PHILIPS

Computed tomography

Access CT

Redefining **value** in CT

Access CT 16-slice specifications

Contents

1. Introduction

Your dream is diagnostic confidence. Access CT makes that dream attainable. Access CT offers full 16-slice capability and the clinical performance to enhance diagnostic confidence. Now you can have proven technologies for imaging excellence across a broad range of clinical applications for a wide range of patients, with advanced capabilities in a reliable system that's easy to use and easy to maintain for a low total cost of ownership.

2. Gantry

2.1 Gantry

Feature	Specification
Rotation times	0.75, 1, 1.5, 2 seconds for 360° rotation
Aperture	65 cm
Focus–isocenter distance	511 mm
Focus–detector distance	900 mm
Scan FOV	450 mm
Tilt	Digital tilt
Slip ring	Low voltage slip ring
Scan localizer	Sagittal and transverse localizer, can perform PA and lateral scan (laser positioning lamp)
Collimation	2 x 0.8 mm, 12 x 0.8 mm, 16 x 0.8 mm

2.2 Gantry control panels

• Multi-directional control
• Movement in/out control
• Start button
• Pause button
• Visual countdown
• Zero table location
• Lasers

2.3 Operator's console control panel

• Table in/out/up/down
• Emergency stop
• X-ray indicator
• Start button
• Pause button

2.4 AutoVoice

A standard set of commands for patient communication before, during, and after scanning in the following languages:

• Bulgaria
• Chinese
• Greek
• Hungarian
• Italian
• Japanese
• Latvian
• Lithuanian
• Polish
• Portuguese
• Romanian
• Russian
• Slovak
• Spanish
• Turkish

Access CT is considered work in progress and is not CE marked and not available for sale. Not available in the USA.

3. Couch

Feature	Specification
Maximum scannable range	Fixed height couch: ≥ 1200 mm Vertical moveable couch*: ≥ 1380 mm
Horizontal speed	1–100 mm/s
Horizontal repeatability	±0.25 mm
Vertical motion for vertical moveable couch*	Vertical range: 430 mm – 960 mm
Couch height for fixed height couch	135 mm (below isocenter)
Maximum load capacity	Fixed height couch: 150 kg Vertical moveable couch*: 200 kg
Table floating buttons	Couch has two floating buttons on each side that can float horizontal motion in an emergency

4. Accessories

Accessories	For vertical moveable couch* S = Standard O = Option	For fixed height couch S = Standard O = Option
Table pad	S	S
Knee rest pad	S	S
General head holder and pad	S	S
Neck pad	S	S
Straps	S	S
Table extension and pad	O	O
Coronal head holder pad	O	O
Coronal head holder	O	O
Flat head holder	O	O
Flat head holder pads	O	O
7" water phantom with pin	S	S
Step phantom	S	S
System phantom	S	S
Adjustable bracket of phantoms	S	S
CCT package	O	O
Barcode reader	O	O
Arm support	O	O

* Vertical moveable couch is an option

5. Imaging chain

5.1 Tube

Feature	Specification
Anode heat storage	3.5 MHU
Focal spots	0.4 mm x 0.7 mm/0.6 mm x 1.3 mm
Anode rotation speed	3000 rpm (50 Hz) or 3600 rpm (60 Hz)
Maximum continuous anode heat dissipation	3 kW
Maximum focal spot power kW	28 kW
Cooling mode	Oil-cooled

5.2 Generator

Feature	Specification
Generator power	28 kW (56 kW equivalent with iDose[4])
Range of mA	10 mA ~ 233 mA increasing by 1 mA
Range of kV	70 kV, 80 kV, 100 kV, 120 kV, 140 kV
Maximum exposure time	No less than 100 s

5.3 Detector

Feature	Specification
Detector rows	16
Detector width	12.8 mm
Detector numbers per row	720
Total detector elements	11,520
Data acquisition rate, maximum	1320 view/rotation

6. Image quality

Feature	Specification
Spatial resolution	Up to 15 ± 10% lp/cm @ 0% MTF
Low contrast resolution	3.0 mm @ 0.3% ($CTDI_{center}$ no more than 40 mGy, 20 cm Catphan)
Image noise	≤ 0.35%
Absorption range	–1,024 to +3,071 Hounsfield units

| iDose[4] off | iDose[4] on | | MAR off | MAR on |

40 mAs spine imaging
Preserves natural appearance at low noise and dose.

7. Console

Feature	Specification
Computer	CPU frequency: ≤ 2.8 GHz, multi–core Graphic processor: 1 GPU Memory: ≤ 8 GB Hard disk capability: ≤ 1 TB Maximum image storage capacity: ≤ 760,000 images, 512 x 512 (512 KB/image) DVD – RW drive: 7500 images, 512 x 512 matrix per 4 GB disk
Reconstruction FOV	50 – 450 mm
Scan pitch	0.5 – 1.5
Image matrix	512 x 512, 768 x 768, 1024 x 1024
Display matrix	1024 x 1024
Image reconstruction speed	Up to 10 IPS
Image displays	1, 2 x 2, 3 x 3, 4 x 4
Image enlargement mode	Interpolation
Range of gray level	256
Monitor	19″ LCD
Monitor resolution	1280 x 1024

* Image courtesy of Nantong Oncology Hospital, Hospital of Nantong University, Jiangsu, China.

8. Application configuration

8.1 Standard applications on console

CT Viewer

2D viewer	After loading images to 2D viewer, user can process routine image operations such as windowing, zoom, pan, roll, and enhance.
3D viewer	Provides interactive visualization of CT volumetric data sets.
MPR viewer	Used to reformat the tomographic data in view planes orthogonal or inclined to the original slices, or in curved planes for better visualization of organs and tissues, and the relation between them.
Endo viewer	Review function that allows user to perform a general flythrough of any suitable anatomical structure that is filled with air or with contrast material, including general vessels, the bronchus, and the colon.
Filmer	Provide filming function to print images to DICOM 3.0 printer.

Console software

CD/DVD writer	The system supports a recordable CD/DVD disk drive.
Dual surview	Surview scans are radiographic-like scans upon which the study is planned. Dual surview is also supported.
ACS	Automatic Current Selection. Prospective current modulation based on the patient anatomy to obtain a constant noise level throughout the examination.
DOM	Dose Modulation. Dynamic tube current modulation technique that provides constant image quality for all scanned regions, regardless of attenuation. Modulation of the tube current according to the anatomic cross-section of the patient reduces dose in low attenuation views and maintains image quality in high attenuation views.
TIBT (Test Injection Bolus Timing)	System provides TIBT function for analyzing the absorption and diffusion process of contrast material. The results of analysis can be used to help determine the scan delay time and clinical needs of injected dose of contrast.
Pediatric protocol	Developed in collaboration with top children's hospitals, age and weight-based infant and pediatric protocols enhance image quality at low dose.
MIP/MinIP	The maximum (minimum) intensity projection (MIP or MinIP) function generates interactive display of ray-traced MIP images from sets of CT slices. The user can define VOI (volume of interest), tissues, and choose it to be projected or removed. Bone removal techniques are incorporated.
MAR	Exclusive Metal Artifact Reduction enhances visualization of critical structures by reducing metal artifacts.
Raw data split	Retrieve the corresponding raw data of bad images for finding the root cause.
iDose[4]	Allows user to implement levels to determine the amount of noise that is removed from the images. Level 1 is the least aggressive noise reduction. Improved image quality Up to 57% ± 15% improvement in spatial resolution. Supports axial, helical, and perfusion. Supports standard and high resolution. Supports 512, 768, and 1024 image matrix sizes. Supports 7 distinct, user-selectable levels that support image quality personalization based on your clinical needs. Reconstruction is achieved in seconds rather than minutes. Image reconstruction speed up to 10 images per second when using iDose[4] in routine scan.
Insert MPR	Insert MPR allows the user to insert automatic multi-planar reformations in a series within a protocol. After finishing the helical or axial scan, coronal plane or sagittal plane images can be automatically generated.
iPlanning	When surview scan is finished, plan box of the scan series before surview scan is matched to the position of the target organ based on the protocol selected. Supports Smart Planning of spine disc, head, and chest.
DICOM 3.0	The full implementation of the DICOM 3.0 communications protocol in the Access CT allows connectivity to DICOM 3.0 compliant scanners, workstations, and printers, and supports IHE requirements for DICOM connectivity.

Access CT is considered work in progress and is not CE marked and not available for sale. Not available in the USA.

8.2 Optional applications on console

DICOM 3.0

MPPS (Modality Perform Procedure Step)	Provides performed exam information (start/end/info) to HIS/RIS using DICOM MPPS (Modality Performed Procedure Step) service.
Modality worklist	Provides HIS/RIS interface through DICOM modality worklist service class; enhances clinical workflow by importing patient demographics and study information from an information management system.

Console software

Bolus tracking	Triggering the start of spiral acquisition at a pre-set CT number threshold following bolus injection of contrast material. The minimum of Inter-scan delay (from the end of current slice acquisition to start of next slice acquisition, and the start of next acquisition must be after the current slice image reconstruction) should be <= 1 second.
Injector triggering	Triggering the start of spiral acquisition at a pre-set delay relative to the bolus injection of contrast material. Includes algorithms for handling interruptions in scan.
CT report	The report system provides report edit function and user can print report in windows printer. The doctor can save the unfinished report temporarily, then close it, and process it later after completing the other report.
Virtual colonoscopy (CTC)	CTC provides a fast and easy way for clinical diagnosis to understand the character of suspected polyps. Many viewing modes are available for visualization of colon: MPR, transparent view, dissection view, cross-sectional view, endo view, cubic view. Fly through along centerline.
Brain perfusion	Brain perfusion is used to enable the measurement of physiological processes in the brain from the continuous or sequential scanning dataset at one position in order to monitor the penetration of contrast material to the organ. Support to select the reference vessel as artery or vein, and generate the vessel and tissue time density curves. Generate functional images include Time Maximum Intensity Project (tMIP), Blood Flow (BF), Blood Volume (BV), Rise Time (RT), Time To Peak (TTP). These functional maps are colored, where the color refers to the intensity values respectively.
Dental	System to generate axial image and 3D image, and image operation tools. To define panoramic curves and sectional lines, the curves and lines can be changed to generate panoramic images and sectional images.
Vessel Analysis (VA)	Vessel Analysis (VA) package offers a set of tools for measurement and general vascular analysis. The centerline of vessel can be automatically tracked or manually edited. Show vessel contour on cross-sectional viewport, and the contour can be manually edited. Measurements function: cross-sectional area and diameter, vessel length, stenosis estimation.
Lung Nodule Assessment (LNA)	LNA provides a fast and easy way for clinical diagnosis understand the character of suspected nodules. LNA support auto segments the lung. Various viewing modes are available for visualization of nodule: MPR, transparent view, cross-sectional view, cubic view. LNA support semi-auto segments the nodules.

9. Extended CT console option – EViewer

EViewer is the optional CT medical image post-processing software system. It is used to acquire, store, process, print, and display DICOM 3.0 standard CT medical images. As a CT system extended application, EViewer can receive CT scan data from the CT console and provides clinical medical image processing. Basic modules: Home, 2D, MPR, Volume, Virtual endoscopy, Film, Report, and Service.

EViewer	CPU frequency: ≥ 2.8 GHz, multi-core Graphic processor: 1 GPU Memory: ≥ 8 GB Hard disk capability: ≥ 1 TB Maximum image storage capacity: ≥ 760,000 images, 512 x 512 (512 KB/image) DVD – RW driver: 7500 images, 512 x 512 matrix per 4 GB disk 19" LCD, 1280 x 1024
Virtual endoscopy	A review function that allows you to perform a general flythrough of any suitable anatomical structure that is filled with air or with contrast material, including general vessels, the bronchus, and the colon.
Virtual colonoscopy (CTC)*	CTC provides a fast and easy way for clinical diagnosis understand the character of suspected polyps. Many viewing modes are available for visualization of colon: MPR, transparent view, dissection view, cross-sectional view, endo view, cubic view. Fly through along centerline.
Brain perfusion*	Brain perfusion is used to enable the measurement of physiological processes in the brain from the continuous or sequential scanning dataset at one position in order to monitor the penetration of contrast material to the organ. Support to select the reference vessel as artery or vein, and generate the vessel and tissue time density curves. Generate functional images include Time Maximum Intensity Project (tMIP), Blood Flow (BF), Blood Volume (BV), Rise Time (RT), Time To Peak (TTP). These functional maps are colored, where the color refers to the intensity values respectively.
Dental*	System to generate axial image and 3D image, and image operation tools. To define panoramic curves and sectional lines, the curves and lines can be changed to generate panoramic images and sectional images
Vessel Analysis (VA)*	Vessel Analysis (VA) package offers a set of tools for measurement and general vascular analysis. The centerline of vessel can be automatically tracked or manually edited. Show vessel contour on cross-sectional viewport, and the contour can be manually edited. Measurements function: cross-sectional area and diameter, vessel length, stenosis estimation.
Lung Nodule Assessment (LNA)*	LNA provides a fast and easy way for clinical diagnosis understand the character of suspected nodules. LNA support auto segments the lung. Various viewing modes are available for visualization of nodule: MPR, transparent view, cross-sectional view, cubic view. LNA support semi-auto segments the nodules.

*Optional

Access CT is considered work in progress and is not CE marked and not available for sale. Not available in the USA.

10. Peripheral options

Peripheral options below are available for Access CT.

• Power conditioner
• Isolation transformer
• UPS

11. Remote service

Philips Remote Services help keep your system running smoothly from the start so you maximize your uptime and keep your focus on patient care while enjoying low maintenance costs. We connect expert remote support specialist with your local service engineer for the strength and experience of Philips to support you at all times. Predictive and proactive actions, fast response, and the ability to collaborate on big data with smart analysis are designed to keep your system and your business running smoothly.

• 24x7 system health monitoring and remote diagnosis designed for rapid and accurate service
• Minimized service costs
• Maximum uptime
• Enhanced clinical support

The EViewer extended console offers a cost-effective and flexible approach to post-processing.
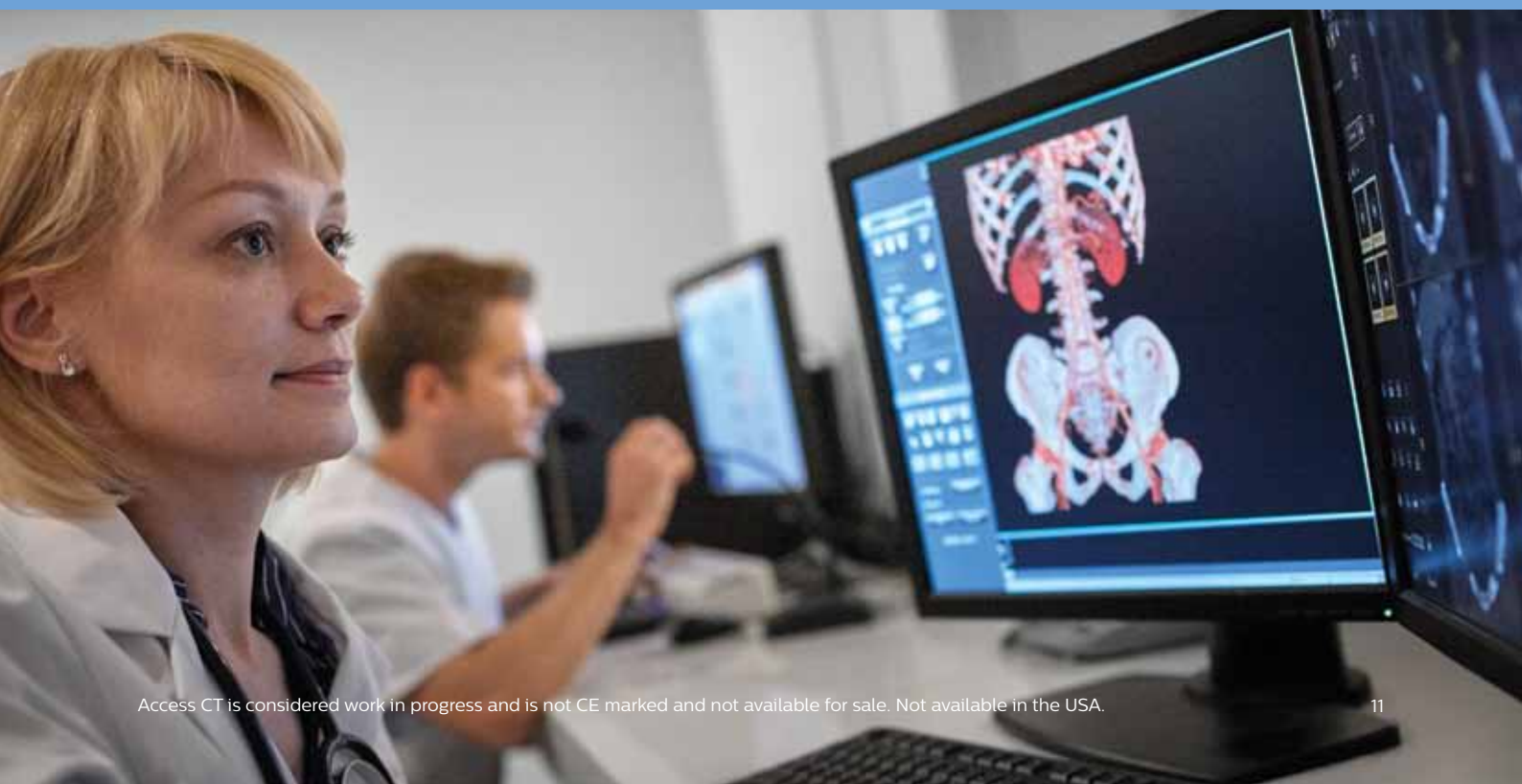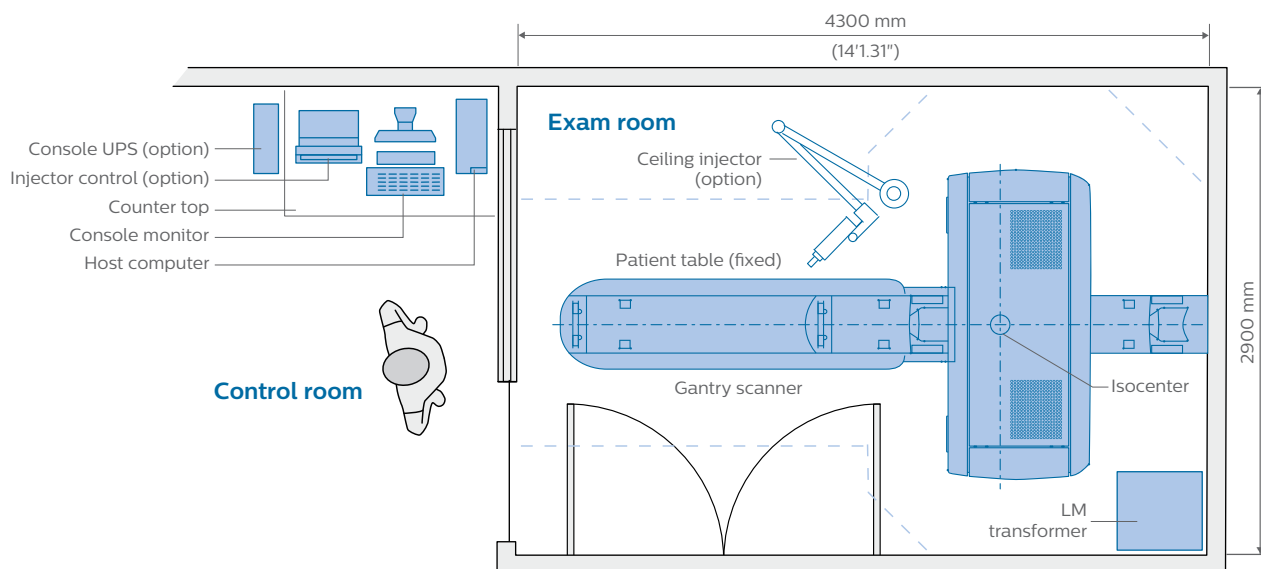
12. Site planning

Compact design fits easily just about anywhere and supports powerful performance in a small space.

Feature	Specification
Power supply	Main power: 3 phase, 380 − 400 VAC ±10%, 50/60 Hz, 46 KVA maximum neutral, protective earth
Scan room size	≥ 12 m^2
Operating temperature	· Gantry room: 18 − 24°C (62 − 75°F) · Console room: 15 − 30°C (59 − 86°F) · Maximum gradient: 10°C/hour · Operating humidity (gantry room): 15% − 75%, non-condensing

Dimensions and weights	Specification			
With package	L (mm)	W (mm)	H (mm)	Gross weight (kg)
Gantry package box	2122	1052	2166	1380
Couch (vertical)* package box	2724	974	1234	520
Couch (fixed) package box	2428	878	1259	338
Accessories package box	1530	1210	1030	290
Without package				
Gantry	1904	875	1832	1200
Couch (vertical)*	2479	640	866	175
Couch (fixed)	2512	550	860	360

* Vertical moveable couch is an option

Access CT is considered work in progress and is not CE marked and not available for sale. Not available in the USA.