

1

Discovery CT750 HD with Gemstone Spectral Imaging

\$

The Discovery CT750 HD is the world's first head and whole body high definition Spectral CT system. It offers enhanced visual clarity and potential dose reduction when scanning all parts of the body, and all ages. The new FREEdom Edition is the foundation for the advanced Cardiovascular features of Snap Shot Freeze(1), Snap Shot Assist and Cardiac Spectral CT(\*). Powered by the Gemstone Detector, the Discovery CT750 HD offers the highest available cardiac spatial resolution in the industry at 18.2lp/cm(\*2) and features Gemstone Spectral imaging, the 1st quantitative dual energy on the market. The Discovery CT750 HD output is a valuable medical tool for the diagnosis of disease, trauma, or abnormality and for planning, guiding and monitoring therapy. This Discovery CT750 HD configuration includes enhanced features of: Gemstone Spectral Imaging (Dual Energy), all cardiac acquisition capabilities, Volume Shuttle and Volume Helical Shuttle for dynamic perfusion.

1) SnapShot Freeze requires CardIQ Xpress 2.0 Reveal on AW VS6 or AW Server 2) Based upon internal test data comparing Discovery CT750 HD cardiac half-scan spatial resolution to data from Advanced CT Scanners for Coronary Angiography, ImPACT Report CEP10043, March 2010, available at <http://www.impactscan.org>

See More

The Discovery CT750 HD delivers unparalleled image quality enabling the visualization of greater anatomical detail, for assessment and diagnosis.

- up to 33% improvement in spatial resolution for body modes
- demonstrates best-in-class spatial resolution of 0.23mm (calculated using 0% MTF) over the full 2 meter scan range
- up to 47% improvement in spatial resolution for cardiac scan modes
- offering the highest available cardiac spatial resolution in the industry at 18.2lp/cm in z and 14.8lp/cm in x-y(2). (measured at 2% MTF) Accurate quantification of stenosis in coronary and vascular vessels
- up to 40% improvement in low contrast detectability for greater soft tissue visualization, allowing improved visualization of smaller low contrast structures down to 2mm in size.

Know More

Gemstone Spectral Imaging: The Discovery CT750 HD system with Gemstone

Spectral Imaging can acquire CT images using rapid kV switching to acquire dual energy samples of the same anatomical region of a patient in a single rotation from a single source. The differences in the energy dependence of the attenuation coefficient of the different materials provide information about the chemical composition of body materials. This approach enables images to be generated at energies selected from the available spectrum to visualize and analyze information about anatomical and pathological structures. Gemstone Spectral Imaging:

- registers energies more than 165 times faster than a dual source CT system at .33-second rotation speed
- generates derived images over a 50cm SFOV for the separation of materials such as calcium, iodine, and water
- provides derived monochromatic spectral images at 101 user selectable energy levels for image contrast optimization
- reduces beam-hardening artifacts due to bone, metal, and other high contrast material (example: iodine) up to 50%
- can detect iodine concentrations as low as 0.5% in density
- ASiR is now available within GSI allowing the users to optimize dose by selecting the amount of ASiR within the protocol
- New GSI presets have been added which have a lower CTDI vol. These presets were designed to achieve dose neutrality between GSI and single kV scanning for the same application.
- Can acquire up to 256 reconstructed slices per rotation comprised of 4 separate image series: monochromatic, two material density image series and 140 kVp

Volume Helical Shuttle: The Volume Helical Shuttle dynamic imaging option allows covering anatomical volumes up to 312.5mm for 4D CT Angiography exams, more than enough coverage for any organ in the human body. This correlates to 500 slices of dynamic 4D coverage. For perfusion assessment VolumeShuttle provides 80mm of axial shuttle coverage, and Volume Helical Shuttle provides up to 120mm of helical coverage.

#### Less Dose

The Discovery CT750 HD innovations continue with advances in reconstruction technology resulting in dramatic dose reduction opportunities in the entire body compared to predecessor CT systems. Adaptive Statistical Iterative Recon (ASiR); provides users with a new and innovative image reconstruction technology to reduce unwanted noise in diagnostic images.

ASiR accurately models the noise in the raw data space and thereby removes the noise, allowing users to maintain image quality\*(pixel standard deviation(4).

4) In clinical practice, the use of ASiR may reduce CT patient dose depending on the clinical task, patient size, anatomical location and clinical practice. A consultation with a radiologist and a physicist should be made to determine the appropriate dose to obtain diagnostic image quality for the particular clinical task.

Low kV Scanning- The Discovery CT750 HD provides the ability to scan with energies as low as 80 kV. The physics of the k-edge absorption properties of Iodine at the lower energy inherently increases the image contrast. This is important for vascular studies. The Performix HD tube can deliver as much as 700mA at 80kVp. Both Veo and ASiR may be able to reduce image pixel standard deviation (noise) reduction and improve LCD(3). this is important for exams where good CNR (boost in contrast from lower kV, with potentially reduced noise from ASiR and Veo) is desired, such as liver studies.

3) In clinical practice, the use of ASiR and Veo may reduce CT patient dose depending on the clinical task, patient size, anatomical location and clinical practice. A consultation with a radiologist and a physicist should be made to determine the appropriate dose to obtain diagnostic image quality for the particular clinical task. ASiR and Veo may reduce image pixel standard deviation and enable an improvement in LCD. In clinical practice, the actual level of image pixel standard deviation reduction and LCD improvement may vary. Consult with a radiologist and a physicist.

#### Discovery CT750 HD Technology

The revolutionary clinical advances of the Discovery CT750 HD are achieved via technological leaps forward in the entire image chain including reconstruction hardware and algorithms.

The key technological advancement is GE's proprietary Gemstone (TM) Detector enabling the improvements in spatial resolution, low contrast detectability, and spectral(multiple energy) imaging. The Gemstone detector is a garnet based CT scintillator was chosen for its highly efficient optical properties. Gemstone detector sets a new standard in CT scintillator performance supporting the next generation of CT imaging applications such as spectral imaging. This is the first new CT scintillator to be developed in the past 20 years and is designed to support high definition imaging.

System components: This whole body CT system includes a compact geometry premium gantry, table, Power Distribution Unit, high performance Xtream HD console with 2 high definition LCD's, customized keyboard, and graphical user interface design for efficient workflow with one technologist.

Gantry: GE's compact gantry design and advanced 10G baud slip ring design continuously rotates the Performix HD tube, HD generator, Gemstone detector and Volara HD digital data acquisition around the patient. Exclusive VariSpeed allows short breath holds, more comfortable exams and the flexibility to customize protocols for unique patient needs.

- Aperture: 70 cm
- Rotational speeds: VariSpeed technology 360 degrees in 0.35, 0.375, 0.4, 0.475, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0 Seconds
- Integrated breathing lights & GE exclusive countdown timer
- Integrated start scan button with countdown timer to indicate when x-ray will turn on
- Tilt: +/- 30 degrees, speed: 1 degree/second
- Remote tilt from operator's console

Gemstone (TM) Detector: The GE proprietary Gemstone detector enables high definition CT. Ultimately the performance of every CT system begins with the detector, and Gemstone sets a new standard in scintillator primary speed, afterglow and performance supporting the next generation of high definition CT imaging applications such as single source spectral imaging. The proprietary Gemstone scintillator is the first new detector material developed in the past 20 years. The V-Res detector benefits are:

- 98% efficient at 120kvp
- Fastest primary speed in the industry
- Best afterglow performance in the industry
- Higher resolution with lower noise per image
- 20 times less radiation damage of the scintillator when compared to competitive detector materials (Gadolinium Oxysulfide)
- Isotropic ceramic with a cubic structure
- Consistent Image Quality from the use of GE's exclusive patented detector material
- Backlit diode technology provides 100% active area

Performix HD X-ray Tube: Performix HD metal-ceramic tube unit with it's unique electrostatic cathode collimator design allows the focal spot to be

dynamically positioned and customized to the clinical protocol and patient. The anode heat storage capability and wide range of technique (10 ma to 835 ma, in 5 ma increments) give the technologist and physician the flexibility to tailor protocols for even the most demanding acute care and cardiac exams without tube cooling.

- Heat storage capacity: 8.0 MHU
- Maximum power: 107 kW (835mA)
- Small focal spot power: 570mA at 120kv, standard resolution
- Small focal spot power: 420mA at 120kv, high resolution
- Beam collimated to 56-degree fan angle
- Heat dissipation: -Anode (Max)>2,100 KHU/min -Casing (cont) 648 KHU/min

HD High Voltage Generator: The HD Generator is capable of switching energy at very high speed to support Gemstone Spectral Imaging. High Frequency on-board generator allows for continuous high power demands required for acute care, cardiac and bariatric exams.

- Maximum Output Power 100kW, 107kW with GSI
- kVp: 80, 100, 120, 140
- Energy Switching Speed: up to 0.5 msec (0.25ms with Cardiac GSI option)
- mA: 10 to 835, in 5 mA increments Maximum mA for each kVp selection:
  - kVp Max mA GSI Max mA
  - 80 700 765
  - 100 800
  - 120 835
  - 140 715 765

Volara HD Digital DAS (Data Acquisition System): The Volara HD digital DAS is high-speed data acquisition system that dramatically improves image quality, especially spatial resolution, low dose exams, and artifact reduction.

- up to 2,496 views per rotation for improvement in spatial resolution and improved image quality across the entire 50cm field of view
- 7,131Hz maximum sample rate
- 58,368 available input channels
- 23 bit dynamic range, 8,000,000 to 1

Integrated Laser Alignment Lights:

- Defined internal and external scan planes to +/- 1 mm accuracy

- Coronal light remains perpendicular to axial light as gantry tilts making visual readout easy from tableside or the operator console

Patient Table:

- Cantilever design for easy patient access, and stability
- Vertical range: 43 cm to 99.1 cm, scannable: 78.5 cm to 99.1 cm
- Horizontal range: 1700mm, (2000mm option)
- Horizontal speed: up to 137.5 mm/sec
- Table automatically re-centers on scan plane with changes in vertical position
- Helical pitches: 0.5:1, 0.9:1, 1.375:1, and cardiac pitches 0.16:1 to 0.24:1 for 0.35 sec cardiac scanning
- Table capacity: 227kg(500lb) +/- 0.25mm positional accuracy

Low Dose Cardiac Capabilities: The low dose cardiac capabilities allow the user to acquire cardiac images with the highest cardiac spatial resolution of 18.2lp/cm\*2, with retrospective or prospective gated acquisitions utilizing 0.35 second rotation speed for excellent cardiac exams. The following features are included:

- SnapShot (TM) Pulse is a cardiac scanning technique that reduces patient dose up to 83%(5) and improves cardiac workflow, with uncompromising image quality. SnapShot Pulse uses prospectively triggered axial acquisitions synchronized by the patient heart rate, in which x-rays are turned on only during the required heart phase and turned off completely at all other times. Three to four snapshots are needed to complete a cardiac exam. Up to 300ms of padding is available with Snapshot pulse imaging
- SnapShot Imaging is designed to produce optimized cardiac images with minimum cardiac motion effects. Three different imaging acquisition techniques are available for the user with temporal resolution(TR)as low as 43ms. SnapShot Segment is a single sector mode with TR of 175ms, SnapShot Burst is a dual sector mode with TR of 87ms and SnapShot Burst Plus uses up to 4 sectors with TR as low as 43ms. For acute care, a triple rule out exam can be acquired with ECG-gating of the chest in a single breath hold in order to assist in the diagnosis of coronary artery disease, aortic dissection and pulmonary embolism.
- Cardiac Trigger Monitor to synchronize R-Wave output with the CT system. Features include: ECG and Heart Rate Display, P-Lock Algorithm, Trigger Mark, Chart Recorder ECG Data Storage, ECG Notch Filter, System Interlock and internal Universal Power Supply Designed

exclusively to work with GE CT Scanners.

- The ECG Editor allows the user to retrospectively modify trigger points identifying R-peaks on ECG trace as displayed on the console. The capability may improve successful cardiac acquisition rate by enabling users to perform the modification in the cases where there is irregular heartbeat or suboptimal triggers.
- Cardiac enhancement filters may reduce noise (pixel standard deviation) while maintaining spatial resolution in a cardiac image with three different levels of image filtration while preserving the edge image detail.
- ECG gated dose modulation reduces patient dose by modulating x-ray technique during acquisition based heart phase.
- SnapShot Assist - Helps users Optimize ECG-gated CT Acquisitions based on patient heart rate characteristics

5) Dose reduction comparing a SnapShot Pulse prospective gated axial acquisition with 75ms padding at a cardiac helical acquisition (40BPM) both with a 140mm scan coverage. In clinical practice, the use of SnapShot Pulse may reduce cardiac CT patient dose depending on the clinical task and patient heart rate. A consultation with a radiologist should be made to determine the appropriate acquisition mode and scan settings to obtain diagnostic image quality for the particular clinical task.

Xtream(TM) HD Workflow: Xtream HD Workflow Platform built on the LINUX operating system for flexibility and security, the next evolution of GE's workflow and reconstruction architecture built to help you maximize productivity and lower dose with ASiR. The split tabletop allows unrestricted patient viewing while supporting 2 - 19 inch color LCD monitors. Each work surface can be adjusted to accommodate a wide variety of operator preferences and site requirements.

Adaptive Statistical Iterative Recon (ASiR) provides the users with an innovative image reconstruction technology that may enable reduction in pixel noise standard deviation. The ASiR reconstruction algorithm may allow for reduced mA in the acquisition of diagnostic images, thereby reducing the dose required. ASiR may enable improvement in low contrast detectability(6).

6) In clinical practice the use of ASiR may reduce CT patient dose and improve low contrast detectability depending on the clinical task, patient size, anatomical location and clinical practice. A consultation with a radiologist and a physicist should be made to determine the appropriate dose to obtain diagnostic image image quality for the particular clinical task.

Xtream HD Reconstruction breaks through existing limits on speed, image quality and flexibility to provide an optimized volumetric workflow solution from acquisition to final report.

- Delivers up to 35 full fidelity images per second (ips) reconstruction
- Up to 16 ips network transfer rates
- DMPP (Direct Multiplanar Reformates) enables prospective 3D review of sagittal, coronal and oblique planes automatically
- Exam Split delivers the capability to split a series of patient images into separate groups for networking
- Data Export and Interchange that allows you to easily share images with referring physicians and patients
- Complete set of clinically proven, low dose protocols and the ability to customize your own for a total of 8,460 programmable protocols. Xtream allows you to automate or build every task into protocols to increase throughput.
- Image decomposition to: -Retrospective thin images from data sets where thicker images were initially reconstructed -Facilitates more detailed image & analysis -Improves 3D and reformat visualization
- Neuro 3D Filters provide users the capability to filter angiographic data using a specially designed and optimized 3D filter. May be prospectively applied with Application Auto-Launch
- VariViewer is an interactive axial review mode that can change the slice thickness reconstruction instantaneously

Xtream HD Operator Console:

- HP Z800 Computer with integrated reconstruction modules
- Image storage for approximately 460,000 512 images
- 4.7 GB DVD/CD-R for data interchange (not recommended as a long term archive)
- Scan data storage for approximately 3000GB
- VolumeViewer 5.0
- AW Server Connection

Scan: Xtream HD workflow allows simultaneous scanning, image reconstruction, display, processing and analysis, as well as networking, archival and filming

- Anatomical programmer allows quick and easy access to user programmable protocols. These are separate selector for adult and



pediatric protocols

- Protocols include preset scan time, kVp, mA, scan mode, image thickness and spacing, table speed, scan FOV, display FOV and center, recon algorithm, networking destination, archiving and special processing options like Direct MPR
- AutoVoice: 3 preset (English) and 17 user defined messages automatically deliver patient breathing instructions, especially useful for multiple helical scanning
- Trauma Patient mode: Allows patient scans and image display/analysis without entering patient data before scanning
- Reconstruction Algorithms: Soft Tissue, Standard, Detail, Bone, Bone Plus, Lung and Edge

OptiDose Features: OptiDose management features: bowtie filters optimized for coronary angiography and pediatric exams, 3D dose modulation, Color coding for kids, hardware and software for x-ray beam tracking, ECG dose modulation, to name a few of GE's dose optimization features, all based on the ALARA principle.

- 3D Dose modulation. Before the scan, clinicians can select the desired Noise/IQ: CT then tailored automatically exposure parameters, patient to patient and real-time x-y-z during each scan, resulting dose optimization for the selected noise index.
- Tracking collimator hardware and software for x-ray beam tracking to minimize patient dose
- Filtration of the x-ray beam is optimized independently for body and head applications
- DLP (dose length product) and dose efficiency display and reports during scan prescription provide patient dose information to the operator and can be saved with each exam
- DICOM Dose report included with each exam
- Dose Check provides the user with tools to help them manage CT dose in clinical practice and is based on the standard XR-25-2010 published by the Association of Electrical and Medical Imaging Equipment Manufacturers (NEMA). Dose Check provides the following:
  - Checking against a Notification Value if the estimated dose for the scan is above your site established value
  - Checking against an Alert Value where the user needs specific authority to continue the scan at the current estimated dose without changing the scan parameters if the estimated dose exceeds the alert value

- The ability to define Alert Values for Adult and Pediatric with age threshold
- Audit logging and review capabilities
- Protocol Change Control capabilities

SMART Technologies: Allows for the Discovery CT750 HD Scanner to tailor the x-ray beam to the patient being scanned. In order to use the optimal amount of dose to achieve the desired image quality, it is important to know the patient attenuation. This information can be generated by the scanner utilizing the scout data, which is then leveraged by our family of SMART technology features:

- SmartmA and AutomA - 3D modulation of the tube current to deliver the right dose at the right place
- GSI Assist - Helps users select the corresponding preset for a targeted CTDI for a comparable non-GSI AutomA scan
- kV Assist - Recommended tube voltage and current to achieve the lowest dose while meeting desired image quality

Volumetric Image Space Reconstruction (VISR) are 3D filters that reduce image noise (standard deviation) without compromising spatial resolution to provide clear visualization in neuro and cardiac imaging.

Dynamic Z-Axis Tracking provides automatic and continuous correction of the x-ray beam position to block unused x-ray at the beginning and end of a helical scan to scan to reduce unnecessary radiation.

Image Networking: Exams can be selected and moved between the Discovery CT750 HD System and any imaging system supporting the DICOM 3.0 protocol for network send, receive and pull/query.

- Standard Auto-configuring Ethernet
- Direct Network Connection
- Supports 1GB or 10/100 BaseT
- Supported Protocols -DICOM 3.0 Network -Advantage Net -InSite Point-to-Point -TCP/IP (for System Administration)

DICOM Conformance:

- DICOM 3.0 Storage Service Class
- Service Class User (SCU) for image send
- Service Class Provider (SCP) for receive
- DICOM 3.0 Query/Retrieve Service Class

- DICOM 3.0 MOD Media Service Class
- DICOM 3.0 Storage Commitment Class Push
- DICOM 3.0 Modality Worklist (incl:Performed Procedure Step through ConnectPro option)
- DICOM 3.0 Print

InSite Broadband included: All hardware and software required to connect this CT system to GE's InSite On-Line Center via secure VPN high-speed internet connection. Enables customer to access services designed to: reduce downtime, improve quality, enhance performance, increase productivity, and expand imaging capabilities, and increased privacy and security of data transmissions.

128i provides 128, 0.625mm images, per axial rotation allowing increased image-space sampling and enables improved visibility of small objects.

Warranty: The published Company warranty in effect on the date of shipment shall apply. The Company reserves the right to make changes. All specifications are subject to change.

Regulatory Compliance: This product is designed to comply with applicable standards under the Radiation Control for Health and Safety Act of 1968.

Laser alignment devices contained within this product are appropriately labeled according to the requirements of the Center for Devices and Radiological Health.

This product complies with the performance standards of 21 CFR, sub-chapter J, and the applicable IEC 60601-1 series.

This product is a CE-compliant device that satisfies regulations regarding Electro-Magnetic Compatibility (EMC) and Electro-Magnetic Interference (EMI), pursuant to IEC-60601-1-2.

Siting Considerations: See the Pre-Installation manual for details of the siting requirements for GE Discovery

1

English Keyboard Kit

English Keyboard Kit

1

Discovery CT - Standard Cable set

Standard length cable set for CT750 HD

1

VT2000x table for Discovery CT systems

The VT 2000x High Capacity Table enables volume scanning with increased weight capacity.

Key features of the VT2000x table include: up to 675 lb. (306kg) weight capacity, 2000mm scannable range, 137.5mm/sec travel time, real-time position control to support advanced application such as SnapShot Pulse, VolumeShuttle, and Volume Helical Shuttle.

The VT2000x is an option only available with Discovery CT750 HD.

1

#### SnapShot Freeze Motion Correction Package - AW

The SnapShot Freeze motion correction package includes a comprehensive solution to correct for the problems of motion that may occur in cardiac imaging. The following items are included in the package:

##### SnapShot\* Freeze

SnapShot\*Freeze:An intelligent motion correction algorithm, which is designed to reduce blurring of coronary arteries due to motion artifacts. This is done by characterizing the vessels' motion path and velocity from adjacent cardiac phases on a vessel-by-vessel and segment-by segment basis. This information is then used to calculate the coronary artery vessel position at the target phase. Utilization of SnapShot Freeze in clinical practice may assist the physician's diagnostic interpretability of coronary CTA by reducing the burden of non-diagnostic segments.

Using a mechanical heart phantom it was shown that SnapShot Freeze reduces motion artifacts up to 6X, equivalent to a 0.058s equivalent gantry rotation speed with effective temporal resolution of 29ms.

##### SnapShot\* Assist

SnapShot\* Assist: A guidance based tool that provides reference scan settings based on an individual's heart rate characteristics , rate variability and BMI(when parameters are entered) to guide the CT operator to help obtain optimal cardiac scan settings. SnapShot Assist uses the patient's recorded heart information to display scan parameters (including scan mode, cardiac phases, padding and pitch) that could be used during the cardiac CT scan. These recommended settings are based on over a decade of GE experience in cardiac CT and can be updated to serve as a department's best practices scan protocols. SnapShot Assist is designed to help users achieve consistent application of advanced cardiac scanning and reduce the complexity of creating diagnostic images.

SnapShot Freeze & SnapShot assist require the cardiac imaging package with an ECG monitor and CardIQ Xpress 2.0 Reveal on AW VS5 or AW Server.

#### CardIQ Xpress Reveal

CardIQ Xpress Reveal is an integrated post processing image analysis software dedicated to the application of cardiovascular imaging on GE's Advantage Workstation. The CardIQ Xpress Reveal software option can be used to effectively display, reformat and analyze 2D or 3D cardiac CT images for qualitative or quantitative assessment of the heart anatomy and coronary artery vessels from single or multiple cardiac phase image data sets.

CardIQ Xpress Reveal is launched via its own link or from Volume Viewer applications. It provides the use with both single and multiple cardiac phase analysis protocols.

The operator has a variety of different 2D, 3D or reformatted protocols to choose from to perform analysis and measurements. They include: display of the coronary vessel tree, angiographic view, 2D and 3D rendering of single or multiple coronary artery vessels or grafts, automatic reformation of cross sectional cardiac images into planes along short or long axis of the heart, one-touch cath views for 3D or reformatted images, 3D angiographic view phase registration, plaque density measurements and color mapping of the non-calcified and calcified plaque, IVUS-like views, 3D ejection fraction, 4D aortic and mitral valve views, relative perfusion, transparency views and beating heart images from single or multiple cardiac phase image data sets.

The CardIQ Xpress Reveal tool can be applied to standard axial or helical CT images. These images can be acquired on GE's multi-slice CT scanners using the cardiac CT SnapShot Pulse,

Segment, Burst or Burst Plus imaging acquisition options.

Clinical Benefits: Cardiovascular CT imaging using multislice CT technology is an exciting clinical application that provides clinically relevant and significant information for cardiovascular disease management as a non-invasive imaging technique. Multislice CT, which has been quickly adopted by the clinical community, has the advantage of being clinically powerful, reliable and accessible, as compared to other invasive or non-invasive cardiac imaging techniques. One of the critical components for an effective cardiac CT application is a fully integrated post processing and analysis tool tailored for cardiac imaging. The CardIQ Xpress Reveal option is designed to provide a user centered-and time effective means for cardiovascular image manipulation. Clinical applications include: imaging of cardiac morphology,

coronary artery imaging and assessment of relative perfusion, assessment of plaque, bypass graft patency, post intervention follow-up and functional assessment

CardIQ Xpress Reveal simplifies user workflow by:

- Pre-processing the images & models for quick review of the exam
- Loading images into the auto launch area for real-time review of multiple exams
- Easy switching from one protocol to the other without exiting the application
- Single click one-touch cath views
- Batch movie output within cardiac reformat
- User defined layouts within vessel analysis for simplified viewing and filming
- Multi-phase load to single phase review

The CardIQ Xpress reveal option includes:

- 2D/3D coronary vascular tree images with automatic vessel tracking & labeling with single click of a protocol. Images can be reviewed in axial, reformat, curved, oblique MPVR, and cross section views
- Various measurements of coronary arteries to include stenosis density and length of stenotic area
- PlaQID to color code non-calcified and calcified plaque with volume measurements.
- 2D reformat review with predefined views to review all coronary vessels.
- Color enhanced relative perfusion defect pattern recognition for detection of ischemic heart disease with 4 color patterns
- Automatically render data for streamlined reading to include: 3D rendered heart, angiographic view, tree VR, and ejection fraction.
- Reformat standard axial CT images of single or multiple cardiac phases automatically into short, long and two chamber long axis of the heart for easy review
- Perform functional evaluation of the heart and cine capabilities for multiphase beating heart images with one easy click
- Automatic extraction of the left ventricle with automatic selection of ES and ED for ejection fraction & volume measurements
- 4D aortic valve and mitral valve views with one touch
- Select protocols within the review step area allowing user to select a

different protocol without exiting the application

- Pre-defined VR IVUS-like views for virtually determining the different compositions of plaque
- One touch angiographic view protocol display coronary vessel tree and myocardium with automatic removal of heart chambers for cath comparative view
- Heart transparency model allowing for full visualization of coronaries in relation to the heart chambers with the ability to fade out the chambers of the heart
- Oblique reformat views in the standard cath angles to provide an analysis of the coronary vessels
- Load multi-phase images, review the data and decide which phase or phases will be reviewed for further processing by dropping the non-essential phases
- Phase registration - ability to register images from different cardiac phases into a unique data set. The data set can then be saved as a 3D object and/or used for further analysis

#### AW VolumeShare 5 with Two Flat Panel Monitors

AW VolumeShare 5 is a multi-modality image review, comparison and post processing workstation built with simplicity of use and power at its core. Powerful software is optimized to take advantage of innovative 64 bit technology and multiple cores to ensure leading edge performance.

AW VolumeShare 5 features include:

#### Hardware:

- HP Z800 Workstation with Intel x5650 Six Core Xeon 2.66 GHz CPU with 8MB shared L2 Cache / 1333 MHz Dual FSB
- 6GB DDR-3 1333 ECC DIMM
- 300GB SAS 15,000rpm Hard Disk for OS & Apps
- 600GB SAS 15,000rpm Hard Disks for Image Data
- 2 x 19" EIZO MX191 Monitors

#### Software:

- Fast access to information you need through optional RIS integration & priors post-fetch
- Efficient workflow through dynamic load, end review and Key Image Notes features
- Optional productivity package to pre-process exams & allow up to 8

simultaneous sessions

- Applications usage monitor to track usage of your system
- Smart layouts with Volume Viewer General review protocol that optimizes comparison and single exam layouts
- Enhanced multi-modality contouring tool with support for PET SUV's
- Support for external DICOM USB media and preference management tool to exchange preferences across users
- Support for optional, broad suite of multi-modality advanced applications

AW VolumeShare5 Productivity Package with 24GB of RAM

AW VolumeShare5 with Productivity Package Represents:

- More Capacity to Load Multiple Large Datasets with at least 24GB of RAM
- Instantaneous Display of Exams with Auto Launch
- Instantaneous Access to the Segmented Vessel Volume with Preprocessing

Productivity Package makes full use of the 64 bit technology as well as the dual screen z800 hardware of the AW workstation. It runs 12 to 24 GB of RAM giving the ability to load simultaneously up to 15,300 Images.

AutoLaunch loads automatically multiple cases as soon as they are transferred to the AW. A single click in the Auto Launch window instantly raises the case in Volume Viewer. Interaction with the data is immediately possible as the data is preloaded and ready to Use. Auto Launch is compatible with CT, MR and PET single volume protocols of Volume Viewer.

One-Touch links provide the ability to automatically launch the best protocol for each exam based upon DICOM image acquisition elements. An intuitive user interface in the protocol launcher provides easy configuration of one touch links by clicking the hand icon.

GSI Cardiac for the AW

The GSI Cardiac option allows for Spectral Spectral Imaging in prospective cardiac gating modes. The ability to alternate two kV energies at 0.25msec leads to unprecedented temporal registration (over 140 times faster than other dual energy technology) important for Cardiac imaging. GSI processing separates the interleaved raw datasets and using a pair of material attenuation characteristics, decomposes the raw data into a pair of material density images. The material decomposition is achieved by a high order



polynomial fit between the two acquired energies subject to the constraints of the known material attenuation characteristics. These material decomposed images together with the material attenuation characteristics enable synthesis of monochromatic spectral energy images ranging from 40 to 140 keV.

The ability to generate material density data that can be used for the separation of materials and derivation of monochromatic spectral images enables the following capability for cardiac scanning.

- GSI Cardiac allows for enhanced visual assessment of coronary vessels due to its ability to separate materials like iodine and calcium, and to display data at different energy levels
- GSI Cardiac helps reduce attenuation artifacts caused by beam-hardening, which improves CT number accuracy
- Enhanced accuracy of coronary vessel diameter assessment(1)
- Potential to reduce Beam Hardening artifacts may improve the accuracy of perfusion assessments when Beam Hardening is a concern
- Information to assist with plaque material composition assessments via the HU Spectral curves

(1) - As measured in a phantom using iodinated contrast material and hydroxyapatite

GSI Cardiac is available on the Discovery CT750 HD and requires Gemstone Spectral Imaging and Cardiac Imaging options with an ECG Monitor.

#### GSI Viewer 3D

The GSI Viewer 3D is the application tool for viewing and manipulating spectral images acquired with GE's Gemstone Spectral Imaging capability on Discovery CT750 HD. GSI Viewer 3D is fully integrated into the Volume Viewer for stream-lined workflow. Special integration in VessellQ Xpress\* and CardIQ Xpress 2.0 Reveal\*\* provides additional analysis tools for use with GSI.

Key features include:

- Protocol Driven Design - This feature provides a standard set of reference protocols with the additional ability for users to create and save their own protocols
- Monochromatic Image Review - With this feature the user has the ability to interactively change the monochromatic energy levels so that the user can select the best energy level for the exam being reviewed
- Image Overlay - The viewer provides a simple way for the user to move

from review to analysis by overlaying material density, and effective atomic number (effective-Z) information on top of the monochromatic images

- Material Density Analysis - Users can visually see how the GSI data is segregated amongst a material density pair, e.g. water and iodine
- Plot Analysis - This feature displays ROI's as graphical plots in the form of a histogram, a scatter plot, spectral HU curve and an optimal CNR (contrast to noise) plot
- Leverage routine Volume Viewer capabilities of volume rendering and segmentation for improved visualization of spectral information
- Save preferred GSI settings to create user defined protocols for automated workflow
- Display monochromatic energies and material separated images fully integrated into CardIQ Xpress Reveal\*\*

Benefits are:

- Material Decomposed images allow for the separation of materials like calcium, iodine, and water
- Visualize a virtual non-contrast like image using water-iodine basis pair image
- Adjusting monochromatic energy levels can optimize image contrast and reduce beam-hardening artifacts
- Aid in the discrimination of different tissue types based on material density and monochromatic image data.

System Requirements:

- AW VolumeShare5
- 16GB RAM
- Two monitor/flat panel configuration recommended

\* Requires VessellIQ Xpress License

\*\* Requires CardIQ Xpress 2.0 Reveal License

#### DYNAMIC SHUTTLE.

Dynamic Shuttle for AW VolumeShare 5

Dynamic Shuttle for AW VolumeShare 5 is a Software package that provides the user with the ability to produce datasets that can capture the kinetic behavior of contrast medium in the anatomy being imaged. The images can

be viewed in a dynamic form as a 3D volume over time. Additionally the software provides the user the ability for a bone free visualization of vasculature in a dynamic CT angiographic exam.

Key features include:

- 4D Neuro DSA protocol-Performs image registration and bone removal with one click of the mouse.
- 4D Body Shuttle protocol-Similar to the Neuro protocol in that it will perform the bone removal and image registration.
- Default viewing formats can be customized to the viewer's preference.
- The software provides the user with the ability to dynamically select the circulation phase for review.

System Requirements:

- AW VolumeShare5 with a minimum of 8 GB RAM.
- CT System-VolumeShuttle or Volume Helical Shuttle required to product the dynamic image dataset.

1

## CARDIQ FUNCTION XPRESS.

### CardIQ Function Xpress for Advantage Workstation

CardIQ Function Xpress is an Image Analysis Software Package that Allows the User to Non-Invasively Image the Functional Parameters of the Heart. CardIQ Functional Xpress Data is available when SnapShot Imaging (Segment, Burst or Burst Plus) is acquired for a coronary CTA study. The software automatically detects endocardial and epicardial contours for assessment of left ventricular (LV), right ventricular (RV) and left atrial functional parameters. The package is optimized to perform assessment of cardiac function using GE LightSpeed CT multi-phase, multi-slice cardiac CT images.

The CardIQ Function Xpress tool can be applied to standard axial CT images. These images can be acquired on GE's LightSpeed multi-slice CT scanners using the cardiac CT Snapshot Segment, Burst or Burst Plus imaging acquisition option.

The CardIQ Function Xpress option allows the user to:

- Automatically select each chamber of the heart for individual chamber volume analysis. The software automatically selects the LV 97%, LA 87% and RV 96% of the time.
- Automatic end diastolic and end systolic selection for LV, RV and LA ejection fractions >91% of the time.

- Behind the scene processing & loading of function data for real time review of ejection fraction, volume analysis and myocardial analysis.
- One click activation for 4D beating heart
- Automatic selection of epicardium and endocardium for myocardial analysis.
- Bulls eye plots representing wall motion, wall thickness and wall thickening.
- Automatic left atrium volume calculation with exclusion of the pulmonary vein.
- Single click visual wall motion activation with short axis images in the basal, mid and distal orientation along with a 2 chamber long axis view.
- Flexible reporting tool with graphical representations.
- Display table of key functional parameters for instant visualization.
- Automatic report generation tool within the CardIQ Function Xpress software.
- Automatically fill in the report fields to includes:
  - ejection fraction, stroke volume, end diastolic volume, end systolic volume, pulmonary vascular resistance, systemic vascular resistance, myocardial mass, and cardiac output.
- Capability to create pre-defined conclusion templates for various finding types.
- Fully customizable report templates to include logos, diagrams, signatures, patient history and messages.
- Report generation provided in PDF, HTML or plain text format.
- Ability to combine CardIQ Xpress 2.0 and CardIQ Function Xpress reports.

System requirements: AW Workstation with:VolumeShare5

Requires the Productivity Package for AutoLaunch and Pre-Processing.

Two (2) Monitor configuration

1

DentaScan for AW

DentaScan Software for the AW 4.1 or higher

DentaScan is Used With CT Scanners. This Option Creates a Comprehensive Set of Cross-Referenced Composite Axial, Panorex and Oblique Planar Reformations of the Mandible and/or Maxilla, Used in Dental Implant Surgery.

System Requirements: AW 4.1 or higher Hardware

All Software Purchases are Non-Transferable to Other Hardware and are Non-Returnable.

## GSI VIEWER

The GSI Viewer is the application tool for viewing and manipulating spectral images acquired with GE's Gemstone Spectral Imaging capability on Discovery CT750 HD. Key features include:

- Protocol Driven Design - This feature provides a standard set of protocols with the additional ability for users to create and save their own protocols.
- Monochromatic Image Review - With this feature the user has the ability to interactively change the monochromatic energy levels so that the user can select the best energy level for the exam being reviewed.
- Image Overlay - The viewer provides a simple way for the user to move from review to analysis by overlaying material density, and effective atomic number (effective-Z) information on top of the monochromatic images.
- Material Density Analysis - Users can visually see how the GSI data is segregated amongst a material density pair, e.g. water and iodine.
- Plot Analysis - This feature displays ROI's as graphical plots in the form of a histogram, a scatter plot, spectral HU curve and an optimal CNR (contrast to noise) plot.

Benefits are:

- Material Decomposed images allow for the separation of materials like calcium, iodine, and water.
- Visualize a virtual non-contrast like image using water-iodine basis pair image.
- Adjusting monochromatic energy levels can optimize image contrast and reduce beam-hardening artifacts.
- Discriminate different tissue types based on material density and monochromatic image data.

System Requirements:

- AW VolumeShare4
- 16GB RAM
- Two monitor/flat panel configuration recommended

Note: All software are Non-Transferable to other hardware and are Non-Returnable.

## LUNG VCAR.

### Lung VCAR for AW VolumeShare5

Volume Computer Assisted Reading (VCAR) takes a new direction in application design, leveraging (exploiting) the power of high resolution, volume scanning. This new technology is enabled by the Automatic Detection, Precise Segmentation and Interactive Quantitative Analysis that enhances analytics and improves data management. The result being better informed decisions and improved patient management.

Key features include:

- Digital Contrast Agent (DCA)- Automatically visualizes and highlights abnormal and potentially cancerous pulmonary solid nodules
- Bookmarking Tools for ease of image review and analysis
- Correlated Workflow-Synchronized 2D, DCA and Segmented Analysis
- One Click Solid Nodule Segmentation from vessels and pleural wall
- Segmentation Analysis of all nodule types Solid, Non-Solid and Part Solid
- Automatic Nodule Analysis Provides:
  - Percent Growth
  - Doubling Time
  - Volumes
- Automatic Segmentation of both the right and left lungs thus reducing the visual distractions associated with anatomy not of interest
- Cross Reference/Correlation Bar Provides a quick reference to aid in the localization of a nodules global location
- Image Display Tools for comparison of initial and follow-up exams
- Automatic Bookmark Propagation from previous to current or current to previous exams
- Automatic Image Registration for image review synchronization
- Temporal Statistics Display for fast informed decisions
- Customizable Personal Review Layouts
- Interactive Patient Reporting (DICOM SR) Provides both structure and flexibility

Lung VCAR requirements: AW VolumeShare5

### CT Perfusion 4D Neuro Package

CT Perfusion 4D Neuro Package is an image analysis software package that allows the evaluation of dynamic CT data following an injection of a contrast

bolus of contrast material, generating information with regards to changes in image intensity over time. The software provides a quick and reliable assessment of the type and extent of cerebral perfusion disturbances by providing qualitative and quantitative information on various perfusion related parameters, which may be related to acute stroke, brain tumor angiogenesis and treatment thereof. The key perfusion parameters that CT Perfusion 4D Neuro Package generates are:

- Regional Blood Volume (BV; ml/100g)
- Regional Blood Flow (BF; ml/min/100g)
- Regional Mean Transit Time (rMTT;s)
- Capillary Permeability Surface Area Product (PS)
- Time of Arrival (IRF T0)
- Transit Time to IRF Peak (Tmax;sec)

The user now has the ability to visualize all the information in true volumetric form.

Additional elements of Perfusion 4D include Smart Map, a new algorithm that improves the image quality of the functional maps in the presence of noise.

Perfusion 4D also includes a new streamlined workflow for Tissue Classification. Tissue Classification may aid the clinician in determining the status of the tissue based on blood volume and one of blood flow, mean transit time, or Tmax.

Productivity is enhanced through the protocol driven design of the user interface. An example of this is the Brain Stroke Protocol (Automatic) that completes the processing with one touch reducing the time required to process the exam and to enhance repeatability.

Perfusion 4D is compatible with AW VolumeShare5.

1

SmartScore 4.0 Software - for AW 4.2P and Higher

SmartScore 4.0 Software Kit Only for AW 4.2P and Higher.

B79971JH SmartScore 4.0 is for the Advantage Windows Workstation. New features include: Mass score, automatic highlighting of the calcium, new mouse modes & improvements to patient report. Images from GE LightSpeed, BrightSpeed or Xi product lines with either prospective or retrospective gating data can be used with the SmartScore software.

1

THORACIC VCAR.

Thoracic VCAR is a CT post processing software package designed to provide the user with a set of tools that allows the physician to make quantitative measurements that can assist in the diagnosis of lung diseases like COPD. The software combines segmentation of the lung and airways with analysis tools to provide advance analysis of the lung parenchyma and airways. The analysis comprises of 2D and 3D wall thickness and diameter measurements which provide an integrated approach to a comprehensive evaluation of a CT lung exam.

Key features include:

- Quick basic 2D review with one-click measurements of wall thickness derived from airway and lumen diameters with display of inner and outer contours for added reference
- Simple workflow with segmentation of right and left lung and airways
- One touch 3D airway tracking with measurements for airway analysis
- Emphysema Protocol-Segments the left and right lung excluding airways. Abnormal regions can be visualized and measured as a percentage of the whole by applying user selectable thresholds
- Lobe segmentation - Segmentation of the left and right lung with additional tools to separate and visualize by distinct lobes. Once segmented they can be displayed with color overlays with volumes displayed by lobe
- Airway analysis - Segments the airways from the trachea to the bronchi, which is tracked for lumen analysis
- Report Tool - Standard feature. The report can be printed, saved as a structured report, made into a secondary capture to be sent to PACS and exported through the web.

System requirements:

- AW VolumeShare5 with a minimum of 8GB RAM

1

VESSELIQ & AUTOBONE

VessellQ Xpress & AutoBone Xpress

CT VessellQ Xpress and Autobone Xpress is for AW VolumeShare5

VessellQ Xpress provides an optimized non-invasive application to analyze vascular anatomy and pathology and aid in determining treatment plans from a set of CTA images. This software supports the physician in:

- Assessment of aneurysms with or without thrombus (false lumen) for size and volume measurements with the capability to track the size and



volume over time, stenosis analysis, pre/post stent and surgical planning and directional vessel tortuosity visualization.

- Automatic tools for the segmentation of bony structures in the brain and neck and other vascular areas for accurate identification of the vessels, single or double click vessel analysis.
- Sizing the vessel, analyzing calcified and non-calcified plaque to determine the densities of plaque within a vessel, measure areas of abnormalities within a vessel (like stenosis, plaque, thrombus, dissection or leakage).
- Semi-automated detection and segmentation of thrombus for subsequent measurements within the application.
- Dedicated anatomy based protocols for improved workflow.
- Compare a patient's previous exam to their current exam in order to measure and track any changes over time of their vascular structures.
- After review of the exams, there are multiple ways to film, archive and capture information for future review.

System Requirements:

- AW VolumeShare5

Note: All software are Non-Transferable to other hardware and are Non-Returnable.

1

Uninterruptible Power Supply for CT systems

Un-Interruptible Power Supply

Un-interruptible Power Supply for CT750 HD, and LightSpeed VCT systems.

Un-interruptible power supply: supply's power to CT console allowing the user to power down system in the event of source power loss; thus preventing the loss of scan data previously acquired before source power loss. This UPS also:

-Provides continuous protection to all of the system's major electronics subsystems -Protects the tube from power outages because it continues to provide power for tube cooling. -Minimizes system restart time by continuing to power the thermal control of the DAS and detector. -Provides enhanced ease of patient removal from the system by keeping the table powered.

1

CT Service Cabinet

Service cabinet for system accessories storage

1

125A Main Disconnect Panel (US)

## CT Main Disconnect Panel - 125 Amp with Auto Restart

### FEATURES/BENEFITS

- Custom panel serves as the main power disconnect between the CT system and the facility 400-480V power source Panel provides short circuit, overload, undervoltage release, automatic restart, and emergency shut down for the CT system
- Reduces installation time and cost by providing a single-point power connection eliminating the need to mount and wire a number of individual components
- Standardized design and testing assures high product quality and system reliability
- On systems where the optional 12.5 kVA partial system UPS is ordered, the Main Disconnect Panel also provides mandated emergency power off control via a UPS output disconnect function included in the panel design
- Provides a standardized platform for future UPS or other GE engineered modifications or upgrades

### SPECIFICATIONS

- Dimensions (H x W): 30.24 in. x 19.78 in.
- Enclosure Depth: 7.05 in.
- Handle Depth: 10.3 in.
- Weight: 110 lbs.
- UL, cUL and CE labeled
- Panel disconnect provides OSHA lockout/tagout provisions
- Surface or semi-flush mounting
- Partial system UPS sold separately (E4502F)

### COMPATIBILITY

- CT LS Pro 16, LS Pro 32, RT Systems, LS VCT, CT 750HD, Discovery 690 VCT

### NOTES:

- Customer is responsible for rigging and arranging for installation with a certified electrician
- ITEM IS NON-RETURNABLE AND NON-REFUNDABLE

Medrad Stellant D Dual-Flow Ceiling Mount Injector System with Long Post.  
Floor to mounting plate is 9 in. to 10.5 in. Requires E8007NZ Mounting Plate be added to the order...E

1 OCS III MOUNTING PLATE

OCS III MOUNTING PLATE

1 Medrad P3T Cardiac Option

Medrad Stellant P3T Cardiac Protocol Option

P3T Cardiac computes custom injection protocols as well as scan timing for each patient, enabling personalized care and patient safety while maintaining efficient workflow.

- Utilizes the power of DualFlow technology (simultaneous injection of contrast and saline) to obtain functional cardiac data
- Enables more consistent images across varied patients, studies and technologists
- Eliminates the need to estimate injection protocols for complicated studies

1 CT Table Slicker with Cushion - VCT 2000 Systems (2-pc Set)

Slicker - CT HD750 and VCT w/GT 2000 Table (2 Piece Set)

#### FEATURES/BENEFITS

- Two-piece, sealed slicker cushion set has comfort pads enclosed inside the slicker cover and extender cover
- Durable, clear PVC plastic cover facilitates faster, more thorough cleanup of blood and fluids
- Increase system uptime by protecting table from spills and particulate contaminants
- Thermo-sealed seams and flaps prevent contaminate buildup in hard to clean areas

#### COMPATIBILITY

- VCT with GT 2000 Table, CT HD750

1 CT Footswitch Slicker - VCT 2000 & 1700 Systems

Footswitch Slicker for CT HD750 and VCT Systems

The footswitch slicker for CT VCT 2000 and 1700 systems is made of durable, clear PVC plastic that protects the footswitch and facilitates faster, more thorough cleanup of contamination caused by blood and other body fluids. Cover is held securely in place with Velcro...H

1

VCT Global Table 2000 Table Pad

GT VCT 2000 TABLE PAD - Warranty Code: H

1

3-day Cardiac CTA Advanced Masters Course for Physicians

This 3 day course is designed for physicians who have already attended an introductory course and are ready to start interpreting cardiac studies. Course includes observation and interpretation of live case studies, hands-on AW workstation experience, overreads of case studies and and mentoring by expert physicians.

Course description, agendas and registration information are listed on the GE Healthcare website at: [www.gehealthcare.com/gectmasters](http://www.gehealthcare.com/gectmasters)

Courses are scheduled at various times throughout the year and are subject to change.

Price includes tuition only and is non-discountable. Travel and Living are Not included.

This training program must be scheduled and completed within 12 months after the order install date. Unused training after the expiration date is non-refundable.

1

Interpreting the Heart: A Visual Guide Using CardIQ Xpress Educational Toolkit

Interpreting the Heart: A Visual Guide Using CardIQ (TM) Xpress Educational Toolkit

Interpreting the Heart: A Visual Guide Using CardIQ (TM) Xpress is a product intended for radiologists and cardiologists who want to learn how to interpret cardiac CT angiography images using the CardIQ software on the AW workstation.

Based on the criteria established by the Society of Cardiac Computed Tomography (SCCT), these 50 cardiac CTA cases can be used towards Level 1 and Level 2 Cardiac CT credentials.

This guide contains 50 cardiac CTA case studies, packaged in 2 binders. The first binder consists of 30 cardiac CTA case studies, which have a correlating cardiac catheterization exam. All 30 cases have multiphase image data to

evaluate coronary function; 25 of these cases have non-contrast image data to obtain a calcium score.

The second binder contains 20 cardiac CTA case studies without cardiac catheterization correlation. All case studies include cardiac CTA impressions as well as a detailed description of findings under each reference image by an expert interpreter.

All cases can be loaded and reviewed on your Advantage Workstation (TM).

Other features include:

- Blank reporting forms for note-taking during case reviews for both cardiac CTA and cardiac catheterization cases
- Blank log sheet for SCCT credentialing

This product is available for sale with VCT, VCT XT and HD scanners.

2

6 Day CT TiP Onsite System Training

6 Day CT TiP Onsite System Training

CT Onsite Training for a new CT system

- One 4 day onsite visit to coincide with system start-up.
- One 2 day onsite follow-up visit 6-8 weeks post system start up.

During the first visit, the applications specialist will work with the medical and technical staff on system operation and patient procedures. The training produces the best results when a dedicated core group of 2-4 CT technologists complete the session with a modified patient schedule. It is suggested that key physicians are available to participate in the protocol implementation and image quality review sessions. By the end of this visit, the core group should be able to perform the routine patient procedures.

The 2 day revisit is suggested after the staff has run the system for 6-8 weeks, however this is flexible based on the site needs. The training will focus on the intermediate and advanced functions of the system or special needs of the customer. The training produces the best results when the same dedicated core group of 2-4 CT technologists from the initial visit complete the session with a modified patient schedule.

This training program must be scheduled and completed within 12 months after the date of product delivery.

1

TiP CT Basic Training 6 Days Onsite 10 Hours TVA

TiP CT Basic Training 6 Days Onsite 10 Hours TVA

TiP Applications CT Basic Training for LightSpeed, LightSpeed VCT and BrightSpeed Systems includes:

- 6 onsite days covered in two site
- 10 hrs. TVA

All elements of the programs are completed within 36 months post installation. Onsite training and TVA are delivered Monday through Friday between 8AM and 5PM. T&L expenses are included.

2	<p>2 Days TiP Onsite Training Advantage Windows Workstation--CT</p> <p>2 Days TiP Onsite Training Advantage Windows Workstation--CT</p> <p>One 2 day TiP onsite visit for CT Advantage Windows Workstation training. Includes T&amp;L expenses. Days provided consecutively.</p> <p>This training program must be scheduled and completed within 12 months after the date of product delivery.</p>
2	<p>TiP HQ Class Discovery CT750 HD - Full Service</p> <p>TiP HQ Class CT750HD - Full Service</p> <p>3.5 day CT course held in the Milwaukee area. Includes travel and modest living expenses.</p> <p>This course is designed to introduce the technologist to the CT750HD system.</p> <p>This training program must be scheduled and completed within 12 months after the date of product delivery.</p>
1	<p>CT Software Training TVA 10 Hrs</p> <p>CT Software Training TVA 10 Hrs</p> <p>10 hours of remote CT training using TiP Virtual Assist. Requires broadband connection with customer upload speed of at least 400 kbps. This training program must be scheduled and completed within 24 months after the date of product delivery.</p>
1	<p>LIGHTSPEED SERIES ADV SVC</p> <p>This is a Two Week Lab Intensive Training Course for Service Engineers on the LightSpeed Series Product Line, Using Equipment at the GE Education Center. The Curriculum Builds on Concepts Taught in the Computer Based Prerequisite, the LightSpeed Basic Service CD ROM. For This Level 3 Certification Course, We Focus on Performing Calibrations, Adjustments,</p>

Diagnostics and Troubleshooting Tasks on All of the Major Subsystems and the Image Chain. Lecture Time Will be Spent Reviewing System Theory and Diagnostic Applications. This course must be taken within 2 years from the purchase date.

1

#### CT LIGHTSPEED PRO ADV SER

The LightSpeed Pro Advanced course is intended for engineers servicing LightSpeed Pro 16, LightSpeed RT, and forward production LightSpeed 16/Ultra/Plus (starting in 2004) systems. This course must be taken within 2 years from the purchase date.

1

#### CT LightSpeed VCT Upgrade Service Training Class

##### CT LightSpeed VCT Upgrade Service Training Class

The LightSpeed VCT package is intended for customers who have a LightSpeed VCT (32 or 64 slice) and are already trained on LightSpeed Pro. The Class/Lab course provides the instructional and hands-on opportunities for the student to acquire the fundamental competencies to effectively and safely service a LightSpeed VCT scanner. This course must be taken within 2 years from the purchase date.

1

#### CT VCT HD UPGRADE

##### CT LightSpeed VCT HD Upgrade Service(Class/Lab)

This course will teach the engineer how to service the new High Definition CT scanner. The HD system builds off of the VCT technology and footprint. New Service features include: a bleeder-less kV check, streamlined tube alignment process, and a System Health Monitor. This course must be taken within 2 years from the purchase date.

1

#### CT Basic Physics/Instrumentation (web)

##### CT Basic Physics/Instrumentation (Web)

The CT Fundamentals Course is Designed for Service Engineers who have Little or No Familiarity with CT Systems. The Course Teaches General Processes, Concepts, and Equipment Used in CT Scanning. This Course is Delivered Via the internet as an online training course. This course must be taken within 2 years from the purchase date.

1

#### CT LIGHTSPEED PRO ADV SVC

##### CT Lightspeed Pro Advanced Service (Web)

Web course is 8 hours long

Sales Description:

Introduction to CT LightSpeed Pro system theory and subsystems

Executive Summary:

This is a computer-based training course intended to prepare Service Engineers on basic system theory for the LightSpeed Pro product line.

Course Competencies:

The curriculum builds on concepts taught in CT Basic Physics and is a prerequisite for the CT LightSpeed Pro and Discovery ST in-resident training classes at the GE Healthcare Institute.

Special Considerations:

A functioning laptop computer with a CD-ROM reader, network card and a modem card is required for use during this course. The browser on the computer must be IE4 or Netscape 4.5 or higher. Minimum system requirements include 133 MHz Windows 95, NY 4.0 or higher 32 MB of RAM 16-bit color display adapter. Proof of completion of this eLearning course is necessary prior to attending any subsequent GE Healthcare In-Resident training. This course contains proprietary content. For customers attending this course, special paperwork is required to take this course. Please see the registration page for details on the enrollment process. This course must be taken within 2 years from the purchase date.

1

#### LIGHTSPEED BASIC SERVICE

Entry-level course for LightSpeed service engineers. This is a computer-based training course intended to prepare Service Engineers on basic system theory, as well as performing preventive maintenance and routine service tasks on the LightSpeed Series product line. Includes interactive exercises and video clip procedures. This class must be taken within 2 years from the purchase date.

1

#### GLOBAL OPERATOR CONSOLE

CT GLOBAL OPERATORS CONSOLE 3,4,& 5

The Global Operators Console can be referred to as the Xtreme console as well. This is the current operator console for the CT LightSpeed and PET Discovery ST systems. This course must be taken within 2 years from the purchase date.



- 1 CT GLOBAL OPR CONSOLE 6
- CT LightSpeed Global Operators Console 6
- This course will prepare the GE Field Engineer and In House engineers for servicing the new Global Operators Console 6 (GOC6). This course must be taken within 2 years from the purchase date.
- 1 Troubleshooting Basics Service (web)
- Troubleshooting Basics Service (Web)
- This Course is Intended for Individuals Involved in Servicing Medical Equipment. By Taking This Course, You will Learn a Proven Process for Troubleshooting Problems with Medical Equipment. You will Also Learn How to Use Various Tools in a Troubleshooting Situation and How to Interpret Error Messages. This Course Does Not Address How to Troubleshoot Specific Products. It is Recommended That you Have Fundamental Training in a Modality Prior to Taking This Course. This course must be taken within 2 years from the purchase date.
- 1 NETWORKING & DICOM BASIC
- Networking and Dicom Basic for DI Service (Web)
- Training will prepare engineers on configuring and troubleshooting networks, which use the DICOM protocol for transferring patient data and how to read and use DICOM Conformance Statements.
- This course covers the following:
- Introduction to 7 layer OSI and 5 layer TCP/IP protocols (Basic model only)
  - Identify hardware used in networking
  - Review of the most used networking devices, cables, NIC, switch and routers
  - Simple network connection with 2 to 5 devices
  - Dicom definitions, theory and configuration
- This course must be taken within 2 years from the purchase date.