

Brilliance™ CT 16 Power configuration



When speed and throughput are critical

The 16 Power configuration of Brilliance CT builds on the experience of the 16-slice platform by incorporating higher performance technologies throughout, including Philips' legendary MRC tube and unsurpassable RapidView™ Reconstruction. The additional horsepower makes this configuration ideal for situations where speed and throughput are especially critical, such as trauma, and for high volume, high demand sites. With powerful standard features that ensure you perform well all the time.

Philips designers have incorporated innumerable features into Brilliance CT systems to improve clinical diagnostics and productivity, making patients more comfortable and technologists' jobs easier.



The 16 Power configuration delivers powerful performance in a wide range of studies – from routine to complex.

Philips has long been known for innovation, and the Brilliance 16 Power configuration continues to enhance that storied heritage.

Brilliance incorporates high performance technologies throughout, making this configuration capable of performing any exam at any time, over time.

Innovative Technology, Unprecedented Performance

Philips develops advanced technologies that eliminate the boundaries of conventional thinking. The exclusive Philips MRC tube dissipates heat as rapidly as it collects it. A patented data acquisition system in Tach™ Technology, replaces cables and computer cards with a single finger tip-sized chip. Exclusive optical slip ring technology transfers pure signal at 1.1 Gbps. And RapidView reconstruction technology enables a myriad of advantages because of its tremendous speed. Feel confident in your ability to achieve extremely high throughput over a wide range of applications, resulting in optimal clinical performance.

PHILIPS

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The Advantage of Brilliance CT

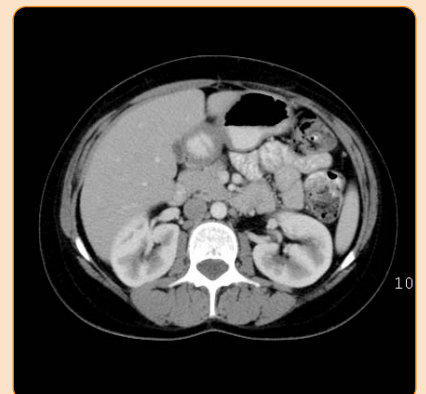
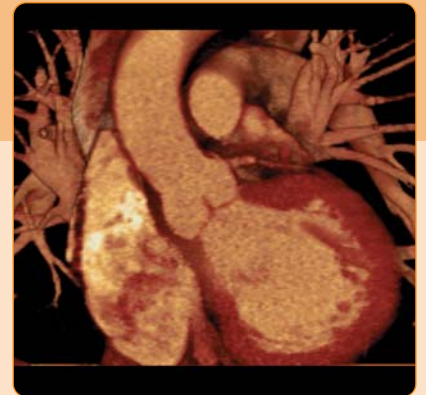


It's simple. You can choose the ordinary, or even the occasionally extraordinary. Or you can choose Brilliance from Philips. Brilliance CT systems give you the clinical advantages you need to attract referrals, and the productivity advantages you need to keep them.

Their appeal is powered not only by more intelligent technologies inside, but also by stunning advances in how people can interact with the systems from the outside. Both are critical for handling the large amounts of data provided by multislice imaging and for helping you achieve a sustainable competitive advantage in your environment.

16 Power configuration: Proven high performance

- Power for situations where speed and throughput are especially critical, such as trauma, and for high volume, high demand sites.
- Best-in-class cardiac imaging with the full power of Philips Rate Responsive™ Technology.
- Sets a new benchmark of performance with heavy-duty technologies throughout including RapidView 40 and MRC X-ray tube.
- Brilliance Workspace's logical Guided Flow makes scanning and visualization fast and easy without intensive training.
- DoseWise™ design delivers optimal dose efficiency without compromising image quality.



Impacting Everyday Workflow



The flexibility of this high performance scanner includes features designed to automate clinical tasks, ease through post-processing and reconstruction, as well as aid in accurate diagnosis. Above all, the speed on the Brilliance 16 Power configuration impacts everyday workflow and increases patient throughput.

Brilliance is designed to optimize clinical performance and improve patient outcomes throughout the workflow process:

- Patient handling and setup
- Scan and image acquisition
- Dose management
- Reconstruction and display
- Post-processing and communication

ScanTools

Comprehensive package of advanced components and productivity features to make workflow smooth and easy. From start to finish, they're everything you need to help streamline routine imaging studies. Standard on all Brilliance configurations.

ScanTools Pro

Supplemental set of tools that optimize productivity, workflow and diagnostic confidence. Including:

- DICOM Modality Worklist
- Prefetch Study
- Automatic Procedure Selection
- Bolus Tracking
- Spiral Auto Start
- Ultra High Resolution Matrices
- Dual Monitor Configuration
- CD Writer
- Organ ID

Built on a strong foundation of clinical and technological advancements, Philips CT again sets the bar for overall imaging resolution, quality, and results.

The Philips Advantage Proven Performance by 16 Power	Image Quality	Dose Efficiency	Throughput
8.0 MHU (26 MHU effective) high power MRC X-ray tube	●	●	●
RapidView reconstruction	●		●
Slice acquisition modes: 16 x 0.75mm, 16 x 1.5mm, 8 x 3mm, 4 x 4.5mm, 2 x 0.6mm	●	●	●
Optional 0.4 sec rotation time	●		●
Tach Technology	●	●	
Dynamic Focal Spot (DFS) for up to 24 Lp/cm ultra-high spatial resolution	●	●	
DoseRightACS (Automatic Current Selection) and DoseRight DOM (Dynamic Dose Modulation)	●	●	

CT User Environment



Brilliance Workspace

Brilliance Workspace is a flexible and user-friendly environment, rich in applications and scalable to your needs. It includes a set of the most powerful CT applications on the market today, improving outcomes and productivity by working the way you do.

All planning, scanning, visualization and archiving can be done at the scanner console. In addition, most of these functions, including additional image reconstructions**, are also available at an Extended Brilliance Workspace that can be sited away from the CT gantry.

- Maximum user flexibility for viewing, performing advanced clinical applications, filming or reporting
- Integrated reporting packages* allow the radiologist to quickly and easily create and transmit a report to the referring physician
- Scalable platform for growth and future applications, making Brilliance CT a secure, long-term investment

- The Brilliance Workspace is part of Philips' Vequion™ family of next generation medical IT products and solutions

Brilliance Workspace leadership revolves around four major areas:

- Guided Flow and ease-of-use
- Leading image quality
- Powerful performance
- Advanced clinical applications

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

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



* optional

**Remote Reconstruction™ is an option for the Extended Brilliance Workspace

Patient Handling and Setup



Flexible Patient Handling

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

Gantry

Scan Control Panels

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

Scan Control Box

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: 700mm diameter

Gantry tilt: -30° to +30°; 0.5 inc

Slice Position Indicator:

- Internal slice plane laser marker
- External positioning, triple-axis laser marker

X-Ray Indicator

On scan control panels and inside the gantry.

AutoVoice

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

Multi-lingual AutoVoice

A set of commands for patient communication in multiple languages including:

- English
- French
- Spanish
- Italian
- Japanese
- Hebrew
- Arabic
- Russian
- 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

Longitudinal motion:

Stroke:	1900mm
Scannable range:	1620mm
Speed:	0.5 - 100mm/sec
Position accuracy:	±0.25mm

Vertical motion:

Range:	526 - 1040mm; 1.0mm inc
Speed:	2.5 - 50mm/sec

Table load capacity:

204 kg (450 lbs) with full accuracy

Floating tabletop

Carbon-fiber table top with foot pedal and hand control for easy positioning and quick release.



ScanTools

- Scan Control Box
- AutoVoice
- Multi-lingual AV
- Table Accessories
- Expert Protocol Planning
- Preset Post-Processing
- Dual Surview Plan
- QuickStart
- QuickSetup

ScanTools Pro

- DICOM Modality Worklist
- Prefetch Study
- Automatic Procedure Selection

Table Accessories

From extra padding to optimal support, our table accessories prevent fatigue and discomfort and give both patients and technologists a sense of security.

Standard Accessories



Patient Restraint Kit



Standard Head Holder



Table Extension



Coronal Head Holder –
Supine



Table Pad



Flat Head Holder



Cushions and Pads

Optional Accessories



Infant Cradle



Therapy Table Top

Easy Patient Setup

Brilliance has many innovative features for easy patient setup, including scan planning and protocol development for improved departmental efficiency.

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

Flexible selection of protocol parameters for optimized scanning. Allows users to tailor protocols to their specific needs.

- Pre-defined and user programmable scan protocols, including multi-protocol procedures, can be stored and retrieved. Scan parameters may be easily modified before and during the study to meet specific clinical needs.
- Multi-protocol with timing allows the user to easily and precisely program acquisitions of varying slice thickness, breathing or scan delay pauses, and table speeds. Efficient planning of any exam, complex or routine, decreases exam times, increasing throughput and patient satisfaction.

Preset Post-processing

User-defined presets improve workflow by automatically opening the relevant post-processing applications for a specific type of exam. For example, you can automatically launch 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 the Surview image.

Viewing angles:	90°, 180°
Longitudinal speed:	100mm/sec
Measurement increment:	0.1mm
Scan length:	up to 1500mm
Scan width:	500mm

Patient Handling and Setup



Dual Surview Plan

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

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 anytime 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

QuickStart

Brilliance CT scanners have an efficient start up sequence that allows scanning to begin within 5 minutes after turning the system on.

QuickSetup

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

DICOM® Modality Worklist

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.

Barcode Reader*

Barcode Reader for entering patient data from a HIS/RIS into the patient data form. Used in conjunction with DICOM Modality Worklist.

Prefetch study

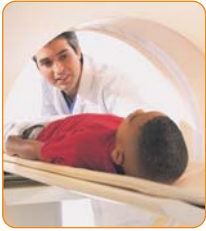
When pressed for a new patient, a database (PACS) will be searched for previous studies of that patient (CT, MR, CR, RF). After selecting the studies, they will be sent to the background of the configurable destination (e.g., to Extended Brilliance Workspace).

Automatic Procedure Selection

Maps the procedure selection from the HIS-RIS with individual scan protocol(s) from the Brilliance CT scanners, simplifying the scanning process.



Scan and Image Acquisition



Maximized System Performance

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

ScanTools

- Dynamic Focal Spot
- Ultra High Resolution
- Test Injection Bolus Timing

ScanTools Pro

- Bolus Tracking
- Spiral Auto Start



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: 90, 120, 140 kVp
mA: 20-500 mA; 1 mA inc

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. Additional features include:

- Motion-free focal spot guarantees optimized image quality
- Absolute noiseless design calms patients
- 2nd generation of MRC tube technology built on proven record of performance and reliability

Effective Heat Storage Capacity: 26 MHU
Anode Storage Capacity: 8.0 MHU
Anode Max Cooling Rate: 1608 kHU/min

Focal spot (IEC):

Large: 1.0mm x 1.0mm
Small: 0.5mm x 1.0mm

Anode Diameter: 200mm

Anode Rotation Speed: 105 Hz (6300rpm)

Target Angle: 7°

Focus-detector distance: 1040mm

Focus-isocenter distance: 570mm

Dynamic Focal Spot

Enables ultra-high spatial resolution in axial and spiral scanning by sampling two fan beams alternately, doubling the reconstruction data samples.

Detector

Philips Medical Systems patented detector design is fundamental to the objective of acquiring high quality images while minimizing patient dose.

Material: Solid-State Cadmium Tungstate

No. of Elements: 16,128
32,256 effective with DFS

Dynamic Range: 1,000,000 to 1

Slip Ring: Optical - 1.1 Gbps transfer rate

Data Sampling Rate:

Up to 2320 views/revolution/element

Slice Collimation: 0.6, 0.75, 1.5, 3.0, 4.5mm

Slice Thickness:

Spiral mode: 0.65 - 7.5mm variable

Axial mode: 0.6 - 12mm

Scan Angles: 240°, 360°, 420°

Scan Field of View: 250, 500mm

Tach Technology

Philips' patented Tach Technology is a complete, high-speed, multichannel data acquisition system (DAS) in a single 8mm x 8mm chip. The chip's small size replaces multiple cables and large computer cards seen in conventional multislice CT detector assemblies, resulting in a virtually perfect direct-digital signal.



Scan and Image Acquisition

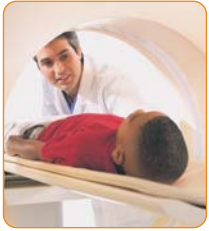


Image Quality

Spatial Resolution:

Ultra High mode:	24.0 Lp/cm @ cut-off
High mode:	16.0 Lp/cm @ cut-off
Standard mode:	13.0 Lp/cm @ cut-off

Noise:

0.27% as measured on the Philips system phantom (21.6cm water equivalent)

Low Contrast Resolution:

4.0mm @ 0.3% as measured on the 20cm CATPHAN phantom

Absorption Range:

-1000 to +3096 Hounsfield units

Temporal Resolution

As low as 53ms using 0.4 sec rotation and adaptive multicycle reconstruction.

Scanning Modes

Spiral Scanning

- Multiple contiguous slices acquired simultaneously with continuous table movement during scans
- Multiple, bi-directional acquisitions
 - Spiral exposure: Up to 100 seconds
 - Spiral pitch: 0.13 to 1.7 (0.1 inc) and 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 artifact-free thick slices from thin slice acquisition

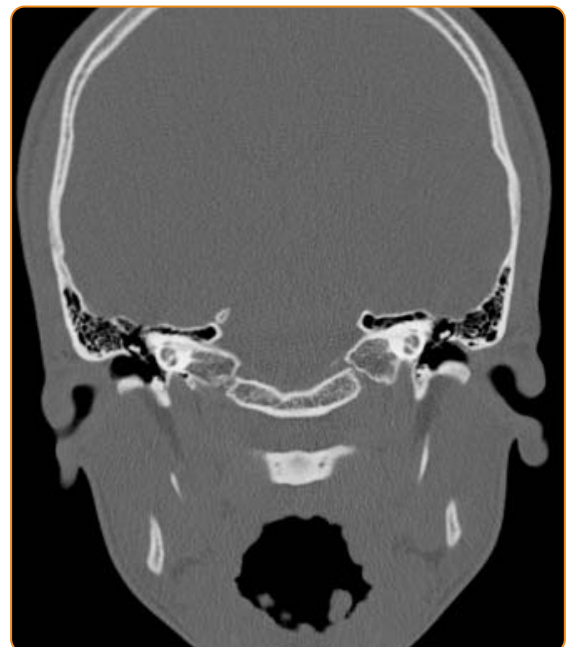
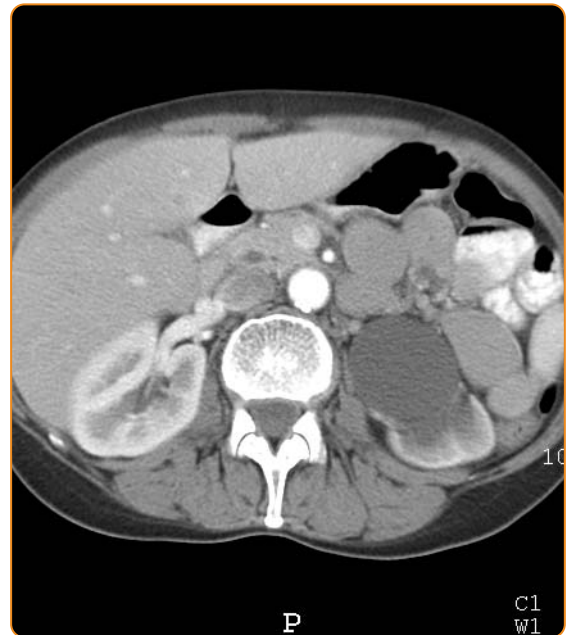
Scan Times

0.4*, 0.5, 0.75, 1, 1.5, 2 seconds for full 360° scans
0.28*, 0.33, seconds for partial angle 240° scans

0.4 Second Rotation*

0.4-second 360° rotation speed (up to 38 slices per second) provides better temporal resolution in advanced clinical applications, including coronary artery imaging, cardiac perfusion and other high-speed, motion-free imaging. The higher speed especially benefits prospective gating, with up to 20% improvement in temporal resolution compared to 0.5 second rotation.

*optional



Clinical Enhancements

Test Injection Bolus Timing

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 reduce contrast usage - ideal for CTA.

Bolus Tracking

An automated injection planning technique that 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 (SAS)

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.

Retrospective Tagging*

Spiral retrospective tagging allows a CT system to acquire a volume of data while recording the patient's ECG. The acquired data is "tagged" and reconstructed at the desired phase(s) of the cardiac cycle with Philips' patented Beat-to-Beat™ Variable Delay Algorithm.

Prospective Gating*

Prospective Gating package automatically triggers axial multislice scan acquisitions using an ECG signal. Philips patented Beat-to-Beat Variable Delay Algorithm enables accurate and reproducible calcification scoring studies.

Continuous CT (CCT)*

Interventional procedures can be performed under CT fluoroscopic guidance with reduced risk to the radiologist and staff. CCT limits X-ray generation to the 240 degrees beneath the patient, shielding the radiologist from scatter radiation. Available in ceiling and cart-mounted configurations.



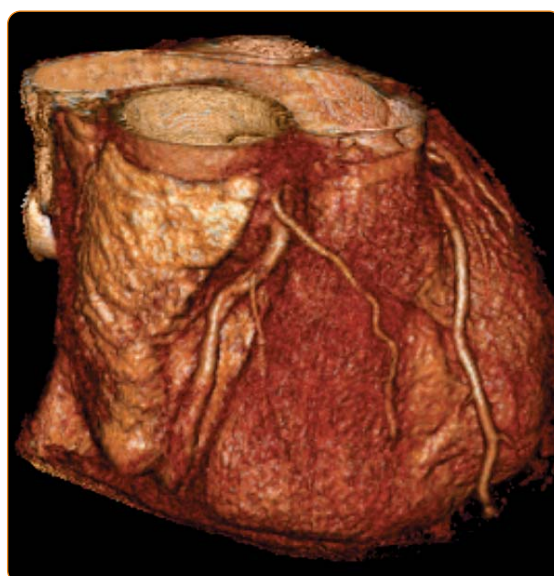
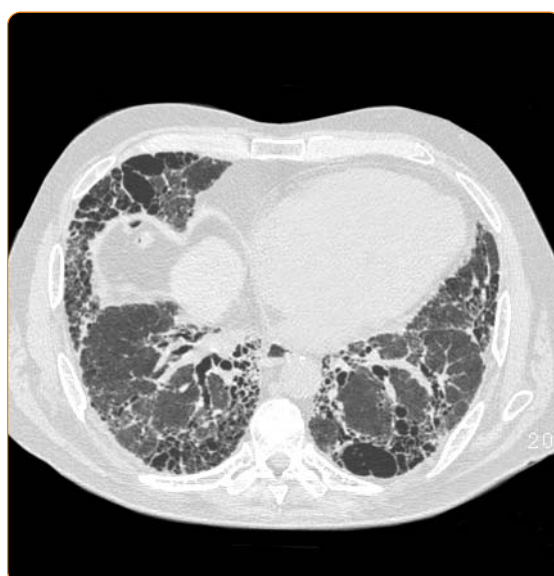
Safety through design

Scan and Image Acquisition



Typical Imaging Protocols

Application	Collimation	Rotation (sec)	Pitch	Slice Width (mm)	Coverage (mm)	On-Time (sec)
Abdomen/Pelvis	16 x 1.5mm	0.5	0.9	5	400	9
Chest High-Res Spiral	16 x 1.5mm	0.5	0.9	2	300	7
Whole Body	16 x 1.5mm	0.5	1.3	2	1200	19
Coronary CTA	16 x 0.75mm	0.4	0.24	0.8	120	17



Dose Management



DoseWise

Philips is continually looking for ways to reduce risk while taking advantage of the benefits of using radiation. The result is a family of multislice CT scanners with the highest dose efficiency on the market. Patients are exposed to significantly less radiation dose without any compromise in image quality.

DoseWise is a philosophy, a set of principles and practices that ensure the best possible outcomes with minimal risk to patients and staff.

It is based on the ALARA (As Low As Reasonably Achievable) principle, but is so much more. It includes creative thinking and smart solutions in three far-reaching strategic areas:

- Smart Beam Management
- Less Radiation Time
- More Dosage Awareness

Smart Beam Management

In Philips multislice CT scanners, specific Smart Beam Management innovations have been developed to block out X-rays that do not contribute to image quality. Through the use of Philips-patented Asymmetrix™ detectors, IntelliBeam™ filtration, and Tach Technology, dose can be managed to limit the exposure specifically to the location of interest.

ScanTools

- DoseRight ACS
- DoseRight DOM
- CTDI Display
- DLP Display
- Dose Efficiency Display
- Dedicated Pediatric Protocols

Less Radiation Time

DoseRight™ ACS (Automatic Current Selection) calculates the best technique for each exam to deliver constant image quality at the lowest doses.

DoseRight DOM (Dynamic Dose Modulation) Automatically reduces mAs on the fly during scanning for 30% or more dose reduction.

DoseRight ECG-gated dose modulation

automatically reduces dose during undesired cardiac phases.

More Dosage Awareness

Through Philips-exclusive design elements, DoseWise gives you easy-to-read, at-a-glance information, keeping you aware of dose levels at all times.

Dose displays include:

- CTDI Volume
- Dose Length Product (DLP)
- Dose Efficiency

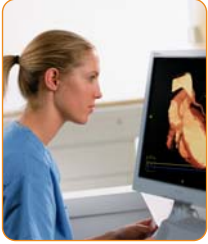
CTDI _{vol}	Dose Levels
Head	12.85 mGy/ 100 mAs
Body	6.54 mGy/ 100 mAs

Using IEC standard phantoms

Dedicated Pediatric Protocols

Infant (0-24 months) and pediatric (2-15 years) protocols, developed using a dedicated pediatric dose phantom, provide dedicated low-dose techniques (as low as 25 mAs) to optimize image quality. Combined with the new Dose Display features, Brilliance customers have an easy, accurate method for controlling the dose their young patients receive.

Reconstruction and Display



Fast reconstruction is vitally important when rapid imaging and viewing is a priority. For example, during trauma scanning, it is important for the technologist and/or radiologist to identify any serious injury quickly, such as a leaking aorta.

RapidView Reconstruction

RapidView reconstruction is the result of years of advanced research, and was designed to forever remove the bottleneck between CT scan acquisition and image visualization. RapidView reconstruction employs true conebeam reconstruction algorithms and Philips-patented backprojection hardware to provide best-in-class reconstruction speeds without compromise in image quality.

Reconstruction Rate

Up to 40 images per second using 512^2 matrix.

Reconstruction Field of View:

- 50 to 500mm continuous
- 25 to 250mm (Ultra High mode)

Cone Beam Reconstruction

Philips' multi-patented ConeBeam Reconstruction Algorithm (COBRA) enables true three-dimensional data acquisition and reconstruction in both axial and spiral scanning.

Adaptive Multicycle Reconstruction (Cardiac)*

COBRA image data can be prospectively gated or retrospectively tagged to provide an accurate depiction of coronary anatomy and to differentiate the types of intravascular plaque. COBRA automatically adjusts according to the patient's heart rate to deliver the best temporal resolution possible all of the time (as low as 53mseconds) in full 3-D conebeam resolution for stable, clear cardiac imaging. This exceptional technology allows you to obtain remarkable images in patients with heart rates up to 115 bpm.

Reconstruction Modes

Concurrent Reconstruction

Image reconstruction in line with acquisition.

Off-Line Reconstruction

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

Evolving Reconstruction

Real-time 256^2 matrix image reconstruction and display in step with spiral acquisition or off-line. Images can be modified for window width and level, zoom and pan prior to larger matrix reconstruction. At the end of the acquisition, all images are updated with the desired viewing settings.

Add Reconstruction

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

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: 512, 768, and 1024

Filters: Choice of six different filters.

Zoom & Pan: Real-time, mouse-controlled with magnification from 0.8 to 10. Can be re-defined during the study.

Archive: On-line image archiving to any installed storage device.

ScanTools

- RapidView
- COBRA
- Evolving Reconstruction
- Add Reconstruction
- UltraImage

ScanTools Pro

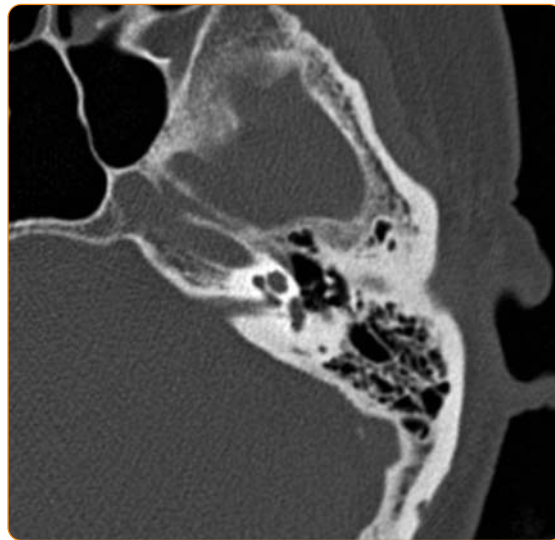
- UHR Matrices

Ultra High Reconstruction (UHR) Matrices

Exclusive to Philips, 768² and 1024² image reconstruction matrices display all of the high-resolution data acquired in applications, such as inner ear, spine and high-resolution lung imaging. As resolution increases, larger matrices are required to display the full resolution for the reconstructed FOV.

UltraImage

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. 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.



512 x 512 matrix

Adaptive Filtering

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



1024 x 1024 matrix

Post-Processing and Communication



Brilliance makes post-processing easy. Through intuitive and flexible tools on the Brilliance Workspace, users can quickly produce the high quality results desired. Brilliance takes you through advanced applications and efficiently communicates information – working the way you do.

Image Processing

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 & Cine, Invert Image, Image Parameters Display.*

Organ ID

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

Image Graphics

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

- Text annotations.
- 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 pixel values along any line.
- Grid with adjustable spacing for distance assessment.

ScanTools

- Slab Viewer
- Image Processing
- Image Graphics
- Window Control
- Volume Rendering
- 3-D, 3-D Small Volume Analysis
- MIP, MPR
- Q-CTA
- RelateSlice
- MasterCut
- Custom Image Filters

ScanTools Pro

- Dual Monitor Configuration
- CD Writer
- Organ ID



Window Control

- 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*: simultaneously 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.

Host Computer

Computer Architecture:

Windows™ XP Dell™ Precision 650
host computer

Main Memory:

2.0 GB RAM (4.0 GB RAM)*

Monitors

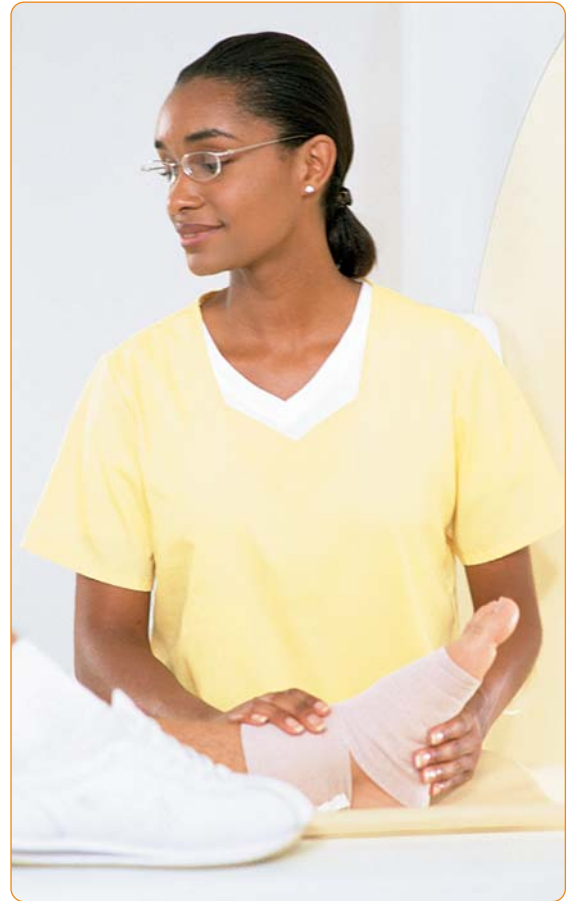
18 inch, 1,280 x 1,024 Flat Panel LCD or
21 inch, 1,280 x 1,024, high resolution CRT

Dual Monitor Configuration

Expands the Brilliance Workspace by utilizing two of the selected monitors. One side is utilized for scanning operations while the other is used for post-processing activities.

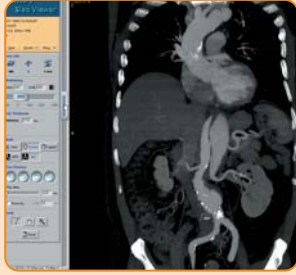
Slave Monitor*

Provides capabilities for viewing images generated on the main console in a remote location, such as the radiologists' reading room.



Brilliance Workspace Analysis Tools

Features



Slab Viewer

Delivers a powerful and easy-to-use general viewing environment. With slab review modes that utilize Maximum MIP and Average rendering techniques for rapid inspection of large volume CT datasets.

- Easy-to-use graphical user interface
- Real-time image display



MPR- Multiplanar Reformation

Real-time reformation of axial images into any user-defined plane - coronal, sagittal or general oblique – or curved plane. Interactive and friendly user interface is provided. The user defines the number of planes, their position, orientation, thickness and spacing and the reformatted image is displayed in real-time. Zoom, pan, leaf and window are available.



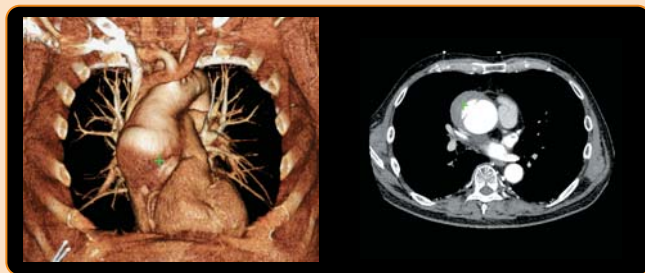
Maximum or Minimum Intensity Projection (MIP)

CT and MR Angiography Maximum Intensity Projection (MIP) images, from a volumetric set of images, can be quickly reconstructed to demonstrate enhanced vascular structures. The projection images can be interactively generated in any arbitrary viewing angle, and can be windowed, zoomed and panned.



3-D SSD Reconstruction

Provides fast reconstruction of three-dimensional images of up to 15 different tissues or organs and easy to understand presentation of complex anatomy. Real-time manipulation of 3-D images includes zoom, pan, rotation around any axis, and cutting of the organs with a user-defined viewing aperture to expose underlying tissues. Making a tissue transparent enables viewing of underlying organs.



RelateSlice™

Displays corresponding 2-D axial information of areas identified on volume-rendered, MIP or virtual endoscopy images.



MasterCut™

Defines MPR curved cuts along vascular structures on MIP or volume-rendered images for panoramic and cross-sectional views.



Custom Image Filters

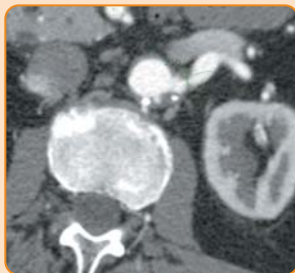
Automated real-time image enhancement or smoothing, defined for up to three independent density ranges such as lung, soft tissue and bone.

Brilliance Workspace Features



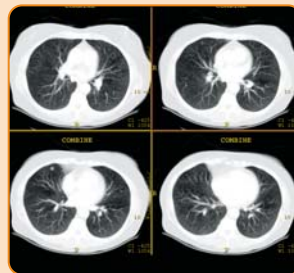
3-D Small Volume Analysis

Enables tumor or nodule characterization with respect to growth rates within the 3-D application. This tool uses automatic segmentation to 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.



Quantitative CTA (Q-CTA)

Q-CTA is a tool kit for taking quantitative measurements of anatomic structures, including vasculature from the 2-D, 3-D or 4-D Angio volume-rendered image. This is accomplished by semi-automatically defining the dimensions of the vessel.



Combine Images

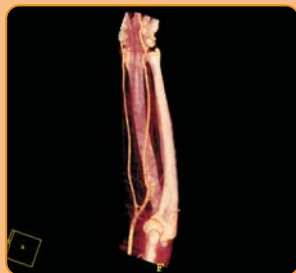
Post processing function enabling linear combination of axial images. Used for filming and reviewing thick slices from thin slice acquisitions, helping to manage large datasets. Does not require raw data or office processing.



CT Time Lapse

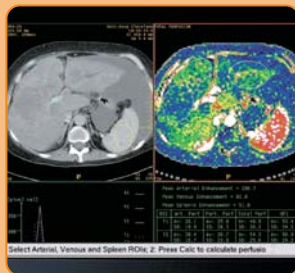
Graphic display of CT pixel values vs. time is available for analysis of uptake and perfusion of contrast media with time.

Advanced Clinical Applications



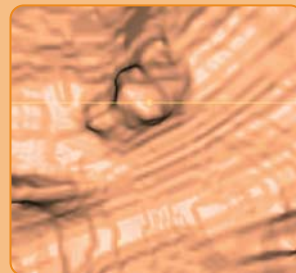
Volume Rendering

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 to permit viewing through and beyond surrounding structures, such as metallic stents and arterial calcifications.



CT Perfusion*

Delivers quantifiable brain perfusion results to evaluate the acute or chronic stroke patient, as well as whole organ liver perfusion. Capable of evaluating tumor perfusion to improve your ability to characterize known lesions



CT Endoscopy*

Renders spiral CT data to provide fly-through images within and around hollow organs. Clinical applications include virtual colonoscopy, bronchoscopy, and angioscopy.

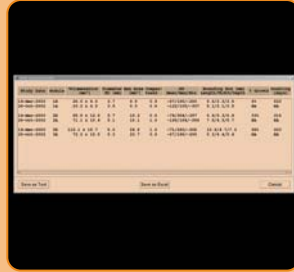
Brilliance Workspace Analysis Tools

Advanced Clinical Applications



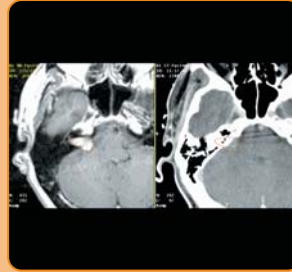
Lung Nodule Assessment™ (LNA)*

Provides quantitative information about the size, shape and change over time of physician-indicated pulmonary lung nodules. Accurately assess the changes over time in a nodule and nodule doubling time.



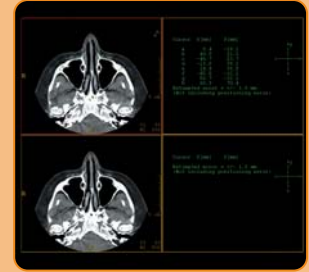
LNA Reporting*

Communicates results of the LNA application. Each report is editable and 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 directly from the Brilliance Workspace.



CT/MR Fusion™*

Allows for the three-dimensional coregistration of studies acquired in different modalities (CT and MR) or in the same modality at different times or with different scan conditions.



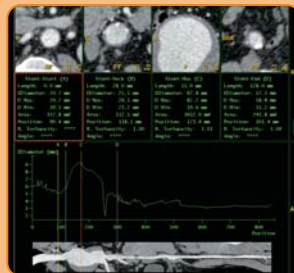
Stereotaxis*

Establishes x-y-z coordinates for up to 15 locations on a single image. Images with these coordinates can be filmed or transferred to a separate third-party stereotactic frame package (compatible with any stereotactic frame including Leksell and BRW).



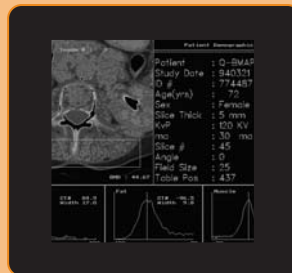
Stenosis Analysis*

Provides information about the number, extent, location, severity, and morphology of a stenosis located in a vessel. Quickly and easily determine the extent and location of area of pathology and assess the severity of each area, aiding in the clinical decision regarding treatment and prognosis.



Stent Planning*

This dedicated program provides auto-centerline detection of any contrast-enhanced vascular structure with quantitative measurements. This is especially useful for planning endovascular (non-coronary) stent placement — such as AAA endoluminal stented grafts — and evaluating vessel stenosis.



Bone Mineral Analysis*

The Bone Mineral Analysis package is an independent, PC-based data analysis system for measuring bone mineral density to monitor metabolic bone disease, such as osteoporosis. It uses a patented histogram-based method to accurately measure only trabecular bone without the need for an external calibration phantom.



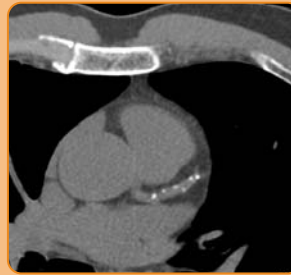
Dental Planning*

Performs imaging of the mandible or maxilla for assisting oral surgeons in planning implantation of prostheses.

Cardiac Imaging*

Integrating knowledge from Philips' leadership in cardiac imaging and monitoring systems, Brilliance CT is uniquely designed to adapt to your patients and overcome the many challenges that unpredictable heartbeat rhythms can present. Philips-patented Rate Responsive™ image acquisition technology adapts to your patients, rather than the other way around. The many intelligent technologies built into the Brilliance CT configurations, result not only in improved departmental workflow, but drastic improvements in the early detection of cardiac disease.

- Redefining patient care through automatic adjustment to variations in patient heart rate and rhythm during the scan and subsequent image reconstruction
- Least invasive, most reliable solution for assessment through accurate determination of the most stable cardiac phase for each region of the heart
- Achieve temporal resolutions as low as 53ms to visualize coronary anatomy, and determine stenosis and plaque constituents



Cardiac Scoring*

Rapidly identifies and quantifies coronary artery calcifications (CAC). Includes mass, Agatston, and volume scores with automated and customizable reporting for paper and/ or electronic distribution of results.



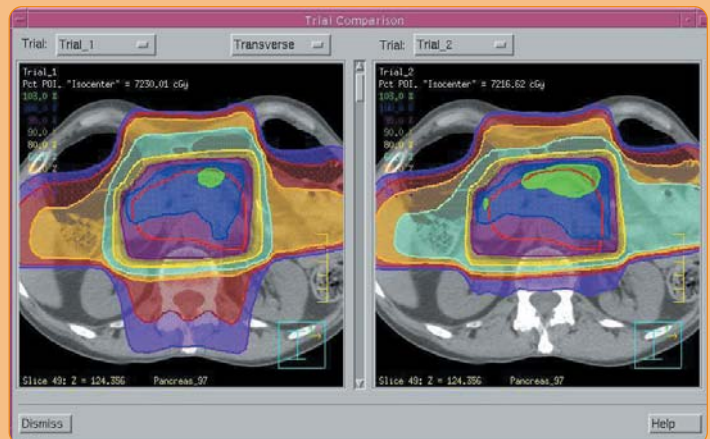
Cardiac Scoring Reporting*

Communicates results of the Cardiac Scoring applications. Each report is editable and 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 directly from the Brilliance Workspace.

Oncology Imaging*

Philips Medical Systems helps improve the detection, diagnosis and treatment of cancer with solutions to help you positively affect patient outcomes and reduce costs. With the skillful merging of imaging, imagination and invention and inventive daring, the Philips experience is leading the way when it comes to providing integrated solutions for radiation oncology.

Philips Radiation Oncology Systems provides innovative solutions to manage patient treatment. These include imaging, localization, simulation and planning, minimally-invasive, image-guided procedures, and inverse planning, conformal external beam planning and IMRT.



Effective Data Management



The Brilliance operating system provides a user-friendly interface and the performance and archiving, filming, and networking capabilities necessary to effectively manage multislice datasets.

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.

Type	Hard Drive	EOD	CD
Capacity	292GB	9.1GB	620MB
Images ¹	514,242	19,000	1228
Exams ²	1714	63	4

¹ 512 x 512 Matrix Uncompressed

² Based on 300 images per study

CD Writer

CD Writer is a compact disk (CD) drive that stores DICOM images along with viewing software on CD media. CD Writer provides a low cost and flexible alternative for archiving images and for providing images to referring physicians – useful for presentations and teaching files or patients.

Filming

This function allows the user to set up and store filming parameters. Pre-stored protocols can be set to 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. An optional AMC Film server is available for non-DICOM printers.

Networking

Network connections should be located within 10 feet of the console. Brilliance CT supports 10/100Mbps (10/100BaseT) network speeds. For optimal performance, Philips recommends 100Mbps network speed and that the CT network be segmented from the rest of the hospital network.

Ethernet Switch

10/100Mb Switch. Provides connectivity between the Workspace hospital network (or Extended Brilliance Workspace).

DICOM

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.

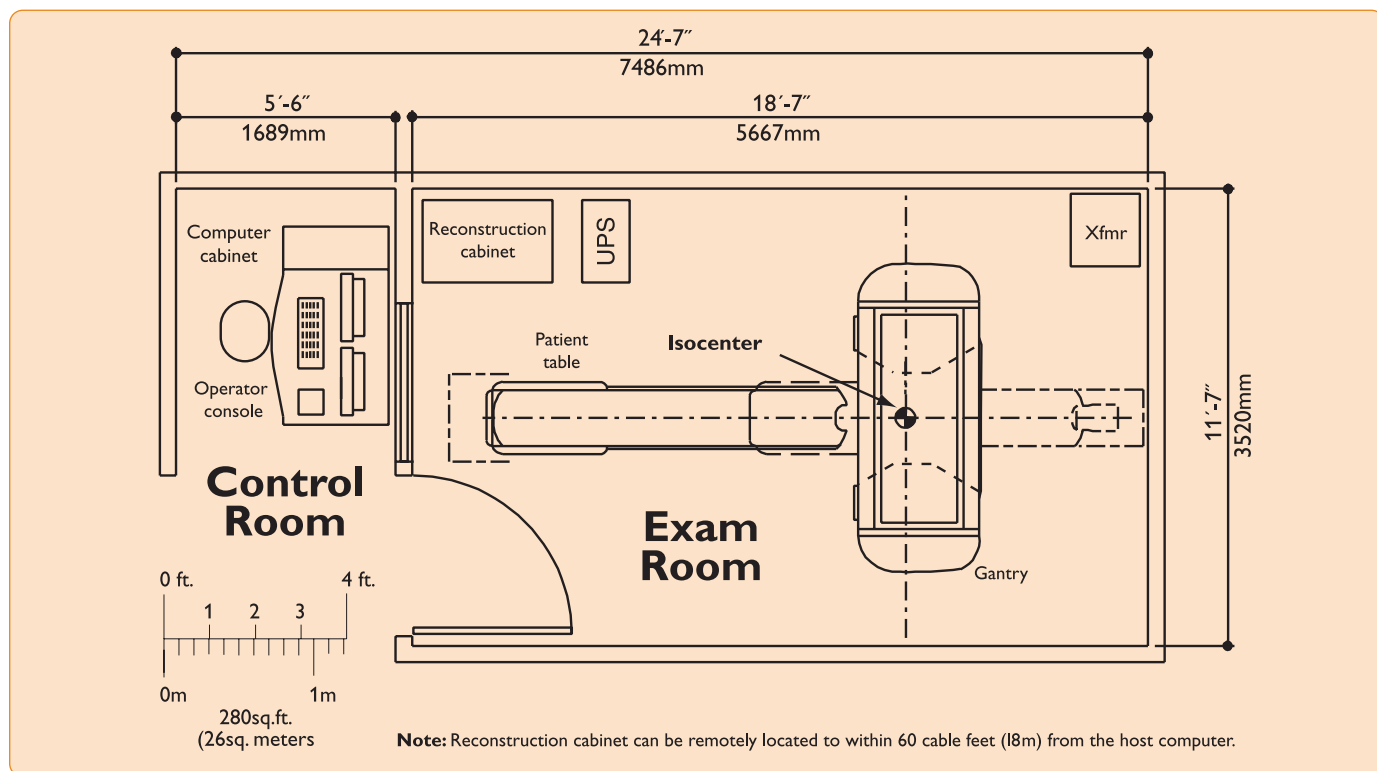
Brilliance Workspace includes DICOM service classes to communicate with the following modalities:

- Computed Tomography
- Magnetic Resonance Imaging
- Nuclear Medicine
- Computed Radiography
- Radiography & Fluoroscopy (R&F)
- Secondary Capture of frozen images (for display only)

Brilliance Workspace includes the following DICOM functionality:

- Service Class User & Provider
- DICOM Print
- Modality Worklist
- Query/Retrieve
- Perform Procedure Step
- Storage Commitment
- Removable Media

Site Planning



Contact the Philips Site Planning department for specific requirements pertaining to optional imaging/viewing equipment floor space and electrical, mechanical, structural or environmental specifications.

Power Requirements

- 200/205/240/380/400/416/480/500 VAC
50/60 Hz 100kVA
- Three-phase distribution source

Console Uninterrupted Power Supply (UPS)

Provides up to 30 minutes of backup power for host computer, reconstruction, and monitors.

Environmental Requirements

Temperature:

- Gantry room: 15° to 22° C (59° to 72° F)
- Control room: 15° to 24° C (59° to 75° F)
- Storage/Transport: -15° to +45° C (5° F to 113° F)

Humidity:

- Gantry/Control: 15% to 75% non-condensing
- Storage/Transport: 10% to 90% non-condensing

Heat Dissipation:

- Gantry: 20,000 BTU/hr
- Computer: 2,559 BTU/hr
- Reconstruction: 5,293 BTU/hr

Dimensions and weights				
	weight	height	width	depth
gantry	1764 kg (3890 lbs.)	203cm (80")	239cm (94")	94cm (37")
patient table	383 kg (845 lbs.)	101cm (40")	69cm (27")	249cm (98")
console table	56 kg (125 lbs.)	76cm (30")	119cm (47")	91cm (36")
LCD monitor* 18"	7 kg (15 lbs.)	36cm (14")	44cm (17")	6cm (2.4")
CRT monitor* 21"	31 kg (68 lbs.)	48cm (19")	50cm (20")	53cm (21")
computer cabinet	118 kg (260 lbs.)	76cm (30")	30cm (12")	86cm (34")
reconstruction cabinet	151 kg (332 lbs.)	76cm (30")	61cm (24")	86cm (34")
transformer (Xfmr)	271 kg (598 lbs.)	112cm (44")	56cm (22")	53cm (21")
console UPS	34 kg (75 lbs.)	51cm (20")	38cm (15")	56cm (22")

*dimensions and weights for one unit

Philips: Partnering with You



Worldwide, Philips Medical Systems is the proven leader in clinical solutions. With its dedication in imaging, patient monitoring and home health care, Philips provides its physicians and patients with the least invasive and most reliable solution to meet their needs.

As your partner in CT, Philips strives to support your practice with versatile solutions and the highest level of product and service. Together, we are changing the practice of medicine today, and redefining the clinical successes of tomorrow.

Research

Since pioneering the first-ever multislice CT scanner more than a decade ago, Philips has been a visionary in its approach to innovative, advanced CT applications. The advent of this advanced detector technology is just another example of Philips making advanced applications routine and helping you deliver clinical excellence without compromise.

Brilliance CT is the brainstorm of a research and development team that continuously engineers methods to help you deliver better healthcare outcomes. Advanced technology that only Philips has had the foresight to create.

Service

Choose a Philips **CUSTOMerCARE** service agreement for your medical equipment and take advantage of the power of choice to optimize your clinical and financial results. We'll tailor a service agreement to match your specific needs. Through service excellence, flexible solutions and effective relationships, we give you the support you need to succeed in today's complex healthcare environment.

Maximize and protect your investment with a Philips **CUSTOMerCARE** Service Agreement.

- Improve productivity
- Lower cost of ownership
- Increase equipment uptime
- Maintain peak clinical performance

Multislice Advanced Training Program

After delivery of your Brilliance CT, Philips makes sure you can perform all of the applications you wish by offering customized Advanced Multislice Training Courses in conjunction with leading institutions around the world. These unique courses are designed to provide physicians and technologists with advanced learning opportunities to maximize both patient care and departmental productivity.



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