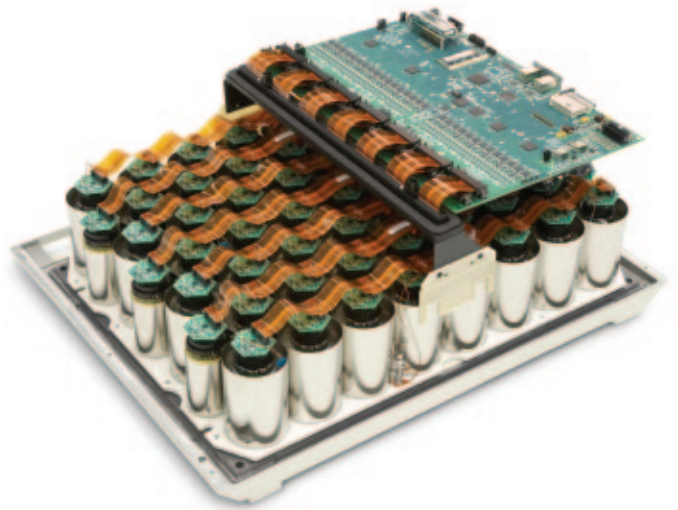# Symbia TruePoint SPECT•CT

Working For You

SIEMENS

Work with confidence.

What does it mean to work with confidence? It's clarity—not only image clarity but the clarity of mind you can obtain from viewing images in which you have the highest measures of clinical certainty. Symbia ensures this clarity through its advanced HD detector, innovative bed design, BiCORE™ collimators with AUTOFORM® technology, and Flash reconstruction, and full diagnostic multislice CT capability. Additionally our global service network provides you the reliability you need to operate your practice with confidence.
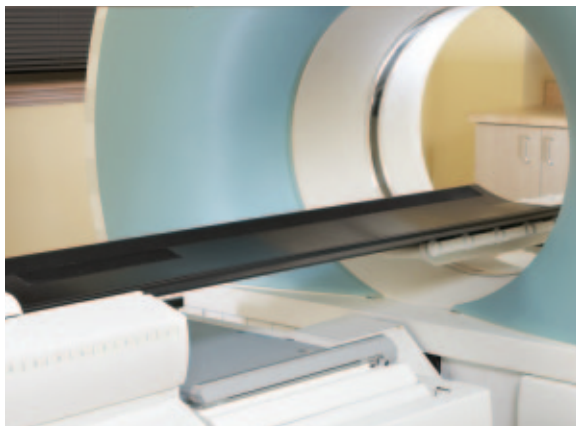
HD Detectors

Symbia's latest HD Detector technology offers outstanding and consistent image quality. The energy independent response of the highly integrated detector electronics eliminates isotope-specific floods. Real time corrections and individual photomultiplier tuning further minimize scheduled system calibrations and user interaction. Together with Siemens' AUTOFORM collimators Symbia has the industry's highest sensitivity, enabling more counts and better image quality.

UFC Detectors

Our proprietary Ultra-fast Ceramic (UFC) CT detector uses superior X-ray absorption, high light output and very short afterglow properties to produce stunning CT image quality. Compared to other detector materials, UFC has a much faster decay reaction, which enables the detector to measure more incoming photons per unit of time and contributes to improved image quality. This property, in combination with the short afterglow of UFC, allows very fast CT rotation times without an increase in image noise.

Innovative Bed Design

With its ultra-thin imaging pallet, the patient bed is not only easy for you to use, it is comfortable for your patients. The bed uses a 15 mm (0.6 in) thick carbon fiber pallet for minimal attenuation of the SPECT data and CT transmission X-ray and together with the indexing rear support can help to eliminate registration errors for patients weighing up to 227 kg (500 lb). A complete set of arm and head rests provides further patient comfort and easy positioning. In fact, the lowest bed position guarantees easy access even for patients with limited mobility.

Data courtesy of University of Erlangen, Erlangen, Germany

State-of-the-Art Reconstruction

A leading iterative SPECT reconstruction method, Flash significantly improves image quality. How? Reconstruction image fidelity depends on the accuracy of the physical models used in image formation. With *onco•*Flash and *cardio•*Flash, you benefit from higher spatial resolution, reduced distortion, and reduced artifacts. As a result, Flash images are more accurate and easier to interpret.

CARE Dose4D

The CARE Dose4D feature utilizes an advanced computing technique that provides real-time dose modulation of the X-ray tube current according to the precise shape of the patient's body during both spiral and sequential scanning. CARE Dose4D uses the topogram to determine the optimum base level mA. It then automatically adjust the mA to reduce the dose for low attenuation views and increase the dose for views with higher attenuation angles. This provides patient dose reduction of up to 68 percent.

Support You Can Rely On

Clinical confidence goes beyond working with trusted image quality. You not only need images you can believe in, you need a system you know will deliver them. Symbia systems combine the newest generation HD detector with an easy-to-use inter-face and control system to provide you with the reliability you need day in and day out.

Siemens Remote Service (SRS) enables our engineers to check your system status through full remote access. SRS can run remote diagnostics, download HD detector and control software, perform software fixes, and check virus protection. Monitoring and trending of key performance indicators allows proactive service planning. The result, Siemens Remote Service program offers a short mean time to repair, high first-time fix and remote-fix rates.

SureView

A patented solution for multislice CT scanning, SureView pro-vides exceptional image quality at any pitch setting. To acquire a scan, you simply select the scan volume (range), mAs, scan time, and slice width. All other parameters, such as pitch, are automatically calculated by the scanner, ensuring high quality imaging at any scanning speed. For spiral scanning, SureView yields a remarkably low image noise level. To produce the same noise level as sequential CT images, our spiral scan protocols are created with lower mAs and, therefore, can reduce doses by up to 20 percent. Specify the slice thickness according to your clinical needs, and SureView automatically provides the best image quality with reliable, excellent performance.

Accelerate your workflow.

Operational costs and workflow. Diagnosis and treatment. Time affects every aspect of your daily imaging from your patients' well-being to your staff's efficiency. Designed with these needs in mind, Symbia's automation and fast image acquisition enable you and your staff to perform at imaging speeds that may have been previously unattainable—which leads to the opportunity to provide faster patient diagnosis and treatment and to support increased patient volumes.

Integrated Collimator Changer

By integrating the collimator changer into the system, Symbia eliminates the need for a collimator cart by providing a storage area underneath the patient bed for both low and medium energy collimators. Initiated from the touch-screen patient positioning monitor, the integrated collimator changer (ICC) features automatic collimator attachment as well as robotic detector positioning.

ICC Benefits:
• Saves space
• Easy to use
• Eliminates risk of damage
• Faster changing
• Safe for the operator

Automated Collimator Changer

The automated collimator changer (ACC) provides a motorized collimator motion to the integrated collimator changer.

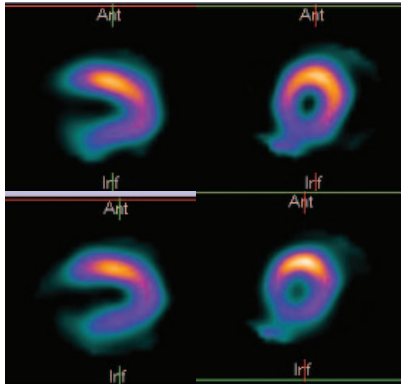**In addition to the ICC benefits, ACC provides the user:**
• More time to perform other tasks
• More scheduling flexibility

Internal ECG

Symbia's integrated ECG eliminates the need for a separate ECG box and monitor, so no additional space is needed for extra equipment. This further ensures a safer work environment by eliminating external wires.
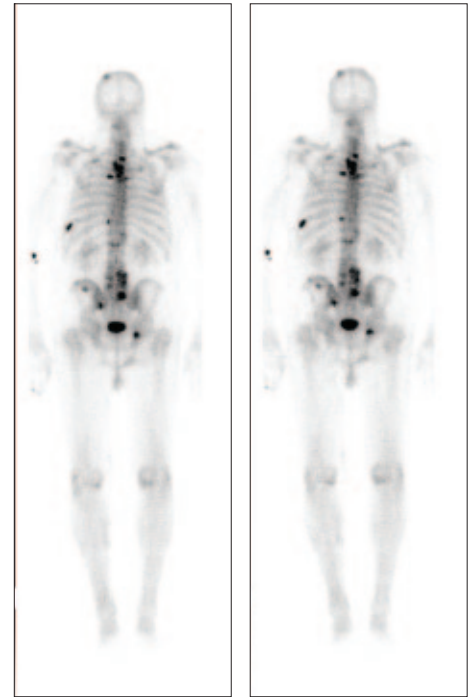
Full Time FBP

Half Time with *cardio*•Flash

Fast Image Acquisition

Imagine acquiring images in half the time or with half the injected dose while still obtaining quality as good as or better than full-time images or full-dose images reconstructed the conventional way. Is this possible? It is *onco*•Flash and *cardio*•Flash, key features of the Symbia system. Flash technology restores image quality from count-reduced patient scans acquired in less time or with lower injected dose. Perform planar, whole-body and SPECT studies with Flash and achieve better image separation, better resolution, and better contrast.

Half Time Whole-Body with onco•Flash

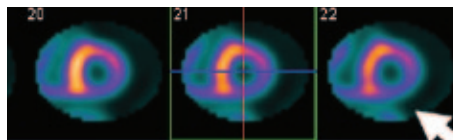**Full Time Whole-Body FBP**

Automated Quality Control

With automated daily, weekly, and monthly quality control (QC), you can take comfort in the knowledge that QC is performed routinely and consistently. Automatic Quality Control (AQC) automatically starts the specified QC tasks so they are finished before your first scheduled patient arrives. AQC uses built-in shielded sources: A point source for peaking and tuning, a line source for extrinsic flood, and a sleeve with five slits for center of rotation and multiple head registration. The process finishes with a report of the completed QC results and integrates with SRS.
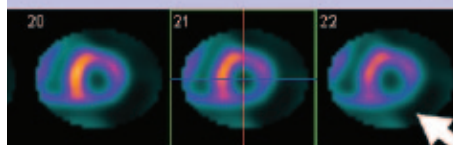
AQC Benefits:
- Reliable, consistently reproducible QC
- Performance trending
- Eliminated risk of spillage with open sources
- Operator dose reduction
- Remote Service Access monitoring to prevent unscheduled downtime

AC

Non AC

Attenuation Correction

Symbia's TruePoint SPECT•CT technology reduces exam time and motion artifacts. Less than 30 seconds is added to any SPECT study for accurate attenuation correction and to obtain diagnostic quality anatomical maps.
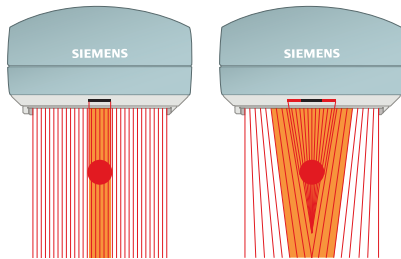
Accelerate your workflow.

IQ•SPECT – The World's First Intelligent SPECT Enabling the 5-Minute Cardiac Workup

With IQ•SPECT, you can get more information from the heart in 5 minutes than you'd get with a conventional SPECT in 20 minutes. Its dual **SMAR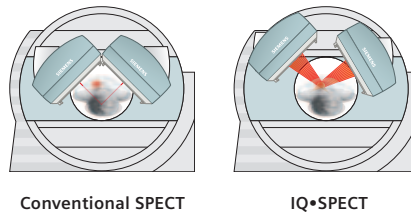T**ZOOM collimators work in tandem to track the heart and keep it in the sweet spot at all times so the acquisition can be quick and accurate, resulting in superb patient comfort and high throughput. IQ•SPECT's three core technlogies are:

Collimation	Acquisition	Reconstruction

Conventional SPECT   IQ•SPECT
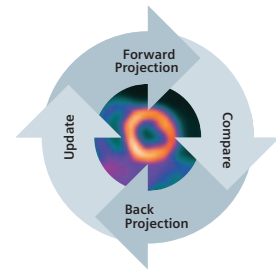
Forward Projection

Update

Compare

Back Projection

Collimators center on the heart, collecting up to 4 times more counts than parallel hole collimators. These collimators magnify the heart while still capturing counts from the entire body, so truncation is virtually eliminated.

IQ•SPECT's cardiocentric orbit is centered on the heart instead of the gantry's mechanical center. This ensures that the heart is always in the **SMART**ZOOM collimators' magnification area.

The Flash-based 3D iterative reconstruction algorithm models 48,000 collimator holes for virtually artifact-free image reconstruction.

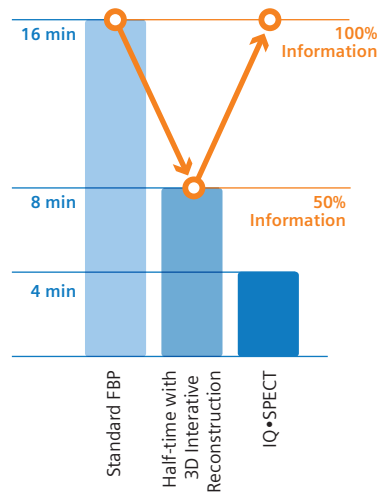## Intelligent because it gets more information faster

IQ•SPECT needs only 4 minutes for a full-count SPECT scan and just 60 seconds more for CT-based attenuation correction and calcium scoring. Its inventive **SMART**ZOOM collimators, placed in a cardio-centric orbit, collect maximum information from the heart in the least amount of time.

How about more counts in a fraction of the time?

Would you like more counts with reduced dosage?

Intelligent because it adapts to every situation today and tomorrow.

The intelligent technology intuitively adapts to various patient populations. Acquire full-count images four times faster or with significantly lower injected dose. This gives you the flexibility to adapt to current and future conditions concerning patients, throughput, and isotope supply.

IQ•SPECT is upgradeable for all Symbia S and T systems, so every Symbia can now have more IQ than ever before.

Fast, full count scans

IQ•SPECT delivers as many counts as a conventional full-time SPECT in 1/4th of the time.

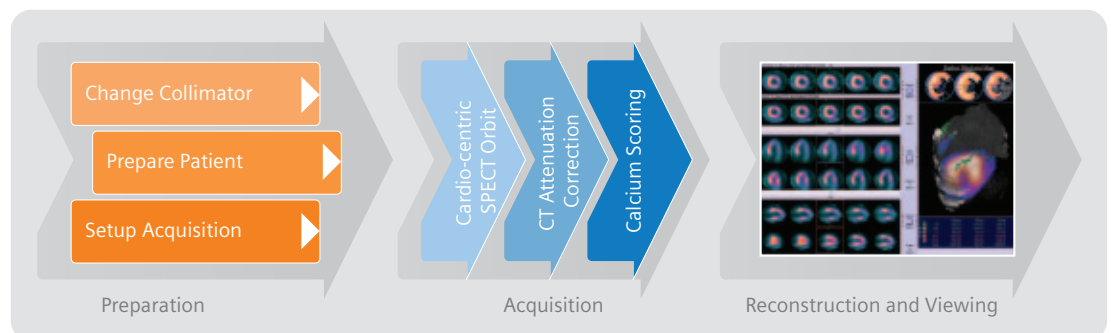| Regular SPECT				IQ•SPECT			
	DOSE	TIME	IMAGE QUALITY		DOSE	TIME	IMAGE QUALITY
Average	Full	16 minutes	Excellent		Full	4 minutes	Excellent
Pediatric	Half	16 minutes	Sub-Optimal		Half	8 minutes	Excellent
Obese	Full	16 minutes	Sub-Optimal		Full	8 minutes	Excellent

Adaptability for various patient populations

IQ•SPECT's short scan time minimizes motion artifacts and enhances patient comfort, resulting in excellent image quality for various patient populations. IQ•SPECT also provides the flexibility to adapt to challenging image situations, offering outstanding image quality for bariatric patients or for pediatric patients with low dosage.

Intelligent because it integrates seamlessly with your automated workflow.

IQ•SPECT is fully compatible with all of Symbia's industry-best, productivity features like automatic collimator changer and automatic quality control. It intelligently combines the newest technology with automatic image processing and display functions to give you superb convenience that is right at your fingertips and that fits into your workflow.

IQ•SPECT Workflow

Change Collimator
Prepare Patient
Setup Acquisition

Cardio-centric SPECT Orbit
CT Attenuation Correction
Calcium Scoring

Preparation   Acquisition   Reconstruction and Viewing
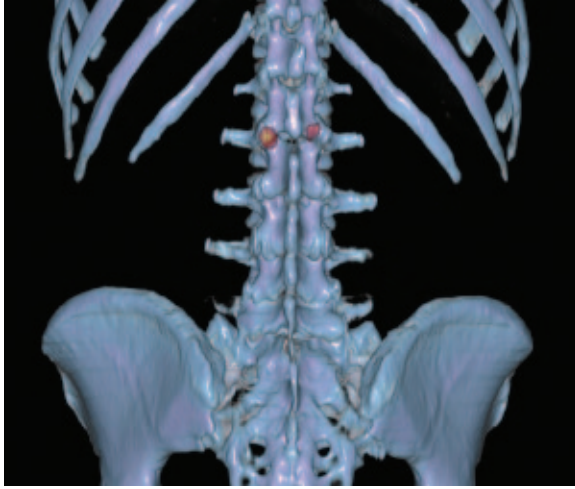
Experience versatility.

Confidence and speed can only take you so far. In the healthcare industry, the ability to do more with less is often a call to action for operational and departmental managers. To help, Symbia provides you with the clinical flexibility to manage your entire workflow, integrate and customize clinical applications, and easily upgrade to the next level of SPECT•CT imaging.

Imaging Obese Patients

Imaging bariatric patients can prove difficult on some equipment. Designed for patient comfort and quality images, Symbia offers a 227 kg (500 lb) patient weight limit, 70 cm (27.5 in) tunnel opening, and 200 cm (6 ft 7 in) maximum scan length—all of which enable you to image larger patients with ease. In addition, the patient bed lowers to a convenient 53 cm (21 in) for easy patient access even for patients with limited mobility.

Data courtesy of Centre Hospitalier Universitaire De La Cavale Blanche, Brest, France

Diagnostic CT

By providing both diagnostic CT and SPECT studies in a single system, Symbia makes exams easier on patients, preventing days or weeks of uncertainty as they wait for test results. Perform three different types of imaging studies—SPECT, multislice-CT, and SPECT•CT—to achieve 100% modality utilization. Acquiring multiple studies during one patient visit enhances therapy planning, speeds exam time, and increases comfort and convenience for patients. TruePoint SPECT•CT acquires CT data in less than 30 seconds—a fast scan time that reduces motion artifacts. The high quality of this CT data improves attenuation correction accuracy for cardiology as well as general SPECT applications while CARE Dose4D and special pediatric protocols allow you to minimize patient dose. SureView provides excellent image quality while minimizing patient dose. The potential to detect disease at its earliest stages, combined with unmatched workflow efficiency gives you an unparalleled combination.

Upgradeability

Siemens can upgrade your Symbia S to any TruePoint SPECT•CT model. You can also upgrade from one model of Symbia SPECT•CT to any of the higher performance models with more CT slices. So, regardless of where you start with Symbia, it can grow with your clinical needs and provide investment protection and non-obsolescence.

Detector Flexibility

To complete Symbia's full range of versatility, the detector heads easily rotate into numerous positions including caudal/cephalic tilt offering comprehensive imaging positions for general purpose, cardiology, oncology, and neurology studies. Together, these features enable faster set-up and image acquisition and make a whole range of otherwise difficult scans possible.
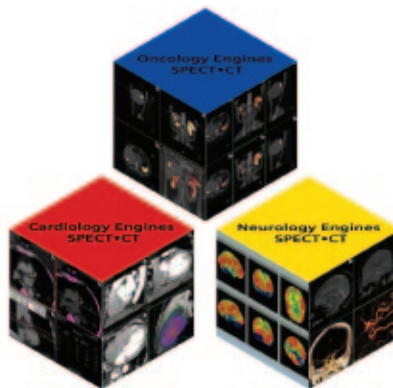
You can perform:
• Planar imaging of ambulatory, wheelchair, and gurney patients
• Cardiac SPECT on all patient sizes
• 180° whole-body and SPECT scans
• Imaging of thyroid, and small structures with pinhole collimator
• Outer room position for standing and sitting patients

Experience versatility.

syngo

An intelligent post-processing workplace, *syngo*®
integrates your entire workflow from order and
scheduling to imaging, viewing, reporting, and
distribution. This integration enables a high level of
interoperability, flexible staff use, shorter training,
and, ultimately, reduced costs. You can combine
multiple tasks into one and bring together all of the
solutions that are critical to you and your patients.
With easy access to all patient data from anywhere
and support for more than 50 different syngo
applications, you have the solution you need for
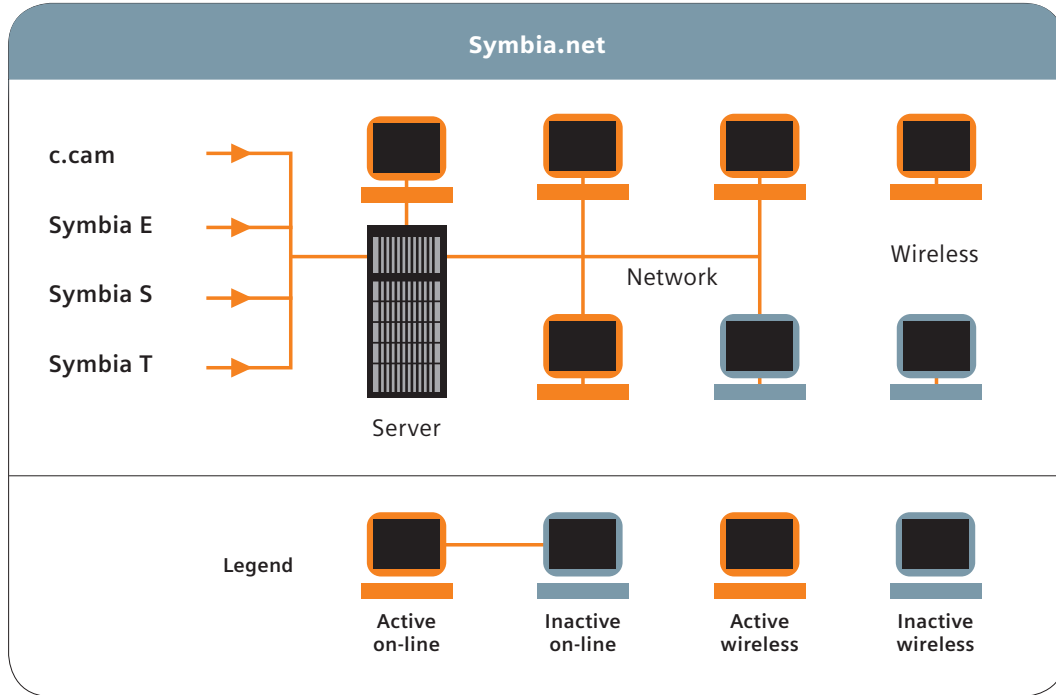diagnostic and therapeutic cycles.

Clinical Engines

Clinical engines are a unique combination of software
applications with a disease orientated focus. They
provide clinical workflows for oncology, cardiology
and neurology and each of these is available in three
levels of increasing functionality. Depending on your
patient volume you can mix and match ologies and
levels to meet your specific needs.

Symbia.net Clinical Workflow Server – Information Access Made Easy

Symbia.net is a cost-effective, client-server solution
for anywhere, anytime processing and reading of
SPECT and SPECT·CT studies.

Symbia.net

c.cam
Symbia E
Symbia S
Symbia T

Server

Network

Wireless

Legend

Active on-line | **Inactive on-line** | **Active wireless** | **Inactive wireless**

Symbia.net is ideal for hospital imaging departments requiring an affordable and expandable client-server solution enabling SPECT and SPECT•CT information access for up to five concurrent users. For more information, please visit www.siemens.com/symbianet.

Anytime Access to full processing and reading capabilities

Whether you are within or outside your imaging department, you have full access to your studies. Any PC or Mac with appropriate network connection and minimal hardware requirements can be used as a client, and up to five concurrent users can access the clinical network simultaneously. Symbia.net is the only client-server solution that provides full processing and reading capabilities and includes advanced clinical applications such as Corridor 4DM, Cedars, or Emory cardiac packages.

Easy to install and operate

Symbia.net easily integrates with your existing cameras, RIS, and PACS systems. A virtually unlimited number of client computers can be installed in minutes. Designed for the needs of molecular imaging, Symbia.net offers a user-friendly interface and advanced automation features.

Economical to maintain and expand

Symbia.net scales efficiently as demand increases. Floating licenses and clients can be added at any time. One server with floating licenses provides access for up to five concurrent users. Symbia.net requires less capital investment than two stand-alone workstations with comparable configuration. The server provides fast and efficient network updates and maintenance, remote installation, and monitoring of the client system. With only one server to administrate, Symbia.net reduces total cost of ownership and increases uptime.
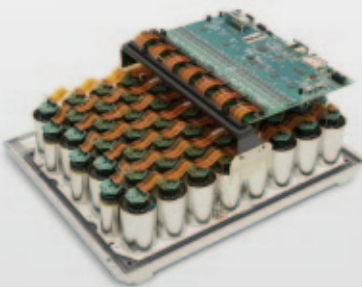
Symbia S

Intuitive hand controller
Easy to use with backlit icon

Autocontour
Infrared body contour system minimizes patient-to-detector distance and reduces patient set-up time

Open Gantry
Patient friendly gantry design with 102 cm x 78 cm (40.2 x 30.7 in) opening

HD Detector
High definition digital detectors provide energy independent performance
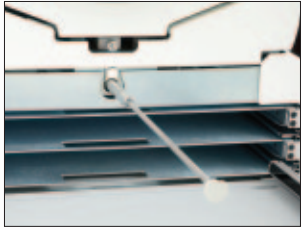
Automated Collimator Changer (ACC)
Completely automatic functions including motorized collimator motion initiated from the patient positioning monitor

Patient Positioning Monitor
Self-guided touch screen user interface with configuration icons and the optional e.media entertainment system

Internal ECG
Patient lead input for integrated ECG

Innovative Bed Design
Low patient bed for easy access with ergonomic patient comfort accessories and an ultra-thin pallet for improved image quality.

Automated Quality Control (AQC)
Built-in point and line sources for fully automated quality control

Symbia T

CT Window
Circular slit for X-ray
field of view

Intuitive hand controller
Easy to use with backlit icon

Open Gantry
Patient friendly integrated
gantry design with 70 cm
(27.5 in) opening for
greater patient comfort

Rear Bed
Rear bed with two positions
to eliminate registration
arrows between CT and
SPECT modes

Autocontour
Infrared body contour system
minimizes patient-to-detector
distance and reduces patient
set-up time

HD Detector
High definition digital detec-
tors provide energy indepen-
dent performance

**Automated Collimator
Changer (ACC)**
Completely automatic func-
tions including motorized
collimator motion initiated
from the patient positioning
monitor

Breath Hold Indicators
For ease of use in CT studies

Patient Positioning Monitor
Self-guided touch screen
user interface with configu-
ration icons and the optional
e.media entertainment system

**Automated Quality
Control (AQC)**
Built-in point and line
sources for fully automated
quality control

Internal ECG
Patient lead input for
integrated ECG

Innovative Bed Design
Low patient bed for easy access with ergonomic
patient comfort accessories.

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