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Vereos System

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The Vereos PET/CT system incorporates the industry's first digital solid state detector design for breakthrough advancements in PET imaging capabilities.

Key Features

- Digital PET System:
 - Digital Photon Counting technology enables precise localization of each PET annihilation event to dramatically improve image quality.
 - Exceptional sensitivity for fast scans, low dose imaging, and advanced applications
 - High resolution for lesion detectability and exceptional anatomic detail
 - Enhanced spatial resolution and contrast performance through point spread function (PSF) technique
- Ingenuity CT sub-system which includes:
 - kV stations of 80, 100, 120, 140 kVp
 - 60 kW generator with optional upgrade to 80 kW (105 kW equivalent) generator
 - 4 cm of coverage for better patient compliance and improved clinical capacities
 - MRC Ice: x-ray tube designed for long life and provides the performance required to meet the needs of volumetric scanning
- iPatient user environment improves PET/CT productivity by working the way the user does

The flexibility of this high performance scanner includes features designed to automate clinical exams, ease through reconstruction and post-processing, and aid in accuracy of diagnoses. Above all, the speed and usability of the Vereos system increases patient throughput including:

- Patient handling and set up
- Scan and image acquisition
- Dose Management
- Reconstruction and display
- Post-processing and communication

PET sub-system

PET Detector System

- Crystal Material: LYSO
- Detector Architecture: Digital Photon Counting, with direct conversion of the scintillation event to a digital signal.
 - 1:1 coupling from crystal to light sensor.
 - Efficient photon counting.
- Enables quantitative scanning across the clinical spectrum.
- Uniform spatial resolution across the FOV.

CT Sub-system

System

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

MRC Ice X-ray Tube

Liquid coolant carries heat away from the MRC Ice X-ray tube so the CT is ready for the most demanding scans, one right after the other. The Philips MRC Ice X-ray tube is designed to be one of the most reliable in the industry. Built for high volume and 24-hour consistency, there is no waiting for the tube to warm up before the scan and no waiting for it to cool down.

CT 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.

Generator

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

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

CT Scanning Modes

Spiral Scanning

- Multiple contiguous slices acquired simultaneously with continuous table movement during scans.
- 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

CT Scan Times

0.4, 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 are the responsibility of the user.*
- *Compatible with following Injectors:*
Medrad Envision/Stellant, Medrad Vistron, Liebel-Flarsheim, Tyco CT 9000, Medtron CT 2, Nemoto Dual Shot, Tyco OptiVantage DH, E-Z-EM Empower, Swiss Medicare, Ulrich Injectors

Dose Management

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

Digital Photon Counting Technology

Minimizes the required PET radiation dose by utilizing high stopping power crystal material (LYSO) and 3D acquisition with full axial acceptance angle, and Digital Photon Counting to more efficiently capture scintillation events.

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.

Dedicated Pediatric Protocols

Dedicated CT protocols are developed in collaboration with top children's hospitals, age and weight-based infant and pediatric protocols enhance image quality at low dose.

DoseRight ACS (Automatic Current Selection)

Personalizes the dose for each patient based on the planned scan by suggesting the lowest mAs settings to maintain consistent image quality at low dose throughout the scan.

DoseRight Angular Dose Modulation

Automatically controls the tube current angularly, increasing the signal over areas of higher attenuation (e.g., lateral) and decreasing signal over areas of less attenuation (e.g., anteroposterior).

iDose

Automatically controls the tube current, adjusting the signal along the length of the scan, increasing the signal over regions of higher attenuation (e.g., shoulders, pelvis), and decreasing the signal over regions of less attenuation (e.g., neck, legs).

Dose Displays

- Volume Computed Tomography Dose Index (CTDIvol)
- Dose-Length Product (DLP)
- Dose Efficiency

PET/CT User Environment

iPatient

Philips' iPatient is an advanced platform that delivers focused innovations to facilitate patient-centered imaging, now and in the future. This powerful Windows® 7-based platform puts our customers 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 while driving confidence and consistency 24/7, and prepares for future innovations that will help improve the care being delivered to the patient.

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 reformatted CT, MPRs, MIPS, AC and non-AC PET, 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.

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

Guided Flow

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

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

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

Patient handling & set-up

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 Features

- *Gantry Aperture*: 700 mm diameter
- *Scan Control Panel*: Controls and displays for 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.
- *AutoVoice*: A standard set of commands for patient communication – before, during and after scanning in multiple languages. Also provides the ability to record customized messages.
- *Intercom System*: Two-way intercom allows patient monitoring and communication.

Patient Table

- Stroke: 1900mm
- Scan range (PET & CT): 1900 mm
- Table load capacity: 195 kg (430 lbs.)

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. The patient comfort kit includes a patient restraint kit, foam head holder, table pad, foam arm rest, arm boards and a knee pad.

Scan Planning

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

Expert Protocol Planning

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

Automatic Procedure Selection

Maps the procedure selection from the HIS-RIS with individual scan protocol(s) 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 Ruler

Provides a visual, highly interactive view of the entire procedure that allows 1-click updates to important study events.

Preset Post-processing

User-defined presets improve workflow, by automatically opening the relevant post-processing

applications for a specific type of exam. For example, PET reconstruction can be set up to run concurrently with data acquisition resulting in shorter reconstruction time.

Spiral Scanning

Multiple contiguous slices acquired simultaneously with continuous table movement during scans allowing for multiple, bidirectional acquisitions

Axial Scanning

Multiple-slice scan with incremental table movement between scans.

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 advanced feature it is now possible to improve patient centering using the lateral Surview with real time feedback.

Surview Plan

Planning via interactive mouse control of multiple, independent acquisition series of any type on Surview image. Linking of the PET plan to the CT streamlines workflow by reducing operator interaction.

Dual Surview Planning

Provides flexibility in exam planning with both anteroposterior and lateral survivals.

CT 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.

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

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 in the background to the configurable destination.

Reconstruction and Display

PET and CT Data reconstruction is designed to provide the best possible image quality. The Vereos High Definition reconstruction system employs list mode, time-of-flight PET reconstruction and true cone beam CT reconstruction algorithms utilizing Philips patented back projection hardware.

PET Reconstruction

High Definition reconstruction

Philips' state of the art time-of-flight reconstruction algorithm is a fully 3D iterative technique that utilizes list mode data to reconstruct event-by-event. Reconstruction geometry is defined using the line of response (LOR) as well as Spherically Symmetric Volume (SSV) approach. Time-of-flight performance can be optimized through a variety of reconstruction settings including large kernel, high-quality reconstruction and point spread functionality (PSF). The advanced design allows for extremely fast reconstruction speeds as fast as 30 seconds/bed post-acquisition for a typical whole body scan without degradation in image quality performance. Multiple reconstructions of collected PET data may be performed following the acquisition.

CT Reconstruction

CT 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

A revolutionary solution to beam hardening and scatter artifact, modeling and simulation technology pre-computes and stores beam hardening and scatter corrections in a database that is later referenced to create a correction that is personalized to each individual patient. As a fully three-dimensional technique, contrast scale stability is preserved across different patient sizes, image uniformity is improved, and organ boundaries are better visualized.

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.

Fast Preview

Display real-time 512x512 matrix image reconstruction and 5mm x 5mm contiguous slice display 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.

Adaptive Filtering

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

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 iDose4 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 majority of factory protocols with iDose4 are reconstructed in less than a minute, with reconstruction speeds up to 18 images per second with iDose4 and up to 25 images per second with standard reconstruction.

CT 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 multi-slice image quality.

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.

Post-processing and communication

Host Computer

Computer Architecture: Windows-based host computer

Main Memory: 6.0 GB RAM

Display Monitor

Dual Monitor Configuration

Expands the iPatient 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.

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

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.

Fusion Viewer

The interactive PET/CT image viewer is designed for fast, efficient and personalized image review and filming purposes.

- Unparalleled flexibility in customization: all images are resizable based on user needs
- Dynamic adjustment of modality, view, orientation and size
- Fast sequential access to patient studies for superior workflow
- Intuitive toolbar controls for image review
- "Auto-Hide" of controls for screen maximization
- One click access to routine functionality (triangulation, SUVs)
- Comprehensive region of interest contouring tools with DICOM RT Structure Set export
- Easy saving of key images (DICOM, JPEG, AVIs) for distribution
- One click addition of key images for reports

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.

Masterlook

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

3-D Small Volume Analysis

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.

Organ ID

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

Vessel Analysis

Ingenuity offers a set of tools for general vascular analysis. It allows the user to easily remove bone, and extract and segment the vessels to quickly perform typical measurements such as intraluminal diameter, cross sectional lumen area, and length of vessel's segments, and angle of the vessels. The package 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.

ScanTools and ScanTools Pro

The ScanTools package of advanced components and productivity features streamlines routine imaging studies, and comes standard with your scanner. ScanTools Pro is a supplemental set of tools standard on your scanner that enhances productivity, workflow, and diagnostic confidence. The components of ScanTools and ScanTools Pro are located throughout the quote under the appropriate headings.

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.

DVD-RAM

DVD-RAM is an archive solution for storing CT and other modality datasets. It provides an inexpensive, reliable method for high-speed random access recording. DVD-RAM disks are written with proprietary Philips format and are only readable on Philips EBW (v3.0.1 or higher) and PET/CT scanner units (v3.3 or higher) with DVD-RAM.

Networking/Connectivity

Network Requirements

Network connections should be located within 10 feet of the console. The Ingenuity TF 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 PET/CT network to be segmented from the rest of the hospital network.

DICOM Connectivity

Ingenuity'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.

Additional features

Other Included Items

- Computer cabinets
- PET sub-system power protection
 - Provides short temporary backup power to several critical components of the PET/CT scanner allowing for proper shutdown of the system.
 - Continuous power will be supplied to the PET gantry to keep power to the detectors, console and CIRS reconstruction computers. This is useful when short (less than 5 minute) power loss occurs.
 - For complete system protection, a full UPS is required.
- Sources (shipped separately), phantoms, and fixtures for daily & monthly QC (PET& CT)
- User documentation.

Vereos PET/CT Clinical Education Package:

Pre-Handover Onsite Education: Philips Education Specialists will provide twenty-eight (28) hours of Vereos PET/CT Onsite Education for up to four (4) students, selected by customer, including technologists from night/weekend shifts if necessary. All training must be delivered within the same visit. Course content will include information intended to provide an introduction to the Vereos PET/CT scanner, the newest PET technology hardware. Students should attend all three onsite training sessions which build on prior training events. CEUs are not available in all cases. Please read Guidelines for more information, which will be provided to you during the scheduling process.

Initial Handover Onsite Education: Philips Education Specialists will provide twenty-four (24) hours of Vereos PET/CT Onsite Education for up to four (4) students, selected by customer, including technologists from night/weekend shifts if necessary. All training must be delivered within the same visit. Course content will include information intended to provide the most innovative technology of the digital Vereos PET/CT scanner, the newest PET technology hardware. Students should attend all three onsite training sessions which build on prior training events. CEUs are not available in all cases. Please read Guidelines for more information, which will be provided to you during the scheduling process.

The Philips NEMA (National Electrical Manufacturers Association) product testing services provide qualified FSE (Field Service Engineer) NEMA testing support. The service ensures that your medical devices meet all requirements of the Philips manufacture(s) product specification as described by the NEMA standard for that system. Our services include tools required to test devices to the current NEMA standard, support for user testing, as well as calibration maintenance to bring a system back into NEMA specification.

NEMA support includes:

1. Qualified engineer trained in NEMA product testing
2. NEMA test tools as specified by the products' validated NEMA manufacture standard
3. Calibration evaluation/certification if needed prior to NEMA testing
4. Calibration services if required
5. NEMA/Testing support service (one trip/maximum of 4 days)

Note: (If user specific testing is requested, support will include product support for testing only. Site-specific processing and/or standards verification is customer responsibility if assessment other than the manufacture(s) recommended NEMA testing that the product was designed for is performed .i.e. a qualified manufacture testing requirement for NEMA 1993 cannot be tested for NEMA 2007 if not validated by manufacture for that product

Isotopes required for NEMA/Testing support services to be provided by customer

Special purpose phantoms or testing devices/kits other than standard NEMA testing devices to be provided by customer

10	**	PET/CT ECG	1
		<p>ECG Gating system for PET and CT cardiac imaging. The system provides a color display with touch screen operations for easy information input and intuitive onscreen navigation with one-touch commands. Includes cart for easy movement and storage.</p> <p>NOTE: This item is only supported with version 3.5 or higher. If selected it will only be deliverable upon the release/installation of version 3.5 software release. Selection of the ECG Gating system allows for PET cardiac gating. For CT cardiac gating you must select either Rate Responsive CV Toolkit (NCTB870) or Heartbeat CS Pro Package (NCTA045) along with the PET/CT ECG Gating system (NPTB595).</p>	
11	**	ECG Monitor - English	1
12	**	Mass Storage Peripheral	1
		<p>The Mass Storage Device provides 6TB (5.4TiB) of RAID protected system attached storage for patient records.</p>	
13	**	Enhanced DICOM Vwr Study Distr	1

The toolkit includes:

- PET/CT acquisition protocols for CT and PET gating
 - Prospective CT gating triggered by an external respiratory device on a pre-selected phase
 - Retrospective Tagging enabling ultra low pitch spiral CT acquired and correlated to the respiratory phase of an external respiratory device
 - Prospective and Retrospective TOF PET data acquisition
 - Respiratory correlated attenuation correction for PET reconstruction
- SUV calculations using respiratory gated image data
- DICOM export of reframed static data for CT and PET
- Bellows pulmonary gating device: a pneumatic mechanism placed around the patient's chest, dynamically observing changes in pressure caused by motion of the chest with a transducer linked to the GEMINI TF 16 & 64 scanners.
- Mayo Device patient feedback device: This device was developed by Mayo Clinic and provides intuitive visual feedback to patients on their respiratory cycle. This feedback can be used to coach patients to better manage their breathing during examinations. The feedback device is only compatible with the Bellows gating device.
- Cables and brackets for connecting to the Varian RPM pulmonary gating device. The Varian RPM device itself is not included and must be purchased separately from Varian. Compatible with Varian RPM version 1.7.

NOTE: This item is only supported on systems running GEMINI 3.5 version or higher. If selected, it will only be deliverable upon the release/installation of GEMINI 3.5 software release.

17	**	GEMINI TF 100 uCi Solid Source	1
		Quantity of one (1), Na-22 radioactive source at 100 uCi, for quality control purposes.	
18	**	Point Source Disk, 10UCI, NA-22	6
19	**	Vereos Install Pre-Wiring Kit	1
		Vereos Install Pre-Wiring Kit	
20	**	Vereos Floor Pour Kit	1
		Vereos Floor Pour Kit	
21	**	UPS, 125 kVA/480 V/60 Hz	1
		Uninterruptible Power Supply (UPS) with Voltage Regulator. Provides power to permit up to 30 minutes of scanning after a power failure. This allows the user to complete the patient scan, save data and make an orderly system shut-down. Also insures that incoming power meets Philips Healthcare's specifications for optimal PET/CT system reliability and performance. The UPS regulates utility voltage deviations, stabilizes line frequency, and subdues line voltage surges & spikes, prevents loss of phase and total power outages, while also ensuring positive phase rotation. Input voltage: 480 VAC/60 Hz.	

Refer to Planning Reference Documentation for more details.

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.

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iDose4 Premium Pkg PET/CT

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The iDose4 Premium Package Upgrade for PET/CT 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 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.

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

27 ****** **SyncRight** **1**
Philips SyncRight provides seamless integration between Philips CT systems and compatible injectors*, facilitating the workflow of contrast-enhanced scans, including advanced applications such as CT of the vascular system. SyncRight simplifies operations and enhances overall consistency by streamlining workflow, allowing more time to focus on patients. With SyncRight, the scanner and injector are in communication to display real-time injection status and allow clinicians to view injection progress, timings, and planned scan real-time on the scanner console.

SyncRight also includes the Bayer Medrad® Personalized Patient Protocol Technology platform, called P3T®, which puts automated personalized patient-dosing capability in clinicians' hands. When P3T® is activated at the CT console, the injected volume and injection rate are automatically adapted to the patient weight.

SyncRight Key Features:

- SyncRight for Philips CT scanner with iPatient
- Bayer Medrad® P3T® Pulmonary Angiography Software
- Bayer Medrad® Stellant D Dual Syringe CT Injection System w/ DualFlow (selected separately based on customer configuration preference)
- Bayer Medrad® P3T® Cardiac Software-Ready (optional)
- Bayer Medrad® P3T® Abdomen Software-Ready (optional)

SyncRight

A single click:

- Automatically load injection protocol from the ExamCard to the injector
- Modify the injection protocol through scanner or injector console
- Create automatic protocol based on scan and patient parameters (using the P3T® protocols)
- View injection timings and planned scan timings on scanner console
- View injection progress and PSI in real time on scanner console
- Start injection and timed scans from scanner or injector console
- Produce injection report as part of the exam summary series

Bayer Medrad® P3T® Pulmonary Angiography (Bayer Catalog # 3028465)

The P3T® Pulmonary Angiography (PA) enables increased diagnostic studies by fitting into the established CTPA workflow and makes consistent administration of personalized dosing practical. P3T® PA 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).

