SIEMENS

www.siemens.com/somatom-scope

SOMATOM Scope

Power configuration
Datasheet for *syngo* CT VC28

Answers for life.

“Focus on the essence” VS. “Compromise on what matters”

Second best is not an option.

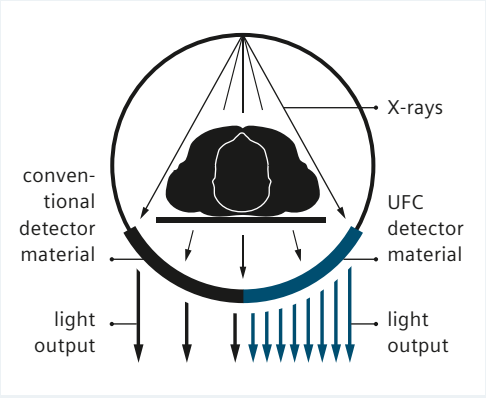
Healthcare facilities around the globe are under major pressure to change. They face the challenge of extending high-quality, affordable care to as many people as possible – in the age of shrinking budgets. To succeed, they must become more efficient. By doing more with less.

The key to mastering this new environment is knowing what really matters: the patients you see every day. To effectively meet their requirements, you need to ensure your scanning hardware cuts no corners when it comes to performance. But how can you achieve this while keeping costs in check?

SOMATOM Scope provides an answer – by focusing on the essence of CT. This cost-efficient scanner delivers outstanding image quality, at the right dose. Highly reliable and easy to use, it saves you time and effort throughout your daily routine. Moreover, a flexible service model helps keep overheads under control, safeguarding your facility’s long-term competitiveness.

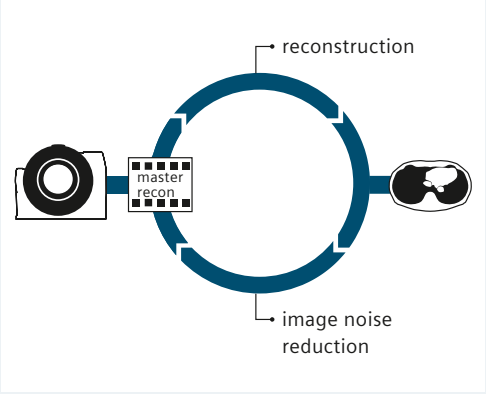
Highlights

UFC: Leading Edge Detector Material



Using Siemens' proprietary Ultra Fast Ceramics (UFC), SOMATOM Scope provides excellent image detail even at low radiation doses. This industry-leading material* – which is also used in our top-of-the-line scanners – achieves exceptional overall efficiency thanks to high X-ray absorption combined with extremely effective conversion of X-ray energy into visible light reducing noise in the images. In addition to absorption, the decay constant and the afterglow of the detector material are crucial in CT. With Siemens' UFC, providing extremely fast decay and afterglow times, the signal can be processed very fast. In only one millisecond – the typical duration of a CT projection – 99.99% of the signal is already processed. This prevents blurring, delivering crystal-clear images even for the most dose-sensitive patient groups. SOMATOM Scope features the latest version of UFC, which has been continuously improved over the last years.

IRIS: Efficient Iterative Reconstruction Technology

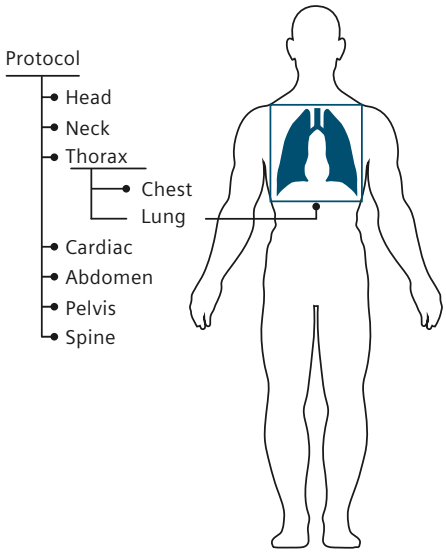


Siemens' proprietary Iterative Reconstruction in Image Space (IRIS) delivers the same image noise reduction as raw-data model based iterative reconstruction, but in a fraction of the time – as raw data is reconstructed only once. The innovative technology is ideal for cost-effective scanners: it significantly enhances spatial resolution while lowering image noise by up to 25%, enabling further dose reductions across a wide range of clinical applications. This is of particular benefit to children and patients requiring multiple scans. In addition, IRIS can improve image quality for obese patients, as it reduces image noise caused by attenuation – boosting diagnostic confidence and efficiency. IRIS uses raw data to generate a high-resolution master image, which includes all information contained in the original, but at the cost of significant noise. A series of iterative corrections is then applied to "clean up" the image, identifying and efficiently reducing image noise by comparing it to the master image without compromising sharpness – eliminating the need for time-consuming repeated forward and back projections, and expediting the scanning process. IRIS also helps maximize patient throughput without sacrificing dose reduction and image quality. The tube's heat storage capacity is utilized at a slower pace, reducing cooling times and allowing more patients to be scanned within the same time window.

* Based on the number of installed systems using UFC.

Highlights

FAST: Efficient Workflows

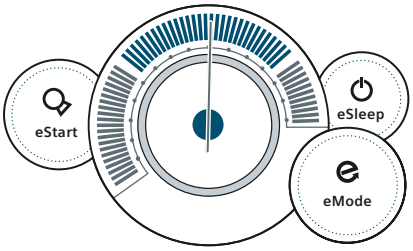


Efficient workflows are key in today's medical facilities. This is why SOMATOM Scope is equipped with Fully Assisting Scanner Technologies (FAST) that optimize the entire imaging process – from planning to reading. These leading-edge technologies make complex processes faster and more intuitive, increasing productivity and freeing medical professionals to spend more time with their patients. In addition, FAST's automatic settings boost reliability and reproducibility, reducing the risk of rescanning due to user error. This translates to improved workflows and optimized resource utilization – and greater profitability. What's more, it decreases wait times for appointments, making for more satisfied patients.

FAST Planning
Streamlining scan preparation is a vital factor for reducing examination time. FAST Planning automatically detects and rapidly applies desired ranges, eliminating the need for complex manual adjustments. This makes CT scan set-up simple and intuitive, even for less experienced technicians. Moreover, the high degree of standardization increases reproducibility and reliability, boosting diagnostic confidence.

FAST Spine
FAST Spine helps streamline another highly time-intensive task: the preparation of anatomically aligned spine reconstructions. The software detects and labels vertebrae within a predetermined scan area, and calculates their position for anatomically correct image reconstruction. This delivers up to 30 minutes' time savings for a complete spine reconstruction, while reducing the risk of mislabeling associated with manual preparation.

eCockpit: Economic CT Scanner Usage



The unique eCockpit suite enables more cost-efficient operation, reducing overhead costs. The entire working day of a CT system was taken into consideration from start-up to scanning to scan breaks to facilitate the most economic scanner usage.

eStart: extends the tube lifetime by pre-warming the tube before a scan. The tube is the most delicate hardware in a CT scanner.

eMode: reduces wear and tear on the scanner by instantly optimizing scan parameters.

eSleep: saves energy by stopping gantry rotation during scan breaks.

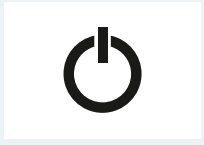
System Configuration

Standard system hardware	0.6, 1.0, 1.5 s rotation time
	Multislice UFC (Ultra Fast Ceramic) detector
	70 cm gantry with ±30° tilt
	82 KW max. equivalent generator power (with IRIS)
	DURA 422 MV High performance liquid bearing X-ray tube
	CT patient table (200 kg / 440 lbs table load)
Optional system hardware	0.5 s rotation time*
	Recon Plus
	Patient table foot switch
	Patient table extension
	Additional 19" (48 cm) flat screen monitor
	Dual 19" (48 cm) flat screen monitor with dual display functionality
	Table cover paper dispenser
Standard workplace	*syngo*® Scope one console
	19" (48 cm) flat screen monitor
	CD/DVD storage

Standard system software	*syngo* Examination
	syngo Viewing
	syngo Filming
	syngo Archiving & Network
	syngo Service Solution
	Image Filter
	SureView™
	Video Capture and Editing Tool
	Scan Protocol Assistant
	syngo 3D Real Time MPR
	syngo 3D SSD (Surface Shaded Display)
	syngo Volume Calculation
	syngo VRT (Volume Rendering Technique)
	CT-Angiography
	Vessel analysis with Automated Bone Removal
	WorkStream4D™ (direct 3D-recon)
	syngo Dynamic Evaluation
	Adaptive Signal Boost
Standard FAST applications	FAST Planning
	FAST Contact
Optional FAST applications	FAST Spine
Standard CARE applications	IRIS (Iterative Reconstruction in Image Space)
	CARE Filter
	CARE Bolus CT
	CARE Topo
	CARE Dose4D
	CARE Dose Configurator
Optional CARE applications	CARE Contrast CT
	ECG-pulsing
	CARE Vision CT with HandCARE™

* Included in *syngo* HeartView CT

System Configuration

eCockpit	
The unique eCockpit suite enables more cost-efficient operation, reducing overhead costs. The entire working day of a CT system was taken into consideration from start-up to scanning to scan breaks to facilitate the most economic scanner usage.	
eStart 	Extends the tube lifetime by pre-warming the tube before a scan. The tube is the most delicate hardware in a CT scanner. For urgent cases, for example in traumatology, it is possible to start the scan without eStart – saving time where every second counts
eMode 	Once the user has prepared a scan protocol and entered all required information, eMode analyzes the parameters in real time and instantly fine-tunes the scan. Therefore the system is operated in the most economical way, reducing wear and tear of all moveable parts while maximizing image quality.
eSleep 	Saves energy by stopping gantry rotation during scan breaks. The system rapidly returns to scan ready mode when needed, allowing user to resume their normal routines in no time.

Optional system applications	Extended FoV (Field of View)
	syngo Expert-i
	syngo Dental CT
	syngo Osteo CT
	syngo Pulmo CT
	syngo Fly Through
	syngo Body Perfusion CT
	syngo Volume Perfusion Neuro CT
	syngo Neuro DSA CT (Digital Subtraction Angiography)
	syngo CT Oncology
	syngo Image Fusion CT
	syngo CT Colonography CT
	syngo CT Colonography CT PEV
	syngo HeartView CT (including ECG-pulsing)
	syngo Calcium Scoring CT
Optional applications for CT-guided intervention	Advanced Intervention
	CARE Vision CT with HandCARE™

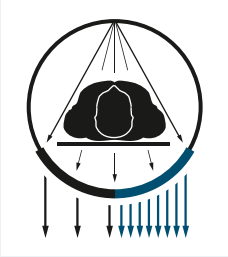
System Hardware

Gantry	
	
Aperture	70 cm / 27.6”
Depth	69.2 cm / 27.2”
Distance scan plane to gantry cover	26.7 cm / 10.5” The short distance from the gantry front to the scan plane allows for easy operator access during interventional procedures
Distance focal spot to isocenter	53.5 cm (21.1”)
Distance focal spot to detector	94.0 cm (37.0”)
Scan field	50 cm / 19.7” 70 cm / 27.6” with extended FoV*
Tilt	± 30°
Rotation time	0.5*, 0.6, 1.0, 1.5 s
Temporal resolution	Down to 125 ms* Continuously rotating tube-detector unit with optimized geometry for high-resolution data acquisition across the entire scan field
Patient breath-hold time indicator	Patient-friendly display at the back of the gantry for indication of the remaining breath-hold time
Three laser light markers	Coronal, sagittal, transversal laser light showing the isocenter position of the scan plane
Integrated display panel	Gantry front display showing current scan parameters such as kV, mA, scan time, table position, gantry tilt, patient name, patient ID and ECG trace*
Gantry front control panels	For convenient and fast patient positioning (e.g. in case of trauma or interventional exams) Gantry tilt control from the operator’s console
Automatic patient positioning	Two user-configurable buttons on the gantry panel One touch, quick patient positioning for pre-selected clinical protocols – e.g. head, thorax

Tube Assembly	
Tube	DURA 422 MV High performance liquid bearing X-ray tube
Tube current range	25–345 mA Max. tube current equivalent to 627 mA utilizing IRIS
Tube voltage	80, 110 and 130 kV
Tube anode heat storage capacity	5 MHU; equivalent to 9 MHU with IRIS With iterative reconstruction technology at maintained image quality the same clinical results can be achieved with less dose, filling up the heat storage of the system more slowly, therefore increasing the heat storage capacity
Focal spot size according to IEC 60336	0.8 x 0.5 mm / 7° 0.8 x 0.7 mm / 7°
Multifan principle with Flying Focal Spot	
Computer-controlled monitoring of anode temperature	

* Optional

System Hardware

Generator	
Max. power	50 kW; equivalent to 82 kW with IRIS
Data Acquisition System	
UFC (Ultra Fast Ceramics) detector 	Speed and efficiency based on Siemens' proprietary scintillator material with ultra-short decay, extremely low afterglow and high absorption for optimized image quality and high dose efficiency
Max. number of slices/rotation	16
Number of detector rows	24
Number of detector elements	17,664
Number of detector channels/slice	736
Number of projections	up to 1,250 1 s/360°
Sequence acquisition modes	4 x 0.6 mm, 12 x 0.6 mm, 16 x 0.6 mm, 2 x 5 mm, 12 x 1.2 mm, 2 x 8 mm, 16 x 1.2 mm
Spiral acquisition modes	4 x 0.6 mm, 16 x 0.6 mm, 16 x 1.2 mm
Adaptive Signal Boost	The Adaptive Signal Boost amplifies low signal areas of the CT data when high attenuation is present – such as when imaging obese patients or patients with metal implants – and further reduces streaks and noise in the image

Patient Table	
Max. table load	200 kg / 441 lbs
Table feed speed	1–100 mm/s
Vertical table travel range	45–83 cm (at table top) (17.7–32.7")
Vertical travel speed	≥ 22.4 mm/s
Scannable range	153 cm (60") / 160 cm (63") with patient table extension*
Patient table foot switch*	Foot Switch located on the bottom edge of the patient table allowing table lifting and lowering. Speeds up patient preparation and keeps the operator hands sterilized.

* Optional

Workplace Overview: *syngo* Scope one console

syngo Scope one console: a workplace solution combining powerful hardware with a complete clinical application suite. The intuitive, easy-to-use software provides radiology staff with all the tools they need to support their daily routine. For data acquisition, image reconstruction and post-processing at the CT scanner.

Image Reconstruction	
Real-time display	Real-time image display (512 x 512) during spiral acquisition
Slice thickness	0.6–19.2 mm
Recon field	5–50 cm / 1.9”–19.69”
	5–70 cm with Extended FoV* / 1.9”–27.6”
Recon time	up to 16* images/s
Recon matrix	512 x 512
HU scale	–1,024 to +3,071
Extended HU scale	–10,240 to +30,710
Wide range of freely selectable slice thickness for prospective and/or retrospective reconstruction	
High-performance computer	XEON Quad Core high performance CPU
Graphics accelerator	NVIDIA Quadro K600** for fast 3D post processing

Standard monitor	19” (48 cm) flat screen
	1,280 x 1,024 resolution
	1,024 x 1,024 image display matrix
	0,29 mm pixel size
Additional monitor***	Yes
Dual monitor****	Yes
RAM storage	8 GB
Image storage	683 GB, up to 1,000,000 images
Additional storage	DVD DICOM drive: 4.7 GB DVD media, 7,300 images Write-RW/+RW/-DL/Read
	CD-R: 700 MB 1,200 images
	DICOM viewer: Included on each CD; automatically started on the viewer’s PC

* Optional
** Or equivalent
*** Optional. Additional monitor for replication of primary monitor at remote location. Distance from host up to 30 m.
**** Optional. Dual monitor enables the simultaneous display of two scans on two monitors within the 3D task card, ideally used for comparison of follow-up studies or native and contrast-enhanced scans.

Standard System Software: *syngo* Examinations

Scan Protocol Assistant
Up to 10,000 protocols can be edited, modified, and stored
Easy and intuitive way to change and manage scan protocols

Automatic Patient Positioning
Two user-configurable buttons on the gantry panel
One touch, quick patient positioning for preselected clinical protocols – e.g. head, thorax

Topogram	
Length	128–1,500 mm (5–59″)
Scan times	2.08–15.8 s
Views	a.p., p.a., lateral
Real-time topogram	
Manual interruption possible once desired anatomy has been imaged	

Patient Communication	
Integrated patient intercom	
Automatic Patient Instruction (API)	Freely recordable
	30 API text pairs
	Presets in nine languages available

Sequence Acquisition	
Reconstructed slice widths	0.6, 1.2, 2.4, 3.6, 4.8, 5.0, 8.0, 9.6, 10.0, 16.0, 19.2 mm
Partial scan times (240°)	0.33*, 0.4 s
No. of uninterrupted scans per range	99
No. of ranges in autorange	8
Scan times (full scan)	0.5*, 0.6, 1.0, 1.5 s
Scan range	max. 160 cm (63″)
Acquisition with or without table feed	
Automatic clustering of scans	
Dynamic Multiscan	Multiple (continuous) sequence scanning without table movement for fast dynamic contrast studies with maximum slice thickness of 19.2 (16 x 1.2) mm

Multislice Spiral Acquisition	
Reconstructed slice widths	0.6, 1.2, 2.4, 3.6, 4.8, 5.0, 8.0, 9.6, 10.0, 16.0, 19.2 mm
Temporal resolution	down to 125 ms*
Scan times full scan (360°)	0.5*, 0.6, 1.0, 1.5 s
Slice increment	0.1–10 mm
Pitch factor	0.4–2.0
Spiral scan time	max. 100 s
Scan length	max. 160 cm (63″)
No. of ranges in autorange	8
Automatic clustering of scans	

* Optional

Standard System Software: *syngo* Examinations

WorkStream4D

4D workflow with direct generation of axial, sagittal, coronal, or double-oblique images from standard scanning protocols

Elimination of manual reconstruction steps

Reduction of data volume, since virtually all diagnostic information is captured in 3D slices

Patient Registration

Direct input of patient information on the Acquisition Workplace immediately prior to scan

Pre-registration of patients at any time prior to scan

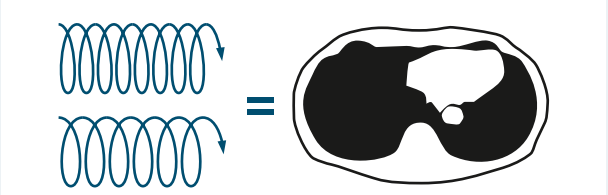
Special emergency patient registration (allows examination without entering patient data before scanning)

Transfer of patient information from HIS/RIS via DICOM Get Worklist

Transfer of examination information from scanner into HIS/RIS via MPPS (Modality Performed Procedure Step)

SureView: Siemens' Patented Solution for Multislice CT Reconstruction

Pitch independent image quality



Excellent for clinical workflow: Forget about compromises in your clinical workflow. Just specify the slice thickness in your protocols according to your clinical needs. SureView automatically takes care of providing excellent volume image quality – with exceptional performance.

Multiply your clinical performance with SureView: High-quality imaging at any scanning speed. SureView allows the CT scanner to automatically select the necessary pitch value to achieve the coverage and scan time defined by you, while keeping selected slice thickness and image quality.

Auto Field of View Adaption

When positioning the scan range, the width of the range is automatically adapted to cover the whole body of the patient

CINE Display

Display of image sequences

Automatic or interactive with mouse control

Max. image rate: 30 frames/s

syngo Dynamic Evaluation

Evaluation of contrast enhancement in organs and tissues

Calculation of	time-density curves (up to 5 ROIs)
	peak-enhancement images
	time-to-peak images

Standard System Software: *syngo* Viewing, *syngo* Filming and *syngo* Archiving & Networking

Windowing	
Window width and center freely selectable	
Single window	
Double window (e.g. bone/soft tissue)	
Multiple window settings for multi-image display	
Organ-specific window settings, e.g. for soft tissue and bones	
2D Postprocessing	
Image zoom and pan	
Image manipulations	Averaging, subtraction
	Reversal of gray-scale values
	Mirroring
Advanced image algorithms	Posterior Fossa Optimization for reduction of beam hardening artifacts in head images
	Low Contrast Enhancement for improving low contrast detectability
	High Contrast Enhancement for increased sharpness of high contrast structures
Evaluation Tools	
Parallel evaluation of more than 10 Regions of Interest	Circle
	Irregular
	Polygonal
Statistical evaluation	Area/volume
	Standard deviation
	Mean value
	Min./max. values
	Histogram
Profile cuts	Horizontal
	Vertical
	Oblique
Distance measurement	
Angle measurement	
Online measurement of a 5 x 5 pixel size ROI	
Freely selectable positioning of coordinate system	
Crosshair	
Image annotation and labeling	

Filming	Digital film documentation, connection to a suitable digital camera
	Connection via DICOM Basic print
	Automatic filming
	Interactive virtual film sheet
	Customizable film formats with up to 64 images
	Filming parallel to other activities
	Independent scanning and documentation
	Freely selectable positioning of images onto film sheet
	Configurable image text
Printing	Documentation on postscript printer supported
Video Capture and Editing Tool	Integrated solution for imaging and visualization of 4D information, allowing the generation and editing of video files for improved diagnoses, recording, and teaching. A wide range of multimedia formats are supported, e.g. AVI, Flash (SWF), GIF, QuickTime (MOV), streaming video.
Image Transfer/ Networking	Interface for transfer of medical images and information using the DICOM standard. Facilitates communication with devices from different manufacturers.
	DICOM Storage (Send/Receive)
	DICOM Query/Retrieve
	DICOM Basic print
	DICOM Get Worklist (HIS/RIS)
	DICOM MPPS (Modality Performed Procedure Step)
	DICOM SR viewer
	DICOM Storage Commitment
	DICOM Viewer on CD/DVD

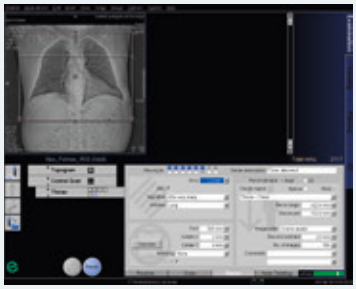
Standard System Software: Applications

Real-time MPR	Real-time multiplanar reformatting of secondary views
	Variable slice thickness (MPR thick, MPR thin) and distance with configurable default values
	Viewing perspectives ▪ Sagittal ▪ Coronal ▪ Oblique ▪ Double oblique ▪ Freehand (curvilinear)
***syngo* 3D SSD (Surface Shaded Display)**	Three-dimensional display of surfaces with different density values ▪ Soft tissue ▪ Bone ▪ Contrast-enhanced vessels
***syngo* Volume Calculation**	Measurements of various tissues and organs with HU-based region growth algorithms and interactive ROI definition
***syngo* Dynamic Evaluation**	Evaluation of contrast enhancement in organs and tissues
	Calculation of ▪ Time-density curves (up to 5 ROIs) ▪ Peak-enhancement images ▪ Time-to-peak images

***syngo* VRT (Volume Rendering Technique)**	Advanced 3D application package for the optimal display and differentiation of different organs through independent control of color, opacity, and shading in up to 4 tissue classes
CT-Angiography	MIP: Maximum Intensity Projection
	MinIP: Minimum Intensity Projection
	Thin MIP function for projection within a small slab to focus on particular vascular structure
	Evaluation of spiral images and display of vessels, vascular anomalies, aneurysms, plaques, and stenoses
Vessel View with automated bone removal	Simplified workflow
	Fast accurate presentation of subtracted CTA data sets

FAST Applications

FAST Planning

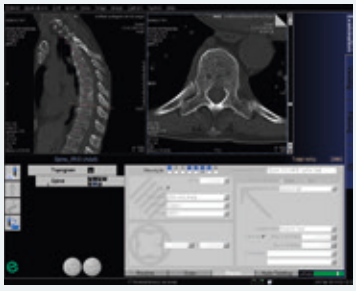


It detects the ROI based on organ characteristics, and sets the scan parameters accordingly. The automatic parameter settings provide precise organ coverage without over scanning, and limit the need for rescans due to incorrect positioning. In addition, this function can be used in critical clinical situations where there is no time for extensive manual preparation

FAST Contact

The FAST Contact tool is the easiest way to contact our Customer Care Centers* for technical and clinical applications support. It also tracks and archives issues reported to Siemens using this feature – directly from the scanner console

FAST Spine**



The FAST Spine software detects and labels vertebrae within a predetermined Scan area, and calculates their position for anatomically correct image reconstruction

* May not be available in all countries
** Optional

CARE Applications

CARE Filter

Specially designed X-ray exposure filters installed at the tube and the collimator for protocol individual optimization of patient dose and image quality

CARE Bolus CT

Scan mode for contrast bolus triggered data acquisition

Significant improvement of the planning procedure by enabling an optimum spiral scan start after contrast injection

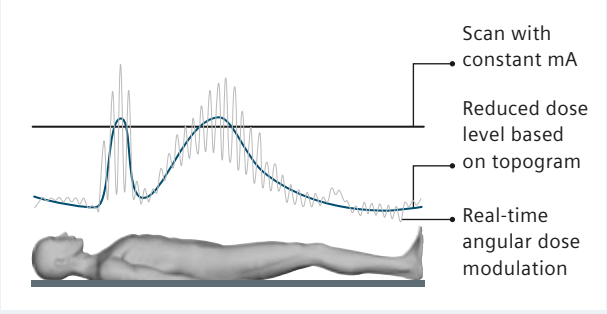
The procedure is based on repetitive low dose monitoring scans at one slice level and analysis of the time density curve in an ROI (Region of Interest)

CARE Topo

Real-time topogram

Manual interruption possible once desired anatomy has been imaged

CARE Dose4D



Automated real-time tube current adjustment for optimum diagnostic image quality at lowest possible dose, depending on patient size and anatomy

Fully automated dose management for adults and children

CARE Dose Configurator

Delivers organ and habitus-sensitive dose modulation, to better manage dosage with respect to the patient's anatomy. It offers predefined settings for children, adults of normal build or bariatric patients

CARE Contrast CT*

CARE Contrast facilitates enhanced CT examinations through the hardware and software integration of CT scanner and injector

ECG-pulsing*

Dose modulated cardiac spiral for dose reduction during the systolic heart phase (part of the *syngo* HeartView CT* package with retrospective ECG-gating). Up to 50% dose savings for the patient

Pediatric Protocols

Special clinical protocols with 80 or 110 kV selection and a wide range of mAs settings. The X-ray exposure is adapted to the child's (and small adult's) weight and age, substantially reducing the effective patient dose

Protocol Password Protection

Prevent unauthorized access to scan protocols and avoid unauthorized modifications

Iterative Reconstruction in Image Space (IRIS)

Iterative Reconstruction in Image Space (IRIS) delivers the same image noise reduction as raw-data model based iterative reconstruction, but in a fraction of the time – as raw data is reconstructed only once. The innovative technology is ideal for cost-effective scanners: it significantly enhances spatial resolution while lowering image noise by up to 25%, enabling further dose reductions across a wide range of clinical applications. This is of particular benefit to children and patients requiring multiple scans. In addition, IRIS can improve image quality for obese patients, as it reduces image noise caused by attenuation – boosting diagnostic confidence and efficiency. IRIS uses raw data to generate a high-resolution master image, which includes all information contained in the original, but at the cost of significant noise. A series of iterative corrections is then applied to "clean up" the image, identifying and efficiently reducing image noise by comparing it to the master image without compromising sharpness – eliminating the need for time-consuming repeated forward and back projections, and expediting the scanning process.

* Optional

Optional System Software

Extended FoV (Field of View)

Special image reconstruction algorithms that provide visualization of objects using an FoV up to 70 cm (27.6")*

syngo Expert-i

Enables the physician to interact with the *syngo* Workplace from virtually anywhere in your hospital

syngo Dental CT

Allows reformatting panoramic views and paraxial slices through the upper and lower jaw, and enables the display and measurement of mandibular bone structures (even on a 1:1 scale) as the basis for OR planning and oral surgery

syngo Osteo CT

Non-invasive measurement of the bone mineral density of the lumbar spine to help early diagnosis of osteopenia and osteoporosis, and to assess the effectiveness of treatment Osteo CT measurements are standardized to the ESP Phantom (ESP: European Spine Phantom. Includes table mat and reference Phantom for Osteo CT studies.

syngo Pulmo CT

Allows the quantitative determination of CT values in the lung for diagnoses and follow-up examinations

syngo Fly Through

Virtual Endoscopy software enabling visualization of vessels, airways, and the intestines

syngo Body Perfusion

Allows the quantitative evaluation of dynamic CT data of organs and tumors: blood flow, blood volume and permeability enabling the assessment of perfusion disturbances and of perfusion changes during therapy

syngo Volume Perfusion Neuro CT

Auto-Stroke functionality for automated display of all perfusion parameters, including MTT, TTP, CBF, CBV, and permeability, automated motion correction, automated 3D assessments of infarcted tissue and tissue at risk, and perfusion plus tumor evaluation model included

syngo Neuro DSA

Direct Image Transfer, Automated Table Removal, Automated Bone Removal, preferred layout automatically applied, Neuro Best Plane, Fast Toggling, One-Click Aneurysm Evaluation, Recalculation Mode, Follow-up Workflow, and Reporting

syngo CT Oncology

Fast-track routine diagnostic oncology, staging, and follow-up. It provides a range of fully automated tools specifically designed to support physicians in the detection, segmentation, and evaluation of suspicious lesions including dedicated tools for lung, liver, and lymph node assessment. It also offers a fully automated follow-up protocol.

syngo Image Fusion CT

Facilitates functional imaging offering fusion of PET with CT data

syngo CT Colonography

Features multimonitor layouts, 2D reading, 3D reading (fly through), global view (solid/semitransparent), registered navigation (prone/supine), hide small intestine, distance to rectum, panoramic view and perpendicular flight

syngo CT Colonography PEV

Autoprocessing, Polyp Enhanced Viewing (PEV)

syngo HeartView CT

ECG-synchronized volume acquisition using prospective ECG triggered or retrospective ECG-gating mode

Basis for 3D cardiac reconstructions, e.g. CT-Angiography of the coronary vessels and Calcium Scoring

Quality control tools enable retrospective ECG viewing and interactions as well as computer-assisted heart phase definition

The ECG signal used for scanning and image reconstruction is acquired by an integrated ECG device. The ECG signal is displayed on the gantry front cover

ECG-gated, multi-phase 4D reconstruction in up to 24 phases enabling dynamic evaluation of the heart and thoracic anatomy

syngo Calcium Scoring CT

This application provides total and relative Calcium Scoring with Coronary Age calculation based on trial data (requires optional *syngo* HeartView CT)

Optional Applications for CT Intervention

Advanced Intervention
For non-fluoroscopic CT intervention
Biopsy mode with user configurable dose and windowing display
Switch between continuous and incremental table movement with user configurable increment
Automatic table positioning via buttons or joystick with auto-stop function
3 image display
Zoom and pan functionality
Head and feet label for easy orientation adaptable to physician's position
Auto-move table to displayed image position

CARE Vision CT with HandCARE
Perform interventions with real-time image guidance, including CT fluoroscopic mode. Single slice or simultaneous display of 3 slices for optimal navigation with two alternate display methods: A) 256 x 256, 512 x 512, 256 x 256 B) 512 x 512, 512 x 512, 512 x 512
In-room joystick allows the user to control the CT system directly from the examination room
Head and feet label for easy orientation adaptable to physician's position
Auto-move table to displayed image position
User configurable dose and windowing display
Switch between continuous and incremental table movement with user configurable increment
Automatic table positioning via buttons or joystick with auto-stop function
Includes real-time image guidance ▪ Image rate up to 10 frames per second ▪ Image matrix 512 x 512 ▪ Configurable saving of images
Foot switch: Radiation release directly at the gantry
HandCARE: Real-time dose modulation during the CT-guided intervention avoids direct X-ray irradiation of the radiologist's hand
Additional flat screen monitor: for parallel image display in the examination room
Distance from host max. 30 m

Image Quality

Low-contrast Resolution	
Low-contrast resolution is the ability to see ...	a small object (mm)
	with a certain contrast difference (HU)
	on a particular phantom (Ø)
	at a certain mAs value (mAs)
	with a particular patient dose (mGy)
Phantom	**CATPHAN (16 cm)**
Object size	3 mm
Contrast difference	3 HU
CTDIvol (32 cm)	13.82 mGy
Technique	0.6 s, 10 mm, 130 kV
Phantom	**CATPHAN (20 cm)**
Object size	5 mm
Contrast difference	3 HU
CTDIvol (32 cm)	12.88 mGy
Technique	0.6 s, 10 mm, 130 kV

Isotropic Resolution
Isotropic voxels with voxel sizes of e.g. 0.3 mm using Siemens' proprietary SureView technology

High-contrast Resolution	
2% MTF (± 10%)	15.6 lp/cm
0% MTF (± 10%)	17.5 lp/cm
Technique	Tungsten wire in air 160 mAs, 130 kV, 1 s, 2.4 mm

Homogeneity	
Cross-field uniformity in a 20 cm water phantom	max. ± 4 HU
	typ. ± 2 HU
Phantom positioned near center of rotation	

Dose, $CTDI_{100}$ Values mGy/100 mAs			
Phantom Ø		kV 110	kV 130
16 cm	A	12.7	18.7
	B	13.5	19.6
32 cm	A	3.7	5.8
	B	7.7	10.9
A: at center	B: 1 cm below surface		
Technique	PMMA-Phantom		
	Absorbed dose for reference material air		
	Max. deviation ± 30%		
	Expected deviation ± 20%		
	2 x 5 mm		

Installation

Dimensions	Height (mm / inch)	Width (mm / inch)	Length (mm / /inch)	Weight (kg / lbs)
Components				
Gantry	≤ 1,807 / 71.4	≤ 692 / 27.2	≤ 2,308 / 90.9	≤ 1,300 / 2,860
Patient table	≤ 836 / 32.9	≤ 700 / 27.6	≤ 2,500 / 98.4	≤ 500 / 1,100
Operator's console desk*	≤ 730 / 28.7	≤ 800 / 31.5	≤ 1,200 / 47.2	≤ 60 / 132
UPS	≤ 435 / 17.1	≤ 90 / 3.5	≤ 530 / 20.9	≤ 30 / 66
Image reconstruction system	≤ 430 / 16.9	≤ 490 /19.3	≤ 490 /19.3	≤ 20 / 44
***syngo* Acquisition Workplace**				
***syngo* Acquisition Workplace**	≤ 430 / 16.9	≤ 490 /19.3	≤ 490 /19.3	≤ 20 / 44

Power Supply	
Nominal voltage ± 10%	380–480 V
Nominal line frequency ± 10%	50; 60 Hz
Power Consumption	
Max. power consumption	≤ 68 kVA
Power consumption	≤ 3.7 kVA standby
Protection Against Input Power Instability	
Controllers	300 ms
syngo Acquisition Workplace	3 min, with UPS*
Frequency stability	± 5% 50; 60 Hz
Electromagnetic Compatibility	
This product is in compliance with IEC 60601-1-2 and fulfills CISPR 11 Class A	

Room Environment	
Temperature range	18–30 °C (64.4–86°F)
Max. temperature gradient	6 k/h
Relative air humidity without condensation	20–80%
Heat dissipation (gantry and table)	≤ 5.3 kW scanning
Heat dissipation (computer)	≤ 1.1 kW
Surface Area for Installation	
System footprint	8 m^2 / 86.1 ft^2
Minimum installation space for system**	12.1 m^2 / 130.2 ft^2

* Optional

** Minimum space requirements for gantry, table and service area System configuration and options to be checked according the available area. Safety distances must be checked according to country specific requirements.

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