Line #	Part #	Description	Qty	Each	Price
1		**INGENUITY PET-CT SYSTEM**	1		

The Ingenuity TF PET/CT system provides revolutionary Astonish TF Time-of-Flight PET and Ingenuity CT technologies combined with advances in how people can interact with the systems. Both technology and workflow are critical in handling the large amounts of data provided by multi-modality imaging -- and in helping achieve a sustainable competitive advantage.

The Ingenuity TF system puts you ahead of the applications curve. In addition to providing additional confidence during routine oncology FDG studies, the acquisition speed of PET and CT enables you to perform advanced applications such as pulmonary gating, cardiac studies, and advanced molecular imaging.

Highlights

- Time-of-Flight Performance Package:
  - Time-of-flight PET imaging precisely localizes each PET annihilation event to dramatically improve image quality, especially for large patients
  - Astonish TF PET architecture: optimized for time-of-flight imaging and provides increased PET performance
  - Astonish TF Plus provides additional spatial resolution enhancements through Philips proprietary point spread function (PSF) technique
  - Exceptional sensitivity for fast scans, low dose imaging, and advanced applications
  - High resolution for lesion detectability and exceptional anatomic detail
- Ingenuity CT sub-system which includes:
  - kV stations of 80, 100, 120, 140 kVp
  - 80 kW (105 kW equivalent)
  - 128 rows of data per rotation that are sent to be reconstructed
  - 4 cm of coverage for better patient compliance and improved clinical capacities
  - MRC Ice: new x-ray tube designed for long life and provides the performance required to meet the needs of volumetric scanning
- Advanced High Definition Reconstruction architecture for high quality, time-of-flight fully 3D PET and cone beam CT reconstruction
- Ingenuity Console user environment improves PET/CT productivity by working the way the user does
- Exclusive OpenView gantry design is designed to reduce patient claustrophobia and facilitate clinical access.

The flexibility of this ultra 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 Ingenuity TF positively impacts everyday workflow and increases patient throughput throughout the entire workflow process:

- Patient handling and set up
- Scan and image acquisition
- Dose Management

- Reconstruction and display
- Post-processing and communication

Philips has created a comprehensive package of tools containing advanced components and productivity features that make workflow smooth and easy.

PET/CT User Environment
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 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. The exclusive OpenView gantry design features a separation between PET and CT gantries that is designed to reduce patient rejection rates due to claustrophobia.
Gantry Features

- *Gantry Aperture*: 700 mm diameter for PET and CT
- *Gantry Separation*: 300 mm OpenView gantry with additional 580 mm separation for interventional access
- *Scan Control Panel*: controls and displays for patient couch elevation and stroke are located on both sides of the PET and CT gantries.
- *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: patient restraint kit, foam head holder, table pad, foam arm rest, arm boards and a knee pad.

Scan Planning
The Ingenuity Console provides intuitive registration and easy entry of patient information and clinical procedure selection, using anatomic graphical display and sample images.

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

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

Preset Post-processing
User-defined presets improve workflow, by automatically opening the relevant post-processing applications for a specific type of exam. For example, PET reconstruction can be set up to run concurrently with data acquisition resulting in shorter reconstruction time.

Surview Plan
Planning via interactive mouse control of multiple, independent acquisition series of any type on Surview image
Scan width: 500 mm

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

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.

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.

PET sub-system
The revolutionary Astonish TF time-of-flight PET technology provides the following key clinical benefits:

- Improved PET image quality
- Greater patient throughput
- Consistent PET image quality for all sizes of patients
- Enabling of molecular imaging applications characterized by low count rates

Improved image quality/greater patient throughput
PET/CT patient throughput of up to 24 patients in a single 8 hour day is made possible with acquisition time of less than 10 minutes per whole body FDG scan. Faster acquisition speed also enables routine total body scanning (head to toe). To further improve image quality beyond today's standards, PET users can choose to scan longer. Lower doses of FDG can also be used for studies where patient exposure is critical (pediatric imaging, screening tests).

Consistent image quality for all patients
In addition to overall performance improvements, the advantages for larger patients are even more significant.   This Ingenuity TF PET/CT system utilizes time-of-flight technology to close the gap in system performance for patients of different sizes. The reading physicians are presented with consistent image quality for all patients, improving ease of interpretation and diagnostic confidence.

Enabling of molecular imaging applications
The Astonish TF technology also enables researchers to image dynamic processes that require fast sampling by delivering longer useful imaging time (dynamic range) for short-lived isotopes, and enabling the use of very low doses for tracers whose synthesis suffers from low efficiency (F-choline, thymidine, etc.) By enabling imaging characterized by low count rates this technology is opening the pathway to new molecular imaging applications.

PET Detector System

- Crystal Material: LYSO
- Crystal Size: 4x4x22mm
- Detector Architecture: PIXELAR continuous light guide
- Electronics sampling: 25 psec

CT Sub-system
Reliable, maximized system performance allows clinicians to remain focused on patient care. Ingenuity CT is perfectly balanced, combining power and flexibility that maximizes image quality, speed and throughput while lowering patient dose.
System
Rotate-rotate architecture with optimized geometry for low dose imaging.

Generator
The Ingenuity generator uses modern, low-voltage slip ring technology to provide a constant high voltage to the CT x-ray tube assembly.
Effective output capacity: 105 kW
Output capacity: 80 kW
kV selections: 80, 100, 120, 140 kVp
mA selections: 20 to 665 mA
MRC Ice X-Ray Tube

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

Motion-free focal spot guarantees optimized image quality.
Absolute noiseless design calms patients.
2nd generation of MRC tube technology built on proven record of performance and reliability.
Segmented Anode tube design, for reliable short shot, high power acquisitions.

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

- 1.0mm x 1.0mm (large)

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.

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

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

Image Quality

<u>Spatial Resolution</u>
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

<u>Spiral Scanning</u>

- Multiple contiguous slices acquired simultaneously with continuous table movement during scans.
- Multiple, bi-directional acquisition
- Spiral exposure: Up to 100 sec of uninterrupted spiral scanning
- Spiral pitch: 0.13 to 1.5 (user selectable

<u>Axial Scanning</u>

- 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 tech nique permits the user to monitor actual contrast enhancement and initiate scanning at a pre-determined enhancement level. Combine with SAS for full automation and efficacy.

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

- *Costs to upgrade an approved injector and any cabling is the responsibility of the user.*
- *Compatible with following Injectors:*
  Medrad Envision/Stellant, Medrad Vistron, Liebel-Flarsheim, Tyco CT 9000, Medtron CT 2, Nemoto Dual Shot, Tyco OptiVantage DH, E-Z-EM Empower, 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. Ingenuity TF PET/CT systems employ a number of features that help provide extremely high dose efficiency.

Astonish TF PET technology
Minimizes the PET radiation dose by utilizing high stopping power crystal material (LYSO) and 3D acquisition with full axial acceptance angle.
DoseRight
Optimizes the dose for each patient based on the planned scan by suggesting the lowest possible mAs settings to maintain constant image quality at low dose throughout the exam.
DoseRight Angular Dose Modulation
Automatically controls the tube current rotationally, increasing the signal over areas of higher attenuation (lateral) and decreasing signal over area of less attenuation (AP).

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

Dose Displays

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

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

Reconstruction and Display
PET and CT Data reconstruction is designed to provide the best possible image quality. The Ingenuity TF 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

Astonish TF time-of-flight PET 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.

CT 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.
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.

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 iDose into your department. RapidView provides dramatic improvements in workflow by displaying images at breakthrough rates, regardless of acquisition speed or reconstruction parameter. The RapidView system employs true cone beam reconstruction algorithms and Philips-patented back projection hardware to provide the user with the images they desire, along with best-in-class reconstruction speeds, without compromise in image quality.
Reconstruction Rate: Up to 20 images per second with iDose

Reconstruction Rate: Up to 33 images per second without iDose4

ClearRay reconstruction
A novel and unique approach to image quality, provides improved soft tissue uniformity and sharper bone-soft tissue boundaries. This technique is automatically applied to all protocols that would benefit from its technique.

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

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

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

Ultra High Resolution Matrices
Exclusive to Philips, 768 x 768 and 1024 x 1024 image reconstruction matrices display all of the high-resolution data acquired in applications, such as inner ear, spine and high-resolution lung imaging. As resolution increases, larger matrices are required to display the full resolution for the reconstructed field of view.

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

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

Post-processing and communication

Image Processing and Display

Host Computer
Computer Architecture: Windows 7 Dell Precision host computer
Main Memory: 6.0 GB RAM

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

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.

PET/CT 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

Organ ID

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

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.

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 intra-luminal 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.

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 is intended as a storage replacement to the EOD and supports multi-session writing in order to store multiple patients added to the disk at different times. DVD-RAM disks are written with proprietary Philips format and are only readable on Philips EBW (v3.0.1 or higher) and CT scanner units (v2.3 or higher) with DVD-RAM.

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

- Minimum PC hardware Requirements are a Pentium III 450 MHz with 128 MB RAM main memory and a 20 GB Hard Drive running Microsoft Windows operating systems
- Supported Web Browsers which must be installed in Compact or Full mode include Microsoft Internet Explorer or Netscape installed with ActiveX Plug-in. Macintosh viewing support via the "Virtual PC" application.
- Image Storage Capacity: (620MB) 512 X 512 Image Matrix = 1,200 Typical Number of Images

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

Networking/Connectivity
Network Requirements
Network connections should be located within 10 feet of the console. The Ingenuity 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.

Other Included Items

- Computer cabinets
- GEMINI 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 the PMT's powered, console and CIRS reconstruction computers
    - This is useful when short (less than 5 minute) power loss occurs.
    - For complete system backup a full UPS is required.
- Sources (shipped separately), phantoms, and fixtures for daily & monthly QC (PET& CT)
- User documentation

Other Optional Items

- Control room table and chair

- Full system UPS with approximately 30 minutes run time.

Clinical Education Program for PET/CT Systems

Pre-Handover OnSite Education: Philips Education Specialists will provide twenty-eight (28) hours of PET/CT Ingenuity TF64 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 is intended to provide an introduction to the hardware and software.. Students should attend all three onsite training sessions. CEUs are not available in all cases. Please read Guidelines for more information, which will be provided to you during the scheduling process. Note: Site must be patient-ready. Philips personnel are not responsible for actual patient contact or operation of equipment during education sessions except to demonstrate proper equipment operation. 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.

Handover OnSite Education: Philips Education Specialists will provide twenty-four (24) hours of PET/CT Ingenuity TF64 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 is intended to provide the framework for operational workflow and clinical applications as they pertain to Gemini specifically. Students should attend all 24 hours, and must include at least two of the OnSite Pre-Handover Education attendees. CEUs are not available in all cases. Please read Guidelines for more information, which will be provided to you during the scheduling process. Note: Site must be patient-ready. Philips personnel are not responsible for actual patient contact or operation of equipment during education sessions except to demonstrate proper equipment operation.

FollowUp OnSite Education: Philips Education Specialists will provide twenty-four (24) hours of PET/CT Ingenuity TF64 Follow-Up 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. Customer must have used the system for at least 30 days. 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.

Recommendations: If CT Cardiac option is purchased, it is recommended that 98981292425 (CT Cardiac OffSite Educ 28h) is purchased as well as 989801292078 CT Full Travel Pkg. 989801292238 (CT Cardiac OnSite Educ 16h) or 989801292450 (CT Cardiac OnSite Educ 24h). If PET Cardiac is purchased, it is recommended that 989801292275 (PET Cardiac OnSite 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 Pulmonary Tool kit is purchased, part # 989801292188 (PET CT Apps OnSite Clin Ed 16h) should be purchased.

2	**Ingenuity TF HC IFU-ENG**	1

Includes English language user documentation

3	**64 Slice CT**	1

Ingenuity CT comes with the following:

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

4	**Local Kit INGENUITY TF-ENG**	1

Includes English language user documentation (paper and electronic)

5	**53cm Flat Pallet**	1

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 the same spacing and nomenclature as the Varian Exact system and are consistent with the CIVCO/MED-TEC Indexed Patient Positioning Systems (IPPS) products.

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.

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.

6	**Kit, Label English RTP**	1

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.

7	**Patient Comfort Kit**	1

Includes accessories used for patient comfort during scans including arm boards, support straps, table pad, overhead arm rest, knee cushion and PET table top head holder.

8	**PET/CT ECG**	1

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.

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).

9	**ECG Monitor - English**	1

10	**GEMINI TF 100 uCi Solid Source**	1

Quantity of one (1), Na-22 radioactive source at 100 uCi, for quality control purposes.

11	**Point Source Disk, 10UCI, NA-22**	6

12	**Floor Pour Kit**	1

13	**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.

14	**Teal 100kVA Isotran Plus**	1

Teal 100 kVA isolation voltage adapting transformer:

Input voltage: 200/208/240/380/400/416/480/500, 3-phase, delta plus protective earth. 50/60 Hz
Output voltage: 480 VAC (277 VAC wye).
Includes: Programmable input circuit breaker.
Includes: TVSS (Transient Voltage Surge Suppression), load side filtration for noise attenuation and remote control contactor.
Weight: 598 lbs. (271 kg)
Dimensions: 27.8" (70.7 cm) wide, 20.5" (52.1 cm) deep, 44.0" (111.8 cm) high.

15	**NM3197 Gemini TF TruFlight CTC14**	1

DESCRIPTION:
Complete PET system, Table and Gantry Separation Unit overview, lectures, labs and troubleshooting. Certified to be first on call for the CT portion of a Gemini system (able to perform basic system operations, calibration and general troubleshooting).

PREREQUISITES:
Knowledge of:

• General computer knowledge , Basic networking knowledge , Basic mechanics
• Completion of the NM9113 PET Fundamentals e-learning, Completion of NM3188 or CT3810 or CT3809 or CT3815 or CT3819 or CT1020 or CT9107

COURSE OBJECTIVES:
After completion of this course, the learner will be able to:
• Demonstrate the appropriate system safety techniques
• Describe the Pet System Data Flow and PCB theory
• Describe the installation of the Gemini Series System
• Calibrate the Gemini Series System
• Troubleshoot the Gemini Series System

* PHILIPS PROPRIETARY MATERIALS SUCH AS DIAGNOSTIC SOFTWARE AND SERVICE DOCUMENTATION ARE NOT INCLUDED IN THE TRAINING AND WILL NOT BE AVAILABLE FOR USE OUTSIDE OF THE TRAINING ENVIRONMENT. THE TRAINEE MUST RETURN ALL PROPRIETARY MATERIALS RECEIVED DURING THE TRAINING AT THE END OF THE TRAINING. CUSTOMER ACKNOWLEDGES AND AGREES THAT NEITHER CUSTOMER NOR TRAINEE WILL RECEIVE A LICENSE TO SUCH PROPRIETARY MATERIALS AND THAT THE TRAINEE MAY NOT BE ABLE TO FULLY UTILIZE THE TRAINING WITHOUT THE USE OF SUCH PROPRIETARY MATERIALS. (CERTAIN LICENSES MAY BE OBTAINED THROUGH PURCHASE OF SUPPORT OR ASSIST AGREEMENT.) Course dates and location to be finalized by Philips. Philips shall attempt to accommodate Customer requested dates and training location. The price quoted includes course tuition. Travel and living expenses are not included, but may be purchased separately through Philips.

IMPORTANT Notes Regarding Admission to Philips Customer Engineer Training Courses:
1. Trainee must meet all prerequisites
2. Course expires one (1) year from equipment installation date (or purchase date if sold separately)
3. Customer must sign Philips Nondisclosure statement
4. Trainee must sign Philips Nondisclosure statement
5. Customer must sign Philips terms and conditions of training

16   **NM8008 INGENUITY TF PET/CT**   **1**
              DIFFERENCES CTC 3
  Course Title: INGENUITY TF PET/CT DIFFERENCES

Course Number: NM8008
Course Length: 3 Days
Delivery Method(s): Lecture & Labs
Modality: Nuclear Medicine
Location: Cleveland Training Center, Cleveland, OH
Target Audience: Field Service Engineers, Biomeds

DESCRIPTION:
This course will instruct the learners on the differences between a Gemini TF PET/CT and the new Ingenuity TF PET/CT

PREREQUISITES:
- NM3197 (or equivalent) trained to the Gemini TF level
- Must have IST (Integrated Security Tool) Smartcard

COURSE OBJECTIVES:

After completing this course, you will be able to:

- Explain the differences between the Gemini TF PET/CT and Ingenuity TF PET/CT system hardware
- Explain the differences between the Gemini TF and Ingenuity TF PET/CT system software
- Calibrate the Ingenuity TF PET/CT system
- Perform maintenance on the Ingenuity TF PET/CT system Use the new service tools to configure the Ingenuity TF PET/CT system
- Use the new service tools to troubleshoot the Ingenuity TF PET/CT system
- Describe the new workflow
- Explain the differences between the Gemini TF PET/CT and the Ingenuity TF PET/ systems PET Reconstruction System
- Describe the new structure and locations of the serviceability logs

17	Third Party Item	Kentucky Trailer - PET/CT Trailer	1

PET/CT Trailer with hot-lab