

Data sheet

SOMATOM go.Top

128-slice configuration
syngo CT VA30

siemens-healthineers.com/somatom-go-top



International version.
Not for distribution or use in the U.S.

Make success your daily business

The SOMATOM go. platform

In a market characterized by intense competition, more selective patients, and reimbursement cuts, healthcare providers must find ways to leverage technological advancements and secure income and referrals. To keep the business running, it is crucial for CT departments to differentiate themselves and deliver excellent patient-centered care.

To help you succeed day after day, we developed the SOMATOM® go. platform. As a member of this family, SOMATOM go.Top supports all users to provide the best scan for every type of patient – no matter the clinical demands and challenges. The scanner features a unique tablet-based mobile workflow, user guidance with our GO technologies, and exclusive innovations such as Tin Filter low-dose technology.

Stand Out in Advanced CT Procedures

SOMATOM go.Top

SOMATOM go.Top starts the era of intelligent CT imaging powered by myExam Companion. It enables you to confidently offer specialized CT procedures, including Dual Energy.

Combined with patient-centric technology and workflows to optimally adapt to each type of patient, all operators can turn challenging fields into routine.

With its unique holistic Dual Energy solution featuring TwinSpiral and TwinBeam¹ Dual Energy, SOMATOM go.Top brings spectral imaging into routine. Additionally, the GO technologies allow full workflow automation, while the powerful imaging chain enables fast scanning for reduced motion artifacts and outstanding cardiac imaging.

¹ *Optional*

Highlights



myExam Companion

SOMATOM go. platform starts the era of intelligent CT scanning with myExam Companion. With it, AI turns aggregated data into built-in expertise to automatically leverage the full potential of technologies – regardless of where, when, and by whom the results have been produced. This allows for reliable and reproducible results from day one. myExam Companion means performing all advanced CT examinations as perfectly and quickly as if they were routine, allowing even unexperienced users to find the best combination of parameters for every individual patient and procedure. Personalized imaging for precise dose and contrast media optimization, reduced unwarranted variations, and always consistent results for enhanced diagnostic experience.

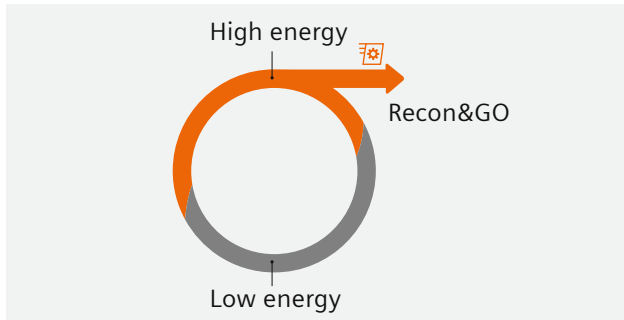


The new Mobile Workflow and GO technologies

A central element of optimizing performance and generating daily revenue is an entirely new approach to operating the scanner. Built around a new mobile workflow, the SOMATOM go.Top features a line-up of innovative solutions – tablet, remote control, camera, and a new workplace design – that bring an unparalleled level of flexibility and mobility to daily CT routines. The solutions also help to enhance patient comfort for potentially higher levels of patient satisfaction.

Additionally, SOMATOM go.Top features a holistic set of intuitive solutions that addresses your workflow not only at the scanner but also beyond. By reducing repetitive workflow steps, GO technologies help standardize and simplify all departmental processes – from patient setup to image distribution, archiving, and reading. You can therefore work more efficiently and focus on your patients – two factors key to running a successful business.

Highlights



Holistic Dual Energy solution

SOMATOM go.Top offers a holistic solution with two Dual Energy modes that makes DE routine ready for all patients and situations – completely neutral in dose and workflow TwinSpiral offers the possibility to acquire two spiral data sets at different energies. Thanks to the spectral properties of the Tin Filter, Twin-Spiral DE allows a better spectral separation for non-contrast examinations, whereas TwinBeam Dual Energy¹ is especially useful for characterizing contrast media examinations since it acquires low and high-kV datasets in a single scan. By allowing you to characterize, highlight, and quantify different materials, Dual Energy gives you greater diagnostic confidence with virtually all patients. And combined with dedicated optional Spectral Viewing packages it allows for comprehensive assessment. No matter if you would like to do your postprocessing directly at the acquisition console or rather have it sent automatically to PACS by Recon&GO – it offers a solution for all clinical workflows.



Tin Filter and Stellar detector

Inherited from high-end dual source scanners, the Tin Filter (Sn) cuts out lower energies to reduce dose and optimizes contrast between soft tissue and air. This has direct benefits in lung and colon imaging, for example. Clinical experience also shows that Tin Filter technology reduces beam-hardening artifacts and improves image quality in bony structures, making it extremely useful in orthopedic examinations.

One enabler for this high image quality in combination with ultra-low dose is the Stellar detector with fully integrated components and an advanced 3D anti-scatter collimator. Being perfectly attuned with advanced iterative reconstruction from SAFIRE it keeps electronic noise low, increases dose efficiency, and improves spatial resolution. Providing excellent and homogeneous image quality, even in complex areas, such as the base of the skull, it becomes especially relevant for routine neuro imaging.

¹ Optional

System Configuration

Standard system hardware

- 0.5, 1.0 s rotation time
- Stellar detector based on Multislice UFC (Ultra Fast Ceramic)
- 70 cm bore size
- 75 kW; equivalent to 187 kW with SAFIRE¹
- Athlon® X-ray tube
- Adaptive Dose Shield
- Tin Filter
- Ultra-FAST IRS
- CT patient table (227 kg / 500 lbs table load)
- Tablet (12" / 30.5 cm) for Mobile Workflow

Hardware options

- 0.33 s rotation time
- FAST 3D Camera
- CT patient table (307 kg / 676 lbs table load)
- Patient table foot switch
- X-ray foot switch
- Dual 23" / 58 cm flat screen monitor with dual display functionality
- Integrated Injector Arm

Mobile Workflow support²

- Additional tablets (up to 3 supported in total)
- Wall-mounted / desk docking stations as additional charging spots for the tablets and remote control

Standard workplace

- 23" / 58 cm flat screen monitor
- External USB 3.0 disks support

High Performance Package²

- High Power 70 & 80
- High-speed 0.33 s
- iMAR
- Basic cardio package including:
 - Physiological Measurement Module
 - ECG cable
 - Cardio Spiral functionality
 - Cardio BestPhase
 - syngo.CT CaScoring
- Recon&GO including:
 - Inline Spine Ranges
 - Inline Radial and Parallel Rib Ranges
 - Inline CaScoring
- CARE Contrast

Standard system software and applications

- syngo Examination
- syngo Archiving & Network
- SureView
- IVR (Interleaved Volume Reconstruction)
- Dynamic serio scan
- HD FOV
- Video Capture and Editing Tool
- Screen recorder
- Exam Designer
- WorkStream4D (direct 3D-recon)
- Adaptive Signal Boost
- syngo System Security

myExam Companion

- myExam User Interface
- myExam Compass
- myExam Cockpit²

Standard GO technologies

- Scan&GO
- Check&GO incl. FAST ROI:
 - Coverage
 - Contrast media
 - Metal detection
- Recon&GO including:
 - Inline Anatomical ranges
 - Inline Table removal
 - Inline Bone removal
 - Inline Vessel Ranges (aorta, run-offs, carotid arteries)
 - Multi Recon
- CT View&GO including:
 - Vessel Extension
 - Spine Ranges
 - Endoscopic View
 - Lung Lesion Segmentation
 - Diameter / WHO area
 - ROI HU Threshold
 - 2D and 3D (MPR, MIP, VRT)
 - Evaluation tools
 - Filming

¹ In clinical practice, the use of SAFIRE 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. As determined from SOMATOM Definition Flash data, SAFIRE enables up to 60% dose reduction. Data on file.

² Optional

System Configuration

Standard FAST technologies

- FAST Planning @ AWP
- FAST Planning @ Scan&GO tablet
- FAST ROI
- FAST Contact
- FAST Adjust

FAST 3D Camera¹

- FAST Isocentering
- FAST Range
- FAST Direction

FAST computer¹

Ultra-FAST IRS II

Standard CARE technologies

- CARE kV
- 10 kV Steps
- CARE Child
- CARE Dose4D
- CARE Topo
- CARE Profile
- CARE Filter
- Flex Dose Profile
- CARE Bolus CT
- CARE Test Bolus
- X-CARE
- SAFIRE (Sinogram Affirmed Iterative Reconstruction)

Optional CARE applications

CARE Contrast

Optional system software and packages

- Flex 4D Spiral – Neuro & Body
- Neuro package
- Recon&GO Inline ASPECTS
- Advanced Cardio package
- Guide&GO CT-guided intervention Package
- Lung CAD Package
- syngo.CT Dental
- CT Osteo @ CT View&GO

Spectral imaging with Dual Energy

- TwinSpiral Dual Energy
- TwinBeam Dual Energy¹
- TwinSpiral Spectral Viewing¹
- TwinBeam Spectral Viewing¹
- Recon&GO – Spectral Recon^{1,2}
- Advanced Dual Energy packages¹

Applications for fleet management

- teamplay BASIC
- teamplay CORE¹
- syngo Expert-i¹
- syngo Virtual Cockpit¹

Standard software applications for Radiation Therapy

HD FOV

Optional hardware and software applications for Radiation Therapy

- Radiation Therapy Basic
- Respiratory Motion Management
- FAST 4D
- Varian RGSC interface
- ANZAI interface
- Open interface
- DirectDensity
- Direct Laser Steering
- 227 kg Patient Table RT
- 227 kg Multi-index RTP overlay
- 307 kg Patient Table RT
- 307 kg Multi-index RTP overlay

¹ Optional

² Requires Ultra-FAST IRS II

System Hardware

Gantry

Aperture

70 cm / 27.6"

Depth

84 cm / 33"

Distance scan plane to gantry cover

- 25 cm / 9.84"
- The short distance from the gantry front to the scan plane allows for easy operator access

Distance focal spot to isocenter

53.5 cm / 21.1"

Distance focal spot to detector

97.6 cm / 38.4"

Scan field

- 50 cm / 19.7"
- 70 cm / 27.5" with HD FOV¹

Physical tilt

Up to $\pm 30^{\circ 4}$

Rotation time

0.33² s, 0.5 s, 1.0 s

Halo (incl. 2D Camera, Visual countdown, Mood Lighting)



By helping you keep an eye on the patient at all times, the gantry-integrated camera makes it easy to provide better care. Its 90° viewing angle gives you a superb view of the tunnel on the stationary monitor. The close-up perspective makes it easy to spot even micro-movements and keep the patient in the right position. In addition to the camera, the Halo assembly includes ambient mood lighting and a digital visual countdown to help improve patient well-being and help them comply with breath-hold times.

Three laser light markers

Coronal, sagittal, transversal laser light showing the isocenter position of the scan plane.

Integrated injector arm³



The unique gantry-mounted injector arm of SOMATOM go.Top lets you position the injector where you need it, when you need it. While a traditional injector cart is often in the way, the injector arm makes for a neat and organized working environment and still lets you flexibly arrange the injector.

¹ The image quality for the area outside the 50 cm scan field of view does not meet the image quality of the area inside the 50 cm scan field of view. Image artefacts may appear, depending on the patient setup and anatomy scanned. HD FOV cannot be used for scan FOV smaller than 50 cm.

² Optional

³ Optional. Availability depends on country-specific regulatory approval and release.

⁴ Depending on configured patient table.

System Hardware

Tube Assembly

Tube

Athlon liquid metal bearing X-ray tube

Tube current range

- 13–625 mA
- 13–825¹ mA
- Max. tube current equivalent to 1560/2060¹ mA utilizing SAFIRE

Tube voltage

- 70–140 kV in 10 kV steps
- Sn100, Sn110, Sn120, Sn130, Sn140

Tube anode heat storage capacity

- 7.0 MHU; equivalent to 17.5 MHU with SAFIRE
- With iterative reconstruction technology the same clinical results can be achieved with less dose at maintained image quality. Therefore when using less dose the heat storage fills up more slowly.

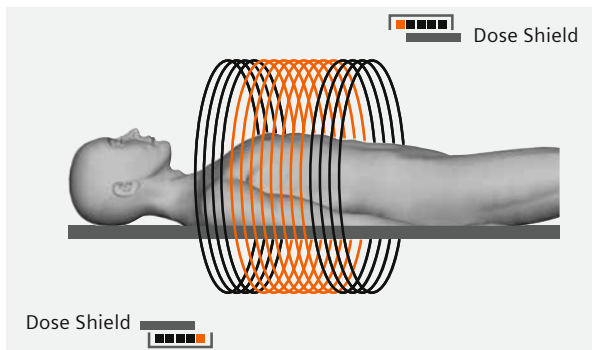
Tube cooling rate

Up to 1700 kHU/min

Focal spot size according to IEC 60336

- 0.8 x 0.8/7°
- 1.0 x 1.2/7°

Adaptive Dose Shield



- The first dynamic tube collimation that protects the patient from clinically irrelevant radiation in all standard spiral CT scan modes.
- Avoid unnecessary radiation most effectively in short scan ranges, especially in cardiac and pediatric scans.

Tin Filter



Inherited from high-end dual source scanners, the Tin Filter (Sn) cuts out lower energies to reduce dose and optimizes contrast between soft tissue and air.

Generator

Max. power

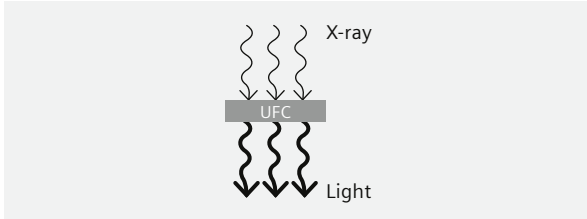
- 75 kW
- Equivalent to 187 kW with SAFIRE
- Equivalent to 93 kW with 78 cm gantry aperture

¹ Optional

System Hardware

Data Measurement System

UFC (Ultra Fast Ceramics)



- The Stellar detector keeps electronic noise low, increases dose efficiency, and improves spatial resolution.
- Speed and efficiency based on Siemens Healthineers' 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

- 64 (acquired slices)
- 128 (with IVR)
- Max. 384 (reconstructed slices)

Number of detector rows

64

Number of detector elements

53,760

Number of detector channels per row (in-plane)

840

Number of projections 1 s/360°

1,536

Sequence acquisition modes

64 x 0.6 mm, Sn64 x 0.6 mm, Sn3 x 5 mm, 1 x 10 mm, 1 x 5 mm, 3 x 5 mm, 3 x 3 mm, Sn3 x 3 mm

Spiral acquisition modes

64 x 0.6 mm, Sn64 x 0.6 mm, AuSn64 x 0.6 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.

Patient Table

Max. table load

- 227 kg / 500 lbs^{2,3}
- 307 kg / 676 lbs^{1,4}

Max. table feed speed

200 mm/s

Vertical table travel range

- 46–88.5 cm / 18"–35" (at table top)²
- 48.2–90.7 cm / 19"–35.7" (at table top)^{1,3}
- 47.5–90 cm / 18.7"–35.4" (at table top)^{1,4}

Vertical travel speed

28.3 mm/s

Scannable range

- 160 cm / 63" with patient table extension^{1,2,3}
- 200 cm / 78.7" with patient table extension^{1,4}

Patient table foot switch¹

- Foot Switch located on the bottom edge of the patient table allowing table positioning.
- Speeds up patient preparation and keeps the operator hands sterile.

X-ray foot switch¹

Foot switch for triggering scans from the examination room

¹ Optional

² For CT patient table (227 kg)

³ For RT patient table (227 kg)

⁴ For CT and RT patient table (307 kg)

myExam Companion

SOMATOM go. platform starts the era of intelligent CT imaging powered by myExam Companion. With this, AI turns aggregated data into built-in expertise to leverage the full potential of technologies automatically – regardless of where, when, and by whom the results have been produced.

myExam Compass

Based on condensed knowledge of thousands of scans, myExam Compass optimizes settings for excellent image quality, standardized results and always the right dose by enabling an optimum usage of our CARE, FAST and GO Technologies. Especially useful for less experienced users, myExam Compass suggests in the own user's clinical language, which settings are more appropriate for every patient based on the procedure and patient characteristics, finding the optimal combination of acquisition and reconstruction parameters.

Reduce complexity while enhancing consistency of cardiac, Dual Energy or other advanced or routine examinations.

Considerably reduce the number of protocols since you don't have to adapt them to individual patient attributes or user preferences. myExam Compass will help you do it on the fly.

myExam Compass is based on condensed knowledge from thousands of exams

- Generation of high quality imaging and operational data based on installed base expert usage.
- Aggregation based on an AI based algorithm that was developed to find an answer to "how" in addition to the "what" is done.
- myExam Compass offers knowledge based guidance at the hand of the technician:
 - Supporting individual patient characterization
 - Based on user's clinical language
 - Trainable by users
 - Sharable across the institution

This allows for reliable and reproducible results from day one. myExam Companion also means performing all advanced CT examinations as perfect and fast as if they were routine, allowing even unexperienced users to find the best combination of parameters for every individual patient and procedure. Get always consistent results and reduce unwarranted variations for enhanced diagnostic experience.

Cardiac CT made easy independent of operator skills

Specially useful for users less experienced in CT Cardiac procedures, myExam Compass suggests which settings are more appropriate for every patient based on the procedure and patient characteristics, finding the optimal combination of acquisition and reconstruction parameters for excellent image quality, standardized results and always the right dose.

Dual Energy is on when you need it

You are not sure in which cases to use Dual Energy or which Recon&GO results to create? Just rely on myExam Compass. Depending on factors such as the patient size, how well they can comply with breathing instructions or what the indication is, myExam Compass will adapt the protocol settings for you as established in your institution.

Anticipate potential breathing artifacts

Characterize proactively the patient's ability for breathhold and let myExam Compass adapt the scan parameters and optimize the scan speed. Especially in clinical trials, where protocol consistency is key, myExam Compass helps you homogenizing settings for all patients and operators

myExam Cockpit¹

The central engine of myExam Compass is driven by this Cockpit- the central user interface for fast and intuitive protocol configuration. In this expert mode, the user benefits from high flexibility to modify predefined protocols and the option to integrate their knowledge into standardized protocols, making them available for every users across your institution through myExam Compass.

- Use myExam Cockpit to include your experience: establish your protocol preferences once and let the Compass take over and avoid repetitive tasks.
- Share settings and easily standardize procedures across your institution.

¹ Optional

New Workplace Design

Thanks to gantry-integrated computers, SOMATOM go.Top gives you complete flexibility over where you position the workstation. Depending on your

needs and infrastructure, you can set it up in the same room, outside the scan room, or in a separate control room.

Image Reconstruction

Real-time display

- Real-time image display (512 x 512) during spiral acquisition on the workplace
- Wireless transfer of images for preview on the tablet. Transfer starts immediately after the end of scanning

Slice thickness

0.6–10 mm

Wide range of freely selectable slice thickness for prospective and / or retrospective reconstruction

Recon field¹

5–50 cm / 1.9"–19.7"

5–70 cm / 1.9"–27.5" with HD FOV²

Maximum reconstruction rate

- 23 fps for FBP, 20 fps for IR with Ultra-FAST IRS
- 40 fps for FBP, 29 fps for IR with Ultra-FAST IRS II³

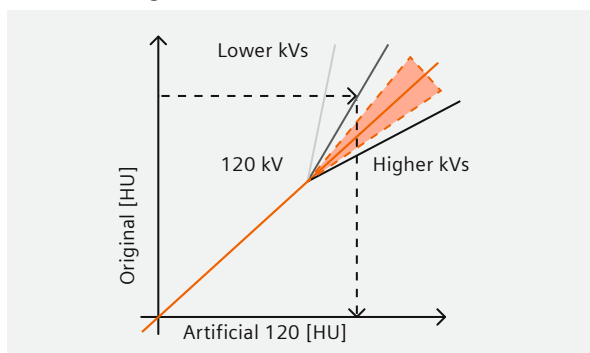
Recon matrix

512 x 512

HU scale

–8,192 to +57,343

Advanced algorithms



¹ 5–41.5 cm FOV with up to 1.5 pitch; above 41.5 cm FOV with up to 0.8 pitch

² The image quality for the area outside the 50 cm scan field of view does not meet the image quality of the area inside the 50 cm scan field of view. Image artefacts may appear, depending on the patient setup and anatomy scanned. HD FOV cannot be used for scan FOV smaller than 50 cm.

³ Optional

⁴ Or equivalent

- Iterative Beam Hardening Correction (iBHC) for reduction of beam hardening artifacts, e.g. in head images
- Any kV CaScoring is a specific reconstruction kernel to perform Agatston equivalent scores, even at lower kV settings where dose saving potential can be significant
- Large selection of reconstruction kernels to adapt to specific clinical needs

Acquisition Workplace (AWP)

Computer integrated into the gantry

Hardware integrated into the gantry to:

- Enable Flexible Room Design (see Installation part)
- Minimize the elements of the new workplace design to a monitor, keyboard, mouse and the control box

High performance computer CPU

Intel Xeon 3.6–4.0 GHz⁴ with Turbo Boost Technology

RAM

32 GB DDR4 RAM

Graphics card

Intel® HD Graphics P530⁴

Hard disk

720 GB SSD

Standard monitor

- 23" / 58 cm flat screen
- 1,920 x 1,080 resolution

Additional monitor³

Yes

Dual monitor³

Yes

Image storage

Up to 600,000 images (300 GB)

Additional storage

External USB 3.0 disks for quick and easy raw data storage are supported

Standard System Software and Applications

syngo Examination

Exam Designer

Easy and intuitive way to change and manage scan protocols

Topogram

Length

- 128–1,680 mm / 5–66" with table extension¹
- 128–2,080 mm^{1,4} / 5–82"¹ with table extension¹

Scan speed

200 mm/s

Scan times

- 1.36–8.76 s
- 1.36–10.76 s¹

Views

a.p., p.a., lateral

Real-time topogram

Manual interruption possible once desired anatomy has been imaged

Topogram scan using Tin Filter for further dose reductions

Patient Communication

Integrated patient intercom

Automatic Patient Instruction (API)

- Freely recordable
- 7 API text pairs for respective languages available
- Presets in 41 languages available
- New gentle voice for better patient comfort and increased audibility

Sequence Acquisition

Reconstructed slice widths

0.8, 1.0, 1.5, 2, 3, 4, 5, 6, 7, 8, 10 mm

Partial scan times (240°)

0.22¹, 0.33, 0.67

Scan times (full scan)

0.33¹, 0.5, 1.0 s

Acquisition with or without table feed

Dynamic Serio Scan

Automatic clustering of scans

Multislice Spiral Acquisition

Reconstructed slice widths

0.6, 0.8, 1, 1.5, 2, 3, 4, 5, 6, 7, 8, 10 mm

Temporal resolution

- 165 ms¹
- down to 83 ms¹ (bisegment)

Scan times full scan (360°)

0.33¹, 0.5, 1.0 s

Reconstruction increment

Min. 0.1 mm

Pitch factor

- 0.15–1.5
- Down to 0.03
(optional with Respiratory Motion Management)

Spiral scan time

Max. 300 s

Scan length

- Max. 160 cm / 63" with patient table extension^{1,2,3}
- Max. 200 cm / 78.7" with patient table extension^{1,4}

¹ Optional

² For CT patient table (227 kg)

³ For RT patient table

⁴ For CT patient table (307 kg)

Standard System Software and Applications

syngo Examination

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 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

IVR (Interleaved Volume Reconstruction)

IVR is a method to use the measured data as efficiently as possible to improve the spatial sampling in z-direction by reconstructing 128 slices for all spiral scans independent of pitch.

HD FOV¹

Designed to enable visualization of the human body parts and skin line located outside of the 50 cm standard scan field of view up to the bore size, based on the algorithmic complement of missing detector data outside of the 50 cm scan FOV.

¹ The image quality for the area outside the 50 cm scan field of view does not meet the image quality of the area inside the 50 cm scan field of view. Image artefacts may appear, depending on the patient setup and anatomy scanned. HD FOV cannot be used for scan FOV smaller than 50 cm.

² Most recent scanner software must be installed

³ If the security patch needs to be installed on site by Siemens Healthineers charges may result. Service conditions apply

syngo System Security

IT security functionalities enabling users to confront external IT threats, including unauthorized access to protected health information or manipulation of the system.

Network connection

Network communication is restricted to the clinically relevant DICOM nodes (for example, PACS and RIS)

Whitelisting (Microsoft Device Guard)

Marks all executable files to be used on the scanner and automatically prevents non approved executables from being started.

Malware protection (Microsoft EMET)

Prevents software vulnerabilities from being exploited by terminating, blocking or otherwise invalidating actions which might compromise the scanner.

User management

Defines individual user accounts and passwords to protect scanner access.

Password strength

Enables the creation of strong user passwords in compliance with the institution's password policy.

Audit trail

Enables the evaluation of who has conducted or altered studies, for example deleting parts of exam studies.

Groups and roles

Supports the creation of individual user privileges and restricts scanner usage according to institution's defined users.

Patient groups

Enables the creation of specific patient groups to protect sensitive patient information (e.g. data of VIP patients)

Trusted nodes

Reduces the risk of data manipulation by authenticating predefined secure medical devices in the institution's network (for example, PACS servers).

Security patches will be provided on regular basis² to maintain the clinical function of the medical device. Updates will be pushed via Smart Remote Services (SRS) and have to be confirmed/executed by the on-site user.³

Standard System Software and Applications

syngo Archiving & Networking

Screen Recorder

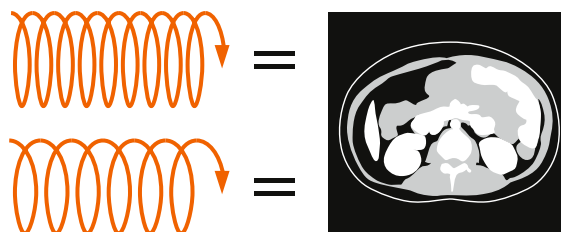
Integrated solution for imaging and visualization of 4D information, allowing the generation and editing of video files for improved diagnoses, recording, and teaching. A wide range of multimedia formats are supported, e.g., AVI, Flash (SWF), GIF, QuickTime (MOV), streaming video.

Image Transfer/Networking

- Interface for transfer of medical images and information using the DICOM standard. Facilitates communication with devices from different manufacturer.
- DICOM Storage (Send/Receive)
- DICOM Query/Retrieve
- DICOM Basic print
- DICOM Get Worklist (HIS/RIS)
- DICOM SR viewer
- DICOM Storage Commitment
- DICOM Viewer on CD/DVD
- DICOM MPPS

SureView: Siemens Healthineers' 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

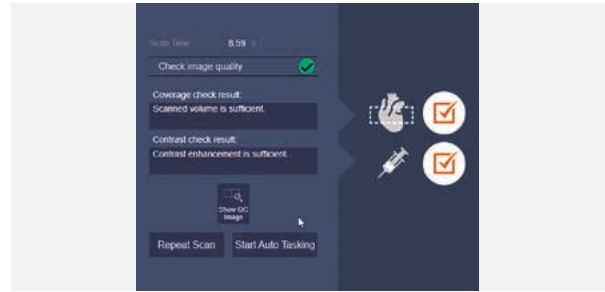
Standard GO Technologies

Scan&GO¹



This advanced tablet app allows you to control scans remotely. You can choose whether to operate the scanner at the gantry or from outside the room to benefit from faster patient preparation and positioning. You can also check the images quickly after the scan, as wireless connectivity sends the results to the tablet almost immediately. The Mobile Workflow concept is expanding further. More than one flexible docking station² can be used to maximize the freedom of the operator or the operators. The stations can be either wall mounted or conveniently sitting on the desk or other surfaces. They are equipped with the proper interface to charge the tablet.

Check&GO



Based on big data, this intelligent algorithm flags up problems with coverage or contrast distribution as they occur. Correct issues on the go, prevent subsequent errors in multiphase scans, and avoid archiving suboptimal images.



Check&GO Metal Detection helps prevent mistakes and rescans by alerting the user when metallic objects such as glasses, belts, chains or earrings are not removed and present on the scan area after the topogram is done.

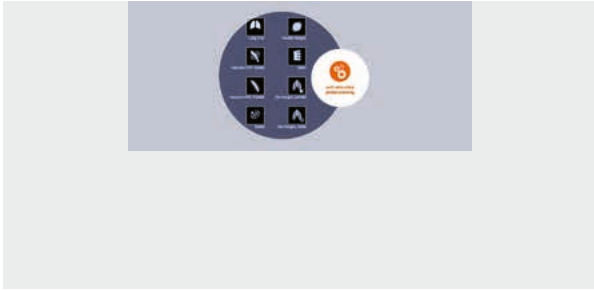
Check&GO, including metal detection is available both on the AWP and on the Scan&GO tablet application.

¹ Availability depends on country-specific approval and release of the wireless devices

² Optional

Standard GO Technologies

Recon&GO



Powered by AI algorithms that recognize individual patient landmarks and anatomies, Recon&GO performs zero-click postprocessing making it part of the standard reconstruction tasks. This ready-to-read technology saves time and cuts down on workflow steps. Recon&GO delivers high-quality results irrespective of the operator or clinical area, and allows users to spend more time with the patient.

Recon&GO including

Multi-recon

Simultaneous reconstruction of different MPR orientations or image impressions (kernel and window settings)

Inline Anatomical Ranges

Powered by ALPHA (Automatic Landmark Parsing of Human Anatomy), this technology automatically recognizes anatomical landmarks in the acquired images and creates ready-to-read standard orientations for different joints and body regions

Inline Table and Bone Removal

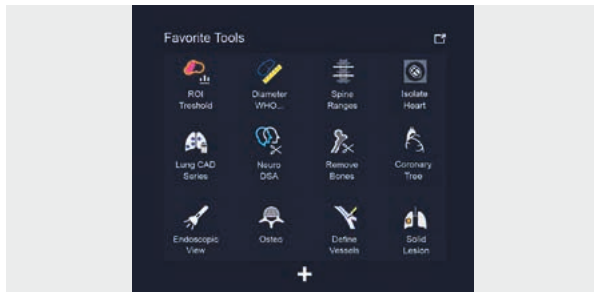
Zero-click bone-free VRT reconstruction that facilitates a precise vascular assessment by visualizing blood vessels without interfering anatomical structures

Inline Vessel Ranges

Zero-click vessel centerline extraction and anatomical labeling of the main vessels (aorta, run-offs and carotids) with display of Curved Planar Reconstruction to simplify reporting of findings and stenosis assessment

Standard GO Technologies

CT View&GO



As an all-in-one, cross-specialty viewing solution, CT View&GO provides a large variety of clinical applications and tools for smooth reading in just one workflow

Customizable user interface, through a Favorite Toolbox

Automatic distribution and filming of images and results

Window width and center freely selectable

Single window

Multiple window settings for multi-image display

Organ-specific window settings, e.g., for soft tissue and bones

Image zoom and pan

Evaluation Tools @ CT View&GO

Parallel evaluation of more than 10 Regions of Interest

- Circle
- Irregular
- Polygonal

Statistical evaluation

- Area / volume
- Standard deviation
- Mean value
- Min. / max. values

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 and Printing @ CT View&GO

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

Standard GO Technologies

3D Visualization @ CT View&GO

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)

MIP and minIP

- MIP: Maximum Intensity Projection
- MinIP: Minimum Intensity Projection
- Thin MIP function for projection within a small slab to focus on particular vascular structure

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

Post-processing applications @ CT View&GO

Table and Bone Removal

Fast accurate presentation of subtracted CT Angiographic data sets

Vessel Extension

- Set of tools and layouts for guided creation of CPR (Curved Planar Reconstructions) for enhanced vascular assessment – for aneurysms or peripheral artery disease, for instance
- Comprehensive length and diameter measurements

Spine Ranges

- Guided reconstructions of anatomically aligned spine Curved Planar Reconstructions (CPR)
- Automatic detection and labeling of vertebrae

Endoscopic View

Virtual Endoscopy software enabling visualization of airways and intestines

Diameter/WHO area

Longitudinal lesion measurements and WHO for enhanced clinical decisions in oncology

ROI HU Threshold

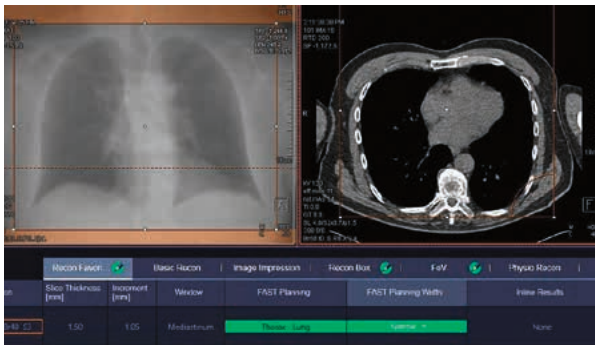
Evaluation and display of tissue densities within a certain HU range. This can help to quantify fat or assess lesions for hypodense areas as a possible indicator of therapy response.

Lung Lesion Segmentation

The Lung Lesion Segmentation tool in CT View&GO performs an automated segmentation of solid and subsolid lesions in lungs, providing the volume and diameter according to the LungRADS guidelines.

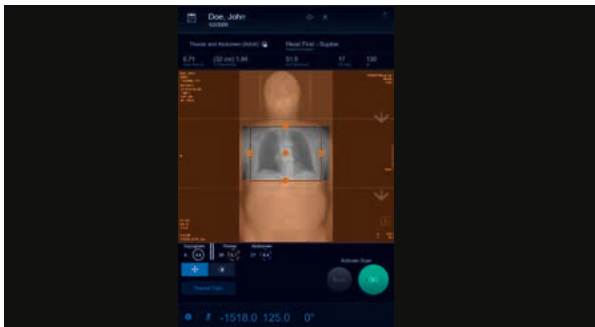
Standard FAST Applications

FAST Planning @ AWP



Fast, organ-based setting of scan and reconstruction ranges powered by AI. 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 Planning @ Scan&GO tablet



In addition to the Acquisition Workplace (AWP), FAST Planning is also part of the Mobile Workflow as it is integrated in the Scan&GO tablet user interface. The automatic and precise organ coverage leverages the mobility of the user as FAST Planning is applied on the topogram image which is wirelessly sent from the gantry computers to the tablet. The user can also decide if he would like to adjust further the scan plane by using the touch screen on the tablet and define the new axial and transaxial ranges manually.

FAST Contact¹



FAST Contact is the easiest way to contact our service experts directly from the scanner console for technical and clinical application support. LifeNet – our fleet management tool – also tracks and archives service tickets generated with FAST Contact.

FAST ROI

The FAST ROI feature automatically identifies regions of interest and calculates HU in the aorta and the pulmonary trunk for automatic triggering of bolus-tracking examinations.

Ultra-FAST IRS

Powerful Image Reconstruction System that allows faster pre-processing and reconstructions of the CT data, with up to 23 images/second.

¹ LifeNet and FAST Contact is subject to country specific availability.

Optional FAST Applications

FAST 3D Camera

World's first 3D camera integrated in a CT positioning workflow is available as an option and allows automatic patient positioning in the examination room. The FAST 3D camera captures the patient's shape, position, and height in three dimensions. Using infrared measurement, it even recognizes body contours: for example, when people are wearing masking clothes or blankets.

Specialized applications support accurate and reproducible positioning:

- FAST Isocentering, at the push of a button, provides the correct isocenter position, enabling the right dose modulation and consistent images.
- FAST Range supports scanning the correct body region in the topogram with no cut-off – by aligning the automatically identified anatomical position with the protocol.
- FAST Direction helps safeguard the right scan direction of the topogram, which is crucial when moving the table with infused patients.



The 3D camera is used to get data of the patient structure in three dimensions and is equipped with an infrared light source and sensor as well as an RGB camera.

The 3D camera system is positioned above the patient table and in front of the gantry.

A live image of the patient is displayed on the Touch Panel preparation screen and a planning image can be taken and displayed.

The FAST 3D camera captures the patient's shape, position, and height in three dimensions.

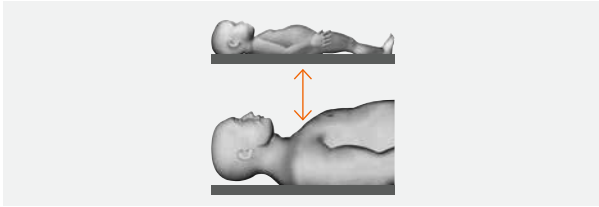
Using infrared measurement, it even recognizes body contours: for example, when people are wearing masking clothes or blankets.

Algorithms use the measured data to calculate

- The body regions in z-direction
- The patient's direction – "headfirst versus feet-first" as well as "prone or supine"
- The table height and patient thickness

Standard and Optional CARE Applications

CARE kV



CARE kV automatically tailors tube voltage to each patient and clinical indication. With optimal kV levels in every case, CARE kV keeps dose low, making it ideal for pediatric imaging. It further simplifies the process by aligning the tube current with the selected kV.

10 kV Steps

Our unique 10 kV Steps feature also helps you tailor voltage to your patient. It can adjust the level at intervals of 10 kV for less dose and high contrast resolution.

CARE Child

CARE Child offers a range of targeted solutions for minimizing radiation exposure while maintaining diagnostic image quality. Pediatric protocols automatically set a low tube voltage – in most cases 70 kV – while CARE Dose4D optimizes dose distribution and offers special modulation curves. The X-ray exposure is adapted to the child's (and small adult's) weight and age, substantially reducing the effective patient dose.

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

Permanent filtration of X-ray tube assembly
Equivalent to 5.5 mm Al @ 140 kV

Tube collimator

- Equivalent to 0.5 mm Al in the isocenter
- 1 mm Al with cardio wedge

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).

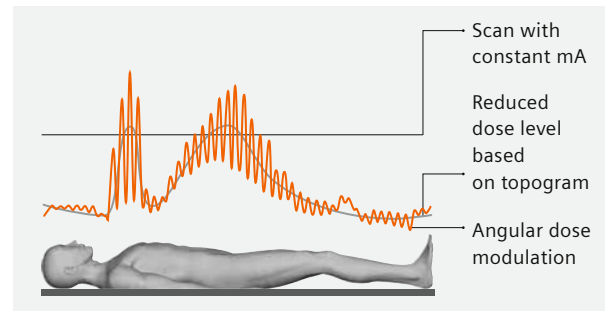
CARE Bolus CT allows the planning and the execution of contrast workflows within the Scan&GO user interface.

CARE Topo

Real-time topogram

Manual interruption possible once desired anatomy has been imaged

CARE Dose4D



Automated 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

X-CARE

Reduce the organ dose for dose-sensitive body parts while maintaining image quality. Organ dose reduction for radiation-sensitive peripheral organs, e.g., eye lenses. Keep the average $CTDI_{vol}$ constant with automated tube current adjustments and use by simply selecting the dedicated right protocols.

Standard and Optional CARE Applications

Protocol Password Protection

Prevent unauthorized access to scan protocols and avoid unauthorized modifications.

DICOM SR Dose Reports

DICOM structured file allows for the extraction of dose values (CTDI_{vol}, DLP) to create transparency and document dose values.

DoseLogs

Whenever the set reference dose levels are exceeded automatically a report is created on the system. The report can for example be used for audit purposes.

Dose Notification

The software checks the dose values per chronicle entry. May help to protect from over-radiation and warn the operator in case set dose thresholds are exceeded.

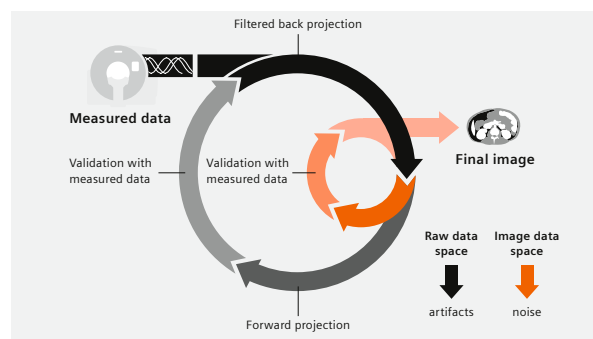
Dose Alerts

The software checks the accumulated dose per z-position. May help to protect from over-radiation and warn the operator in case set dose thresholds are exceeded.

CARE Contrast¹

Facilitates contrast enhanced clinical workflow by synchronizing CT scan and contrast media injection using a single button control. It speeds up clinical workflow and allows efficient and confident monitoring of patients during contrast media injection and scan start.

SAFIRE (Sinogram Affirmed Iterative Reconstruction)



SAFIRE is a unique method that reduces image noise without loss of image quality or detail visualization by introducing multiple iteration steps now also in the raw data in the reconstruction process. As determined from SOMATOM Definition Flash data, SAFIRE enables up to 60% dose reduction².

SAFIRE is easily incorporated into daily routine to maintain high patient throughput thanks to an excellent reconstruction speed.

Flex Dose Profile

In combination with CARE Dose4D and FAST Planning, Flex Dose Profile allows a more optimal modulation of the dose in long scan ranges where different quality references might be needed for instance in regular thorax-abdomen or in Chest Pain examinations.

The Flex Dose Profile is displayed at the AWP and at the Scan&GO tablet with the same visual logic as any other procedures, so users of any level of experience can utilize it right away.

Automatic detection of individual patient landmarks and anatomies for more personalized and accurate dose handling.

¹ Optional

² In clinical practice, the use of SAFIRE 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. As determined from SOMATOM Definition Flash data, SAFIRE enables up to 60% dose reduction. Data on file.

Optional High Performance Package

Benefit from additional operational and clinical flexibility by configuring your SOMATOM go.Top with the High Performance package, a bundle of software and hardware options to boost your performance.

High Power 70 & 80

High Power 70 & 80 and the all new Athlon X-ray tube allow you to scan at 70 or 80 kV with the highest tube current of this CT class, up to 825 mA.

Benefit from exceptionally high currents at low kV levels down to 70 kV (selectable in 10 kV steps) for enhanced iodine contrast, which is especially useful for very small vessels.

The clinical benefit of High Power 70 & 80 is based on the mass attenuation coefficient. For lower photon energies, the mass attenuation coefficient of iodine increases, whereas soft tissue is less energy-dependent. This means that the iodine-to-soft-tissue contrast in the CT image will increase with low-kV imaging and lower average photon energy. This increase is extremely beneficial for contrast-enhanced studies.

High-speed 0.33 s

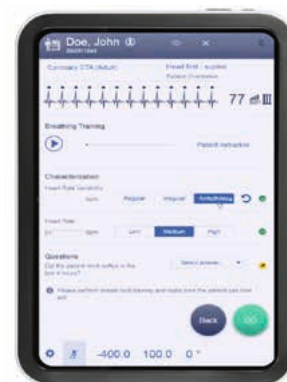
This option provides a rotation speed of down to 0.33 sec per rotation, for outstanding image quality and very high scan speeds. Fast gantry rotation is the prerequisite for highest temporal resolution and is therefore essential for brilliant, motion free cardiovascular imaging. With the temporal resolution of up to 83 ms, this CT is especially suitable for cardiac examinations and fast scanning.

CARE Contrast

Facilitates contrast enhanced clinical workflow by synchronizing CT scan and contrast media injection using a single button control. It speeds up clinical workflow and allows efficient and confident monitoring of patients during contrast media injection and scan start.

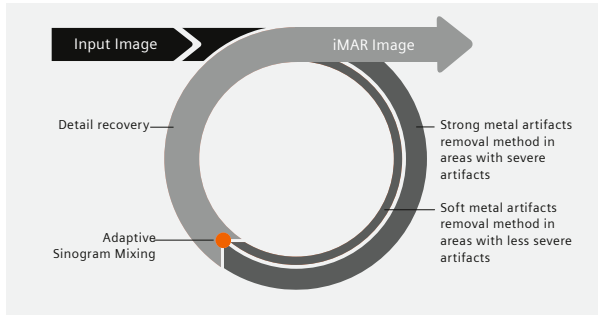
Basic Cardio Package

The SOMATOM go.Top with the High Performance Package is equipped with the basic cardio package boosted by myExam Compass. Based on patient characteristics such as e.g. heart rate and variability, myExam Compass suggests the most appropriate combination of acquisition and reconstruction parameters. Furthermore, it includes the adaptive Cardio Spiral and a new specific reconstruction kernel which enables Agatston equivalent scores even at lower kV settings. Together with the known GO Technologies this makes more advanced procedures like coronary CTAs easy. With real time feedback of ECG signal and electrode placement quality at the tablet, Scan&GO enables you to plan your entire scan close to the patient and also train the crucial breathing commands. Check&GO automatically checks for any removable metal, the correct organ coverage and contrast media distribution in real time. And Recon&GO inline CaScoring and syngo.CT Calcium Scoring provide you with total and relative Calcium Scoring including Coronary Age calculation – allowing you to include calcium scoring in every cardiac scan with almost no impact on workflow. The adaptive retrospective ECG-gated CT cardio spiral obtains CT images of the heart in defined phases of the cardiac cycle and let's you react flexibly to arrhythmia. Retrospective ECG gating also allows functional imaging of the heart and can be combined with ECG pulsing, reducing the dose beyond the regular dose plateau by ECG-based dose modulation.



Optional High Performance Package

iMAR



iMAR is a metal artifact reduction algorithm based on the Adaptive Sinogram Mixing. The Adaptive Sinogram Mixing combines a strong metal artifact removal method in areas with severe artifacts and a soft correction in areas with less severe artifacts. The result is an outstanding image quality with metal artifacts removed while valuable information remains even for challenging cases like spine implants, pacemakers, dental fillings and neuro coils.

Compatible with HD FOV, Guide&GO, extended CT scale and dose reduction features

Recon&GO

Inline Spine Ranges

Zero-click reconstruction of anatomically aligned spine reconstructions. The software detects and labels vertebrae within a predetermined scan area, and calculates their position for anatomically correct image reconstructions. This delivers time savings for a complete spine reconstruction, while reducing the risk of mislabeling associated with manual preparation.

Inline Radial and Parallel Rib Ranges

Zero-click reconstruction of radial and parallel rib specific visualization that adapts the rib cage anatomy according to the radiologist's reading needs – displaying all ribs spread out in one plane. Automated rib labelling and numbering.

Inline CaScoring

Establish Calcium Scoring in all your cardiac examinations with almost no impact on workflow steps. For the first time, Inline CaScoring makes the Calcium Score available as zero-click reconstruction. The total Agatston score as well as the Coronary Age estimation (based on trial data) are automatically calculated and can be sent directly to PACS.

Optional System Software and Packages

Flex 4D Spiral – Neuro¹

- Continuously repeated bi-directional table movement during spiral acquisition enables an extended range for 4D information
- Facilitates volume perfusion studies in head applications for a perfusion range of up to 8.5 cm
- Facilitates dynamic angiographies for head and neck with a coverage of up to 26.5 cm
- These dynamic procedures are handled at the AWP with the same visual logic as any other procedures, so users of any level of experience can perform them right away

Recon&GO Inline ASPECTS

Inline ASPECTS automatically calculates the ASPECT score of a non-contrast CT head scan and highlights the affected brain regions as an overlay on the CT image. The images and results are automatically calculated in the background and can be directly sent to PACS without any user interaction.

This makes Inline ASPECTS routine ready by providing consistent results independent of the user and always available especially in urgent situations when time is a scarce resource.

Neuro Package

The Neuro Package of your SOMATOM go.Top provides you with tools for the full stroke assessment



- Outstanding native neuro scanning with high detector channel density of the Stellar detector for excellent gray/white matter differentiation
- Neuro DSA (Digital Subtraction Angiography) @ CT View&GO for bone-free evaluation of the neuro vasculature
- syngo.CT Neuro Perfusion for dynamic 4D quantification and visualization of perfusion data

¹ Requires 307 kg patient table and 0.33 sec rotation time

² Requires High Performance Package

³ Recommended applications for evaluation in syngo.via: syngo.CT Body Perfusion and syngo.CT Dynamic Angio

In addition, Recon&GO automatically produces standardized orientations to overcome challenging situations where patients might be wrongly positioned or unable to cooperate.

Neuro DSA @ CT View&GO

By enabling single-click, bone-free visualization, Neuro DSA (digital subtraction angiography) allows quick and easy neurovascular assessment without increasing dose, as it uses the standard, non-enhanced head scan for the subtraction.

Flex 4D Spiral – Body^{1,3}

- Continuously repeated bi-directional table movement during spiral acquisition enables an extended range for 4D information.
- Facilitates volume perfusion studies in body applications for a perfusion range of up to 18.5 cm
- Facilitates dynamic studies up to a scan range of 40 cm
- These dynamic procedures are handled on the AWP with the same visual logic as any other procedure, so users of any level of experience can perform them right away

Advanced Cardio Package²



The Advanced Cardio Package allows for comprehensive cardiac assessment and clinical consistency in cardiac CT with ease. Optimized, fully tablet-operated scan preparation, fast scanning, and standardized results in every cardiac case enabled by the integrated GO technologies allow you to devote more time to your patient.

It features:

- Adaptive Cardio Sequence for even more dose conscious cardiac scanning
- Bi-segment Cardio Spiral for improving temporal resolution in case of higher heart rates
- Inline cardio ranges with zero-click CPR creation, inline Heart Isolation and inline Coronary Tree with Recon&GO
- Intuitive and straightforward reading of challenging cases with the Cardio Ranges functionality at the CT View&GO

Optional System Software and Packages

Guide&GO¹ CT-guided Intervention Package



The first tablet-based solution for CT-guided interventions. Built on the new mobile workflow, it is both familiar and easy to use. You can control the entire intervention with the tablet and the remote control – no need for ceiling-mounted displays or joysticks – and the tablet cover means you can use it even in sterile environments. Needle guidance is supported by the highly intuitive image manipulation functions we know from our smartphones.

It features:

- CT-guided intervention workflow supported by the Guided path in the Scan&GO tablet user interface
- Image based navigation for fast location of the slice target position
- FAST i-sequence for fast repetition of several low-dose sequential scans
- 3x3 mm and 3x5mm i-sequence acquisition modes
- iMAR² removes or mitigates artifacts in a wide variety of clinical situations
- Toggle functionality between predefined window settings
- Laser cross hair visualization
- Tin Filter low dose protocols for spiral scans
- Intuitive tools at the tablet:
 - Zoom/Pan
 - Window presets
 - Free windowing
 - Distance and angle measurements
 - Show Distance Lines Everywhere
 - Show/Hide graphics
 - Save Key Image
- Patient table side rails
- Tablet and remote control holders³ for improved ergonomics

Lung CAD Package

Inline Lung CAD

- Zero-click Lung CAD (Computer Aided Detection) series reconstruction, designed as second reader tool to assist radiologists in the detection of pulmonary nodules during review of CT examinations of the chest
- Detection of solitary nodules, as well as those adjacent to vessels and pleural surfaces

Lung CAD @ CT View&GO

- Lung CAD (Computer Aided Detection) is a fully automated, computer assisted second reader tool, designed to assist radiologists in the detection of pulmonary nodules during review of CT examinations of the chest.
- Lung CAD potentially makes results more objective and consistent, and shortens the radiologists' learning curve since the skill in interpreting diagnostic images may vary among interpreting physicians.
- Detection of solitary nodules, as well as those adjacent to vessels and pleural surfaces

syngo.CT Dental

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.

CT Osteo @ CT View&GO

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.

¹ The tablet application is intended as an orientation aid for needle path planning or needle position monitoring. The tablet display is not intended to be used for diagnostic imaging. Refer to the user documentation for verification of the results.

² Requires iMAR or High Performance Package

³ Additional hardware option

Optional System Software and Packages

Spectral imaging with Dual Energy

By allowing you to characterize, highlight, and quantify different materials, Dual Energy gives you greater diagnostic confidence with virtually all patients. It does this without dose penalty, and even allows you to further minimize radiation with any of our existing dose-reduction technologies.

Dual Energy procedures are handled at the AWP or at the Scan&GO tablet with the same visual logic and automation as any other procedures, so users of any level of experience can perform them right away.

SOMATOM go offers a holistic solution that makes DE routine ready for all patients and situations – completely neutral in dose and workflow.

Specially useful for users less experienced with the DE technique, this holistic approach, powered by the new myExam Compass, suggests which DE settings are more appropriate for every patient based on the procedure and patient characteristics, finding the optimal combination of acquisition and reconstruction parameters for excellent image quality, standardized results and always the right dose.

TwinSpiral Dual Energy¹

This scan mode is supported by a new workflow concept of two scans integrated into one single acquisition. It offers the possibility to acquire two spiral data sets in sequence at different energies. These two different kV levels with independent mAs modulation are utilized to combine tissue information and go beyond morphological imaging by providing additional functional information.

Thanks to the spectral properties of the Tin Filter, TwinSpiral DE allows a better spectral separation for non-contrast examinations, useful for instance for assessment of subtle functional changes for instance in Bone Marrow.

Improved spectral separation leads to better dose distribution i.e. reduced overlap of the high and low energy spectra resulting in better dose efficiency.

All dose reduction technologies applicable, such as CARE kV, CARE Dose4D and SAFIRE. These technologies allow to get excellent image quality and optimal dose for all situations and patients, even with the most challenging ones.

CT View&GO – Dual Energy ROI

Basic evaluation of the behavior of different tissues at different energies as an indication of their atomic composition

TwinSpiral Spectral Viewing

TwinSpiral Spectral Viewing allows for comprehensive assessment of non-contrast Dual Energy acquisitions with the most common applications. No matter if you would like to do your postprocessing directly at the AWP or rather have it sent automatically to PACS by Recon&GO – it offers a solution for all clinical workflows.

Recon&GO – Inline DE results for Mixed and Monoenergetic Plus²

Standardize results by automatically generating Mixed and Monoenergetic Plus Inline results in any required orientation, thickness or keV level e.g. for metal artifact reduction.

CT View&GO – Interactive Spectral Imaging for Mixed and Monoenergetic Plus²

- Start your postprocessing directly at the scanner within CT View&GO by the click of one button.
- Interact with Dual Energy information and select the energy level at which implants, clamps or screws have the smallest impact on image quality

syngo.CT Dual Energy – Advanced applications for AWP

Take advantage of advanced DE postprocessing directly at the scanner.

syngo.CT Dual Energy:

- Preparing and viewing of Dual Energy data
- Monoenergetic

syngo.CT DE Monoenergetic Plus²:

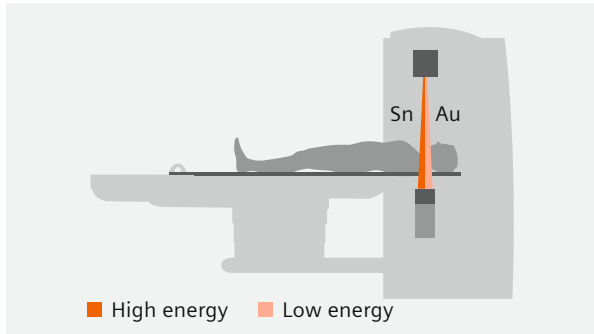
- Improved algorithm for enhanced image quality
- Evaluation of multiple ROI

¹ Included in the standard configuration

² In combination with TwinSpiral not for visualization of iodine, only for metal artifact reduction

Optional System Software and Packages

TwinBeam Dual Energy



TwinBeam Dual Energy technology acquires low- and high-kV datasets in a single scan. This produces rich diagnostic information that a conventional single source scan cannot deliver, especially useful for characterizing contrast media examinations.

TwinBeam DE available for 120 and 140 kV and applicable with CARE kV and all other dose reduction technologies allows to get excellent image quality and optimal dose for all situations and patients, even with the most challenging ones.

Full number of projections for both spectra resulting in no compromise on image quality

Separate reconstruction of high and low energy image series

Composed reconstruction enables single-energy image dataset with diagnostic image quality

TwinBeam Spectral Viewing¹

TwinBeam Spectral Viewing extends your Dual Energy assessment to contrast media enhanced acquisitions. With the same work flow freedom as the TwinSpiral Spectral Viewing package, it presents you with a thorough solution for your oncological assessment. In addition it offers you:

Recon&GO – Inline DE results for Virtual Unenhanced (incl. iodine map) / Liver VNC / Fat map

Standardize results by automatically generating non-contrast images optimized for the respective organ tissue, iodine maps and fat maps and use Monoenergetic Plus also for further contrast enhancement.

CT View&GO – Interactive Spectral Imaging for Virtual Unenhanced (incl. iodine map) / Liver VNC / Fat map

- Expand the interaction with Dual Energy information to contrast media enhanced scans
- Toggle easily between different postprocessing visualizations and answer your clinical questions in just one work flow directly at the scanner

syngo.CT Dual Energy – Advanced applications for AWP

Take advantage of advanced DE postprocessing directly at the scanner.

syngo.CT Dual Energy:

- Mixed image calculation
- Optimum Contrast

syngo.CT DE Virtual Unenhanced:

- Iodine uptake quantification
- Calculation of virtual unenhanced images (incl. Liver VNC)
- Calculation of fat map in the liver

¹ Requires TwinBeam Dual Energy

Optional System Software and Packages

Recon&GO – Spectral Recon¹

- Benefit from the speed of Dual Energy reconstructions calculated directly at the IRS based on the spectral information available in the raw data, while reducing the amount of data and transfer times to PACS. It offers full freedom of reconstruction parameters (e.g. kernels, recon options such as different orientations including oblique orientation).
- Full freedom for further multiplanar reconstructions and quantification of DE related parameters.
- Spectral Recon includes:
 - Mixed
 - Monoenergetic Plus
 - VNC (Virtual Non-Contrast)
 - Iodine map

Dual Energy Gout

Overcome difficulties of conventional gout assessment and visualize uric acid depositions in peripheral extremities non-invasive with Dual Energy Gout. Exploit the full range of work flow flexibility and generate color-coded visualizations of crystal depositions without boundaries using:

- Zero-click PACS ready Recon&GO DE Gout
- Advanced syngo.CT DE Gout application directly at the AWP

Dual Energy Calculi Characterization

Identify and characterize different kinds of kidney stones with Dual Energy Calculi Characterization. Visualize the chemical composition of kidney stones using:

- Zero-click PACS ready Recon&GO DE Calculi Characterization
- Advanced syngo.CT DE Calculi Characterization application directly at the AWP

Dual Energy Brain Hemorrhage^{2,3}

Differentiate hemorrhage from bleeds and lesions by the remarkable spectral separation of TwinSpiral Dual Energy and visualize iodine concentration and distribution in the brain with:

- Zero-click PACS ready Recon&GO DE Brain Hemorrhage
- Advanced syngo.CT DE Brain Hemorrhage application directly at the AWP

Dual Energy Bone Marrow²

Bone Marrow can be affected by various pathologies such as bone bruises and diffuse tumor infiltration. Harness Dual Energy to segment and visualize bone marrow always applicable to your personal work flow by:

- Zero-click PACS ready Recon&GO DE Bone Marrow
- Advanced syngo.CT DE Bone Marrow application directly at the AWP

Dual Energy Direct Angio⁴

Use Dual Energy to reliably isolate bone from contrast-media enhanced vessels and discover bone free views of the vessel system even in complex vasculature such as the base of the skull:

- Zero-click PACS ready Recon&GO DE Direct Angio
- Advanced syngo.CT DE Direct Angio application directly at the AWP

Dual Energy Lung Analysis⁴

Broaden your Dual Energy assessment and use the help of dedicated applications to detect pulmonary embolism and its related lung perfusion defects with:

- Zero-click PACS ready Recon&GO DE Lung Analysis
- Advanced syngo.CT DE Lung Analysis application directly at the AWP

Dual Energy Rho/Z⁵

One factor for the attenuation of X-rays is the electron density and the effective atomic number. Obtain the chemical characterization of different materials by:

- Zero-click PACS ready Recon&GO DE Rho/Z
- Advanced syngo.CT DE Rho/Z application directly at the AWP

¹ Requires Ultra-FAST IRS II

² Only in combination with TwinSpiral Dual Energy and TwinSpiral Spectral Viewing

³ Only for visualization of static iodine enhancement after interventional procedures (not for CTA)

⁴ Only in combination with TwinBeam Dual Energy and TwinBeam Spectral Imaging

⁵ Not cleared for use as a basis for radiation therapy planning, but for visualization only

Fleet Management Applications

teampay BASIC¹



With SOMATOM go.Top and our cloud-based performance management solution teampay, you will get a transparent overview of your system data. teampay helps you identify areas of improvement and monitors your Siemens Healthineers fleet's performance.

teampay Dose BASIC

View dose performance of your SOMATOM scanners and filter data by modality, body region, protocol and location. Automatic detection of dose events through institutional and national reference levels enable efficient dose data analysis.

teampay Usage BASIC

Monitor your imaging throughput of your SOMATOM scanners and compare performed procedure types, examined body regions or patient throughput over weeks and months. Detect workflow inefficiencies and continuously increase your department's productivity.

teampay Protocols² BASIC

Pull and push all protocol files of your SOMATOM scanners into one convenient location. View protocol parameters, compare protocol changes over time and comment on changes or release decisions for quality and tracking purposes.

teampay CORE³

teampay CORE extends the functionalities to all scanners of your fleet regardless of manufacturer². teampay CORE provides advanced functionalities like benchmarking or monitoring of dose reduction improvements.

teampay Dose CORE

Compare dose performance of different entities or of different time frames to identify improvement potentials and track implemented dose reduction measures. Scanner data from 3rd party vendors are also supported⁴ enabling efficient dose data analysis across the whole institution.

teampay Usage CORE

Monitor your imaging throughput and resource allocation of the complete department down to every device and procedure through 3rd party vendor support⁴. Additionally, benchmark values for examination duration per scanner are provided.

teampay Protocols² CORE

Save time and resources by distributing protocols remotely to compatible SOMATOM scanners⁵, standardizing your imaging outcome and quality of care. Edit protocols remotely enabling accurate, fast and confident clinical decisions. Additionally, you can share protocols with other institutions or create XLS protocol documentation containing all protocol parameters.

SOMATOM go.Top is compatible and ready for teampay. For more information and experiences please visit: www.siemens.com/teampay

¹ teampay BASIC supports Siemens Healthineers modalities only

² teampay Protocols supports selected Siemens Healthineers scanners only. Please contact your sales representative for more details.

³ Optional

⁴ Data support derived from DICOM image headers

⁵ Selected Siemens Healthineers scanners support distribution and receiving to the same scanner model or between scanner models. Availability depending on scanner software version.

Radiation Therapy System Software and Hardware

HD FOV

Designed to enable visualization of the human body parts and skin line located outside of the 50 cm scan field of view up to the bore size, based on an algorithmic complement of missing detector data outside of the 50 cm scan FOV.

The image quality for the area outside the 50 cm scan field of view does not meet the image quality of the area inside the 50 cm scan field of view. Image artefacts may appear, depending on the patient setup and anatomy scanned. HD FOV cannot be used for scan FOV smaller than 50 cm.

Radiation Therapy Basic¹

Radiation Therapy Basic is a dedicated virtual simulation tool designed for RT available under the CT View&GO platform. Contain Sim&GO.

General features

- Concurrent display of up to a total of 4 image series (2 single or 2 fused series) over 4 image panels
- Data pre-fetching from DICOM nodes and imaging devices, simple import from CDs and DVDs, patient data reconciliation
- Image preview function
- Drag&Drop image loading
- Automatic data transfer to TPS configuration
- DICOM, HL7 and IHE-RO standard compliance
- Create annotations and measurements and share them

Patient Marking

- Single or multiple reference points or isocenters
- Absolute and relative patient marking
- Automatic marking of structure centroids
- Direct Laser Steering for compatible lasers²
- DICOM and text file data exchange with lasers
- Virtual Laser View for display of laser lines on 3D patient model (VRT)
- Patient marking on any supported image type
- One-click breast isocenter placement with automated contouring

Contouring Features

- User configurable organ templates based on a subset of the FMA (Foundation Model of Anatomy) for interoperability between IT systems
- Parallel contouring: contouring performed on any image is reflected on all other images
- Semi-automatic freehand contouring 2D, 3D
- Smart 2D/3D Nudge
- Contour on any arbitrary plane including oblique planes
- Organ algebra (union, intersection, exclusion)
- Symmetric and asymmetric structure growth or contraction
- Multiple structure set support (1 per image series)
- Molecular imaging data such as PET, thresholdbased and skin, gray value-based segmentation
- Visualization of previously drawn structures on the current image series

4D data management

- 4D phase splitting
- tMinIP, tMIP, AverageCT generation
- Cine-loop
- ITV generation
- Quantitative assessment of 3D tumor trajectory and amplitude and semi automatic calculation of the midventilation phase
- Control the patient marking workflow with the RT dedicated tablet and avoid unnecessary switching between different interfaces to enter laser co-ordinates.
- Stay closer to the patient with patient centric mobile workflow
- Fully compatible with 3rd party LAP DORADO lasers

Beam Placement

- Beam Placement including DRR, Source to Distance and beam templates
- Automated beam shaping based on RT structure

¹ Optional

² Optional. Available for following LAP lasers: DORADO 1, 3, 4, DORADOnova 1, 3, 5

Radiation Therapy System Software and Hardware

DirectDensity¹

DirectDensity images unlock a wider range of tube voltages in CT scanner while supporting better imaging quality and yielding equivalent tissue characterization compared to standard practice.

RT table and overlay¹

- 227 kg Patient Table RT with 227 kg Multi-index RTP overlay
- Multi-indexing with Varian and Elekta indexing
- Light weight overlay
- TG-66 compliant

- 307 kg Patient Table RT with 307 kg Multi-index RTP overlay
- Multi-indexing with Varian and Elekta indexing
- Light weight overlay
- TG-66 compliant

Respiratory Motion Management^{1, 2}

- Various acquisition modes and protocols accommodate for a wide range of respiratory patterns and workflows.
- Extended scan time capabilities up to 200 seconds
- Supports retrospective modes including phase and amplitude reconstructions
- Supports the automatic creation of temporal MIP (tMIP), temporal MiniIP (tMinIP), temporal MaxIP (tMaxIP) and the easy generation via reconstruction of an Average CT, to evaluate Respiratory Motion
- Ability to automatically detect synchronization points
- User-selectable number and placement of reconstruction bins up to 1% recon
- Quantitative 4D assessment of 3D tumor trajectory and amplitude and semi automatic calculation of the midventilation phase for RT available under CT View&GO platform.

FAST 4D^{1, 3}

FAST 4D streamlines your 4D CT workflow by automatically setting the optimal scan parameters based on the patient's breathing rate. The direct online connection between the CT and a gating device over the Varian RGSC online interface or the ANZAI Interface allows to display and analyze the breathing rate in real time.

Gating Interfaces¹

Varian RGSC interface

The online mode allows for retrospective gating

ANZAI Interface

The online mode allows for retrospective gating

Open Interface

For retrospective gating with a number of supported gating systems

¹ Optional

² Requires an interface to connect to one of the many compatible 3rd party gating devices, like VARIAN RGSC or ANZAI.

³ Requires online mode and Respiratory Motion Management

Image Quality

Low-contrast Resolution

Low-contrast resolution is the ability to see ...

- a small object
- with a certain contrast difference
- on a particular phantom
- with a particular dose (CTDI_{vol})

Phantom CATPHAN (20 cm)

Object size

5 mm

Contrast difference

3 HU

CTDI_{vol} (32 cm)

10.75 mGy

Technique

1.0 s, 10 mm, 120 kV

Isotropic Resolution

Isotropic voxels using Siemens Healthineers' proprietary SureView technology

Isotropic resolution

0.33 mm

High-contrast Resolution

- 2% MTF 15.1 lp/cm ($\pm 10\%$)
- 10% MTF 14.6 lp/cm ($\pm 10\%$)
- 50% MTF 12.0 lp/cm ($\pm 10\%$)

Technique

- Tungsten wire in air
- 160 mA, 120 kV, 1 s, 5 mm

Homogeneity

Cross-field uniformity in a 20 cm water phantom

- Max. ± 4 HU¹
- Typ. ± 2 HU

Phantom positioned near center of rotation

Dose, CTDI₁₀₀ Values mGy/100 mAs

Phantom		kV	kV	kV	kV
Ø		70	80	110	140
16 cm	A	3.8	5.9	14.6	25.8
	B	4.3	6.4	15.3	26.6
32 cm	A	0.9	1.5	4.3	8.3
	B	2.2	3.3	8.5	15.3

A: at enter

B: 1 cm below surface

Technique

- PMMA-Phantom
- Absorbed dose for reference material air
- Expected deviation:
 - $\pm 10\%$ without Split Filter
 - $\pm 20\%$ with Split Filter
- Max. deviation:
 - $\pm 20\%$ without Split Filter
 - $\pm 30\%$ with Split Filter

The actual exposure values, such as CTDI₁₀₀, CTDI_w, CTDI_{vol}, and DLP, may deviate from the values displayed at the scanner and from the values stated here.

The linearity of the radiation output (linearity of measured dose related to displayed mAs) is $\pm 10\%$

¹ Max. HU value also for 30 cm phantom

Installation

Components

Dimensions	Height (mm/inch)	Width (mm/inch)	Length (mm/inch)	Weight (kg/lbs)
Gantry	≤ 1,860/73.2	≤ 2,250/88.6	≤ 840/33.1	≤ 1,400/3,086
CT patient table (227 kg)	≤ 950/37.4	≤ 700/27.6	≤ 2,480/97.6	≤ 500/1,102
CT patient table (307 kg) ¹	≤ 950/37.4	≤ 700/27.6	≤ 2,560/100.8	≤ 500/1,102
RT patient table ¹	≤ 950/37.4	≤ 700/27.6	≤ 2,480/97.6	≤ 500/1,102

Power Supply

Nominal voltage ± 10%
380–480 V

Nominal line frequency ± 10%
50; 60 Hz

Power Consumption

Max. power consumption

- ≤ 115 kVA
- ≤ 100 kVA with Cos Phi Inductor¹

Standby
≤ 3 kVA

Power Consumption according to COCIR and GPP

Use scenario 24-hour power consumption⁴

Off²
16.6 kWh

Low power³
17.5 kWh

Idle (stand-by)
32.4 kWh

Protection Against Input Power Instability

Controllers
20 ms

syngo Acquisition Workplace
3 min, with UPS¹

Frequency stability
± 5% at 50 and 60 Hz

Sound Design

Standby
55 dB(A)

Peak
67 dB(A)

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

Relative air humidity without condensation
20–75%

**Heat dissipation
(gantry, table and integrated computers)**
≤ 7.4 kW scanning

Surface Area for Installation²

System footprint (surface area covered by gantry and moving table top)
4 m² / 43 ft²

Flexible room design minimum requirement
12 m² / 130 ft²

¹ Optional

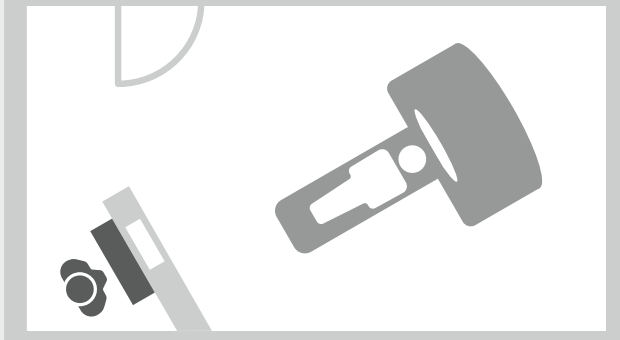
² With wall-switch

³ System off

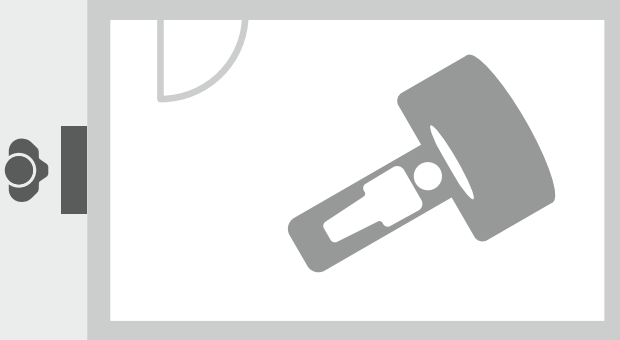
⁴ Values may vary approx. +/- 3% due to specific system conditions, for example of UPS, etc.

Installation

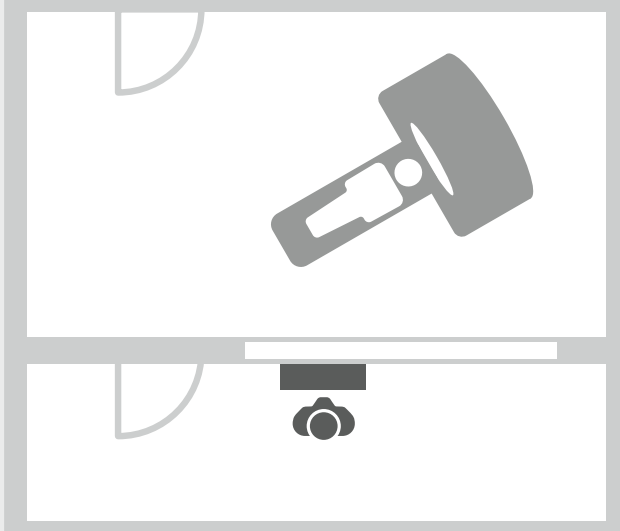
Flexible Room Concepts¹



Follow the “niche” concept to work in the examination room.



Position the workstation outside the room, e.g., in the corridor.



Minimize the room requirements of a separate control room.

¹ Subject to local regulations. Safety distances must be checked according to country specific requirements..

International version.

Not for distribution or use in the U.S.

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