

VAMC KANSAS CITY, MO
PO# 589-B30015

Line #	Part #	Description	Qty
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1		30Fr/sec Extension	1
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Frame Rate Extension increases the system acquisition speed for cardiac applications that require high speed imaging. The frame rate extension increases the acquisition speed to 15fps and 30fps with a 1024x1024 matrix.

2		AlluraClarity FD20 F	1
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The AlluraClarity FD20 (Floor) single-plane cardiovascular system comprises a ceiling mounted C-arm stand and digital imaging X-ray system for cardiovascular diagnostic and interventional procedures.

ClarityIQ technology is the foundation of AlluraClarity systems touching every part of the imaging system.

ClarityIQ incorporates powerful state-of-the-art image processing technology, developed by Philips research, all working in real-time enabled by the latest computing technology:-

- Noise and artifact reduction, also on moving structures and objects
- Image enhancement and edge sharpening;
 - Automatic real-time patient and accidental table motion correction on live images.
- Flexible digital imaging pipeline
- ClarityIQ systems have a flexible digital imaging pipeline from tube to display that is tailored for each and every application area such as Cardio or Neuro. This gives the flexibility to select virtually unlimited application-specific configurations.
- With ClarityIQ over 500 system parameters are fine-tuned for each application area; the result of years of Philips clinical leadership. It is now possible to filter out more X-ray radiation, use smaller focal spot sizes, shorter pulses, thereby fully utilizing the unique capabilities of the Philips MRC X-ray tube.

The AlluraClarity FD20 (Floor) 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 FD20 Stand

The Allura stand consists of a floor-mounted C-arm. The stand has the following capability:

- The L-arm can be rotated allowing a three-sided patient approach.
 - L-arm rotation around the patient table: +90, 0, -90 degrees.
 - L-arm rotation movement: motorized and manual

The Allura stand allows a very wide range of projections, including PA and AP imaging.

- In the head position (0 degrees position, L-arm parallel to patient table):
 - C-arm rotation range (degrees): 120 LAO to 185 RAO

- C-arm angulation range (degrees): 90 CA to 90 CR
- (Full angulation capability determined by patient position)
- In the side position (+90 / -90 degrees position, L-arm perpendicular to patient table):
 - C-arm rotation range (degrees): 90 LAO to 90 RAO
 - C-arm angulation range (degrees): 185 CA to 120 CR or 120 CA to 185 CR
 - (Full angulation capability determined by patient position)
- The stand provides fully motorized fast movements with variable and configurable maximum speed.
 - Variable C-arm rotation speed, up to: 25 degrees/s
 - Variable C-arm angulation speed, up to: 18 degrees/s
- L-arm rotation motorized and manual
- C-arm depth is 90 cm
- The FD20 Dynamic Flat Detector features Xper Access which allows the flat detector to be positioned in either portrait or landscape imaging modes in 3 seconds.
- The variable source image distance between focus and Dynamic Flat Detector input screen is motorized from 89.5 to 119.5 cm.
- The stand features BodyGuard a capacitive sensing collision avoidance system for patient protection.

Patient support

The Xper Table

Patient support with flat carbon fiber tabletop

- Table top length of 319 cm, width 50 cm
- Metal-free overhang 125 cm
- Floating table-top movement of 120 cm longitudinal and 35 cm transversal range.
- Motorized height adjustment from 79 to 107 cm
- Maximum cantilever of 223 cm , for full patient coverage
- Maximum patient weight 250 kg with 25 kg of accessories plus 500 N for CPR in any longitudinal position of the table top
- Xper Geometry and Imaging Modules for exam room controls.
 - The operating modules can be attached to either side of the table.

Patient Support Accessories set

- One cerebral filter
- Three rail accessory clamps
- One IV stand
- One slow recovery foam mattress
- One Set of Arm Supports (FCV0248)
- One Set of Patient Straps (FCV0250)
- One Head Support (FCV0251)
- One Arm Support (FCV0258)
- One Table-mounted Radiation Shield
- One anti-fatigue mat with Philips logo

X-ray Generation

The AlluraClarity FD20 comprises an integrated dedicated X-ray system, micro-processor controlled Velara CFD generator based on high frequency converter technique. The user interface

control of this X-ray Generator is incorporated in the Xper module, Xper Desktop Viewing Console, and the Xper on-screen displays.

The Velara CFD generator comprises:

- X-ray generator 100 kW
- Voltage range is 40 - 125 kV
- Maximum current 1250 mA at 80 kV
- Program selection
 - Pulsed X-ray for pulsed fluoroscopy; 3.75, 7.5, 15 and 30 frames/s
 - Pulsed X-ray for (subtracted) acquisition up to 6 frames/s for vascular applications
 - Minimum exposure time of 1 ms
 - Automatic kV and mA control for optimal image quality prior to run to save dose
 - An X-ray depth collimator with two semi-transparent wedged filters with manual and automatic positioning
 - SpectraBeam filtering of low energy radiation to optimize image quality and dose efficiency with MRC-GS 0407 X-ray tube.
 - Grid switching at dynamic pulsed fluoroscopy
 - Xper Beam Shaping, positioning of both shutters and wedges on the Last image Hold without the need for X-ray radiation

Fluoroscopy

- Three programmable fluoroscopy modes
 - Each mode can be set to different composition of dose rate, pulse speed, filter setting, and image processing (noise reduction, adaptive contour enhancement, and adaptive harmonization).
 - Roadmap Pro
 - Roadmap Pro can be selected from the Xper imaging module and/or Xper module.
 - A vessel map is created and superimposed with (un)subtracted live fluoroscopy. Acquisition runs can be done during Roadmap without losing the vessel map. Roadmap Pro features Smart Settings in special clinical modes that are optimized to visualize special materials such as coils and glue. Live processing of the vessel map, the device map and the landmark map can be done on the Xper Module. Xres for vascular procedures is standard part of Roadmap Pro.
 - **Disclaimer:** AMC only corrects movement artifacts in two dimensions. Three dimensional movements such as swallowing or rotation of the head cannot be corrected.
 - In Roadmap Pro R2 "Automatic Motion Compensation" (AMC) is added to the roadmap functionality. During roadmap, small movements of the patient can lead to subtraction artifacts. These artifacts might conceal important clinical information. "Automatic Motion Compensation" compensates for rigid, uniform (skeletal/table) translations and is therefore very effective in interventional (neurology) applications where subtraction imaging is applied.
 - Disclaimer: AMC only corrects movement artifacts in 2 dimensions. 3 dimensional movements like swallowing or rotation of the head cannot be corrected.
 - Xper Fluoro Storage, a grab function allows storage and archiving of both a fluoro image and the last 20 seconds of Fluoroscopy, called Xper Fluoro Storage. These fluoro images or fluoro runs can be archived as a regular exposure run.
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X-ray tube

The AlluraClarity FD20 has the Maximus ROTALIX Ceramic grid switch tube assembly MRC 200 GS 0407 integrated in the C-arc. This MRC tube has an anode heat storage capacity of 2.4 MHU and 0.4/0.7 mm. nominal focal spot values. The tube has a maximal loading of 30 and 67 kW.

Dynamic pulsed fluoroscopy uses grid switching technology to eliminate soft radiation and improve image quality. SpectraBeam allows for filtration of the x-ray beam with (a combination of) 0.2, 0.5 or 1 mm CU-equivalent filters.

Tube housing ROT-GS 1004 is for oil-cooling and has a build-in thermal safety switch. A rotor control unit is build-in for continuous rotation of the anode disk. The heat exchanger CU 3101 is for direct and continuous forced cooling with oil.

IMAGE DETECTION

The Allura Xper FD20 comprises the following image detection chain:

- A 30 cm by 40 cm FD20 Dynamic Flat Detector with eight imaging modes.
 - 30 x 38, 30 x 30, 26 x 26, 22 x 22, 19 x 19, 16 x 16, 13.5 x 13.5, and 11 x 11 cm
- The digital output of the FD20 flat detector is 2k x 2.5k image matrix at 14 bits depth for the largest mode
- The flat detector subsystem features Xper Access, the detector can be rotated over 90 degrees, it moves from portrait to landscape back & forth
- DQE (Detective Quantum Efficiency) >73 %
- The pixel pitch: 154 x 154 microns

Viewing

The AlluraClarity FD20 comprises the following components in order to display the clinical images in the control and examination room:

Displays

Examination Room

Two 18-inch monochrome LCD monitors designed for medical applications. The first display is used for viewing live images. The second display is the reference monitor.

- 18-inch monochrome TFT-LCD display with a 160 degree viewing angle.
- 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 3, 4, 6 or 8 18-inch 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.

- Of the two medical monochrome LCD monitors included in the MCS, one is used for viewing of live images and the other serves as the first reference display. Reference images or runs are 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. For cardiac applications, the system also monitors and displays body zone specific Air Kerma data (10 zones).
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Control Room

One 19-inch color LCD monitor used as a data monitor.

- 19-inch color TFT-LCD display
- Native format 1280x1024 SXGA

One 18-inch monochrome LCD monitor (Xper review monitor) designed for medical applications.

- 18-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.

The Graphical User Interface on the monochrome monitor has the following features and functions:

- Step through file, run, or images
- File, and run overview
- Contrast, brightness, and edge enhancement settings
- Flagging of runs or images for transfer
- Applying text annotation in images
- Optional DICOM printing
- Executing Quantitative Analysis Packages if available
- Subtraction functionality
- Zoom/pan functionality
- Electronic shutters
- Video invert
- View trace, stacking of images
- Landmarking

Acquisition

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

Exposure techniques:

- Serial imaging for DA and DSA with automatic exposure setting
- Single shot mode
- Acquisition frame rates: 0.5 to 6 images/s at 2048 x 2048, 12-bit matrix

The AlluraClarity FD20 offers a storage capacity of:

- 50,000 images at matrix size of 1024 x 1024
- 12,500 images at matrix size of 2048 x 2048
- Maximum number of examinations is 999, with no limit to the maximum number of images per examination

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 uses User Interface modules in the Examination Room with On-Screen Display.

The On-Screen Display is positioned on the left side of the reference monitor. The following system information is displayed

- X-ray indicator and X-ray tube temperature condition
- Gantry position in rotation, angulation, and Source Image Distance
- Detector field size display
- General System messages
- Selected Frame speed
- Fluoroscopy mode
- Integrated fluoroscopy time
- Skin Dose and Dose Area Product
- Stopwatch

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
- Laser pointer, intended to point at regions of interest on the imaging monitors
 - LED indication of laser pointer on/off and battery low
- Subtraction on/off
- Remasking
- Landmarking

Remote Intercom

The 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.

Table Side Modules

Two Xper Modules are provided for use. The first Xper Module is mounted tableside. The Second Xper Module (NCVA778) is located in the control room. These modules use 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
 - Image Processing
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The Xper Geometry module can be positioned on all sides of the patient table, while keeping the button operation intuitive. The Xper Geometry module 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 module can also be positioned on three sides of the patient table, while keeping the button operation intuitive. The Xper Imaging module 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
- Shutter positioning
- Reset of the fluoroscopy buzzer

Pan Handle (NCVA081)

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

Control Room

The control room comprises a Xper Review Module, Xper Desktop Module, a keyboard, and 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) and 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

Scheduling

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

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, like 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 own room protocols. This preparation page makes hard copies of the protocol instructions redundant.

Acquisition

The acquisition page contains information on the current selected patient.

Review

The review page allows for reviewing of patients:

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

Radiation Dose Structured Report

Collection of dose relevant parameters and settings and export to a DICOM database (e.g. PACS, RIS), according IEC60601-2-43, 2nd Edition.

The reported data can be used for, for example:

- Quality improvement: evaluating trends in X-ray dose performance per facility, system and operator.
- RDSR enables analysis of average dose levels & variance for routinely performed exams and procedures.
- Typical system usage can be extracted from the data.

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, archive formats can be selected to the individual needs and wishes for programming under the Xper Settings,

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, 1024x1024 2048 x 2048 (unprocessed) matrix.
- 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.

Remote Service

Access to the system from a Remote location is possible via network or modem connection. Remote access to a system can shorten the time needed for e.g. changing system settings or problem diagnosis.

Clinical Education Program for the Allura Xper System

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.

In the event that an EP Navigator workstation has also been ordered, the offsite training course will be tailored to focus on the electrophysiology functionality of the FD system and the EPN workstation.

In the event that your main FD system will be dedicated to Cardiac applications your offsite training course will be tailored to focus on the Cardiac functionality.

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 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).** Education expires one (1) year from equipment installation date (or purchase date if sold separately). Ref #106107-110915

3

Xper PM5 on XperModule

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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

4

Isolated Wall Connection Box

4

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 quantity 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 Vascular 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 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

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MultiVision 4x 1

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MultiVision is the integrated video switch for high quality Progressive Display video sources. It can switch either B&W (RGB based) or color signals, with up to 4 inputs to one output.

MultiVision allows to share a Reference Display- or extra color monitor in the ceiling suspension in the exam room between the Xray system and other sources, such as a Xcelera viewstation, an Ultrasound system, a Interventional Tools station (like StentBoost, 3D CA) etc. These sources can be

allocated in the exam room or in the control room of the cath lab.

The switch is controlled by a button on the Xper Module. MultiVision provides a black image when a not operational input is selected.

Each external video source requires a Wall Connection box (not included in the MultiVision package) for the connection to a MultiVision input: only the Xper 2nd Ref Display as possible source does not require such box. The wall connection box also provides 230 V Power Supply for the connected video sources; however, in total maximum 1400 W can be supplied to the sources all together.

Comprising:

- video switch unit with cabling for max 4 B&W- or Color sources
- soft key button implemented on the Xper Module

Compatible with:

- Allura Xper series Rel 3 (monoplane versions) resp Rel2 (biplane versions) onwards.

- external video sources that comply with following requirements:
 - qualified medical electrical equipment [IEC 60601-1], or IEC 950 equipment combined with a multiple socket outlet [IEC 60601-1]
 - can be connected to the same earth as the Philips Protective Conductor Bar (PPCB).
 - provide video-output that matches the display range of the XB monitor or Colour

Monitor that is used for display

- provide a slave monitor output

Power requirements: refer to system configuration

6 **Legacy Video Convertor** 2

Legacy Video Convertor

The Legacy Video Convertor 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

7 **RIS / CIS DICOM interface** 1

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 or to search for a 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
- 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 with DICOM Work List Management and Modality Performed Procedure Step.

Lab Reporting allows the user to generate and print simple reports in modality stand-alone situations. The user is able to incorporate free text and clinical images. The reporting functionality is suited for local printing and email. Part of the report is generated automatically from administrative data (e.g. patient/exam data hospital name) and required data (e.g. run-log dose information and event-log).

Rotational angiography provides real-time 3D impressions of complex vasculature and coronary artery tree. It acquires multiple projections with just one contrast injection via a fast rotational scan of the region of interest.

Rotational Angiography 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 Angiography can save considerable time, dose and contrast, while providing image detail required for diagnostic and therapeutic decisions.

A rotational 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.

C-arm in side position:

- Max. rotation Speed: 30 degrees/s
- Max. rotation Angle: 180 degrees

C-arm in head position:

- Max. rotation Speed: 55 degrees/s
- Max. rotation Angle: 305 degrees

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.

A contrast run can be followed up with a mask run, to allow image/run subtraction.

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 Rotational Angiography is extremely easy. The procedure is selected, set up and executed virtually in 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 end- and start-positions are easily selected. The procedure is controlled from the exposure hand- or footswitch.

XperSwing allows dual-axis rotational coronary angiography to gather more information in less time and with less X-ray and contrast dose. XperSwing acquires simultaneous RAO/LAO cranial-caudal views in just one acquisition run by moving the C-arm in a curved trajectory instead of multiple acquisitions. XperSwing 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, providing image detail required for diagnostic and therapeutic decisions and to obtain a real-time 3D impression of the coronary artery tree.

In total seven pre-programmed trajectories are available:

- Three for Left coronary imaging
- Two for Right Coronary imaging,
- Two generic trajectories.

The choice depends on size and weight of the patient. These trajectories are designed to fully cover all conventional projections for a diagnostic coronary angiography. Rotation and angulation movements are combined in one complete scan trajectory, using the maximum rotation and angulation speed of the Allura Xper system. (55 resp 30 degr/sec). XperSwing is possible in the side position (ceiling mounted systems) and in the head position

XperSwing functionality includes, but is not limited to

- 15 frames per seconds acquisition to allows using of less contrast.
- Wide rotation range provides a complete evaluation of the anatomy.
- Precise positioning and high reproducibility, assuring you of high quality images and excellent subtraction studies.
- Set up and executed in a matter of seconds.
- Set of dedicated acquisition programs with the trajectories available on the Xper Module
- The rotation end- and start-positions can be selected.
- Acquisition procedure is controlled from the exposure hand or footswitch.

For visualization of vessel structures when the blood flow is difficult to estimate, in particular in the lower peripherals.

Bolus Chase solves the problem of cumbersome step movements, the mismatch between blood flow and selected program, and lack of real-time image information.

During digital acquisition in non-subtracted mode with uninterrupted real-time image display, the contrast bolus is followed (chased) interactively by a motorized table scan movement using a hand-hold speedcontroller to adapt the speed of the table scan to the contrast flow. The framespeed can be adapted as well.

The bolus run is followed with a mask run while using the same speedcurve and framespeed as generated during the bolus run. Viewing is possible in the subtracted and non-subtracted mode. If subtracted viewing is not required, the mask run can be skipped.

Subtracted Bolus Chase gives fast, accurate results for increased patient throughput and improved patient management. Automated exposure control and precise speed control assure a high quality images and excellent subtraction studies.

Comprising:

- automatic exposure control
- tabletop motordrive and hand-held speed controller (tableside)
- technique selection using Xper module, available both tableside and in control room (Xper FD20, FD20/10)

12 CO2 View Trace Software 1

Software package which enables tracing (stacking) of images acquired with CO2 injections. This function can be used during postprocessing next to view trace of images acquired with iodine injection.

13 FD Dual Fluoro 1

Dual Fluoro for Flat detector systems

The Dual Fluoroscopy mode allows digitally processed fluoroscopy in parallel with trace subtract fluoroscopy, providing a non subtracted reference fluoro image for complex interventions.

This option provides an additional fluoro channel in parallel to the default fluoro channel. The Dual fluoroscopy mode is selected via the Xper module.

The trace subtracted fluoro image will be displayed on the exam monitor, the non-subtracted fluoro image is displayed on the reference monitor.

In Dual Fluoro mode, The fluoroscopy image on the exam monitor can be zoomed digitally with a factor 2, providing a larger view of the region of interest for complex interventions. The fluoro zoom function is controlled via the Xper module.

14 FD SmartMask 1

SmartMask simplifies roadmapping procedures by overlaying a selected reference image with fluoroscopy on the live monitor in the exam room.

The reference image can be faded in/out with variable intensity, controlled from tableside.

SmartMask uses the reference image displayed on the reference monitor.

Any previously acquired image can be used as reference.

SmartMask facilitates pre- and post- intervention comparisons to assess treatment results

15 FULL AUTOCAL 1

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

16 Ventricular Quant.Sw pkg(Xper) 1

Left Ventricular Quantification Software Package. Software package for the analysis of single plane Left ventricular angiograms. Calculates the Ejection fraction and local wall motion parameters in different formats.

Functions:

- Various LV-volumes
-

- Ejection Fraction
- Cardiac Output
- Centerline Wall Motion
- Slager Wall Motion
- Regional Wall Motion
- 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:

- 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

17 **Coronary Quant.Sw pkg(Xper)** 1

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:

- 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

18 **Vascular Quant.Sw pkg(Xper)** 1

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

- 19 Xcelera on Xper Module 1**
- This option integrates the Xcelera network application in the Allura Xper system. It allows operation of the Xcelera viewer with the Xper module in the examination room during an examination. Display of Xcelera imaging in the examination room has to be arranged for the monitor ceiling suspension with an additional monitor or with MultiVision (sharing an existing monitor). Following Xcelera viewing functions are available on the Xper module:
- study selection
 - replay control (start/stop/autocycle, run step, image step)
 - Report selection (with page step, close report)
 - image settings (adjust Contrast, Brightness, Edge enhancement) and reset to original settings
- 20 Peripheral X-ray Filter 1**
- Set of flexible x-ray filters to provide an uniform density in angiographic examinations of the lower peripheral area. Comprising:
- one central filter, at the top edge provided with sizing markers at every 5 cm, length : 1 m
 - two side filters, length: 1 m
- 21 Swivel for table base. 1**
- For angiographic- and interventional procedures of the upper and lower peripherals, in systems with the floor-mounted C-arm. Allows:
- Motorized longitudinal movement of the table base of 78.2 cm with locks on both end positions. Pivoting of the table base around its vertical axis. Pivot range is 180 degrees counter clock wise and 90 degrees clockwise with swivel the table height range is 83-111 mm or 87-112 mm with tilt and/or cradle (optional).
- 22 19" Color LCD monitor in Exam Room 2**
- 19" Color LCD monitor in Exam Room
- 19" flat panel color monitor. This LCD monitor is intended for viewing in the examination room and is designed for medical applications. The main characteristics are:
- 19 inch Color TFT-LCD display
 - Native format 1280x1024 SXGA
 - Wide viewing angle (approx 170 degr)
 - operated Brightness level 200 Cd/m²
 - On Screen Display of control functions operated via touch buttons on front
 - Internal power supply (90-264 VAC)
- Compatible with:
Standard PC format (RGBHV)
-

DVI interface standard
 UL60601-1
 Allura Cardio/Vascular systems
 Mains connection: 110 - 240 V
 Dimensions : 425(W)x375(H)x97(D) mm
 Weight: 7 kg.
 Colour: mushroom, front ultra dark grey

23	Two rows of 2 (4M)	1
24	Rad Shield w/ Arm (Contoured) 61X76	1
	Contoured Rad Shield with Arm rest. 61X76	
25	Cable Spooler	1
26	M LED 3MC Light	1
	MAVIG M3 MC LED - Multi Color / power Supply Included Includes Portegra2 Ext Spring Arm 75/90cm	
27	Exam Lamp 220v	1
	Spring arm mounted examination light for cardiovascular applications	
28	Portegra 2 360 Ceiling Column	2
	Portegra 2 360 Column w/ trolley and ceiling track	