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V.A. Medical Center

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Line #	Description	Qty
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1	Azurion 7 C20	1
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Advanced solution for vascular, non-vascular, embolization to interventional oncology procedures
Key benefits

- Optimized utilization of your lab by procedure based workflow
- Superb image quality to evaluate small details and vessels with clarity.
- Intuitive user interaction delivering an easy to use, easy to learn system

Changing interventions

With our Live Image Guidance we aim to remove barriers to safer, effective and reproducible treatments, delivering clinical value where it's needed most - at the point of patient treatment. Intelligent and intuitive integration of live imaging, patient information, and procedure-based applications optimize real time therapy guidance.

The 7 series C20 ceiling system is designed to enhance all the different procedures your interventional lab faces, from vascular, non-vascular and embolization to interventional oncology procedures. This future proof solution is designed around a single, standardized hardware and software platform that can be upgraded and expanded as new needs arise or requirements change. Its architecture is made to easily integrate with third party applications and devices. A new workflow approach aims to support interventional teams in carrying out procedures for their patients, consistently and efficiently with great ease of use.

The Philips Azurion 7 C20 uses a range of Procedure Cards to help optimize and standardize system set-up for your cases, from routine to mixed procedures.

Procedure Cards can increase the consistency of exams by offering presets (e.g. most-frequently used, default protocols and user-specified settings) on procedure-, physician- or departmental level. In addition, hospital checklists and/or protocols can be uploaded into the Procedure Cards to help safeguard the consistency of interventional procedures and help to minimize preparation errors.

The Philips Azurion 7 C20 interventional X-ray suite has been specifically designed to save time by enabling the interventional team to work on all activities in the exam room - and at one or more work spots in the control room at the same time - without interrupting each other. This leads to higher throughput and faster exam turnover and contributes to quality of care.

To improve dose management, Philips Zero dose positioning enables you to move the stand and table to the region of interest shown on the last clinical image hold before a new acquisition is started, without any radiation.

Specifications

The Philips Azurion series contain a number of features to support a flexible and patient centric procedural workflow.

The Philips Azurion series (within the limits of the used Operating Room table) are intended for use to perform:

- Image guidance in diagnostic, interventional and minimally invasive surgery procedures for the following clinical application areas: vascular, non-vascular, cardiovascular and neuro procedures.

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- Cardiac imaging applications including diagnostics, interventional and minimally invasive surgery procedures.

The Philips Azurion 7 C20 system comprises five functional building blocks:

1. Geometry
2. X-ray Generation
3. Image Detection
4. User Interface
5. Viewing

Each functional building block is explained in further detail including accessories.

1. Geometry

A. 7 C20 stand

The Philips Azurion 7 C20 stand is a stable assembly of a C-arm and a ceiling suspended L-arm. The X-ray tube and the flat detector are integrated into the C-arm. This provides a compact assembly completely free from the floor, with maximal positioning flexibility and unrestricted access to the patient. The robust design ensures excellent reproducibility of projections, needed in for example subtracted imaging procedures and advanced 3D imaging. The L-arm can be rotated and moved in longitudinal direction allowing a three-sided patient approach and total body coverage.

- L-arm rotation around the patient table: +90, 0, -90 degrees.

- L-arm longitudinal movement: 300 cm

This movement features auto-stops at the parking position, cardio/neuro position and lower peripheral position.

B. Patient Support

The patient support provides very light manual float movement, even for heavy patients, thanks to the mono-bearing technology. The long flat carbon fiber tabletop provides ample space to place e.g. catheters and endovascular tools. On customer request, the standard table top can be replaced by a table top for neuro procedures. This table top has a smaller width at the head end for better imaging results in neuro procedures.

- Table top length of 319 cm, width 50 cm (neuro table top is 45cm at head end)
- Metal-free cantilever 125 cm
- Floating table-top movement of 120 cm longitudinal and +/- 18 cm transversal
- Motorized height adjustment range is 74 -102 cm for a table without swivel nor cradle/tilt.
- Maximum cantilever of 223 cm , for full patient coverage
- Table tilt +17 /-17 degrees (optional)
- Table cradle +15 / -15 degrees (optional)
- Pivot range 270 degrees (-90 to +180 or +90 to -180 degrees), table can be locked at any position and has stops at 0, +/-13, +/- 90 and +/- 180 (optional)
- Table swivel, 78.2 cm longitudinal displacement, motorized (optional).
- Maximum load: 275 kg (up to 250 kg patient weight plus 25kg accessories or 225kg patient weight plus 50kg accessories) plus 500 N for CPR in any longitudinal position of the table top

The UIM modules are not accessories; make consistent with "AD7 accessories Cardiac"

The Philips Azurion system can be fitted with a comprehensive set of accessories to help you perform your procedures as conveniently as possible. Included are

- 1 cerebral filter

Line #	Description	Qty
	<ul style="list-style-type: none"> • 3 rail accessory clamps • 1 drip stand • 1 Set of Elbow Supports • 1 Set of patient Straps • 1 Arm Support Board • 1 Head Support • 1 Mattress <p>The mattress is a slow recovery foam mattress with a density of 58 kg/m³. The mattress has a thickness of 7 cm and adapts to the body shape of the patient. It makes the pressure being divided equally and it recovers when the patient is taken off the mattress. The light yellow cover is easy to clean. Patients are more relaxed due to the comfort of this mattress.</p>	

2. X-ray Generation

A. Generator

The 7 C20 system comprises an integrated, micro-processor controlled Certeray generator based on high frequency converter technique. The user interface control of this X-ray Generator is incorporated in the touch screen module, review module, and the on-screen displays. The Certeray generator comprises:

- X-ray generator 100 kW
- Voltage range is 40 - 125 kV
- Maximum current 1000 mA at 100 kV
- Maximum continuous power for fluoroscopy: 1.5 kW

Program selection:

- Pulsed X-ray up to 3.75 , 7.5 , 15 , 30, 60(optional) frames/s for digital dynamic exposures
- Frame rate extension to 30 frames per second.

Designed to enhance visualization of complex and pediatric interventions

Frame rate extension to 30Fr/sec increases the system acquisition speed up to 30 frames per second for cardio studies requiring high speed imaging.

Specifications

The frame rate extension increases the acquisition speed to 15fps and 30fps with a 1024x1024 matrix.

- Pulsed X-ray for pulsed fluoroscopy (3.75 , 7.5 , 15 , 25, 30 frames/s).
- Minimum exposure time of 1 ms
- ECG triggered acquisition: allows acquiring one exposure for each QRS peak with selectable delay time
- Automatic kV and mA control for excellent image quality prior to run to save dose
- X-ray tube load incorporated in the Certeray generator
- Pulsed X-ray for (subtracted) acquisition up to 12 frames/s for vascular applications

Line #	Description	Qty
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B. X-ray tube

The 7 C20 system has the Maximus ROTALIX Ceramic grid switch tube assembly MRC200+ GS 0407 integrated.

The MRC 200+ GS 04 07 tube assembly and cooling unit CU 3101 for cardiovascular systems comprises:

- 0.4/0.7 mm nominal focal spot values maximal 30 and 65 kW short time load
- Grid switching at pulsed fluoroscopy and low load exposure (to eliminate soft radiation and improve image quality)
- Continuous loadability: 3400 W (at 21 degrees C room temperature) / 4000 W (= Max assembly continuous heat dissipation)
- Application of SpectraBeam dose management
- Tube housing is oil cooled with thermal safety switch
- Maximum anode cooling rate of 1820 kHU/min
- Anode heat storage capacity of 6.4 [MHUeff]

C. System intrinsic

- Fully digital imaging chain in maximizing the utilization and technology of the x-ray generator, x-ray tube, flat detector and image processing.
- Customizable EPX protocols to each application according to user preferences for different composition of dose rate, pulse speed, filter setting, and image processing (noise reduction, adaptive contour enhancement, adaptive harmonization)
- Built-in SpectraBeam filtering of low energy radiation to improve image quality and dose efficiency with MRC200+ X-ray tubes.
- Pre-filters of 0.2, 0.5 and 1.0 mm CU equivalent
- Automatic cardiac wedge positioning
- X-ray depth collimator with single semi-transparent wedge filter with manual and automatic positioning.
- 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.
- Xper Fluoro Storage, a grab function allows storage and archiving of both a fluoro image or the last 20 seconds of fluoroscopy run. These images or runs can be archived and reviewed as a regular run.

D. User selections

- removable anti-scatter grid to lower x-ray dose for pediatrics (grid ratio 13:1)
- ECG triggered acquisition, offering the possibility to acquire images at the same phase of the heart cycle. This applies to the low dose fluoro and exposure program for EP applications. This allows patient dose reduction by lowering the pulse rate to 1 pulse per heart and let the physician still focus on relevant items
- three programmable fluoroscopy modes can be selected from the control module. Each mode has a different composition of dose rate, pulse speed, filter setting, and image processing (noise reduction, adaptive contour enhancement, and adaptive harmonization)

Roadmap Pro can be selected from the control module.

In the first Roadmap phase a vessel map is created by live fluoroscopy or by selecting an exposure image (SmartMask) with a vessel map which, in the second Roadmap phase, is superimposed with subtracted live fluoroscopy.

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Roadmap Pro features Smart Settings in special clinical modes that are optimized to visualize special materials such as coils and glue.

- Acquisition runs can be done without losing the vessel map of Roadmap Pro.
- Live processing of the vessel map, the device map and the landmark map can be done on the touch screen module.
- Field of View (FoV) can be altered during the second phase.
- Xres for vascular procedures is standard part of Roadmap Pro.

In Roadmap Pro "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.

E. User dose awareness

DoseWise program: Philips DoseWise program is a set of techniques, programs and practices built into the X-ray system that ensures excellent image quality during each interventional application, while at the same time reducing x-ray dose at every opportunity. The DoseWise comprises of three building blocks to help reduce x-ray dose without compromising diagnostic quality: system intrinsic, user selection and awareness.

On-system monitor display provides and displays body zone specific Air Kerma data (10 zones for cardiac applications) in numeric and graphical bars.

- Graph displays the accumulated Air Kerma dose for the particular body zone of the actual projection
- When the accumulated Air Kerma dose of the particular body zone reaches the critical skin dose level of 2 Gy, it will be indicated on the display and made visible to the x-ray operator.

Radiation Dose Structured Report

Collection of dose relevant parameters and settings and export to a DICOM database (e.g. PACS) (dose information is sent in MPPS message not as Radiation Dose Structure report), 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. Also, typical system usage can be extracted from the data, helping to identify root causes behind deviations and measures to improve.
- Analysis of individual patient cases: using dose levels and system usage per procedure
- Alerting for high dose cases, timely identifying patients at risk or deterministic effects, for proper follow-up.

Secondary Capture Dose Report

The Secondary Capture Dose Report function allows the user to save & transfer, manually or automatically, a patient Dose Report to PACS in DICOM secondary capture format.

The dose report will be stored in the related patient image folder.

Line #	Description	Qty
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3. Image Detection

The system has a 20 inch flat panel image detector. This detector can be rotated over 90 degrees from portrait to landscape and vice versa.

The image chain with the 20 inch flat panel image detector comprises the following:

- A 30 cm by 40 cm (20 in.) diagonal 8 mode Dynamic Flat Detector subsystem for fluoroscopy and cine-fluorography.
- 8 modes 30*38/30*30/26*26/22*22/19*19/16*16/13.5*13.5/11*11 cm, Dynamic Flat Detector
- The outer detector physical housing is 36 x 47.2 cm
- The digital output of the Flat detector is 1904*2586 pixels at 16 bit depth.
- The pixel pitch is 154 micron by 154 micron
- The DQE(0) is >77% providing high conversion of X-ray into a digital image, while maintaining a high MTF.

Philips Azurion offers a storage capacity of (optionally extendable) of 50,000 images at matrix size of 1024 x 1024, in 8 or 10 bit depth. With a matrix size of 2048 x 2048 this is 12,500 images. Maximum number of examinations is 999, with no limit to the maximum number of images per examination.

Xres is a multi-resolution spatial temporal noise reduction and edge enhancement filter for interventional applications. Xres exploits the full benefits of dynamic digital flat detector imaging to enhance sharpness and contrast and has been designed to reduce noise in fluoroscopy and exposure runs. The settings for Xres Cardio can be customized to improve image quality. Xres is a Philips unique image processing algorithm developed at Philips Research for medical applications. Xres is used with Philips MR and US scanners next to Philips Azurion systems.

4. User Interface

User Interface in Examination Room

The User Interface comprises a variety of User Interface modules in the Examination Room. There is the On-Screen Display, the touch screen module, Viewpad and the control modules.

The On-Screen Display is positioned on the left side of the live/ref monitor. The following system information is displayed:

- X-ray indicator
- X-ray tube temperature condition
- Gantry position in rotation and angulation
- Source Image Distance
- Table height
- Table top tilt and cradle angle, if applicable
- Detector field size display
- General System messages
- Selected Frame speed
- Fluoroscopy mode
- Integrated fluoroscopy time
- Skin Dose: dose rate during X-ray, cumulated dose when no X-ray
- Dose Area Product: dose rate during X-ray, cumulated dose when no X-ray
- Graphical bars for Body Zone specific dose-rate and accumulated skin dose levels, related to the 2 Gy level (for cardiac applications)
- Stopwatch

Line #	Description	Qty
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The pan handle is an extension of the control possibilities for floating movements of the table top in cardio vascular and neuro systems

Key benefits

- Flexible positioning during cardio and neuro procedures
- Flexible positioning during cardio and neuro procedures

To allow more flexible positioning during cardio and neuro procedures, the pan handle option can be used to perform floating table movements. The pan handle provides a solid grip of the tabletop and can release and apply the tabletop brakes. It can be attached anywhere along the tabletop and accessory rails without affecting the floating range.

Specifications

Pan handle with cable and connector

Table-top attachment clamp

Accessory-rail attachment clamp

Touch screen module

The touch screen module is provided for use at either the tableside or in the control room. Optionally, it is possible to connect in parallel up to three touch screen modules on the system. The touch screen module has a touch screen, which can be operated when covered with sterile covers. The touch screen module allows control of (depending on configuration):

- 3rd party equipment (e.g. CX50, Interventional Tools, EchoNavigator, DoseAware)
- Monitor layout (FlexVision, switchable viewing)
- X-Ray settings (Collimation, Projections, Table, Series and Processing)
- Quantitative Analysis (optional) User can only start QA from the touch screen module. No controls like coronary analysis, left ventricular and vessel analysis can be performed on the touch screen module.
 - Operation of Xcelera, XperIM and IntelliSpace Portal viewing (optional)
- Operation of CX50 Ultrasound (optional)

2nd Touch Screen Module

Key Benefits

- Control system operations with a second touch screen module

Tablet-like touch screen control

During an intervention flexible control of applications and system operations can support fast decisions and communication with team members. The touch screen module provides fast, tablet-like touch response to control system operations. Up to three touch screen modules can be connected to the X-ray system: on the table, on the pedestal and in the control room.

Specifications

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

Line #	Description	Qty
	<ul style="list-style-type: none"> • Acquisition settings • Image processing controls • Channel selection for MultiVision • Automatic position control (optional) • Quantitative Analysis controls (optional) • Xcelera and IntelliSpace Portal viewing (optional) • Interventional tool controls (optional) • 3D-RA, Dynamic 3D Roadmap (optional) • StentBoost, 3D-CA (optional) • XperCT, XperGuide (optional) • XIM physio monitoring controls (optional) 	

Connectivity:

A maximum of 3 touch screen modules can be connected to the X-ray system:

- One touch screen module on the table
- One touch screen module in the Control Room
- One touch screen module on the pedestal

Viewpad

The Viewpad contains the preprogrammed function settings. The system is provided with two 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 Viewpad function from life to reference monitor
- Laser pointer, intended to point at regions of interest on the image monitors
- LED indication of laser pointer on/off and battery low
- Subtraction on/off
- Remasking
- Landmarking
- Access flat detector rotation

User Interface in Control Room

The control room comprises a review module, data color monitor and review monitor. The data and review functions are controlled by a single keyboard and mouse. The review module offers the basic functions for review. The most prominent functions can be controlled by the push of a button. The review module comprises the following functionality:

- Power on/off
- File and run cycle
- File, Run, and Image stepping

Line #	Description	Qty
	<ul style="list-style-type: none"> • Run and file overview • Reset fluoroscopy timer • Enable/disable X-ray • Geo disable 	

Acquisition monitor. A standard keyboard and mouse control the user interface. The acquisition monitor is intended to follow live case in the ER. System information is displayed on the bottom of the monitor:

- Stopwatch and Time
- System guidance information
- Dose Area Product (DAP) and Skin Dose, as dose rate during X-ray and cumulative dose at no X-ray
- Frame speed settings, fluoroscopy mode, and accumulated Fluoroscopy time
- Exposure and fluoroscopy settings as Voltage (kV), Current (mA) and time (ms)
- Geometry information as rotation, angulation, and SID

The acquisition monitor is designed for standard workflow based on scheduling, preparation, acquisition, review, report, and archive.

Scheduling

In the scheduling page it is possible to add new patients (either querying from RIS/CIS or by creating patient locally). 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 Philips Azurion 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.

Procedure Cards

Procedure Cards provide the information of room and patient preparation for each individual physician. Procedure Cards are customizable per setting and allow each physician to provide their own room protocols. Procedure Cards is intended to make hard copies of the protocol instructions redundant.

Acquisition

The acquisition page contains information on the currently selected patient.

Reviewing

The review page allows for reviewing of patients:

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

Quantitative Vascular Analysis

Key benefits

Line #	Description	Qty
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- Allows quantitative assessment of different size vessels such as aortic and peripheral
- Aids confident decision making for device selection, approach angles and follow-up
- Designed for efficiency with single click functions and fast results

Easily obtain objective assessment of aortic and peripheral vasculature to support decision making and allow quantitative assessment of vasculature during vascular interventions, the 2D quantitative vascular analysis option supports quantification such as aortic and peripheral artery dimensions of about 5 to 50 mm from 2D angiographic images. With one click, the relevant segment is detected and a visualization of the obstruction, healthy vessel, reference diameter, stenosis diameter and plaque area is created.

Specifications:

- Automated vessel segmentation
- Diameter measurement along selected segment
- Automated obstruction analysis
- Stenosis diameter, stenosis length
- % stenosis diameter, % stenosis area
- Automated and manual calibration routines
- Store result page

Analysis of the targeted vessel segment has been simplified with the single click function. Position the mouse on or close to the stenotic area and click once to detect the relevant segment. The visualization shows the obstruction, healthy vessel, reference diameter, stenosis diameter and plaque area.

Archiving

Clinical studies can be archived to a CD/DVD, USB or a PACS. The archive process can be completely automated and customized with settings. Parameters like multiple destinations, archive formats can be selected to the individual needs and wishes for programming under the settings.

With Philips Azurion the control room comprises of an acquisition monitor and a review monitor. The review monitor is a 24 inch color TFT-LCD medical grade monitor. The Graphical User Interface on the Review monitor has the following features and possibilities:

- 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
- DICOM printing if available
- Executing Quantitative Analysis Packages if available
- Subtraction functionality if available

This system is delivered with printed instructions for use and/or electronic instructions for use, as well as a quick start leaflet. A printed paper instructions for use can also be ordered at no additional cost.

5. Viewing

A. Viewing in Examination room

Line #	Description	Qty
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Philips Azurion systems come with one 27 inch high brightness color medical grade LCD monitor for clinical image display in the Examination room. This LCD monitor is intended for viewing in the examination room and is designed for medical applications. The monitors is used for combined viewing of live images and reference display. Selection and storing of live to reference monitor is controlled by the infra-red remote-control viewpad or via touch screen module.

The On-Screen Display provides status information on stand rotation-angulation, table height, 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 Air Kerma dose.

The main characteristics are:

- 27 inch high brightness color TFT-LCD display
- Native format 1920x1080 Full HD
- 10 bit gray-scale resolution with gray-scale correction
- Wide viewing angle (approx. 178 degrees)
- High brightness (max 650 Cd/m2, default 400 Cd/m2)
- Long term luminance stability through backlight stabilization circuit
- Automatic brightness control with backlight sensor
- Control functions on side
- User programmable and standard reference setting
- On-Screen Display
- Internal selectable lookup table for gray-scale transfer function, including DICOM
- Internal power supply (100-240 VAC)
- Integrated LCD protection screen

If applicable included is a flat monitor ceiling suspension for 2 monitors (2F MCS). MCS includes motorized height adjustment. The ceiling suspension allows flexible monitor positioning over a range of about 360 x 300 cm. At customer request, this 2 monitor MCS can be replaced by a 4 or 6 fold MCS or an MCS integration kit HD for non-Philips MCS. The MCS integration kit HD contains vital parts for system operation.

B. Viewing in Control room

Philips Azurion includes two 24 inch high brightness color LCD monitors. The color monitors are for acquisition and reviewing display.

The main characteristics for color monitor are:

- 24 inch color TFT-LCD display
- Native format 1920x1080 Full HD
- High brightness (max 400 Cd/m2, default 350 Cd/m2)
- Wide viewing angle (approx. 178 degrees)
- Long term luminance stability through backlight stabilization circuit
- Automatic brightness control with backlight sensor
- Control functions on side
- User programmable and standard reference setting
- On-Screen Display
- Internal selectable lookup table for gray-scale transfer function, including DICOM
- Internal power supply (100-240 VAC)Integrated USB hub

A Philips Azurion system includes the DICOM Image Interface which enables the export of clinical images to a DICOM destination like a CD-Medical station or a PACS server. 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.

Line #	Description	Qty
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The DICOM Image Interface transfers through its fast Ethernet link, making images available on-line within seconds. The archive process can be configured by X-ray settings. The images are sent out either in the background, or manually upon completion of the examination. The export format is configurable in 512x512 or 1024x1024 matrix in 8 or 12 bit depth. The examination can be sent to multiple destinations for archiving and reviewing purposes. The 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 Intercom for the Azurion System. The option includes a separate intercom, which is connected independently from the system. This allows placement of the intercom at the preferred working position in the control room and examination room. The listen function can be separately selected on each intercom. Activating the talk function on a selected intercom automatically disables this function on the other intercom.

Uninterruptable Power System (UPS)

Ensures data integrity

A power failure of the hospital mains during an intervention can cause loss of data. If this occurs, the single phase Uninterruptable Power System (UPS) enables a proper shut-down of the X-ray system processor units.

Specifications

In case a full three phase UPS is selected, the single phase UPS is not delivered.

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.

Environmental

At Philips Healthcare, we feel the responsibility towards society and the environment. The latest 7 C20 system is a perfect example of our EcoVision program. By examining every aspect of the 7 C20 design and development through a green eye, we drastically reduced the products environmental impact.

System & table APC

Helps to save time and manage X-ray dose with automatic positioning

Positioning the X-ray system to visualize relevant anatomy from different perspectives can involve a great deal of time and many scout images during interventional procedures. To help save time and manage X-ray dose while working, the Automatic Position Controller (APC) provides an easy way for interventional team members to store and recall stand-related positions.

Specifications

The system APC stand and table positions need to be stored and recalled separately.

Clinical Education Program for Azurion System:

Line #	Description	Qty
	<p>The purchase of the Azurion System includes a StartRight entitlement pool that allows for the customized delivery of educational events to improve staff time to proficiency, knowledge on system features, and improve overall lab efficiency. For new users, the recommended series of educational events includes:</p> <p>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. 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. 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</p> <p>Initial Handover OnSite Education: The primary 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).</p> <p>FollowUp OnSite Education: Philips Education Specialists will provide sixteen (16) hours of education for up to four (4) students, selected by customer, including technologists from night/weekend shifts if necessary. Students should attend all 16 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.</p> <p>Assessment OnSite Year 1: The primary Philips Education Specialist will perform a two day onsite assessment at the customer site on or close to the first anniversary of the Initial Handover. The Specialist will assess through various means not limited to; physical observation of procedure workflow, tool usage data analysis and staff interviews. The Specialist will then review findings with department head and make recommendations thereof. The Specialist may perform refresher training if required.</p> <p>Education expires one (1) year from installation date (or purchase date if sold separately). Ref#296339296340296341296342-20170209</p>	

Line #	Description	Qty
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Integrated work spot in the Control Room to view, control and manipulate all applications within a single view

Key benefits

- Access all applications on one compact workplace in the control room
- Set up unlimited custom screen layouts with all relevant information in one view
- Full flexibility of screen layouts (live resize, drag and drop)
- Clutter free and clean control room

Simplify control room workflow

Typical interventional control rooms are equipped with several workstations and controls to support procedures that require extra handling and space. FlexSpot helps you save time and space in the control room by giving you seamless access to all applications on one compact workplace. Easily set up any screen layout desired with all relevant information in one view. Resize, drag and drop items just like a tablet.

Specifications

FlexSpot offers an integrated workspot in the Control Room with one or more high resolution QHD (2560x1440) displays.

- Show internal video sources (e.g. Review, CR Live)
- Show up to 11 external video sources (e.g. Ultrasound, EchoNav, etc.)
- Video sources can be flexibly displayed on FlexSpot through user customizable presets. Users can customize the displayed layout and assign video sources to viewports as desired
- Up to 4 video sources can be displayed on a single FlexSpot display (excluding the add-on FlexSpot).
- Per display, the user can choose between 7 different layouts (positioning of viewports)
- FlexSpot offers user interaction through a keyboard and mouse with which users can seamlessly control all video sources on screen. Seamless means that users can move out of one viewport and into another without needing to press a special keyboard shortcut or use a gesture.
- In systems with both FlexSpot and FlexVision, FlexSpot offers convenient control access of FlexVision from the primary FlexSpot workspot.
- Users can define their own preset groups and preset names.
- Through field service, users can assign their own custom name and icon to a video source (also applies to FlexVision)
- The X-ray status area with all X-ray details is always visible on the primary display of the primary FlexSpot workspot.
- Up to 3 Philips workstations can be integrated into the technical room. With this, the workstations are powered from the system and are fully integrated into the system. Users do not need to separately power on/off these workstations.
- The snapshot function allows the user to store/save a screen-capture of any image on the FlexSpot as a photo image to the current Acquisition Patient study.
- 27 inch high brightness color LCD monitor for clinical image display in the Control Room.

The main characteristics for color monitor are:

- 27 inch color TFT-LCD display
- Native format 2560x1440 Quad HD
- High brightness (max 500 Cd/m², default 350 Cd/m²)
- Wide viewing angle (approx. 178 degrees)
- Long term luminance stability through backlight stabilization circuit
- Automatic brightness control with backlight sensor
- Control functions on side
- User programmable and standard reference setting
- On Screen Display
- Internal selectable lookup table for gray-scale transfer function, including DICOM
- Internal power supply (100-240 VAC)
- Integrated USB hub

Line #	Description	Qty
3	<p>VasoCT</p> <p>The VasoCT interventional tool helps to visualize sub-millimeter sized vascular anatomy and endovascular material during neuroradiology interventions</p> <p>Key benefits</p> <ul style="list-style-type: none"> • Enhances visualization of endovascular devices (stents, flow diverters etc.) and vessel morphology down to perforator level. • Allows visualization beyond the clot with peri-procedural imaging of the distal vessel aspects in ischemic stroke. <p>Reveal hidden complexities</p> <p>The ability to visualize sub-millimeter sized vascular anatomy and endovascular material during neuroradiology interventions enhances the clinician's ability to judge the chances of success and raises their treatment confidence. The VasoCT interventional tool was designed to meet these requirements and to help clinicians further enhance clinical outcomes, and reduce procedural complications and patient trauma.</p> <p>This novel interventional acquisition technique provides high-resolution 3D imaging that reveals key information about cerebral vascular structures to support the spatial assessment of vessels in the soft tissue context. It is designed to increase the confidence with which clinicians plan, perform, and follow-up on various endovascular neuro procedures. Three protocols are provided to enhance visualization of different devices and pathology: high resolution VasoCT, intra-arterial enhanced VasoCT, and intra-venous enhanced VasoCT.</p> <p>Specifications</p> <p>VasoCT is available for X-ray systems with an FD20 detector on the frontal Arc.</p> <p>The VasoCT package contains everything that is needed for to perform VasoCT imaging such as:</p> <ul style="list-style-type: none"> • VasoCT software package • Instruction video • Instructions for Use 	1
4	<p>VesselNavigator</p> <p>VesselNavigator</p> <p>Reduce your need for contrast in complex endovascular procedures</p> <p>VesselNavigator allows reuse of 3D vascular anatomical information from existing CTA and MRA datasets as a 3D roadmap overlay on live X-ray images. With its sophisticated visualization, it provides an intuitive and continuous 3D roadmap to guide you through vasculature during the entire procedure. This reduces the need for a contrast enhanced run to create a conventional roadmap and potentially shortens procedure times.</p> <p>The essential components of VesselNavigator are:</p> <ul style="list-style-type: none"> • 3D roadmap navigation with a personalized visualization of a CT or MR overlay of the selected vasculature on live fluoro. • Both 2D and 3D registration for CT or MR image fusion, allowing to choose the optimal registration method for the user's workflow • Easy, intuitive four step workflow, with one click vessel segmentation • Ring markers to easily indicate the ostia and landing zones. <p>VesselNavigator can be used for any type of endovascular procedure, except for coronaries and intracranial vessels. It is especially beneficial for complex and tortuous vasculature where it is challenging to accurately navigate and place stents or for procedures where contrast use should be minimized.</p> <p>VesselNavigator provides the following functions:</p>	1

Line #	Description	Qty
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One click vessel segmentation; the user can select the relevant vessels for the overlay in the CT or MR volume in one click

3D landmarks. In the planning step the user can place ring markers for denoting ostia or landing zones and markers for denoting specific structures like calcifications

Plan angles; VesselNavigator provides three dimensional views of vasculature that allow you to easily define the right projection angle. These angles can be recalled during the procedure for optimal navigation and stent placement.

2D registration; The CT or MR volume needs to be matched with the X-ray image for continuous live overlay. This can be performed with 2 X-ray images from different orientations. Once the 2 images are acquired, the user must manually match the bones on the preoperative scan with the X-ray image.

3D registration; The existing CTA or MRA volume needs to be matched with the X-ray image for continuous live overlay. This can be performed with a rotational angiogram or cone beam CT. The user has to identify 3 identical anatomical points on the rotational scan and the CTA or MRA volume. The software automatically matches the identified points to register the pre-operative scan with the X-ray system.

Live image guidance; Real-time overlay of the 3D Vessel segmentation on the live 2D X-ray images from the Allura X-ray system of the same anatomy. For optimal viewing, the user can personalize the visualization of the overlay. The overlay can provide additional 3D image guidance to help the user with navigating the device/catheter to the target, enhancing clinical outcomes.

Table tracking; The overlay will be aligned with the live X-ray image, irrespective of table movements.

Table side control; Registration and live guidance can be controlled from table-side to provide efficient work-flow during the interventional procedures

Image data for VesselNavigator is stored together with the VesselNavigator movies and snapshots and can be sent to any optional DICOM compatible device (e.g. PACS/IntelliSpace Portal/Xcelera). Supported are DICOM XA, DICOM SC, DICOM CT and DICOM MR and any PC in a standard PC compatible format (JPEG, AVI). All this data can be reviewed at any time.

VesselNavigator movies and snapshots can be stored/archived on:

- A PACS systems as DICOM Secondary Capture images or movies.
- USB removable memory device.
- One or multiple DVD's, CD-ROM(s) for easy archiving.
- Hard copy via the (DICOM Print) protocol.

Clinical Education Program for Vessel Navigator:

Philips Imaging Systems Clinical Education Specialist will provide sixteen (16) hours of education for up to four (4) students, as selected by customer, including technologists from weekend/night

Line #	Description	Qty
	shifts as necessary. CEU credits are not available for this portion of training. 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.	
	Education expires one (1) year from equipment installation date (or purchase date if sold separately). Ref#296273-20150805	
5	Dynamic Coronary Roadmap When advancing guidewires and devices through the vasculature during percutaneous coronary interventions, it's important to understand the relationship between the device and the anatomy. Navigation is based on the physician's knowledge of the patient's anatomy as shown on angiograms and live fluoroscopic images. As the physician works, small shots of contrast agent are applied to check the device position shown on the live fluoro image with the anatomical reference provided by the previously acquired angiogram. Dynamic Coronary Roadmap combines the live fluoro and angiogram image into a single adaptive roadmap image, which provides immediate feedback on the position of the device and its relationship to the anatomy to guide navigation. Dynamic Coronary Roadmap features include: <ul style="list-style-type: none"> • Automatic creation and storage of a dynamic roadmap from each acquired coronary angiogram. Only one roadmap per projection is stored • Automatic overlay of the dynamic roadmap on live fluoroscopy • Automatic guidance to reach projections for which a roadmap is available • The Dynamic Coronary Roadmap functionality is fully integrated in the interventional X-ray system • Image snapshots or movies can be archived to any DICOM compatible PACS. These include DICOM XA and DICOM SC Note: when ordering Dynamic Coronary Roadmap and/or StentBoost Live for a non-FlexVision system a single dedicated color monitor must be added to the MCS.	1
	IXR Dynamic Coronary Roadmap Imaging Systems OnSite Education: Philips Imaging Systems Clinical Education Specialist will provide eight (8) hours of education for up to four (4) students, as selected by customer, including technologists from weekend/night shifts as necessary. CEU credits are not available for this portion of training. 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. Education expires one (1) year from equipment installation date (or purchase date if sold separately). Ref#296309-20170315	
6	ClarityIQ. Significantly lower dose- across clinical areas, patients and operators. Key benefits <ul style="list-style-type: none"> • High-quality imaging at low dose levels • Enhanced work environment for staff through active management of scatter radiation • Expands treatment options – enables longer procedures to treat obese and high-risk patients with confidence 	1

Line #	Description	Qty
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See with confidence every time

Interventions are becoming increasingly complex, which lengthens fluoroscopy time and increases the need for high resolution imaging. New devices can be more difficult to visualize, making it harder to position them precisely. The prevalence of patients with a high BMI can also require increased dose levels to visualize anatomy. All of these factors inspired us to completely redefine the balance in interventional X-ray with AlluraClarity.

AlluraClarity with its unique ClarityIQ technology gives you exceptional live image guidance during treatment. What's more, you can confidently manage low X-ray dose levels without changing your way of working. In short, you can see what you have to regardless of patient size.

Specifications

ClarityIQ technology is the foundation of Philips X-ray systems with AlluraClarity. It offers:

- Noise and artefact reduction, also on moving structures and objects
- Image enhancement and edge sharpening
- Automatic real-time patient and table motion correction on live images
- A flexible digital imaging pipeline from tube to display that is tailored for each application area
- Over 500 clinically fine-tuned system parameters making it possible to filter out more X-ray radiation and use smaller focal spot sizes and shorter pulses with the grid switching technology of Philips MRC tube and accompanying generator

7	*	live/ref slaving for ER	2
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Live/ref slaving for Exam Room.

Key benefits

- Easily display any data or clinical information needed to work efficiently

Simplify workflow with flexible viewing control

Having patient data and clinical information easily available on screen can enhance decision making and efficiency during interventions. The live/ref slaving will enable the option to slave the Live and Ref video source from the X-ray system. The total amount of live/ref slaving that can be selected is max 5, minus the number of FCV0807 Live/ref slaving for CR.

Specifications

Live/ref slaving for ER is possible:

- On Philips MCS (additional monitor excluded from this option)
- In combination with FCV0519 1 or 2 MCS from Skytron/Steris

8		Isolated Wall Connection Box	1
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Isolated Wall Connection box to support the display of an external video source on a monitor in the examination room.

Key benefits

- Stream video from other modalities on the interventional X-ray suite:
- Connect external video in the exam room

Easily stream video to other locations

Many interventional facilities use video to record and stream images from other modalities on the interventional X-ray suite for training or presentation purposes. The Video Wall Connection Box facilitates connection of the video source via a standard DVI cable/connector and lossless transfer of the video signal over the approximate 30 meter long cable. It can be mounted in the examination room or in the control room, depending on the location of the video source.

Line #	Description	Qty
	Specifications 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) Live/ref Slaving 2) Interventional HW (XtraVision), IntelliSpace Portal, Philips Xcelera (only if workstations are powered by Philips X-ray system) 3)XperIM	
9	optional ref monoplane Additional Ref2 and Ref3 viewport	1
	Key benefits <ul style="list-style-type: none"> • Easily display any data or clinical information needed to work efficiently Simplify workflow with flexible viewing control Having patient data and clinical information easily available on screen can enhance decision making and efficiency during interventions. Optional ref monoplane offers an additional video output of the X-ray system offering an additional Ref2 and Ref3 viewport on one LCD monitor. Combined with the Dual Fluoro license this enables users to zoom live images during acquisition, while having the Dual Fluoro image visible on the Ref3 viewport.	
10	FlexSpot secondary monitor FlexSpot secondary monitor Simplify control room workflow This option adds a second QHD (2560x1440) high resolution monitor to the primary FlexSpot workspot. Specifications 2nd Display for FlexSpot enables the user to show up to 8 video sources on a single FlexSpot workspot by combining 2 high resolution displays. Keyboard and mouse control is seamless across the 2 displays, see FlexSpot.	1
11	3D RA Control for Xper Module Table Side Module functionality for Allura Xper FD20 used with Integris 3D-RA Release 4.2. For further improvement of interventional procedures efficiency the following workflow enhancers are made available in the examination room: With the Xper touchscreen module the physician has all 3D functionality needed at tableside. Functionality like rotating panning zooming AVA Virtual stenting 3 and 3D Follow C-arc can be performed. No need for the Physician to leave the examination room. 3D Automatic Position Control (3D-APC); when the optimal working position has been chosen via the Integris 3D-RA interventional tool the C-arc will automatically steer to this position. 3D Follow C-arc: When the position of the C-arc (not using any X-ray) is changed the 3D volume will automatically follow the position of the C-arc. This means the position of the C-arc (and therefore the 2D projection) and the 3D volume are always aligned.	1
12	Subtracted Bolus Chase	1

Line #	Description	Qty
	<p>For visualization of vessel structures when the blood flow is difficult to estimate, in particular in the lower peripherals.</p> <p>Bolus Chase solves the problem of cumbersome step movements, the mismatch between blood flow and selected program, and lack of real-time image information.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Comprising:</p> <ul style="list-style-type: none"> • 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) 	
13	<p>Peripheral X-ray Filter</p> <p>Set of flexible x-ray filters to provide an uniform density in angiographic examinations of the lower peripheral area.</p> <p>Comprising:</p> <ul style="list-style-type: none"> • one central filter, at the top edge provided with sizing markers at every 5 cm, length : 1 m • two side filters, length: 1 m 	1
14	<p>Quantitative Coronary Analysis</p> <p>Key benefits</p> <ul style="list-style-type: none"> • Allows quantitative quantification of coronary artery dimensions • Aids confident decision making for device selection, approach angles and follow-up • Designed for efficiency with single click functions and fast results <p>Easily obtain objective assessment of coronary artery</p> <p>To support decision making and allow assessment of vasculature during cardiac interventions, the 2D quantitative coronary analysis supports quantification of coronary artery dimensions of about 1 to 6 mm from 2D angiographic images. With one click, the relevant segment is detected and a visualization of the obstruction, healthy vessel, reference diameter, stenosis diameter and plaque area is created.</p> <p>Specifications</p> <ul style="list-style-type: none"> • Automated segmentation of selected coronary • Diameter measurement along the selected segment • Automated obstruction analysis • Stenosis diameter, stenosis length • % stenosis diameter, % stenosis area 	1

Line #	Description	Qty
	<ul style="list-style-type: none"> Automated and manual calibration routines Store result page <p>Analysis of the targeted vessel segment has been simplified with the single click function. Position the mouse on or close to the stenotic area and click once to detect the relevant segment. The visualization shows the obstruction, healthy vessel, reference diameter, stenosis diameter and plaque area.</p>	
15	<p>Pivot for table base.</p> <p>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.</p> <p>Comprising:</p> <ul style="list-style-type: none"> pivot device with graduated scale to be mounted on the universal floor plate of the table. <p>Compatible with Xper Table</p>	1
16	<p>StentBoost Live</p> <p>When inserting a stent in complex cardiac vasculature, inexact positioning and under deployment are always a challenge. StentBoost Live allows physicians to improve the visualization of balloons and stents in coronary arteries on-the-fly to clarify the situation at any moment during an intervention. The user simply presses and holds the foot pedal to boost visualization during the cine run. He can use StentBoost Live to check the position of a device in real-time and confirm stent expansion while the balloon markers are still in place. He can then take any corrective action immediately if required.</p> <p>To do this, StentBoost Live automatically detects the balloon markers in each acquired image. The detected markers are aligned with the markers found in previous image(s) and temporal and spatial filtering is applied to enhance all radiopaque material in close proximity to the markers. All of this occurs in a few hundreds of milliseconds to produce an enhanced visualization in real-time. StentBoost Live can be applied to any cine run acquisition and at least four frames of images are required.</p> <p>StentBoost Live features include:</p> <ul style="list-style-type: none"> Automatic marker detection Real-time image enhancement during the StentBoost Live run Immediately after acquiring the StentBoost Live run, the run is automatically looped three times to allow for further review StentBoost Live functionality is fully integrated in the interventional X-ray system Image snapshots or movies can be archived to any DICOM compatible PACS. These include DICOM XA and DICOM SC <p>Note: when ordering Dynamic Coronary Roadmap and/or StentBoost Live for a non-FlexVision system a single dedicated color monitor must be added to the MCS.</p> <p>IXR StentBoost Imaging Systems OnSite Education:</p> <p>Philips Imaging Systems Clinical Education Specialist will provide eight (8) hours of education for up to four (4) students, as selected by customer, including technologists from weekend/night shifts as necessary. CEU credits are not available for this portion of training. Please refer to guidelines for more information. Note: Site must be patient ready. Philips personnel are not</p>	1

Line #	Description	Qty
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responsible for actual patient contact or operation of equipment during education sessions except to demonstrate proper equipment operation.

Education expires one (1) year from equipment installation date (or purchase date if sold separately). Ref#296309-20170315

17	3D-RA R.6	1
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Allura 3D-RA assists physicians in decision making for treatment strategy in endovascular procedures, neuro or vascular surgery or even radiotherapy. Allura 3D-RA reduces the number of DSA acquisitions and fluoroscopy time needed to perform an examination. This means less X-Ray dose for the patient and the medical staff and a reduced quantity of dye, leading to reduced procedure costs. Allura 3D-RA provides a unique assessment after treatment due to the use of non-subtracted images that allows to shows devices stents, coils, clips and provide the optimal stand projection for endovascular treatment.
Allura 3D-RA provides a wide range of communication facilities to export 3D images.

1 Image Acquisition

- Image acquisition is performed with the Rotational Angiography feature of the Allura Xper FD series with the flexibility to position the C-arm in either head or side position.
- C-arm in Head position: the Rotational Angiography run is performed over a scan range of 240 degrees with a rotation speed up to 55 degrees/sec.
- C-arm in Side position: the Rotational Angiography run is performed over a scan range of 180 degrees with a rotation speed up to 30 degrees/sec.

2 3D Vessel Reconstruction

The rotational run is automatically transferred and displayed as a 3D vessel model: with the Real-Time digital link (option) 120 images are reconstructed into a 3 dimensional model within seconds. Additional reconstructions, using the Reconstructive Zooming Technique, can be performed as well.

3 Workflow:

- Allura 3D-RA in combination with the Allura Xper FD series will provide an optimal workflow via the following workflow enhancers:
Complete automated 3D-RA process from 3D acquisition to 3D Viewing: no user interaction needed.
- 3D at Xper Module (option); With the Xper module the physician has all required 3D functionality at tableside. At the touch screen module functionality like rotating, panning, zooming, AVA, virtual stenting, 3D-APC and 3D Follow C-arc can be performed. With the mouse tablet all other functions can be performed so that there is no need for the Physician to leave the examination room.
- 3D Automatic Position Control (3D-APC); When the optimal working position has been chosen via the Allura 3D-RA interventional tool, the C-arc will automatically steer to this position.

Line #	Description	Qty
	<ul style="list-style-type: none"> • 3D Follow C-arc; When the position of the C-arc (not using any X-ray) is changed, the 3D volume will automatically follow the position of the C-arc. This means the position of the C-arc (and therefore the 2D projection) and the 3D volume are always aligned. As last seen; when the user leaves the patient in the model and later selects that patient again, the Allura 3D-RA interventional tool will return to the image last used by the user. • Mouse over: When moving the mouse cursor over a button the mouse over text will show up to explain the function of that specific button. 	

4 Calibration

Allura 3D-RA calibrations are performed by Philips Healthcare Customer Support. Allura 3D-RA calibration data are stable over at least 6 months time.

5 Viewing

A Real Time user interface is available with 3D-RA, providing 3D object viewing in any space direction. A graphical display of (C-arm) stand position including

- angulation/rotation for any projection.
- Philips' CRM (Contrast Resolution Management) Technology for a considerable increase in contrast resolution in all volumes.
Various Image Rendering possibilities: Volume/Surface Rendering, MIP, Endoscopy, SUM (pseudo x-ray image) Gradient rendering; the possibility to display the vessel structure transparently.
- Cut-plane function to get a precise insight of the shape of the pathology
- Orthoviewer providing a multi-planar visualization of objects using the different Image Rendering possibilities.
- MPR (Multi-Planar Reformatting): enables visualization of the volume in all three standard projections (coronal, sagittal and axial) Especially useful for optimal viewing of spine procedures (e.g. Vertebroplasty)
- SpineView: special acquisition protocol for optimal viewing of the spine, especially osteoporotic vertebrae
CalciView: allows visualization of Hyper dense plaque in 3D, separately or in relation to the lumen.
- 5 different distance measurements calculated in the same volume, including "Quick measurement" feature
- Volume calculation
 - Automated Vessel Analysis (AVA), provides information on vessel segment diameter, area and length with only three mouse-clicks. Endoscopic and cross sectional views are available.
- Computer Assisted Aneurysm Analysis (CAAA), providing information on Aneurysms, like volume, neck size etc..
- Catheter tip shape simulation, providing information on how to shape the catheter tip.
- Virtual stenting; Ability to simulate a stent placement in a selected vessel segment for proper stent sizing. All relevant data of the simulated stent are displayed
- Annotation: text can be added to a volume to capture comments.
- Interpolative Zoom
- Reconstructive Zooming Technique, 2 additional user defined reconstructions focused on the Volume Of Interest (VOI) using different cube size and voxel resolution.
- Subtraction of reconstructed volumes, allowing to visualize vessels without embolization devices (stents, coils, clips,..) to assess the outcomes of treatment

Line #	Description	Qty
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- Automatic Voxelsift: compensates for movement when rendering subtracted or superimposed volumes
- Set the grey values WW/WL
- Store/Recall of user defined projections.

6 Archiving

Transfer to:

- Optional Hard Copy unit (DICOM Print)
- Any optional DICOM compatible device (e.g. PACS/ViewForum/Xcelera), supported are DICOM XA, DICOM SC, DICOM CT and DICOM 3D
- Any PC in a standard PC compatible format (JPEG,AVI)
- One or multiple DVD's, CD-ROM(s) for easy archiving
- Store a subset of exportable objects (snapshots and AVI Movies) to a USB removable memory device.

Clinical Education Program for 3DRA

CV 3DRA Handover OnSite Education:

Philips Education Specialists will provide sixteen (16) hours of 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. 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. Education expires one (1) year from equipment installation date (or purchase date if sold separately). Ref# 222-100615

18	Bolus Chase Reconstruction	1
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Key benefits

- Obtain a complete overview of peripheral vasculature in seconds
- Use overview image as a roadmap for diagnostic images

Complete overview of peripheral vasculature

Assessment of peripheral vasculature, such as the legs, can be challenging because of their length and the time required to reconstruct images of the entire anatomy. Our BolusChase Reconstruction option provides a complete reconstruction of peripheral vasculature from a single contrast injection in seconds. This overview image can be used as a roadmap next to the original diagnostic images.

Specifications

- In combination with the X-Ray Vascular package it is possible to view subtracted original images next to the reconstructed survey image.
- Calibration routines
- Manual measurements of line lengths (absolute and ratio's) and angles.
- Annotations

A calibration ruler is included in this package.

19	FD Rotational Angio	1
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Line #	Description	Qty
	<p>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.</p> <p>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.</p> <p>Compared with traditional angiography, Rotational Angiography can save considerable time, dose and contrast, while providing image detail required for diagnostic and therapeutic decisions.</p> <p>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.</p> <p>C-arm in side position:</p> <ul style="list-style-type: none"> • Max. rotation Speed: 30 degrees/s • Max. rotation Angle: 180 degrees <p>C-arm in head position:</p> <ul style="list-style-type: none"> • Max. rotation Speed: 55 degrees/s • Max. rotation Angle: 305 degrees <p>Max. Frame speeds are given by the framespeed specifications of the system configuration.</p> <p>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.</p> <p>A contrast run can be followed up with a mask run, to allow image/run subtraction.</p> <p>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.</p> <p>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.</p> <p>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.</p>	
20	<p>Wireless footswitch: mono-plane version</p> <p>One wireless footswitch in the examination room.</p> <p>Key benefits</p> <ul style="list-style-type: none"> • Reduces clutter around the examination table • Simplifies preparation and cleanup • Streamlines workflow in the interventional suite 	1

Line #	Description	Qty
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Reduce clutter and streamline workflow

The wireless footswitch option streamlines workflow, reduces clutter, and simplifies preparation and cleanup in the interventional suite. Clinicians can use the footswitch to wirelessly control the X-ray system in the examination room, from any convenient position around the table. No sterile covers are needed with the IPX8 certified waterproof design.

Specifications

- The mono-plane wireless footswitch is a 3 pedal version; one pedal for fluoroscopy, one for exposure and one to control the room light/single shot. The pedals can be configured according customers preferred lay-out.
- The wireless footswitch is working via RF technology and is fully tested and released for medical use. It has an active range up to 10 meters, depending on structures within this range.
- The wireless footswitch has a lithium battery which only needs to be recharged once per week. During recharging the footswitch still can be used and is fully functional. In parallel, a wired footswitch can also be used.
- The status of the battery is indicated by an LED-indication on the footswitch itself, so that the user can decide when the footswitch needs to be recharged.
- The wireless footswitch has high water ingress protection standard (IPX8), it can easily be cleaned in water.

The wireless footswitch has an on/off switch. It can be switched off when not in use. When the footswitch is active, but not in use, it will go into a sleep-mode. It will be re-activated when touched or when one of the pedals is pressed.

21	extension to FlexVision Pro	1
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Extension to Flexvision large 58 inch high resolution LCD for exam room, enabling flexible screen lay outs and full control (seamless mouse) of up to 11 external sources including third party systems.

Key benefits

- Full control at table side of all applications with seamless mouse control or via touch screen module
- Full flexibility of screen layouts (live resize, drag and drop, unlimited number)
- To simplify and standardize system set-up for your FlexVision Pro, your personalized layout will come up automatically with ProcedureCards.

Easy tableside control

With FlexVision Pro, user can control FlexVision and video sources on FlexVision through wireless mouse in Examination Room as well as virtual keyboard and touchpad on the touch screen module in the Examination Room. An operator can resize images and adjust the screen layout during the procedure without going into configuration.

Specifications

Full control at table side of all applications in the interventional lab (view and control) with a single wireless mouse or with a Touch Screen Module

- Integration: control of up to 11 external sources
- Possibility to configure unlimited flexible screen layouts
- Screenshots: with single click all displayed inputs can be captured
- Live resize the video window and adjust the screen layout during the procedure without going into configuration
- Operate all the video sources displayed on the monitor using the wireless mouse at tableside
- Mouse and keyboard function on the touch screen module (TSM) to control (external) sources

22	3D Roadmap	1
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Line #	Description	Qty
	<p>3D Roadmap overlays real-time 2D fluoroscopy images on a 3D reconstruction of the vessel tree</p> <p>Key benefits</p> <ul style="list-style-type: none"> • Provides full 3D view to enhance navigation of guide wire and catheter through complex vascular structures • Helps to overcome the limitations of 2D roadmaps in visualizing overlapping vessels • Offers a high level of precision thanks to real-time compensation for gantry, table, and small patient movements <p>Live 3D image guidance</p> <p>Diagnosing and treating vascular diseases without a clear picture of the relationships between overlapping vessels is a daily challenge for interventionists. 3D Roadmap was developed to overcome the limitations of 2D roadmap images in visualizing overlapping vessels and eliminate the need to perform multiple DSA runs. This technique offers a real-time roadmap alternative that provides dynamic 3D image guidance for navigating through vascular structures anywhere in the body.</p> <p>3D Roadmap overlays real-time 2D fluoroscopy images on a 3D reconstruction of the vessel tree acquired with 3D-RA or XperCT, both available on the X-ray system. The resulting roadmap shows the progress of a guide wire, catheter, or coil in real-time. It is designed to improve visualization and navigation for complex neuro, vascular, and oncology interventions.</p> <p>Specifications</p> <p>3D Roadmap is based on the visualization of the vessel tree from 3D-RA acquisitions, activated with one button touch at tableside.</p> <p>Viewing:</p> <p>Table side control: bidirectional link between the X-ray system and 3D Roadmap, 3D Automatic Position Control, 3D Follow C-arc, The 3D roadmap provides the freedom to change: The angulation of the C-arc, The rotation of the C-arc, The Field of View, The Source to Image Distance, Landmarking, 3D blending, WW/WL settings, Store and review runs, Store snapshots and movies.</p> <p>Transfer/ export to:</p> <p>Optional Hard Copy unit (DICOM Print) DICOM compatible device, supported are DICOM XA, DICOM SC, DICOM CT and DICOM 3D Any PC in a standard PC compatible format (JPEG,AVI) One or multiple DVD's, CD-ROM(s) USB device.</p>	
23	AneurysmFlow	1

Line #	Description	Qty
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AneurysmFlow is an interventional software tool that extends the capabilities of the interventional NeuroSuite. AneurysmFlow provides relevant information to the interventionalist during cerebral aneurysm embolization treatment based on quantification of blood flow changes. AneurysmFlow provides color coded representation of flow changes of digital subtraction angiography (DSA). It can quantify blood flow rates in the artery and visualize blood flow patterns in an aneurysm. It also provides a comparison between pre-, peri- and post-procedural color coded images and calculates the Mean Aneurysm Flow Amplitude (MAFA value) representing the reduction of blood flow in the Aneurysm. It helps the interventionalist to better gauge the impact of flow diverter deployment. AneurysmFlow can be controlled at the tableside via the touch screen module and in the control room.

AneurysmFlow assists during endovascular procedures for treating of saccular cerebral aneurysms of 5 mm and larger with flow diversion devices, by:

- visualization of blood flow patterns in the aneurysm and parent vessel
- quantification of the blood flow in the parent vessel
- quantification of the change in blood flow in the aneurysm pre-, peri- and post-procedure based on digital subtraction angiography (DSA)

AneurysmFlow is intended to be used in combination with a Philips interventional X-ray system and proprietary 3DRA data. The software consists of a workflow-oriented structure, which involves the following essential elements:

1. Acquisition of high-speed angiograms acquired at 60 fps, using a dedicated EPX
2. Automatic registration of the 2D angiograms with previously acquired 3DRA datasets
3. Automatic segmentation of the 3DRA data in order to identify the parent artery and to automatically calculate the parent artery flow
4. Manual identification of a region of interest for which flow information is calculated and displayed
5. Calculation of flow in aneurysm and in its parent artery.
6. Manual marking of contour and calculation of the compensated MAFA ratio
7. Manual vessel time intensity analysis

AneurysmFlow analysis data can be exported:

- USB device (csv and/or DICOM format)

AneurysmFlow datasets can be stored/achieved on:

- A PACS systems as DICOM Secondary Capture images or movies
- PACS system with 3D-XA settings configured
- One or multiple DVD's, CD-ROM(s) or USB for easy archiving

Clinical Education for AneurysmFlow

Philips Imaging Systems Clinical Education Specialist will provide sixteen (16) hours of education for up to four (4) students, as selected by customer, including technologists from weekend/night shifts as necessary. CEU credits are not available for this portion of training. Please refer to guidelines for more information. Note: Site must be patient ready. Philips personnel are not

Line #	Description	Qty
	responsible for actual patient contact or operation of equipment during education sessions except to demonstrate proper equipment operation.	
	Education expires one (1) year from equipment installation date (or purchase date if sold separately).	
24	SmartMask Monoplane	1
	Key benefits <ul style="list-style-type: none"> • Simplifies roadmap procedures by overlaying fluoroscopy with a selected acquired image. • Enables roadmap procedures to manage radiation dose and contrast media by selecting an image from an acquired series as a mask image. Supports navigation during interventions without the need of additional contrast media. <p>SmartMask simplifies roadmap procedures by overlaying fluoroscopy with a selected acquired image in the Live X-ray window.</p> Specifications <p>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.</p>	
25	table tilt option	1
	<p>Table tilt option provides precise imaging of contrast medium, blood, or objects in the body.</p> Key benefits <ul style="list-style-type: none"> • Tilts the table to support gravity oriented and puncture procedures • Keeps the region of interest in the isocenter of rotation and angulation • Allows more precise imaging of contrast medium, blood, or objects in the body Precise imaging during gravity oriented and puncture procedures <p>To obtain high quality results and avoid re-takes during gravity oriented or puncture procedures, it's important to keep the region of interest centered at all times. The tilt option allows you to tilt the table. As the table tilts, the X-ray beam automatically adapts to the movement to keep the region of interest in the isocenter of rotation and angulation of the stand. As a result, your region of interest always remains centered to allow more precise imaging of contrast medium, blood, or objects in the body.</p> <p>The table floats even when tilted, and the region of interest can be followed by panning the tabletop. When combined with the Bolus Chase option, the table tilt option enables phlebography to be performed with a head-up tilted patient.</p> Specifications <ul style="list-style-type: none"> • Motorized table height from 78.5 - 103.5 cm • Maximum tilt range: -17 degrees (head down) to +17 degrees (head up). • Tilt speed: 2 degrees/sec • Automatic safeguarding system with manual override • Panning range in tilted plane: equal to the standard tabletop specifications (longitudinal 120cm, lateral 36cm) • Easy to use controls 	
26	DVD writer	1

Line #	Description	Qty
	Key benefits <ul style="list-style-type: none"> • Store images and information on DVDs for easy sharing Store images and information on DVDs for easy sharing <p>To provide flexible storage options, a DVD writer is available with the Philips X-ray system. Procedural images and information can be stored on DVDs and used for archiving, training and presentations.</p> Specifications <p>Export and import of X-ray images and X-ray runs to DVD and/or from DVD</p>	
27	FlexVision XL HD + 2 LCD's <p>FlexVision XL HD is an integrated viewing solution designed to give you full control over your viewing environment which brings High Definition viewing. This FlexVision XL HD is delivered with two 27 inch high brightness color medical grade LCD monitors. The monitors can be mounted on top side or on rear side of the MCS.</p> Key benefits <ul style="list-style-type: none"> • Easily access multiple, up to 8, video inputs (including third party systems) video inputs to inform decision making during procedures • Create custom display templates to support diverse procedures • The screen layout of the FlexVision XL HD can also be changed from the control room • Enlarge images to reveal more details and support comfortable working positions Diagnostic information easily made available at table side <p>In today's interventional setting, as you perform more complex procedures with smaller devices in complex anatomy, you rely on various types of diagnostic information to guide you. To inform decision making in the exam room, Philips offers an advanced digital workspace called FlexVision HD. You can display multiple images in a variety of custom layouts on a large, high-definition LCD screen. Zoom in and out to enhance fine details, while maintaining an overview of all information. Create custom display templates for specific procedures/physician preferences to easily support diverse procedures.</p> Specifications <p>FlexVision XL HD offers:</p> <ul style="list-style-type: none"> • Native resolution of FD20 can be displayed. • Sharp images at full size without zoom • High Definition display at native resolution for ultimate detail • Up to 2k*2k image display fully integrated • Enhanced small vessel visualization <p>1. DVI video composition unit. The DVI video composition unit allows the user to direct and switch the video output of all connected medical equipment to specific sub windows of the Philips 58-inch color LCD with LED backlight in the Examination Room.</p> <ul style="list-style-type: none"> • The DVI video composition unit is operated from the touch screen module. • The DVI video composition unit supports a wide variety of display formats (up to 1920x1200) • Up to 11 external inputs are connected to the DVI video composition unit via wall connection box or boxes. <p>2. Medical grade, high resolution color LCD in the Examination 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 the system for the Examination Room.</p> <p>Main characteristics are:</p> <ul style="list-style-type: none"> - 58-inch, 8 Megapixel color LCD - Native resolution: 3840x2160 	1

Line #	Description	Qty
	<ul style="list-style-type: none"> - Brightness: Max: 700 Cd/m2 (typical) stabilized: 400 Cd/m2 - Contrast ratio: 1:4000 (typical) - Wide viewing angle (approx. 176 degrees) - Constant brightness stabilization control - Lookup tables for gray-scale, color and DICOM transfer function - Full protective screen Ingress Protection: IP-21 <p>3. Large color LCD control (touch screen module)</p> <ul style="list-style-type: none"> • Enlarge information at any stage during the case via the touch screen module in the Examination Room or Control Room. • Select viewing lay-outs via the touch screen module in the Examination Room. • Create new layouts by matching inputs to desired locations on preset templates. • Adjust the screen layout during the procedure without going into configuration • 20 layouts; each layout is customizable, size of viewports can be customized by end user X-ray status area visible with all X-ray details <p>4. Monitor ceiling suspension</p> <p>Monitor ceiling suspension for use in the Examination Room carries the 58-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.</p> <p>5. Snapshot</p> <p>The snapshot function allows the user to store/save a screen-capture of any image on the FlexVision HD as a photo image to the current acquisition patient study.</p>	
28	<p>Cradle extension</p> <ul style="list-style-type: none"> • Moves the tabletop in a cradle motion from side to side to support surgical and puncture procedures • Improves access to patients • Allows precise imaging of contrast medium or blood <p>Precise imaging during surgery and puncture procedures</p> <p>To obtain high quality imaging results and help in avoiding re-takes during surgical or puncture procedures, it can be useful to swing the tabletop from side to side in a cradle movement. This extension moves the tabletop in a cradle motion to improve access to patients. It also allows precise imaging of contrast medium or blood.</p>	1
29	<p>Touch Screen Module Pro</p> <p>Extension of Touch Screen Module for easy control of X-Ray images at table site</p> <p>Key benefits</p> <ul style="list-style-type: none"> - Imaging parameters can be quickly and easily adjusted at table side - Clinical image are shown to support easy navigation. Collimate on the clinical image with one finger. Pinch, zoom, pan and flag images for processing. Position shutters and wedges by simply swiping the image on screen. - All X-ray settings can be easily adjusted to help you effectively manage patient and staff dose <p>Enhance image navigation on the touch screen module</p> <p>This option extends the functionality of the touch screen module, allowing live X-ray images and source images from reference monitors to be displayed on the touch screen module. Shutters and wedges can also be easily positioned with a fingertip by simply dragging them into position. A pointer is also available on screen to improve communication in and between the exam room and control room.</p> <p>Specifications</p> <ul style="list-style-type: none"> - enhance image navigation on the TSM - intuitive control of shutters and wedges by simply dragging the lines shown on top of the image 	1

Line #	Description	Qty
	<ul style="list-style-type: none"> - provides intuitive zooming and panning functionality (also during fluoroscopy) - turns the touchscreen into the pointing device in order to improve communication in ER/CR: when activated the pointer is shown on corresponding monitor <p>!!! Note: Touchpad and Keyboard control from the TSM is NOT part of this option but 'FlexVision Pro' option.</p> <p>!!! Note: Images shown on the TSM are not meant for diagnostic purposes (image is downscaled, compressed and latency during live/replay maybe higher than on the live monitor)</p>	
30	<p>FD Dual Fluoro monoplane</p> <p>An additional fluoro channel in parallel to the standard fluoro channel</p> <p>Key benefits</p> <ul style="list-style-type: none"> • View the subtracted fluoroscopy next to the default non subtracted fluoroscopy • View a digitally zoomed fluoroscopy image next to the default fluoroscopy image <p>Second fluoro image to support complex interventions</p> <p>For complex interventions, it can be useful to view the subtracted fluoroscopy image next to the normal fluoroscopy image. The Dual Fluoro option provides an additional fluoro channel in parallel to the default fluoro channel. The dual fluoro option allows to view live digitally zoomed fluoroscopy next to non-zoomed fluoroscopy.</p> <p>Specifications</p> <p>The Dual fluoroscopy mode is selected via the touch screen module.</p> <p>The trace subtracted fluoro image will be displayed on the live viewport, the non-subtracted fluoro image is displayed on the reference 3 viewport.</p> <p>In Dual Fluoro mode, the live fluoroscopy image can be zoomed digitally, providing a larger view of the region of interest for complex interventions. The zoomed live fluoroscopy image will be shown on the live viewport, while the entire non zoomed image will be shown on the reference 3 viewport. The fluoro zoom function is controlled via the touch screen module.</p>	1
31	<p>2D Perfusion</p> <p>2D Perfusion brings functional imaging in the interventional suite and allows assessing tissue perfusion during the intervention. 2D Perfusion is based on a digital subtraction angiography (DSA) and calculates the transit time of the contrast through the vessels, displaying it as a full color image.</p> <p>2D Perfusion can be used for the identification of perfusion alterations in tissue of vascular pathologies and it allows to compare side by side pre, peri, and post-procedural perfusion images to identify treatment end-point and to verify procedure outcome.</p> <p>In addition to a visual interpretation, a quantitative analysis of the perfusion is presented. For a user defined region of interest, a time density curve can be created, to quickly obtain comprehensive data to quantitatively compare impact of interventions. Conventional perfusion parameters are measured including:</p> <ol style="list-style-type: none"> 1. Mean Transit Time 2. Arrival Time 3. Time to Peak 4. Wash-in Rate 5. Width 6. Area Under Curve <p>The color legend indicates the perfusion parameters that are represented by each color in the displayed image. The analysis on the time density curve can also be performed while comparing pre and post interventional images to quantify perfusion differences within a selected region of interest.</p>	1

Line #	Description	Qty
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Two different types of region of interest (ROI) can be drawn: an elliptical ROI or a freeform ROI. If the ROI is repositioned, the curve in the analysis graph is updated automatically.

Once the ROI is selected, the time density curve is generated real time and the average value of the selected parameter is calculated and displayed. When comparing pre and post intervention images, it's possible to draw a region of interest and it will be automatically drawn in the comparative image. It will also calculate the time density curve of both images, to easily evaluate pre and post intervention differences.

- 2D Perfusion supports subtracted X-ray exposure runs acquired with a 2D Perfusion protocol. (While acquiring a run with the 2D Perfusion protocol, the subtracted run is shown on the X-ray modality screen.)
- 2D Perfusion supports runs acquired on the frontal channel or on the lateral channel.
- The 2D Perfusion protocol acquires up to 173 images at 3 frames per second.
- 2D Perfusion supports runs of 5 images or more
- 2D perfusion allows to select the frames where the presence of contrast is detected, in order to reduce the motion artifacts.
- 2D Perfusion provides different options for exploring the time-to-density curve, which describes the presence of contrast at a certain point in time.
- It allows to draw 2 different types of ROI: an elliptical ROI or to draw a freeform ROI. If you make changes to the ROI (elliptical ROI only), the curve in the analysis graph is updated automatically.
- 2D Perfusion includes EPX's for Peripheral, Neuro and Abdominal examinations.
- In procedures where it's required to compare left and right hemispheres, you can draw a mirror line, and analyze the perfusion behavior in the ROI between the hemisphere suspected to have a perfusion alteration, with the normo-perfused hemisphere.
- Runs can be transferred to 2D Perfusion over the DICOM network or over the Real Time Image Link (option).

Clinical Education Program for 2D Perfusion

IXR 2D Perfusion OnSite Education: Philips Education Specialists will provide sixteen (16) hours of 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. 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.

Education expires one (1) year from equipment installation date (or purchase date if sold separately). Ref # 6034-20131218

32	control module (CR)	1
Extension of the control facility for geometry movements in the Philips monoplane X-ray systems.		
Key benefits		
<ul style="list-style-type: none"> • Easy system control from a different location • Intuitive operation thanks to streamlined design 		
Full control where you need it		
To help your interventional suite work as efficiently as possible, no matter what layout or case mix it has, you can choose extra control modules to easily control the system from a different location.		

Line #	Description	Qty
	<p>Each control module works according to the Philips workflow concept, allowing intuitive operation of the system thanks to the streamlined design.</p> <p>Specifications</p> <p>A second combined imaging and geometry module offers an additional assisting operation of the stand, table and imaging functionality in parallel with the standard module at table side. The modules are connected in a master-slave configuration. Any activation of the master module will de-activate the slave module at once. The 2nd module is connected in the Control Room.</p>	
33	IW Hardware (FlexSpot)	1
	<p>Hardware for the 3D interventional tools combined with FlexSpot.</p> <p>Key benefits</p> <ul style="list-style-type: none"> • Facilitates multimodality viewing in exam room and control room • Supports DICOM compatible data from CT and MR imaging modalities • Provides real-time access to images to support fast results <p>View multimodality images in exam room and control room</p> <p>Images from a variety of sources are being increasingly used during interventions for a variety of Live Image Guidance tools. The Interventional Hardware option provides the hardware for our interventional tools that enables DICOM compatible data from other imaging modalities to be imported and viewed in the exam room and control room. To support fast results, a real-time digital image link is provided between the Interventional Hardware workstation and the X-ray system.</p> <p>Specifications</p> <p>The Interventional hardware is the hardware for the 3D interventional tools that included Real Time Link. It enables import and viewing of DICOM compatible data from other imaging modalities. The Interventional Hardware comprises at least:</p> <ul style="list-style-type: none"> • Computer Workstation • 16 GB memory • 1.5 TB disk for the operating system, application software and application data • Internal CD-ROM / DVD writer • Mouse tablet to interact with all the interventional tools at the table side. <p>Conditionally: FD Calibration Tool Kit for 3D-RA</p>	
34	storage extension	1
	<p>Extends image storage capacity on your X-ray system</p> <p>As imaging data becomes larger, you can quickly reach the limit of the storage capacity on your interventional X-ray system. The Storage extension extends the storage capacity of your interventional X-ray system.</p> <p>Specifications</p> <p>By default 50.000 images are available, this option will give 100.000 images (this is for 1K2 image size).</p>	
35	CO2 View Trace Software	1
	<p>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.</p>	
36	HeartNavigator R3	1

Line #	Description	Qty
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Key benefits

- Deeper anatomical understanding to plan and perform TAVR/TAVI, mitral valve replacement and LAAC procedures
- Immersive user experience and fully automated tasks simplify planning, measurement, device selection and choice of optimal X-ray viewing angle
- Enhanced insight into calcification distribution

Insightful planning and guidance for Structural Heart Disease procedures

When planning a structural heart disease (SHD) procedure, an objective assessment on vascular anatomy can help you work with greater confidence and avoid complications. Understanding the patient's individual anatomy when planning a transcatheter aortic valve replacement or implantation (TAVR/TAVI), mitral valve replacement, left atrial appendage closure (LAAC) or other procedure helps you select the appropriate approach, and size and type of a device. In addition, safely navigating the valve delivery devices through anatomy and deploying the valve in the correct position are recognized as technical challenges when performing TAVR/TAVI procedures.

HeartNavigator Release 3 automatically segments anatomical structures, anatomical landmark points and anatomical planes from previously acquired DICOM compliant CT datasets to support a wide variety of structural heart disease procedures. Different visualization tools, including anatomical landmarks, virtual devices, optimal viewing planes and measurements are available to support precise planning.

Specifications

- Automatic segmentation of tissue, anatomical structures, landmarks, calcium, anatomical planes and viewing angles within the cardiac CT data for TAVI/TAVR
- Automatic distance, diameter, area and perimeter measurements for TAVI/TAVR
- Automatic Free centerline measurement along the ascending aorta for TAVI/TAVR
- Segmentation, measurements and viewing angles for other SHD procedures, e.g. mitral valve replacement and left atrial appendage closure
- Up to date virtual device library for TAVI/TAVR procedures
- Report with all relevant measurements, optimal viewing angles and selected device as print for use in exam room or stored on the PACS.
- Live guidance with CT overlay and automatic optimal viewing angles
- Highly automated intuitive workflow
- Enhanced anatomy visualization

Please contact your local sales person for any CT compatibility details.

Clinical Education Program for iXR Heart Navigator:

iXR Heart Navigator OnSite Education: Philips Education specialist will provide sixteen (16) hours of education for up to (4) students selected by the customer . The Physicians performing the procedures are required to be part of the training session. CEU credits may be available for each participant that meet 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 the equipment during the educations sessions except to demonstrate proper equipment operation.

iXR Heart Navigator OnSite Live Case Follow Up Education: Philips Education Specialist will provide twenty -four (24) hours of education for Physicians and staff for live case use of the Heart Navigator software. This will be a follow up visit to the initial training of the Heart Navigator

Line #	Description	Qty
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software. **It is required that Live Valve implantation studies be performed during this education session.** No CEU credits will be available for this session. 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 the equipment during the education sessions except to demonstrate proper equipment operation.

Education expires one (1) year from equipment installation date (or purchase date if sold separately). Ref # 694698-20110915

37	XperCT Dual	1
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XperCT Dual extends the capabilities of the interventional suite offering CT like imaging to visualize bone, soft tissue and vessels in case of contrast enhanced acquisition. XperCT Dual protocols are available covering routine procedures such as biopsies and drainages but also advanced procedures such as abdominal oncological imaging up to neuro high resolution stenting. All protocols can be selected at the tableside via the XperModule.

The DualPhase dual view functionality allows the simultaneous visualization of two 3D datasets acquired at different times of the procedure such as the arterial and post-arterial contrast enhancement in oncologic liver imaging. In this DualView, XperCT Dual allows the segmentation of multiple lesions at the same time in the viewed datasets.

XperCT Dual acquires up to 60 frames/sec. (frame rate extension to 60frames/sec is included) and supports fast abdominal protocols with 5 to 10 second acquisition time for Allura release prior to 8.2 and even 5 to 8 second acquisition times for Allura release 8.2 or higher, thereby minimizing respiratory artifacts. The XperCT volume is displayed automatically within 8 to 15 seconds after acquisition. No user interaction is required.

XperCT Dual includes Metal Artifact Reduction to reduce the artifacts caused by metal presence in the region of interest. In case the original XperCT shows metal artifacts, the interventional radiologist can perform a second reconstruction and select for Metal Artifact Reduction, which will remove the artifacts caused by the metal present. The most typical examples of metal presence are: metal implants, coils or stents with stainless steel structures. Moreover, BMI Noise Reduction is included to reduce the noise caused by large size patients.

Note: BMI Noise Reduction is only available when Abdominal XperCT runs are selected

The XperCT volume can be viewed in the control room and in the examination room. The viewing package comprises:

- 3D volume viewing in any desired orientation
- Slice viewing in any desired orientation
- Slice viewing at any slice thickness with a minimum of 0.5 mm
- Five distance measurements calculated in the same volume, including "Quick measurement" feature
- Cut-plane functionality to provide precise insight into anatomical structure
- Unique high-resolution reconstructive zoom technique
- Graphical display of stand position including rotation and angulation parameters
- Contrast and brightness control

Line #	Description	Qty
	<ul style="list-style-type: none"> • Contrast resolution 5-10 Hu • Spatial resolution of the initial reconstruction: 10 lp/mm • Contrast range -1000 to 2000 Hu • High resolution imaging mode produces • 512x512x512 volume rendered reconstructions • XperCT Dual can be controlled via the Xper module and the mouse at tableside. 	

The XperCT volume can be matched with (when additional options are available) Allura 3D-RA and pre acquired CT, PET/CT or MR volumes. This view allows combining multiple images from different modalities in order to provide additional anatomical insight. This multimodality volume can be viewed with the following functionalities:

- Registration of the two volumes from the same patient
- The resulting volume can be viewed with complete 3D-RA viewing functionality
- The XperCT slice can be overlaid onto the 3D vessel for better assessment of the region of interest
- Three different contrast rendering options to allow optimal viewing of the 3D vessel in the soft tissue structure
 - (128x128x128, 256x256x256, 384x384x384 and 512x512x512 volumes)
- Movie clip recording functionality (AVI) to capture dynamic views
- 3D automatic position control at tableside: When an optimal working position is selected from the XperCT volume the C-arc steers itself to the selected position
- 3D Follow C-arc at tableside: When selected, the XperCT volume automatically follows the position of the C-arc.
- XperCT data and 3D-RA with XperCT Dual overlay is stored in the same patient file as all other patient related data. All this data can be reviewed at any time

XperCT data can be sent to:

- Any optional DICOM compatible device (e.g. PACS/ViewForum/Xcelera), supported are DICOM XA, DICOM SC, DICOM CT and DICOM 3D
- Any PC in a standard PC compatible format (JPEG,AVI)
XperCT datasets can be stored/achieved on:
 - A PACS systems as DICOM Secondary Capture images or movies
 - USB removable memory device
 - One or multiple DVD's, CD-ROM(s) for easy archivingHard copy via the (DICOM Print) protocol

Clinical Education Program for XperCT

CV XperCT Handover OnSite Education:

Philips Education Specialists will provide eight (08) hours of 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. 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. Education expires one (1) year from equipment installation date (or purchase date if sold separately). Ref# 335-100615

Line #	Description	Qty
	<p>EmboGuide is an interventional tools that provides workflow-guided embolization support</p> <p>Key benefits</p> <ul style="list-style-type: none"> • 3D imaging enhances detection of HCC feeders compared to DSA • 3D lesion segmentation allows fast detection and volume measurement • 3D roadmap with lesion and feeding paths overlay supports precise navigation to target <p>Workflow-based embolization guidance</p> <p>For interventional suites that already have XperCT and want to decide with confidence during embolization procedures, EmboGuide provides workflow-guided embolization support in three steps. The first step allows identification and segmentation of multiple lesions. The second step automatically detects the feeders of the segmented lesions. Finally, EmboGuide creates a real-time overlay and registration of the 3D volume (3D roadmap) on the live X-ray images to support precise navigation of the device/catheter to reach each of the identified feeders for a selective or super-selective embolization.</p> <p>Specifications</p> <p>The essential components of EmboGuide are:</p> <ul style="list-style-type: none"> • 3D lesion segmentation tool for 3D target(s) identification and volume measurement. • Workflow-driven planning tool with automated feeding vessel detection and marking. • 3D roadmap navigation with lesion and feeding paths overlay. <p>EmboGuide provides the following functions:</p> <ul style="list-style-type: none"> • Automatic Feeder Detection; supports the user in analyzing the vasculature of lesions by giving the initial suggestions of the feeding vessels of the segmented lesions. The detected feeding vessels will be annotated and added to the planning. • Manually add and/or remove feeding vessels; after running the automatic feeder detection function, the user can verify and refine the planning by manually adding and/or removing feeding vessels. • Follow Feeder; for verification, the user may use the Follow Feeder function. This function allows the user to trace the path of a single annotated feeding vessel to verify whether it traces into a targeted lesion. • 3D Landmarks; landmarks can be put on the 3D volume as additional information to support with the navigation of the catheter. • Live 3D Image Guidance; real-time overlay and registration of the 3D volume on the live 2D X-ray images from the X-ray system of the same anatomy, can provide additional 3D image guidance to help the user with navigating the device/catheter to the embolization target. • Storage of the live 2D-3D overlay runs; the real-time overlay of the 3D volume with the live 2D X-ray images from the X-ray system can be recorded and stored for reviewing at any time. • Table-side control; to provide efficient work-flow during the interventional procedures, the most frequently used functions can be controlled from table-side. <p>Image data for EmboGuide is stored together with the EmboGuide movies and snapshots and can be sent to any optional DICOM compatible device (e.g. PACS/IntelliSpace Portal/Xcelera). Supported are DICOM XA, DICOM SC, DICOM CT and DICOM 3D and any PC in a standard PC compatible format (JPEG, AVI). All this data can be reviewed at any time.</p> <p>EmboGuide movies and snapshots can be stored/achieved on:</p> <ul style="list-style-type: none"> • A PACS systems as DICOM Secondary Capture images or movies. • USB device. • One or multiple DVD's, CD-ROM(s) for easy archiving. • Hard copy via the (DICOM Print) protocol. 	

Line #	Description	Qty
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OncoSuite Ablation allows planning of the ablation zone with a high degree of accuracy using conventional methods. XperGuide ablation software helps to plan and guide the specific ablation zones and distance between the ablation needles in 3D based on the manufacturer's specifications of each needle. OncoSuite Ablation shows the isotherm of each needle on an XperCT overlay or on a pre-acquired MR, CT or PET/CT volume. OncoSuite Ablation assists clinicians in planning the optimal placement of the ablation needle to cover the targeted lesion. The needle path can be planned by drawing it or by defining entry and target locations on XperCT, MR, CT or PET/CT slices. By allowing the precise planning of multiple needles, XperGuide's ablation software assists clinicians in treating large tumors and thereby helping to prevent re-do.

OncoSuite Ablation consists of both XperGuide and the XperGuide Ablation option. XperGuide enables real-time needle guidance in the angio suite. Virtual needle paths are created by XperCT Dual data and on overlays of previous acquired MR, CT, or PET/CT datasets. In order to visualize the actual needle path versus the virtual path that is planned upfront, XperGuide offers the possibility to match real-time 2D fluoroscopy images with 3D volume of XperCT Dual, CT, PET/CT or MR datasets. A wide range of gantry projections can be used to define the needle path. This volumetric dataset can be viewed in any slice direction providing optimal sight.

Path planning in XperGuide can be done by:

- Drawing a virtual needle path on an XperCT, CT, PET/CT or MR slice
- Defining entry and target points on different XperCT Dual, MR, CT or PET/CT slices
- Defining a help line on a 3D volume XperGuide automatically calculates the optimal gantry projections for the path and transfers them to the planning to draw the needle path. The calculated virtual needle paths can be viewed on the XperCT Dual, MR, CT or PET/CT slices, to verify if this path is feasible

XperGuide supports planning of multiple needle trajectories. During the needle procedure, XperGuide is fully controlled at tableside. When XperGuide is active, guidance is automatically active when the fluoroscopy pedal is pressed. The live 2D image is projected over the XperCT Dual, MR, CT or PET/CT volume. The gantry can be positioned in the calculated gantry positions or controlled manually. The XperGuide images (live 2D fluoroscopy projected over the XperCT Dual, MR, CT or PET/CT volume) will follow the gantry projections.

At table side, XperGuide adapts in real-time to the following parameters:

- Changes in the angulation of the C-arm
- Changes in the rotation of the C-arm
- Changes in the field of view
- Changes in the source image distance

XperGuide data, like XperGuide movies and snapshots, can be exported to any optional DICOM compatible device (e.g. PACS/ViewForum/Xcelera). Supported are DICOM XA, DICOM SC, DICOM CT and DICOM 3D and any PC in a standard PC compatible format (JPEG,AVI).

XperGuide movies and snapshots can be stored/achieved on:

- A PACS systems as DICOM Secondary Capture images or movies
- USB removable memory device
- One or multiple DVD's, CD-ROM(s) for easy archiving
- Hard copy via the (DICOM Print) protocol

Line #	Description	Qty
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XperGuide Ablation is an extension to the XperGuide software to facilitate the planning of tumor ablation procedures. It supports all percutaneous ablation techniques (RF, microwave and cryo-ablation) by displaying the isotherm of the chosen ablation needle. It allows the visualization of multiple needles by entering their thermal characteristics, and the assessment of their combined impact in the ablation zone. A virtual ablation needle with its thermal characteristics is displayed on a 3 dimensional XperCT volume or previously acquired CT, MR or PET/CT data to verify optimal positioning of the needle and obtain total tumor coverage. The thermal characteristics of each needle consist of the width, breadth and front of its ablation zones. Per needle up to three ablation zones of different isotherms can be defined. XperGuide Ablation allows to plan and store up to 60 different types of thermal needle characteristics simultaneously.

All thermal characteristics can be stored and transferred to other Allura systems. After the needle planning is performed, the 2D fluoroscopy overlay on the 3D volume allows real time needle guidance along the planned trajectory on XperCT, MR, CT and PET/CT datasets. During live needle guidance it is possible to adjust the ablation transparency and modify the previous plan. After the needle(s) are positioned, it's possible to control the effective ablation target with the previous plan.

Clinical Education Program for XperGuide Onco Ablation

CV XperGuide Onco Ablation OnSite Education:

Philips Education Specialists will provide sixteen (16) hours of 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. 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.

Education expires one (1) year from equipment installation date (or purchase date if sold separately). Ref#296044-20140116

40	Accessory rail + cable ext.kit	1
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- Extend the length of the OP rail to fit cardio and neuro tabletops
- Position operating modules and/or accessories conveniently
- Work comfortably at the head end of the table

Extend the length of the OP rail

To provide more flexibility when performing procedures, the additional OP rail accessory with cable extension kit is equipped with everything needed to mount operating modules and/or accessories next to the tabletop.

Specifications

This option includes the following items:

- One additional OP rail (mechanical) of 500 mm
- Cable extension set for OP rail
- Extension cable for control module, 1.3 meters long
- One connection box to connect the user interface cables to the module cables
- An extension for the table op rail of 500 mm

Line #	Description	Qty
	<p>The additional OP rail can be mounted on either side of the tabletop where no OP rails are mounted. The additional OP rail is compatible with AD5 and AD7 Table (cardio and neuro) patient tabletops. The OP rail has the same profile and dimensions as the current standard OP rail. The maximum load (downwards) on the additional OP rail is 100 N (F=100N), the maximum mechanical moment on the additional OP-Rail is 40Nm downwards and 20Nm upwards, determined by the tabletop of the patient table.</p>	
41	* XperCT Open and Closed	1
	<p>For Philips Azurion Interventional X-ray suites, Open trajectory function is available in propeller mode in addition to the current standard trajectory.</p> <p>Specifications</p> <p>Open Trajectory provides 3D rotational acquisitions with start and stop positions of +55° to -185° respectively. This protocol opens the arc to the left side of the patient allowing for a wider translation of the angiographic table towards this direction; thereby shifting the isocenter of the C-arm to the right lateral side of the patient. This enables visualizing off-centered regions of interest (such as the periphery of the liver) in a single sweep. In this function, the data is acquired at the same frame rate as XperCT Dual (60 frames/sec). With 'XperCT Open and Closed' functionality, customers can continue to retain the current standard closed trajectory protocols. Therefore, customers will be able to choose either of the trajectories in propeller mode during the procedure as per their preference.</p>	
42	Rad Shield w/ Arm (Contoured) 61X76	1
	Contoured Rad Shield with Arm rest. 61X76	
43	PIVOTING TABLE-MOUNTED RADIATION SHIELD	1
	<p>Table-mounted radiation shield for additional protection of physician and staff against scatter radiation. The shield consists of two protective parts: a lower shield and an upper shield. The shield is specially designed for use with the AD57 patient table.</p> <p>The table mounted radiation shield provides the following features:</p> <ul style="list-style-type: none"> • Mounting to either the right or left table accessory rails; • Pivoting into the required working position; • Pivoting into the parking underneath the tabletop facilitating patient preparation; • The upper shield can be positioned upright providing optimal protection or can be folded down for free access to the patient. <p>The table mounted radiation shield includes:</p> <ul style="list-style-type: none"> • Lower shield measuring 70 cm high 80 cm wide 0.5 mm Pb equivalence; • Upper shield measuring 40 cm high 50 cm wide 0.5 mm Pb equivalence; • Mounting clamp; <p>Docking device for wall mounting.</p>	
44	Cable Spooler	1
45	M LED 3MC Light	1
	<p>MAVIG M3 MC LED - Multi Color / power Supply Included</p> <p>Includes Portegra2 Ext Spring Arm 75/90cm</p>	

Line #	Description	Qty
46	Medrad Xper Cable Rack Mnt	1

47 Mark 7 Arterion, Table Mount 1

The Mark 7 Arterion Injection System is the latest in MEDRAD's "Mark" series of angiographic injectors. Compared to earlier systems, the Mark 7 Arterion injector head is lighter and easier to use so you can focus more on the patient.

The clear and intuitive user interface guides you through proper set-up, and highlights the information you need to perform safe procedures.

Unique to the market, the front load system simplifies set-up and makes for a cleaner tear down. The clear syringe provides a higher level of confidence that you are ready to inject.

Made from a clear material, the Mark 7 Arterion syringe (Catalog ART 700 SYR) allows you to easily view the inside of the syringe for smoother purging of air. And MEDRAD's famous fluid dots are still there to help-round for fluid, oval for air.

The table mount injector solution ensures the contrast injector is conveniently placed and always available when it is needed. It provides a clean workspace without occupying valuable floor space. System includes:

- Table Mount
- display control panel
- 6 ft. coiled hand switch
- operation manual (CD)
- 10 ft. head cable
- syringe heat maintainer
- imaging system interface cable for the Allura / Allura Xper
- consumables starters kit

For the MEDRAD Mark7 Injector system Philips is only the distributor. MEDRAD provides the service as well as the application support of both versions unless stated differently in the Philips Service Agreement

System Specifications:

- Flow Rate 0.1-45.0 ml/s in 0.1 ml increments
- 0.1-59.9 ml/m in 0.1 ml increments
- Volume 1-150 ml in 1 ml increments
- Pressure Limit 100-1200 psi in 1 psi increments
- (150ml syringe) 689-8273 kPa in 1 kPa increments
- Rise Time 0.0-9.9 seconds in 0.1 increments
- Delay Time 0.0-99.9 seconds in 0.1 increments
- Fill Speed 1-20 ml/s
- Fill Volume 1-150 ml
- Syringe Size 150 ml
- Syringe Heat Maintainer 35 °C (95 °F) ± 5 °C (9 °F)
- Protocol Memory 40 Protocols
- Injection Memory History

Line #	Description	Qty
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48	**989801220273 Ceiling Track w/Column & Handle Ext	2
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Mavig 2.5m Ceiling Track with Ceiling trolley, 360 degree column, and brake handle extension.

49	**989801220280 LED Single Color Exam Lamp	1
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ED Single Color M LED130F for MCS Examination Lamp

Portegra2 extension-spring arm 75/91 cm with terminal block for mounting on Philips L-Bracket for MCS The LED lamp is focusable, including sterilizable handle, power supply unit.

Light in new dimension LED lamps support your daily operations through innovative technology and design. In addition to advantages provided by MAVIG with all light equipment, LED technology offers the following enhanced features:

- Facetted multi-lens system
- In-depth illumination
- Superior color rendition
- Extension arm 750mm
- Spring arm 900mm
- LED-Examination-light
- Operating voltage is 24V DC. The lamp is supplied with a transformer, should it be used with 230V.

Technical data LED 130F:

- Light intensity at 1 meter distance: 60.000 Lux
- Color rendering index: Ra = 95
- Focusable: yes
- Focusable size of the light field: 14-25 cm
- Color temperature: 4500 Kelvin
- Electronic light intensity control at the lamp head: standard dimming range: 50 - 100 %
- Temperature increase in head area: 0.5° C
- Mains: 230 V / 60 Hz
- Power consumption: 28 W
- Number of LEDs: 19
- Life-span of the LEDs: > 40.000 h
- Diameter of the lamp head: 33 cm
- Working distance: 70 - 140 cm
- Height Adjustment: 117 cm

50	Volcano CORE IVUS - Vascular Bundle	1
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CORE Precision Guided Therapy System

CORE CPU, Operator's Manual, Power Transformer, Cable Pre-Install Kit, Connection Box, two (2) Standard Controller and one (1) bedrail mount, 19"NEC Monitor Kit, Phased Array PIM Body, FFR functionality, DICOM Network Connection, ChromaFlo Functionality.

Line #	Description	Qty
	-Includes VH IVUS End User License Agreement	
	The customer agrees that use of the VH IVUS Software is subject to the terms of the End User License Agreement. A copy of the End User License Agreement is also available from your VOLCANO representative or online at www.volcanocorp.com/products/pdf-files/software-support-vh-ivus.pdf	
	-Includes Three (3) Year IVUS Software Support Agreement	
	This signed Agreement provides for the purchase of the IVUS Software Support Agreement (SSA), which provides for unspecified IVUS software revisions released during for a three (3) year term (should any be commercially released) at no additional cost. In the absence of an SSA, future software revision releases will be made available at additional cost to be determined upon commercial availability. www.volcanocorp.com	
	CORE Control Pad	
	Bedside touchscreen controller offering system control from the sterile field	
51	Black Anti-fatigue Floor Mat w/logo.	2
	Black Anti-fatigue Floor Mat with Philips Logo	
	36" x 60"	
52	XD3071 Interventional Workspot CTC3	1
	Course Number: XD3071	
	Course Title: Interventional Workspot	
	CSIP Level: All course materials are on CSIP level 1	
	Course Length: 3 days	
	Delivery Method(s): ILT	
	Modality: IGT Systems	
	Location: PHC, CTC, SLC, HCA	
	DESCRIPTION:	
	This course provides the engineer with knowledge and skills which will enable him/her to perform the service tasks. He/she will be able to execute the Setting to Work, perform Planned Maintenance, Corrective Maintenance and Upgrades.	
	This training is valid for the following workstation release(s):	
	- Interventional Workspot R1.4	
	including following products:	
	<ul style="list-style-type: none"> • 2D Perfusion • Allura 3D-CA • Allura 3D-RA • CT TrueView • Dynamic 3D roadmap • EmboGuide • HeartNavigator • Roadmap Pro • StentBoost 	

Line #	Description	Qty
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- VasoCT
- XperCT Dual
- XperGuide
- XperGuide Ablation
- AneurysmFlow
- VesselNavigator
- VesselNavigation Complete

PREREQUISITES:

All of the below courses:

- FC9002 – Safety
- FC9003 – Imaging Systems Safety
- XD3894 – Allura Xper release 8.2 Essentials or XD3970 – Allura Xper Rel 7.6 part 1

COURSE OBJECTIVES:

Upon successful completion of the course the learner will be able to:

- Operate the Interventional Workspot in order to execute the service tasks.
- Execute the Setting to Work of the Interventional Workspot.
- Perform Planned Maintenance on the Interventional Workspot.
- Perform Corrective Maintenance on the Interventional Workspot.
- Execute FCO's and Commercial upgrades on the Interventional Workspot.

* PHILIPS PROPRIETARY MATERIALS SUCH AS DIAGNOSTIC SOFTWARE AND SERVICE DOCUMENTATION ARE NOT INCLUDED IN THE TRAINING AND WILL NOT BE AVAILABLE FOR USE OUTSIDE OF THE TRAINING ENVIRONMENT. THE TRAINEE MUST RETURN ALL PROPRIETARY MATERIALS RECEIVED DURING THE TRAINING AT THE END OF THE TRAINING. CUSTOMER ACKNOWLEDGES AND AGREES THAT NEITHER CUSTOMER NOR TRAINEE WILL RECEIVE A LICENSE TO SUCH PROPRIETARY MATERIALS AND THAT THE TRAINEE MAY NOT BE ABLE TO FULLY UTILIZE THE TRAINING WITHOUT THE USE OF SUCH PROPRIETARY MATERIALS. (CERTAIN LICENSES MAY BE OBTAINED THROUGH PURCHASE OF SUPPORT OR ASSIST AGREEMENT.) Course dates and location to be finalized by Philips. Philips shall attempt to accommodate Customer requested dates and training location. The price quoted includes course tuition. Travel and living expenses are not included, but may be purchased separately through Philips.

IMPORTANT Notes Regarding Admission to Philips Customer Engineer Training Courses:

1. Trainee must meet all prerequisites
2. Course expires one (1) year from equipment installation date (or purchase date if sold separately)
3. Customer must sign Philips Nondisclosure statement
4. Trainee must sign Philips Nondisclosure statement
5. Customer must sign Philips terms and conditions of training

53	XD8982ALLURAXPERCLARITY REL8.2CTC5D	1
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Allura Xper / Clarity release 8.2

Course Number: XD8982

System Codes: 722-026, 722-027, 722-028, 722-029, 722-033, 722-034, 722-035, 722-036, 722-038, 722-039

Course Title: Allura Xper / Clarity release 8.2

Course Length: 5 days

Delivery Method(s): ILT

Modality: iXR-CV

Line #	Description	Qty
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Location: PHC and CTC

Target Audience: CS Field Service Engineers

DESCRIPTION:

This course will provide information on and in insights in the differences between Allura Xper release 8.1 and Allura Xper / Clarity release 8.2.

PREREQUISITES:

XD3970, Allura Xper Rel 7.6 part 1(Or history courses XD3966 & XD9065 or XD3875 & XD9065);

Field experience;

XD9906, Allura Xper update to R8.1;

FC9021 Cat Tool.

COURSE OBJECTIVES:

Upon completion of this course and using the appropriate service manuals, the FSE can:

- Identify differences between the 8.1 release and the 8.2 release.
- Recognize new system parts.

- Certeray Generator

- motion control Clea-stand

- FD20 and FD15 detector

- AD7XT and AD7XNT table

- Power Supply gPDU

- Cabinet layout and cable routing

- Identify and sequence the steps to installing an 8.2 release.
- Identify the new service documentation structure
- Identify the Diagnostic CM procedures.

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Line #	Description	Qty
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IMPORTANT Notes Regarding Admission to Philips Customer Engineer Training Courses:

1. Trainee must meet all prerequisites
2. Course expires one (1) year from equipment installation date (or purchase date if sold separately)
3. Customer must sign Philips Nondisclosure statement
4. Trainee must sign Philips Nondisclosure statement
5. Customer must sign Philips terms and conditions of training

54	XD3894 ALLURA XPER REL8.2 ESSENTIAL	1
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PHILIPS PROPRIETARY MATERIALS SUCH AS DIAGNOSTIC SOFTWARE AND SERVICE DOCUMENTATION ARE NOT INCLUDED IN THE TRAINING AND WILL NOT BE AVAILABLE FOR USE OUTSIDE OF THE TRAINING ENVIRONMENT. THE TRAINEE MUST RETURN ALL PROPRIETARY MATERIALS RECEIVED DURING THE TRAINING AT THE END OF THE TRAINING. CUSTOMER ACKNOWLEDGES AND AGREES THAT NEITHER CUSTOMER NOR TRAINEE WILL RECEIVE A LICENSE TO SUCH PROPRIETARY MATERIALS AND THAT THE TRAINEE MAY NOT BE ABLE TO FULLY UTILIZE THE TRAINING WITHOUT THE USE OF SUCH PROPRIETARY MATERIALS. (CERTAIN LICENSES MAY BE OBTAINED THROUGH PURCHASE OF SUPPORT OR ASSIST AGREEMENT.) Course dates and location to be finalized by Philips. Philips shall attempt to accommodate Customer requested dates and training location. The price quoted includes course tuition. Travel and living expenses are not included, but may be purchased separately through Philips.

IMPORTANT Notes Regarding Admission to Philips Customer Engineer Training Courses:

1. Trainee must meet all prerequisites
2. Course expires one (1) year from equipment installation date (or purchase date if sold separately)
3. Customer must sign Philips Nondisclosure statement
4. Trainee must sign Philips Nondisclosure statement
5. Customer must sign Philips terms and conditions of training

Course Number:

XD3894

Course Title:

Allura Xper release 8.2 Essentials

CSIP Level:

Line #	Description	Qty
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All course materials are on CSIP level 1

Course Length:

9 days

Delivery Method(s):

ILT

Modality:

iXR

Location:

PHC, CTC, SLC, HCA

Target Audience:

Field Service Engineers (multi-modality)

Licensed Representatives

System Code(s):

Associated system codes: 722-026, 722-027, 722-028, 722-029, 722-033, 722-034, 722-035, 722-036, 722-038, 722-039, 722-058, and 722-059

Document Date:

2015-05-26

DESCRIPTION:

After successfully finishing this training the Engineer reaches compliance to work on the above mentioned system codes. The training is performed on "basic" system configurations. Commercially available system options are only partially covered; these are offered as separate courses.

Aims of this training are :

- The engineer will learn how to:
- perform planned maintenance.

Line #	Description	Qty
	<ul style="list-style-type: none"> • execute a repair of the system. • perform 1st line fault diagnosis on the system. 	

Topics covered:

- Planned Maintenance
- plan visits
- perform preparation:
- customize planned maintenance modules
- determine visit type
- get latest planned maintenance instructions
- determine needed tools and materials
- operate the system; basic understanding of system operation
- use software service tools; field service framework and the Xper management tool on a basic level.
- perform the following planned maintenance instructions:
- general planned maintenance
- adjust generator, adjust image detector and perform level 1 Image Quality measurements
- adjust geometry
- patient support AD7X(N)T
- radiation safety
- electrical safety
- XtraVision release 8.8.1/9.0.x
- finishing activities

Repair

For these repairs it is assumed that the fault diagnosis has been done by remote support, tier 2 or tier 3.

- Identify "all" Field Replaceable Units of the Allura Xper rel. 8.2 system
- Find the correct service instruction to replace a Field Replaceable Unit
- Identify connections between parts using the corrective maintenance manual
- Perform replacement cases; demonstrate replacement of various parts using the appropriate repair manual.

First line fault diagnosis

Use the Corrective maintenance manual for faultfinding

- diagnostic flows (90%)
 - functional diagrams (5%)
 - led indications (5%)
 - Learn how power is distributed
 - Escalate to helpdesk
 - Perform various fault finding cases
 - power on problems
 - movement problems
 - acquisition problems
-

Line #	Description	Qty
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PREREQUISITES:

All of the below courses:

- FC9002 – Safety
- FC9003 – Imaging Systems Safety
- XD3007 – X-Ray Systems basic part 2
- XD9903 – Anatomy and pathology of the heart and bloodvessels
- XD9904 – Allura Xper Operation and Clinical Workflow
- FC9017 – Basic Networking

COURSE OBJECTIVES:

Upon successful completion of the course the learner will be able to:

- perform planned maintenance on the system according the planned maintenance instructions.
- execute a repair of the system with the help of available repair manuals.
- perform 1st line fault diagnosis on the system using the corrective maintenance manual.

55	XD9702 Flexvision XL eLearn	1
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Course Number: XD9702

Course Title: FlexVision XL

CSIP Level: All course materials are on CSIP level 1

Course Length: 10 hours

Delivery Method(s): Standard eLearning

Modality: IGT Systems

Location: Online

Target Audience: Field Service Engineers and Licensed Representatives

System Code(s): Not applicable

DESCRIPTION:

This e-learning module will familiarize the engineer with FlexVision XL basics with regards to:

- System Architecture
- Signal Flow
- Setting to Work
- Monitor replacement

This course has a one question exam only. You have to declare that you studied and understood the content in order to be certified as trained.

PREREQUISITES:

All of the below courses:

- FC9002 – Safety
- FC9003 – Imaging Systems Safety

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Line #	Description	Qty
	<p>DURING THE TRAINING AT THE END OF THE TRAINING. CUSTOMER ACKNOWLEDGES AND AGREES THAT NEITHER CUSTOMER NOR TRAINEE WILL RECEIVE A LICENSE TO SUCH PROPRIETARY MATERIALS AND THAT THE TRAINEE MAY NOT BE ABLE TO FULLY UTILIZE THE TRAINING WITHOUT THE USE OF SUCH PROPRIETARY MATERIALS. (CERTAIN LICENSES MAY BE OBTAINED THROUGH PURCHASE OF A PHILIPS RIGHTFIT SERVICE AGREEMENT.) Course dates and location to be finalized by Philips. Philips shall attempt to accommodate Customer requested dates and training location. The price quoted includes course tuition. Travel and living expenses are not included, but may be purchased separately through Philips.</p> <p>IMPORTANT Notes Regarding Admission to Philips Customer Engineer Training Courses:</p> <p>Trainee must meet all prerequisites Course expires one (1) year from equipment installation date (or purchase date if sold separately) Customer must sign Philips Nondisclosure statement Trainee must sign Philips Nondisclosure statement Customer must sign Philips terms and conditions of training</p>	
56	<p>* Full Load Remote UPS</p> <p>MGE Galaxy 5000 80 kVA Full Load – 40kW UPS with remote capability. Includes top feed cabinet and optional side panels, ISX0001369526 G5TUPSU80KPA Adjacent MGE Galaxy 5000 Battery Cabinet with one full string of batteries and standard Galaxy 5000 Adjacent battery Temp sensor. High Voltage 6 Alarm Relays Card MGE GALAXY 5000 Remote Alarm Status Panel MGE SNMP/Web Communication Card Top Feed Auxiliary Cabinet In the event of a power loss the UPS provides emergency power to allow system function and full X-Ray exposure and fluoroscopy for up to 15 minutes.</p>	1
57	<p>Clinical Services Flex Account</p> <p>Clinical Education for Off Site Travel SP059Q Clinical Services Flex Account Agreement</p> <p>Customer may request non-discountable clinical training ("Training") commencing on the warranty start date for a period of three (3) years ("Training Contract Period") from the Philips course catalogs available at the time Training is requested.</p> <p>As Customer requests Training, the Flex Account balance will be reduced by Philips pursuant to the then current published and non-discountable list price for a given Training, multiplied by the number of Trainees scheduled to attend.</p> <p>Subject to the terms and conditions in this Agreement, Philips will provide requested Training during the Training Contract Period until the monetary level of training is exhausted or falls below the then current published and non-discounted list price of the requested Training. Training coverage expires at the end of the Training Contract Period and no credit for any unused funds may be carried forward to the next year.</p> <p>Course catalogs include:</p> <ul style="list-style-type: none"> • Guided pathways to clinical excellence: Imaging Systems continuing education course catalog • Education designed around you: Ultrasound course catalog • Philips online Learning Center: www.philips.com/learningcenter • Some additional clinical education programs may apply 	1

Line #	Description	Qty
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Selections can be made across one or any of these modalities: Computed Tomography (CT), Cardiovascular (CV), General X-Ray (GXR), Hybrid, Magnetic Resonance (MR), Nuclear Medicine (NM), CT Simulation and Treatment Planning (Oncology), and Ultrasound.

Philips Training may be conducted at Philips training facilities, the Customer location(s) listed below in this Agreement ("Customer Site(s)"), through on-line or remote training, or at a third party location as determined by Philips. Customer is responsible for scheduling Training for its employees ("Trainee(s)"). Philips will make reasonable efforts to accommodate Customers scheduling requests. All Training is subject to availability. Philips reserves the right to cancel or reschedule courses at its sole discretion.

Trainee(s) must meet the minimum admission requirements set forth in the course syllabus, must satisfy all prerequisites prior to admission and may be required to sign or acknowledge Philips safety checklist prior to receiving Training. PHILIPS MAKES NO WARRANTY THAT ANY TRAINEE WILL PASS ALL OR ANY PORTION OF THE TRAINING COURSES PROVIDED OR THAT THE TRAINING WILL RESULT IN ANY TRAINEE BEING QUALIFIED OR ABLE TO OPERATE THE SYSTEM.

Unless otherwise indicated in this agreement, all travel and living expenses incurred by the Trainee(s) will be the responsibility of the Customer.

To receive remote training Customer must provide Philips a secure location to store a Philips remote services ("PRS") router (or a Customer owned router acceptable to Philips) for connection to the products and Customer network; provide Philips appropriate access to the PRS router to enable Philips to access the products remotely; provide Philips with 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 PRS and Customers network for Philips use in remote training, transmitting automated status notification from the products 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 new services). Unless Philips determines in its sole discretion that the products cannot be connected to the PRS, then Customer's failure to provide the access described in this paragraph will constitute Customer's waiver of its rights to remote training under this Agreement. Customer must identify, in writing, one (1) Customer representative to Philips who will manage and be responsible for Customer's selection and scheduling of all Training to be provided by Philips.

58	Trade in Allowance	1
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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: GE X-RAY
Serial Number: 1-GQPL0F
Manufacturer: GE MEDICAL SYSTEMS CAPITAL

Trade-In authorization number: 11111

De-install Date: Not later than 180 days after receipt of Order

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 #	Description	Qty
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.	