

VAMC MINNEAPOLIS, MN
PO# 618-B39045

Trade- In:

Option 1
Manufacturer: Philips
Model: Big Bore CT Scanner - 610
EE: 69255
S/N: 7185
Acquisition Date: 8/23/2007

Line #	Description	Qty
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1	Brilliance CT, Big Bore Oncolo	1
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The Brilliance CT Big Bore oncology configuration is designed to meet the unique needs of radiation oncology focusing on accuracy, patient positioning, imaging performance and radiation oncology workflow. This configuration is also ideal for dual use environments.

- Brilliance CT Big Bore Oncology configuration includes:85 cm bore size and 60 cm true scan field of view
- 16 slices per rotation.
- Tumor LOC simulation and patient marking tools for the purpose of radiation therapy planning.
- Pulmonary Toolkit for Oncology for 4D CT imaging.
- RapidView reconstruction with iDose iterative reconstruction technique
- Dose management software that provides more options for achieving low dose without sacrificing image quality.
- Philips MRC X-ray tube designed to provide the performance required to meet the needs of volumetric scanning.

Brilliance CT Big Bore oncology is powered not only by intelligent technologies inside, but also by stunning advances in how people can interact with the system from the outside. Both are critical in generation of reproducible image quality and handling of large amounts of data provided by volume imaging.

CT User Environment

Brilliance Workspace

The Brilliance Workspace user environment is flexible and available wherever it is needed. Designed in collaboration between Philips and its customers, it is a powerful set of CT applications that improves productivity by working the way a user does. Users can do all of their planning, scanning, visualization and archiving in a simple, easy-to-use graphical user interface (GUI) that is harmonized across Philips Medical Systems.

Guided Flow

Logical Guided Flow graphical user interface increases productivity through ease-of-use features:

- Features and functions are visible, not hidden.
- Most common operations are shown most prominently.

A top-level workflow bar directs the user along important tasks and provides non-linear movement between functions without losing any current work. This provides the user with maximum flexibility for viewing, performing applications, filming or reporting.

Patient handling and setup

Philips' "Design for Life" approach provides high levels of flexibility for users and comfort for patients. Philips helps improve productivity during patient handling and setup through a variety of features, making patients more comfortable and making technologists' jobs easier.

Gantry

Scan Control Panel

Controls and displays for gantry tilt, patient couch elevation and stroke are located on both sides of the gantry.

Scan Control Box (ScanTools)

Gantry and patient couch controls and displays are located conveniently at the operator's console. Additional functions include emergency stop, intercom, and scan enable/pause buttons.

Gantry Aperture: 850 mm diameter

Gantry Tilt: -30° to +30°; 0.5° increments.

AutoVoice (ScanTools)

A standard set of commands for patient communication: before, during and after scanning.

Multi-lingual AutoVoice (ScanTools)

Commands for patient communication in multiple languages including: English, French, Spanish, Italian, Japanese, Hebrew, Arabic, Russian and Georgian. Also provides the ability to record customized messages - up to 25 seconds per message.

Intercom System: Two-way intercom allows patient monitoring and communication.

Table (Bariatric Patient Support)

The Brilliance Bariatric Patient Support is designed to meet the CT imaging needs of the growing bariatric (morbidly obese) population. Allowing for patient loads of up to 295kg (650 lbs.), the Bariatric Patient Support provides CT imaging access to a larger patient population than current offerings.

Patient Support Specifications:

Longitudinal motion: \

Stroke:	1907 mm
Maximum surview length:	1800 mm
Maximum axial scan length:	1860 mm
Maximum helical scan length:	1730 mm
Speed:	0.5 to 100 mm/sec
Position accuracy:	±0.25 mm

Vertical motion:

Range: 579 to 1012 mm (+/-3mm); 1.0 mm inc.

Table load capacity: 295 kg (650 lbs)

Floating tabletop: Carbon-fiber table top with foot pedal and handrail control for easy positioning and quick release.

Brilliance Therapy Tabletop Kit:

A comprehensive patient positioning system, the Brilliance Therapy Tabletop Kit is designed to enhance treatment effectiveness and ensure maximum clinical efficiency. Featuring Indexed Immobilization(tm) (trademark of Varian Medical Systems Inc), patient setup time is reduced and positioning for subsequent scans and treatment is easily duplicated. The Therapy Tabletop supports immobilization accessories that deliver the precision required for conformal and stereotactic procedures. These accessories significantly enhance positioning accuracy and

patient comfort. The indexed surface allows the positioning system to be locked into place according to the treatment plan's specifications.

The kit includes the Therapy Tabletop, Phantom Holder, water level phantom, and laser calibration bar phantom with two Lok bars necessary for proper use of the laser calibration phantom. The Phantom Holder fits over the Therapy Tabletop, allowing the user to run calibrations with the QA phantom while the Therapy Tabletop is still attached.

Scan Planning

The Brilliance Workspace provides intuitive registration and easy entry of patient information and clinical procedure selection, using anatomic graphical display and sample images.

Expert Protocol Planning (ScanTools)

Tailor protocols to meet specific needs via a selection of parameters optimized for certain studies.

Preset Post-processing (ScanTools)

User-defined presets improve workflow, by automatically opening the relevant post-processing applications for a specific type of exam. For example, automatically launching CTA studies in MIP or spine studies in MPR.

Surview Plan

Planning via interactive mouse control of multiple, independent acquisition series of any type on Surview image

Scan length: up to 1800 mm

Scan width: 600 mm

Dual Surview Planning (ScanTools)

Planning patient scans with two survIEWS provides flexibility in exam planning and execution, and also avoids repeat scans.

Multi Surview Planning (ScanTools)

Requested by radiation oncology users where patient positioning and alignment is critical, Multi Surview allows user to repeat the AP and LAT survIEWS until satisfied that their patient is properly aligned on the table top.

Manual Scan

Places slice-by-slice scans under operator control with on-line or off-line reconstruction, background image archiving to local or remote storage devices. At any time, the operator is able to switch from automatic to manual scan and back.

Automatic Scan

Enables automatic execution of pre-planned studies, with concurrent, on-line or off-line reconstruction, background image archiving to local or remote storage devices, without operator intervention.

Productivity Tools

QuickSetup (ScanTools)

System utilities such as quality assurance tools and service functions are readily available with a single mouse click.

DICOM® Modality Worklist (ScanTools Pro)

Provides HIS/RIS interface through DICOM Modality Worklist service class; enhances clinical workflow by importing patient demographics and study information from an information management system.

DICOM® MPPS

Provides performed exam information (start/end/info) to HIS/RIS using DICOM MPPS (Modality Performed Procedure Step) service.

Split Study (ScanTools Pro)

Many times multiple orders or accession numbers are generated for a patient's CT scan that require only a single scan acquisition. In these instances Philips' Split Study feature allows the user to virtually split the acquisition so that proper accession numbers are assigned to specific areas of the scan acquisition (i.e. chest slices to the chest accession number, etc.) and billing and tracking is completed accurately and appropriately. By assigning the accession numbers quickly and easily during scan setup, scan information is matched accurately in all subsequent steps (matching, reporting, archiving, billing, etc.). Philips' Split Study reduces error and improves workflow efficiency.

Prefetch Study (ScanTools Pro)

This feature searches the database (PACS) for previous patient studies (CT, MR, CR, RF). After location and selection, these studies are then sent to the background of the configurable destination (e.g., Extended Brilliance Workspace).

Automatic Procedure Selection (ScanTools Pro)

Maps the procedure selection from the HIS-RIS with individual scan protocol(s) from the Brilliance CT scanners, simplifying the scanning process. Only the most relevant scan protocol(s) for any requested procedure are shown to the user, ensuring that only the desired scanning procedures are performed. This is especially useful for infrequent users of the CT scanner.

Scan and image acquisition

Reliable, maximized system performance allows clinicians to remain focused on patient care. Brilliance CT is perfectly balanced, combining power and flexibility that maximizes image quality, speed and throughput while lowering patient dose.

System: Rotate-rotate architecture with optimized geometry for low dose imaging.

Generator

The Brilliance generator uses modern, low-voltage slip ring technology to provide a constant high voltage to the CT x-ray tube assembly.

Output capacity: 60 kW

kV selections: 90, 120, 140 kVp

mA selections: 20 to 500 mA

MRC X-ray Tube

The exceptional heat management demands of multislice imaging calls for an exceptional tube. With its patented spiral groove bearing design, Philips' MRC tube dissipates heat as rapidly as it is collected, with an effective heat storage capacity far superior to a conventional ball bearing design.

- Virtually motion-free focal spot guarantees optimized image quality.
- Noiseless design calms patients.
- 2nd generation of MRC tube technology built on proven record of performance and reliability

Equivalent Heat Storage Capacity: 26 MHU

Anode storage capacity: 8.0 MHU

Maximum cooling rate: 1608 KHU/min

Focal spot (IEC): 0.5 mm x 1.0 mm (small)
 1.0 mm x 1.0 mm (large)

Dynamic Focal Spot (ScanTools)

Dynamic Focal Spot (DFS) doubles the data sampling density from the detectors in axial and spiral scanning.

Detector

Detector design is fundamental to the objective of acquiring high quality images while minimizing patient dose. Unlike single matrix detectors that simply sum elements, Philips designs configuration-specific detectors that minimize the separation between elements to always provide the highest geometric detector efficiency. Direct-to-digital signal conversion with TACH technology reduces dose and improves image quality.

Material: Solid State - GOS

Slip Ring: Optical - 2.5Gbps transfer rate

Slice Collimation: 16 x 0.75mm, 16 x 1.5mm, 8 x 3.0mm, 4 x 4.56mm, 2 x 0.612mm

Image Quality

Spatial Resolution

High mode: 16 lp/cm @ cut-off

Standard mode: 13 lp/cm @ cut-off

Noise: 0.27% measured on Philips system phantom (21.6 cm water equivalent)

Low Contrast Resolution: 4.0 mm @ 0.3% as measured on the 32 cm CATPHAN phantom

Absorption Range: -1024 to +3071 Hounsfield units

Scanning Modes

Spiral Scanning

- Multiple contiguous slices acquired simultaneously with continuous table movement during scans.
- Multiple, bi-directional acquisitions
 - Spiral exposure: Up to 120 sec. of uninterrupted spiral scanning
 - Spiral pitch: 0.0413 to 1.7 (user selectable)

Axial Scanning

- Multiple-slice scan with up to 16 contiguous slices acquired simultaneously with incremental table movement between scans
- Fused modes for reconstructing partial volume artifacts free thick slices from thin slice acquisition

Scan Times

0.44, 0.5, 0.75, 1, 1.5, 2 seconds for full 360° scans

0.29, 0.33 seconds for partial angle 240° scans

Test Injection Bolus Timing (ScanTools)

This feature establishes the optimum delay time for contrast injection. By using a test injection, a real-time graph of the enhancement in the selected region of interest is displayed. The delay time is then selected to provide optimal peak contrast enhancement and reduced contrast usage - ideal for CTA.

Bolus Tracking (ScanTools Pro)

This automated injection planning technique permits the user to monitor actual contrast

enhancement and initiate scanning at a pre-determined enhancement level. Combine with SAS for full automation and efficacy.

Spiral Auto Start (ScanTools Pro)

Spiral Auto Start integrates the injector with the scanner, allowing the technologist to monitor the contrast injection to check for extravasation, and to initiate and stop the scan (with the pre-determined delay) while in the scan room.

NOTE:

Costs to upgrade an approved injector and any cabling is the responsibility of the user.

Compatible with following Injectors

Medrad Envision/Stellant, Medrad Vistron, Liebel-Flarsheim, Tyco CT 9000, Medtron CT 2, Nemoto Dual Shot, Tyco OptiVantage DH, E-Z-EM Empower, Swiss Medicare, Ulrich Injectors

Dose Management

Philips' DoseWise philosophy is a set of principles and practices that ensures the best possible outcomes with minimal risk to patients and staff. Brilliance CT systems employ a number of features that help provide extremely high dose efficiency.

DoseRight (ScanTools)- Optimizes the dose for each patient based on the planned scan by suggesting the lowest possible mAs settings to maintain constant image quality at low dose throughout the exam.

DoseRight Angular Dose Modulation (ScanTools)- Automatically controls the tube current rotationally, increasing the signal over areas of higher attenuation (lateral) and decreasing signal over area of less attenuation (AP).

DoseRight Z-DOM (Longitudinal Dose Modulation) (ScanTools)- Automatically controls the tube current, adjusting the signal along the length of the scan, increasing the signal over regions of higher attenuation (shoulders, pelvis) and decreasing the signal over regions of less attenuation (neck, legs).

Dose Displays

- Volume CTDI (CTDIvol) (ScanTools)
- Dose Length Product (DLP) (ScanTools)

Dedicated Pediatric Protocols (ScanTools)

Developed in collaboration with top children's hospitals, Brilliance age and weight-based infant and pediatric protocols ensure the best clinical results with minimal dose.

Dedicated Oncology Protocols (ScanTools)

Developed in collaboration with top cancer centers, dedicated oncology protocols provide simplicity for the CT scan therapist and ensure optimal clinical results.

iDose4 Iterative Reconstruction Technique

The iDose4 iterative reconstruction technique gives you control of the dial so you can personalize image quality based on your patients' needs at low dose. When used in combination with the advanced technologies of the Philips CT scanner families, this 4th generation reconstruction technique provides a unique approach to managing important factors in patient care – a new era in low-energy, low-dose and low-injected contrast imaging.

iDose4 balances high image quality, low dose, natural appearance, and easy workflow. iDose4 iteratively removes noise, prevents artifacts, and preserves morphological information using statistical and structural models in both projections (raw) and image domains.

iDose4 reconstruction is achieved in seconds rather than minutes. iDose4 features RapidView console – hardware advances designed specifically to satisfy the performance requirements and processing power needed to reconstruct the majority of reference protocols in 60 seconds or less.

As part of our ongoing commitment to streamlining workflow, iDose4 provides the look and feel of conventional higher-dose images without longer processing times.

Reconstruction and Display

RapidView 4D Reconstruction

RapidView 4D reconstruction is the result of years of advanced research, and was designed to remove the bottleneck between CT scan acquisition and image visualization. RapidView 4D provides dramatic improvements in multiphase Pulmonary Retrospective 4D imaging workflow by displaying reconstructed retrospective images in under 4 minutes. This performance will allow clinicians to evaluate tumor motion within the patient's allotted simulation time slot. The RapidView 4D system employs true cone beam reconstruction algorithms and Philips-patented back projection hardware to provide this impressive performance.

Cone Beam Reconstruction Algorithm- COBRA (ScanTools)

Philips patented Cone Beam Reconstruction Algorithm (COBRA) enables true three-dimensional data acquisition and reconstruction in spiral scanning. This avoids and/or corrects artifacts present in reconstruction by reducing pixel to noise ratio, resulting in superior multislice image quality.

Reconstruction Modes

Concurrent: Axial and spiral modes - image reconstruction concurrent with acquisition

Off-Line (batch): Background image reconstruction of user-defined groups of raw data files with automatic image storage.

Evolving Reconstruction (ScanTools)

Provides real-time 256 x 256 matrix image reconstruction and display in step with spiral acquisition. Images can be modified for window width and level, zoom and pan prior to reconstruction. At the end of the acquisition, all images are updated with the desired viewing settings.

Add Reconstruction (ScanTools)

Enables quick and easy unplanned or modified reconstructions of part or all of the images prospectively or retrospectively planned.

Extended Display Field of View (pending clinical validation)

Enables extrapolated reconstruction for visualization of anatomy out to 70cm. Useful in radiation oncology for avoidance in treatment planning. Also may be useful for evaluating out of field artifacts, contouring skin, and bariatric or off-center scanning. Data outside of 60cm shall not be considered to be of diagnostic quality; CT numbers may not be accurate and image quality may be degraded in this region.

Reconstruction parameters

Any study can be set up to automatically reconstruct using various reconstruction parameters. Exams can be tailored online while planning the scan, or during off-line recon. Up to six different reconstruction assignments are possible for each study. Image reconstruction parameters include image matrix, filters, enhancements, zoom and pan, and archive.

UltraImage (ScanTools)

UltraImage includes proprietary pre- and post-processing hardware and software for enhanced visualization of soft tissue structures. UltraImage significantly improves image quality for the most accurate representation of even the most difficult to image anatomic areas, such as the bone-brain-air interface in neurological exams. The full clinical impact of UltraImage is best appreciated in the brain, long bones, spine, pelvis or shoulder, where subtle, soft tissue structures can be obscured by adjacent high contrast bone.

Adaptive Filtering

Adaptive filters reduce pattern noise (streaks) in non-homogenous bodies, improving overall image quality.

Post-processing and communication

Image Processing (ScanTools)

The interactive image viewer is designed for fast, efficient and simple image review and filming purposes. Images can be handled individually or in user-selected groups.

- Image viewer window: Displays a single image or a selection of images.
- Zoom & Pan: Magnification from 0.8 to 10 times
- Scroll Bar, Leaf and Cine, Invert Image, Image Parameters Display

Organ ID (ScanTools Pro)

Automatically isolates lung images for better viewing, including lung limit detection, zoom and pan setting, lung windowing, image enhancement, and image filming.

Image Graphics (ScanTools)

To help interpret clinical images, a variety of text and graphic aids can be individually positioned and manipulated with the mouse:

- Text annotation
- Cursors for pixel value measurements.
- Regions of Interest (ROI) - elliptical, rectangular, curved or freehand, with instantaneous calculation and display of area, average pixel value and standard deviation. Values of several ROIs may be added or subtracted.
- Lines, grid and scales for distance measurements, curved and freehand lines for measuring any shape.
- Arrows for pointing to features.
- Angle measurements.
- Histogram of pixel values in a user-defined region of interest.
- Profile of the pixel values along any line.
- Grid with adjustable spacing for distance assessment

Window Control (ScanTools)

- Eight user-defined preset windows provide fast and convenient window setting. Mouse-driven fine adjustments of the window center and width enable optimal image viewing
 - Highlight Window: paints user-defined range of CT densities in color.
 - Double Window: Simultaneous displays two independent CT density ranges on the same image, i.e. thorax slice with lung and mediastinum windows
 - Invert Window: Ability to toggle between negative and positive image.
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Host Computer

Computer Architecture: Windows XP Dell Precision host computer

Main Memory: 4.0 GB RAM

Display Monitor

Dual Monitor Configuration (ScanTools Pro)

Expands the Brilliance workspace by utilizing two flat panel monitors side-by-side. The left monitor is utilized for scanning operations while the right is used for post-processing activities. These high-resolution, flat panel LCD, color monitors save space and weight when compared to conventional CRT-based monitors.

Post-Processing Analysis Tools

SlabViewer (ScanTools)

MPR- Multiplanar Reformation (ScanTools)

Maximum or Minimum Intensity Projection (MIP) (ScanTools)

3-D SSD Reconstruction (ScanTools)

MasterCut (ScanTools)

With the MasterCut feature, MPR (Multiplanar Reformatting) curved cuts along vascular structures can be defined on Maximum Intensity Projection (MIP) or volume rendered images to display panoramic and cross-sectional views that accurately visualize the vasculature.

RelateSlice (ScanTools)

RelateSlice is a Philips-exclusive tool provided in Volume Rendering, 3-D SSD, MIP, and MPR, that correlates the axial image to a user-selected location on multiplanar views and renderings. RelateSlice makes it easy for a user to compare the axial image to its post-processed presentation, improving the user's productivity and diagnostic confidence.

Masterlook (ScanTools)

An automated real-time image enhancement, or smoothing, that can be defined for up to three independent density ranges, such as lung, soft tissue and bone.

3-D Small Volume Analysis (ScanTools)

3-D Small Volume Analysis permits tumor or nodule characterization with respect to growth rates within the 3-D application. This tool uses automatic segmentation for help in identifying a solitary nodule or tumor (early staging of lung cancer), and measures volumetric parameters such as nodule volume, long axis, and short axis for follow-up purposes.

Q-CTA - Quantitative CT Measurement Tool Package (ScanTools)

Q-CTA is a tool kit for quantitative measurements of anatomic structures, such as vasculature pathology from 2-D, 3-D or volume-rendered images.

Volume Rendering (ScanTools)

Philips advanced volume rendering 3-D visualization software provides unique simultaneous visualization of vasculature, soft tissue and bone. Unlike conventional 3-D or MIP, volume-rendering visualization offers real time interactive control over opacity and transparency values. This permits viewing through and beyond surrounding structures, such as metallic stents and arterial calcifications, and virtually eliminates the need for organ segmentation.

Image Management and Archiving

Image archiving is organized according to the DICOM 3.0 hierarchical model, in a DICOM 3.0 compliant image format. Loss less image compression/decompression algorithm is used during image storage/retrieval to/from all local archives. Images can be auto-archived to selected archive media.

292 GB Hard Disk: Image Storage Capacity: 512 X 512 Image Matrix = 500,000 typical number of uncompressed images

DVD-RAM Storage

DVD-RAM is a solution for storing CT and other modality datasets. It provides an inexpensive, reliable method for high-speed random access recording. DVD-RAM is intended as a storage replacement to the EOD and supports multi-session writing in order to store multiple patients added to the disk at different times. DVD-RAM disks are written with proprietary Philips format and are only readable on Philips EBW (v3.0.1 or higher) and CT scanner units (v2.3 or higher) with DVD-RAM.

4.7 GB DVD: Image Storage Capacity: 512 X 512 Image Matrix = 15,000 typical number of uncompressed images

CD Writer (ScanTools Pro)

A Compact Disk (CD) drive stores DICOM images plus DICOM image viewing software, on very low cost CD media. The CD Writer permits a standard PC with a built-in CD drive to view and perform basic manipulations (zoom, pan, and window level) on the DICOM images stored on the CD. This Brilliance enhancement provides a low cost and flexible alternative for archiving and retrieving images, copies for referring physicians, and to use in presentations and teaching.

- Minimum PC hardware Requirements are a Pentium III 450 MHz with 128 MB RAM main memory and a 20 GB Hard Drive running Microsoft Windows operating systems
- Supported Web Browsers which must be installed in Compact or Full mode include Microsoft Internet Explorer or Netscape installed with ActiveX Plug-in. Macintosh viewing support via the "Virtual PC" application.

CD: Image Storage Capacity: 512 X 512 Image Matrix = 1,200 typical number of uncompressed images

Filming

The Brilliance filming function allows the user to set up and store desired filming parameters. Pre-stored protocols can also include auto-filming. The operator can film immediately after each image, at the end of a series, or film after the end of a study and review images prior to print. The operator can also automatically film the study at three different windows and incorporate Combine Images functionality to manage large datasets. Basic monochrome and color DICOM Print capability are supported.

Networking/Connectivity

Network Requirements

Network connections should be located within 10 feet of the console. The Brilliance CT supports 10/100/1000Mbps (10/100/1000BaseT) network speeds. For optimal performance, Philips recommends a minimum of 100Mbps network speed (1Gbps preferred) and for the CT network to be segmented from the rest of the hospital network.

DICOM Connectivity

Brilliance Workspace's full implementation of the DICOM 3.0 communications protocol allows connectivity to DICOM 3.0 compliant scanners, workstations, and printers; supports IHE requirements for DICOM Connectivity.

Brilliance Tumor LOC

This Brilliance CT Tumor Localization package meets the clinical requirements of oncology departments where segmentation and localization can be completed directly on the CT display console. The package provides tools to assist in Isocenter localization and CT Simulation. In addition to standard studies, these tools are available for respiratory correlated studies, including all phase information. Visualization capabilities within the Tumor LOC package include the generation of Digitally Reconstructed Radiographs (DRR), Digitally Compositing Radiographs

(DCR), and Multiplanar reformatted images (MPR). Additionally, the package provides the ability to manage different window/level settings to aid in generating the best images possible. Special visualization tools for respiratory correlated scans are also included.

- Segmentation and localization.
- Efficient advanced contouring of external and critical structures in preparation for the radiotherapy treatment planning process.
- Visualization and analysis tools can be utilized to evaluate the treatment volume(s)
- Tools for visualizing and analyzing respiratory correlated datasets (4D)

This Brilliance CT Tumor Localization Package has been specially configured to:

- Provide additional Brilliance Big Bore Scanner display console functionality that allows for increased productivity and improved workflow by minimizing CT simulation time, and enhancing the patient marking process.

Brilliance CT Tumor LOC Basic Software License:

Features and capabilities provided by the Brilliance CT Tumor LOC software include:

Contour-Based Segmentation Package: Consists of drawing and editing tools for drawing contours and maintaining groups of contours used in hand segmenting image data. Tools also exist for interpolation functions for automatic and semi-automatic segmentation. Automated generation of an external contour can be preselected as a user defined preset.

Virtual Fluoroscopy using orthogonal beam divergent DRR's for isocenter and beam border placement.

Interpolate algorithm provides interactive, shape based interpolation. A Smart algorithm fills in any number of irregularly contoured slices, Interpolated contours may be edited, accepted or rejected.

Isocenter Management:

Isocenter menu to support and manage multiple isocenters. Supports the generation of separate isocenters for multiple target volumes or general regions. Marked and final Isocenters are reported and displayed in the Localization package for easy confirmation of a physical simulation session. A record of the simulation session may be printed on a standard printer. If configured, RT Plan can easily be exported to the laser system for a more streamlined marking procedure.

Isocenters and structure sets can be transmitted to a compatible RTP System capable of receiving DICOM RT structure set, plan, and RT Image.

2D Image Analysis: Enables viewing of the data exactly as it was acquired, prior to any interpolation and with no preprocessing.

Markers: Permits the display of a fixed marker (cross hairs, axis or grid) on the screen as an aid in isocenter marking, or image positioning.

Screen Annotation: Allows the operator to toggle selected screen annotations on and off.

Archive: Allows the user to archive a patient study from disk onto selected archive media.

Information: Displays the study's original scan information, including the number of slices in the study, slice thickness, etc. Can be displayed at any time during an analysis.

Control of Window/Level: Allows adjustment to achieve optimal viewing parameters.

Measurement Package: Provides the density value (in Hounsfield units if CT) of a particular point on an image. Computes distances along straight lines.

Pan: Permits the repositioning of any image within a viewport.

Tools to allow visualization of organ motion and to assist physician in determining best treatment are the following:

Import of multiple phase datasets as well as a routine CT

Contour on any phase and apply it to a chosen primary phase

Dynamic DRR/DCR

Dynamic MPR & Axial

Maximum, minimum, and average intensity projection dataset generation

Pulmonary Toolkit for Oncology

The Pulmonary Toolkit for Oncology includes three different modes of operation and supports two respiratory sensor devices. Pulmonary Viewer is also included.

Prospective Axial enables the user to trigger an axial scan at a particular breath level (threshold). The clinical usefulness in diagnostic radiology is that it minimizes artifacts due to respiratory motion for those patients who are not able to hold their breath during the scan. In radiation oncology, the prospective axial dataset may be used for planning gated treatments. By matching the scan phase with the treatment phase the clinician can be assured of providing the CT simulation plan that delivers the highest tumorcidal dose while maximizing the amount of healthy tissue that is spared.

Prospective Spiral enables the user to visualize the breathing waveform and begin a spiral scan at a desired breath level. This mode is used in conjunction with breath-hold imaging (typically followed by breath-hold gated treatments).

Retrospective Spiral (4D CT) results in the ability to generate multiple phases allowing for visualization of motion during the respiratory cycle. This mode entails acquiring an over-sampled ultra low pitch spiral scan of the thorax or desired area, and correlating it in reconstruction with the patient's breathing. The resulting images can be used to assess motion of the tumor and critical organs, make decisions about gating the radiotherapy delivery, and delineate a target volume that encompasses the entire range of tumor motion.

In addition to conventional phase-based binning, the 4D CT mode also features TrueImage 4D Amplitude Binning. Amplitude Binning for 4D correlated imaging uses a proprietary algorithm that utilizes the amplitude of the respiratory signal in addition to phase information when creating retrospective 4D-CT volumes. This approach can help reduce artifacts and enhance image quality for 4D studies for patients with uneven breathing patterns. Amplitude Binning is compatible with the Philips Bellows and Varian RPM respiratory gating devices.

The Philips Bellows device is a pneumatic mechanism placed around the patient's chest for dynamically observing changes in pressure caused by respiratory motion via a transducer linked to the Brilliance CT scanner.

Another supported respiratory sensor is the Varian RPMTM, for which an interface cable is provided. The Varian RPMTM device itself is not included. The customer should contact their Varian Medical Systems representative to ensure their RPM configuration is correct for the Philips Brilliance CT. RPM 1.6 and 1.7 are compatible.

Pulmonary Viewer is a dedicated software package to aid the clinician in making radiation therapy treatment planning decisions. Pulmonary Viewer provides the ability to visualize one or multiple respiratory phases, analyze and determine extent of motion, and review the patient's respiratory waveform. The comprehensive set of user tools includes cine mode with adjustable speed for visualizing motion over time and interactive slab-MIP tools.

CT Reporting

Provides reporting capabilities for paper print of clinical results from the Philips Brilliance

Workspace including display of key images and results frames. The report is available for paper or electronic distribution to referring physicians, patients, or for medical records. Each report is editable and new default templates can be easily created and included in the system configuration. The report can be saved as a PDF file for digital transfer or printed as a paper report.

The CT Reporting package includes all applications-specific reports when the application itself is purchased separately

Siting information

Power Requirements

- 200/208/240/380/400/416/480/500 VAC at 100 kVA and 50/60Hz
- Three-phase distribution source

Computer cabinet is included. Computer table and operator's chair are optional.

Clinical Education Program for Brilliance CT Big Bore Oncology

Essentials OffSite Education: Philips will provide two (2) Simulation Therapists, as selected by customer, with in-depth lectures covering basic clinical applications, Philips-specific imaging techniques, protocol optimization and scan parameters. A Brilliance CT "system emulator" is used during the lab sessions to simulate all basic scanning operations without x-ray exposure. Students will graduate from this class with an 80% understanding of the base system functionality. The remaining 20% is covered during the Handover OnSite experience. This twenty-eight (28) hour class is located in Cleveland, Ohio, and is scheduled based on your equipment configuration, geography, 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, and should be attended no earlier than two weeks prior to system installation. ASRT CEU credits may be available for each participant that meets the Guidelines provided by Philips during the scheduling process. **Travel and lodging are not included, but may be purchased through Philips. It is highly recommended that 989801292078 (CT Full Travel Pkg OffSite) is purchased with all OffSite courses.**

Handover OnSite Education: Clinical Education Specialists will provide twenty-four (24) hours of education for up to three (3) dedicated Therapy staff members. This training will encompass all aspects of data acquisition for CT Simulation. Monday is reserved for acceptance testing and commissioning if required. ASRT CEU credits may be available if the participant meets the Philips Guidelines. 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.

Follow-Up OnSite Education: Clinical Education Specialists will provide twenty-four (24) hours of education for up to three (3) dedicated Therapy staff members, selected by customer. This course covers Tumor LOC and Respiratory Correlated Imaging. Schedule patients based on Training Guidelines. ASRT and MDCB credits may be available if the participant meets the Philips Guidelines. Note: 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 that 989801292077 (CT Cross Trainer Module) and 989801292221 (CT Cross Sectional Anatomy Module) are purchased.

Note: The North America Clinical Education Specialists for Oncology are a team of Certified Medical Dosimetrists and registered Radiation Therapist with expert level knowledge of radiotherapy treatment planning and CT simulation.

Education expires one (1) year from equipment installation date (or purchase date if sold separately).

Ref #234194080-100614

2	Keyboard Language - English	1
3	Operator's Manual - English	1
	Operator's Manual <ul style="list-style-type: none"> English 	
4	Computer Table	1
	Computer table, for the Brilliance Console or the Extended Brilliance Workspace, provides a large enough working space (120cm) to accommodate dual monitors and other peripheral devices.	
5	Operator's Chair	1
	One (1) standard height operator's chair.	
6	Oncology	1
	Primary Use of Scanner <ul style="list-style-type: none"> Oncology 	
7	CT Simulation on Console	1
	This application adds the capabilities to Tumor LOC to enable CT simulation on the scanner console. This can provide workflow flexibility and productivity in situations such as emergency simulations, "Sim and Treat", and simple simulation cases.	
	Simulation capabilities include:	
	<ul style="list-style-type: none"> Multiple radiotherapy machine characterizations Visualization and analysis of multiple treatment beams Beam modifiers such as blocking and MLC capabilities 	
	Note: Tumor LOC is a prerequisite.	
8	O-MAR	1
	Metal Artifact Reduction for Orthopedic implants reduces artifacts in image data caused by high density metal objects such as prosthetic hip replacements. This artifact reduction may aid diagnosis and help treatment planning accuracy by enhancing visualization of critical structures and target volumes	
	Prerequisite: For installed base upgrades on Brilliance 64-Channel, Brilliance 64-Channel w/ Essence technology, iCT SP, and iCT, O-MAR requires iDose4 installed	
9	LAP CARINAiso3 green(Floor)	1

LAP DORADO 3 CT Simulation Laser System with three green movable lasers for identifying the isocenter location: One Ceiling-mounted Sagittal Laser, and two (Side) Lasers mounted on floor posts on each side of the patient support. The LAP laser system along with the CARINAiso software and control console completes the integration of Tumor L.O.C. CARINAiso software imports patient's surface, isocenter, MLC and field information, along with patient orientation and patient data to enable automatic movement of lasers to patient marking position. LAP will provide one (1) year warranty, preinstallation support by email and phone, and one (1) on-site visit for installation and training of two (2) days duration.

Note: Transfer of isocenter position from Tumor LOC to CARINAiso for automatic movement of laser to patient marking position is only applicable if system has Tumor LOC and an absolute marking couch (ie. Brilliance Big Bore).

10 Load and Unload Foot Pedals 1

Load and Unload foot pedals allow the operator to move the patient couch to the load or unload position using a foot pedal thus improving patient handling efficiency by the freeing the operator's hands to prepare, restrain, or release the patient.

Prerequisite: Rear Gantry Panel for Field Upgrades

11 30-min Console UPS 1

Uninterruptible Power Supply (UPS) provides up to 30 minutes of battery backup for computer/reconstruction system.

12 Teal 100kVA Isotran Plus 1

Teal 100 kVA isolation voltage adapting transformer:

Input voltage: 200/208/240/380/400/416/480/500, 3-phase, delta plus protective earth. 50/60 Hz

Output voltage: 480 VAC (277 VAC wye).

Includes: Programmable input circuit breaker.

Includes: TVSS (Transient Voltage Surge Suppression), load side filtration for noise attenuation and remote control contactor.

Weight: 598 lbs. (271 kg)

Dimensions: 27.8" (70.7 cm) wide, 20.5" (52.1 cm) deep, 44.0" (111.8 cm) high.

13 Full Travel Package for OffSite Training 2

Includes one (1) participant's airfare from North American customer location to Cleveland, Ohio, with modest lodging, ground transportation, and meal expenses. Breakfast/dinner provided by the hotel, and lunch/breaks are catered by Philips. All other expenses will be the responsibility of the attendee. Details are provided during the scheduling process.

Note: Cancellation/rescheduling policy strictly enforced.

Expires one (1) year from the earlier of equipment delivery date or purchase date.

CT ONC Motion Mgt Rad Therapy 2

This 2-day course is held at Washington University School of Medicine, St Louis MO, and is intended for radiation oncologists, medical physicists, dosimetrists, therapists, and others who want to gain exposure to Respiratory Correlated Imaging and understand the benefits of how it can be implemented in their clinical environment to improve patient care. The course is taught by physicians, medical physicists, and other professionals from an institution leading the way in this area. The course consists of lectures, discussions, and hands-on learning lab exercises. Topics include clinical indications, scanning process, review and analysis of 4D CT studies, treatment planning, commissioning and QA, and treatment delivery. The goal is to facilitate easier implementation of respiration motion management using Philips equipment in the attendee's clinic.

Accreditation will be offered for CAMPEP, ASRT and MDCB. Philips Oncology Schedule Coordinators manage course dates and scheduling. Program updates, course dates/times, and topics are subject to change without notice. Attendees receive updated information regarding schedule changes. This quote covers tuition costs for one (1) person. Travel, lodging and transportation are the responsibility of the attendee.

Cancellation Policy For MMRT Course:

Cancellations made in writing between 30 and 60 days prior to the first day of the course will be subject to a 50% cancellation fee. No refunds will be given less than 30 days prior to the first day of the course. No telephone cancellations will be accepted. In the unlikely event that the course is cancelled by the training site, Washington University will refund the registration fee, but is not responsible for any travel costs. Attendee is responsible for any cancellation fee incurred.

15

ONC Resp Correlated Img Remote Educ 2h

1

One Philips Clinical Education Specialist will provide two (2.0) hours of remote clinical education, on Respiratory Correlated Imaging-4DCT for Oncology. Please read Philips guidelines for more information, which will be provided to you during the scheduling process. This coaching session will require access to the internet from a PC at the user location. Delivery method will be through prepared presentations and software broadcasted via a WEB conference. If applicable, the training may include a session where the Philips Clinical Education Specialist will remote login to the CT Simulator to conduct a portion of the training. ASRT and MDCB CEUs are available in most cases. This training is available for Brilliance Big Bore Oncology CT software version 2.3.5 and GEMINI TF Big Bore software version 3.6.

Requirements: Customer must be able to receive an Adobe Connect Pro or Microsoft Live Meeting web conference and have a land line speaker phone. The scanner must have Philips Remote Service capability if the remote login session is desired.

Education expires one (1) year from equipment installation date (or purchase date if sold separately).

Note: The North America Clinical Education Specialists for Oncology are a team of Certified Medical Dosimetrists and registered Radiation Therapist with expert level knowledge of radiotherapy treatment planning and CT simulation.

16

Trade in Allowance

1

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: 100017.000 Brilliance CT Big Bore Oncology Systems
Serial Number: 7185
Manufacturer: PHILIPS HEALTHCARE

Trade-In authorization number: 29896

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");
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.