

**EQUIPMENT PO# 655-B30004**

CT Product:

**TURNKEY PO# 655-B30003**

Serial Number: UNKNOWN

Manufacturer: TOSHIBA

Line #	Part #	Description	Qty
1		<b>Ingenuity Core 128</b>	1
		<b>Ingenuity Core128 Configuration</b>	

With a focus on clinical integration and collaboration, patient focus, and improved economic value, the Ingenuity Core128 scanner provides improved image quality at low dose with up to 57% improvement in spatial resolution. The Ingenuity Core128 features the iDose4 Premium Package and is fully in-room upgradable to Ingenuity CT for high performance with no tradeoffs.

Ingenuity Core128 comes with:

- iDose4 Premium Package
- kV stations of 80, 100, 120, 140 kVp
- 80 kW Generator
- Ingenuity DAS
- 4 cm of coverage for better patient compliance and improved clinical capacities
- MRC Ice: new x-ray tube designed for long life and provides the performance required to meet the needs of volumetric scanning

**CT User Environment**

*Brilliance Workspace*

The Ingenuity Core128 leverages the Brilliance Workspace user environment. 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 Healthcare.

*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 for gantry tilt, patient couch elevation and stroke are located on front and back and left and right 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:* 700 mm diameter  
*Gantry Tilt:* -30° to +30°; 0.5° increments.

### *AutoVoice*

A standard set of commands for patient communication before, during, and after scanning is available in the following languages:

- English
- Hebrew
- German
- French
- Arabic
- Danish
- Spanish
- Russian
- Swedish
- Italian
- Georgian
- Chinese
- Japanese
- Turkish
- Portuguese

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

### Table Accessories

From extra padding to optimal support, these table accessories prevent fatigue and discomfort and give both patients and technologists a sense of security: patient restraint kit, table extension, standard head holder, table pad, IV Pole, arm rests, cushions, and pads.

### *Infant Calibration Phantom*

The Infant Calibration Phantom is a Philips exclusive tool used to calibrate system parameters (HCOR) to optimize the system for scanning infants.

### **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.

#### *Patient Centering on Surview*

Centering the patient properly is one of the most important factors in getting good image quality. Traditionally, patients are centered using the gantry laser lights; with this feature it is now possible to improve patient centering using the lateral surview with real time feedback.

#### *Expert Protocol Planning*

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

#### *Preset Post-processing*

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 width: 500 mm

### *Dual Surview Planning*

Planning patient scans with two survIEWS 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 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

#### *QuickStart*

The Ingenuity Core128 scanners have an efficient start-up sequence that allows scanning to begin within five 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.

#### *DICOM® MPPS*

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

#### *Split Study*

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*

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*

Maps the procedure selection from the HIS-RIS with individual scan protocol(s) from the Ingenuity Core128 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**

The Ingenuity Core128 is perfectly balanced, combining power and flexibility that maximizes image quality, speed and throughput at a low dose.

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

### *Generator*

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

Effective output capacity: 105 kW

Output capacity: 80 kW

kV selections: 80, 100, 120, 140 kVp

mA selections: 20 to 665 mA

### *MRC Ice 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 Ice tube dissipates heat as rapidly as it is collected, with an effective heat storage capacity far superior to a conventional ball bearing design.

- 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.
- Segmented Anode tube design, for reliable short shot, high power acquisitions.

Effective Heat Storage Capacity:	30.0 MHU
Anode storage capacity:	8.0 MHU
Maximum cooling rate:	1608 kHU/min
Focal spot (IEC):	0.5mm x 1.0mm (small) 1.0mm x 1.0mm (large)

### *Dynamic Focal Spot*

Dynamic Focal Spot (DFS) doubles the data sampling density from the detectors effectively doubling the number of detectors and providing ultra-high spatial resolution in axial and spiral scanning.

### *Detector*

Detector design is fundamental to the objective of acquiring high quality images while managing 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 TACH2 technology reduces dose and improves image quality.

Material:	Solid State - High Performance Multislice Ceramic
Slip Ring:	Optical - 5.28 Gbps transfer rate
Slice Collimation:	64 (128) x 0.625mm, 32 (64) x 1.25mm, 16 (32) x 2.5mm, 2 (4) x 0.5mm

---

### *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% measured on Philips system phantom (21.6 cm water equivalent)
Low Contrast Resolution:	4.0 mm @ 0.3% as measured on the 20 cm CATPHAN phantom
Absorption Range:	-1024 to 3072 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 100 sec. of uninterrupted spiral scanning  
Spiral pitch : 0.13 to 1.5 (user selectable)

#### Axial Scanning

- Multiple-slice scan with up to 128 contiguous slices acquired simultaneously (via Ingenuity data acquisition and sampling technique) with incremental table movement between scans
- Fused modes for reconstructing partial volume artifacts free thick slices from thin slice acquisition

### *Scan Times*

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

### *Test Injection Bolus Timing*

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*

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*

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

### **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. The Ingenuity Core128 systems employ a number of DoseRight features that help provide extremely high dose efficiency.

---

*DoseRight ACS* - 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* - 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)* - 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)
- Dose Length Product (DLP)
- Dose Efficiency

#### *Dedicated Pediatric Protocols*

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

#### *NEMA XR-25 (DoseCheck)*

DoseCheck enables the ability to set dose thresholds and provides alerts and notifications to the scan operator when radiation dose levels will be exceeded.

There are two threshold level values:

- Notification Values
- Alert Values

Notification values apply to a single image series, and Alert values apply to an overall exam. Both CTDIvol and Dose Length Product (DLP) values can be set.

For Alert values that will be exceeded, the system requires the user provide name and password information before proceeding to scan. Also, an additional indication will appear in the Dose Info Page Series when the Notification or Alert values have been exceeded during a scan.

#### *DICOM Structured Report for Dose (DICOM SR)*

Dose SR complies with the IEC, DICOM PS and IHE standards for dose reporting. The report includes CTDIvol and DLP dose values.

## **Reconstruction and Display**

#### *iDose4 Premium Package*

The iDose4 Premium Package includes two leading technologies that can improve image quality – iDose4 iterative reconstruction technique, and metal artifact reduction for large orthopedic implants (O-MAR). iDose4 improves image quality through artifact prevention and increased spatial resolution at low dose. O-MAR reduces artifacts caused by large orthopedic implants. Together they produce high image quality with reduced artifacts.

### *iDose4 Iterative Reconstruction Technique*

iDose4 is an iterative reconstruction technique that 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 projection (raw) and image domains.

iDose4 reconstruction is achieved in seconds rather than minutes. iDose4 features the RapidView IR 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 for radiologists, iDose4 is easy to use and easy to adopt into your existing standard of care. The operator simply plans the scan as they normally would. Designed to seamlessly integrate into your CT department, iDose4 provides the look and feel of conventional higher-dose images without long processing times.

### *RapidView IR Reconstruction*

RapidView IR reconstruction is the result of years of advanced research, and was designed specifically to satisfy the performance requirements and processing power needed to seamlessly integrate the iDose Premium Package into your department. RapidView IR provides dramatic improvements in workflow by displaying images at breakthrough rates, regardless of acquisition speed or reconstruction parameter. The RapidView IR system employs true cone beam reconstruction algorithms and Philips-patented back projection hardware to provide the user with the images they desire, along with best-in-class reconstruction speeds, without compromise in image quality.

Reconstruction Rate: Up to 18 images per second with iDose4

Reconstruction Rate: Up to 25 images per second without iDose4

### *ConeBeam Reconstruction Algorithm - COBRA*

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.

### *ClearRay Reconstruction*

Provides improved soft tissue uniformity and sharper bone-soft tissue boundaries. This technique is automatically applied to all protocols that would benefit from its technique.

### *Evolving Reconstruction*

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*

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, filters, enhancements, zoom and pan, and archive.

### *Ultra High Resolution Matrices*

Exclusive to Philips, 768 x 768 and 1024 x 1024 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 field of view.

### *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, such as the bone-brain-air interface in neurological exams.

### *Adaptive Filtering*

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

## **Post-processing and communication**

### 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 and 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 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

---

- 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.

#### Host Computer

*Computer Architecture:* Windows XP Dell Precision host computer

*Main Memory:* 12.0 GB RAM

#### Display Monitor

##### *Dual Monitor Configuration*

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.

#### Post-Processing Analysis Tools

##### *SlabViewer*

##### *MPR- Multiplanar Reformation*

##### *Maximum or Minimum Intensity Projection (MIP)*

##### *3-D SSD Reconstruction*

##### *MasterCut*

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*

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.

##### *3-D Small Volume Analysis*

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*

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*

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.

500 GB Hard Disk: Image Storage Capacity: 512 X 512 Image Matrix = 900,000 typical number of uncompressed images

#### *DVD-RAM Storage*

DVD-RAM is a solution for storing datasets. 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 drive.

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

#### *Filming*

The 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 Ingenuity Core128 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. Further details on connectivity and interoperability are provided within the DICOM Conformance statement.

#### **Siting information**

##### ***Power Requirements***

- 200/208/240/380/400/460/415/480/500 VAC at 112.5 kVA (150 kVA preferred) and 50/60Hz
- Three-phase distribution source

Computer cabinets are included. The computer table and operator's chair are optional.

#### **Clinical Education Program for Ingenuity Systems:**

**Essentials OffSite Education:** Philips will provide up to two (2) lead technologists, as selected by customer, with in-depth lectures covering basic clinical applications, Philips-specific imaging techniques, protocol optimization and scan parameters. A 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:** This twenty-eight (28) hour training event will fine tune and expand upon knowledge learned during the Essentials OffSite with focus on maximizing scanning techniques and protocols. This session is to be attended by the same two (2) technologists from Essentials OffSite, and up to two (2) more of your dedicated CT Technologists, preferably from night or weekend shifts if necessary. ASRT CEU credits may be available for each participant that meets 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 On-Site Education:** Clinical Education Specialists will provide twenty-eight (28) hours of follow-up CT On-Site Education for up to four (4) students, selected by customer, including technologists from night/weekend shifts if necessary. CEUs are not available in all cases.

**Follow-Up OnSite Education:** Clinical Education Specialists will provide twenty-four (24) hours of follow-up CT OnSite Education for up to four (4) students, selected by customer, including technologists from night/weekend shifts if necessary. CEUs are not available in all cases. Please read Guidelines for more information, which will be provided to you during the scheduling process. Note: Philips personnel are not responsible for actual patient contact or operation of equipment during education sessions except to demonstrate proper equipment operation.

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

Ref# 618619620621-20110921

2

## iPatient

1

Philips' iPatient is an advanced platform that delivers focused innovations to facilitate patient-centered imaging, now and in the future. This powerful platform puts users in control of innovative solutions that drive confidence and consistency through personalized patient centric workflow, increase the ability to do complex and advance procedures with ease and efficiency. iPatient removes unnecessary complexity and allows our customers to get the job done with less stress and greater confidence, and prepares for future innovations that will help improve the care being delivered to the patient.

### Dose Management

The Philips iPatient approach to patient-centered imaging includes new, patient-specific methods to facilitate optimal management of both image quality and radiation dose.

These methods were designed to simplify the adaptation of scan protocols and advanced techniques— such as dose modulation and iterative reconstruction — for each individual patient and diagnostic task and include:

- **DoseRight Index (DRI):** a single number used to specify the image quality required for the diagnostic task at hand
  - **Organ-specific DRI:** Liver and Head/Neck localized settings to optimize dose and image quality
  - **NEMA XR-25 DoseCheck**
  - **DICOM Structured Reporting for Dose**
  - **IHE REM Profile**
  - **DoseRight 3D Modulation**
  - **DoseRight ACS**
-

- Ability to set a maximum and minimum dose per ExamCard
- Dose display on Surview for the planned acquisitions
- 11 (1 infant, 7 pediatric, 3 adult) size-specific reference diameters, directly related to weight intervals, that may be used to establish patient-centric ExamCards
- Locking Protocols

### ExamCards

ExamCards are the evolution of the scanning protocol. With ExamCards, the results are planned, not the acquisition, as traditionally done in CT; this reduces decision points and clicks, saves time and improves operator-to-operator consistency. ExamCards can include axials, coronals, sagittals, MPRs, MIPS, and other results, all of which will be automatically reconstructed and can be sent off to where they will be read with no additional work required by the operator.

### Workflow Enhancements

iPatient is the ideal platform for high-throughput for both routine and trauma exams. iPatient's holistic approach to workflow makes the entire procedure simpler and easier. Some features include:

- **Scan Ruler:** provides a visual, highly interactive view of the entire procedure that allows 1-click updates to important study events
- **Fast Preview:** displays real-time 512x512 matrix image reconstruction and 5 mm x 5 mm contiguous slices with helical acquisition or off-line reconstruction. Images can be modified for window width and level, zoom, and pan prior to larger matrix reconstruction at the end of the acquisition.
- **View2:** allows you to work with more than one patient at a time. With one-click move the current patient to the right monitor to continue working and on the left monitor you can simultaneously begin the next patient.

3

### Bariatric Table

1

The Brilliance Bariatric Patient Support is designed to meet the CT imaging needs of the growing bariatric 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:*

Manual Stroke: 1890 mm  
 Scannable range: 1750 mm  
 Acquisition Speed: 0.5 to 185 mm/sec (iCT)  
 0.5 to 143 mm/sec (Ingenuity CT, Brilliance 40 and 64)  
 0.5 to 100 mm/sec (Brilliance 6, 10, 16, Big Bore)  
 Load/Unload Speed: 0.5 to 185 mm/sec (iCT, Ingenuity CT, Brilliance 64)  
 Position accuracy: ±0.25 mm

##### *Vertical motion:*

Range: 578 to 1028 mm; 1.0 mm inc.  
 645 to 1065mm; 1.0 mm inc. (iCT)

*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.

The Bariatric Table includes the Radiology Flat Top Kit. This kit, comprised of a wide accessory flat top, wide mattress pad and extra long patient restraint straps, provides additional comfort and security for patients. A quality assurance phantom holder fitted for the flat top is also included. Note: This flat top is not qualified for oncology radiation therapy usage and cannot be used to support the iCT calibration phantom.

**4** **Operator's Manual - English** **1**

**5** **Keyboard Language - English** **1**

**6** **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.

**7** **IntelliSpace Portal IX** **1**

ace Portal IX Workstation is a single-user advanced multimodality imaging system workspace that can support radiology, cardiology, oncology, neurology, orthopedics, and other specialties' imaging needs, to support your imaging workflow. Clinicians can review the results of multiple imaging modalities – including studies acquired from multiple vendors' imaging equipment – from one workspot.

The IntelliSpace Portal IX Workstation offers powerful capabilities, both standard and optional. Standard capabilities include:

- Multivendor compatibility that makes image data and applications available for all CT, MR, Nuclear Medicine images
- IntelliSpace Portal IX Workstation is based on the Extended Brilliance Workspace, which has been ranked at or near the top in the “Best in KLAS” awards in Ease-of-Use for four consecutive years; and was also the 2008 and 2010 “Best in KLAS” designee for Software & Professional Services for Advanced Visualization
- Guided Task workflow walks users through each processing stage from start to finish
- Use of bookmarks, interactive snapshots and other convenient tools to increase efficiencies and minimize training needs
- Multimodality Viewer for display of CT, MR and Nuclear Medicine datasets
- Smart MR Viewing, smart linking, cine movie loop for MR datasets
- Multimodality Fusion: PET-CT, SPECT-CT, NM-CT, CT-CT, CT-MR, and MR-MR
- Automatic Registration: PET-CT, SPECT-CT, CT-CT and MR-MR
- PET/CT Alpha blending and 2D/3D SUV calculations
- Display of multi-frame secondary captures
- 3D Volume rendering, MIP, VIP, minIP, SurfaceMIP
- Slab Review capabilities including regional investigation and curved MPR
- Volume Explorer: for instant and interactive seed-growing 3D segmentation
- “Glass View” to display bony structures in relation to 3D volumes
- Comprehensive DICOM Printing (“Filming”)
- DICOM 3.0 & IHE compliance

[IntelliSpace Portal IX Workstation specifications](#)

- DELL Precision workstation
- 12 GB RAM
- 300 GB hard-disk for storage of up over 300,000 (512 x 512 matrix) images
- 19" LCD color monitor
- CD-DVD Writer: DICOM image storage on CDs or DVD-R

**8 CT AVA Stenosis IX 1**

AVA Stenosis offers a set of tools for stent planning and general vascular analysis. It allows the user to easily remove bone, and extract and segment the vessels to quickly perform typical measurements such as intra-luminal diameter, cross sectional lumen area, length and tortuosity of vessel's segments, and angle of the vessels. AVA allows the user to display the dataset using volume rendering, Average, or MIP with cross sections images that can be used to delineate aneurysm, presence of mural calcification and lining mural thrombus, branch vessel (celiac, mesenteric, renal) and the ilio-femoral arterial runoff circulation.

The interactive measurement tools make it easy for the user to calculate the angulation between the superior neck and aneurysm, the angle between the superior neck and aneurysm lumen, as well as other complex anatomic calculations.

Prerequisite: IntelliSpace Portal IX workstation

**9 Additional Manual - English 1**

Additional Manual - English

**10 Rate Responsive CV Toolkit 1**

The "Rate Responsive CV toolkit" package is a set of features designed to allow basic cardiovascular imaging of the heart. This package is a prerequisite to the cardiac packages and to the "Stand Alone" applications, it includes:

*Acquisition Features*

**0.4 Second Rotation**

0.4 second 360° rotation provides better temporal resolution in advanced clinical applications such as coronary artery imaging, cardiac perfusion and other high-speed, motion-free imaging. The higher speed especially benefits prospective gating, with up to a 20% improvement in temporal resolution.

**DoseRight Cardiac**

ECG Dose Modulation reduces the mA of the X-ray beam up to 80% during acquisition of non-desired phases (estimated overall dose reduction to the patient of ~45% for single-phase, end-diastolic imaging). For example, only one phase may be required for coronary CTA, and the system will reduce the mA during the other portions of the acquisition, saving considerable dose.

**Retrospective Tagging**

Spiral Retrospective Tagging allows the Brilliance CT system to acquire a volume of data while the patient's ECG is recorded. The acquired data is "tagged" using AccuTag and reconstructed retrospectively at any desired phase of the cardiac cycle. This phase selection is accomplished using the Philips' patented Beat-to-Beat Variable Delay Algorithm, which automatically finds the best phase for cardiac CT imaging.

**Prospective Gating**

Prospective Gating automatically triggers axial multislice scan acquisitions using patient information from the ECG monitor. This feature uses Philips patented Beat-to-Beat variable delay algorithm for accurate and reproducible calcification scoring studies.

### **Integrated ECG Monitor**

Philips' advanced ECG monitor with accompanying stand is used to collect the patient's ECG signal and then transfer the signal to the scanner for gated cardiac CT imaging. The ECG signal is stored on the system for later recall and display in the Brilliance Workspace. This can be used to interactively complete raw data reconstructions at different portions of the ECG cycle. Also can be used to correct reconstruction artifacts caused by irregular heartbeats.

Note: Gemini systems will ship with the GEMINI PET/CT ECG Gate.

*Reconstruction Features*

### **COBRA Reconstruction (COBRA Cardiac)**

This reconstruction algorithm along with the adaptive multi-cycle reconstruction algorithm (MaxCycle) delivers the clearest images with the best temporal resolution possible at all times, as low as 53mseconds, in full 3-D conebeam resolution.

*Review Features*

### **Cardiac Viewer**

Provides a comprehensive set of user tools that allows quick visualization of one or multiple cardiac phases, synchronization of multiple cardiac phases with interactive slab-MIP tools for review purposes, cine mode for cardiac axes views and a simple "Area-Length" calculation of End Systolic Volume (ESV), End Diastolic Volume (EDV), Cardiac Output (CO) and Ejection Fraction (EF) for basic ventricular functional assessment.

### **Calcium Scoring**

Cardiac scoring program which provides Agatston, Volume and Mass scores. Incorporates a database of > 5,000 asymptomatic multislice cardiac scoring patients.

*Reporting Features*

### **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.

11

## **SyncRight (WO Injector)**

1

SyncRight enables bi-directional communication between the scanner and SyncRight Injector. This communication allows for improved workflow.

*Prerequisite: iPatient*

### **Medrad Stellant P3T PA:**

Medrad Catalog # 3028465

P3T PA (Pulmonary Angiography) tailors each patient's contrast protocol based on four primary components:

- Patient and procedure data gathered by healthcare personnel
  - P3T algorithm for protocol generation
  - DualFlow technology (the simultaneous injection of contrast and saline).
  - An optional transit bolus that refines the protocol (P3T PA also works with bolus detection software)
-

P3T PA software enables increased diagnostic studies by fitting into the established CTPA workflow and making consistent administration of personalized dosing practical.

Philips does not warranty the Medrad Stellant CT Injector System or its options but will pass on the Medrad warranty provided in countries where MEDRAD operates. In these countries Medrad or a MEDRAD authorized Distributor warrants each new injector system; including control unit, display control, remote panel and injector head against defects in material and workmanship, under proper, normal use and service for a period of one year (12 months) from the date of installation. There will be no charge for any action deemed necessary by Medrad, including parts, travel, or labor to fulfill the terms of the warranty, during normal business hours (8:30am to 5:00pm, local time, Monday through Friday, except MEDRAD recognized holidays).

**12** **Barcode reader** **1**  
Barcode Reader enters patient data from a HIS/RIS into the patient data form. Used in conjunction with DICOM Modality Worklist.

**13** **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*

**14** **P3T Abdomen** **1**  
**Medrad Stellant P3T Abdomen:**  
Medrad Catalog # 3018741  
P3T Abdomen enables clinicians to automatically calculate and deliver personalized contrast injection protocols. It is indicated for use with CT imaging of abdominal organs (i.e. liver, pancreas, and kidneys). The P3T Abdomen automatically adjusts contrast volume based on scientific methods, according to patient, procedure, and prescribed physician parameters. P3T Abdomen facilitates consistency amongst clinicians in delivering a personalized contrast injection protocol. P3T Abdomen aids in patient safety by tailoring contrast volume according to unique patient-imaging needs. Added safety constraints on Maximum Iodine Load and Maximum Flow Rate will help ensure individualized protocols are compliant with a clinician's practice.

Target Availability: With Results Driven Scanning  
Prerequisite: SyncRight

Philips does not warranty the Medrad Stellant CT Injector System or its options but will pass on the Medrad warranty provided in countries where MEDRAD operates. In these countries Medrad or a MEDRAD authorized Distributor warrants each new injector system; including control unit, display control, remote panel and injector head against defects in material and workmanship, under proper, normal use and service for a period of one year (12 months) from the date of installation. There will be no charge for any action deemed necessary by Medrad, including parts, travel, or labor to fulfill the terms of the warranty, during normal business hours (8:30am to 5:00pm, local time, Monday through Friday, except MEDRAD recognized holidays).

**15** **SyncRight Injector - OCS Short** **1**

---

The SyncRight Injector is a MEDRAD Stellant D with DualFlow option. The injector, when bundled with the SyncRight (WO Injector) option, interfaces with Ingenuity CT allowing bi-directional communication.

This injector comes with an Overhead Counterpoise system with a ceiling column length of 580 mm (22.8")

Medrad Stellant D CT - Dual Syringe w/DualFlow - Overhead Counterpoise System (short):  
Medrad Catalog # SCT 222

The Stellant CT Injection System is comprised of the injector head located in the screening room and a touch screen Display Control Unit (DCU) and Base unit, which is typically located in the control room. The three components are connected by a communication link.

Control console system with Dual 200 ml variable speed injector head with automatic docking, Auto Advance and Auto retract. Includes touch screen display input, 75 ft. cable to control console, injector head overhead mount, operation manual and two 200 ml syringe kits.

Stellant D with DualFlow option is more than a saline flush after a contrast bolus. Now you can inject both contrast and saline at the same time. The key is the simultaneous injection capability of the DualFlow option. DualFlow enables variable ratios of plunger motion from the contrast and saline syringes simultaneously. With the proper ratio, left and right heart ventricles can be illuminated uniformly for improved image quality.

Philips representatives are responsible for the unpacking, assembly and installation of the CT Injector equipment. Medrad will be available for technical assistance, by phone: call (412) 767-2400. Medrad will also provide an operational checkout, final calibration, in-service of the equipment and initial applications training. Please contact the local Medrad sales office at least two weeks in advance to schedule installation. Call (412) 767-2400.

Philips does not warranty the Medrad Stellant CT Injector System but will pass on the Medrad warranty. Medrad warrants each new injector system; including control unit, display control, remote panel and injector head sold in North America and Europe against defects in material and workmanship, under proper, normal use and service for a period of one year (12 months) from the date of installation. There will be no charge for any action deemed necessary by Medrad, including parts, travel, or labor to fulfill the terms of the warranty, during normal business hours (8:30am to 5:00pm, local time, Monday through Friday, except holidays).

**16** **Teal 100kVA Isotran LM** **1**

**17** **Add. Manual - English** **1**

Additional Operator Manuals may be ordered. One set is included with the base system.

**18** **Full Travel Package for OffSite Training** **3**

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.

19

**IntelliSpace IX Clinical  
Education Entitlement**

1

Clinical Education Program for IntelliSpace Portal IX Workstation:

Intellispace IX Handover Education: Clinical Education Specialists will provide twenty-four (24) hours of Multi-Modality OnSite Education for up to four (4) students, selected by customer, including technologists from night/weekend shifts if necessary. CEUs are not available in all cases. Please read Guidelines for more information, which will be provided to you during the scheduling process. Note: Philips personnel are not responsible for actual patient contact or operation of equipment during education sessions except to demonstrate proper equipment operation.

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

Ref# 714-120315

20

**Rigging Charges**

1

CT RIGGING INTO HOSPITAL.

21

**Universal Power Supply**

1

UPS SYSTEM WITH BATTERY CABINET.

22

**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: TOSHIBA AMERICA MEDICAL SYSTEMS TOSHIBA CT  
Serial Number: 12345  
Manufacturer: TOSHIBA AMERICA MEDICAL SYSTEMS

Trade-In authorization number: 26239

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.
-