD20/10 Rel.2
Allura Xper FD20/20 Rel.1

Power requirements: refer to system configuration.

17 ****NCVA815** **Xper PM5 on XperModule** **1** **$3,970.25** **$3,970.25**

This option integrates Xper PM5 with the Allura Xper system.
It allows the physician and procedure staff to perform a complete hemodynamic study from tableside on the Allura Xper module.
The "Hemo" menu will contain a subset of the Xper PM5 features. The Allura Xper module interface acts as a remote control to the Xper PM5 system. Changes selected on the Allura Xper module will be displayed on the Xper PM5 system, all functionality for the selected functions are controlled within the Xper IM application.

Following functions are available from the Allura Xper Module:

- SNAP (Auto record)
- Obtain/Capture and store hemodynamic waveforms and ECG's
- Cardiac Output measurements
- Monitor scale and sweep speed
- NIBP measurement

18 ****NCVA097** **Cath Arm Support** **1** **$910.41** **$910.41**

For brachial catheterisation and digital imaging technique
The support is made of X-ray transparent material with exception of the fixingclamp and pivots.

19 ****NCVA783** **Pivot for table base.** **1** **$4,596.44** **$4,596.44**

For angiographic- and interventional procedures of the upper peripherals.
Provides improved table access for patient transfer.
Allows pivoting of the table base around its vertical axes.
Pivot range from -90 degrees to + 180 degrees (or -180 to +90 degrees) with locked positions on 0, -13/+13 (facilitating arm-angiography) and -90/+90 and 180 degrees.

Comprising:

- pivot device with graduated scale to be mounted on the universal floor plate of the table.

Compatible with Xper Table

20 ****FCV0250** **Patient straps** **1** **$528.48** **$528.48**

Straps for patient fixation.
Set of 5 straps:

- 3 long straps
- 2 short straps

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Line #	Part #	Description	Qty	Each	Price
21	**FCV0510	**Long mattress cardio**	1	$555.13	$555.13
	Patient mattress, thickness 70 mm, length 3165 mm, width 500 mm				
22	**FCV0017	**CABLE CARRIER CS**	1	$262.02	$262.02
	Additional carrier for suspension of cable hose from X-ray tube assembly or TV monitor.				
23	**NCVB630	**FlexVision XL,Snapshot**	1	$110,567.58	$110,567.58

FlexVision XL for Allura Xper Release 7 systems with large 56-inch high resolution color LCD in the Exam Room.

FlexVision XL is an integrated viewing solution designed to improve workflow efficiency in a variety of interventional settings.

The FlexVision XL provides the ability to:

- Display information from up to 8 sources simultaneously (incl. third party systems) on the Philips 56-inch color LCD in the Exam Room.
- Resize and/or enlarge information at any stage during the case.
- Select and customize viewing lay-outs of the Philips 56-inch color LCD via the Allura Xper table-side module
- Overview connected equipment (incl. third party systems) from a single location.

The FlexVision XL consists of:

- MediaWall Controller for the large screen display

- OmniSwitch
  OmniSwitch allows the user to direct and switch the video output of all connected medical equipment to specific sub windows of the Philips 56-inch color LCD in the Exam Room

  OmniSwitch is a 16 channel video-switch operated from the Allura Xper tableside module. 16 channels are available for a mix of up to 7 internal and up to 9 external inputs. OmniSwitch supports a wide variety of display formats (up to 1600x1200).

  External inputs are connected to OmniSwitch via Wall Connection boxe(s).

- Medical grade, high resolution color LCD in the Exam Room
  This display supports the image quality requirements for monochrome X-ray images as well as color images and replaces all displays normally delivered with an Allura Xper system for the Exam Room.
  Main characteristics are:
  - 56 inch, 8 Megapixel color LCD
  - Native resolution: 3840x2160,
  - Brightness:
    Max: 450 Cd/m2 (typical)
    stabilized: 350 Cd/m2
  - Contrast ratio: 1200:1 (typical)
  - Wide viewing angle (approx. 176 degrees)
  - Constant brightness stabilization control
  - Lookup tables for gray-scale, color and DICOM transfer function

Line #	Part #	Description	Qty	Each	Price

- Full protective screen
- Ingress Protection: IP-21

- Large color LCD control (Xper Module)
  • Resize and/or enlarge information at any stage during the case via the Allura Xper tableside module in the Exam or Control Room
  • Select viewing lay-outs via the Allura Xper table-side module in the Exam Room
  • Create new layouts by matching inputs to desired locations on preset templates.

- Snapshot
  The snapshot function allows the user to store/save a screen-capture of any image on any EP cockpit display as a DICOM Secondary Capture image to a connected PACS.
  The snapshot-all function allows the user to store/save a screen-capture for each displayed image in the Exam Room / Control Room as seperate DICOM Secondary Capture images

- Monitor Ceiling Suspension
  Monitor ceiling suspension for use in the Exam Room carries the 56 inch color LCD, providing highly flexible viewing capabilities. The monitor ceiling suspension is height-adjustable and moveable along ceiling rails. It can be positioned on either side of the table.

- Wall Connection Boxes
  Up to 9 Wall Connection Boxes can be connected to FlexVision XL.
  Through Wall Connection Boxes, 3rd party equipment can be connected to the FlexVision Omniswitch.
  The Wall Connection Boxes have Power (230V, 50Hz, max. 500 Watt), Grounding, Video (DVI), Network (RJ45) and Keyboard/mouse (USB) connections.
  The Wall Connection Boxes can be located in the Technical Room, Control Room and/or Exam Room.
  In case of an Equipment Rack: 1 x Wall Connection Box is permanently placed on the Equipment Rack.
  The Wall Connection Boxes for FlexVision XL can be used to connect 3rd party equipment that complies with the following requirements:
  - Qualified medical electrical equipment [IEC 60601-1]
  - IEC 950 only if connected to an FlexVision Wall Connection Box mains (230V) connection in the Control Room or otherwise isolated from hospital mains according IEC60601-1.
  - Connected to the same earth as the Philips Protective Conductor Bar (PPCB).
  - Can be operated with a standard AT 101-key US English keyboard connected through a PS/2 connection.
  - Provide video-output that matches the display range of the Color monitor that is used for display. Most display formats up to 1600x1200 are supported

- Option: NCVB294 set of 2 additional 21 inch LCDs
  For FlexVision XL and EP Cockpit XL a set of 2 additional 21 inch LCDs is available as an option.
  These 2 additional LCD's can be used to display additional video sources or used as display back up for Hemo and Xray Live images. These LCD's have a fixed content.

- Option: NCVB591 = 2nd REF for FlexVision XL is optional on FlexVision XL. Second Ref images will be displayed on the large screen monitor

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Line #	Part #	Description	Qty	Each	Price
		Compatibility FlexVision XL Release 1.x is compatible with: Allura Xper FD10 series from Release 7 onwards Allura Xper FD20 series from Release 7 onwards			
24	**989801292099	**CV Add OnSite Clin Educ 24h**	1	$3,876.99	$3,876.99
		Clinical Education Specialists will provide twenty-four (24) hours of CV OnSite Education for up to four (4) students, selected by customer, including technologists from night/weekend shifts if necessary. CEU credits may be available for each participant that meets the guidelines provided by Philips. Note: Philips personnel are not responsible for actual patient contact or operation of equipment during education sessions except to demonstrate proper equipment operation. Education expires one (1) year from the earlier of equipment delivery date or purchase date.			
25	**989801292102	**CV Full Travel Pkg OffSite**	2	$1,128.01	$2,256.03
		Includes one (1) participant's airfare from North American customer location to Cleveland, Ohio, with lodging, ground transportation, and meal expenses. Breakfast/dinner provided by the hotel, and lunch/breaks are catered by Philips. All other expenses will be the responsibility of the attendee. Details are provided during the scheduling process. Note: Cancellation/rescheduling policy strictly enforced. Education expires one (1) year from equipment installation date (or purchase date if sold separately).			
26	**980306640009	**Blue Anti-Fatigue Floor Mat w/ Logo**	1	$173.20	$173.20
		Blue Anti-Fatigue Floor Mat w/ Logo			
27	**980406041009	**Rad Shield w/ Arm (Contoured) 61X76**	1	$2,558.02	$2,558.02
		Contoured Rad Shield with Arm rest. 61X76			
28	**989801220064	**Medrad Xper Cable Rack Mnt**	1	$404.13	$404.13
29	**989801220076	**Exam Lamp 220v**	1	$2,726.77	$2,726.77
		Spring arm mounted examination light for cardiovascular applications			
30	**989801220078	**Medrad Provis Rack Mount**	1	$18,683.29	$18,683.29
		The MARK V ProVis rack mount version is a contrast medium power injector which is dedicated for system integration. The injector is accomplished with microprocessor control of the flow rate the volume and the pressure. A dual turret syringe system is applied suitable for 2x150 ml disposable syringes. • flow rate can be set in ml/sec. ml/min. and ml/hour. • display of achieved rate volume pressure and time. • constant update and display of total injected contrast per patient • injection programs can be stored and retrieved.			

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Line #	Part #	Description	Qty	Each	Price

Comprising:

- electronic unit for rack mounting with power cable (3 m)
- injector head with controls heater system and cable (4.6 m)
- two disposable 150 ml syringes with pressure jackets and dual turret.
- control panel with cable (15 m)
- hand switch with coiled cable
- system interface cable 24 m with D connector
- rack mount installation kit
- table mount for injector power head of the injector MARK V ProVis
- Connector kit for injector head which is a kit for mounting the connector of the injector head extension cable at the connection box of the Angio DIAGNOST 5 table withcover for connection box of the AD5 for insulated mounting of the injector head connector
- mounting material
- injector head extension cable 18 m with mounting instructions for connector assembly

31	**989801220080	**Portegra 2 360 Ceiling Column**	2	$2,482.52	$4,965.04

Portegra 2 360 Column w/ trolley and ceiling track

32	SP059B	**Universal Power Supply**	1	$43,995.00	$43,995.00

Philips Power Solutions 25kVA UPS fluoro protection

33	Third Party Item	**C-Com Wireless System**	1	$26,100.00	$26,100.00

C-Com is a state-of-the-art digital wireless communication system specifically suited for medical environments. Includes shipping, installation, training and warranty.

34	Third Party Item	**GL-01 PRIVALITE**	1	$11,646.08	$11,646.08

Privacy glass, 1 x 3 meters maximum, UPS, cables, door to door delivery, five year warranty. Installation not included.

35	SP019	**Trade in Allowance**	1	$0.00	$0.00

Customer represents and warrants that (i) Customer has, and shall have when title passes, good and marketable title to the equipment being traded in and (ii) has the authority to effect such trade in.

Product: Toshiba CATH LAB
Serial Number: 1-WNGUA
Manufacturer: TOSHIBA AMERICA MEDICAL SYSTEMS

Trade-In authorization number: 19534

Trade-In Value: $0.00

De-install Date: 9/30/2012

Customer will be trading-in equipment that is described on the attached System Disclosure Form (the "Trade-In"), which Trade-In the parties agree (i) will be removed on the De-install Date and (ii) is currently in the condition as represented on the System Disclosure Form. In addition, the parties agree as follows:

1. Customer represents and warrants that Customer has good and marketable title to the Trade-In as of the date of this Quotation and will have good and marketable title when Philips removes the Trade-In from Customer's site (the "Removal Date");

Line #	Part #	Description	Qty	Each	Price

2. Title to the Trade-In shall pass from Customer to Philips on the Removal Date, unless otherwise agreed by Philips and the Customer;
3. Notwithstanding anything to the contrary in any Business Associate Addendum, Customer represents and warrants that as of the Removal Date all Protected Health Information will have been de-identified or removed from the Trade-In;
4. Philips may test and inspect the Trade-In prior to de-installation. If the condition of the Trade-In is not substantially the same on the Removal Date (ordinary wear and tear excepted) as it is identified on the System Disclosure Form, then Philips may reduce the price quoted for the Trade-In;
5. If the removal date is delayed until after the De-Install Date, unless Philips causes the delay, then Philips may reduce the price quoted for the Trade-In by six percent (6%) per month.
6. Philips is responsible for normal de-installation costs of the Trade-In.
7. The trade-in value will not include costs associated for any facility modifications and/or rigging required for de-installation and must be accounted for separately.
8. Customer is responsible for all plumbing necessary to properly drain coolant from chiller system and cap the lines.
9. Prior to the Removal Date, Customer shall remove from the room all equipment that is not being de-installed.

********PROMOTIONS********

Promotion Name	Description
Mono Closer Q3-Q4, 2011	All orders for this promotion must be received on or before December 30, 2011. This promotion can be combined with other promotions.
MedAssets Q411 Multi Systems CV	Philips is pleased to offer an additional 1% promotional discount off the total list price of the multiple solutions proposed herein.

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LIST PRICE	$2,069,451.08
DISCOUNT	$1,154,944.90
NET PRICE	$914,506.18

Buying Group: MEDASSETS SUPPLY CHAIN SYSTEMS INC Contract #: Multi Modalitys GB Q4 11

Addt'l Terms:

Each Quotation solution will reference a specific Buying Group/Contract Number representing an agreement containing discounts, fees and any specific terms and conditions which will apply to that single quoted solution. If no Buying Group/Contract Number is shown, Philips' Terms and Conditions of Sale will apply to the quoted solution.

Each equipment system listed on purchase order/orders represents a separate and distinct financial transaction. We understand and agree that each transaction is to be individually billed and paid.

Price above does not include any applicable sales taxes.

The preliminary delivery request date for this equipment is:_____.

If you do not issue formal purchase orders indicate by initialing here_____.

Tax Status:

Taxable_____ Tax Exempt_____

If Exempt, please indicate the Exemption Certification Number:_____, and attach a copy of the certificate.

Delivery/Installation Address:

_____

_____

_____

Invoice Address:

_____

_____

_____

Contact Phone #:

_____

Contact Phone #:

_____

Purchaser approval as quoted:

_____

Date:

_____

Title:

_____

This quotation is signed and accepted by an authorized representative in acknowledgement of the system configuration, terms and conditions stated herein.

Philips Standard Terms and Conditions of Sale

The products and services listed in the quotation are offered by Philips Healthcare, a division of Philips Electronics North America Corporation ("Philips") only under the terms and conditions described below.

1. Price; Taxes. The purchase price stated in the quotation does not include applicable sales, excise, use, or other taxes in effect or later levied. Unless Customer provides Philips with an appropriate exemption certificate reasonably in advance of the date the product is available for delivery, Philips shall invoice Customer for those taxes, and Customer shall pay those taxes in accordance with the terms of the invoice.

2. Cancellation. Philips' cancellation policies are set forth in the applicable schedule attached to these Terms and Conditions of Sale.

3. Payment Terms.
3.1 Unless otherwise specified in the quotation, Philips will invoice Customer, and Customer will immediately pay such invoice on receipt for each product in accordance with the payment terms set forth in the applicable schedule attached to these Terms and Conditions of Sale:
3.2 Orders are subject to Philips' on-going credit review and approval.
3.3 Customer shall pay interest on any amount not paid when due at the maximum rate permitted by applicable law. If Customer fails to pay any amount when due, in addition to any other rights or remedies available to Philips at law or in equity, Philips may discontinue the performance of services, discontinue the delivery of the product, or deduct the unpaid amount from any amounts otherwise owed to Customer by Philips under any agreement with Customer. In any action initiated to enforce the terms of the quotation following a Customer default or product cancellation under an order arising from the quotation, Philips shall be entitled to recover as part of its damages all costs and expenses, including reasonable attorneys' fees, in connection with such action.
3.4 Credit Card. Philips, at its discretion, will accept a credit card for payment on orders with a net value of $50,000 or less.

4. Trade - In. If Customer will be trading-in any equipment ("Trade-In"), then:
4.1 Customer represents and warrants that Customer has good and marketable title to such Trade-In;
4.2 Title to the Trade-In shall pass from Customer to Philips upon Philips making the new equipment available for first patient use. Removal of the Trade-In from Customer's site shall occur no later than the date Philips makes the new product available for first patient use, unless otherwise agreed in writing between Philips and the Customer; and
4.3 Notwithstanding anything to the contrary in any Business Associate Addendum ("BAA"), Customer represents and warrants that Customer has removed or de-identified all Protected Health Information ("PHI") from the Trade-In equipment as of the date the equipment is removed. To the extent Customer has not done so, Customer agrees to reimburse Philips for any out-of-pocket costs Philips incurs to remove or de-identify PHI from the Trade-In.
4.4 If (a) the condition of the Trade-In is not substantially the same when Philips removes the Trade-In (ordinary wear and tear excepted) as it was when Philips quoted the Trade-In value; or (b) Customer delays the removal of the Trade-In, then Philips may reduce the price quoted for such Trade-In or cancel the Trade-In and Customer will pay the adjustment amount within thirty (30) days of receipt of invoice.
4.5 If Philips does not receive possession of the Trade-In, Philips will charge Customer, and Customer will pay within thirty (30) days of receipt of invoice, the amount of the Trade-In allowance.
4.6 Evidence that Customer intends to trade in an asset as part of the purchase or lease of any product(s) shall be in the form of, but not limited to: (a) receiving a trade in quote and/or authorization from Philips on the value of the asset to be traded in; (b) providing Philips with serial numbers of assets to be traded in; and/or, (c) providing Philips with a de-installation date to remove an existing asset in order to install Philips quoted equipment.

5. Leases. If Customer desires to convert the purchase of any product to a lease, Customer will arrange for the lease agreement and all other related documentation to be reviewed and approved by Philips not later than ninety (90) days prior to the date of the availability for delivery of major components of the product. The Customer is responsible for converting the transaction to a lease, and is required to secure the leasing company's approval of all of these Terms and Conditions of Sale. No product will be delivered to the Customer until Philips has received copies of the fully executed lease documents and has approved the same.

6. Security Interest. Customer hereby grants to Philips a purchase money security interest in the products until all payments have been made. Customer shall sign any financing statements or other documents necessary to perfect Philips' security interests in the products. Where permitted by applicable law, Customer's signature on the quotation or on a purchase order issued as a result of the quotation gives Philips the right to sign on Customer's behalf and file any financing statement or other documents to perfect Philips' security interest in the product.

7. Shipment and Risk of Loss.
7.1 The applicable schedule attached to these Terms and Conditions of Sale shall apply for delivery.
7.2 Title to any product (excluding software), and the risk of loss or damage to any product shall pass to the Customer F.O.B. destination. Customer shall obtain and pay for insurance covering such risks at destination.

8. Installation, Site Preparation, Remote Services.
8.1 **Installation.** Customer shall provide Philips full and free access to the installation site and suitable and safe space for the storage of the products before installation. Customer shall advise Philips of conditions at or near the site, including any hazardous materials, that could adversely affect the installation or pose a health or safety risk to Philips' personnel, and shall ensure that those conditions are corrected and hazardous materials removed, and that the site is fully prepared and available to Philips before installation work begins. Customer shall ensure, at no charge to Philips, that there are no obstacles preventing Philips from moving the product from the entrance of the Customer's premises to the installation site. Customer shall be responsible, at its expense, for rigging, the removal of partitions or other obstacles, and restoration work. The products will be installed during normal working hours. Philips will unpack the product, construct applicable pads (if required for certain products), connect the product to a safety switch or breaker to be installed by the Customer, and calibrate and test the product. If local labor conditions, including but not limited to a requirement to utilize union labor, require the use of non-Philips employees to participate in the installation of the product, then such participation of non-Philips employees shall be at Customer's expense. In such case, Philips will provide engineering supervision during the installation.

8.2 **Site Preparation.** Except where Philips has agreed in writing to provide construction services for a fee pursuant to a construction agreement and scope of work signed by Customer, Customer shall be responsible, at its expense, for the preparation of the installation site where the product will be installed including any required structural alterations. Customer shall provide any and all plumbing, carpentry work, conduit, wiring including communications and/or computer wiring, network equipment, power supply, surge suppression and power conditioning (except to the extent they are expressly included in the quotation), fire protection and environmental controls, ground fault and isolation system, and other fixtures and utilities required to properly attach, install, and use the product. Site preparation shall be in compliance with all safety, electrical, RF or magnetic shielding and acoustical suppression and building codes relevant to the product and its installation and use. The sufficiency of any installation site plans shall be the responsibility of Customer. Customer, at its expense, shall obtain all permits and licenses required by federal, state, or local authorities in connection with the installation and operation of the product, including any certificate of need and zoning variances. PHILIPS MAKES NO WARRANTY AND ASSUMES NO LIABILITY FOR THE FITNESS OR ADEQUACY OF THE SITE IN WHICH THE PRODUCT IS TO BE INSTALLED OR USED. CUSTOMER INDEMNIFIES PHILIPS AGAINST ANY CLAIMS, INCLUDING SUBROGATION CLAIMS, ARISING FROM CUSTOMER'S SITE PREPARATION RESPONSIBILITIES.
8.3 **Remote Services Network ("RSN").** Customer will (a) provide Philips with a secure location at Customer's premises to store one Philips RSN router (or a Customer-owned router acceptable to Philips at Customer's option) for connection to the equipment and to Customer's network; and (b) at all times during the warranty period provide Philips with full and free access to the router and a dedicated broadband Internet access node, including but not limited to public and private interface access, suitable to establish a successful connection to the products through the Philips RSN and Customer's network for Philips' use in remote servicing of the product, remote assistance to personnel that operate the products, updating the products software, transmitting automated status notifications from the product and regular uploading of products data files (such as but not limited to error logs and utilization data for improvement of Philips products and services and aggregation into services). Customer's failure to provide such access at the scheduled time will constitute Customer's waiver of the scheduled planned maintenance service and will void support or warranty coverage of product malfunctions until such time as planned maintenance service is completed or RSN access is provided. Customer agrees to pay Philips at the prevailing demand service rates for all time spent by Philips service personnel waiting for access to the products.

9. Product Warranty.
9.1 If a separate product warranty page prints as part of this quotation, that product warranty applies to your purchase and is incorporated herein; otherwise Section 9.2-9.7 shall apply.
9.2 **Hardware/Systems.** Philips warrants to Customer that the Philips equipment (including its operating software) will perform in substantial compliance with its performance specifications in the documentation accompanying the products, for a period of 12 months beginning upon availability for first patient use.
9.3 **Stand-alone Licensed Software.** For a period of ninety (90) days from the date Philips makes Stand-alone Licensed Software available for first patient use, such Stand-alone Licensed Software shall substantially conform to the technical user manual that ships with the Stand-alone Licensed Software. "Stand-alone Licensed Software" means sales of Licensed Software without a contemporaneous purchase of a server for the Licensed Software. If Philips is not the installer of the Stand-alone Licensed Software, the foregoing warranty period shall commence upon shipment.
9.4 If the start of the installation is delayed for any reason beyond the control of Philips for more than thirty (30) days following the date that Philips notifies Customer that the major components of the product are available for delivery, the warranty period begins on the thirty-first (31st) day following that date.
9.5 Philips' sole obligations and Customer's exclusive remedy under any product warranty are limited, at Philips' option, to the repair or the replacement of the product or a portion thereof within thirty (30) days after receipt of written notice of such material breach from Customer ("Product Warranty Cure Period") or, upon expiration of the Product Warranty Cure Period, to a refund of a portion of the purchase price paid by the Customer, upon Customer's request. Any refund will be paid to the Customer when the product is returned to Philips. Warranty service outside of normal working hours (i.e, 8:00 A.M. to 5:00 P.M., Monday through Friday, excluding Philips' observed holidays), will be subject to payment by Customer at Philips' standard service rates.
9.6 This warranty is subject to the following conditions: the product (a) is to be installed by authorized Philips representatives (or is to be installed in accordance with all Philips installation instructions by personnel trained by Philips); (b) is to be operated exclusively by duly qualified personnel in a safe and reasonable manner in accordance with Philips' written instructions and for the purpose for which the products were intended; and (c) is to be maintained and in strict compliance with all recommended and scheduled maintenance instructions provided with the product; and Customer is to notify Philips immediately if the product at any time fails to meet its printed performance specifications. Philips' obligations under any product warranty do not apply to any product defects resulting from improper or inadequate maintenance or calibration by the Customer or its agents; Customer or third party supplied interfaces, supplies, or software including without limitation loading of operating system patches to the Licensed Software and/or upgrades to anti-virus software (except DAT file changes) running in connection with the Licensed Software without prior validation approval by Philips; use or operation of the product other than in accordance with Philips' applicable product specifications and written instructions; abuse, negligence, accident, loss, or damage in transit; improper site preparation; unauthorized maintenance or modifications to the product; or viruses or similar software interference resulting from connection of the product to a network. Philips does not provide a warranty for any third party products furnished to Customer by Philips under the quotation; however, Philips shall use reasonable efforts to extend to Customer the third party warranty for the product. The obligations of Philips described herein and in the applicable product-specific warranty document are Philips' only obligations and Customer's sole and exclusive remedy for a breach of a product warranty.
9.7 THE WARRANTIES SET FORTH HEREIN AND IN PHILIPS' WARRANTY DOCUMENT WITH RESPECT TO A PRODUCT (INCLUDING THE SOFTWARE PROVIDED WITH THE PRODUCT) ARE THE ONLY WARRANTIES MADE BY PHILIPS IN CONNECTION WITH THE PRODUCT, THE SOFTWARE, AND THE TRANSACTIONS CONTEMPLATED BY THE QUOTATION, AND ARE EXPRESSLY IN LIEU OF ANY OTHER WARRANTIES, WHETHER WRITTEN, ORAL, STATUTORY, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Philips may use refurbished parts in the manufacture of the products, which are subject to the same quality control procedures and warranties as for new products.

10. Philips Proprietary Service Materials. Any Philips maintenance or service software and documentation provided with the product and/or located at Customer's premises is intended solely to assist Philips and its authorized agents to install and to test the products or to assist Philips and its authorized agents to maintain and to service the products under warranty or a separate support agreement with Customer. Customer agrees to restrict access to such software and documentation to Philips' employees and those of Philips' authorized agents only and to permit Philips to remove its Proprietary Service Materials upon request.

11. Patent Infringement Claims.
11.1 Philips shall indemnify, defend, and hold harmless Customer against any new claim that a Philips Product provided in the quotation infringes, misappropriates, or violates any third party intellectual property right, whether patent, copyright, trademark, or trade secret, provided that Customer:
(a) provides Philips prompt written notice of the claim;
(b) grants Philips full and complete information and assistance necessary for Philips to defend, settle, or avoid the claim; and
(c) gives Philips sole control of the defense or settlement of the claim.
11.2 The provisions of this section shall not apply if the product is sold or transferred.
11.3 If (a) a Philips Product is found or believed by Philips to infringe such a claim; or, (b) Customer has been enjoined from using the Philips Product pursuant to an injunction issued by a court of competent jurisdiction, Philips may, at its option, (i) procure the right for Customer to use the product, (ii) replace or modify the product to avoid infringement, or (iii) refund to Customer a portion of the product purchase price upon the return of the original product. Philips shall have no obligation for any claim of infringement arising from: Philips' compliance with Customer's designs, specifications, or instructions; Philips' use of technical information or technology supplied by Customer; modifications to the product by Customer or its agents; use of the product other than in accordance with the product specifications or applicable written product instructions; use of the product with any other product; if infringement would have been avoided by the use of a current unaltered release of the products; or use of the Philips Product after Philips has advised Customer, in writing, to stop use of the Philips Product in view of the claimed infringement. Philips will not be liable for any claim where the damages sought are based directly or indirectly upon the quantity or value of products manufactured by means of the products purchased under this quotation, or based upon the amount of use of the product regardless of whether such claim alleges the product or its use infringes or contributes to the infringement of such claim. The terms in this section state Philips' entire obligation and liability for claims of infringement, and Customer's sole remedy in the event of a claim of infringement.

12. Limitation of Liability. THE TOTAL LIABILITY, IF ANY, OF PHILIPS AND ITS AFFILIATES FOR ALL DAMAGES AND BASED ON ALL CLAIMS, WHETHER ARISING FROM BREACH OF CONTRACT, BREACH OF WARRANTY, NEGLIGENCE, INDEMNITY, STRICT LIABILITY OR OTHER TORT, OR OTHERWISE, ARISING FROM A PRODUCT, LICENSED SOFTWARE, AND/OR SERVICE IS LIMITED TO THE PRICE PAID HEREUNDER FOR THE PRODUCT, LICENSED SOFTWARE, OR SERVICE. THIS LIMITATION SHALL NOT APPLY TO THIRD PARTY CLAIMS FOR BODILY INJURY OR DEATH CAUSED BY PHILIPS' NEGLIGENCE OR PROVEN PRODUCT DEFECT.

13. DISCLAIMER. IN NO EVENT SHALL PHILIPS OR ITS AFFILIATES BE LIABLE FOR ANY INDIRECT, PUNITIVE, INCIDENTAL, CONSEQUENTIAL, OR SPECIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR PROFITS, BUSINESS INTERRUPTION, LOSS OF DATA, OR THE COST OF SUBSTITUTE PRODUCTS OR SERVICES WHETHER ARISING FROM BREACH OF CONTRACT, BREACH OF WARRANTY, NEGLIGENCE, INDEMNITY, STRICT LIABILITY OR OTHER TORT.

14. Confidentiality. Each party shall maintain as confidential any information furnished or disclosed to one party by the other party, whether disclosed in writing or disclosed orally, relating to the business of the disclosing party, its customers and/or its patients, and the quotation and its terms, including the pricing terms under which Customer has agreed to purchase the products. Each party shall use the same degree of care to protect the confidentiality of the disclosed information as that party uses to protect the confidentiality of its own information, but in no event less than a reasonable amount of care. Each party shall disclose such confidential information only to its employees having a need to know such information to perform the transactions contemplated by the quotation. The obligation to maintain the confidentiality of such information shall that (a) is or becomes generally available to the public without violation of this Agreement or any other obligation of confidentiality or (b) is lawfully obtained by the receiving Party from a third party without any breach of confidentiality or violation of law.

15. Compliance with Laws & Privacy.
15.1 Each party shall comply with all laws, rules, and regulations applicable to the party in connection with the performance of its obligations in connection with the transactions contemplated by the quotation, including, but not limited to, those relating to affirmative action, fair employment practices, FDA, Medicare fraud and abuse, and the Health Insurance Portability and Accountability Act of 1996 ("HIPAA"). Health care providers are reminded that if the purchase includes a discount or loan, they must fully and accurately report such discount or loan on cost reports or other applicable claims for payment submitted under any federal or state health care program, including but not limited to Medicare and Medicaid, as required by federal law (see 42 CFR 1001.952[h]).
15.2 In the course of providing project implementation related services and/or warranty services to Customer, hereunder, it may be necessary for Philips to have access to, view and/or download computer files from the products that might contain Personal Data. "Personal Data" means information relating to an individual, from which that individual can be directly or indirectly identified. Personal Data can include both personal health information (i.e. images, heart monitor data, and medical record number) and non-health information (i.e. date of birth, gender). Philips will process Personal Data only to the extent necessary to perform and/or fulfill its project implementation related service, warranty service and/or warranty obligations hereunder.
15.3 It is Customer's responsibility to notify Philips if any portion of the order is funded under the American Reinvestment and Recovery Act ("ARRA"). To ensure compliance with the ARRA regulation, Customer shall include a clause stating that the order is funded under ARRA on its purchase order or other document issued by Customer.

16. Excluded Provider. Philips represents and warrants that Philips, its employees and subcontractors, are not debarred, excluded, suspended or otherwise ineligible to participate in a federal health care program, nor have they been convicted of any health care related crime for the products and services provided under this Agreement (an "Excluded Provider"). Philips shall promptly notify Customer when it becomes aware that Philips or any of its employees or subcontractors, providing services hereunder, have become an Excluded Provider whereupon Customer may terminate this order by express written notice for product and services not yet shipped or rendered.

17. General Terms. The following additional terms shall be applicable to the purchase of a product:
17.1 **Force Majeure.** Each party shall be excused from performing its obligations (except for payment obligation) arising from any delay or default caused by events beyond its reasonable control including, but not limited to, acts of God, acts of third parties, acts of any civil or military authority, fire, floods, war, embargoes, labor disputes, acts of sabotage, riots, accidents, delays of carriers, subcontractors or suppliers, voluntary or mandatory compliance with any government act, regulation or request, shortage of labor, materials or manufacturing facilities.
17.2 **Bankruptcy.** If Customer becomes insolvent, is unable to pay its debts when due, files for bankruptcy, is the subject of involuntary

bankruptcy, has a receiver appointed, or has its assets assigned, Philips may cancel any unfulfilled obligations, or suspend performance; however, Customer's financial obligations to Philips shall remain in effect.
17.3 **Assignment.** Customer may not assign any rights or obligations in connection with the transactions contemplated by the quotation without the prior written consent of Philips, which consent shall not be unreasonably withheld, and any attempted assignment without such consent shall be of no force or effect.
17.4 **Export.** Customer shall assume sole responsibility for obtaining any required export authorizations in connection with Customer's export of the products from the country of delivery.
17.5 **Governing Law.** All transactions contemplated by the quotation shall be governed by the laws of the state where the equipment will be installed, without regard to that state's choice of law principles, and expressly excluding application of the Uniform Computer Information Transactions Act ("UCITA"), in any form. EACH PARTY, KNOWINGLY AND AFTER CONSULTATION WITH COUNSEL, FOR ITSELF, IT'S SUCCESSSORS' AND ASSIGNS, WAIVES ALL RIGHT TO TRIAL BY JURY OF ANY CLAIM ARISING WITH RESPECT TO THIS AGREEMENT OR ANY MATTER RELATED IN ANY WAY THERETO.
17.6 **Entire Agreement.** These Terms and Conditions of Sale, the terms and conditions set forth in the quotation and the applicable Philips' product-specific warranty document constitute the entire understanding and agreement by and between the parties with respect to the transactions contemplated by the quotation, and supersede any previous understandings or agreements between the parties, whether written or oral, regarding the transactions contemplated by the quotation. The pricing in the quotation is based upon the terms and conditions in the quotation. No additional terms, conditions, consents, waivers, alterations, or modifications shall be binding unless in writing and signed by the parties. Customer's additional or different terms and conditions, whether stated in a purchase order or other document issued by Customer, are specifically rejected and shall not apply to the transactions contemplated by the quotation.
17.7 **Headings.** The headings in the quotation are intended for convenience only and shall not be used to interpret the quotation.
17.8 **Severability.** If any provision of the quotation is deemed to be illegal, unenforceable, or invalid, in whole or in part, the validity and enforceability of the remaining provisions shall not be affected or impaired, and shall continue in full force and effect.
17.9 **Notices.** Notices or other communications shall be in writing, and shall be deemed served if delivered personally, or if sent by facsimile transmission, by overnight mail or courier, or by certified mail, return receipt requested and addressed to the party at the address set forth in the quotation.
17.10 **Performance.** The failure of Customer or of Philips at any time to require the performance of any obligation will not affect the right to require such performance at any time thereafter. Course of dealing, course of performance, course of conduct, prior dealings, usage of trade, community standards, industry standards, and customary standards and customary practice or interpretation in matters involving the sale, delivery, installation, use, or service of similar or dissimilar products or services shall not serve as references in interpreting the terms and conditions of the quotation.
17.11 **Obligations.** Customer's obligations are independent of any other obligations the Customer may have under any other agreement, contract, or account with Philips. Customer will not exercise any right of offset in connection with the terms and conditions in the quotation or in connection with any other agreement, contract, or account with Philips.
17.12 **Additional Terms.** Schedule 1 is incorporated herein and its additional terms shall apply solely to Customer's purchase of Interventional X-Ray (IXR), Diagnostic X-Ray (DXR), Computed Tomography (CT), Magnetic Resonance (MR), Cardiovascular (CV), Positron Emission Tomography (PET), Nuclear Medicine (NM) and Ultrasound (US) products (including Image Guided Intervention and Therapy (IGIT) products). If any terms set forth in a schedule conflict with terms set forth in these Terms and Conditions of Sales, the terms set forth in the schedule shall govern.

LICENSED SOFTWARE

1. License Grant.
1.1 Subject to any usage limitations for the Licensed Software set forth on the product description of the quotation, Philips grants to Customer a nonexclusive and non-transferable right and license to use the computer software package ("Licensed Software") in accordance with the terms of the quotation. The License shall continue for as long as Customer continues to own the product, except that Philips may terminate the License if Customer is in breach or default. Customer shall return the Licensed Software and any authorized copies thereof to Philips immediately upon expiration or termination of this License.
1.2 The License does not include any right to use the Licensed Software for purposes other than the operation of the product. Customer may make one copy of the Licensed Software in machine-readable form solely for backup purposes. Philips reserves the right to charge for backup copies created by Philips. Except as otherwise provided under section 1.6, Customer may not copy, reproduce, sell, assign, transfer, or sublicense the Licensed Software for any purpose without the prior written consent of Philips. Customer shall reproduce Philips' copyright notice or other identifying legends on such copies or reproductions. Customer will not (and will not allow any third party to) decompile, disassemble, or otherwise reverse engineer or attempt to reconstruct or discover the product or Licensed Software by any means whatsoever.
1.3 The License shall not affect the exclusive ownership by Philips of the Licensed Software or of any trademarks, copyrights, patents, trade secrets, or other intellectual property rights of Philips (or any of Philips' suppliers) relating to the Licensed Software.
1.4 Customer agrees that only authorized officers, employees, and agents of Customer will use the Licensed Software or have access to the Licensed Software (or to any part thereof), and that none of Customer's officers, employees, or agents will disclose the Licensed Software, or any portion thereof, or permit the Licensed Software, or any portion thereof, to be used by any person or entity other than those entities identified on the quotation. Customer acknowledges that certain of Philips' rights may be derived from license agreements with third parties, and Customer agrees to preserve the confidentiality of information provided by Philips under such third party license agreements.
1.5 The Licensed Software shall be used only on the product(s) referenced in the quotation.
1.6 Customer may transfer the Licensed Software in connection with sale of the product to a healthcare provider who accepts all of the terms and conditions of this License; provided that Customer is not in breach or default of this License, the Terms and Conditions of Sale, or any payment obligation to Philips.

2. Modifications.
2.1 If Customer modifies the Licensed Software in any manner, all warranties associated with the Licensed Software and the products shall become null and void. If Customer or any of its officers, employees, or agents should devise any revisions, enhancements, additions, modifications, or improvements in the Licensed Software, Customer shall disclose them to Philips, and Philips shall have a non-exclusive royalty-free license to use and to sub-license them.
2.2 The Licensed Software is licensed to Customer on the basis that (i) Customer shall maintain the configuration of the products as they were originally designed and manufactured and (ii) the product includes only those subsystems and components certified by Philips.

The Licensed Software may not perform as intended on systems modified by other than Philips or its authorized agents, or on systems which include subsystems or components not certified by Philips. Philips does not assume any responsibility or liability with respect to unauthorized modification or substitution of subsystems or components.

Schedule 1
Interventional X-Ray (iXR), Diagnostic X-Ray (DXR), Computed Tomography (CT), Magnetic Resonance (MR), Cardiovascular (CV), Positron Emission Tomography (PET), Nuclear Medicine (NM), and Ultrasound (US) products (including Image Guided Intervention and Therapy (IGIT) Products)

1. Payment Terms.
Unless otherwise specified in the quotation, Philips will invoice Customer, and Customer will pay such invoice on receipt, as follows:
1.1 For Interventional X-Ray (iXR), Diagnostic X-Ray (DXR), Computed Tomography (CT), Magnetic Resonance (MR), Cardiovascular (CV), Positron Emission Tomography (PET), and Nuclear Medicine (NM) products:
(a) 10% of the purchase price shall be due with Customer's acceptance of the quotation.
(b) 70% of the purchase price shall be due on delivery of the major components of the product. Product installation will not begin until Customer has paid this portion of the purchase price.
(c) 20% of the purchase price shall be due when the product is available for first patient use. Available for first patient use means the product has been installed and substantially meets Philips' published specifications.
1.2 For Ultrasound(US) products (including IGIT Products):
(a) 100% of the purchase price shall be due thirty (30) days from Philips' invoice date.
1.3 If the start of the installation is delayed for any reason beyond the control of Philips for more than thirty (30) days following the date that Philips notifies customer that the major components of the product are available for delivery, the unpaid portion of the purchase price shall be due on the thirty-first (31st) day following such date.

2. Cancellation. The quotation is subject to change or withdrawal prior to written acceptance by Customer. All purchase orders issued by Customer are subject to acceptance by Philips. If Customer cancels an order prior to product shipment, Customer shall pay a cancellation charge of fifteen percent (15%) of the net order price. Orders may not be cancelled after shipped.

3. Delivery.
3.1 Philips will use reasonable efforts to ship the product to the Customer by: (a) by the mutually agreed upon shipment date; or (b) by the date stated in the quotation; or (c) as otherwise agreed in writing. Philips will ship the product according to Philips' standard commercial practices. Philips will deliver the equipment during normal working hours, 8:00 - 5:00 PM, in the time zone where the Customer is located. Philips may make partial shipments. Philips will pay shipping costs associated with product shipment.
3.2 Prior to the shipment of any product, Philips may change the construction or the design of the product without notice to the Customer so long as the function, footprint, and performance of the product are not substantially altered.
3.3 If Customer requests a delay in the date major components of the product are available for delivery, then Philips will place the product in storage and the unpaid portion of the purchase price shall be due. Customer will reimburse Philips for all storage fees incurred upon receipt of invoice.

4. Additional Customer Installation Obligations for Magnetic Resonance.
4.1 Customer's contractor or Customer's architect is required to provide detailed information on the proposed Helium Exhaust Pipe for their MRI system prior to installation to ensure safety specifications are being met.
Required Details include:
(a) Architectural drawing or sketch with complete dimensions including lengths, bending radii, bending angles, and pipe diameters for entire Helium Exhaust Pipe run from RF enclosure to discharge location.
(b) Completed Helium Exhaust Pipe Verification Checklist (Provided by Local Philips Project Manager)
(c) Picture showing the area where the Helium Exhaust Pipe will discharge.
4.2 Magnets will not be released for delivery unless and until Helium Exhaust Pipe details are provided for verification and have been confirmed to meet all life safety specifications.

5. Additional Terms Related to Sales of IGIT Products.
5.1 As part of installation, Philips will connect the IGIT product to such DICOM compatible scanners as Customer may designate (in writing), including CT and MR scanners and, if ultrasound navigation is included in the product, an iU22 ultrasound system.
5.2 If Customer requires that Philips connect the IGIT product to more than two (2) scanners or other devices, then Philips shall invoice Customer and Customer shall pay for installation services at Philips' then-current daily service rate. Additionally, Customer shall (a) make the scanner(s) the Customer has designated available to Philips' installation representative, (b) create and provide a data set of the installation phantom on or before the installation date, and (c) have its IT representative available to assist in connecting the IGIT product to Customer's DICOM devices during the agreed installation time. If such installation and connection is delayed due to Customer failing in its obligations described in this section, then Philips may invoice Customer and Customer shall pay either for (a) any time that Philips spends waiting at the site for such obligation to be fulfilled, at Philips' then-current service rate, or (b) reasonable travel expenses if Philips has to reschedule such installation.
5.3 Training on the IGIT Product is not included with the purchase of the IGIT product unless it is separately identified on the quotation.

PHILIPS PRODUCT WARRANTY

CARDIOVASCULAR (CV) SYSTEMS

This product warranty document is an addition to the terms and conditions set forth in the quotation to which this warranty document is attached. The terms and conditions of the quotation are incorporated into this warranty document. The capitalized terms herein have the same meaning as set forth in the quotation.

TWELVE-MONTH SYSTEM WARRANTY
Philips warrants to Customer that the Philips Vascular and Cardiac Systems (the "System") as delivered to Customer will perform in substantial compliance with its performance specifications for a period of twelve (12) months upon first patient use. Any glassware or flat detectors provided with the System is subject to special warranty terms set forth below.

PLANNED MAINTENANCE
During the warranty period, Philips personnel will schedule planned maintenance visits, in advance, at a mutually agreeable time on weekdays, between 8:00 A.M. and 5:00 P.M. local time, excluding Philips observed holidays.

SYSTEM UPGRADES
Any commercially available upgrade to the System which is hereafter installed by Philips during the original term of the System warranty shall be subject to the warranty terms contained in the first paragraph of this warranty, except that such warranty shall expire on the later of: a) upon termination of the initial twelve (12) month warranty period for the System on which the upgrade is installed or b) after ninety (90) days for parts only from the date of installation.

MRC X-RAY TUBES
Philips warrants to Customer, for the warranty periods further specified in this section, that the Philips X-Ray tube will be substantially free from defects in material and manufacturing workmanship, which impair performance under normal use as specified in Philips product descriptions and specifications.

The warranty period for MRC tubes provided with Customer's purchase of a new or refurbished X-ray system shall be the shorter of thirty-six (36) months after installation or thirty-eight (38) months after date of shipment from Philips. The warranty period for purchases of replacement tubes shall be the shorter of twelve (12) months after installation or fourteen (14) months after date of shipment from Philips.

MRC TUBE WARRANTY EXCLUSION
The above warranty shall not apply to X-ray tubes outside the United States and Canada. Philips' obligations under the product warranty do not apply to any product defects resulting from: improper or inadequate maintenance or calibration by Customer or its agents; Customer or third party supplied software, interfaces, or supplies; use or operation of the product other than in accordance with loss, or damage in transit; improper site preparation; unauthorized maintenance or Philips' applicable product specifications and written instructions; abuse, negligence, accident, modifications to the product; or, to viruses or similar software interference resulting from the connection of the product to a network.

MRC TUBE WARRANTY REMEDIES
If a tube is found to fail during the warranty period, and if, in the best judgment of Philips, the failure is not due to neglect, accident, improper installation, use contrary to instructions, or the exclusions stated above, Philips' tube warranty liability hereunder is limited to, at Philips option, the repair or replacement of the tube. Any replacement tube would have a warranty period equal to the balance of the warranty period left on the tube replaced.

IMAGE INTENSIFIER TUBES
Philips warrants the image intensifier tubes provided with the System, if any, will be free from defects in material and manufacturing workmanship for twenty-four (24) months. Claims must be made within twenty-four (24) months after installation or twenty-seven (27) months after date of shipment from Philips, whichever occurs first. If an image intensifier tube fails to meet this warranty, as Customer's sole and exclusive remedy, upon return of the tube, Philips will provide a prorated credit towards the purchase of a replacement tube from Philips as follows:

USAGE				CREDIT
0	to within	12	months	100%
12	to within	13	months	50%
13	to within	14	months	46%
14	to within	15	months	42%
15	to within	16	months	37%
16	to within	17	months	33%
17	to within	18	months	29%
18	to within	19	months	25%
19	to within	20	months	21%
20	to within	21	months	17%
21	to within	22	months	12%
22	to within	23	months	8%
23	to within	24	months	4%

Tubes received by Philips under this warranty that are found to meet all test specifications will be returned to the Customer and the warranty will continue as of the original date of installation. Examination of the returned tube may necessitate its destruction, but Philips' liability shall, in any case be limited to repair or replacement as aforesaid, only if in its sole opinion the tube has been properly used, installed and applied and has not been subjected to neglect, accident, or improper installation, or use. Transportation charges and risk of loss, both ways, of returned or replaced tubes shall be at the expense of the Customer.

DYNAMIC FLAT DETECTORS
Philips warrants the flat detectors provided with the System, if any, will be free from defects in material and manufacturing workmanship for twelve (12) months. Claims must be made within twelve (12) months after installation or fifteen (15) months after date of shipment from Philips, whichever occurs first. If a detector fails to meet this warranty, as Customer's sole and exclusive remedy, upon return of the detector, Philips will provide Customer a replacement detector at no additional charge.

SYSTEM SOFTWARE AND SOFTWARE UPDATES
The software provided with the System will be the latest version of the standard software available for that System as of the 90th day prior to the date the System is delivered to Customer. Updates to standard software for the System that do not require additional hardware or equipment modifications will be performed as a part of normal warranty service during the term of the warranty.

All software is and shall remain the sole property of Philips or its software suppliers. Use of the software is subject to the terms of a separate software license agreement. Customer must sign all such license agreements prior to or upon the delivery of the product. No license or other right is granted to Customer or to any other party to use the software except as set forth in the license agreements.

Any Philips maintenance or service software and documentation provided with the product and/or located at Customer's premises is intended solely to assist Philips and its authorized agents to install and to test the System, to assist Philips and its authorized agents to maintain and to service the System under a separate support agreement with Customer, or to permit Customer to maintain and service the System. Customer agrees to restrict the access to such software and documentation to Philips' employees and those of its authorized agents, and to authorized employees of Customer only.

WARRANTY LIMITATIONS
Philips' obligations under the System warranty are limited, at Philips' option, to the repair or the replacement of the System or a portion thereof, or to a credit or refund of a portion of the purchase price paid by Customer. Any refund or credit will be paid to Customer when the System is returned to Philips. Certain of the parts used in the manufacture or installation of, or in the replacement parts for, this System may contain refurbished components. If such components are used, they will be subject to the same quality control and inspection procedures as all other components in the System. Any System warranty is made on condition that Philips receives written notice of a System defect during the warranty period, and within thirty (30) days following the discovery of the defect by Customer. Philips' obligations under the System warranty do not apply to any System defects resulting from: improper or inadequate maintenance or calibration by Customer or its agents; Customer or third party supplied software, interfaces, or supplies; use or operation of the product other than in accordance with loss, or damage in transit; improper site preparation; unauthorized maintenance or Philips' applicable product specifications and written instructions; abuse, negligence, accident, modifications to the System; or to viruses or similar software interference resulting from the connection of the product to a network. Philips does not provide a warranty for any such third party products furnished to Customer by Philips; however, Philips shall use reasonable efforts to extend to Customer the third party warranty for the product. The obligations of Philips described above are Philips' only obligations and Customer's sole and exclusive remedy for a breach of a System warranty. Repairs or replacement parts do not extend the term of this warranty.

THE WARRANTIES SET FORTH IN THIS WARRANTY DOCUMENT WITH RESPECT TO THE SYSTEM (INCLUDING THE SOFTWARE PROVIDED WITH THE SYSTEM), GLASSWARE, AND DETECTORS ARE THE ONLY WARRANTIES MADE BY PHILIPS IN CONNECTION WITH THE SYSTEM, SOFTWARE, GLASSWARE, DETECTORS, AND THE TRANSACTIONS CONTEMPLATED BY THE QUOTATION, AND ARE EXPRESSLY IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

ACCESS TO SYSTEM
Philips shall have full, free and safe access to the System and Customer's operation, performance and maintenance records for the System, on each scheduled or requested warranty service visit. Philips shall also have access to and use of any machine, service, attachment, features or other equipment required to perform the necessary service contemplated herein at no charge to Philips. Customer waives warranty service if it does not provide such access to the System and Customer's records. Should Philips be denied access to the System and Customer's records at the agreed upon time, a charge equal to the appropriate hourly rate will be accepted by Customer for "waiting time."

WARRANTY SERVICE
In the event it is not possible to accomplish warranty service within normal working hours (8:00 A.M. to 5:00 P.M., Monday through Friday, excluding Philips observed holidays), or in the event Customer specifically requests that warranty service be performed outside of Philips normal working hours, Customer agrees to pay for such services at Philips standard service rates in effect. Maintenance Agreements are available for extended coverage.

TRANSFER OF SYSTEM
In the event Customer transfers or relocates the System, all obligations under this warranty will terminate unless Customer receives the prior written consent of Philips for the transfer or relocation. Upon any transfer or relocation, the System must be inspected and certified by Philips as being free from all defects in material, software and workmanship and as being in compliance with all technical and performance specifications. Customer will compensate Philips for these services at the prevailing service rates in effect as of the date the inspection is performed. Any System which is transported intact to pre-approved locations and is maintained as originally installed in mobile configurations will remain covered by this warranty.

CONDITIONS
This warranty is subject to the following conditions: the System (a) is to be installed by authorized Philips representatives (or is to be installed in accordance with all Philips installation instructions by personnel trained by Philips), (b) is to be operated exclusively by duly qualified personnel in a safe and reasonable manner in accordance with Philips written instructions and for the purpose for which the products were intended, (c) is to be maintained and in strict compliance with all recommended and scheduled maintenance instructions provided with the System, and (d) Customer is to notify Philips immediately in the event the System at any time fails to meet its printed performance specifications.

LIMITATIONS OF LIABILITY AND DISCLAIMERS
The liability, if any, of Philips AND ITS AFFILIATES for damages whether arising from breach of the terms in the quotation, breach of warranty, negligence, indemnity, strict liability or other tort, or otherwise with respect to the products and services is limited to an amount not to exceed the price of the product or service giving rise to the liability.

IN NO EVENT SHALL PHILIPS OR ITS AFFILIATES BE LIABLE FOR ANY INDIRECT, PUNITIVE, INCIDENTAL, CONSEQUENTIAL, OR SPECIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR PROFITS, OR THE COST OF SUBSTITUTE PRODUCTS OR SERVICES WHETHER ARISING FROM BREACH OF THE TERMS IN THIS QUOTATION, BREACH OF WARRANTY, NEGLIGENCE, INDEMNITY, STRICT LIABILITY OR OTHER TORT. PHILIPS SHALL HAVE NO LIABILITY FOR ANY GRATUITOUS ADVICE PROVIDED TO THE CUSTOMER.

FORCE MAJEURE
Philips and Customer shall each be excused from performing its obligations arising from any delay or default caused by events beyond its reasonable control including, but not limited to: acts of God, acts of third parties, acts of the other party, acts of any civil or military authority, fire, floods, war, embargoes, labor disputes, acts of sabotage, riots, accidents, delays of carriers, subcontractors or suppliers, voluntary or mandatory compliance with any government act, regulation or request, shortage of labor, materials or manufacturing facilities.

Philips system specifications are subject to change without notice Document Number 4535 983 03234 999

EXHIBIT 4
EXISTING UNIT

Made for Life

TOSHIBA MEDICAL SYSTEMS CORPORATION
http://www.toshibamedicalsystems.com

MCAXR0143EAB 2006-7(200708) TME/D

Toshiba Medical Systems Corporation meets internationally recognized standards for Quality Management System ISO 9001, ISO 13485.

Toshiba Medical Systems Corporation Nasu Works meets the Environmental Management System standard, ISO 14001.

Printed in Japan

TOSHIBA

INTERVENTIONAL ANGIOGRAPHY SYSTEM

Infinix CC-i

Flat Panel Detector

Exhibit 4

innovative
interactive
interventional

Infinix-i

Exceptional Image Quality

Speed, Response & Flexibility

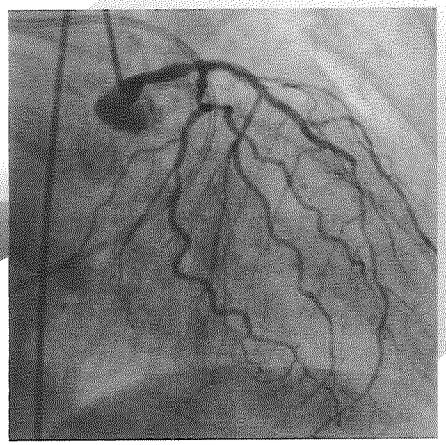
Interventional Functionality

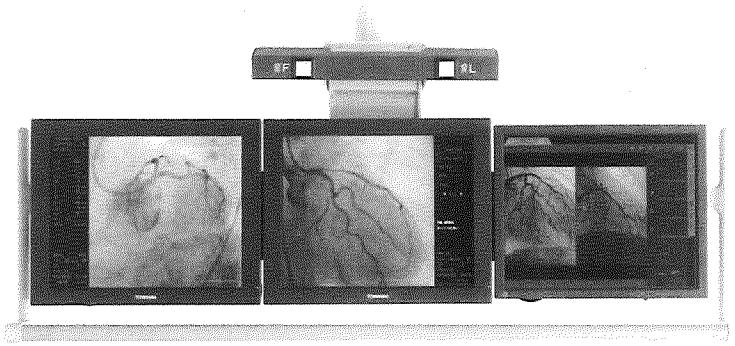
Ergonomic Efficiency

Dose Reduction Technologies

Seamless Workflow

Exceptional Image Quality





High-performance Monitor

Large-sized LCD monitors with ultra-high brightnees specification, this enables easier viewing with ambient room lighting.

New-generation Image Processing

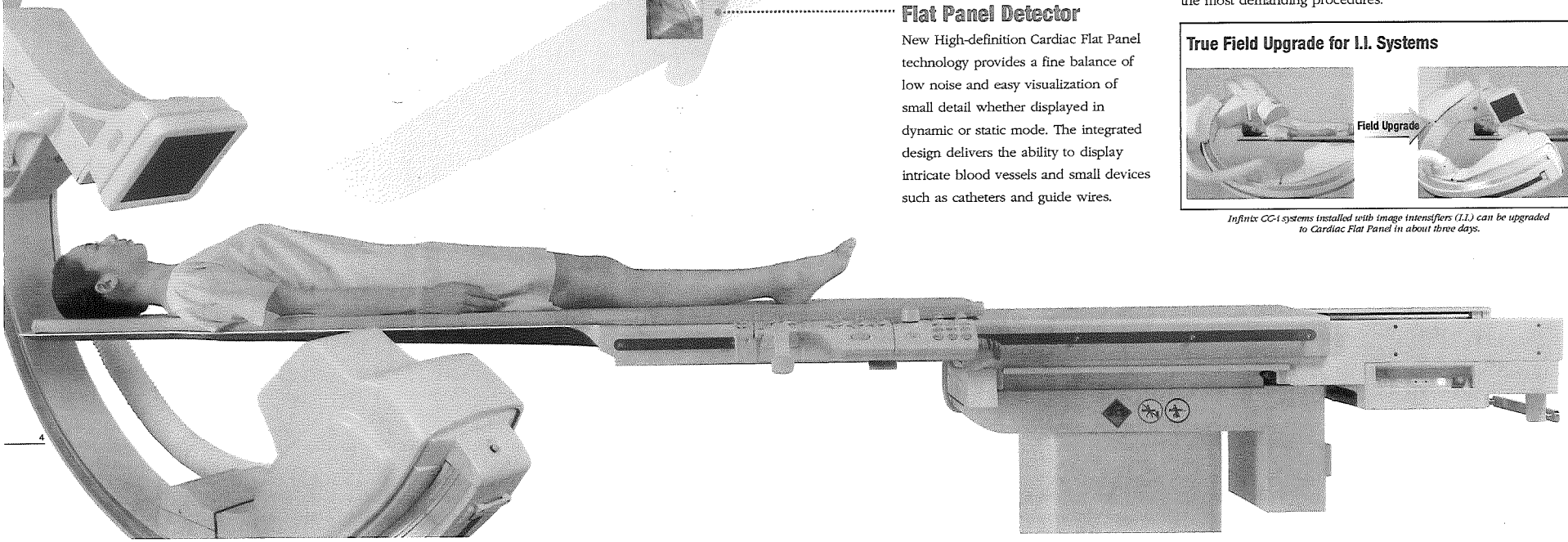
New from Toshiba is a sophisticated real-time digital image processing function. Real-time image processing is applied to both fluoroscopic and radiographic image data. A Dynamic Pattern Recognition Filter (DPRF) and a Dynamic Digital Compensation Filter (DDCF) are used simultaneously to allow high definition of small devices and structures during the most demanding procedures.

Flat Panel Detector

New High-definition Cardiac Flat Panel technology provides a fine balance of low noise and easy visualization of small detail whether displayed in dynamic or static mode. The integrated design delivers the ability to display intricate blood vessels and small devices such as catheters and guide wires.

True Field Upgrade for I.I. Systems

Infinix CC-i systems installed with image intensifiers (I.I.) can be upgraded to Cardiac Flat Panel in about three days.

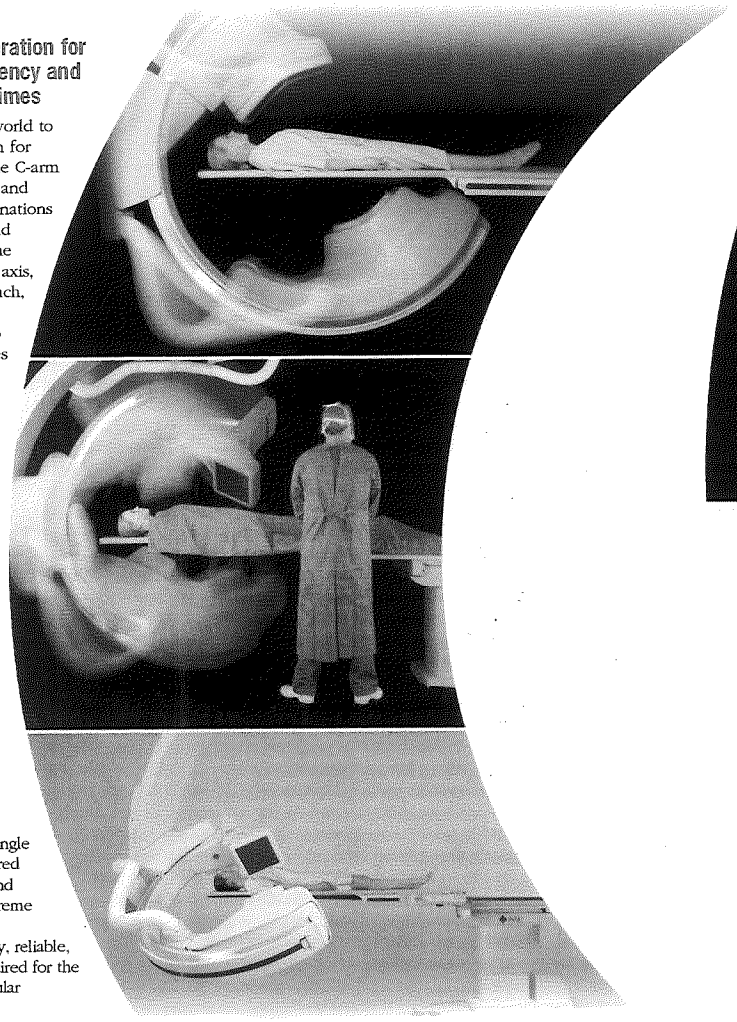


SPEED, RESPONSE & FLEXIBILITY

Flexible C-arm

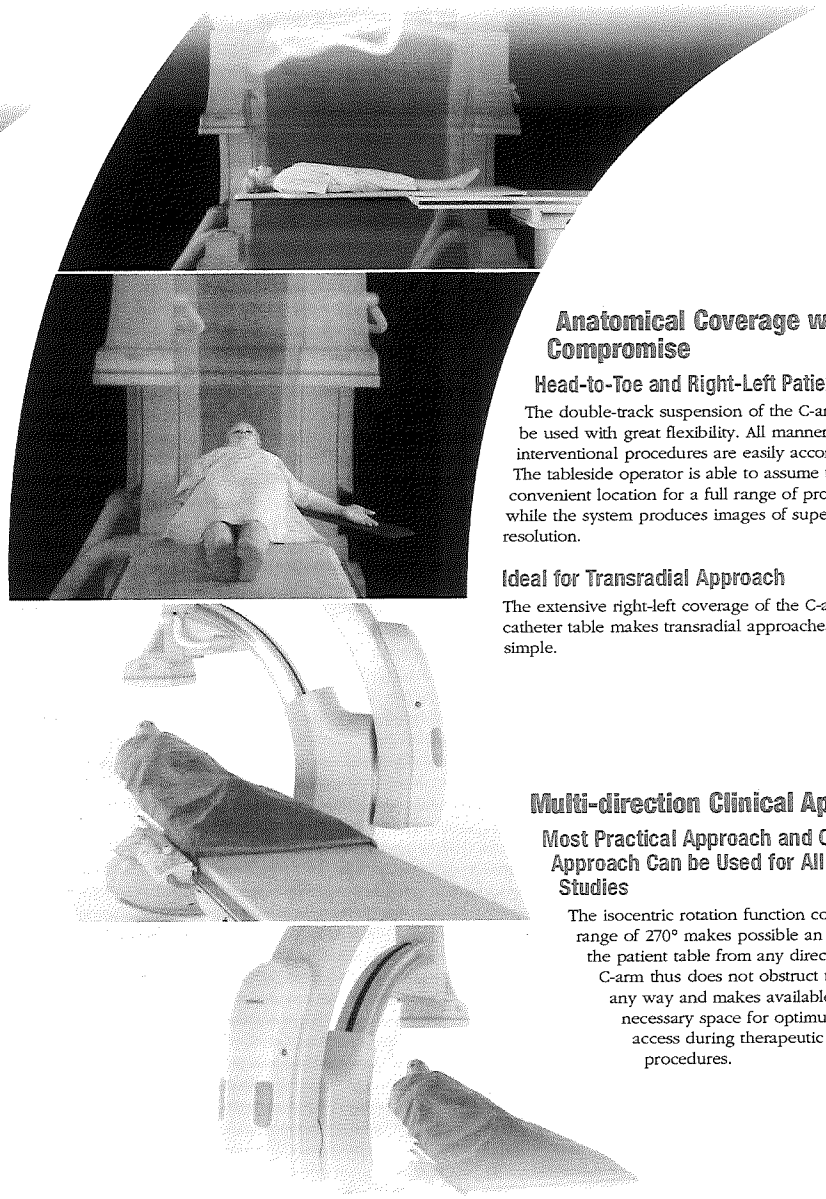
Precise High-speed Operation for Advanced Clinical Efficiency and Reduced Examination Times

Toshiba was the first in the world to develop a double-track C-arm for interventional application. The C-arm is designed to achieve quick and accurate interventional examinations with an unrestricted range and smoothness of movement. The C-arm, ceiling mounted triple axis, allows the operator to approach, and work in any desired relationship to the patient, so that catheterization techniques can be freely executed.



C-arm Now Has Deeper Angle and Greater Speed

High-speed rotation and free-angle movement of the slim, contoured C-arm allow it to be quickly and reliably positioned even at extreme angles.
The C-arm also delivers speedy, reliable, steep angulations such as required for the spider view used in cardiovascular angiography.



Anatomical Coverage without Compromise

Head-to-Toe and Right-Left Patient Coverage

The double-track suspension of the C-arm allows it to be used with great flexibility. All manner of interventional procedures are easily accommodated. The tableside operator is able to assume the most convenient location for a full range of procedures, while the system produces images of superb clarity and resolution.

Ideal for Transradial Approach

The extensive right-left coverage of the C-arm and catheter table makes transradial approaches extremely simple.

Multi-direction Clinical Approach

Most Practical Approach and Optimum Approach Can be Used for All Clinical Studies

The isocentric rotation function covering a total range of 270° makes possible an approach to the patient table from any direction. The C-arm thus does not obstruct the operator in any way and makes available the necessary space for optimum patient access during therapeutic and diagnostic procedures.

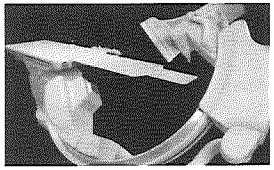
INTERVENTIONAL FUNCTIONALITY

One Touch Sequential-navigation

With just One Touch, the operator can adjust basic settings for routine and repeat procedures, as needed. This provides superior, time-efficient intervention during the procedure while making available the ability to synchronize the display of map images, the position of devices, or application of radiographic programs.

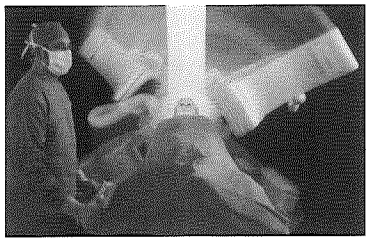
One Touch Synchro-position

The operator is able to establish with just One Touch the position and angulation of the C-arm, the table-top height, SID and the setting of the compensation filter according to the procedural sequence.



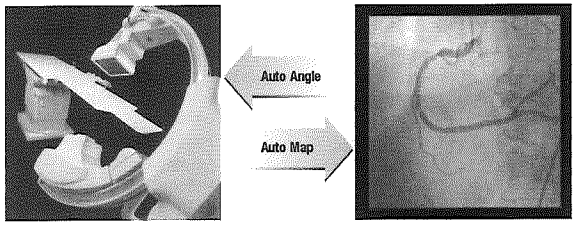
One Touch Synchro-map

With just One Touch the operator is able to coordinate the C-arm position using a map image, using time-saving technology to achieve improved workflow.



One Touch Synchro-program

With just One Touch the operator is able to set the radiographic mode, X-ray parameters, acquisition rate, matrix, image size, image processing conditions and comments, etc.

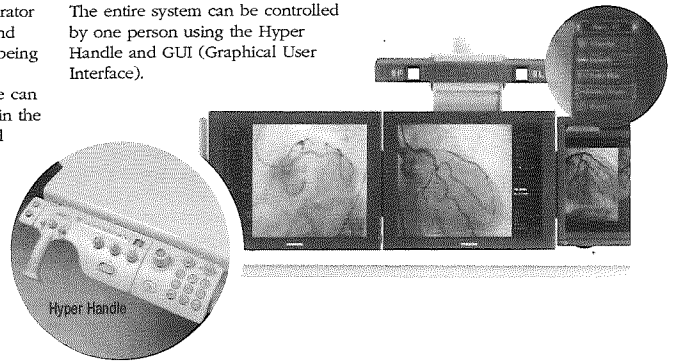


Totally Redefines the Words Interactive & User-friendly

One Touch Table Side Control & Graphical User Interface

Using Hyper Handle, the operator can control both the C-arm and catheterization table without being distracted from the patient or procedure. The Hyper Handle can be attached to the table side in the most convenient and practical position.
The Hyper Handle makes operation extremely easy. Functions frequently used during examination, such as the changing of fluoroscopic dose level or the display of map images are achieved with just One Touch.

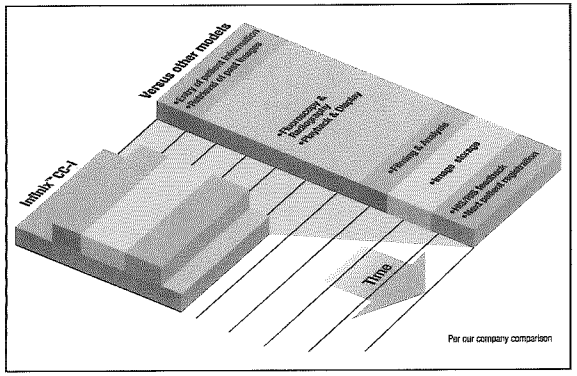
The entire system can be controlled by one person using the Hyper Handle and GUI (Graphical User Interface).



Ergonomic Efficiency

Time-saving Technology for Improved Workflow

Putting digital automated technology to work in each phase of the procedure makes for a smooth and efficient workflow in the examination room, making it possible to complete interventional procedures in the shortest possible time.

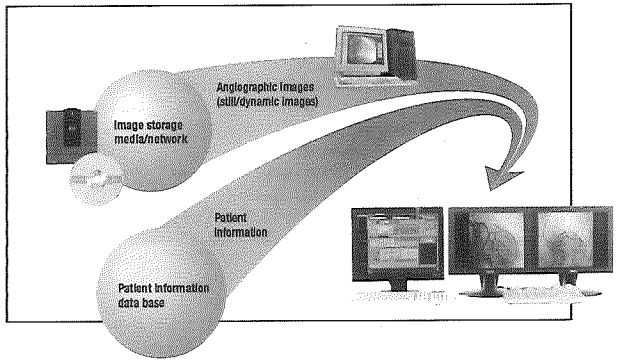


Parallel & Background Processing

The Infinix™ CC-i provides simultaneous functionality. For example, during fluoroscopy and fluorography, it is possible to prepare for the next scheduled patient, process and print images from a prior study, and transfer and/or archive images to an associated network.

Prevision

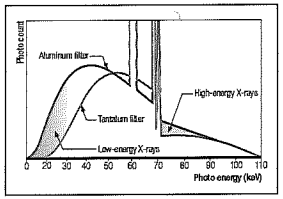
Entry and storage of patient information prior to the procedure is a simple process.
Information is easily obtained from the patient information data base using only the patient identity reference as a key. Previous studies can be retrieved from the archive for a quick comparison and evaluation of prior results.



Dose Reduction Technologies

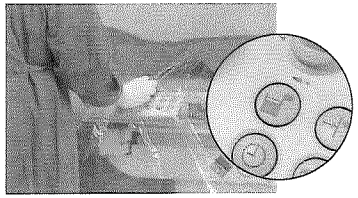
Tantalum Filter (X-ray Beam Filter)

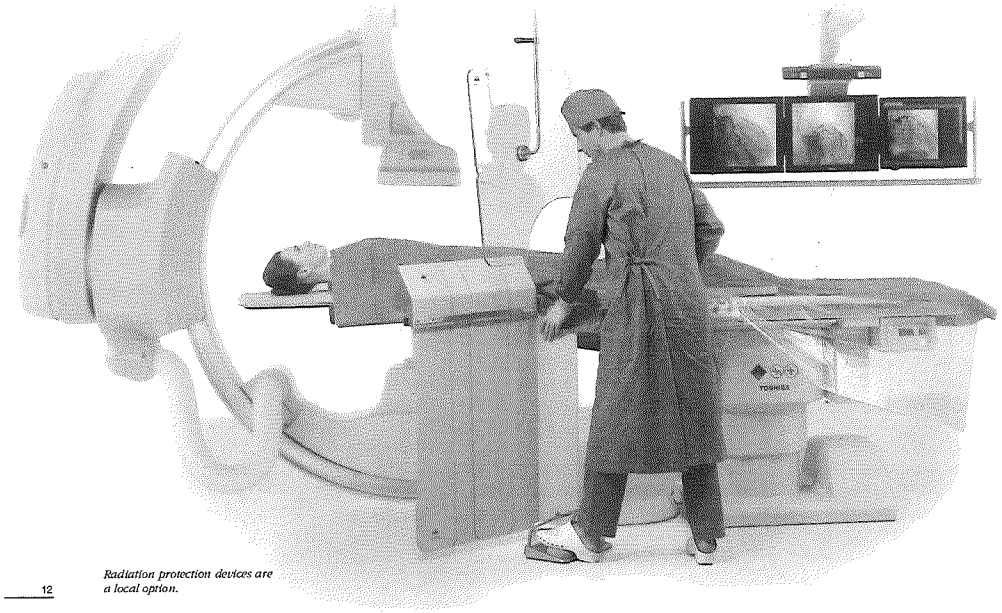
Toshiba's unique tantalum filtration dramatically reduces absorbed patient dose and also back-scattered radiation to the tableside operator. Tantalum replicates the performance of copper in terms of dose reduction but provides a superior signal-to-noise ratio which translates to improved image quality.



Digital-pulsed Fluoroscopy & Low-rate Pulsed Fluoroscopy

Merging digital-pulsed fluoroscopy with new-generation image processing technology has advanced functions to a new level. Devices of all types such as catheters and guidewires are easier to recognize and the overall time needed for fluoroscopy has been reduced. The fluoroscopic pulse rate can be freely selected from a range of 1, 2, 3, 5, 7.5, 10, 15, 20 and 30 fps to satisfy the demand of different procedures. Radiation dose to the patient and tableside operator is reduced to the absolute minimum necessary.

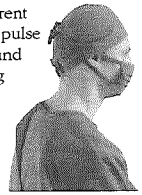




Radiation protection devices are a local option.

Variable Dose Mode

With just One Touch using the tableside control, the operator is able to select one of four fluoroscopy modes, each of which is pre-programmed for an optimum approach to examination conditions. Different combinations of pulse rate, dose level and image processing parameters are stored in each mode and set according to the study protocol.



Virtual Collimation

After fluoroscopy virtual collimation uses software simulation of collimator positions with reference to LIH (Last Image Hold) image. Adjustment of collimation is possible without the need of additional fluoroscopy, contributing to a further reduction of radiation dose.

Electronic Zoom

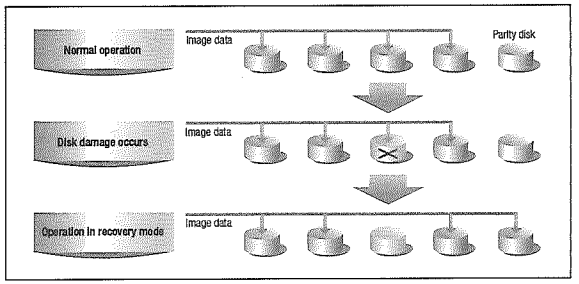
Electronic zoom digitally enlarges images in real time during fluoroscopy without increasing dose. This eliminates the need to use smaller fields of view on the detector magnification purposes which increase the demand for the radiation. Electronic zoom maintains image quality while lowering radiation exposure.

Fluoroscopic Acquisition

Single-image capture and dynamic imaging during fluoroscopy may be saved for future reference. The ability to archive fluoroscopic imaging when fluorography is not necessary represents another important step in the reduction of radiation dose.

Acquisition without Risk (RAID Level 3)

The advanced RAID (level 3) system is used to acquire and store digital image data. Very large volumes of data can be stored and processed at high speed by segmenting the image data and storing it on multiple magnetic disks. This technology is known to be highly reliable because if a problem occurs on a disk, interventional procedures can continue smoothly, since data is restored in real time.

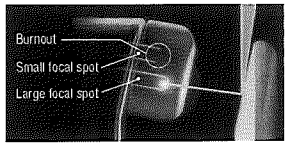


Dose Control (option)

Radiation dose can be monitored in real time. A digital display provides details on a monitor in the examination room. The operator is able to observe the radiation dose on the monitor throughout the entire procedure. The total accumulated dose for each procedure can be communicated using the DICOM modality (PPS) when needed.

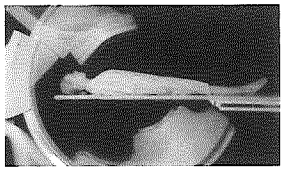
Backup Focus

The performance of the X-ray tube is monitored at all times by the CPU. If the fluoroscopic focus filament burns out, it is instantly replaced by a radiographic filament to maintain fluoroscopic operation and the satisfactory and safe completion of an examination.



Collision Protection

Anti-collision software programs automatically slow down mechanical movement of the C-arm when it approaches potential contact with the catheterization table or patient. An anti-collision detector is installed on the front of the Flat Panel Detector or image intensifier to prevent further advance movement of the system in the event of physical contact.



SEAMLESS WORKFLOW

Wide Range of DICOM Support

The Toshiba Infinix-i series supports a wide range of DICOM and has the flexibility to meet future network expansion needs.

DICOM CD-R & DVD-RAM*

The Infinix CC-i is equipped with a CD-R as a standard feature and the option of DVD-RAM is also available. The CD-R or DVD-RAM serves as a long-term storage medium for valuable image data and both support DICOM 3.0. During re-examinations, images stored on CD-R or DVD-RAM can be reloaded into the Infinix CC-i as reference images for use during the examination.

DICOM Print

DICOM print exports images to DICOM-compliant printers. Virtual film function allows the operator to preview the final print and to influence its composition and final image presentation to optimize the print function.

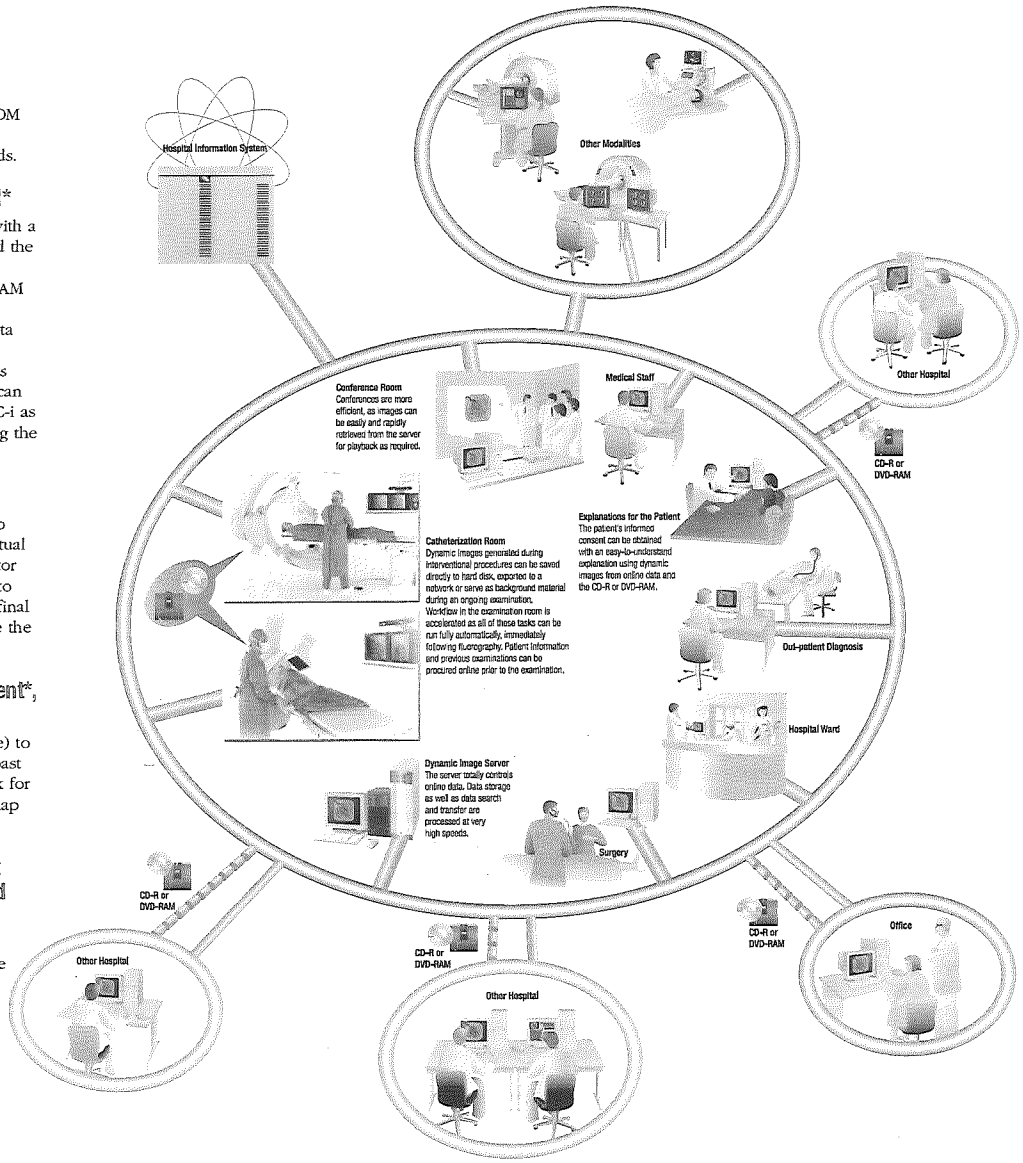
DICOM Storage Commitment*, Query/Retrieve*

Archiving of images (XA image) to the network, and retrieval of past examinations over the network for use as review and reference map images.

DICOM Modality Worklist Management*, Performed Procedure Step*

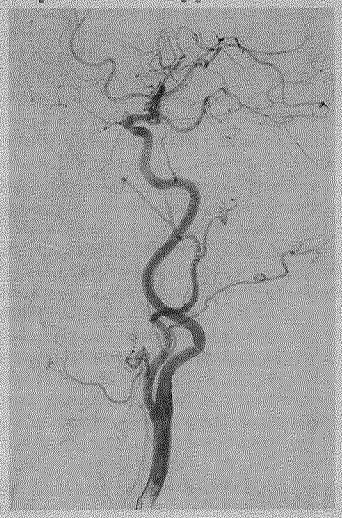
Exam information including scheduled examinations can be acquired and examination results communicated directly to hospital information systems.

*Option

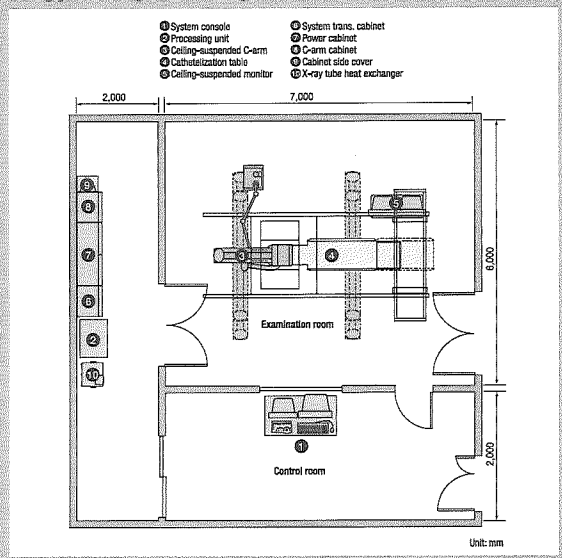


DYNAMIC FPD CAPABILITY

Expansion of Application



A Typical System Layout



Some objects shown in this catalog are optional items. For complete details, please contact your local representative.

Advanced interventions in your lab

Philips Allura Xper FD10 system specifications

EXHIBIT 5

PROPOSED REPLACEMENT

PHILIPS

sense and simplicity

The print quality of this copy is not an accurate representation of the original.

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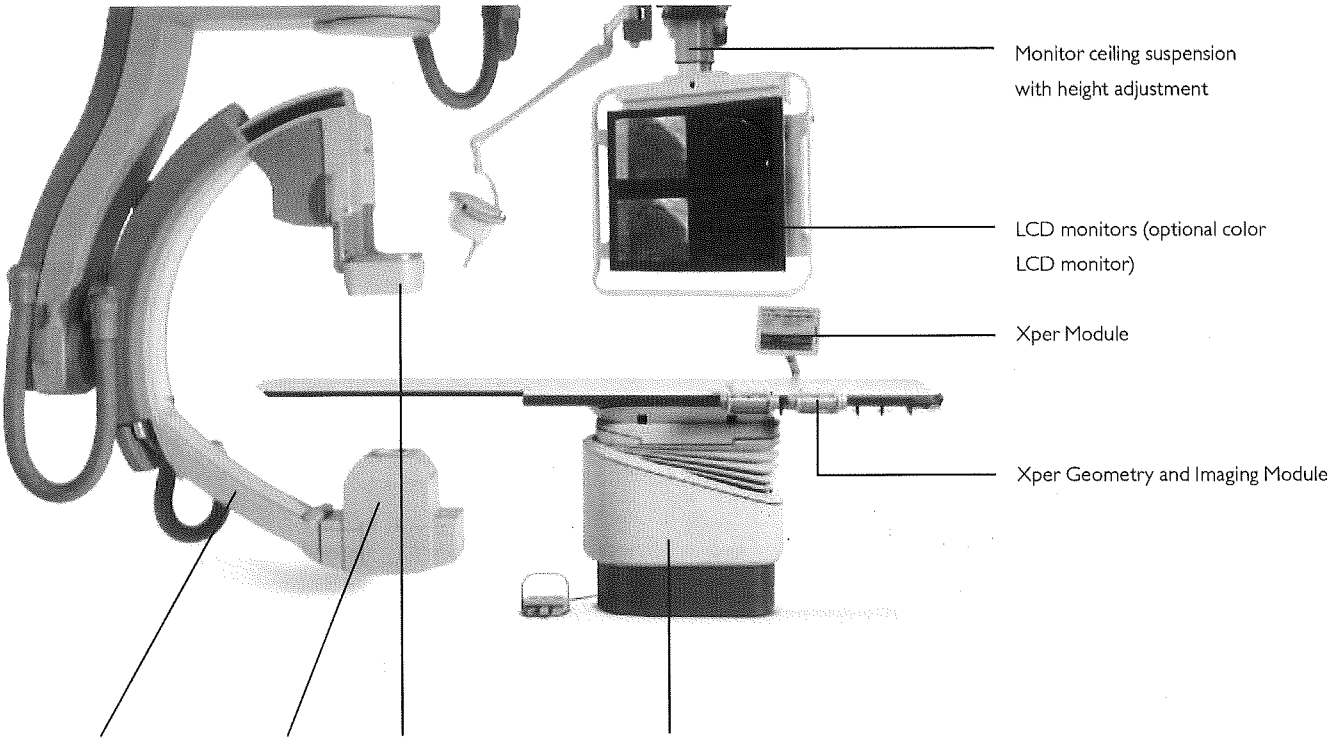
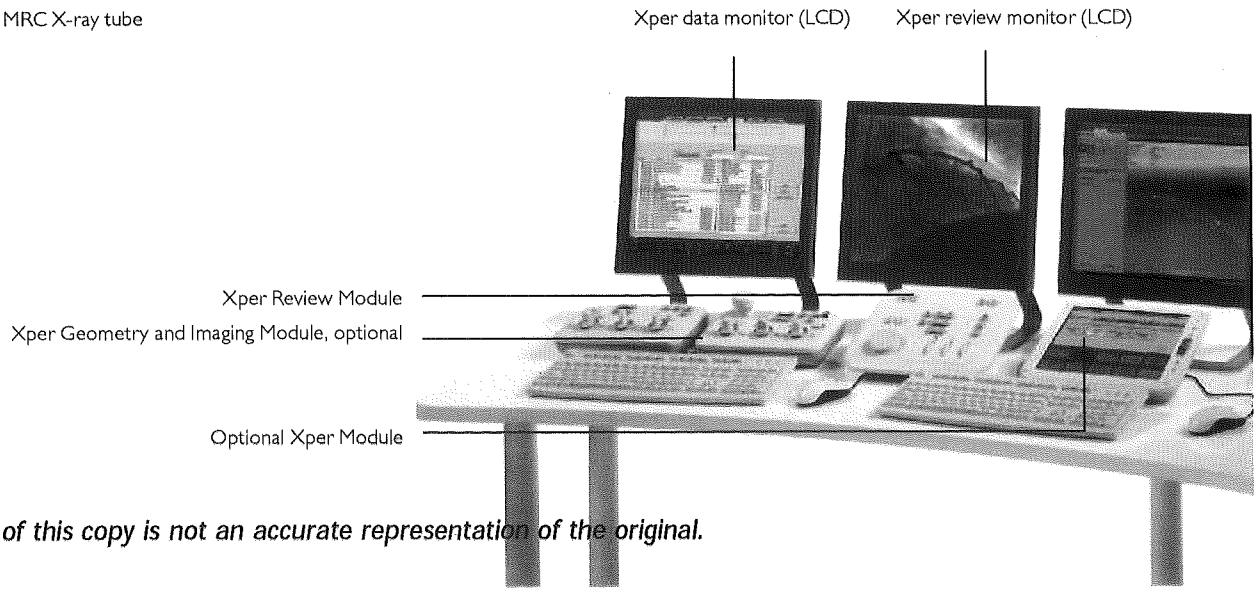
Introduction

Today, new interventional treatments and applications are constantly being pioneered. And although this expansion is exciting, it means that you must be more versatile than ever before. You must be equipped with an X-ray system that is capable of performing a wide variety of complex procedures. To achieve this, cardiologists need superb image quality at a low X-ray dose, instant access to multi-modality information, as well as advanced and easy-to-use image processing tools. Through partnerships with busy cath labs around the world, Philips has developed the Allura Xper FD10.



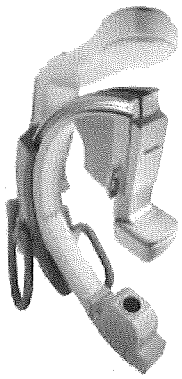


1 Geometry

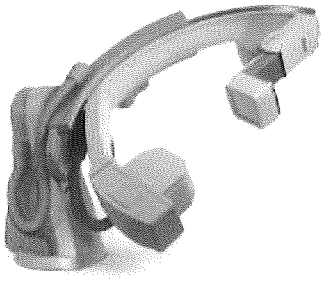
1.1 Gantry

The G-shaped stand maximizes speed and provides excellent patient access. Rock stable gantry design with fast and easy table side controlled operation, with full flexibility in applications by free positioning of the gantry, monitor suspension and operating modules. The unique G-shaped of the stand allows you to reach the groin without repositioning and allows a wide range of projections.

The exclusive BodyGuard patient protection mechanism is designed to protect the patient from unexpected contact between the detector and the body. It uses capacitive sensing to determine patient location to prevent collision, while allowing stand positioning at up to 25°/sec.



Allura Xper FD10 Ceiling G-stand



Allura Xper FD10 Floor G-stand

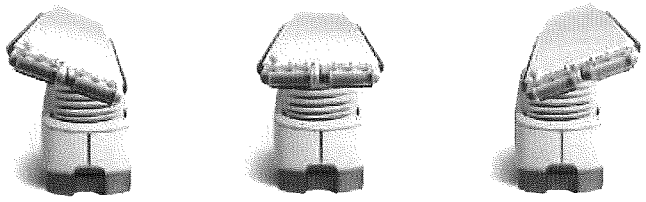
Features	Specifications
Iso-center to floor	FD10 ceiling and floor is 106.5 cm (41.9 inch)
Longitudinal movement	FD10 ceiling has a motorized and manual range of 260 cm (102.4 inch) at 15 cm/sec (6 inch/sec.). It includes auto stops at the park position, cardio position, neuro position and lower peripheral position FD10 floor has no longitudinal movement. It pivots of the stand base for -90° to + 90°
L-arm rotation	FD10 ceiling has motorized and manual movement, over 180° with snap positions at 90°, -0°, -90° to allow patient access from three sides of the table
G-stand rotation / speed	FD10 ceiling and floor in head-end position: 120° LAO, 120° RAO up to 25°/sec FD10 ceiling in side position: 45° LAO, 45° RAO up to 18°/sec
G-stand angulation / speed	FD10 ceiling and floor in head-end position: 45° cranial, 45° caudal up to 18°/sec FD10 ceiling in side position: 120° cranial, 120° caudal up to 25°/sec
Focal spot to iso-center	Is up to 76.5 cm (30.1 inch)
Source Image Distance	Is 86.5 - 123 cm (34.1 to 48.4 inch)
G-stand depth	105 cm (41.3 inch)
Programmable positions	Standard two positions

Optional

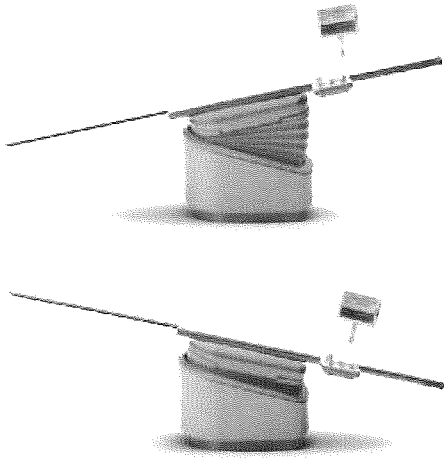
Automatic Position Controller (APC)	Functionality for the stand is accessed through the Xper Module at the patient tableside. • This option includes a programmable position extension, which allows you up to ten different stand positions per clinical procedure • Another feature of the APC is reference-driven positioning. This allows you to recall stand positions by referring to the images at the reference monitors, which means that the rotation, angulation, SID, and detector orientation are restored to the original settings of the reference image.

1.2 Patient support

The Xper table offers full range of applications, without restriction on position during CPR. The Xper table is a dedicated interventional X-ray table with a free-floating tabletop. This table has very high patient loadability and can make large floating movements.



Xper table cradle



Xper table tilt

Features	Specifications
Tabletop material	Radio translucent carbon fiber tabletop
Tabletop length	319 cm (125.6 inch)
Tabletop width	50 cm (19.7 inch)
Motorized tabletop height adjustment	79 to 104 cm (31.1 to 40.9 inch)
Tabletop metal free overhang	125 cm (49.2 inch)
Longitudinal float	120 cm (47.2 inch)
Transversal float	36 cm (14.2 inch)
Maximum allowable patient weight	250 kg with additional force of 500 N, allowed in case of CPR. CPR can be performed while the tabletop is set in any longitudinal position
The positioning of the modules	The Xper Module, Xper Imaging, and Xper Geometry Modules can be positioned on three sides of the patient support
Cable integration	Cables are incorporated in the table to allow maximum operation flexibility
Patient mattress	The mattress is made of slow recovery foam, with a density of 58 kg/m^3 and a thickness of seven cm that adapts to the patient body shape.

Optional

Table tilt	Yes, Xper table tilt; tilt range: 17° head-down to 17° head-up; tilt speed: 2°/sec.
Iso centric tilt movement	Yes
Cradle movement	Movement: yes, with Xper Cradle; range: -15° to +15°; speed: 3°/sec.
Iso centric cradle	Yes
Pivot range	-90° to +180° (or -180 to +90°). Table can be locked at any position and indents at 0, -13° and +13° (to support arm angiography).
Table Automatic Position Controller	It contains store and recall functionality of the height-, longitudinal- and lateral position of the table top. This allows returning to a previously stored position, without using X-ray dose.
Patient tables	Besides the Allura Xper systems with the Xper table we also have the Allura Xper OR Table series available for full use in the OR environment. These systems combine the Allura high end x-ray with a fully OR compatible patient table. For details we refer to the specifications of the Allura Xper OR Table series.

1.3 Monitor Ceiling Suspension

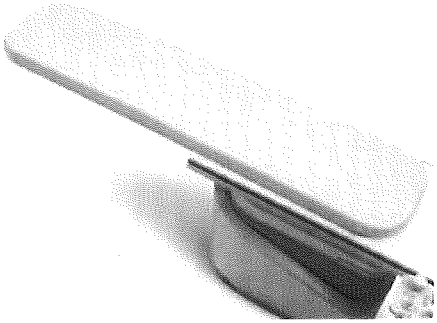
The Monitor Ceiling Suspension allows flexible, freely rotating positioning with a concave set-up of the monitors for optimal viewing angle.

Feature	Specifications
Number of monitors	One, two, three, four, six or eight monitors
Rotation range	350°
Transversal movement	Over a distance of 300 cm (118.1 inch)
Longitudinal movement	Over a distance of 330 cm (129.9 inch)

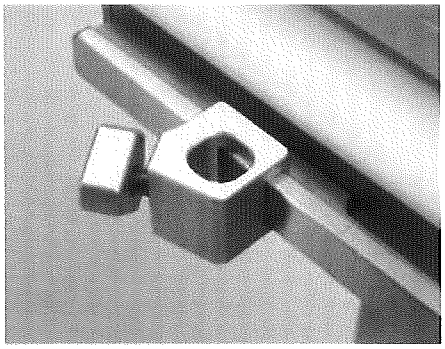
1.4 Accessories

1.4.1 Standard accessories

- Mattress
- Patient straps
- Set of arm supports (if cradle)
- Dripstand
- OP rail accessory clamps
- Cable holders (15 pieces)



Mattress (standard delivery of one piece per table)



OP rail accessory clamps

Optional

1.4.2 Optional accessories

- Arm support (height adjustable)
- Ratchet compressor
- Table X-ray protection
- Peripheral X-ray filter
- Pulse cath arm support
- Examination light
- MCS bracket ceiling rad. shield
- Ceiling suspended radiation shield
- Panhandle
- Neuro Mattress (if Neuro tabletop)
- Longer Mattress
- Head support
- Arm support, incl. mattress pad
- Neuro wedge
- Table clamp
- Set handgrips and clamps
- Additional op-rail
- Additional op-rail (USA version)
- Additional op-rail with cable extension kit for Xper Modules

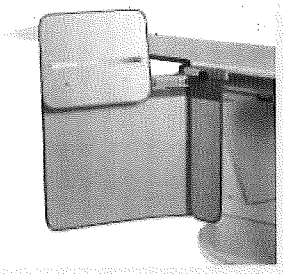
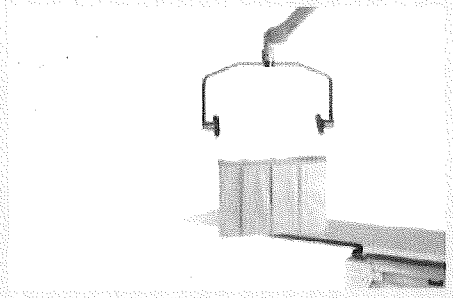
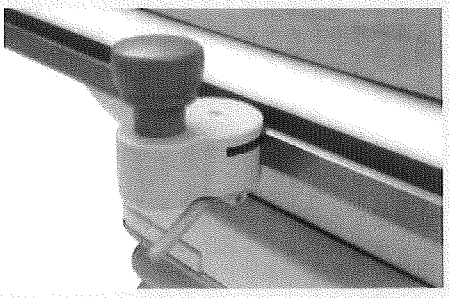


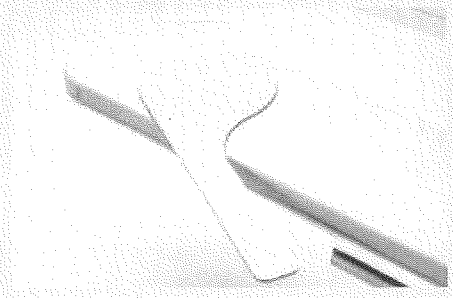
Table X-ray protection



Ceiling suspended radiation shield



Panhandle



Arm support

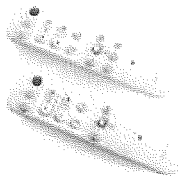
2 User Interface

Tailor made customized operating user interface per user (groups) and per desired application is available. Full integration of the complete system user interface is available at table side. Xper stands for "X-ray Personalized", and reflects the expert nature of the Allura Xper FD10 system.

2.1 Xper User Interface in the examination room

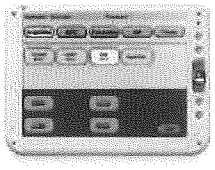
In the examination room, the Xper User Interface comprises the On-Screen Display, the Xper Module, and the Xper Imaging and Geometry Modules. Information is displayed on the On-Screen display in the examination room.

The Xper Geometry and Imaging Module can be positioned on three sides of the patient table. The Modules adjust to the position to retain the intuitive button operation. Both the Xper Geometry and Imaging Module have a removable protection bar that prevents unintended activation of system.

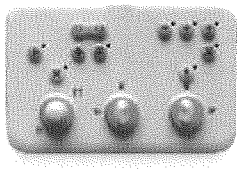


Xper Viewpad Controls

Xper Geometry Module



Xper Module



Xper Imaging Module

Xper User Interface
X-ray indicator
X-ray tube temperature condition
Radiographic parameters: kV, mA, ms
Rotation and angulation of the stand positions
Source Image Distance (SID)
Table height
Detector field size display
General system messages
Selected frame speed
Fluoroscopy mode
Integrated fluoroscopy time
Air Kerma dose (both rate and accumulated X-ray dose)
Dose Area Product (both rate and accumulated X-ray dose)
Graphical bars for body zone specific X-ray dose rate and accumulated Air Kerma levels related to the 2Gy level for cardiac procedures
Stopwatch

Xper Viewpad controls
Run and image selection
Exam and run cycle
Review speed
Run and exam overview
Active exam sub files (exposure image/runs, reference images, print file)
Flagging exam and run for storage
Digital zoom
Storing reference run or image to reference monitors
Select reference monitors for review and/or processing of previous run exposures
Subtraction and image mask selection

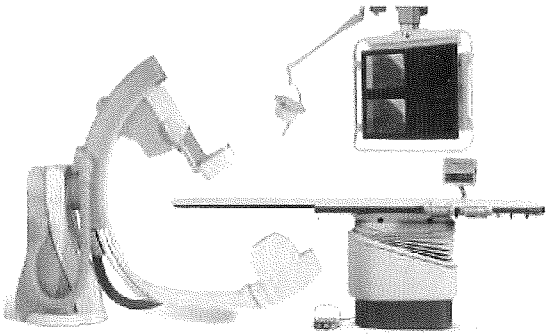
Xper Module
Acquisition setting
Image Processing
USB port for data transfer
Automatic Position Control (APC), optional
Quantitative Analysis (QA), optional
Table Automatic Position Controller, optional
Interventional tools table side control, optional
Xcelera table side control, optional
Hemo table side control, optional
Ultrasound table side control, optional

Xper Geometry Module
Tabletop float
Table height position
Table tilt angle (if the tilt option is selected)
Table cradle angle (if the cradle option is selected)
Source Image Distance selection
Stand positioning
Longitudinal movement of the stand along the ceiling
Stand rotation in an axis perpendicular to the ceiling
Store and recall of two scratch stand positions including SID and detector orientation
Emergency stop button
Accept button of the Automatic Positioning Control
Geometry reset button, which resets stand and table to a default service configure able starting position

Xper Imaging Module
Fluoroscopy mode selection as defined via Xper settings
Positioning of shutters and wedges without radiation
Manual or automatic wedge including position on the last image without radiation
Xper fluoro storage to record fluoroscopy up to 999 images
Selection of the detector field size
Preferred beam width
Reset of the fluoroscopy buzzer
Selection of Roadmap Pro function
Selection of SmartMask function

2.2 Xper User Interface in the control room

The Xper Viewing Console comprises a 19 inch LCD color data monitor for patient data and system information management, including radiographic parameters, and a 18 inch black and white review monitor and Review Module enabling efficient exam viewing and post-processing. The monitors have the ability to extend the screen area to multiple screens.

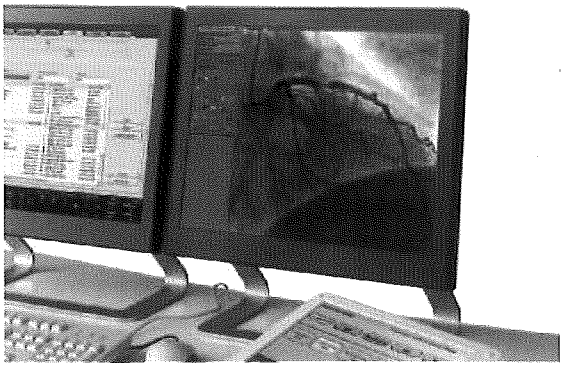


Xper Data Monitor
Scheduling
Preparation
Acquisition
Review
Report
Archive

System Information
Stopwatch and Time
System guidance information
Dose Area Product (DAP) and Air Kerma X-ray Dose (both rate and accumulated X-ray dose)
Frame speed settings, fluoroscopy mode and accumulated fluoroscopy time
Exposure and fluoroscopy settings, such as Voltage (kV), Current (mA) and pulse time (ms)
Stand position information, such as rotation, angulation and SID

Xper Review Monitor

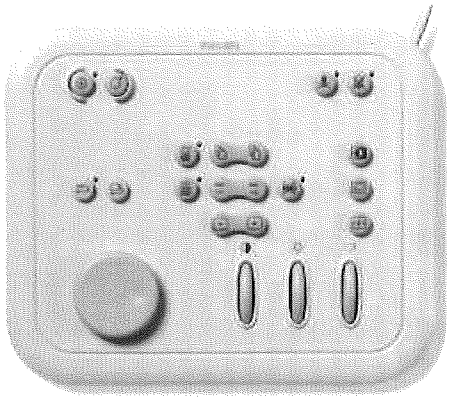
The Xper review monitor is a 18 inch black and white LCD monitor that have the ability to extend the screen area to multiple screens.



Xper Review Monitor
Step through file, run or images
File and run overview
Image processing features such as contrast, brightness and edge enhancement
Flagging of runs or images for transfer
Image annotation
Automatic printing
Video invert
Zoom and pan image
Electronic shutters
Toggle switch physio
Store/delete images/runs
Store fluoro
Quantitative Analysis Packages, optional
Subtraction, optional
Move or renew mask, optional
Landmarking (increase/decrease of subtraction degree), optional
View trace, optional
Pixel shift, optional

Xper Review Module

The Xper Review Module is a review station for basic interventional X-ray viewing needs. The most often used functions can be controlled by the touch of a button.



Xper Review Module
Power on/off of the system
Tagarno wheel to control the review of a patient exam
File and run cycle
Adjustment of contrast, brightness, and edge enhancement
File, run and image stepping
Run and file overview
Basic review functionality, such as image invert and digital zoom
Go to default settings
Reset fluoroscopy timer and switch X-ray on/off

Optional

2.3 User Interface options

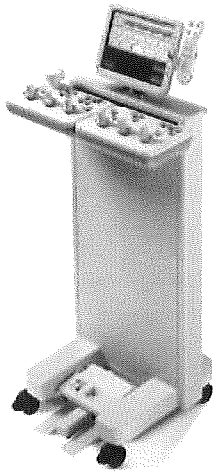
Second or third Xper Module

The Allura Xper FD10 can be extended with additional Xper Modules. The functionality of these Xper Modules is equivalent to the functionality on the Xper Module connected in the examination room.

Second or third Xper Module

Xper Pedestal

The Xper Pedestal creates an additional flexible workspot for operating the system in the examination room. The pedestal is equipped with additional Xper Geometry and Imaging Modules and can also hold the X-ray footswitch. Optionally, an additional Xper Module can be mounted on the pedestal. The Xper Pedestal can be positioned freely around the patient table and can be stowed away when not in use.



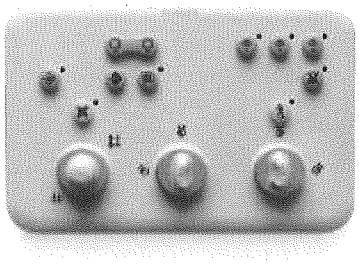
Xper Pedestal

Second Xper Imaging Module

Extension of the imaging controls with a second module in the control room in a master-slave configuration.

Second Xper Geometry Module

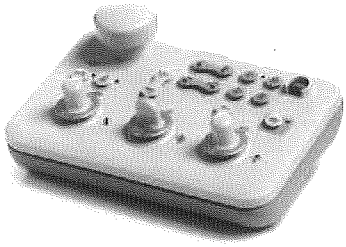
Extension of the geometry controls with a second module in the control room in a master-slave configuration.



Second Xper Imaging Module

Contrast Injectors

The system is optimized for coupling with several contrast injectors.



Second Xper Geometry Module

3 X-ray generation

3.1 X-ray generator

The Velara generator is optimized for the latest interventional X-ray needs.

Features	Specifications
Generated power	Microprocessor-controlled, 100 kW high frequency converter generator
Minimum switching time	Quartz-controlled power-switch, with a minimum switching time of one ms
Voltage range:	40 to 125 kV
Maximum current:	1250 mA at 80 kV
Maximum continuous power:	2.4 kW for 0.5 hours, 2 kW for eight hours
Nominal power (highest electrical power):	100 kW (1000 mA at 100 kV)

With Xper settings on the Xper Module, different exposure protocols can be customized for every clinical application.

3.2 X-ray tube

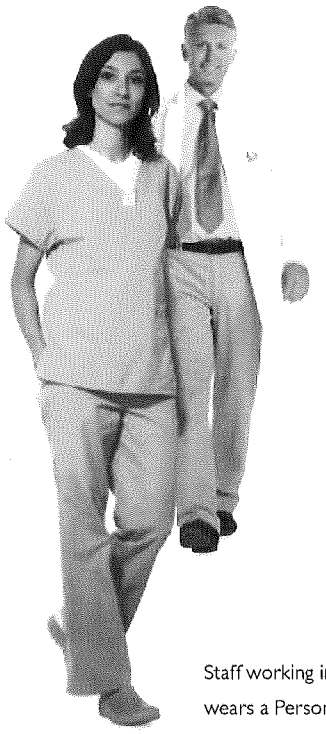
The Allura Xper FD10 is provided with the legendary high power MRC-GS 0508 X-ray tube which allows for very high heat dissipation, enabling SpectraBeam filtration to reduce the patient X-ray dose.

Features	Specifications
Focal spot size and loadability	0.5/0.8 nominal focal spot values with maximal 45 respectively 85 kW loadability
Grid-switched pulsed fluoroscopy	Yes
Fluoro power for 10 minutes	4,500 W
Fluoro power for 20 minutes	3,500 W
Anode heat dissipation	3,200 W
Max. heat dissipation of assembly heat	3,500 W
Maximum Anode cooling rate	910 kHU/min
Extra pre-filtration	SpectraBeam dose management with 0.2, 0.5, and 1.0 mm Copper equivalent SpectraBeam Filters
Cooling liquid	Oil cooled X-ray tube with thermal safety switch
Anode cooling method	Direct anode oil cooling system with 200 mm anode diameter

3.3 DoseWise

DoseWise is a set of techniques, programs, and practices that ensures excellent image quality, while protecting people in X-ray environments. It's a philosophy that drives Philips to develop innovative new strategies in dose management. DoseWise focuses on three highly effective strategies for dose management:

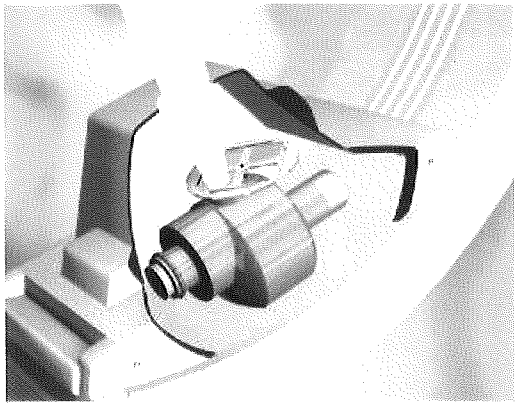
- Smart Beam management: the smart way to remove unwanted "soft" radiation and minimize scatter radiation.
- Less time: gives you a range of automatic exposure controls to maximize dose efficiency.
- More Awareness: clear, real-time information, so you can easily choose the optimal balance between image quality and radiation exposure.



Staff working in an X-ray environment wears a Personal Dose Meter (PDM).

3.4 SpectraBeam

The combination of SpectraBeam with the MRC-GS 0508 tube allows increased X-ray output with better filtration of soft radiation. This reduces patient X-ray dose for interventional X-ray applications, while maintaining the same excellent image quality.



Spectrabeam with unique beam filtration

Xper Beam Shaping

Xper Beam Shaping allows for virtual collimation of the shutters and wedges on the last X-ray image, eliminating additional X-ray dose during collimation changes.

Double shutters / wedge filters

Double wedge filters provide outstanding image quality in all projections. The wedge filters allow exceptional exposure and hence excellent image quality is maintained (with minimal patient entrance X-ray dose).

Anatomical filters

Filters designed to compensate for large absorption differences in the object. There are special filters for cerebral angiography and the optional lower peripheral angiography.

Automatic wedge positioning

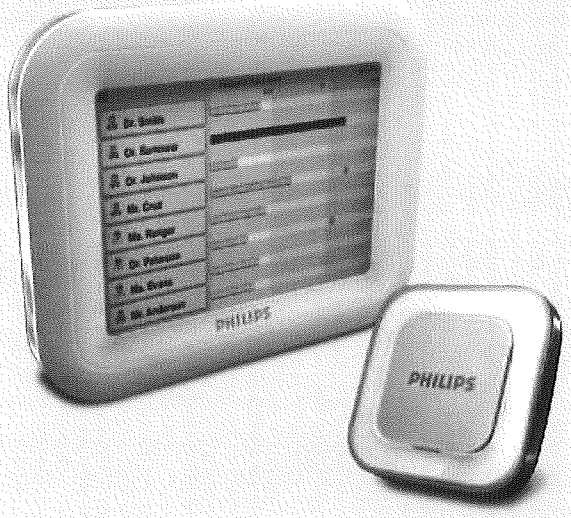
Wedge filters can be positioned automatically according to gantry positions.

Optional

DoseAware

The ability to see your dose exposure in real-time is now possible thanks to Philips DoseAware. An innovative new product that will transform the way you work. Only Philips DoseAware helps to visualize the invisible nature of radiation so clinicians and staff can see it in real time through a simple and easy to read display and immediately act to change their behavior and work patterns.

Staff working in an X-ray environment wears a Personal Dose Meter (PDM). This PDM measures X-ray dose reception and is wirelessly connected to the Base Station. The Base Station is mounted in the examination room where all staff can directly see whether received dose is in the red, yellow or green area. X-ray dose history information can be automatically retrieved from any Base Station of any PDM by using a Cradle with DoseView software of Dose Manager software. Working dose conscious is working healthier.



The BaseStation, a LCD touchscreen displays real time dose data for all PDMs within range, to enable you and your staff to take immediate action. DoseAware does not replace the thermoluminescent dosimeter (TLD) as a legal dose meter.

3.5 X-ray indication

"X-ray On" indicator light

The Allura Xper FD10 has an integrated "X-ray On" indicator light located above the LCD monitors that is clearly visible from virtually anywhere in the room.

Real-time dose information at tableside

Relevant dose information is integrated in the On-Screen User Interface of the LCD exam room monitors of the Allura Xper FD10 system. It provides the user with all relevant X-ray dose information, including accumulated and rate values of patient Air Kerma and X-ray dose area product. In addition, body zone specific X-ray dose rates are displayed for cardiac procedures. X-ray dose rates can be controlled by the user at tableside, by choosing a different fluoro mode.

X-ray dose information in the control room

X-ray dose information is also available in the control room. Cumulative X-ray dose is displayed on the Xper data monitor.

X-ray dose information in the examination report

Examination report data can be provided via the RIS/CIS DICOM two-way interface, to the RIS/CIS (MPPS protocol). A X-ray dose report can optionally be printed or e-mailed (in background) at the end of each examination at the touch of a button. Body zone specific information is included.

Specifications

Copper filters: 0.2, 0.5, and 1.0 mm copper equivalent
The filters can be programmed via Xper settings
Three fluoroscopy modes per application can be selected at tableside

4 Imaging

The Allura Xper FD10 is equipped with a compact dynamic flat detector which can easily handle complex projections. Image quality and X-ray dose reduction are further enhanced by dedicated image processing.

4.1 Dynamic Flat Detector

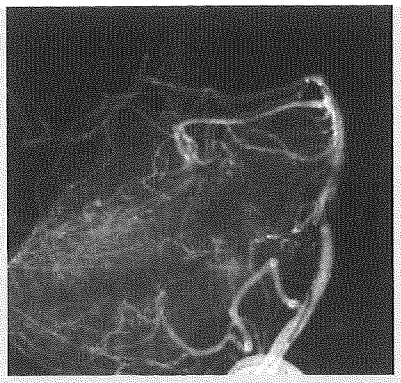
Philips' next generation dynamic flat detector provides excellent image quality at a low patient X-ray dose.

Features	Specifications
Size of detector housing	37 cm (14 inch) diagonal, including BodyGuard
Physical detector size	28 cm (11 inch) diagonal
Maximum field of view	25 cm (10 inch) diagonal square
Image matrix	1024 x 1024 pixels at 14 bits depth
Detector zoom fields	25, 20 and 15 cm (10, 8 and 6 inch) diagonal square formats
Pixel pitch	184 x 184 µm
Detector bit depth	14 bits
Nyquist frequency	2.72 lp/mm
DQE (0)	75% at 0 lp/mm
Digital output	$1k^2$ and 512^2 at 8 or 10 bit depth resolution
MTF at 1 lp/mm	> 60%

4.2 Fluoroscopy

Per application, three fluoro modes are available at tableside which can be programmed via Xper settings. Each mode can be programmed with a different composition of X-ray dose rate, digital processing and filter settings.

Features	Specifications
Extra pre-filtration	SpectraBeam filters: 0.2, 0.5 and 1.0 mm Copper equivalent
Fluoroscopy image processing	Recursive filtering, localized contrast-adaptive contour enhancement, SPIRIT filters and Xres algorithm
Pulse rates	Default at 3.75, 7.5, 15 and 30 pulses per second
Frame grabbing of static fluoroscopy images	Yes
Fluoroscopy storage	Default storage of the last 10 sec, programmable up to 999 images of fluoroscopy for reference or archiving
Grid-switched pulsed fluoroscopy	Yes



The roadmapping tool tailored for specific clinical applications

Optional

Subtraction package

The Digital Subtraction Angiography (DSA) option extends the vascular applicational functionality of the Allura Xper system. DSA features real-time digital subtraction at low frame speeds of 0.5, 1, 2, 3, or 6 frames per second. The DSA programs can be selected via the Xper settings. This option's exposure technique provides exceptional image quality for subtracted images. It also also offers run-subtract to perform subtraction per run. This feature can be applied in the Rotational Scan and Bolus Chase Subtract options.

Roadmap Pro

Advanced subtraction angiography techniques are now being used to support highly complex procedures throughout the body. A roadmap is created by superimposing a live fluoro image on an angiographic image. Roadmap Pro is a software tool that provides a flexible range of features to support all anatomical areas and types of interventions. It offers insight into anatomy, and aids interventionalists in carefully positioning tools and materials, evaluating their effect, and provides information to help their decision making process. Automatic Motion Compensation has been added to the roadmapping functionality. It compensates for subtracted artifacts that might conceal important clinical information during Roadmapping due to small movements of the patient.

SmartMask

SmartMask simplifies roadmapping procedures by overlaying fluoroscopy with a selected reference image on the live monitor. The reference and fluoro images can be faded to taste on the monitors.

4.3 Digital acquisition

The Allura Xper FD10 system can be customized with a virtually unlimited number of acquisition programs for digital angiography and digital subtraction angiography. Image resolution is up to 1024 x 1024 pixels for interventional X-ray imaging. Xres Cardio is a real-time processing algorithm that provides excellent image quality through improved contrast and sharpness. It exploits the benefits of the fully digital detector to reduce noise in clinical images for cardiac applications.

Acquisition frame rates

	1024 x 1024 matrix
Standard configuration	3,75, 7,5, 15 and 30 images/sec.

Up to 60 images/sec. acquisition at a 512 x 512 matrix is optionally available

Storage capacity

	1024 x 1024 matrix
Standard configuration	100.000 images

5 Viewing

5.1 Monitors

The system is delivered standard with two black and white 18 inch LCD monitors in the examination room. A 19 inch LCD color monitor and an 18 inch black and white LCD monitor are standard in the control room.

Monochrome LCD monitor

Features	Specifications
Size of monochrome TFT-LCD display	18 inch monochrome TFT-LCD display
Format	Native format of 1280 x 1024 SXGA
Grey-scale resolution	10 bit with grey-scale correction
Wide viewing angle	Yes (approximately 160°)
High brightness	Yes (max 600 Cd/m², default 500 Cd/m²), with ambient light dependent brightness control
Protection screen	Yes, in the examination room

Color LCD monitor

Features	Specifications
Size of color TFT-LCD display:	18 or 19 inch Color TFT-LCD display
Format	Native format 1280 x 1024 SXGA
Wide viewing angle	Yes (approximately 160°)
High brightness	Controlled brightness (200 Cd/m²) with ambient light dependent brightness control

Optional

Second reference monitor

A second reference monitor (monochrome) in the examination room can display both reference images and reference runs. The User Interface on this reference monitor is accessed via the Xper ViewPad.

Optional

Physio Viewing

Physio Viewing provides acquisition, storage and display of physiological signals on the Allura Xper FD10 system. Four physiological data signals can be acquired and stored. One signal can be displayed when reviewing images. Physio Viewing includes ECG triggering that offers the possibility to acquire one fluoroscopic image per heart cycle, each at the same phase (e.g. end-diastolic or end-systolic). For each heartbeat the system generates a trigger pulse and only one image is acquired.

Acquiring only one image per cardiac cycle phase has two major advantages:

- Drastically reduces patient and physician X-ray dose.
- Cardiac motion is eliminated from the images, caused by the cardiac contraction being visible.

MultiSwitch

Xper MultiSwitch enables the Xper workspot in the control room to be shared with other applications that are loaded on separate PC modalities. The MultiSwitch option lets you switch the color LCD data monitor, keyboard and mouse that are normally connected to the Allura Xper system.

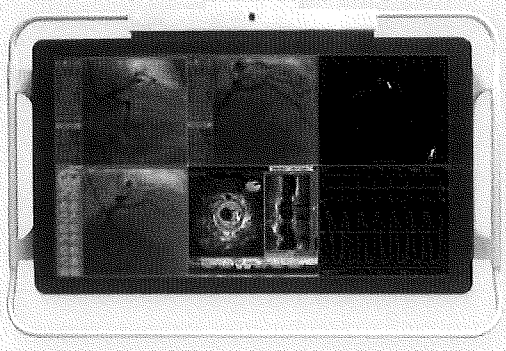
The Xper data monitor can be switched to Radiology/Cardiology Information Systems via the web-based browser (HTML) or X-window (Exceed). It makes full use of the RIS/CIS facilities and existing support for automatic handling of logistic tasks (e.g. automatic tracking, purchasing of supplies and billing) that are available.

MultiVision

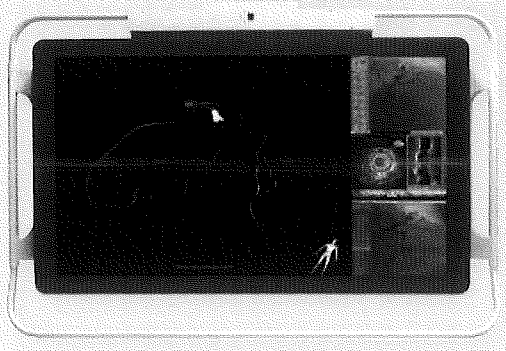
The MultiVision video switch is the integrated video switch for high quality, progressive display video sources on the color LCD monitor. It can switch either black and white or color signals, and supports up to four inputs to one output. MultiVision enables an extra color monitor in the ceiling suspension in the examination room to be shared between the system and other sources, such as a DICOM viewer, StentBoost, Allura 3D-CA software, etc. The switch is controlled via the Xper Module.

FlexVision XL

Philips has introduced a new 56 inch display: FlexVision XL. FlexVision XL is a new viewing concept that provides outstanding viewing flexibility, using a large, high definition LCD screen, it allows you to display multiple images in a variety of layouts - each tailored for your specific procedure.



FlexVision XL allows you to display multiple images in variety of layouts



Now you are able to see a complete overview of all the relevant data and images without having to leave the examination room all the time

6 Additional options

6.1 Subtracted Bolus Chase

Routine examinations can be performed quickly and confidently with Bolus Chase (only for FD10 ceiling). A hand-held speed controller is used to constantly match table speed to the speed of the contrast run-off, which is displayed in real-time on the monitor screen. After the contrast run, the recorded speed profile can be used to acquire mask images with the subtraction results. The result is an efficient, run-off study that may eliminate the need for repeat exposures. Bolus Chase gives fast results for increased patient throughput and improved patient management.

6.2 2D Quantification packages

Quantitative Coronary Analysis (QCA)

This software package provides quantification of stenosis measurements in the coronary arteries. It includes the following functions:

- Diameter measurement along the selected segment
- Cross sectional area
- Percentage of stenosis
- Pressure gradient values
- Stenotic flow reserve
- Calibration routines

Left Ventricular Analysis (LVA)

The Left Ventricular package quantifies the status of the left ventricle using various relevant. It includes the following functions:

- Various Left Ventricular volumes
- Ejection Fraction
- Cardiac Output
- Wall Motion (Centerline, Regional, Slager)
- Calibration routines

Right Ventricular Analysis (RVA)

This software package is used to assess ejection fraction and right ventricular volumes. It allows you to perform right ventricular analysis from angiograms. The calculations can be executed from single plane or biplane projections. The package is intended especially for pediatric cardio applications and focuses on easy and efficient wall contour detection. It includes the following functions:

- Calibration routines
- Various Right Ventricular volumes
- Ejection Fraction
- Cardiac output
- Wall Motion (Centerline, Regional, Slager)
- Biplane Ejection Fraction (automatic and manual)

Quantitative Vascular Analysis (QVA)

QVA is an analytical software package for quantitative analysis. It includes the following functions:

- Calibration routines to enter the scale into the programs (based on the size of the catheter visible in the image).
- Automated Vessel Analysis. This program uses contour detection to calculate vessel dimensions and analyzes stenoses.
- Vessel diameter and stenotic index. This program measures vessel size and calculates the degree of stenosis.

Full Autocal

The Full Autocal option can be used in conjunction with the quantitative analysis packages. When the object to be analyzed (e.g., Left Ventricle, Vessel Segment) is placed in the iso-center, full autocal avoids the need to:

- Acquire an additional image series containing a sphere or grid for calibration purposes, or
- Calibrate manually on a calibration object (e.g., catheter) displayed in the image or image series to be analyzed

Measurement (MEAS)

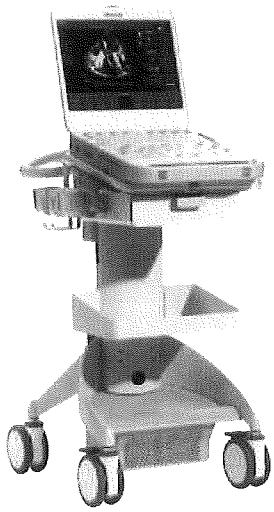
Measurement is an analytical software package for different kinds of measurement, except from stenotic measurements. This option includes angle-, length-, ratio-, and density measurements.

6.3 XperSwing

During a dual axis rotation scan, the G-stand operates on two axes simultaneously, enabling it to swing in a threedimensional arc around the patient, providing a flexibility of movement that allows it to capture the required coronary images in fewer 'runs'. The system rotates with curved trajectories around the patient, thereby allowing imaging in all desired anatomical views in a single run. The trajectories are pre-programmed and are optimized to maximize the clinical image content, while staying within it's boundaries in order to avoid any collisions. Dedicated trajectories are available for the left and the right coronary arteries.

6.4 Rotational scan

Rotation image data can be used for advanced post processings, like 3D reconstructions. Rotational Angiography acquires a range of projections to create real-time, 3D impressions of complex 'vascular' and coronary arteries. A contrast run can be followed up with a mask run to allow image/run subtraction. Rotational Angiography can save considerable time and contrast, while providing the image detail required for diagnostic and therapeutic decisions. A rotational scan can be done in both the head and side positions. The high speed acquisition decreases the amount of contrast medium, while the wide rotation range provides a complete evaluation of anatomy.



The CX50 system can be fully integrated into the Allura Xper system via a one-click connection.

6.5 CX50

To provide additional support for your interventional procedures, you can extend the power of your Allura Xper system with Philips' unique CX50 ultrasound integration solution. The new CX50 is a compact ultrasound system that enables you to have premium image quality ultrasound available right where you need it, when you need it. The CX50 system can be fully integrated into the Allura Xper system via a one-click connection. The CX50 is controlled at the table side by the Xper module with the ultrasound image displayed on the Allura's ceiling suspended monitor system. In addition, all patient data is shared automatically between the X-ray and ultrasound system eliminating workflow duplication.

Features Rotational Angio		Specifications
G-stand in head position	Maximum rotation speed	55°/sec.
	Maximum rotation angle	240°
G-stand in side position (ceiling mounted only)	Maximum rotation speed	30°/sec.
	Maximum rotation angle	90°
Frame speeds		15 to 30 and 60 fps.

Users can designate speed, as well as a start and end position, through Xper settings. The clinical images from the rotational scan can be sent automatically to a 3D-CA interventional tool for a reconstruction of static vasculature.

7 Interventional tools

In close partnership with our clinical partners, Philips continues to enhance the capabilities of the interventional tools on Allura Xper family. Recent Philips innovations have expanded the clinical utilization by continuous improvement of the acquisition protocols and reduction of reconstruction times and expanding the range of applications with e.g. the image guidance on previous acquired high resolution CT and/or MR data sets.

7.1 StentBoost

StentBoost is a simple and cost-effective tool which improves the visualization of stents in the coronary arteries during interventions. It produces an instant and enhanced view of the stent position and deployment while the catheter is still in place, assisting you with stent positioning. With the unique StentBoost Subtract, contrast can be used during acquisition which provides a better visualization of stent-vasculature relationships. The enhanced stent image and the contrast image are superimposed and alternately faded in and out to visualize the stent in relation to the vessel lumen, enabling an enhanced control of the expansion of the stents and of their apposition to the vessel wall. It also provides additional information with the better visibility of stent struts and morphology, and calcification.

- Improves visualization of the stent placement and deployment example during stent-in-stent placement, malapposition and under-expansion of stent due to calcification
- Save time and money by shorting the procedure time and potentially eliminating the use of additional stents.

7.2 Allura 3D-CA

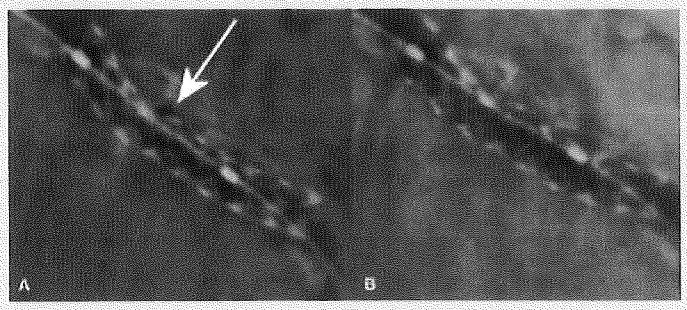
Allura 3D-CA creates a 3D model of 2D coronary artery images. It can help with diagnosis by providing optimal insight into the structure of the coronary tree that leads to enhance assessment of lesions and bifurcations. It also gives you insight into the exceptional working angles.

Enhance interventional preparation to assist the user to:

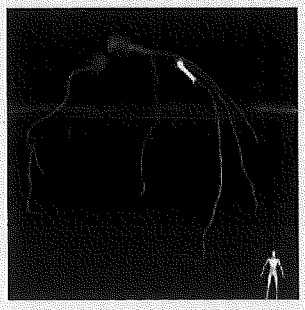
- Select the right stent length
- Select view of lesion or bifurcation with "TrueView" map

Enhance interventional execution to assist you/the physician to:

- Work with optimal viewing angles of lesions and/or bifurcations
- Place the right stent with the right length in the right place



(A) Image after initial stent deployment showing malapposition.
(B) Image after post dilation showing correct apposition of the stent with the vessel wall.



Allura 3D-CA: Create a 3D model of 2D coronary arteries to enhance assessment of lesions and bifurcations

7.3 CT TrueView

CT TrueView connects the Cath lab to the CT room. It provides all the benefits of Allura 3D-CA based on a CT diagnostic image. It offers:

- Optimal G-stand positioning on Philips CT data sets to minimize foreshortening when assessing lesions or bifurcations.
- CTO Navigator provides an overlay of a 2D exposure run over the previous acquired segmented cardiac CT data. The images are matched manually or automatically for images in the same part of the ECG signal.
- Easy to use user interface, on the EBW and interventional tools.

7.4 EP navigator

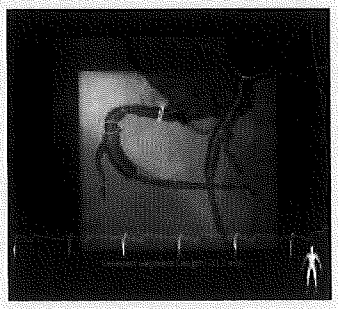
EP navigator provides a fluoroscopy overlay of a 3D image of the heart, based on either a pre-interventional CT image or an 3D atriography acquisition. EP navigator shows the catheters and the 3D anatomy in real-time in one image, allowing electrophysiologists to instantly confirm the position of any catheters or lead with respect to detailed 3D cardiac anatomy in the EP intervention lab.

3D atriography

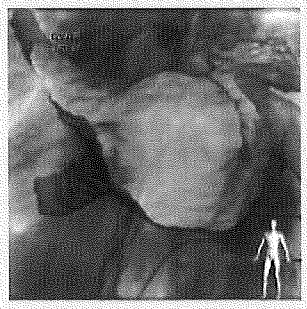
3D atriography allows the user to create a 3D image of the left atrium on the X-ray system in the EP lab by doing a rotational angiography with contrast injection. An up-to-date view of the cardiac anatomy is vital for guiding EP interventions. Obtaining good CT scans is often difficult, time consuming and expensive, and it requires a high X-ray dose. With 3D atriography, you can create 3D images of the left atrium in your own lab and use this information to guide your catheters.

7.5 Allura 3D-RA

Allura 3D-RA provides extensive three-dimensional (3D) visualization into vascular pathologies from a single rotational angiographic X-ray acquisition. Paired with the unique whole body coverage of the Allura, which is specifically designed for 3D-imaging, Allura 3D-RA is able to cover any anatomy, including cerebral, abdominal and peripheral vasculature. The 3D-RA functionality is fully integrated with the Allura system, and can be fully controlled at the table side. 3D-RA volumes can be matched with any previous acquired CT and/or MR scan, to assist with procedure management for aneurysms, AVMs, stroke or surgical planning.



The combination of CT TrueView and CTO Navigator, provides the optimal view and insight to the distal trajectory of the occluded coronary arteries



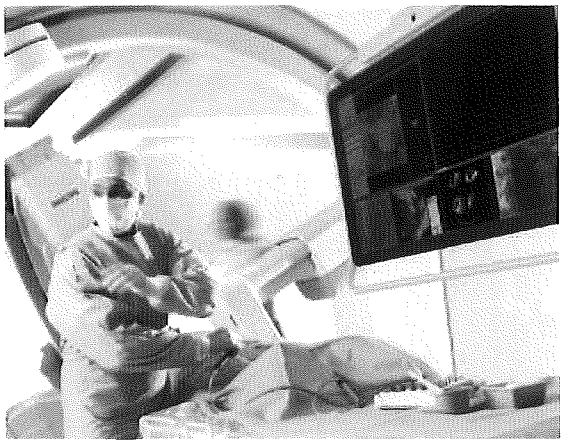
EP Navigator: show the catheters and the 3D anatomy in real-time to confirm the position of the catheters or lead

Excellent image quality of a 3D-RA image showing an aneurysm at the aorta arch

Workflow enhancer options

7.6 EP cockpit

EP cockpit creates a comfortable EP lab working environment, integrates EP information across the EP care cycle and supports new complex therapies.



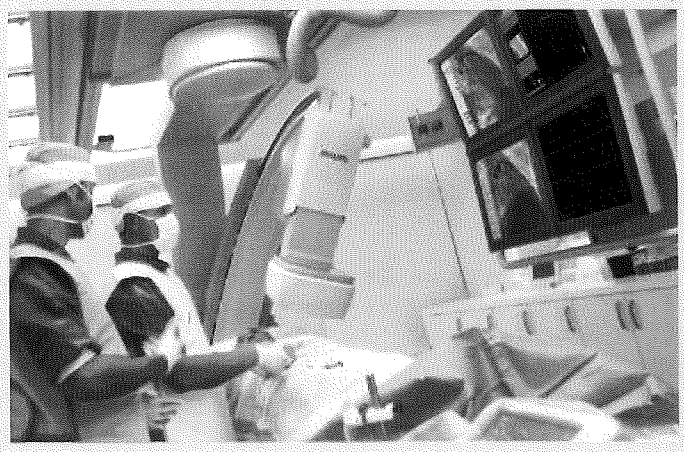
The EP cockpit brings the following innovations to your EP lab

- Organize EP equipment on one moveable ceiling mounted rack to reduce EP clutter
- Mix and match images from Philips and 3rd party equipment on any Philips' exam or control room monitor
- Operate equipment (incl 3rd party systems) centrally from one workspot in control room
- Store and retrieve all information used during EP procedure in a central place
- Reduce radiation exposure for staff and patients by up to 80% with special EP X-ray dose settings
- Resize and enlarge information with EP cockpit XL. The large 56 inch, high resolution colour display, lets you select and personalize all relevant procedure information from up to eight sources simultaneously. With the advanced Super Zoom you can resize and enlarge information at any time and any position on the screen.

Optional

Ambient Experience

Philips Ambient Experience provides a positive environment for patients and healthcare professionals to enhance clinical processes and patient care. Ambient Experience integrates architecture, design and enabling technologies, such as dynamic lighting and sound, to allow patients to personalize their environment and surround themselves in a relaxing atmosphere. Our innovative approaches to enhancing the clinical environment makes the prodecure less stressful and more relaxing for both patients and caregivers. This makes your clinicians' jobs easier, potentially reducing procedure time, and improving workflow. Ambient Experience can lead to greater patient and staff satisfaction, help you attract and retain clinicians, and set your hospital apart from the competition.



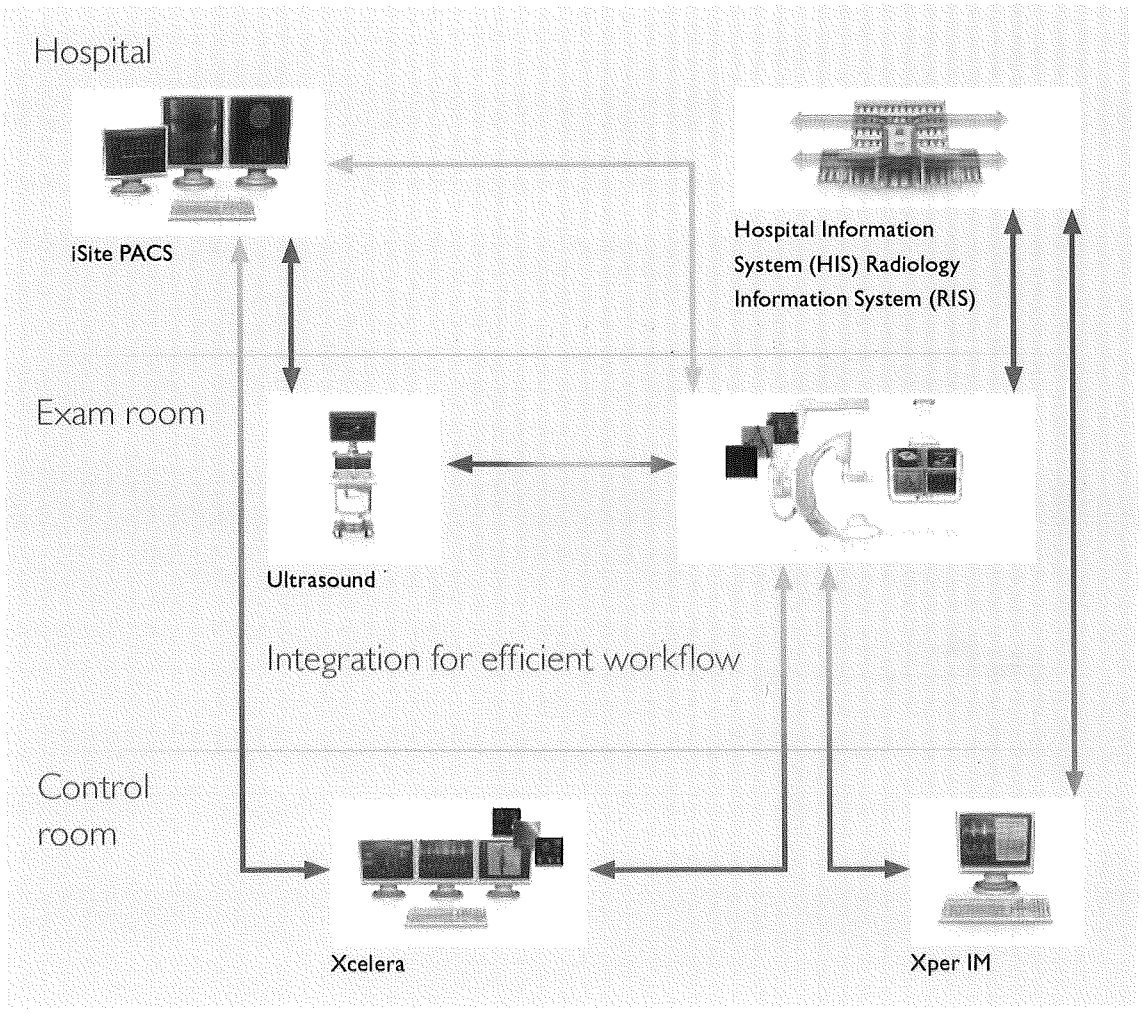
Ambient Experience, a purpose-fully designed environment that makes patients and staff feel more comfortable.

8 Integration solutions

The Xper DICOM Image Interface enables clinical images to be exported to a destination, such as Xcelera or any third party PACS. The system exports clinical studies in DICOM XA Multi Frame or DICOM Secondary Capture formats.

The Xper DICOM Image Interface speeds up image transfer through its fast Ethernet link, making images available on-line within seconds. The archiving process can be configured via Xper settings:

- The image archiving is done in the background during or after the procedure
- The images can be archived automatically in the background with the Continuous Autopush option
- The export format is configurable in 512^2 and 1024^2 matrix
- The Xper DICOM Image Interface can distribute the examination images to multiple destinations for archiving and reviewing purposes
- The Xper DICOM Image Interface provides DICOM Store and DICOM Store Commitment Services
- The Query/Retrieve function allows older DICOM studies to be uploaded in the system



Optional

Continuous autopush

This option provides an additional processor board that is dedicated to archiving. This minimizes interruptions that are caused by other functions that require the image processor, such as patient review. Using the continuous autopush option speeds up archiving and availability of clinical images for review at other PACS destinations.

DICOM Print

DICOM Print provides an interface to any DICOM Printer. It provides Print Preview, Print Compose, Print Manual Overrides, Print Job submission, and Print Job management via automated printing protocols.

Intercom

The remote Intercom is used for communication between the examination and control room.

Lab reporting

This option allows the clinical user to generate and print a report in modality stand-alone situations. The user can incorporate free text, clinical images and X-ray dose information. The report is printed or sent by e-mail. Part of the report is generated automatically from administrative data (e.g. patient/exam data, hospital name) and acquired data (e.g. run log, X-ray dose information and event log).

RIS/CIS DICOM Interface

This interface option enables two-way communication between the FD10 and a local Information System (CIS or RIS) or hemodynamic system. The interface uses the DICOM Worklist Management (DICOM WLM) and Modality Performed Procedure Step (DICOM MPPS) standards. If an information system is present, it is possible to receive patient and examination (request) information and to report examination results.

This option provides the following benefits:

- Eliminates the need to retype patient information on the system
- Can help prevent errors in typing patient name or registration number, which allows for consistency of information throughout the department to prevent problems in archive clusters
- Provides information to and from the information system about the acquired images and radiation dose. Upon request from the system, the complete worklist with all relevant patient and examination data is returned to the system.

Standard line rate video output

The standard line rate video output option is 625 (525) lines for a 50 (60) Hz video output unit. This option is required to connect a medical DVD/VCR or an additional TV monitor. This option enables you to store fluoro and acquisition data on a DVD/CD as X-ray is being generated during fluoroscopy and exposure.

Cath lab experience

The Philips cath lab experience is based on a simple yet powerful concept: The procedures you perform are increasingly complex, so using advanced technologies that assist you in diagnosing and treating your patients should not be. Our offerings for interventional X-ray interventions are designed to simplify cath lab workflow, and may help you deliver faster, accurate diagnosis and treatment.

With advanced image acquisition and visualization tools, multimodality access, hemodynamic monitoring and integrated reporting, the Philips cath lab experience creates a fluid workflow that works for you and your patients.

Xcelera

The ultimate goal of using information solutions is to streamline workflow and provide access to all relevant images and information at one location. Philips can help you do just that with one of the most interfaced interventional X-ray image management and reporting solutions on the market. Philips unites interventional X-ray care, offering one access point for all relevant information - X-ray, ultrasound, CT, MR, nuclear medicine, ECG, and electrophysiology. One workspace for documentation, viewing, quantification and reporting tasks. Philips gives you everything you need to manage and enhance your interventional X-ray operations.

9 Services

Services – a full lifecycle solution

The success of your organization depends on people. Philips Services are designed with that in mind – creating healing environments, developing your staff, improving your organization's performance, and increasing patient satisfaction.

Depend on us. The resources, training, and support we offer enable you to focus on what's most important – your patients.

Philips provides a full lifecycle solution designed around your patients, your people, and your organization. We help you succeed in every phase of system ownership, from planning to start-up, through peak usage and renewal.

Planning

Understand how and when the right equipment and services contribute to better patient care and better economics.

Start-up

Make the most of your system as quickly as possible.

Peak Usage

Extract maximum utility out of your system day to day.

Renewal

We'll help you make smart decisions on upgrading or transitioning to a new system.

asimpleswitch.com

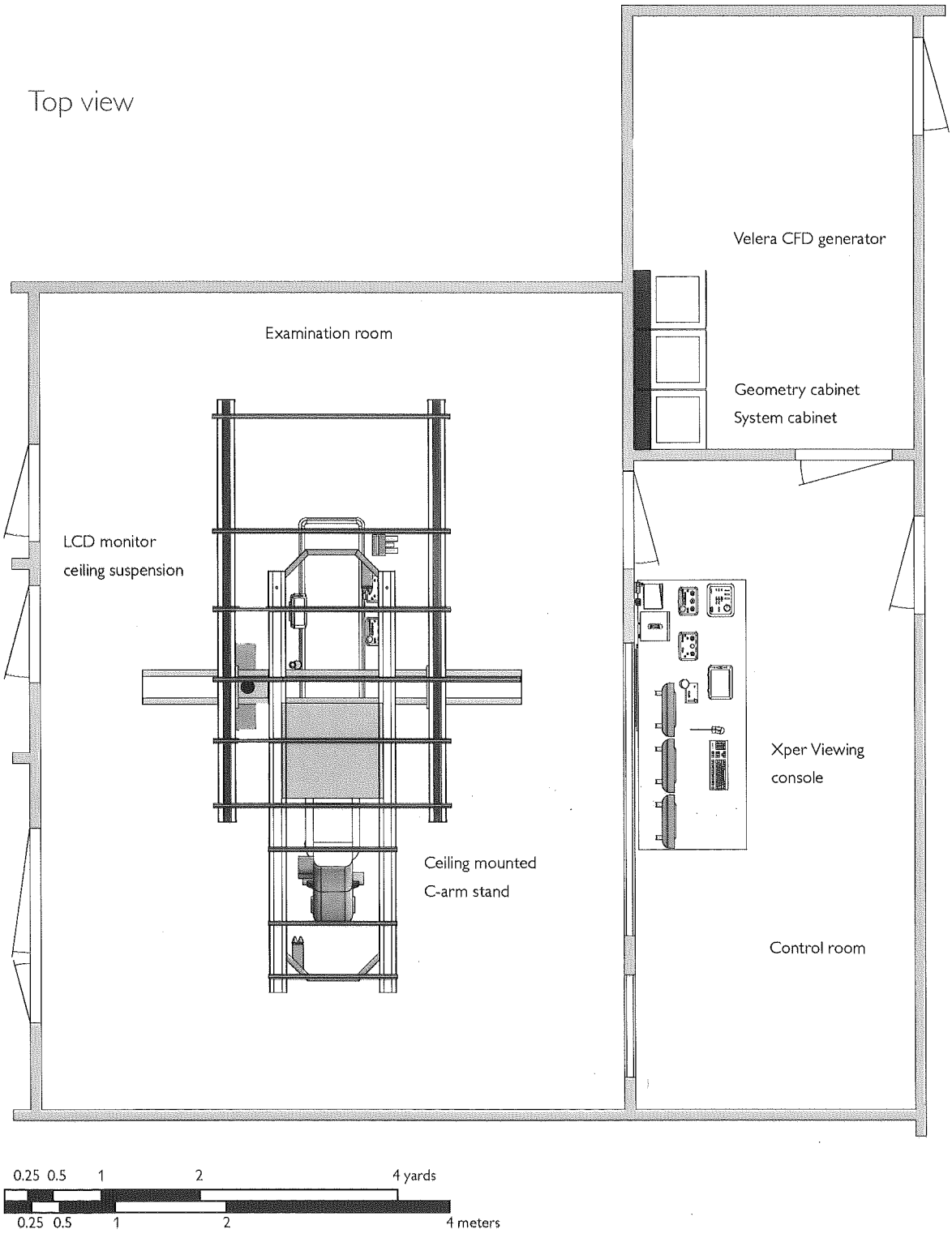
Our Allura Xper FD10 is labeled as being a Green Product. The Allura Xper FD10 saves you at least 12% energy, and 5% is related to the use of LCD monitors. An optimal counter balance design has resulted in eliminating 83% of the total lead content thus reducing the amount of lead to an absolute minimum for specific applications only (e.g. X-ray shielding).

Hazardous substances

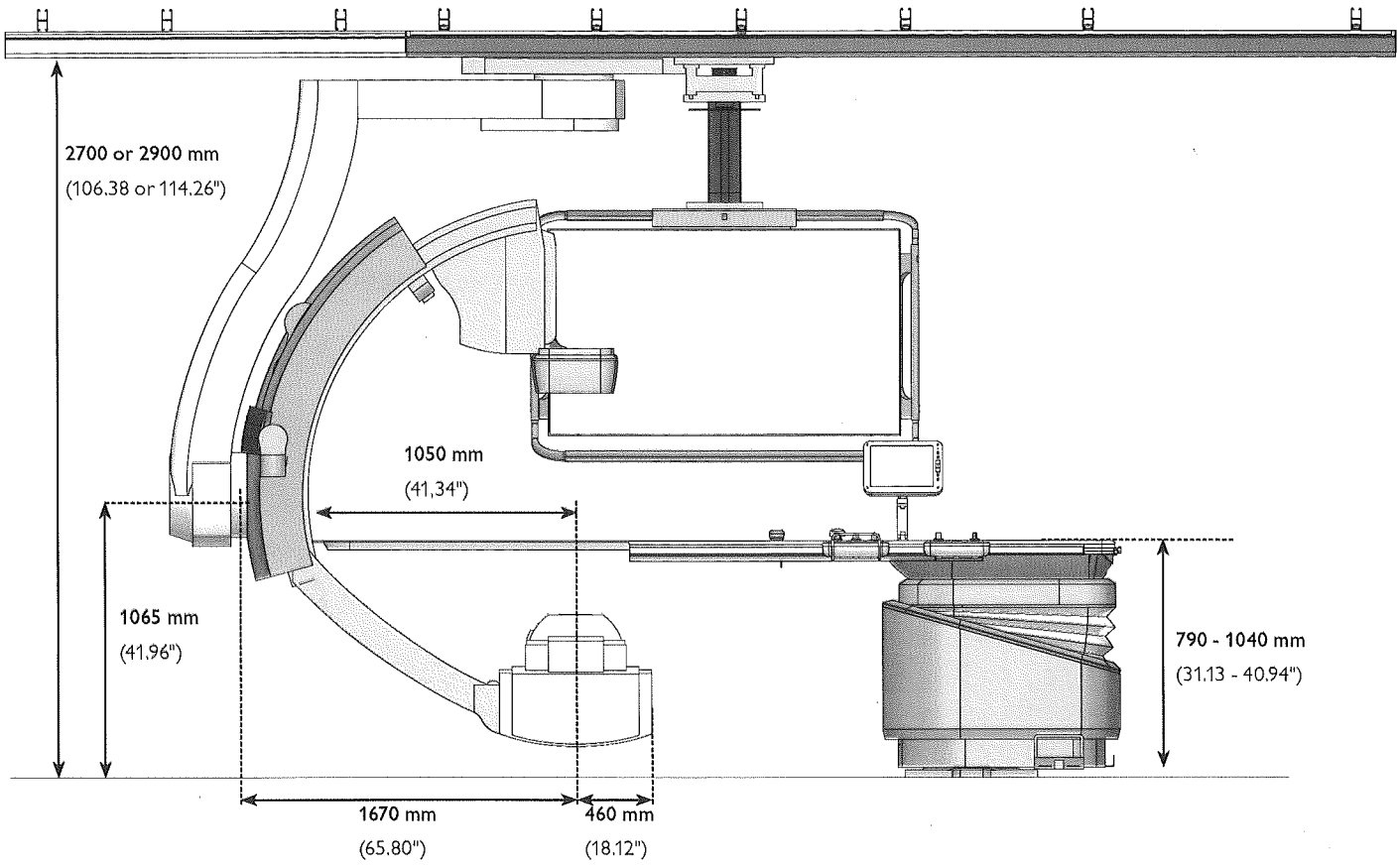
Energy efficiency

10 Room layout

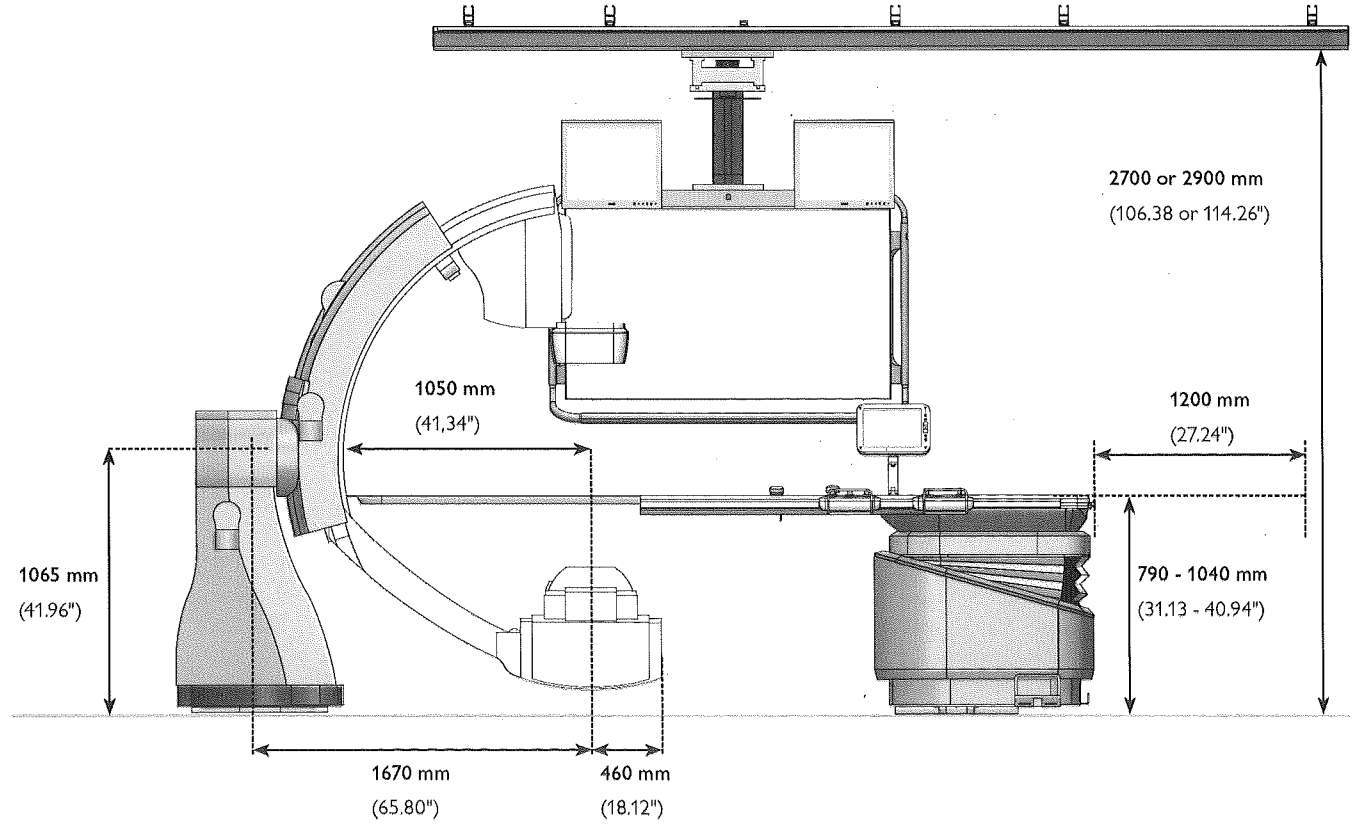
Top view



Front view ceiling mounted



Front view floor mounted



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Royal Philips Electronics

How to reach us
www.philips.com/healthcare
healthcare@philips.com

Asia
+49 7031 463 2254

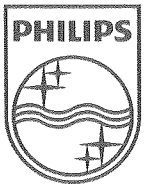
Europe, Middle East, Africa
+49 7031 463 2254

Latin America
+55 11 2125 0744

North America
+1 425 487 7000
800 285 5585 (toll free, US only)

asimpleswitch.com

Please visit www.philips.com/interventionalxray



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