

VAMC ALBUQUERQUE, NM  
PO# 501-B30031

## Symbia S-Series

All items listed below are included for this system: (See Detailed Technical Specifications at end of Proposal.)

Qty	Item Description
1	<b>Symbia S Series</b> The Symbia S is a dual variable SPECT camera that can be field upgraded to TruePoint SPECT•CT.
1	<b>Symbia S</b> The Symbia S is a variable angle dual detector emission imaging system with a pass through open gantry design for fast data acquisition to achieve high patient throughput during SPECT, Whole Body and general purpose procedures or optimized Cardiac SPECT applications. The Symbia S can be upgraded to one of the Symbia T Series TruePoint SPECT•CT models, T, T2, T6 or T16.
2	<b>3/8" Hi-Resolution Detector</b> The high resolution, digital detector assembly includes a .95 cm (3/8 in.) thick NaI (TI) crystal.
1	<b>Detector Support with Caudal Tilt</b> Caudal tilt on Detector 2 allows for precise positioning of static and dynamic acquisitions.
2	<b>Low_Energy_Hi_Res Collimator Symbia</b> Low energy (140 keV), high resolution, parallel hole collimator
2	<b>Medium Energy Collimator Symbia</b> Medium energy (300 keV), parallel hole collimator
2	<b>High Energy Collimator Symbia.</b> High energy (364 keV) parallel hole collimator
1	<b>Pinhole Collimator Symbia</b> Pinhole collimator with a 4mm aperture
1	<b>6MM APERTURE</b> The 6 mm aperture is a high sensitivity insert for the pinhole collimator.
1	<b>8 mm aperture</b> The 8 mm aperture is a high sensitivity insert for the pinhole collimator.
1	<b>Productivity Package</b> B-Text The productivity package automates collimator exchange and quality control to improve the productivity of the Symbia S and Symbia T camera systems.
1	<b>AQC Web Based Training</b> AutoQC web based training is available on the Siemens training website.

<b>Qty</b>	<b>Item Description</b>
1	<b>AutoQC Source Registration Kit</b> Source registration kit for Symbia Automatic Quality Control option. This kit contains information on updating site radioactive materials license, contact information for source vendor, and user instructions.
1	<b>AutoQC source kit</b> This source kit contains includes 1 - Gd-153 line and 1 - Co-57 point source required for the automatic quality control option.
2	<b>Symbia Collimator Cart</b> The collimator cart is designed to hold extra collimators and allows collimator exchange without removing the bed.
1	<b>Internal ECG for Symbia</b> The internal ECG gating system provides ECG triggering for the nuclear subsystem for nuclear cardiology examinations. In addition, for Symbia T2, T6, and T16 cameras, the internal ECG gate provides ECG triggering to the CT subsystem for CT applications that require ECG gating. The ECG gate is built into the Symbia patient bed and is controlled by the Symbia acquisition workplace. The leads connect near the head of the patient bed and travel with patient, thus never interfering with scanning. The ECG waveform is displayed on the touch-screen Patient Positioning Monitor.
1	<b>PHS Extended Pivot</b> The PHS extended pivot option extends the range of pivot for the patient bed in gurney mode.
1	<b>Under Floor PHS Cable SPECT</b> This option includes a kit for installing the cable between patient bed and the Symbia S gantry under the floor.
1	<b>Extra Hand Controller</b> Provides an extra hand controller for the Symbia S scanner.
1	<b>Monitor: 19 inch LCD</b> The 19" LCD Monitor is an economic monitor solution
1	<b>Organ Processing for Symbia</b> This upgrade will add organ processing capabilities to your acquisition workplace.
1	<b>Remote Diagnostic Services</b> Remote Diagnostic Services. A broadband connection is required for full remote diagnostic functionality and optimal system uptime.
1	<b>Symbia S US Installation</b> This option includes the mechanical installation of the Symbia S scanner.
1	<b>Cardiology Engine Cedars</b> The Cardiology Engine Cedars assists in the diagnosis and quantitative assessment of coronary artery disease by enabling the visualization of SPECT studies as well as quantified perfusion assessment.
1	<b>Reconstruction Engine</b> The Reconstruction Engine provides the ability to shorten SPECT and Planar acquisition times with optimized workflows based on Siemens' innovative Flash reconstruction techniques. This engine is suited to provide the best reconstruction for SPECT-only scanners.
1	<b>English Cedars Lang Kit</b>
1	<b>English Cedars Lang Kit</b>
1	<b>4Quadrant Phantom for SymbiaS/T/Intevo</b> A 4 quadrant 2.0-2.5.30.3.5 mm standard pattern slightly modified for use with the e.cam and Symbia Imaging Systems

<b>Qty</b>	<b>Item Description</b>
1	<b>Initial onsite training 32 hrs</b> Up to (32) hours of on-site clinical education training, scheduled consecutively (Monday - Friday) during standard business hours for a maximum of (4) imaging professionals. Training will cover agenda items on the ASRT approved checklist. Uptime Clinical Education phone support is provided during the warranty period for specified posted hours. This educational offering must be completed (12) months from install end date. If training is not completed within the applicable time period, Siemens obligation to provide the training will expire without refund.
1	<b>MI SPECT Project Management</b> A Siemens Project Manager (PM) will be the single point of contact for the implementation of your Siemen's equipment. The assigned PM will work with the customer's facilities management, architect or building contractor to assist you in ensuring that your site is ready for installation. Your PM will provide initial and final drawings and will coordinate the scheduling of the equipment, installation, and rigging, as well as the initiation of on-site clinical education.
1	<b>Additional onsite training 16 hours</b> Up to (16) hours of on-site clinical education training, scheduled consecutively (Monday - Friday) during standard business hours for a maximum of (4) imaging professionals. Training will cover agenda items on the ASRT approved checklist if applicable. This educational offering must be completed (12) months from date of purchase order. If training is not completed within the applicable time period, Siemens obligation to provide the training will expire without refund.
1	<b>Initial onsite training 32 hrs Gov Offse</b>
1	<b>English Symbia S Lang Kit</b>

#### **Incidental Services Associated with this Quotation:**

One complimentary biomedical tuition is included with the purchase of this system. This training must be completed before the end of the warranty period.

SPECT ELEVATE BONUS PROMO Elev Symbia S 1 G48

Offset Part 10118811 English Symbia S Lang Kit

Offset Part 10182968 English Cedars Lang Kit

XX2SYNGO – syngo with Multimodality Workstation 5 Days

XX1RADSFVC- (8 Hrs) virtual radiation - Our NC RAM license requires that attendees have 8+hrs of Radiation Safety training within the last 3 yrs.

MI1SPEESSE- Service Essentials for Specht 5 Days

MI2ESOFTWS-ESOFT WORKSTATION 4 days

MI2SYMBIA SYMBIA Gantry Class 13 Days

Lodging for Complimentary Biomedical Training for one engineer for 26 nights

Airfare for Complimentary Biomedical Training for one engineer from ABQ  
- RDU for 3 roundtrips

Lodging for Additional Biomedical Training for one engineer for 26 nights

Airfare for Additional Biomedical Training for one engineer from ABQ -  
RDU for 3 roundtrips

Lodging for Service Essentials Biomedical Training for 2 engineers for 10  
nights

Airfare for Service Essentials Biomedical Training for 2 engineers from  
ABQ - RDU for 2 roundtrips

# Detailed Technical Specifications

## Symbia S-Series

/ Product	Description
Symbia S	<p>The Symbia S has the following features:</p> <ul style="list-style-type: none"><li>- Gantry</li><li>- Patient Bed</li><li>- Acquisition Workplace</li><li>- SPECT Acquisition Features</li></ul> <p><b><u>Gantry</u></b></p> <p>Variable Angle, open design with 102 x 78 cm (40.2 x 30.7 in) patient opening. The two High Definition Digital SPECT detectors can be configured at 76° or 90° for cardiac applications and at 180° for all other whole body and general protocols. Optional caudal tilt of one detector allows for optimum detector positioning of static and dynamic acquisitions. The contemporary design of the gantry incorporates Siemens-typical design elements like translucent cover materials and a fresh stripe décor. The unobstructed gantry base permits planar imaging of seated and standing patients and patients on wheelchairs, or on standard imaging tables, gurneys and hospital beds.</p> <p>The gantry supports circular orbits and non-circular orbits using autocontour. Autocontour, with infrared real-time body contouring, is a standard component which minimizes patient to collimator distance to 1.2 cm (0.45 inches) in Whole Body and SPECT non-circular orbit acquisition modes.</p> <p>All motorized motions of the patient bed, gantry and detectors are controlled from the hand controller which can be plugged into either side of the gantry.</p> <p>The Patient Positioning Monitor (PPM) is a touch screen flat panel display monitor which can be rotated for a wide range user access and visibility. It is used for the following functions:</p> <ul style="list-style-type: none"><li>- Patient Positioning with window and persistence adjustment</li><li>- Acquisition Parameter display (elapsed time, time remaining, view number, count rate, etc.)</li><li>- Camera Information (detector and bed positions)</li><li>- Gantry Control (reconfiguration, collimator change, offset zoom)</li></ul> <p><b><u>Patient Bed</u></b></p> <p>The patient-oriented design of the imaging bed consists of 35.6 cm (14 inch) wide and 3 mm (0.102 inch) aluminum pallet, supporting patient weights up to 227 kg (500 lbs). Minimum bed height is 53 cm (21 inches) for easy patient access. Programmable table positions for wheelchairs and gurneys minimize the transport efforts of patients and staff. Integrated rulers on each side of the patient bed, allow for quick whole body set up. The patient bed can easily removed for rail-free access of sitting/standing patients, wheelchairs, imaging tables, gurneys and hospital beds.</p> <p>A fully integrated source holder is provided for quick and convenient quality control.</p> <p>Since patient comfort plays an important role in high quality medical imaging, the Symbia S comes equipped with the following comfort accessories:</p> <ul style="list-style-type: none"><li>- a head holder to support and stabilize the head during brain SPECT examinations</li><li>- a SPECT armrest to support upper arms and hands during SPECT examinations</li><li>- a whole body armrest to support the arms and keep them within the detector field of view during whole body examinations</li></ul>

/ Product	Description
<p><i>(Continued)</i></p> <p><b>Symbia S</b></p>	<ul style="list-style-type: none"> <li>- a set of patient support straps to help patient lie still on bed</li> </ul> <p><b><u>Acquisition Workplace</u></b></p> <p>The syngo-based high performance acquisition workstation provides a wide range of clinical acquisition protocols utilizing a graphical user interface, keyboard and mouse.</p> <p><b><u>Hardware:</u></b></p> <ul style="list-style-type: none"> <li>- Single Quad-Core 3.2 GHz Xeon CPU</li> <li>- 8 GB RAM</li> <li>- 2 X 500 GB SATA Hard Drives</li> <li>- Integrated DVD-R RW</li> <li>- Workflow-based Architecture</li> </ul> <p><b><u>SPECT Acquisition Features</u></b></p> <p><b>SPECT Acquisition Modes:</b></p> <ul style="list-style-type: none"> <li>- Planar static and dynamic</li> <li>- Whole Body</li> <li>- SPECT, gated, non-gated or both</li> <li>- Dynamic SPECT</li> <li>- Whole Body SPECT</li> </ul> <p><b>Workflow Features:</b></p> <p>The system combines acquisition, post-processing (optional), and display into user customizable workflows that automate many of your clinical routines. Besides remembering and storing your parameters for each clinical protocol, the workflow will automatically print, archive, and distribute your results to other devices on your network.</p> <p><b>Quality Control:</b></p> <p>Use the automatic and manual motion correction features of the system to aid you in the quality of your acquired images. Besides motion correction, you can beat normalize your gated studies and create quality control images such as sinograms and linograms to document your results.</p> <p><b>3D Orientation:</b></p> <p>Reorient your acquired SPECT volumes interactively to achieve the desired patient position. Cardiac and general orientations are supported. If desired, the orientation applied to one volume can be automatically applied to up to 3 additional volumes.</p> <p><b>Image Registration:</b></p> <p>Multiple techniques are available for accurate registration of your acquired images. Interactive, manual translations and rotations in all 3 planes provides a good foundation for good registration. The optional automatic registration technique can often assist you in those hard to register cases. A landmark registration feature rounds out the available techniques. Triple registration and the choice of output matrix size are also standard features.</p> <p><b>Reconstruction:</b></p> <p>The reconstruction engine supports up to 5 multi-isotope studies concurrently. Standard SPECT as well as wholebody, dynamic and gated cardiac volumes can be created.</p>
<p><b>3/8" Hi-Resolution Detector</b></p>	<p>The Symbia utilizes energy independent high definition digital detectors.</p> <p>Detector assembly technical specifications:</p> <ul style="list-style-type: none"> <li>- True rectangular FOV of 38.7 x 53.3 cm (15.25 x 21 in.)</li> <li>- 59 photomultiplier tubes – 53, 7.6 cm (3 in.) and 6, 5.1 cm (2 in.) diameter tubes</li> <li>- .95 x 59.1 x 44.5 cm (3/8 x 23 x 17.4 in.) NaI (TI) crystal material</li> </ul> <p>The HD Detector features include:</p>

/ Product	Description
<p><i>(Continued)</i></p> <p><b>3/8" Hi-Resolution Detector</b></p>	<ul style="list-style-type: none"> <li>- Balanced performance between energy resolution and spatial resolution</li> <li>- One, 10-bit high-speed flash ADC per PMT</li> <li>- Variable PMT selection ensures high resolution for all multi-energy and multi-peak applications</li> <li>- Optimized dynamic digital integration time to improve high count rate capability</li> <li>- Individual PMT pile-up correction for improved performance at high count rates</li> <li>- Energy independence maintains clinical performance at all energies including multi-peak and dual isotope studies</li> <li>- Location independence maintains consistent spatial resolution across the field of view</li> <li>- Crystal variation correction for optimal uniformity and linearity across all energies</li> <li>- Single source (Co-57 or Tc-99m) tunes the detector for all energies</li> </ul>
<p><b>Low_Energy_Hi_Res Collimator Symbia</b></p>	<p>The low energy high resolution collimator has the following technical specifications:</p> <ul style="list-style-type: none"> <li>- 148,000 hexagonal holes</li> <li>- Sensitivity: 202 cpm/microCurie</li> <li>- Resolution: 7.5mm at 10 cm</li> <li>- Weight: 22 kg (49 lbs)</li> </ul>
<p><b>Medium Energy Collimator Symbia</b></p>	<p>The medium energy collimator has the following technical specifications:</p> <ul style="list-style-type: none"> <li>- 14,000 hexagonal holes</li> <li>- Sensitivity: 275 cpm/microCurie</li> <li>- Resolution: 12.5 mm at 10 cm</li> <li>- Weight: 64 kg (140 lbs)</li> </ul>
<p><b>High Energy Collimator Symbia.</b></p>	<p>The high energy collimator has the following technical specifications:</p> <ul style="list-style-type: none"> <li>- 8,000 hexagonal holes</li> <li>- Sensitivity: 135 cpm/microCurie</li> <li>- Resolution: 13.4 mm at 10 cm</li> <li>- Weight: 125 kg (275 lbs)</li> </ul> <p>Due to the weight of these collimators, it is recommended that an individual collimator cart containing only the 2 high energy collimators be utilized.</p>
<p><b>Pinhole Collimator Symbia</b></p>	<p>The pinhole collimator with 4 mm aperture has the following technical specifications:</p> <ul style="list-style-type: none"> <li>- 1 round hole</li> <li>- Sensitivity: 123 cpm/microCurie for 99m Tc</li> <li>- Resolution: 6.6 mm at 10 cm</li> <li>- Weight: 80 kg (177 lbs)</li> </ul> <p>SPECT imaging with a pinhole collimator is not allowed.</p> <p>The pinhole collimator occupies the upper 2 locations on a collimator cart; Therefore, only an additional 2 collimators (1 pair) can be stored on the same cart.</p>
<p><b>6MM APERTURE</b></p>	<p>The 6 mm aperture has the following technical specifications:</p> <ul style="list-style-type: none"> <li>- Sensitivity: 271 cpm/microCurie for 99m Tc</li> <li>- Resolution 9.5 mm at 10 cm</li> </ul>
<p><b>8 mm aperture</b></p>	<p>The 8 mm aperture has the following technical specifications:</p> <ul style="list-style-type: none"> <li>- Sensitivity: 478 cpm/microCurie for 99m Tc</li> <li>- Resolution: 12.5 mm at 10 cm</li> </ul>

/ Product	Description
<b>Productivity Package</b>	<p>The productivity package includes the following features:</p> <ul style="list-style-type: none"> <li>- Integrated Collimator Changer</li> <li>- Automatic Collimator Exchange</li> <li>- Automatic Quality Control</li> </ul> <p><b>Integrated Collimator Changer</b></p> <p>Innovative collimator exchange system that is mounted beneath the patient bed. Saves time and effort when changing the most frequently used collimators. Holds two sets of low or medium energy collimators.</p> <p><b>Automatic Collimator Changer</b></p> <p>Fully automated changing of collimators within the integrated collimator changer. Collimator removal or exchange is initiated from the patient positioning monitor.</p> <p><b>Automatic Quality Control</b></p> <p>Automatic quality control is performed via self-shielding Gd-153 line and Co-57 point sources. The sources are housed in the patient bed and are extended automatically as part of the camera's quality control procedures. The daily, weekly, and monthly procedures are customer scheduled and performed automatically without manual intervention.</p>
<b>AutoQC source kit</b>	<p>The useful life of the 370 MBq (10 mCi) Gd-153 line, used for daily extrinsic floods and monthly multi-head registration procedures, is 2 years. The useful life of the 1.85 MBq (50 µCi) Co-57 point, used for intrinsic floods, is 1 year.</p> <p>Sources that have been replaced are returned to the source vendor for disposal. Return shipment costs are not included in the purchase price.</p>
<b>Symbia Collimator Cart</b>	<p>The collimator cart is automatically clamped to the patient bed once positioned by the user. The clamping mechanism allows precise collimator exchange to occur.</p> <p>The collimator cart is designed to hold 2 sets of collimators, or 1 set in combination with a pinhole collimator.</p> <p>Due to the weight of the high energy collimators, it is recommended that an individual collimator cart containing only the 2 high energy collimators be utilized.</p>
<b>PHS Extended Pivot</b>	<p>The extended pivot opens the range from 40 degrees to 45 degrees to allow better handling of wide hospital beds.</p>
<b>Under Floor PHS Cable SPECT</b>	<p>This option does not include the cost of any room modifications for sub-floor installation of the cable.</p>
<b>Extra Hand Controller</b>	<p>The Symbia S scanner comes standard with a single hand controller that can be plugged into either side of the gantry. This option adds an additional hand controller for added efficiency in accessing the motorized motions for the patient bed, gantry, and detectors.</p>
<b>Monitor: 19 inch LCD</b>	<p>The Monitor: 19 in. LCD technical features are:</p> <ul style="list-style-type: none"> <li>- 19" active display</li> <li>- Optimal picture resolution of 1280 x 1024</li> <li>- Anti-glare panel surface</li> <li>- Up to 170 degree viewing angle</li> </ul>
<b>Organ Processing for Symbia</b>	<p>Organ processing provides generic tools for the manipulation of NM images. In addition, it provides dedicated processing protocols for the many different types of exams performed in nuclear medicine departments. Features provided are:</p>



/ Product	Description
<p><i>(Continued)</i></p> <p><b>Organ Processing for Symbia</b></p>	<ul style="list-style-type: none"> <li>- Cardiac: Planar Gated Blood Pool, First Pass, Shunt</li> <li>- Lung: Perfusion, Ventilation, V/Q</li> <li>- Thyroid</li> <li>- Renal: GFR, ERPF, MAG3, Transplant, TER, Ace Inhibitor</li> <li>- Gastric</li> <li>- Hepatobiliary</li> <li>- Brain: Patlok, Lassen, IMP, IMP-ARG, NIMS</li> <li>- GSA Liver</li> <li>- Parathyroid: Scaled subtraction</li> <li>- Image manipulation tools: Series Filter, Series Arithmetic, Series Reformat, and Series ROI and Curve</li> </ul>
<p><b>Remote Diagnostic Services</b></p>	<p>A broadband connection is required for full remote diagnostic functionality and optimal system uptime. The Remote Diagnostic Services option allows for remote access to your networked workstations. This service includes all the necessary hardware, software and configuration required to access your equipment remotely for the purposes of remote diagnostics. Features include:</p> <ul style="list-style-type: none"> <li>- Image Transfer</li> <li>- Access to automatic Virus Protection updates</li> <li>- Error log retrieval</li> <li>- Remote Workflow revisions</li> <li>- Remote configuration</li> <li>- License management</li> <li>- Remote workstation control via netmeeting</li> </ul>
<p><b>Symbia S US Installation</b></p>	<p>Installation includes:</p> <ul style="list-style-type: none"> <li>- Complete system assembly</li> <li>- Alignment</li> <li>- System startup</li> <li>- Calibrations</li> <li>- Performance verification to factory specifications</li> </ul>
<p><b>Cardiology Engine Cedars</b></p>	<p>The Cardiology Engine provides the Cedars Cardiac SPECT Suite, a comprehensive set of quantitation programs for the evaluation of SPECT Myocardial Perfusion Imaging</p> <p>The engine calculates a comprehensive set of cardiac parameters including ejection fractions, volumes, wall motion including right ventricular free wall motion in QBS, wall thickening, perfusion (%). QPS allows for the quantitation of prone SPECT data and of serial perfusion changes. Both 20 and AHA-17 segment scoring models are available. In addition to calculating an Eccentricity Index, QGS also calculates a more regional measure of LV shape known as the Shape Index. Displays include gated slices with contours, a motion frozen display which results in better resolution and contrast by eliminating motion of the cardiac cycle, interactive 3D images, and polar maps. Manual over-ride of contours and DICOM compatible output are additional features. Outputs include DICOM secondary capture files, result files as well as the ability to generate an AVI file format. The Cedars application is an OEM product developed and supported by Cedars Sinai.</p> <p>Applications include: Cedars SPECT Suite</p>
<p><b>Reconstruction Engine</b></p>	<p>The Reconstruction Engine includes a three dimensional iterative reconstruction method with resolution recovery and scatter correction. It also includes statistics-based adaptive de-noising and de-blurring of planar images and longitudinal whole body bone scans. It can be used to shorten the acquisition time of planar images, bone scans or SPECT studies without loss in image quality. This reconstruction method can also improve overall image quality with better contrast, higher resolution, and decreased image noise when used to reconstruct full-time studies. This packages provides syngo MI Workflows with half-time acquisition parameters and optimized reconstruction settings and filters, specifically designed to acquire whole body SPECT scans in the time of a conventional whole body bone scans and to increase the scan speed of whole body bone scans to shorten scan time.</p> <p>Applications include: Flash3D and Scatter Correction for general and cardiac exams as well as Planar ½ Time Imaging.</p>