



SIEMENS



Stellar Detector
Benefits –
SOMATOM
Definition Flash

www.siemens.com/somatom-definition-flash

Multiply Your Potential with the Stellar Detector

Generation Flash

Answers for life.



Stellar Detector

The First Fully Integrated Detector

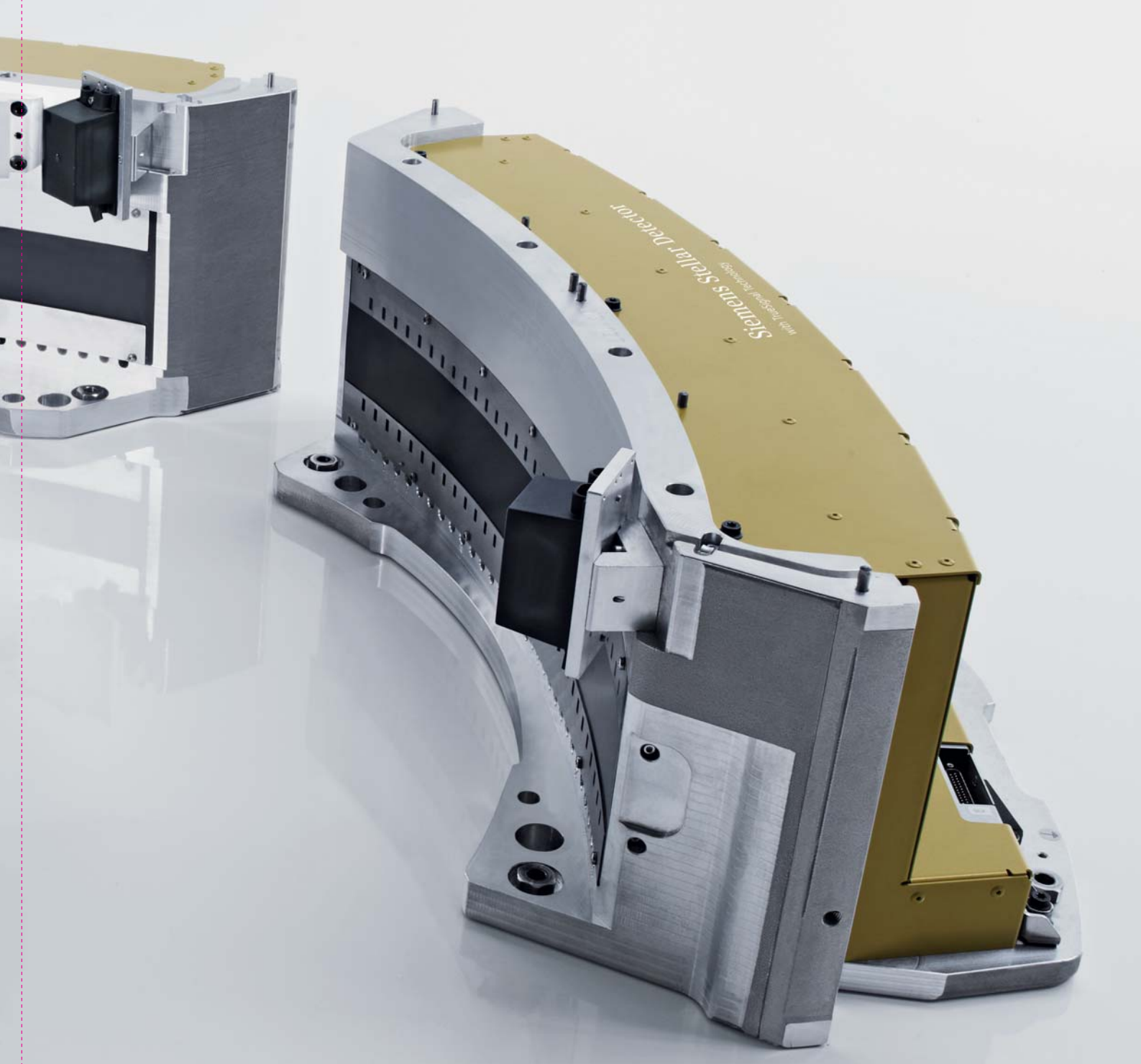
Unique Innovations

- 2 x Stellar Detector with TrueSignal and Edge Technology
- Cross-plane spatial resolution: 0.30 mm
- Heart-rate independent temporal resolution of 75 ms
- Tube power: 30 MHU, 7.3 MHU/min
- Focal spot size: Small: 0.7 x 0.7 mm / Large: 0.9 x 1.1 mm
- Generator power: 200 kW
- kV settings: 70/80/100/120/140 kV
- 3D voxel size: 0.24 mm / 0.33 mm
- Max. table load: Up to 307 kg / 676 lbs
- Reconstruction performance: up to 60 ips
(1 oncology staging exam with 1000 images within 20 seconds)
- SAFIRE – with the only FDA-approved quantitative dose-saving claim of 54 – 60%*
- Dual Energy – dose-neutral with Selective Photon Shield
- FAST Dual Energy – WorkStream 4D for Dual Energy
- 2 x Adaptive Dose Shield for any spiral CT examination
- X-CARE
- Pediatric CT low-dose protocols
- Adaptive ECG-Pulsing including MinDose
- Selective Photon Shield
- Neuro BestContrast
- CARE kV – automated patient and examination specific kV adaptation
- CARE Child
- CARE Configurator
- CARE Contrast III
- CARE Profile

The SOMATOM Definition Flash with the revolutionary Stellar Detector, Siemens' latest high-end scanner, was especially designed to make CT exams much healthier for your patients.

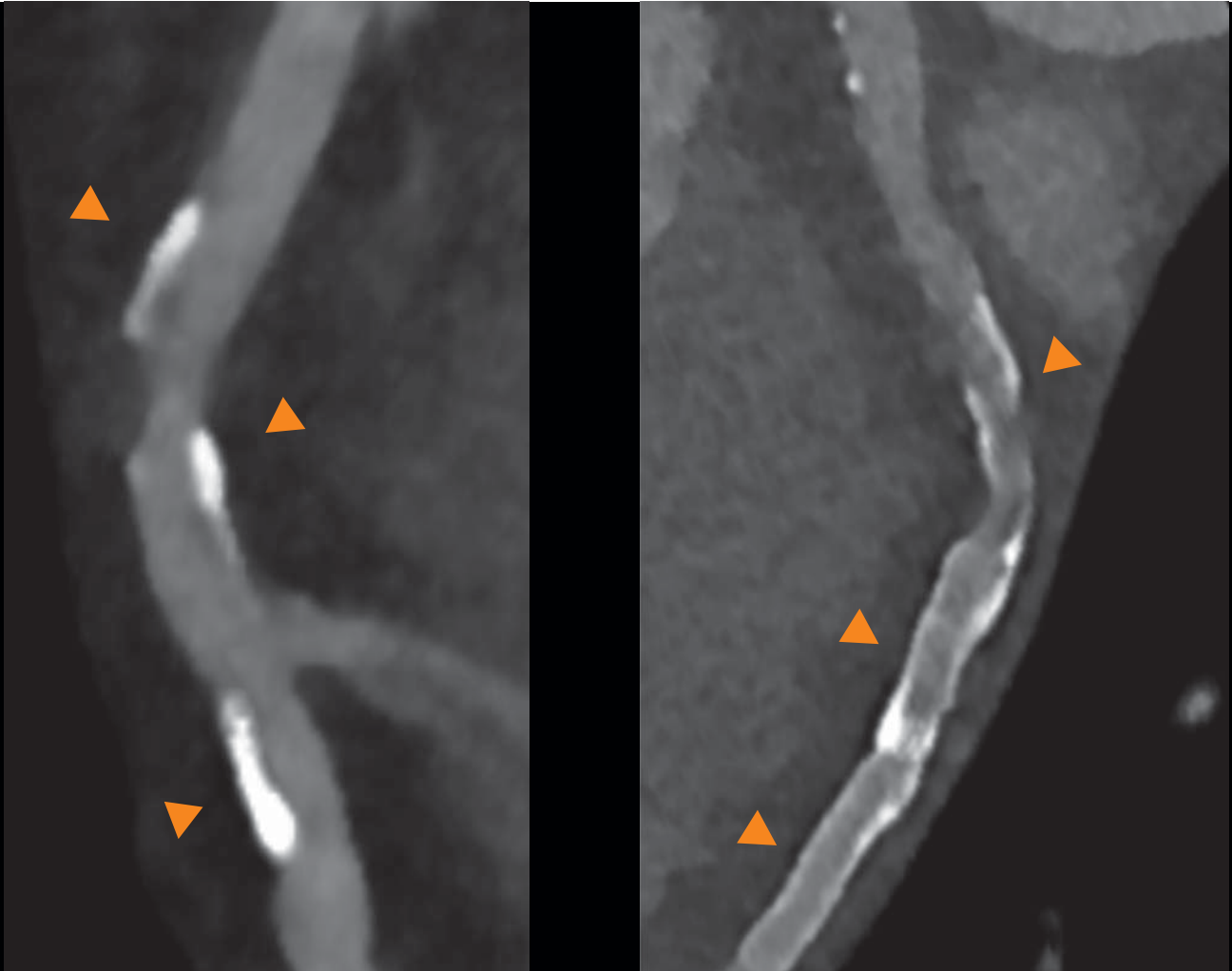
Together with its core scan mode – the Flash Spiral – it can be summarized in four words: Flash Speed. Lowest Dose.

* 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. The following test method was used to determine a 54 to 60% dose reduction when using the SAFIRE reconstruction software. Noise, CT numbers, homogeneity, low-contrast resolution and high contrast resolution were assessed in a Gammex 438 phantom. Low dose data reconstructed with SAFIRE showed the same image quality compared to full dose data based on this test. Data on file.



Find out how these ground-breaking innovations become unique benefits in your daily clinical CT practice.

Increased Sharpness at Reduced Blooming



Courtesy of German Heart Center / Munich, Germany

To achieve high resolution imaging, without blurring at a temporal resolution of 75 ms for sound calcified lesion evaluation and exclusion of in-stent restenosis in stents narrower than 3 mm inspired our R&D to develop the Stellar Detector. The full electronic integration of the Stellar Detector elements minimizes cross-talk between neighboring detector rows. This significantly reduces slice blurring, resulting in a more precise slice profile and generates 0.5 mm slices at a spatial resolution of 0.30 mm without increasing dose.

“Stellar Detector technology provides reduced blooming of calcified lesions and stents with much sharper vessel contours.”

Professor Jörg Hausleiter, Cardiologist, Cardio-Vascular CT,
German Heart Center, Munich, Germany

Adaptive Cardio Sequence
temp resolution: 75 ms
collimation: 128 x 0.6 mm
spatial resolution: 0.30 mm
scan length: 138 mm
rotation time: 0.28 s
120 kV, 296 mAs/rotation
heart rate: 69 bpm
CTDIvol: 11.0
DLP: 152 mGycm
eff. dose: 2.1 mSv

Less Noise for Less Dose or Improved Image Quality



Courtesy of German Heart Center / Munich, Germany

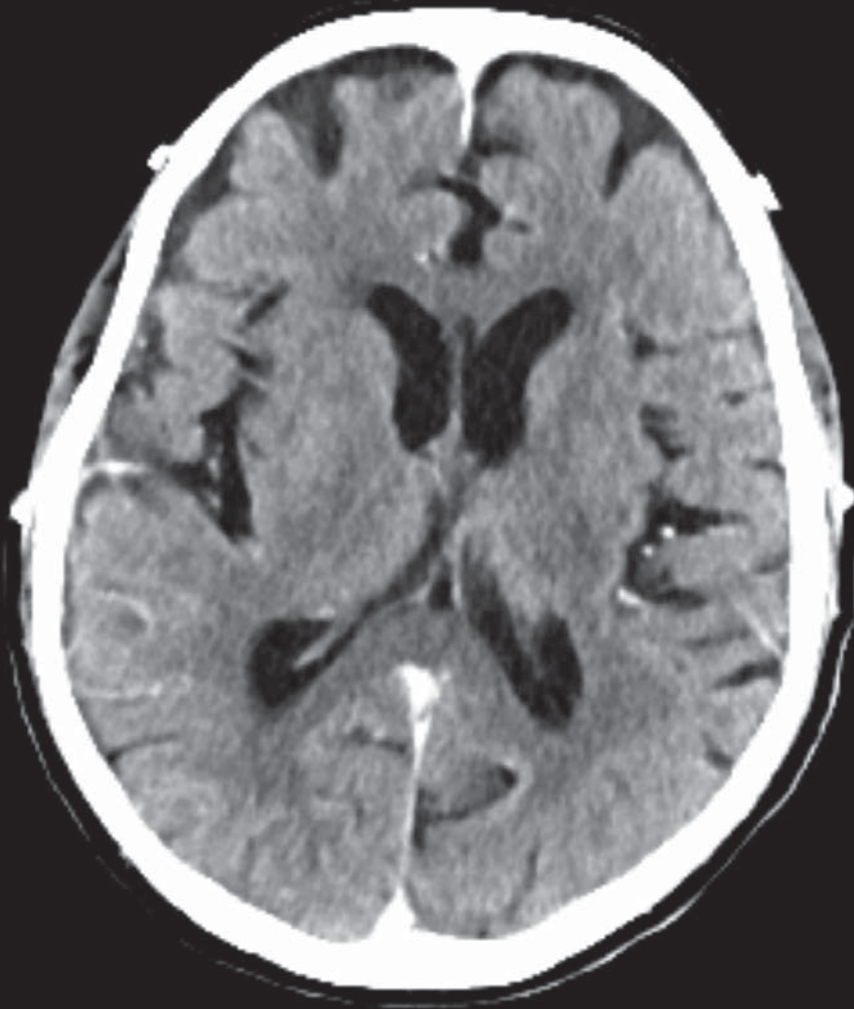
The full electronic integration of the Stellar Detector elements facilitate that no analog electronic components or cables and connectors are mounted on the elements anymore. The Stellar Detector minimizes electronic noise thus increasing the signal-to-noise ratio significantly for improved utilization of low signals at the detector. This can be used either for further dose reduction or improved image in all your examinations.

Flash Spiral scanning
collimation: 64 x 0.6 mm
spatial resolution: 0.30 mm
scan time: 2 s
scan length: 500 mm
rotation time: 0.28 s
120 kV, 72 eff. mAs
CTDivol: 6 mGy
DLP: 300 mGycm
eff. dose: 4.4 mSv

“Stellar Detectors offer 20-30% less noise. Beyond its high resolution we’re looking into further dose reduction.”

Professor Jörg Hausleiter, Cardiologist, Cardio-Vascular CT,
German Heart Center, Munich, Germany

Improved Grey-White Matter Differentiation



Courtesy of German Heart Center / Munich, Germany

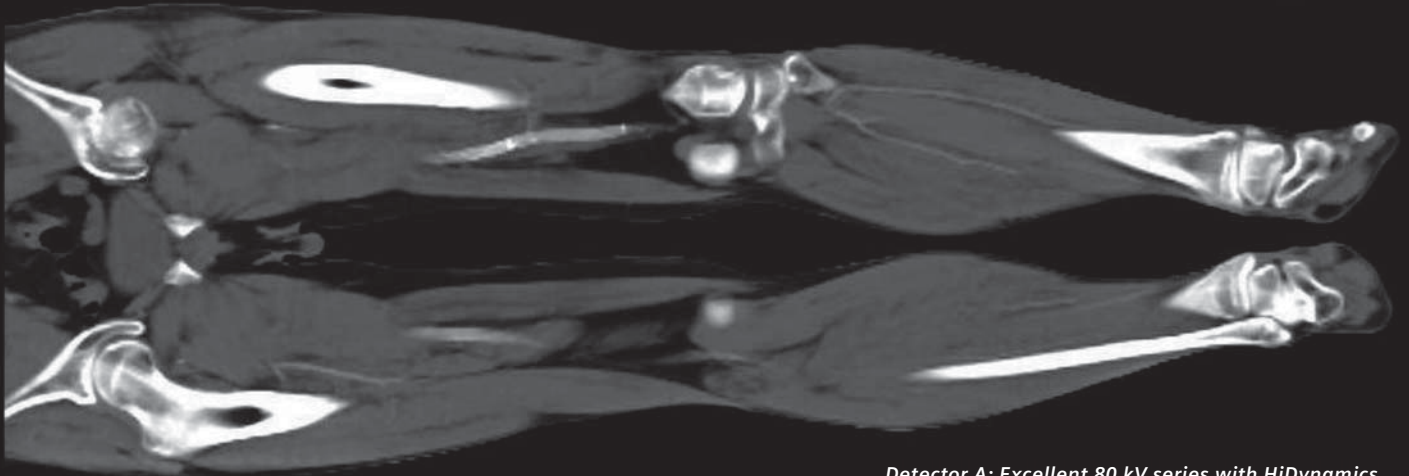
Detect bleeding, brain injury and skull fractures in patients with head injuries with excellent grey-white matter differentiation for increased diagnostic certainty while X-CARE protects the patient's eyes. The new Stellar Detector supports decision making due to unprecedented image sharpness without increasing image noise through Edge Technology. Additionally its TrueSignal Technology increases signal-to-noise ratio because of its more efficient x-ray quanta processing. Grey-white matter differentiation used to detect the early signs of a stroke.

X-CARE acquisition
collimation: 64 x 0.6 mm
scan time: 8 s
scan length: 90 mm
rotation time: 1.0 s
100 kV, 580 eff. mAs
CTDIvol: 54 mGy
DLP: 608 mGycm
eff. dose: 1.3 mSv

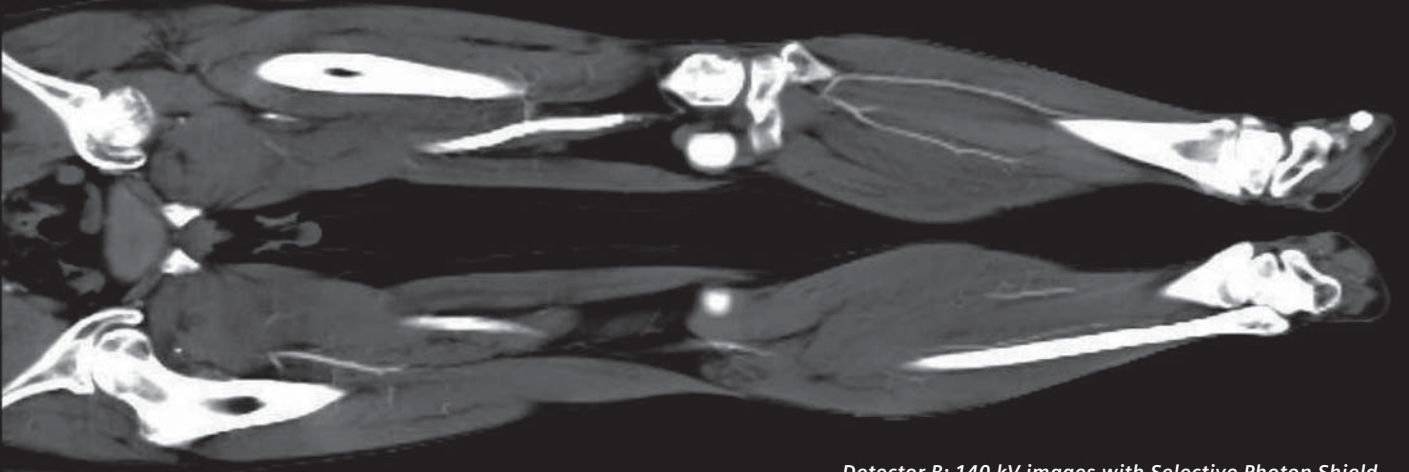
“Stellar neuro images show much more pronounced grey-white matter differentiation especially at the cortex and the basal ganglia.”

Stefan Martinoff, MD, Director of Radiology and Nuclear Medicine Institute and Deputy Medical Director of German Heart Center, Munich, Germany

Detail-Rich Low-Voltage CT



Detector A: Excellent 80 kV series with HiDynamics



Detector B: 140 kV images with Selective Photon Shield

Courtesy of German Heart Center / Munich, Germany

The Stellar Detector with TrueSignal Technology makes HiDynamics imaging possible. Thanks to the full electronic integration, the dynamic bandwidth is significantly extended. This increases the image detail level especially for low contrast objects in close proximity to high contrast objects. This is important for low-kV scans, e.g. in the 80 kV dataset of Dual Energy scans or in 70 kV pediatric examinations.

“With HiDynamics more patients can be scanned with 70 or 80 kV now since the image quality is excellent, as we see here in Dual Energy.”

Professor Jörg Hausleiter, Cardiologist, Cardio-Vascular CT,
German Heart Center, Munich, Germany

Dual Energy Acquisition
collimation: 64 x 0.6 mm
spatial resolution: 0.30 mm
scan time: 24 s
scan length: 975 mm
rotation time: 0.33 s
80/140 kV, 121/53 eff. mAs
CTDivol: 4.3 mGy
DLP: 419 mGycm
eff. dose: 1.6 mSv

In the event that upgrades require FDA approval, Siemens cannot predict whether or when the FDA will issue its approval. Therefore, if regulatory clearance is obtained and is applicable to this package, it will be made available according to the terms of this offer.

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