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CT Systems

Company	Neusoft	Philips Healthcare	Siemens Medical	Toshiba America Medical Systems
Model	NeuViz 64e Cardiac (Basic)	Ingenuity Core	Somatom Perspective - 64-slice configuration	Aquilion Prime Series (40-80-160 slice)
FDA cleared, yearCE mark, year	20122012	YesYes	Yes	20122010
Intended use (cardiac image, general radiology, etc)	Cardiac imaging (general radiology)	Low-dose general radiology, cardiac, pediatric, trauma, neuro	General radiology, ER, oncology, pediatrics, bariatrics, stroke, cardiac	Low-dose general rad., ER, cardiology, stroke, oncology, pediatric, bariatric
Geometry	3rd generation	Rotate-rotate	Slip Ring	Rotate-rotate, slip ring
Detectors, type	GOS	NanoPanel	Ultra-fast ceramic	40 - 80, solid-state Gd(2)O(2)S
No. of rows	64	64	32	40 and 80
Detector width, mm	20	40	38.4	0.5
Reconstructed slice width options, mm	0.625, 0.8, 1, 1.25, 1.5, 2, 2.5, 3, 4, 5, 6, 7, 8, 9, 10	0.625 10	0.6 20	0.5, 1, 2, 3, 4, 5, 8, 10
Elements per row	672	672	736	896
No. of detection elements	21504	43008	47,104	35,840 (71,680)
Rotation times, sec., 360 degrees	0.39, .5, .6, .8, 1.0, 1.5, 2.0	0.3 effective (cardiac) 0.4, 0.5, 0.75, 1.0, 1.5, 2.0	0.6 (optional 0.48 with Heartview), 1.0, 1.5	0.35, 0.375, 0.4, 0.45, 0.5, 0.6, 0.75, 1.0, 2.0 and 3.0
Partial	0.25, 0.32, 0.39, 0.52, 0.65, 0.97, 1.3s	0.28 option, 0.33	0.41 (305 degrees)	0.23
X-ray fan beam angle, degrees	52	54	55.8	49.2
Gantry tilt, degrees	30	30	30	30
Gantry dimensions, H x W x D, cm	1,920 x 2,244 x 890	201 x 238 x 94	182 x 68 x 230	187 x 215 x 87
Gantry weight, kg	1,800	1,950	1,200	1,800
Gantry aperture, cm	70	70	70	78

Scan localizer	Laser	Laser	Laser	Laser
X-ray tube anode	NS	MRC ice with segmented tungsten anode	DURA 688 MV high-performance	Tungsten, molybdenum graphite
Heat storage, HU	8	30 MHU effective	6 MHU	7.5
Dissipation rate, HUmin	931,000	Direct cooling	810 kHUmin.	1,386
Tube cooling	Air	Direct cooling	Oilair	Oilair
Tube focal spot, mm	.6 x 1.2 (small); 1.1 x 1.2 (large)	0.5 _ 1 (small); 1 _ 1 (large)	0.8 x 0.5, 0.8 x 0.7	1.6 x 1.4, 0.9 x 0.8 (IEC standard)
Optional X-ray tubes	NA	NA	No	NA
kW output	80	105 effective	55 (112 equivalent w SAFIRE)	72
kVp range	80,100,120,140	80, 100, 120, 140	80, 110, 130	80, 100, 120, 135
mA range	30 - 667	20 667	20 - 345	10 - 600 - 10- 50 increments 5 >50 increments of 10
Max scan time, sec	100	100	100	100
Max scan volume, cm	1,750	175, 210 (option)	150	195
Spatial resolution, lpcm	17 (.32mm)	Up to 24	17.5	18
Pitch	.13 - 2.0	0.13 - 1.5	0.3 to 2 in steps of 0.1, 0.27 (cardio)	Max. 1.5
Reconstruction time per image, sec	20	As low as 0.05	20	Up to 30 fps (opt. 60 fps)
Range of movement	NS	NS	NS	NS
Vertical, cm	43 - 97	57.9 - 101.2	45 - 83	33 - 98.8
Longitudinal, cm	0 - 1,800	190, 210 (optional)	160	239 (42 mm lateral movement optional)
Scannable range, cm	175	175, 210 (optional)	160	200
Max load capacity with accuracy, kg	205300 (option)0.25 mm	204 (295 option); 0.25 mm	456 lbs	205 (0.25 mm), optional 300
Computer CPU	Dell Precision	RapidView IR	Image control system, image reconstruction system	64-bit processor x 2
Scan FOVs, cm	50	50	50 (optional 70 RFOV)	18, 24, 32, 40, 50
Reconstruction matrices	512 x 512, 768 x 768, 1,024 x 1,024	512 x 512, 768 x 768, 1,024 x 1,024	512 x 512	512 x 512, 1,024 x 1,024
Reconstruction time, sec	0.3	Up to 25 imagesec	20 images	Up to 30 fps (opt. 60 fps)
Per slice, sec	3.34	As low as 0.05	0.05	0.035
For localization scan, sec	Real time	<2	Real time	Real time
Monitor size	19-in.	19-in. LCD	19-in. flat screen	19-in. LCD
Matrices, pixels	1,024 x 1,024	1,280 x 1,024	1,024 x 1,024	1,280 x 1,024
Range of CT numbers	10,240 to 32,767	-1,024 to 3,071	-1,024 to 3,071	-32,798 to 32,767

Image enlargement	Yes	Up to 10x	Yes	Up to 2,000x
Max no. of slices displayed at once	64	64	64	24
Hard disk, MB	700,000	300 GB	828 GB	500 GB or more
No. online images	1,400,000	Up to 1 million	414,000	Varies
Archival storage	DVD, USB	DVD	DVD DICOM, CD-R, external USB	9.4 GB DVD-RAM DL
Dose-modulation technique	4-D	DoseRight	Care Dose4D, Hand Care, Safire	X, Y and (opt) ECG modulation
Pediatric-specific dose control	Yes	Dedicated pediatric protocols, DoseRight for pediatrics, infant calibration phantom	Pediatric protocols, Safire	Yes
Prospective ECG gating	Yes (option 64e Basic)	Step and shoot cardiac with arrhythmia management	Yes	Yes
Retrospective ECG	Yes (option 64e Basic)	DoseRight cardiac; rate responsive with Beat-to-Beat variable delay algorithm	Yes	Yes
Low-dose cardiac (axial acquisition)	Yes (option 64e Basic)	Step and shoot cardiac with arrhythmia management	Yes	SURECardio Prospective
Min. interscan time, sec	0.6	0.5	0	0.5
Dynamic scan rate	1, 2 and 3 seconds	As low as 0.5 simage intermittent; continuous CT option	0.48	1 sec or less
High-contrast spatial res., lpcm	17	Up to 24	17.5	0.35
0% MTF, lpcm	17	Up to 24	17.5	NS
50% MTF, lpcm	NA	Up to 8	10.1	11.8
Low-contrast resolution, mm at % at 4 rads	4 mm @ 0.3%	3 mm @ 0.3%	5 @ 3 HU	2 mm @ 0.3% @ 16.4 mGy (AIDR 3D)
Noise, percent at 2.5 rads	NS	0.27	0.39%	<0.5%
CT angiography	Yes	Yes	Yes	Yes
CT simulation	No	Pinnacle	Yes	Third-party optional
3-D package	Yes	Yes	Yes	Yes - Vital Images
DICOM 3.0 interface	Yes	Yes	Yes	Yes
Suggested room size, m2	20	26	18	21.3
Warranty	1 year tubeparts	1 year	1 year	1 year
Other features	**see original form	NanoPanel detector with ClearRay reconstruction,	Dose ReportingManagement Tools: Dose	Integrates Quantum 40 to 80-row detector

<p>iDose4 Premium Package with metal artifact reduction for orthopedic implants (O-MAR), SmartShape and IntelliBeam filters, MRC Ice x-ray tube, age- and weight-based protocols</p>	<p>Alert: Alerts user if scan will exceed predefined allowance - default 700 mGy</p> <p>Dose Notification: Alerts user if scan will exceed predefined values in specific protocol</p> <p>CARE Dashboard: Over view of utilized dose measures for protocol optimization and training syngo Security: control of protocol modification</p>	<p>technology, volume imaging capabilities and advanced software; with coneXact double slice technology, capable of delivering 160 unique images reconstructed per axial scan enabling volume reconstruction in double density, resulting in a more true-to-original reconstruction in MPR and 3-D rendered images; temporal resolution as low as 4035 msec; cerebral blood-flow analysis system; quantitative bone-mineral analysis; CT fluoro; full DICOM feature set; pediatric scanning; SUREStart contrast tracking; SUREScan real-time imaging; volume-rendered 3-D; ECG gating; cardiac scoring; cardiac function analysis; SURECardio imaging; multiview MPR; AutoFilm; AutoSend; AutoArchive; SUREExposure 3D, SURE Subtraction Carotid.</p>
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