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V.A. Medical Center
 BLDG 402A
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 TOMAH, WI 54660

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Revolution CT ES Configuration

The Revolution CT ES configuration is a premium CT scanner that brings the essence of Revolution CT experience into a scalable platform. Built upon ground-breaking and clinically proven Revolution CT hardware platform, it delivers HD image quality, fast volumetric scanning and lower dose with optimized contrast use. And it has scalability with its ability to be upgraded in-room to a 160mm detector coverage system, allowing you to grow its clinical capabilities with your needs.

The Revolution CT ES delivers industry leading technical specifications for a premium CT system, including:

- VHD reconstruction, 3D Collimator, and focal aligned detectors provide high-definition image quality, while overcoming the challenges of typical wide detector systems such as cone beam artifacts, HU uniformity, scatter and beam hardening artifacts.

- ASiR-V provides integrated advanced iterative reconstruction technology that reduces noise and reduces low-signal streak artifact at very low signal levels. This technology is designed to deliver reduced noise levels, improved low contrast detectability and may enable a reduction in dose for all clinical applications. In clinical practice, the use of ASiR-V 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.

Clinical Highlights

- High-Definition Imaging

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| | | <p>The clinical needs for better image quality never stop. Visualizing the finest image details significantly enhances diagnostic confidence. Equipped with the 80 mm Gemstone Clarity Detector and the Performix® HDw tube, the Revolution CT ES achieves best-in-class 0.23 mm spatial resolution across all detector coverage, all FOV, all applications, even obese patients.</p> <ul style="list-style-type: none"> • Low Dose Lung Cancer Screening <p>Empowered by low dose high definition image chain and new low-dose CT lung cancer screening protocols, Revolution CT ES can deliver low dose, short scan times and sharp images for the detection of small lung nodules.</p> <ul style="list-style-type: none"> • Contrast Optimized Scanning <p>X-ray radiation and iodine hazards have become the major concerns associated with CT scan with contrast enhancement. Due to increased use of iodinated contrast media in diagnostic imaging and interventional procedures, Contrast-induced nephropathy has become a significant source of hospital morbidity and mortality. Equipped with the ASiR-V and Low kVp scanning, Revolution CT ES addresses these two challenges with one unique solution: achieving lower dose scan with optimized contrast usage.</p> <ul style="list-style-type: none"> • Fast Emergency & Trauma Imaging <p>The system allows for robust Triple RuleOut™ acquisition for all patients providing HD, motion free coronaries, PE & aortic dissection in a single exam covering the entire thorax. ECG gating and mA modulation along with flexible collimations enable low dose acquisition personalized to the patient.</p> <p>80 mm helical mode combined with fast table speed of 300 mm/s allows for ultra-fast scanning, thus reducing the effect of breathing and other motion during the scan.</p> <ul style="list-style-type: none"> • Sedation-free Pediatric Scanning <p>Split second pediatric trauma acquisition of abdomen / pelvis is enabled by wide 80 mm z-coverage and fast table speed up to 300 mm/s, thus reducing the need for sedation and eliminating unnecessary repetition of scans in young children due to failed sedation, as is the case in 29% of conventional exams, shown in a large trial (British Journal of Anesthesia, 84 (6), 743-8 (2000)).</p> |

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| | | <p>70kV scan mode allows for minimizing dose to pediatric patients while preserving excellent contrast to noise ratio and image quality.</p> <p>Neurology (To achieve the full benefits described below, an AW workstation with dynamic and perfusion post processing tools may be required. Please consult with your GE sales representative)</p> <p>Routine non-contrast whole brain scans can be performed in a single rotation without moving the table. VHD reconstruction technology ensures CT number uniformity across the whole brain coverage. Iterative MMAR can reduce the beam hardening artefacts at bone / brain interface and posterior fossa region. Enhanced Contrast can achieve excellent grey white matter differentiation.</p> <ul style="list-style-type: none"> • Smart Stroke, the stroke-dedicated hardware, software and post-processing solution on Revolution CT, can help physicians to reduce “CT scan-to-report” time and “door-to-treatment” time, thus to save more brain tissue of patient with stroke. • Dual Energy Scanning <p>Revolution CT ES features protocols which allow easy configuration of back to back axial or helical scans of the same anatomy at two different X-ray energies (kVp's). To further improve registration accuracy patient immobilization may be utilized. The additionally acquired dual energy data can be post-processed on AW WS using Add/Sub function to gain additional clinical information.</p> <p>Key Hardware Components</p> <p>Gemstone Clarity Detector</p> <p>The Gemstone Clarity detector features a unique focally aligned layout of the detector sub-modules and a 3D collimator (post patient) to minimize scatter artifacts, ensure HU uniformity & reduce beam hardening artifacts associated with wide coverage systems. Combined with VHD reconstruction technology, the system delivers excellent image quality at full 80 mm coverage. The Gemstone Clarity detector also features a revolutionary ultra-low capacitance photo diode with new ASIC technology that redefines electronic noise at the quantum limit to less than 3 photons @ 120 keV (3100 electrons). The detector includes</p> |

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| | | <p>acquisition electronics which allow 4x faster bandwidth and 3x faster trigger rate than previous generations and reduces electronic noise by 25% which may improve image quality and reduce artifacts in low signal conditions as may be encountered in large patients. 3D Collimator Scatter Reduction Technology reduces scatter to primary ratio by more than 50% (R Melnyk, J Boudry, X Liu, and M Adamak, "Anti-scatter grid evaluation for wide- cone CT," Proc. of SPIE, Vol. 9033, 90332P1-7, 2014) and results in significant improvement in image quality and reduction in beam hardening and metal artifacts.</p> <p>Gemstone Clarity detector specifications:</p> <ul style="list-style-type: none"> • Z-Coverage/360 degree rotation: 80 mm • Number of slices: 256 • Number of detector rows: 128 • Number of detector elements: 106,496 cells with individual electronic/DAS channels • Sampling rate: Up to 2,496 views per rotation (Up to 8914 Hz) • Electronic noise: less than 3 photons noise (3100 electrons) • Effective analog to digital conversion range >2,000,000:1 • Scintillator speed: 0.03us (100 times faster than GOS) • Afterglow: 0.001% (4 times lower than GOS) • Radiation damage: 0.03% (20 times less than GOS) • Scatter to Primary Ratio: <10% • Detection efficiency: 98% @ 120 kV <p>Performix HDw tube</p> <p>The Performix HDw tube is a next generation anode-grounded, metal-ceramic x-ray tube. The tube enables improved spatial resolution via dynamic in-plane focal spot deflection and independent control of the focal spot size in both X and Z-axis which optimizes the focal spot to deliver consistent beam quality across the full 80 mm Z-axis coverage, making it one of the most innovative CT tubes offered today. The design is optimized for exams requiring a large number of scans without tube cooling. It is powered by an onboard high frequency generator capable of ultra-fast kVp switching. Due to the ultrashort exposure times associated with wide coverage scanning, traditional metrics</p> |

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| | | <p>related to tube cooling such as anode heat content & cooling rate lose their relevance. The GE Performix HDw tube includes a standard license that automatically enables the use of tube dependent advanced applications. The use of a third party X-ray tube will require an additional license for the activation of these features.</p> <p>Ultra-fast kV Switching Generator</p> <p>The new generator features 3x faster rise and fall times for kV switching compared to previous generator. This would allow for more time to be spent at the target energy levels and result in better energy separation between the datasets acquired at different kV levels using fast kV switching.</p> <ul style="list-style-type: none"> • Generator maximum peak power: 103 kW • Tube current range: 10-740 mA with 5 mA increments • Tube voltage: 70, 80, 100, 120, 140 kV. Automatically selected through kV Assist based on patient body habitus and examination type • Max x-ray tube assembly heat content: 5.0 MJ (6.8 MHU) • Max continuous heat dissipation: 3.0 kW • Focal spot size according to IEC 60336/2005: 1.0 x 0.7mm, 1.6 x 1.2mm, 2.0x1.2mm <p>Gantry and Slipping</p> <p>Revolution CT's gantry platform has been designed from the ground up to support the demands of today's scanning environment. Exclusive Whisper Drive system technology reduces audible noise during gantry rotation at 0.28s by more than 50% compared to a typical belt driven system thus improving patient comfort (audible gantry noise is measured at 69 dBA).</p> <p>The contactless slipping transfers power and data to and from the rotating side of the gantry (slip ring) to the stationary side through contactless RF technology. This eliminates carbon dust due to brush wear- out in typical CT systems thereby increasing the reliability of the system. In addition, the gantry frame features redundant fail-safe mounts for all major components that is designed and tested to stringent standards to ensure safe and reliable operation even at fast rotation speeds.</p> |

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| | | <ul style="list-style-type: none"> • Aperture: 80 cm • Focus-to- detector Distance: 109.7 cm • Focus-to- isocenter Distance: 62.6 cm • Scan FOV: 50 cm • Rotation speeds: 0.28s, 0.35s, 0.5s, 0.6s, 0.7s, 0.8s, 0.9s, 1.0s per 360° acquisition • Temporal resolution: 140ms cardiac temporal resolution without using SnapShot Freeze. 29ms effective temporal resolution using SnapShot Freeze. (As demonstrated in mathematical phantom testing)(Cardiac Acquisition software and AW workstation or server with CardIQ Xpress 2.0 required to process SnapShot Freeze data) • Data chain bandwidth: 40 Gbps • Table and gantry control panels: Define both internal and external scan planes to +/- 1 mm accuracy. Activated any time during exam (with tube stationary) • Front and rear integrated gantry LCD Display: Display patient information, ECG data from the integrated ECG module (optional), built-in patient breathing lights and countdown timer, cardiac gating indicator light and patient information videos • Flexible cable manage system with coordinated straps attached to the gantry sides to keep cables connected to the gantry away from the floor and to reduce clutter <p>Operator Console</p> <p>The Revolution CT scanner desktop allows simultaneous scanning, image reconstruction, display, processing and analysis, as well as networking and archival.</p> <p>It features the new “Clarity Operator Environment” designed with your everyday needs in mind. The environment allows for more real time adaptive capabilities thus enabling dramatically improved timing with Smart Prep including automatically transitioning to acquisition in as quickly as 1 second when the set HU threshold is reached. The benefits provided by the new interface include:</p> <ul style="list-style-type: none"> • Smart prescription workflow automates scan set up by recommending scan parameters specific to the patient based on |

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| | | <p>scout attenuation and ECG information, in the case of cardiac, to enable consistent image quality & dose performance across scans, irrespective of the technologist expertise level</p> <ul style="list-style-type: none"> • Seamless multi-tasking through ability to have multiple patient sessions open with one active patient for acquisition and the rest for post-acquisition tasks • “Plan ahead” task list as part of scan setup automates repetitive tasks such as reconstructions, image transfer, image processing, etc. without requiring technologist intervention • Ability to prospectively prescribe multi planar reconstructions for anatomies such as spine as part of the protocol, thus automating the workflow seamlessly • Clear status visibility across all automated patient tasks without any interaction enables you to focus on the primary task at hand • Manage your patient flow better with the ability to pre- pare scan prescription for the next patient while the current patient is getting off the table • Quickly select scan protocols through global search, anatomical selection or user specific favorites in the new- ly designed protocol management system • Facilitates protocol consistency by controlling access to changes and simplifying inputs required • Integration with AW allows prescribing automatic image processing steps to be performed on the AW / AW Server post acquisition • Better dose awareness through clearly visible real time projected dose indicator for the selected protocol <p>Operator console specifications</p> <ul style="list-style-type: none"> • Intel Xeon performance processor: 2.60GHz/8-Core CPU (or equivalent) • Nvidia high performance GPU (or equivalent) • 64 GB DDR3 unbuffered ECC (or equivalent) • 24 inch dual monitors with screen resolution of 1920x1200 • Image data storage up to 700,000 uncompressed DICOM images (512x512) • Scan data storage of 1 TB (up to 1500 scan files are supported) |

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| | | <ul style="list-style-type: none"> • DVD-ROM (supports DVD-R, DVD-RW, DVD+R, DVD+RW, DVD+R DL, CD-R, CD- RW) • USB 3.0 Port for External Hard Disk Drive Connectivity (scan data storage and image data storage are supported) • Recon Server Xtream enables recon task parallelism and achieves up to 1.8x faster reconstruction throughput than Recon Server Pro • Image reconstruction speed up to 65 fps with FBP and up to 25 fps with ASiR-V. <p>System Software</p> <ul style="list-style-type: none"> • Smart Flow <p>Simplified, automated scan prescriptions, personalized to the patient and easy-to-use reference protocols make the Revolution CT fast and efficient in patient set-up, prescription & scanning. The following features further help you streamline your workflow.</p> <ul style="list-style-type: none"> • Protocol Management System Protocols can be copied, built and edited intuitively using the Protocol Management System. • GE Reference Protocol: A set of predefined protocols for adult patients that cannot be modified but can be copied and used. These protocols are factory installed. They have been developed in collaboration with clinical partners to provide users with a convenient and clinical relevant starting point for tailoring your departmental protocols. • Recently Scanned Protocols: A copy of the last 90 protocols reside exactly as they were used for review purposes only. These protocols can also be copied and used within into your departmental protocols. • Anatomical Selector: Use the Anatomical Selector area to select a specific anatomical region to show only protocols related to that region. • Favorites: A user can add to a list of favorite protocols commonly used by your site. <p>Clinical ID</p> <p>Clinical ID is designed to streamline the clinical application specific workflow from protocol setup to reconstruction prioritization and automated reformatted views for timely</p> |

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| | | <p>diagnostic decisions.</p> <p>AutoVoice™</p> <p>Auto Voice provides recorded breathing instructions for the patient. Consistent breathing instructions assist with more precise timing during an exam. Auto Voice also provides a pre-message in the SmartPrep feature. The system also comes equipped with microphones at the console and gantry for communicating with the patient. The system has three, pre-recorded messages in ten selectable languages that cannot be deleted. You can also record up to 17 additional messages for each language. Default language options include: Chinese, English (Female) , English (Male), French, German, Italian, Korean, Japanese, Spanish (European), Spanish (Latin America).</p> <p>Smart Patient Centering</p> <p>The smart patient centering feature helps to detect suboptimal centering prior to the diagnostic scan. When scout is acquired, the system will assess patient centering. If the patient is off-centered greater than 2 cm, the system will display the table height location and an up or down arrow to indicate the elevation needed to reach that height.</p> <p>SmartStart™</p> <ul style="list-style-type: none"> • Gantry-mounted start scan button and countdown display, • Facilitates single-technologist operation by allowing start of scan at the gantry, with a visual reminder of time until X-ray initiation <p>SmartPrep™ with Dynamic Transition</p> <p>Enables real-time monitoring of IV contrast and a user-selectable mode to dynamically transition to the diagnostic scan phase when a user entered Enhancement Threshold is reached in the Transition ROI.</p> <p>Trauma Patient entry</p> <p>Allows patient scans and image display/analysis without entering patient data before scanning.</p> <p>Prospective Exam Split</p> <p>Prospective Exam Split allows operator to specify how to split images from a scan into separate requested procedures/accession numbers in protocol management. This</p> |

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| | | <p>capability is especially useful in cases of full body trauma or for chest, abdomen and pelvis exams. Prospective Exam Split works with primary, secondary and reformatted images.</p> <p>Smart DMPPR</p> <p>Smart DMPPR can automatically generate reformatted views with prospectively set window width and window level and automatically transferring these image datasets to the designated PACS destination for fast review and diagnosis.</p> <p>Digital Tilt</p> <p>The system has preset protocols that can be selected prospectively, which allows images to be reconstructed at a specified tilt angle. This capability, combined with organ dose modulation and tilted head holder accessory for the patient allows for reducing the dose to sensitive organs such as the eyes while also reducing dental artifacts.</p> <p>Enhanced Xstream Injector (Requires a compatible Bayer or Nemoto Injector system)</p> <p>The Enhanced Xstream Injector provides synchronization of the start of the scan and the start of the contrast injector using the start scan button on the Scan Control Interface or the gantry controls. The Enhanced Xstream Injector also allows setting of the contrast injector parameters within the CT scan protocol and creation of an Injector Report at End Exam of what was delivered by the injector. The system and injector are operated independently after the start scan button is pressed on the system.</p> <p>System Software</p> <p>Volume High Definition Reconstruction</p> <p>The system features state of the art image reconstruction technology designed to mitigate cone beam artifacts associated with wide coverage systems. In addition, the algorithm preserves temporal uniformity and provides excellent image quality at full 80 mm coverage. It further reduces variation in iodinated contrast HU uniformity across the full 80 mm z-coverage, typically caused due to heel effect. In addition, Multi-Material Artifact Reduction (MMAR) technology utilizes material physics learnings from GSI incorporated in single energy acquisition. In</p> |

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| | | <p>conjunction with the 3D Collimator, this reduces beam hardening artifacts due to iron, bone, metal & other dense objects.</p> <p>Iterative Reconstruction: ASiR-V Integrated advanced iterative reconstruction technology (ASiR-V) reduces noise, even at very low signal levels. The ASiR-V algorithm focuses primarily on the modeling of the system noise statistics, objects, and physics and de-emphasizes the modeling of the system optics. The most time-consuming portion of the IR process is the modeling of the system optics. By excluding the most time-consuming component, system optics, and focusing on the other terms during the IR process, significant image quality improvement can be achieved without paying a large penalty in reconstruction speed. The advanced system noise model includes the modeling of the data acquisition system (photon noise and electronic noise) as well as noise characteristics of the reconstructed images. The photon noise model includes characterization of the photon statistics as it propagates through the imaging chain. The modeling of the reconstructed image noise includes characterization of the scanned object, using information obtained from extensive phantom and clinical data. This technology is designed to deliver reduced noise levels, improved low contrast detectability and may enable up to 82% reduction in dose when compared to FBP for all clinical applications.</p> <p>Smart Dose technologies Automatic Exposure Control (AEC) AEC is a versatile and powerful tool designed to tailor the scanner's radiation output to each patient based on the patient's size, age, shape and attenuation and the user's requested level of image noise/quality criterion. AEC technology uses estimated patient attenuation values to adjust the mA dynamically in order to achieve the requested level of image noise/quality criterion.</p> <p>3D Dose Modulation Utilizing SmartmA Volumetric knowledge prior to scanning allows you to personalize protocols and optimize dose for every patient, large and small. During the scan, real-time, 3D dose modulation helps deliver consistent image quality because it automatically accounts for the changing dimensions of your patient's anatomy.</p> |

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| | | <p>In addition, the system provides guidance to assist in centering the patient to maximize the benefit of mA modulation.</p> <p>Organ Dose Modulation</p> <p>Organ Dose Modulation (ODM) builds on the SmartmA feature to enable even further patient dose reduction. By reducing the mA exposure profile as a function of the X-ray tube angle, radiosensitive organs towards the anterior surface of the patient, such as the eyes, breasts and thorax, can benefit from enhanced dose reduction while the overall image noise is still maintained.</p> <p>kV Assist</p> <p>kV Assist makes it easy to select optimal kV settings for the patient being scanned. It recommends tube voltage and current to achieve the lowest dose while meeting desired image quality goals.</p> <p>70 kV Scanning</p> <p>70 kVp scan mode enables low dose pediatric and small patient scans</p> <p>ECG Modulated mA</p> <p>For cardiac applications (optional), prospective ECG dose modulation automatically adjusts the mA to minimize the patient's exposure to X-rays – reducing mA, and thus dose, near the beginning and end of each prescribed phase range. Up to 3 phase ranges are selected within a heart cycle with different mA levels. The peak mA for the first phase range is automatically determined based on noise index set by the user. The user can also select the relative mA level for an optional second or third phase range, set as a percent of the mA level of the first phase range. This provides clear images and allows you to reduce dose yet provides motion free, high quality images for functional and anatomical analysis within a heart cycle</p> <p>Color Coding for Kids</p> <p>Based on the Broselow-Luten Pediatric System, the Color Coding for Kids was developed to help operator to select the correct pediatric CT protocol. The system divides the protocols into nine color zones based on height and weight, and incrementally increases scan technique as the patient's size increases. This arrangement of protocols assists you in reducing the variations</p> |

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| | | <p>in pediatric protocol selection. If the patient weight is unavailable, a Broselow-Luten Tape can also be used to obtain the weight based on the length.</p> <p>- DoseWatch Explore is an introductory dose management software application that provides you secure access, via any PC with internet access, to dose and protocol data from this system. An InSite connection to the system and completion of the registration process is required to use the DoseWatch Explore application. For US and Canadian Customers, this quotation includes access to the DoseWatch Explore application for a period of time concurrent with the system warranty.</p> <p>Smart Dose technologies</p> <ul style="list-style-type: none"> • Smart Track: Advanced hardware and software for X-ray beam tracking minimizes patient dose. • Smart Beam: Optimizes X-ray beam filtration independently for body, head, and cardiac applications. • Soft Shutter: This capability reduces the over-beaming dose in helical scans by using an advanced reconstruction algorithm for helical scans that makes better use of acquired data through intelligent view weighting and back projection. • 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 Association (NEMA). Dose Check provides the following: <ul style="list-style-type: none"> o Checking against a Notification Value if the estimated dose for the scan is above your site established value o 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 o The ability to define Alert Values for Adult and Pediatric with age threshold o Audit Logging and Review capabilities o Protocol Change Control capabilities provided by robust protocol management interface • Dose Computation, Display & Reporting: CTDIvol (CTDI volume), |

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| | | <p>DLP (Dose Length Product), and Dose Efficiency computation and display during scan prescription provide dose information to the operator. Dose Reporting saves the CTDIvol, DLP, and phantom type in a DICOM Structured Dose Report and a secondary screen capture. Series and cumulative exam values are saved. Saved values can be networked or archived.</p> <p>DICOM Interchange</p> <p>DICOM Interchange allows the saving of any image from the database, along with a PC viewer using Internet Explorer, to a CD-R or DVD-R without marking the exam/series or image as archived for exam transfer between stations that are not networked or pass along to referring physicians or patients. For detailed information, please reference DICOM conformance statement.</p> <ul style="list-style-type: none"> • DICOM Storage Service Class • Service Class User (SCU) for image send • Service Class Provider (SCP) for image receive • Service Class User (SCU) for storage commitment • DICOM Query/Retrieve Service Class • DICOM Modality Worklist • DICOM Modality Performed Procedure Step <p>Image Networking</p> <p>Exams can be selected and moved between the Revolution CT and any imaging system supporting the DICOM protocol for network send, receive and pull/query. Image transfer time using DICOM protocols is > 16fps on a 1000baseT network.</p> <p>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.</p> <p>This product complies with the performance standards of 21 CFR, sub-chapter J, and the applicable IEC 60601-1 series.</p> <p>This product complies with NEMA Standard XR29-2013 / MITA</p> |

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| 3 | 1 | <p>Smart Dose Standard. See the Pre-Installation manual for details of the siting requirements for GE Revolution CT.</p> |
| 4 | 1 | <p>Rev CT English keyboard English keyboard</p> |
| 5 | 1 | <p>REVOLUTION STD CABLE SET Standard cable set for Revolution CT system</p> <p>Revolution CT heavy table with X-strong foot-switch cover The heavy table has been designed with 10x more stiffness to reduce deflection and provide the best possible images under 675 lbs (306 kg) load load. The X-strong foot switch cover, capable of supporting 1350 lbs (612 kg) load, has been specially designed for ER settings to support physicians or technologies to stand atop of it to implement diagnostic and/or treatment procedures to patients. The heavy table also features: # Maximal metal free horizontal scannable range: 2000 mm # X-strong foot switch cover, capable of supporting 1350 lbs # Maximal horizontal travel speed: 300 mm/s (standard) (437.5 mm/s optional with Hyperdrive) # Horizontal positioning accuracy +/- 0.25 mm from any direction # Motor-driven table height adjustment from min. 550 mm to max. 1030 mm # Maximal vertical travel speed: 40 mm/s # Control elements on both sides on front and rear gantry control panels. Table height can be controlled alternatively by means of foot switch (2 each on both sides of the patient table) # Integrated ECG module with waveform and configuration through the gantry display # Workflow hub area with a see-through tray to give you the most flexibility in placing scanning related supplies, etc. without limiting visibility to the integrated ECG inputs.</p> |

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| 6 | 1 | <p data-bbox="540 405 1265 506"># IV Pole integrated at the foot-end of the table helps to prevent IV lines from becoming crossed and tangled, and helps keep lines in place during patient table travel.</p> <p data-bbox="540 541 1265 569">Low Dose CT Lung Screening Option with Indication For Use</p> <p data-bbox="540 594 1265 1016">This option provides lung screening reference protocols that are tailored to the CT system, patient size (small, average large), and the most current recommendations from a wide range of professional medical and governmental organizations. Now, qualified GE Healthcare CT scanners with this option are formally indicated for, and can be confidently used by physicians for low dose CT lung cancer screening of identified high-risk patient populations. These protocols deliver low dose, short scan times, and clear and sharp images for the detection of small lung nodules. Early detection from an annual lung screening with low dose CT in high-risk individuals can prevent a substantial number of lung cancer-related deaths.</p> <p data-bbox="540 1031 1265 1377">All new GE 64-slice and greater CT scanners, and virtually all of the 16-slice CT scanners that GE Healthcare sells are qualified for this screening option. This solution is also available to thousands of qualified GE CT scanners currently in use, increasing access to the quality scanners that satisfy both patient and physician needs. The new protocols, do include the choice for the user to be able to utilize GE Healthcare's industry-leading technologies such as ASiRTM, ASiR-VTM and VeoTM that are designed to reduce image noise, which is undesirable for physicians looking for small nodules.</p> <p data-bbox="540 1392 1265 1486">This option contains two documents. Lung Cancer Screening Option Reference Protocol Guide, and the Lung Cancer Screening Option User Manual / Technical Reference Manual</p> <p data-bbox="540 1501 1265 1776">i) The following GE Healthcare CT scanners are qualified to receive the new low dose CT Lung Cancer Screening Option: LightSpeed 16, BrightSpeed Elite, LightSpeed Pro16, Optima CT540, Discovery CT590 RT, Optima CT580, Optima CT580 W, Optima CT590 RT, LightSpeed Xtra, LightSpeed RT16, LightSpeed VCT, LightSpeed VCT XT, LightSpeed VCT XTe, LightSpeed VCT Select, Optima CT660, Revolution EVO, Discovery CT750 HD, Revolution HD, Revolution CT, Revolution Frontier.</p> <p data-bbox="540 1791 1265 1814">ii) Moyer V. Screening for Lung Cancer: U.S. Preventive Services</p> |

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| | | <p>Task Force Recommendation Statement. Ann Intern Med. 2014;160:330-338. http://www.uspreventiveservicestaskforce.org/Page/Document/Recom</p> |
| 7 | 1 | <p>AutoBone Xpress option</p> <p>AutoBone Express is a Software Package that provides Automatic Segmentation of Bony Structures and Calcified Plaques Optimized for the latest CTA Acquisition Techniques.</p> <p>AutoBone Xpress Clinical Benefits:</p> <ul style="list-style-type: none"> • Click Segmentation of Bony Structures to facilitate Vascular Structures Visualization for any Anatomy including Head and Neck CTA. • 1-Click Automatic Segmentation of Calcifications for Abdominal CTA and Run-Off Exams. Side-by-Side display of Vessels in 3D MIP with and without Calcifications provides a Direct Access to Calcified Plaques effect on Vessel Lumen. <p>Operator Productivity Benefits Include:</p> <ul style="list-style-type: none"> • Decreased time to First Clinically Relevant Image Segmenting Automatically Bony Structures and providing a Quick 3D MIP Overview of Vascular Structures. • Synchronized Viewports enabling Fast confirmation of Results on Reformatted and Native Images. • AutoSelect Segmentation Tools may be used to Refine Segmentation by Quickly Adding or Removing Structures. • The resulting Volume Rendered Image can be Manipulated to View Vessels Only. Transparent Bones can be Restored for Landmarks. Calcifications can also be Visualized in Transparency to Show Lumen. • Optimized Layouts for each Anatomy for Fast and Relevant Visualization. <p>System Requirements: VolumeViewer on the Console - B7870JA</p> |
| 8 | 1 | <p>Advanced Vessel Analysis Xpress option</p> <p>CT AVA is a Highly Automated Software Post Processing Package for the CT Operator's Console. It is an Additional Tool for the</p> |

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| | | <p>Analysis of 3D Angiography Data Providing a Number of Display, Measurement and Batch Filming/Archive Features to Study User-Selected Vessels Which Include Stenosis Analysis; Pre/Post Stent Planning Procedures and Directional Vessel Tortuosity Visualization.</p> |
| | | <p>Clinical Benefits</p> <ul style="list-style-type: none"> • Decreased Operator Dependence: Currently there is Heavy Operator Dependence to Produce True Vessel Cross Sections and Vessel Profiles. This Software Eliminates the Need for the Operator to Manually Identify the Center of the Vessel. • Automated Batch Filming and the Ability to Rotate Around a Vessel, Reduces the Risk of Overlooking Vascular Structures. • Quick AVA - Two click vessel analysis • Measurement Tools: Quantitative Information on User-Selected Vessel Segments , Aids in the Proper Selection of Prosthesis • Distances to Bifurcations or Other Landmarks are Critical for Clinical Decisions • Increased Value of Reports: A Single Report Provides a Complete 3D Context; Measurements Cross-References and 3D Views. Consistency in the Format and Style of the Reports Also Help Referring Physicians. |
| | | <p>Productivity Benefits</p> <ul style="list-style-type: none"> • Decreased Time to First Clinically Relevant Image: Automatic Centerline Detection Provides a Quick 3D Value Understanding of a Selected Vessel. The Anatomy Becomes Visible Once Two Points Identifying the Section of Interest Have Been Defined. • Background Auto-Filming: Replaces Manual Filming. |
| | | <p>System Requirements: VolumeViewer on the Console - B7870JA</p> |
| 9 | 1 | <p>Enhanced Xtream Integrated Injector Interface Kit - Class IV</p> <p>Xtream Injector provides one handed synchronized start of the scan and injection from the CT Operators console or from the</p> |

| Item No. | Qty | Description |
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| | | <p>scan room providing consistent simultaneous start of contrast injection and scan acquisition protocols.</p> <p>It utilizes the CiA Class 4 functionality which includes the following benefits:</p> <ul style="list-style-type: none"> Up to a 50% reduction in the number of user interface selections needed when compared to systems not utilizing the Xstream Injector. The 50% reduction comes from the fact that users select one button to start the scan acquisition and injection. o Better control of contrast enhancement by synchronizing start time of the contrast injection and CT scan o Improved workflow by enabling single-button start of both the injector and scanner from the scanner o Injection parameter preview from the scanner console prior to beginning the scan o Post-study review of injection results from the scanner console o Automatic documentation of injection results in PACS. |
| 10 | 1 | <p>Chair</p> <p>Chair for CT scanner</p> |
| 11 | 1 | <p>Revolution Desk - Adjustable</p> <p>Revolution Desk - Adjustable</p> |
| 12 | 1 | <p>CT Service Cabinet</p> <p>Service cabinet for system accessories storage</p> |
| 13 | 1 | <p>CT Main Disconnect and UPS Control 380-480V 50 60Hz 125A</p> <p>Main Disconnect Panel (MDP) UL 125A 400/480V 50/60Hz 3 phases for CT, PET and PETCT</p> <p>The (Main Disconnect and UPS Control Panel serves as the main facility power disconnect source installed ahead of the CT system PDU. On systems where the optional partial system UPS is included in the system, the panel provides NEC mandated UPS emergency power-off control function via a UPS control cable included with the UPS. The optimized design PDB saves time, installation labor, and valuable mounting space by consolidating the main circuit breaker, control power source and required warning lights into a compact factory manufactured panel. The panel provides short circuit protection, overload protection and National Electrical Code and Canadian Electrical Code required</p> |

| Item No. | Qty | Description |
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| | | <p>emergency shutdown for the system. The 24-volt low voltage controls all power, using either the panel cover mounted EMERGENCY OFF push button or the remote EMERGENCY OFF push button included with each system. The PDB is painted to match the imaging system for a total coordinated system appearance. Available in a combination surface semi-flush mounted enclosure. The system provides stock availability of otherwise special-order devices, saving time and installation costs.</p> <p>Benefits</p> <ul style="list-style-type: none"> • The System Main Disconnect saves time, installation labor, and valuable mounting space by consolidating the main circuit breaker, the feeder overcurrent devices, magnetic contactors and UPS emergency power-off into one compact panel • The system provides stock availability of otherwise special-order devices, saving time and installation costs • Reduces installation time and cost by eliminating delays in obtaining individually enclosed components and by eliminating on site assembly • UPS emergency power-off functions are included for future, partial system UPS addition. • Disconnects system power on first loss of incoming power, preventing damage to system components • Provides a standardized platform for UPS or other future GE engineered modifications or upgrades • Main power disconnect operating handle can be padlocked in the OFF position for servicing safety and OSHA lock out/tag out • The door has provisions for padlocking • Enclosure door is interlocked with ON / OFF disconnect handle to prevent unauthorized access if disconnect is in the ON position <p>Features</p> <ul style="list-style-type: none"> • Optional partial system UPS provides clean uninterrupted power to the system computer, maintaining system integrity during power loss while also providing a solution to power quality problems • UL, cUL listed, and CE labeled • Supplied with low voltage, cover mounted Push to Stop, Twist to |

| Item No. | Qty | Description |
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| | | <p>Restore pushbutton and long-life LED pilot lights</p> <ul style="list-style-type: none"> • Provides overcurrent and short circuit protection with GE GuardEON solid-state circuit breakers • Suitable for use on systems with 25,000A of short circuit current. It is the installer's responsibility to verify that the available short circuit current is 25,000A or less for compliance to all electrical codes • Emergency-off disconnects power to both the PDU and optional partial system UPS output, per National Electric Code • Factory wired and tested • All devices are selected for high reliability and long life • Panel disconnect provides OSHA lockout / tag out provisions Remote EPO • This MDP comes with two normally closed contact blocks attached to the back of the emergency off push button. <p>Seismic Specifications</p> <ul style="list-style-type: none"> • This Panel has been certified by an independent California structural engineer in conformance with the shake testing requirements of ICC-AC 156. The California OSHPD number is OSP-0457-10. • The seismic performance characteristics are as follows: SDS(g) # 2.56; z/h # 1.0 ; Ip # 1.5 <p>Physical Characteristics</p> <ul style="list-style-type: none"> • Dimensions: Height x Width x Depth: 30 x 16 x 8 inches (762 x 407 x 203 mm) • Handle depth: 2.75 inches (70 mm) • Weight: 55 pounds (25 kg) <p>Components supplied with each panel</p> <ul style="list-style-type: none"> • The Main Disconnect and UPS Control Panel • An Installation, Operations & Service Manual • (2) sets of Emergency Power Off pushbuttons with 2NC on each EPO • Drawings and Electrical Schematics |
| 14 | 1 | OCS III Mounting Plate |
| | | OCS III Mounting Plate |

| Item No. | Qty | Description |
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| 15 | 1 | <p>MEDRAD Stellant D DualFlow ISI-ready on ceiling mount (58cm post length) with Certegra Workstation</p> <p>GE Healthcare now offers the Medrad Stellant D injector with Certegra workstation. The dual syringe CT injection system is reliable and easy to use. It features saline flush and DualFlow capabilities allowing users to test vein accesses with saline, and prime patient tubing with saline to save contrast.</p> <p>Medrad Stellant D CT Injection System users are armed with:</p> <ul style="list-style-type: none"> • Automation features to help maximize throughput: integrated auto load, auto retract, auto prime and auto syringe sensing • Save up to 250 protocols • Quick, easy install and detachment • Check for air confirmation button and arming on the injector head • Pressure monitor graph and flow profile preview • Up to 6 phases including pause and hold capabilities • Programmable pressure limit • Colour touch screen • Either ceiling counterpoise or pedestal-mount configurations <p>Certegra Workstation</p> <p>From study set-up and preparation to study administration and results management, the Certegra Workstation serves as a workflow-centralized technologist interface to help users enhance efficiencies and patient care, enabling options such as P3T 2.0 (Personalized Patient Protocol) software environment.</p> <p>The benefits of DualFlow (simultaneous injection of contrast and saline)</p> <ul style="list-style-type: none"> • Provide more uniform attenuation of the right and left ventricles • Minimize artefacts by achieving proper attenuation levels • Visualize the right coronary arteries and right ventricles in a single study by achieving more uniform attenuation <p>Ceiling-mount configuration includes:</p> <ul style="list-style-type: none"> • Dual injector head on Overhead Ceiling Counterpoise • Syringe heat maintainer |

| Item No. | Qty | Description |
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| | | <ul style="list-style-type: none"> • Certegra Workstation with USB drive • DualFlow software • ISI-ready software to accept ISI900G integrated injector option† • Base control unit • 22.8 m (75 ft) head extension cable • 7.6m (25 ft) base to display cable • Power cord, North America • Power cord, international • Product information package • Operations manual • Installation, customer’s operational training at time of installation, and one year full on-site warranty in Bayer service countries <p>System Specifications</p> <ul style="list-style-type: none"> • Flow Rate (range & increments): 0.1 to 10 ml/sec in 0.1 ml increments • Volume (range & increments): 1 ml to syringe capacity in 1 ml increments • Programmable Pressure Limit 200 ml syringe: 325 psi, 2241 kPa • Scan delay: 0-300 seconds (5 minutes) in 1 second increments • Pause: 1-900 seconds (15 minutes) in 1 second increments • Hold: maximum HOLD time is 20 minutes • Syringes (volume capacity): 200 ml sterile disposable syringe • Number of phases: 6 • Number of protocols: 250 • Electrical Requirements (VAC/Hz): 100-240 VAC, 50/60 Hz • Syringe Heat Maintainer Range: 35 °C +/-5, 95 °F +/-9 • Dual Injector Head: 15.5 cm (6.1”) H x 30.7 cm (12.1”) W x 36.8 cm (14.5”) D, 8.1 kg (17.0 lb) without syringe • Certegra Workstation (CWS): 34.2 cm (13.5”) H x 40.0 cm (15.8”) W x 30.0 cm (10.2”) D, 8.0 kg (17.6 lb) • Base Unit: 29.2 cm (11.5”) H x 27.9 cm (11.0”) W x 22.2 cm (8.8”) D |

| Item No. | Qty | Description |
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| 16 | 1 | <p>MEDRAD P3T 2.0 Abdomen option for Stellant Certegra workstation</p> <p>Certegra P3T 2.0 Abdomen option is a contrast-injection that automates personalized contrast dosing at the point of care.</p> <ul style="list-style-type: none"> • Save/recall Certegra P3T 2.0 software protocols in protocol manager • Create protocol pre-sets based on radiologist preferences • Enables generation of individualized contrast injection protocols, customized to the patient • Increases consistency of individualized protocols amongst clinicians |
| 17 | 1 | <p>MEDRAD P3T 2.0 Pulmonary Angiography (PA) option for Stellant Certegra workstation</p> <p>Certegra P3T 2.0 PA option is a contrast-injection that automates personalized contrast dosing at the point of care.</p> <ul style="list-style-type: none"> • Save/recall Certegra P3T 2.0 software protocols in protocol manager • Create protocol pre-sets based on radiologist preferences • Enables generation of individualized contrast injection protocols, customized to the patient • Utilizes the power of DualFlow technology (simultaneous injection of contrast and saline) to obtain functional cardiac data • Increases consistency of individualized protocols amongst clinicians • Certegra P3T 2.0 (PA and Cardiac) Software are used for CT angiography of cardiac structures, coronary arteries, chambers of the heart, thoracic and abdominal aorta, and pulmonary vasculature |
| 18 | 1 | <p>TABLE SLICKER FOR CT REVO</p> <p>The GEHC Revolution CT table slicker is specifically designed to maximize contaminant protection. Manufactured to be used in conjunction with the table restraining belts, this slicker adds versatility to your CT procedures. Latex free, it is strongly suggested that the slicker is cleaned with a water/bleach solutioj</p> |

| Item No. | Qty | Description |
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| | | <p>prior to every procedure.</p> <p>Features:</p> <ul style="list-style-type: none"> • Table gray cushion sealed in vinyl slicker Dimension 2403 x 788 • Table extender gray cushion sealed in vinyl slicker Dimension 406 x 788 • Cover for catheter bag hanger • Increase system uptime by protecting table from spills and particulate contaminants • Easy to install and comfortable for patients • Will not interfere with normal operation of CT table • Clear PVC plastic facilitates faster cleanup of blood and fluids • Prevents contaminant build up in hard to clean areas • Thermosealed seams and flaps • Recommended for trauma centers and sites concerned about exposure to blood and fluid-borne disease |
| 19 | 1 | <p>FOOT SLICKER FOR CT REVOL</p> <p>The GEHC Revolution CT Foot Switch slicker is specifically designed to maximize contaminant protection. Latex free, it is strongly suggested that the slicker is cleaned with a water/bleach solutioj prior to every procedure.</p> |
| 20 | 1 | <p>TiP CT Imaging Academy Training: Revolution CT GSI Upgrade Training Package (IB getting GSI Xstream Upgrade)</p> <p>TiP CT Imaging Academy Training: Revolution CT GSI Upgrade Training Package (IB getting GSI Xstream Upgrade)</p> <p>Training designed for customers that have a Revolution CT and have purchased the GSI Xstream upgrade. Training package includes training on GSI Xstream utilizing a variety of delivery mechanisms including 10 onsite days as well as online and remote training options and involves a blended approach for continuous learning and skill building.</p> <p>Key components include Preparation, Pre-Onsite, Onsite, and Ongoing Training.</p> <ul style="list-style-type: none"> • The Preparation component aligns the training plan with |

| Item No. | Qty | Description |
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| | | <p>customer specific needs and expectations. It includes discussion of a program overview and customized training options as well as staffing and scheduling and identification of IT needs and support.</p> <ul style="list-style-type: none"> • The Pre-Onsite component includes online self-paced prerequisite learning taken prior to and in preparation for onsite training. This will help build foundational knowledge to enable maximum engagement and retention during onsite training. Learners can immediately apply new concepts into clinical practice. • The Onsite component provides a structured GSI Xstream training agenda and a follow up agenda, both include hands on practice and additional protocol building. Several customized agenda options are available based on clinical specializations and advanced scanning designed to cater to staff competencies and desired outcomes. This component is delivered onsite by an experienced Clinical Applications Specialist. • The Ongoing component provides the opportunity for continued learning, anywhere and anytime, through virtual training sessions with GE experts, continued access to online training modules, reference guides and tutorials and non-emergency assistance via the Answerline. These resources will help to maintain clinical performance, continue to improve upon knowledge and competencies and ongoing development of skills. <p>Instruction is provided from 8 AM to 5 PM, Monday through Friday and includes T&L expenses. Program concludes two years after the initial start date.</p> |
| 21 | 1 | <p>CT TiP Training Package, 4.5 day TiP HQ Class Revolution CT - Tuition Only, Non Discountable</p> <p>CT TiP Training Package, Non Discountable 4.5 day CT course held in the Milwaukee area. Includes tuition only.</p> <p>This course is designed to introduce the technologist to the Revolution CT system.</p> <p>This training program must be scheduled and completed within 12 months after the date of product delivery.</p> |

| Item No. | Qty | Description |
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| 22 | 1 | <p>Standard Service License</p> <p>GE Healthcare has reclassified its service tools, diagnostics and documentation into various classes (please refer to the Service Licensing Notification statement at the beginning of this Quotation). The Standard License provides access to service tools used to perform basic level service on the Equipment and is included at no charge for the warranty period.</p> |
| | 1 | Technical Service Training |
| 23 | 1 | <p>CT Proficient Service Training</p> <p>CT Proficient Service Training</p> <p>CT Proficient technical training is a 9.5 day course and provides the knowledge and skills necessary to perform service tasks on GE CT systems. It is an integrated training program including instructor-led, hands on labs, and online training. The training provides an understanding of CT systems including safety, principles of CT, how to perform PMs, as well as some corrective maintenance and troubleshooting. Hands on lab activities provide the student the opportunity to practice, apply, and demonstrate their knowledge and service skills across GE CT platforms. Please visit http://www3.gehealthcare.com/en/education/product_education_-_tec or contact us at: edservices@ge.com</p> |
| 24 | 1 | <p>Troubleshooting Basics Service (web)</p> <p>Troubleshooting Basics Service (Web)</p> <p>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.</p> |
| 25 | 1 | NETWORKING & DICOM BASIC |

Item Qty
No.

Description

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.

Toshiba Aquilion 64

TRADE-IN FOR OPTION 1:

MFR: TOSHIBA

MODEL: AQUILION 64

EE#: 26402

S/N: jda0992146

ACQUISITION DATE: 7-21-10

Options

(These items are not included in the total quotation amount)

| Item No. | Qty | Description |
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| 26 | 1 | <p>HyperDrive on Revolution CT</p> <p>HyperDrive is an unmatched high pitch scan mode on Revolution CT that combined wide coverage acquisition with high pitch helical techniques to achieve speeds up to 437mm/s with uncompromised 50 cm field of view and image quality. This additional scan mode is especially beneficial in trauma or pediatrics environments.</p> |
| 27 | 1 | <p>Uninterruptible Power Supply for CT systems</p> <p>Un-Interruptible Power Supply</p> <p>Un-interruptible power supply provides 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.</p> <p>This UPS also:</p> <ul style="list-style-type: none">- 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. <p>This is compatible with the Revolution Frontier, Revolution HD, Revolution CT, Discovery CT 750HD and LightSpeed VCT systems.</p> |