

PHILIPS HEALTHCARE  
A division of Philips Electronics North America Corporation  
22100 Bothell Everett Highway  
P.O. Box 3003  
Bothell, Washington 98041-3003



<b>Quotation #:</b> 1-1184K8F	<b>Rev:</b> 17	<b>Effective From:</b> 29-Apr-16	<b>To:</b> 30-Nov-16
<b>Presented To:</b> UNIVERSITY OF VERMONT 111 COLCHESTER AVE BURLINGTON, VT 05401-1416  Tel:  <b>Alternate Address:</b>	<b>Presented By:</b> Matt Egan <b>Account Manager</b>  Laura Costello <b>Regional Manager</b>	<b>Tel:</b> (800) 833-3316 x2796 <b>Fax:</b> (603) 726-7455  <b>Tel:</b> <b>Fax:</b>	
<b>Date Printed:</b> 29-Apr-16			
<b>Submit Orders To:</b> 22100 BOTHELL EVERETT HWY BOTHELL WA 98021  Tel: Fax:(425) 458-0390			

This quotation contains confidential and proprietary information of Philips Healthcare, a division of Philips Electronics North America Corporation ("Philips") and is intended for use only by the customer whose name appears on this quotation. It may not be disclosed to third parties without the prior written consent of Philips.

**IMPORTANT NOTICE:** Health care providers are reminded that if the transactions herein include or involve a loan or discount (including a rebate or other price reduction), they must fully and accurately report such loan or discount on cost reports or other applicable reports or claims for payment submitted under any federal or state health care program, including but not limited to Medicare and Medicaid, such as may be required by state or federal law, including but not limited to 42 CFR 1001.952(h).

## Quote Solution Summary

<u>Line #</u>	<u>Product</u>	<u>Qty</u>	<u>Price</u>
	101430 Vereos PET/CT System	1	\$2,370,000.00
Equipment Total:			\$2,370,000.00

## Solution Summary Detail

<u>Product</u>	<u>Qty</u>	<u>Each</u>	<u>Monthly</u>	<u>Price</u>
101430 Vereos PET/CT System	1	\$2,370,000.00		\$2,370,000.00

**Buying Group: NOVATION**

**Contract #: XR11032 Pet**

**Add'l Terms:**

Each Quotation solution will reference a specific Buying Group/Contract Number representing an agreement containing discounts, fees and any specific terms and conditions which will apply to that single quoted solution. If no Buying Group/Contract Number is shown, Philips' Terms and Conditions of Sale will apply to the quoted solution.

Each equipment system listed on purchase order/orders represents a separate and distinct financial transaction. We understand and agree that each transaction is to be individually billed and paid.

**Payment Terms: 0% Down, 80% Shipment, 20% Due When the Product is Available for First Patient Use, Net due 10 days from date of invoice**

## Quote Summary

### 101430 Vereos PET/CT System

Qty	Product
1	NNAJ844 Vereos System
1	NPTB948 CT 128 Slice
1	NPTB950 80 kW Generator
1	NPTB964 Point Spread Function
1	NPTB951 Local Kit Vereos - ENG
1	NPTC011 Flat Pallet Option Kit
1	NPTB040 Kit, Label English RTP
1	NPTC014 NEMA Test Kit for Vereos
1	NPTB595 PET/CT ECG
1	NPTB617 ECG Monitor - English
1	NPTB610 Mass Storage Peripheral
1	NPTB030 Enhanced DICOM Vwr Study Distr
1	NPTC012 Research Toolkit for Vereos
1	NPTC013 Uniformity Analyzer
1	NPTB396 4D Time Of Flight Toolkit
1	989605602191 Solid Source TF 400uCi
6	989605600151 Point Source Disk, 10UCI, NA-22
1	989605602181 Vereos Install Pre-Wiring Kit
1	989605602171 Vereos Floor Pour Kit
1	989605602131 Laser w/Carinalso, Red Wall
1	NCTD293 O-MAR
1	NCTD248 iDose4 for PET/CT
1	NCTD063 SyncRight
1	989605201111 SyncRight Injector - Pedestal
2	989801292189 24 Hours of CT Apps OnSite Clinical Education
1	989801292070 24 Hours of Additional OnSite Clinical Training
2	989801292078 Full Travel Package for OffSite Training
2	989801292424 CT Brilliance Ess Add OffSite 28h
1	SP019 Trade in Allowance

## 101430 Vereos PET/CT System

**System Type:** New  
**Freight Terms:** FOB Destination  
**Warranty Terms:** Part numbers beginning with two (2) asterisks (\*\*) are covered by a System 12 Months Warranty. All other part numbers are third (3rd) party items.  
**Special Notations:** Contingencies must be removed 120 days before scheduled shipment to assure delivery on specified date. Any rigging costs are the responsibility of the Purchaser.  
**Additional Terms:**

Line #	Part #	Description	Qty
--------	--------	-------------	-----

1	**NNAJ844	Vereos System	1
---	-----------	---------------	---

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.

## 101430 Vereos PET/CT System

Line #	Part #	Description	Qty
--------	--------	-------------	-----

### 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

## 101430 Vereos PET/CT System

Line #	Part #	Description	Qty
--------	--------	-------------	-----

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.

## 101430 Vereos PET/CT System

Line #	Part #	Description	Qty
--------	--------	-------------	-----

### *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.

## 101430 Vereos PET/CT System

Line #	Part #	Description	Qty
--------	--------	-------------	-----

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



## 101430 Vereos PET/CT System

Line #	Part #	Description	Qty
		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.	
		<i>Spiral Scanning</i> Multiple contiguous slices acquired simultaneously with continuous table movement during scans allowing for multiple, bidirectional acquisitions	
		<i>Axial Scanning</i> Multiple-slice scan with incremental table movement between scans.	
		<i>Patient Centering on Surview</i> 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.	
		<i>Surview Plan</i> 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.	
		<i>Dual Surview Planning</i> Provides flexibility in exam planning with both anteroposterior and lateral survivals.	
		<i>CT Dynamic Focal Spot</i> 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.	
		<i>Manual Scan</i> 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.	
		<i>Automatic Scan</i> 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.	
		<u>Productivity Tools</u> <i>DICOM® Modality Worklist</i> 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.	
		<i>DICOM® MPPS</i> Provides performed exam information (start/end/info) to HIS/RIS using DICOM MPPS (Modality Performed Procedure Step) service.	
		<i>Split Study</i> 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, information is matched accurately in all subsequent steps (matching, reporting, archiving, billing, etc.). Philips' Split Study reduces error and improves workflow efficiency.	

## 101430 Vereos PET/CT System

Line #	Part #	Description	Qty
--------	--------	-------------	-----

### *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.

## 101430 Vereos PET/CT System

Line #	Part #	Description	Qty
--------	--------	-------------	-----

### *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.

## 101430 Vereos PET/CT System

Line #	Part #	Description	Qty
--------	--------	-------------	-----

- 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.

## 101430 Vereos PET/CT System

Line #	Part #	Description	Qty
--------	--------	-------------	-----

### *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.

## 101430 Vereos PET/CT System

Line #	Part #	Description	Qty
--------	--------	-------------	-----

### 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.

## 101430 Vereos PET/CT System

Line #	Part #	Description	Qty
--------	--------	-------------	-----

**Follow-up On-site Education:** Philips Education Specialists will provide twenty-four (24) hours of Vereos PET/CT On-site 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 be customized to the customers' needs and information intended to provide the most innovative technology of the digital Vereos PET/CT scanner. Students should have attended the Pre-handover and Initial handover training sessions to 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.

**Note:** For education listed above 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. Completion of (2) CT modules and (2) PET Modules will be required prior to attending onsite essentials education. Students access didactic courses through the Philips On-Line Learning Center. CT modules consist of an overview of physics, scanner generations, a review of hardware and software components, data acquisition, and image reconstruction. PET modules include an overview of physics, instrumentation, radiopharmaceuticals, patient preparation, and radiation safety.

Recommendations: If CT Cardiac option is purchased, it is recommended that 98981292425 (CT Cardiac Off-site Educ 28h) is purchased as well as 989801292078 CT Full Travel Pkg. 989801292238 (CT Cardiac On-site Educ 16h) or 989801292450 (CT Cardiac On-site Educ 24h). If PET Cardiac is purchased, it is recommended that 989801292275 (PET Cardiac On-site Educ 8h) or 989801292276 (PET Cardiac OnSite Educ 16h) also be purchased. If system will be used for Diagnostic CT, for an experienced CT Technologist it is recommended that 989801292424 CT Brilliance Essentials Offsite 28h as well as 989801292078 CT Full Travel Pkg also be purchased. If 4D Respiratory Gating is purchased it is recommended that 989801292133 (PET Add On-site Clin Educ 16h).

**Education expires one (1) year from equipment installation date (or purchase date if sold separately). Ref#969970971-20130915**

2	**NPTB948	CT 128 Slice	1
		Vereos comes with the following:	
		<ul style="list-style-type: none"> <li>• 128 rows of data per rotation that are sent to be reconstructed</li> <li>• kV stations of 80, 100, 120, 140 kVp</li> <li>• 0.4 sec rotation</li> <li>• 4 cm of coverage for better patient compliance and improved clinical capacities</li> <li>• MRC Ice: x-ray tube designed for long life and provides the performance required to meet the needs of volumetric scanning</li> </ul>	
3	**NPTB950	80 kW Generator	1
		Enhances CT system performance with 80 kW on-board, high frequency power generator with:	
		Three selectable voltages:                    90, 120, 140 kVp	
		Maximum Current:                                500 mA (at 120 kVp)	
4	**NPTB964	Point Spread Function	1

## 101430 Vereos PET/CT System

Line #	Part #	Description	Qty
		Using an estimate of the point spread function (PSF) of the system, a deconvolution method, also known as the Richardson-Lucy (R-L) algorithm is used to improve the image resolution. It is an iterative method that attempts to maximize the likelihood of the restored image by using the expectation-maximization algorithm.	
5	<b>**NPTB951</b>	<b>Local Kit Vereos - ENG</b>	<b>1</b>
		Includes English language user documentation (paper and electronic)	
6	<b>**NPTC011</b>	<b>Flat Pallet Option Kit</b>	<b>1</b>
		The 53cm RTP flat -panel table insert securely locks into the PET/CT cradle providing a surface consistent with your treatment couch for accurate and reproducible patient positioning. Made of carbon fiber with a foam core, this 53cm wide insert features Indexed Patient Positioning. Each longitudinal edge of the insert has a series of indents/notches that receive the indexing bar, (Lok Bar included) which accommodates standard patient fixation accessories. The notch locations have a 14 cm space between indexing points. The insert is very lightweight, yet very durable in its construction. It can easily be removed and re-inserted for diagnostic studies. The attachment mechanics ensure that, once the top is re-inserted on the cradle, it will be stable throughout the imaging process. Integral aluminum wire fiducials provide a non-symmetric artifact-free reference to determine data orientation in the treatment planning system. The fiducial are divergent as well, to determine slice position/sequence within the data set.	
7	<b>**NPTB040</b>	<b>Kit, Label English RTP</b>	<b>1</b>
		English language labels for RTP flat pallet option	
		NOTES:	
		1. One label kit must be chosen when purchasing the RTP flat pallet option.	
		2. English is the default kit if no other is chosen.	
8	<b>**NPTC014</b>	<b>NEMA Test Kit for Vereos</b>	<b>1</b>
		This kit includes phantoms and accessories necessary to perform NEMA testing for PET imaging. Items are shipped in a durable container for storage on site. The container includes one of each of the following:	
		NEMA Sensitivity Phantom and holder	
		NEMA Scatter Phantom	
		NEMA Body Phantom	
		Spatial Resolution Test Plate	
		Axial Resolution Fixture	
		Performance Test Manual	
		Consumable Kit	
		25 -- 10 cc Luer-Lock Syringes	
		100 - 22 ga. 1.5" disposable needles	
		100 - 1.5mm x 4" glass tubing	
		50 - 3 cc Luer-Lock Syringes	
		10 - 18 ga 6" disposable needles	



## 101430 Vereos PET/CT System

Line #	Part #	Description	Qty
--------	--------	-------------	-----

5 - Spare plastic tubing ( scatter phantom)  
 5 - Spare plastic tubine ( sensitivity phantom)

NOTE: The NEMA Test Kit option is for the materials only. This option does not include on-site testing support from Philips personnel.

<b>9</b>	<b>**NPTB595</b>	<b>PET/CT ECG</b>	<b>1</b>
<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 (NCTC985) or Heartbeat CS Pro Package (NCTA045) along with the PET/CT ECG Gating system (NPTB595).</p>			

<b>10</b>	<b>**NPTB617</b>	<b>ECG Monitor - English</b>	<b>1</b>
-----------	------------------	------------------------------	----------

<b>11</b>	<b>**NPTB610</b>	<b>Mass Storage Peripheral</b>	<b>1</b>
<p>The Mass Storage Device provides 6TB (5.4TiB) of RAID protected system attached storage for patient records.</p>			

<b>12</b>	<b>**NPTB030</b>	<b>Enhanced DICOM Vwr Study Distr</b>	<b>1</b>
<p>The Enhanced DICOM Viewer provides advanced features such as multi-planar reformats for referring physicians and other recipients of DICOM patient studies on a CD/DVD.</p>			

Key Features:

- Triangulation
- Maximum intensity projection
- Multi-planar reformats
- Image display modes for PET, CT image data with Fusion
- Simple, quantitative SUV measurement

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 GEMIN 3.5 software release.

<b>13</b>	<b>**NPTC012</b>	<b>Research Toolkit for Vereos</b>	<b>1</b>
<p>This site support package is a set of programming language routines and documents developed to provide research sites with the capability to read file formats produced by Philips PET/CT scanners. The source code included in the Luminary Package is intended to assist research sites in conducting their own PET research efforts.</p>			

The routines included in the Luminary Package can be used with the MATLAB®, IDL®, and ImageJ applications. PET file readers and writers are included. Image and sinogram readers and writers are also included for use in MATLAB and IDL, image manipulation and data analysis

## 101430 Vereos PET/CT System

Line #	Part #	Description	Qty
--------	--------	-------------	-----

applications. Routines are provided to read List Mode data files. Finally, an image reader plugin for ImageJ, a free, Java-based image manipulation software program is provided. ImageJ program does not support the ListMode format.

NOTE: This item is not to be sold without written approval from the PET Business Unit.

14	**NPTC013	<b>Uniformity Analyzer</b>	1
----	-----------	----------------------------	---

The Uniformity Analyzer assists in detailed optional evaluation of the PET imaging performance. It supports the information needed for some initial and annual qualification assessments, which may need to be performed with a uniform cylinder phantom. The generated statistics may be stored for additional analysis and record keeping

15	**NPTB396	<b>4D Time Of Flight Toolkit</b>	1
----	-----------	----------------------------------	---

Philips' 4D TOF (Time-of-Flight) combines the benefits of TOF PET imaging and respiratory correlated imaging for PET/CT. The toolkit enables the user to trigger a scan at a particular breath level (axial and/or spiral CT prospective gating and PET prospective gating) or scan the thorax at different pulmonary phases (spiral retrospective-- CT and PET retrospective gating) and reconstruct the image data from those phases, minimizing artifacts caused by respiratory motion. Philips 4D TOF toolkit gives the clinician tools to accurately reproduce similar respiratory conditions over multiple exams when it is important to visualize a tumor at the same respiratory phase where radiation therapy will later be delivered.

By matching the scan phase with the treatment phase the clinician can be assured of providing the CT simulation plan that delivered the highest tumoricidal dose while maximizing the amount of healthy tissue that is spared. It will also allow multi-phased studies to be imported into a therapy planning system. The user can calculate dose and view the dose curves on different phases of the same anatomy.

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.

## 101430 Vereos PET/CT System

Line #	Part #	Description	Qty
		<ul style="list-style-type: none"> <li>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.</li> </ul> <p>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.</p>	
16	**989605602191	<b>Solid Source TF 400uCi</b>	1
		Quantity of one (1), Na-22 radioactive source at 400 uCi, for quality control purposes.	
17	**989605600151	<b>Point Source Disk, 10UCI, NA-22</b>	6
18	**989605602181	<b>Vereos Install Pre-Wiring Kit</b>	1
		Vereos Install Pre-Wiring Kit	
19	**989605602171	<b>Vereos Floor Pour Kit</b>	1
		Vereos Floor Pour Kit	
20	**989605602131	<b>Laser w/Carinalso, Red Wall</b>	1
		LAP DORADO 3 CT Simulation Laser System with three red movable lasers for identifying the isocenter location: One Ceiling-mounted Sagittal Laser, and Two (Side) Lasers mounted on the wall. The LAP laser system along with the CARINAiso software and control console completes the integration of Tumor L.O.C. CARINAiso software imports patient's surface, isocenter, MLC and field information, along with patient orientation and patient data to enable automatic movement of lasers to patient marking position. LAP will provide one (1) year warranty, pre-installation support by email and phone, and one (1) on-site visit for installation and training of up to a maximum of three (3) days duration.	
		NOTE: Transfer of isocenter position from Tumor LOC to CARINAiso for automatic movement of laser to patient marking position is only applicable if the system has Tumor LOC and an absolute marking couch.	
21	**NCTD293	<b>O-MAR</b>	1
		Metal Artifact Reduction for Orthopedic implants reduces artifacts in image data caused by high density metal objects such as prosthetic hip replacements. This artifact reduction may aid diagnosis and help treatment planning accuracy by enhancing visualization of critical structures and target volumes	
		<i>Prerequisite:</i> For installed base upgrades on Brilliance CT-16-slice, Brilliance CT 64-channel, Brilliance CT 64-channel w/ Essence technology, Ingenuity family and iCT family. O-MAR requires iDose4.	
22	**NCTD248	<b>iDose4 for PET/CT</b>	1
		<i>iDose4</i> 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.	
		<i>iDose4</i> balances high image quality, low dose, natural appearance, and easy workflow. <i>iDose4</i> iteratively removes noise, prevents artifacts, and preserves morphological information using statistical and structural models in both projection (raw) and image domains.	

## 101430 Vereos PET/CT System

Line #	Part #	Description	Qty
--------	--------	-------------	-----

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.

23	**NCTD063	<b>SyncRight</b>	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).
- An optional transit bolus that refines the protocol (P3T® PA also works with bolus detection software)

## 101430 Vereos PET/CT System

Line #	Part #	Description	Qty
--------	--------	-------------	-----

*Bayer Medrad® Stellant D Dual Syringe CT Injection System*

Stellant D is a dedicated, dual-head CT injector that injects both contrast and saline. Its scalable platform can be expanded to meet your unique needs.

\*Currently available with appropriate Bayer equipment, which includes the Bayer Medrad® Stellant D Dual Syringe CT Injection System.

**Notes:**

- *Philips representatives are responsible for the unpacking, assembly and installation of the CT Injector equipment. Bayer will be available for technical assistance, by phone at +1 (412) 767-2400. Bayer will also provide an operational checkout, final calibration, in-service of the equipment and initial applications training. Please contact the local Bayer sales office at least two weeks in advance to schedule installation. A complete listing of offices and contact information can be obtained at [www.ri.bayer.com](http://www.ri.bayer.com) by selecting "Contact Us."*
- *Philips does not warranty the Bayer Medrad® Stellant D Dual Syringe CT Injection System but will pass on the system warranty from Bayer. Bayer 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 Bayer, including parts, travel, or labor to fulfill the terms of the warranty, during normal business hours (8:30 am to 5:00 pm, local time, Monday through Friday, except holidays).*

*Prerequisite: iPatient*

<b>24</b>	<b>**989605201111</b>	<b>SyncRight Injector - Pedestal</b>	<b>1</b>
-----------	-----------------------	--------------------------------------	----------

The SyncRight Injector Bayer Medrad® Stellant D Dual Syringe CT Injection System w/ DualFlow option. The injector, when bundled with SyncRight, interfaces with the Philips CT scanner allowing bi-directional communication. This injector comes with a Pedestal Head Mount.

The Stellant D 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.

**Notes:**

- *Philips representatives are responsible for the unpacking, assembly and installation of the CT Injector equipment. Bayer will be available for technical assistance, by phone at +1 (412) 767-2400. Bayer will also provide an operational checkout, final calibration, in-service of the equipment and initial applications training. Please contact the local Bayer sales office at least two weeks in advance to schedule installation. A complete listing of offices and contact information can be obtained at [www.ri.bayer.com](http://www.ri.bayer.com) by selecting "Contact Us."*
- *Philips does not warranty the Bayer Medrad® Stellant D Dual Syringe CT Injection System*

**101430 Vereos PET/CT System**

Line #	Part #	Description	Qty
		<i>but will pass on the system warranty from Bayer. Bayer 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 Bayer, including parts, travel, or labor to fulfill the terms of the warranty, during normal business hours (8:30 am to 5:00 pm, local time, Monday through Friday, except holidays).</i>	
25	**989801292189	<b>24 Hours of CT Apps OnSite Clinical Education</b>	2
		Clinical Education Specialists will provide twenty-four (24) hours of tailored PET CT Applications 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. 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 the earlier of equipment delivery date or purchase date.	
26	**989801292070	<b>24 Hours of Additional OnSite Clinical Training</b>	1
		Clinical Education Specialist will provide twenty-four (24) hours of tailored 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 the earlier of equipment delivery date or purchase date.	
27	**989801292078	<b>Full Travel Package for OffSite Training</b>	2
		Includes one (1) participant's airfare from North American customer location to Cleveland, Ohio, with modest lodging, ground transportation, and meal expenses. Breakfast/dinner provided by the hotel, and lunch/breaks are catered by Philips. All other expenses will be the responsibility of the attendee. Details are provided during the scheduling process. Note: Cancellation/rescheduling policy strictly enforced. Expires one (1) year from the earlier of equipment delivery date or purchase date.	
28	**989801292424	<b>CT Brilliance Ess Add OffSite 28h</b>	2
		Philips will provide one (1) lead technologist, as selected by customer, with in-depth lectures covering basic clinical applications, Philips-specific imaging techniques, protocol optimization and scan parameters. A Brilliance CT "system emulator" is used during the lab sessions to simulate all basic scanning operations without x-ray exposure. Students will graduate from this class with an 80% understanding of the base system functionality. The remaining 20% is covered during an 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. If purchased with a system, 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.	
29	SP019	<b>Trade in Allowance</b>	1

## 101430 Vereos PET/CT System

Line #	Part #	Description	Qty
--------	--------	-------------	-----

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: 728243 Brilliance CT Big Bore Oncology  
Serial Number: 545569  
Manufacturer: PHILIPS HEALTHCARE

Trade-In authorization number: 30258

Trade-In Value: \$380,000.00

De-install Date: 3/15/2014

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.

**101430 Vereos PET/CT System**

NET PRICE

\$2,370,000.00

Buying Group: NOVATION

Contract #: XR11032 Pet

Add'l Terms:

Each Quotation solution will reference a specific Buying Group/Contract Number representing an agreement containing discounts, fees and any specific terms and conditions which will apply to that single quoted solution. If no Buying Group/Contract Number is shown, Philips' Terms and Conditions of Sale will apply to the quoted solution.

Each equipment system listed on purchase order/orders represents a separate and distinct financial transaction. We understand and agree that each transaction is to be individually billed and paid.

Price above does not include any applicable sales taxes.

The preliminary delivery request date for this equipment is:\_\_\_\_\_.

If you do not issue formal purchase orders indicate by initialing here\_\_\_\_\_.

Tax Status:

Taxable\_\_\_\_\_ Tax Exempt\_\_\_\_\_

If Exempt, please indicate the Exemption Certification Number:\_\_\_\_\_, and attach a copy of the certificate.

Delivery/Installation Address:

Invoice Address:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Contact Phone #:

Contact Phone #:

\_\_\_\_\_

\_\_\_\_\_

Purchaser approval as quoted:

Date:

\_\_\_\_\_

\_\_\_\_\_

Title:

\_\_\_\_\_

This quotation is signed and accepted by an authorized representative in acknowledgement of the system configuration, terms and conditions stated herein.



# PHILIPS PRODUCT WARRANTY

## COMPUTED TOMOGRAPHY (CT) SYSTEMS

This product warranty document is an addition to the terms and conditions set forth in the quotation to which this warranty document is attached. The terms and conditions of the quotation are incorporated into this warranty document. The capitalized terms herein have the same meaning as set forth in the quotation.

### **TWELVE (12) MONTH SYSTEM WARRANTY**

Philips warrants to Customer that the Philips CT System (the "System") will be free from defects in material and manufacturing workmanship for a period of twelve (12) months after completion of installation or availability for patient use, whichever occurs first. If an X-ray tube, Chiller Unit, Power Conditioner Unit, CT Injector Unit, Option, Upgrade or Accessory is purchased from Philips, they will be covered by the special warranty set forth below.

### **PLANNED MAINTENANCE**

During the warranty period, Philips service personnel will schedule planned maintenance visits, in advance, at a mutually agreeable time on weekdays, between 8:00 A.M. and 5:00 P.M., excluding Philips observed holidays.

### **SYSTEM OPTIONS, UPGRADES OR ACCESSORIES**

Any commercially available options, upgrades, or accessories for the System which are delivered and/or installed on the System during the original term of the System warranty shall be subject to the same warranty terms contained in the first paragraph of this warranty, except that such warranty shall expire on the later of: a) upon termination of the initial twelve (12) month warranty period for the System on which the option, upgrade or accessory is installed, b) after ninety (90) days for parts only from the date of installation. Any commercially available options, upgrades, or accessories for the System which are delivered and/or installed on the System after the original term of the System warranty has expired shall be subject to the same warranty terms contained in the first paragraph of this warranty, except that such warranty shall expire the later of: a) after ninety (90) days for parts only from the date of installation, or b) on the twelve (12) month renewal date of any current service agreement then in effect on the System.

### **X-RAY TUBE WARRANTY**

#### **BRILLIANCE CT SERIES -MRC X-RAY TUBES:**

#### **INGENUITY CT SERIES - MRC X-RAY TUBES:**

#### **ICT SERIES - MRC X-RAY TUBES:**

#### **MX16 SERIES – CTR2150 X-RAY TUBES:**

The CT X-ray Tube ("tube") warranty period is for twelve (12) months from the date of installation or availability for patient use, whichever occurs first. If a tube becomes inoperative or fails when operated within this twelve (12) month warranty period, upon return of the tube, Philips will provide a replacement tube at no additional charge. The replacement tube will be warranted for the balance of the original twelve (12) month warranty.

All claims under this Tube warranty must be made within sixty (60) days of failure, or fourteen (14) months of (1) the date of installation (if installation of the tube is performed by Philips) or (2) the delivery (if installation of the tube is not performed by Philips), which ever comes first.

### **CHILLER UNIT, POWER CONDITIONER UNIT OR INJECTOR UNIT WARRANTY**

The System can be purchased with an optional Chiller Unit, Power Conditioner Unit or Injector Unit. If any of these Units are purchased with the System, Philips will include these Units under the twelve (12) month System warranty as an OEM Warranty pass through. Authorized representatives of the Original Equipment Manufacturer will perform warranty service on each of these units.

### **SYSTEM SOFTWARE AND SOFTWARE UPDATES**

The software provided with the System will be the latest version of the standard software available for that system as of the 90th day prior to the date the System is delivered to Customer. Updates to standard software for the System that do not require additional hardware or equipment modifications will be performed as a part of normal warranty service during the term of the warranty. "Updates" shall mean changes to the right of the decimal point for the software shipped with the product

All software is and shall remain the sole property of Philips or its software suppliers. Use of the software is subject to the terms of a separate software license agreement. Customer must sign all such license agreements prior to or upon the delivery of the product. No license or other right is granted to Customer or to any other party to use the software except as set forth in the license agreements.

Any Philips maintenance or service software and documentation provided with the product and/or located at Customer's premises is intended solely to assist Philips and its authorized agents to install and to test the System, to assist Philips and its authorized agents to maintain and to service the System under a separate support agreement with Customer, or to permit Customer to maintain and service the System. Customer agrees to restrict the access to such software and documentation to Philips' employees and those of its authorized agents, and to authorized employees of Customer only.

### **WARRANTY LIMITATIONS**

Philips' obligations under the System warranty are limited, at Philips' option, to the repair or the replacement of the System or a portion thereof, or to a credit or refund of a portion of the purchase price paid by Customer. Any refund will be paid to Customer when the System is returned to Philips. Certain of the parts used in the manufacture or installation of, or in the replacement parts for, this System may contain refurbished components. If such components are used, they will be subject to the same quality control and inspection procedures as new components. Any System warranty is made on condition that Philips receives written notice of a System defect during the warranty period, and within thirty (30) days following the discovery of the defect by Customer. Philips' obligations under the System warranty do not apply to any System defects resulting from: improper or inadequate maintenance or calibration by Customer or its agents; Customer or third party supplied software, interfaces, or supplies; use or operation of the product other than in accordance with loss, or damage in transit; improper site preparation; operation of the system outside its environmental, electrical, or performance specifications; unauthorized maintenance or Philips' applicable product specifications and written instructions; abuse, negligence, accident, modifications to the System; or to viruses or similar software interference resulting from the connection of the product to a network. Philips does not provide a warranty for any such third party products furnished to Customer by Philips; however, Philips shall use reasonable efforts to extend to Customer the third party warranty for the product. The obligations of Philips described above are Philips' only obligations and Customer's sole and exclusive remedy for a breach of a System warranty. Repairs or replacement parts do not extend the term of this warranty.

THE WARRANTIES SET FORTH IN PHILIPS' WARRANTY DOCUMENT WITH RESPECT TO THIS SYSTEM (INCLUDING THE SOFTWARE PROVIDED WITH THE SYSTEM) ARE THE ONLY WARRANTIES MADE BY PHILIPS IN CONNECTION WITH THE SYSTEM, THE SOFTWARE, AND THE TRANSACTIONS CONTEMPLATED BY THE QUOTATION, AND ARE EXPRESSLY IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

### **ACCESS TO SYSTEM**

Philips shall have full, free and safe access to the System and Customer's operation, performance and maintenance records for the System, on each scheduled or requested warranty service visit. Philips shall also have access to and use of any machine, service, attachment, features or other equipment required to perform the necessary service contemplated herein at no charge to Philips. Customer waives warranty service if it does not provide such access to the System and Customer's records. Should Philips be denied access to the System and Customer's records at the agreed upon time, a charge equal to the appropriate hourly rate will be accepted by Customer for "waiting time."

### **WARRANTY SERVICE**

In the event it is not possible to accomplish warranty service within normal working hours (8:00 A.M. to 5:00 P.M., Monday through Friday, excluding Philips observed holidays), or in the event Customer specifically requests that warranty service be performed outside of Philips normal working hours, Customer agrees to pay for such services at Philips standard service rates in effect. Customer Support Agreements are available for extended coverage.

### **TRANSFER OF SYSTEM**

In the event Customer transfers or relocates the System, all obligations under this warranty will terminate unless Customer receives the prior written consent of Philips for the transfer or relocation. Upon any transfer or relocation, the System must be inspected and certified by Philips as being free from all defects in material, software and workmanship and as being in compliance with all technical and performance specifications. Customer will compensate Philips for these services at the prevailing service rates in effect as of the date the inspection is performed. Any System, which is transported intact to pre-approved locations and is maintained as originally installed in mobile configurations, will remain covered by this warranty.

### **CONDITIONS**

This warranty is subject to the following conditions: the System (a) is to be installed by authorized Philips representatives (or is to be installed in accordance with all Philips installation instructions by personnel trained by Philips), (b) is to be operated exclusively by duly qualified personnel in a safe and reasonable manner in accordance with Philips written instructions and for the purpose for which the products were intended, (c) is to be maintained and in strict compliance with all recommended and scheduled maintenance instructions provided with the System, and (d) Customer is to notify Philips immediately in the event the System at any time fails to meet its printed performance specifications.

### **LIMITATIONS OF LIABILITY AND DISCLAIMERS**

The liability, if any, of Philips AND ITS AFFILIATES for damages whether arising from breach of the terms in the quotation, breach of warranty, negligence, indemnity, strict liability or other tort, or otherwise with respect to the products and services is limited to an amount not to exceed the price of the product or service giving rise to the liability.

IN NO EVENT SHALL PHILIPS OR ITS AFFILIATES BE LIABLE FOR ANY INDIRECT, PUNITIVE, INCIDENTAL, CONSEQUENTIAL, OR SPECIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR PROFITS, OR THE COST OF SUBSTITUTE PRODUCTS OR SERVICES WHETHER ARISING FROM BREACH OF THE TERMS IN THIS QUOTATION, BREACH OF WARRANTY, NEGLIGENCE, INDEMNITY, STRICT LIABILITY OR OTHER TORT. PHILIPS SHALL HAVE NO LIABILITY FOR ANY GRATUITOUS ADVICE PROVIDED TO THE CUSTOMER.

**FORCE MAJEURE**

Philips and Customer shall each be excused from performing its obligations arising from any delay or default caused by events beyond its reasonable control including, but not limited to: acts of God, acts of third parties, acts of the other party, acts of any civil or military authority, fire, floods, war, embargoes, labor disputes, acts of sabotage, riots, accidents, delays of carriers, subcontractors or suppliers, voluntary or mandatory compliance with any government act, regulation or request, shortage of labor, materials or manufacturing facilities.

Philips system specifications are subject to change without notice Document Number 4535 983 03551 999

# Non Disclosure Agreement for Philips Confidential Pricing Information

The parties specified below agree to the following terms:

**A. Philips**

Name	Philips Healthcare, a division of Philips Electronics North America Corporation
Address	22100 Bothell-Everett Highway, Bothell, WA 98021 United States of America

**B. Company**

Name	UNIVERSITY OF VERMONT
Address	111 COLCHESTER AVE BURLINGTON, VT 05401-1416

**C. Confidential Information**

Authorized Purpose	To evaluate Philips' confidential information relating to pricing for imaging equipment ("Pricing") in connection with the potential purchase of such imaging equipment.
Period	Begins on the date Pricing is first disclosed and continues for 5 years from date Pricing is last disclosed.

**D. Philips Contact**

Name	Matt Egan
Title	
Telephone	(800) 833-3316 x2796
Fax	(603) 726-7455
e-mail	
Signature	

**Company Contact**

Name	
Title	
Telephone	
Fax	
e-mail	
Signature	

1. The following terms and conditions (the "Agreement") apply to Pricing disclosed by Philips and its Affiliates ("Philips") to Company and its Affiliates ("Company"), in connection with the Authorized Purpose.
  - (a) Subject to Philips' prior written consent, Company may disclose, or request that Philips disclose, Pricing to Company's Affiliates that need to know the Pricing for carrying out the Authorized Purpose, provided they are advised of and agree to be bound by this Agreement. Company is responsible for any breach of this Agreement by its Affiliates.
  - (b) An Affiliate is any corporation, company, or other entity, that: (i) is under the Control of a party hereto; or (ii) has Control of a party hereto; or (iii) is under common Control with a party hereto. For this purpose "Control" means that more than fifty percent (50%) of the controlled entity's shares or ownership interest representing the right to make decisions for such are owned or controlled, directly or indirectly, by the controlling entity.
  
2. Philips may disclose Pricing to Company with respect to the Authorized Purpose in writing, orally, or otherwise. All information is assumed to be Pricing, and confidential, if the confidential or proprietary nature is reasonable under the circumstances.
  
3. All Pricing disclosed by Philips shall remain Philips' the property. Company does not, by implication, estoppel, or otherwise, acquire any intellectual property right, title, or ownership, nor a license to any such intellectual property right, with respect to any Pricing disclosed by Philips hereunder.  
 ALL PRICING IS PROVIDED ON AN "AS IS" BASIS, WITHOUT ANY WARRANTY WHATSOEVER. PHILIPS SHALL HAVE NO LIABILITY WHATSOEVER RESULTING FROM THE USE OF THE INFORMATION PROVIDED.
  
4. Company shall:
  - (a) not use the Pricing for any purpose other than the Authorized Purpose;
  - (b) not disclose the Pricing to any third party;
  - (c) protect the Pricing against disclosure in the same manner and with the same degree of care with which Company protects its own confidential information but not less than a reasonable degree of care; and
  - (d) limit circulation of the Pricing to Company's employees as have a need to know in connection with the Authorized Purpose.
 These obligations shall survive the termination of this Agreement. Philips may terminate this Agreement at any time by means of a written notice to Company. Company shall return to Philips, or certify destruction of, all Pricing, immediately upon termination or expiration of this Agreement.
  
5. Information disclosed by Philips to Company pursuant to this Agreement shall not be confidential to the extent that the information:
  - (a) is or becomes part of the public domain without violation of this Agreement or any other obligation of confidentiality;
  - (b) is known by Company prior to disclosure by Philips;
  - (c) is lawfully obtained by Company from a third party without any breach of confidentiality or violation of law; or
  - (d) is developed by Company completely independently of any such disclosure by Philips.
  
6. If Company is required, pursuant to administrative or judicial action or subpoena, to disclose the Pricing, Company shall use its best efforts to maintain the confidentiality of the Pricing, e.g. by asserting in such action any applicable privileges. Immediately after gaining knowledge or receiving notice of such action or subpoena, Company shall notify Philips and give Philips the opportunity to seek any other legal remedies so as to maintain such Pricing in confidence, including a reasonable protective order.
  
7. Company may not transfer or assign any or all of its rights and/or obligations or delegate the performance of any or all of its obligations under this Agreement, directly or indirectly, through acquisition, merger or otherwise, without the prior written consent of Philips. Any transfer, assignment or delegation in contravention of the foregoing shall be void.
  
8. Company shall not disclose, export or release the Pricing in contravention of any applicable laws or regulations.
  
9. This Agreement shall be governed and construed in accordance with the laws of the State of New York, without giving effect to its conflict of laws provisions.
  
10. This Agreement contains the entire understanding of the parties and supersedes any previous understandings or agreements with respect to the subject matter hereof. This Agreement may be amended only in writing signed by authorized representatives of each party.