128 CT Product Datasheet

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活动	**签名/日期**	**部门/职务**
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1. 128 CT – Detailed Specifications：

128 CT Basic Configuration:

1. Gantry	
Aperture	72cm
Scan Field	50cm
Tilt	± 30°
Rotation Time	0.374s, 0.5s, 0.6s, 0.8s, 1.0s, 1.5s, 2.0s （Standard configuration）
Partial Scan Times (240°)	0.25s, 0.32s, 0.39s, 0.52s, 0.65s, 0.97s, 1.29s （Standard configuration）
Temporal Resolution	Down to 62.3（Standard configuration） (Heart Scan System, 3-section Reconstruction)
Focus-to-isocenter Distance	570mm
Focus-to-detector Distance	1040mm
2. Data acquisition system	
Max. number of Slices/Rotation	128
Number of Detector Rows	64
Number of Detector Elements	672X64
Total Channels per Slice	1344
Number of Projections	4640
Sequence Acquisition Modes	128x0.625, 64x0.625, 32x0.625, 16x0.625, 8x0.625, 2x0.625
Spiral Acquisition Modes	128x0.625, 64x0.625, 32x0.625, 16x0.625, 16x0.3125(iHD Option), 8x0.625
Detector	Up to 50% SNR improvement compared to conventional CT detectors; Down to 1us~2us decay time for sub second scan

	application; Ultra low afterglow; Special design to minimize electronic noise; High geometric efficiency
3. X-ray Tube Assembly	
Tube	CTR2280（Standard configuration）
Tube Current Range	10mA～667mA（Standard configuration）
Tube Voltage	80kV, 100kV, 120 kV, 140kV
Tube Anode Heat Storage Capacity	8M（Standard configuration）
Cooling Rate	931 KHU/min（Standard configuration）
Focal Spot Size	0.6×1.2（Small） 1.1×1.2（Large）
4. Filter system	
Equivalent	Al Equivalent Tube: 1.5mm Al
Beam Limiting Device	Equivalent to 6.68mm Al
5. Generator	
Max. power	80kW（Standard configuration）
6. Patient table	
Max. table Load	205kg/452 lbs; 300kg/661 lbs（Option）
Table Feed Speed	1mm/s-160mm/s
Vertical Table/Travel Range	430mm -970mm
Vertical Travel Speed	9mm/s-15mm/s
Scannable Range	1770mm

7. Host computer system

The host computer workplace provides an intelligent and reliable workflow for data acquisition, image reconstruction, and routine post processing at the CT scanner.

High-performance Computer	Host： 1 x Quad Core Intel(R) Xeon(R) Recon：2 x 8-Core Intel Xeon 3.30GHz processor
Standard Monitor	Flat Screen Monitor 19” (48 cm) 1,280 x 1,024 Resolution
Dual Monitor	Support Dual Monitor Flat Screen Monitor 19” (48 cm)
RAM Storage	Host：16G Recon：128G
Image Storage	1TB; 1,920,000 Uncompressed Images
Additional Storage	CD-R 700 MB 1,100 Images DVD DICOM Drive 4.7 GB DVD Media 8,400 Images Write-RW/+RW/-DL/Read
DICOM Viewer	Included on each CD; Automatically started on the viewer’s PC

8. AVW workplace system

AVW workplace provides the unique advantage of an efficient multi-modality diagnostic workflow at a single workplace. It manages the clinical diagnostic workflow anywhere within the clinical environment.

High-Performance Computer	Dell Precision T5610
Standard Monitor	Flat Screen Monitor 19”
RAM Storage	≥16GB
Image Storage	≥700 GB;

	≥1,400,000 Uncompressed Images
Additional Storage	CD-R 700 MB 1,100 Images DVD DICOM Drive 4.7 GB DVD Media 8,400 Images
DICOM Viewer	Included on each CD; Automatically started on the viewer's PC
9. System Software	
Patient Registration	Direct input of patient information; Acquisition Workplace immediately prior to scan; Pre-registration of patients at any time prior to scan; Special emergency patient registration (allows examination without entering patient data before scanning); Transfer of patient information from HIS/RIS via DICOM get Worklist; Transfer of examination information from scanner into HIS/RIS via MPPS (Modality Performed Procedure Step)
Protocols	Up to 10,000 protocols can be edited, modified, and stored
Surview	
Length	50–1650mm
Scan Times	1.5–18s
Views	A.P., Lateral, Dual
Real-Time Surview	Yes
Sequence Acquisition	
Reconstructed Slice Widths	0.625mm, 1.25mm, 2.5mm, 5mm, 10mm

Dynamic Multi-Scan:	Multiple (continuous) sequence scanning without table movement for fast dynamic contrast studies with maximum slice thickness of 40mm
Contrast studies with maximum slice thickness of 40mm.	
Multi-slice Spiral Acquisition	
Reconstructed Slice Widths	0.4mm(iHD Option), 0.625mm, 0.8mm, 1mm, 1.25mm, 1.5mm, 2mm, 2.5mm, 3mm, 4mm, 5mm, 6mm, 7mm, 8mm, 9mm, 10mm
Slice Increment	0.1–20mm
Spiral Scan Time	Max. 100s
Scan Length	1700mm
Pitch Factor	0.13-2.0
Automatic clustering of scans.	

10. Image reconstruction

Real-Time Display	Real-time image display during spiral acquisition.
Scan Field	50cm
Recon Field	5–50cm
Recon Time	Up to 40 images/s with full cone beam reconstruction
Recon Matrix	512x512, 768x768, 1024x1024
HU Scale	-32768~32767

11. CINE display

Display of Image Sequences	
Automatic or Interactive with Mouse Control	
Max. Image Rate	more than 30 frames/s

12. Image transfer/Networking

Interface for transfer of medical images and information using the DICOM standard.

Facilitates communication with devices from different manufacturers.

DICOM Storage (Send/Receive)

DICOM Query/Retrieve

DICOM Basic print

DICOM Get Worklist (HIS/RIS)

DICOM MPPS

DICOM Storage Commitment

DICOM Viewer on CD

13. Raw data

Capacity	2.4TB

14. Image Quality

Low-contrast Resolution

Low-contrast resolution is the ability to see

• a small object (mm)

• with a certain contrast difference (HU)

• on a particular phantom

• at a certain mAs value (mAs)

• with a particular patient dose (mGy)

Spiral

Phantom	Catphan 600
Object Size	4mm
Contrast Difference	3HU
Dose (CTDIw)	19.8mGy
Technique	10mm, 120kV

Sequence

Phantom	Catphan 600
Object size	4mm
Contrast difference	3HU

Dose (CTDIw)	19.8mGy
Technique	10mm, 120kV
High-contrast resolution	
Isotropic high-contrast resolution in all three planes (x, y, and z).	
X-Y-plane	0%MTF 17lp/cm, 0.29mm (24lp/cm, 0.21mm, iHD Option) 10%MTF 11lp/cm, 0.45mm 50%MTF 7.5lp/cm, 0.66mm
Z-Plane	0%MTF 15.0lp/cm, 0.33mm 10%MTF 10.0lp/cm, 0.5mm 50%MTF 6.0lp/cm, 0.83mm
Technique	Technique 245mA, 120kV, 1.0s, 0.625mm
Noise	≤0.35%
15. Application	
O-Dose	According to the patient's surview scanning data to determine the human body's size, and automatically calculates the proper Dose; The system will automatically on-line modulate dose to adapt to different attenuation, and then the dose is optimized under the premise of image quality guarantee and noise uniformity; Auto kv; Dose modulation based on ECG signal and cardiac phase selected.
AutoVoice	A standard set of commands for patient communication; before, during and after scanning.
AutoFilm	This function allows the user to set up and store filming parameters. Pre-stored protocols can be set

	to include auto-filming. The operator can film immediately after each image, at the end of a series, or film after the end of a study and review images prior to print. The operator can also automatically film.
Networking	supports 100/1000Mbps
Bolus Tracking	An automated injection planning technique that permits the user to monitor actual contrast enhancement and initiate scanning at a predetermined enhancement level. Combine with SAS for full automation and efficacy.
SAS	Spiral Auto Start integrates the injector with the scanner, allowing the technologist to monitor the contrast injection to check for extravasation and to initiate and stop the scan (with the pre-determined delay) while in the scan room.
Barcode Reader▪▪	Symbol LS1203
Dual Monitor▪▪	Console dual monitor support, and here is the advice. When scanning on left monitor, on right monitor the user can register, access to the image information of the patients, and do the DICOM printing and sending (based on the current technical accumulation, better resource reuse pattern to the vice monitor can be designed.)
Continuous CT▪▪	Continuous CT (CCT) is a scanning mode that allows the physician to perform extended, low-dose scans while performing a biopsy. The resulting images display on a remote monitor in the scan

	room, providing near-real-time visual feedback during the biopsy.
ClearView**	ClearView iterative reconstruction provides nine different recon levels, respectively corresponding to different levels of image noise.
iHD**	The iHD function can improve the spatial resolution of the system, the high reconstruction can be achieved 24lp/cm@0%MTF for option through iHD.
Cardiac Scan**	• Prospective ECG scan and multi-phase reconstruction •Retrospective ECG scan •Retrospective ECG scan mA modulation •ECG wave edit
Home	Home is used as patient list manager, it provides following functions: •Patient image management •Image quick review •Search image •Import, delete images •Application selection
Filming	Film Edit Print Preview Images Management Basic gray and color DICOM Print Function Normal Printing Send Images to Report Send Images to other Data Sources Show surview lines Allow users to set and store camera parameters

Report	Create report Edit report Confirm report Save report Manage report Export report Manage case template Template management: create, delete and edit Support structured reports
Image review	Support displaying Image, operation, measurement and other functions. Display, zoom, pan Image, adjust window width and window level. Preset window width and window level. Measure ROI. Show image information. Display location lines and surview image. Compare series. Batch function. Support Image storage, including Secondary Capture, BMP, PNG, JPG, TIFF, Derived Image and PS
MPR	Multi-Planar Reformat (MPR): Coronal, Sagittal, Axial Image Display; Oblique MPR; Defining CPR Image; Batch; CT Image Fusion: Providing fusion visualization of 2 CT images; Providing measurement tools

3D	Include following visualization function: Volume Rendering, MIP, MinIP, SSD, AIP; Supporting Image Cutting, Manual Segmentation, Tissue Management, Volume Calculation; Batch; Volume Compare; Saving and reading processing results
Virtual Endoscopy	Providing fly-through for colon, trachea, vessel; Define fly-through path; Manual navigation mode; Saving navigation result
Dental Analysis▪	Displaying Axial Image and 3D Image; Define and edit curve; Creating panoramic image and sectional images; Creating true-size film images; Saving and reading processing results
Vessel Analysis▪	Bone Removal function; Vessel Extraction and Labeling ; Editing vessel centerline; Vessel Measurement Tool; Saving and reading processing results
Virtual Colonoscopy▪	Auto-segmentation Colon; Extraction Colon centerline; Editing segmentation result and centerline; Fly-through; Saving and reading processing results
Brain Perfusion▪	Playing images; Displaying time Maximum Intensity Projection (tMIP) image;

	Defining reference vessel and displaying the TDC (Time Density Curve); Calculating and displaying Cerebral Blood Flow (CBF), Cerebral Blood Volume (CBV), Mean transit time (MTT), Time to Peak (TTP) images; Defining Region of Interesting (ROI); Calculating ROI average value of following parameters: CBF: Cerebral Blood Flow CBV: Cerebral Blood Volume MTT: Mean Transit Time TTP: Time to Peak Saving and reading processing results
Body Perfusion	Liver Protocol, Display following images: tMIP: time Maximum Intensity Projection Average image CBF: Cerebral Blood Flow TTP: Time to Peak HAP: Hepatic Artery Perfusion HPP: Hepatic Portal Perfusion HPI Hepatic Portal Perfusion Index HAI: Hepatic Artery Perfusion Index TLP: Total Liver Perfusion Tumor Protocol, Display following images: tMIP: time Maximum Intensity Projection Average image BF: Blood Flow BV: Blood Volume MTT: Mean Transit Time

	PS: Permeability Surface Saving and reading processing results
Lung Nodule Analysis•	Visualization Lung parenchyma; Can manual segment nodule and view lesions information; Follow up support ; Saving and reading processing results
Lung Density•	Extraction of both lung, and displaying 3D image of the left and right lungs and the trachea; Can calculate the volume of emphysema, left lung, right lung and trachea; Can calculate the percentage of emphysema volume; Saving and reading processing results
Coronary Analysis•	Vessel stenosis measurement; Automatic coronary extraction and the main vessels labeling; Plaque analysis; Report; Saving and reading processing results
Cardiac Calcium Scoring•	Measuring Calcium Score and displaying Pseudo Color; Displaying Vessel Name, Plaque Number, Pixel Number, Volume, Area Score, Continuous weight factor Score and Mass Score; Can add vessel, delete vessel, rename and modify vessel color; Saving and reading processing results
Cardiac Function Analysis•	The CFA is a tool used to evaluate and analyze left

	ventricle. It can display three cardiac MPR images: Short axis (SA) Image, Horizontal long axis (HLA) image and Vertical long axis (VLA) image. It also can show LV Function Results Table, LV Volume Graph, VR image and Bull's-Eye Map. And can switch the display between Wall Thickness Map, Regional Wall Thickness Map, and Wall Thickening Map. Saving and reading processing results Can display the following values: •Ejection Fraction (%) •ED Volume (ml) •ES Volume (ml) •Stoke Volume (ml/beat) •Cardiac Output (L/min) •Myocardial Volume (ml) •Myocardial Mass (g) •BSA (mm2)
Cardiac Viewer•	Can View cardiac images and provide measurement tools; Providing MPR and 3D view; Can switch data between different phases; Comparing different phases data; 4D playing; Displaying three cardiac MPR images; Providing Oblique MPR display;

	Defining CPR
Fat Analysis·	Used to analyze fat of abdomen, including calculate the area of Subcutaneous Fat, Abdomen Fat and Waist circumference, etc. Segment the fat of Subcutaneous and Abdomen function; Saving and reading processing results
Nerve System DSA·	Can subtract CTA data between contrast and non-contrast; Can remove bone; Can display subtract result and generate new data series
Tumor Assessment·	Providing Manual definition lesions ; Displaying tumor measurement result, including RECIST Diameter, WHO Area, Lesion Volume, etc.; Follow up and compare support; Saving and reading processing results
Dicom Viewer	DICOM Viewer is a standalone application burned on disc to help user view CT DICOM images in different layouts. User can make operation and ROI measurements on images. •Support multi-series layout and multi-image layout •Annotating and measuring •Zoom, pan, adjust window/level, enhance and smooth, etc. •Rotate the images by any angle •View DICOM information •Cine Images

Preprocessing function**	The specified image data can be preprocessed before the user review them. For example, following processing will be done before the user review the image data: bone removal, couch removal, vessel extraction etc.

* Optional feature for Host workplace and AVW workplace

** Optional feature for Host workplace only

*** Optional feature for AVW workplace only

16. Installation

Outline Dimensions & Weight	
Gantry Dimensions	2198mm (L) x 938mm (W) x 1910mm (H)
Gantry Weight	1800Kg
Gantry Package	2370mm (L) x 1030mm (W) x 2250mm (H)
Dimensions	
Couch Dimensions	2540mm (L) x 643mm (W) x 1055mm (H)
Couch Weight	360kg
Couch Package Dimensions	2570mm (L) x 970mm (W) x 1230mm (H)
Console Table Dimensions	600mm (L) x 800mm (W) x 675mm (H)
Power Supply Requirements	
Power Capacity	100kVA（Standard configuration）
Input Voltage	380/400VAC 3-phase 5-line 3-phase 4-line(Export is equipped with isolate transformer), power supply from below options:190/200/208/220/230/240/380/400/415/440/460/480VAC）

Voltage Variation	±10%
3-phase Unbalance	≤5%
Frequency	50/60Hz±1Hz
Grounding Resistance	4Ω（independent grounding system）; 1Ω（complex grounding system）
Min. Area of Scanning room	5550mm×3650mm
Min. Area of Operating Room	1700mm×3650mm
Operating Room	
Recommended Room Size	Operating Room: 3000mm×4600mm Scanning Room: 6000mm×4600mm
Min. Height of Ceiling	2010mm
Temperature of Scanning Room	Scan room 18℃~24℃; Control room 18℃ ~ 28℃
Humidity of Scanning room	Scan room 30%~60%; Control room 20%~80%
Atmospheric Pressure	70kPa~106kPa
Temperature of Transportation and Storage	-20℃~+55℃
Humidity of Transportation and Storage	10%~90%, no-condensing
Running Noise	No more than 70dBA
Other Configurations	
Laser Camera	DICOM 3.0 Interface
High Pressure Injector	DDI-200C (Single) DDI-400C(Double) MEDRAD Stellant SX (Single) MEDRAD Stellant D (Double)

Power Conditioner	Optional for domestic configuration
Isolation Transformer	Optional for international configuration
UPS for Console	Option (30mins for power failure)

2. Revision History

Version No.	Author	Dept.	Revision History	Effective Date (MM/DD/YYYY)
1.0	隋萍萍	CT 电气研发部	首次编写	6/25/2014