



CT Oncology Benefits – SOMATOM Definition Flash

Unique Innovations

- 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
- Coverage perfusion: 14 cm @ 50 cm FOV
- Coverage 4D CTA: 48 cm @ 50 cm FOV
- Bore size: 78 cm
- Scan range: 200 cm
- Max. table load: Up to 307 kg / 676 lbs
- Reconstruction performance: Up to 50 ips (1 oncology staging exam with 1000 images in up to 20 sec.)
- SAFIRE*
- Dual Energy
- Adaptive Dose Shield for any spiral CT examination
- X-CARE
- Pediatric CT protocols
- 4D Noise Reduction
- Selective Photon Shield
- Flash Spiral with 458 mm/s scan speed
- 1 kW Scan room heat dissipation
- Tube Guard
- Siemens Remote Services
- FAST Planning
- FAST Spine
- FAST Scan Assistant
- FAST Adjust
- CARE kV
- CARE Child
- CARE Configurator
- CARE Contrast III
- CARE Profile
- CARE Dashboard

*The information about this product is being provided for planning purposes. The product is pending 510(k) review, and is not yet commercially available in the U.S.

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Global Business Unit
Siemens AG
Medical Solutions
Computed Tomography &
Radiation Oncology
Siemensstr. 1
DE-91301 Forchheim
Germany
Phone: +49 9191 18 0
Fax: +49 9191 18 9998

Global Siemens Headquarters
Siemens AG
Wittelsbacherplatz 2
80333 Muenchen
Germany

Global Siemens Healthcare Headquarters
Siemens AG
Healthcare Sector
Henkestrasse 127
91052 Erlangen
Germany
Phone: +49 9131 84-0
www.siemens.com/healthcare

Legal Manufacturer
Siemens AG
Wittelsbacherplatz 2
DE-80333 Muenchen
Germany

Order No. A91CT-06014-46C1-7600 | Printed in Germany | CC CT WS 06112. | © 06.2011, Siemens AG

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Multiply Your Potential in CT Oncology
Generation Flash

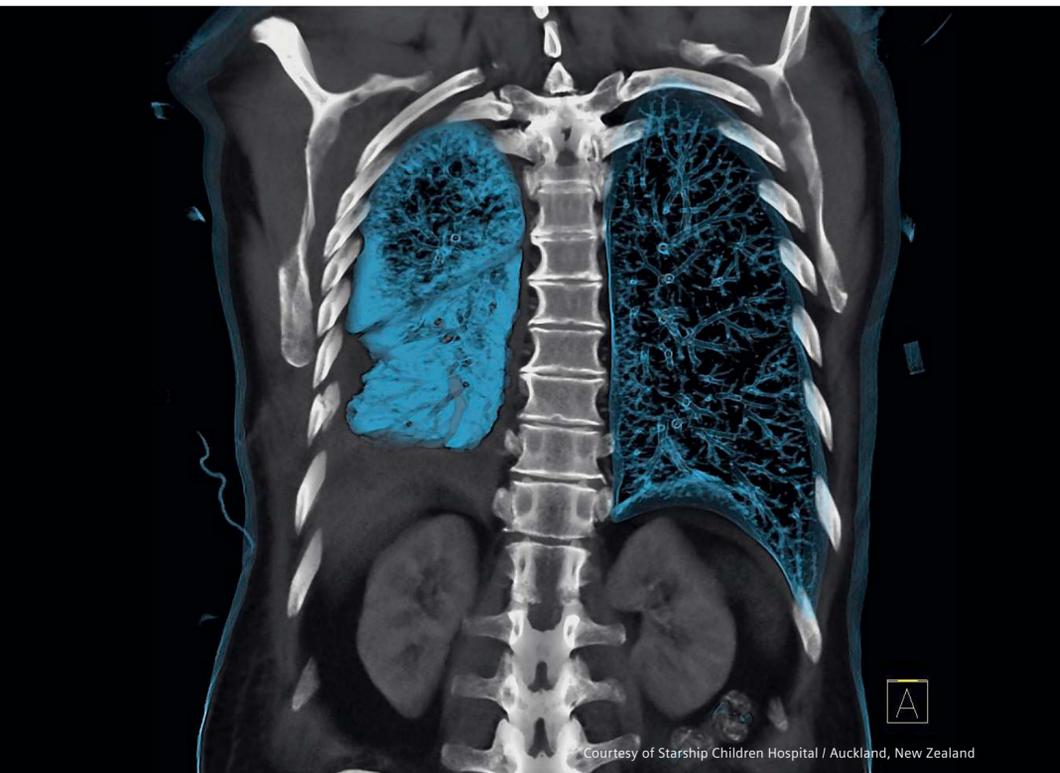
Find out how these technical specifications become unique benefits for your oncological patients.

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

Its core innovation – the revolutionary Flash Spiral – can be summarized in four words: Flash speed. Lowest dose.

Answers for life.

Minimized Accumulated Exposure



Courtesy of Starship Children Hospital / Auckland, New Zealand

For cancer patients receiving multiple scans over time, keeping radiation dose to the very minimum is of utmost importance. Low dose scanning enabled by utilizing the revolutionary Flash Spiral, protection of radiation sensitive organs (X-CARE), 70 kV protocols (CARE kV), as well as iterative reconstruction (SAFIRE*), helps provide healthier treatment for these patients.

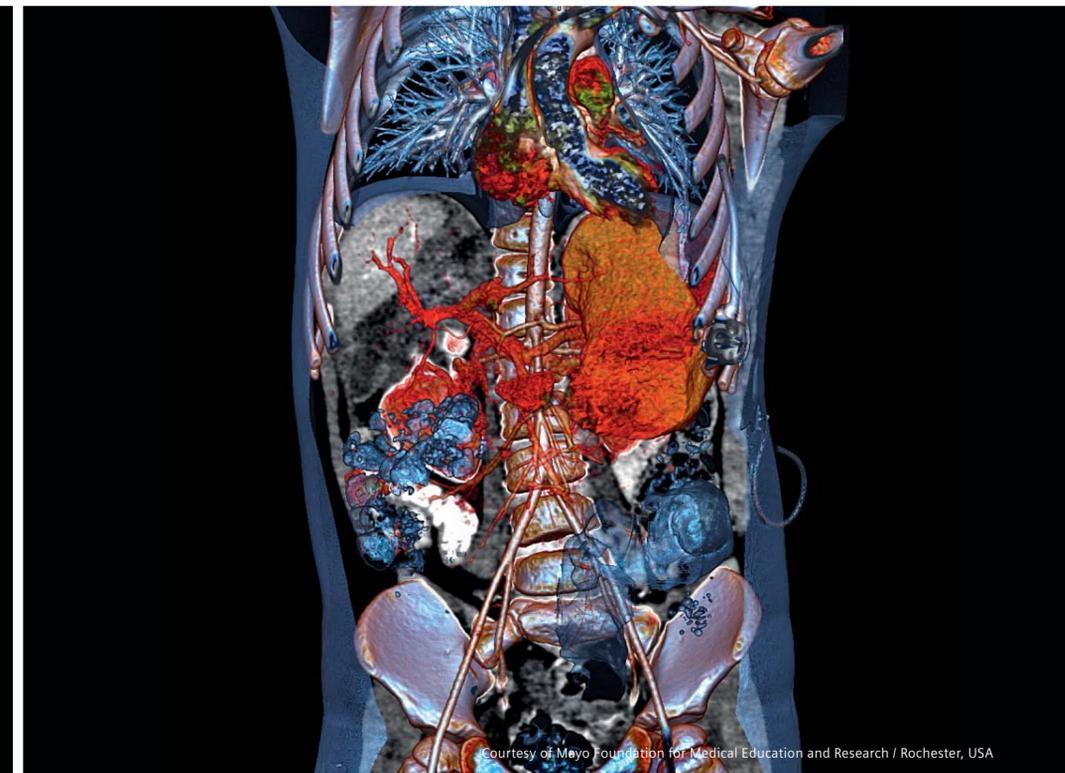
"In conclusion, our results confirm that it is possible to provide similar image quality on low-dose CT examinations reconstructed with [...] iterative reconstructions compared to standard-dose CT examinations reconstructed with FBP [Filtered Back Projection]."

Pontana F et al. Chest computed tomography using iterative reconstruction vs filtered back projection (Part 2): image quality of low-dose CT examinations in 80 patients. Eur Radiol. 2011 Mar;21(3):636-43.

spatial resolution: 0.33 mm
scan time: 5 s
scan length: 390 mm
rotation time: 0.5 s
120 kV, 114 effective mAs
DLP: 316 mGycm
CTDIvol: 7.76 mGy
eff. dose: 4.4 mSv

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No Breath-hold



Courtesy of Mayo Foundation for Medical Education and Research / Rochester, USA

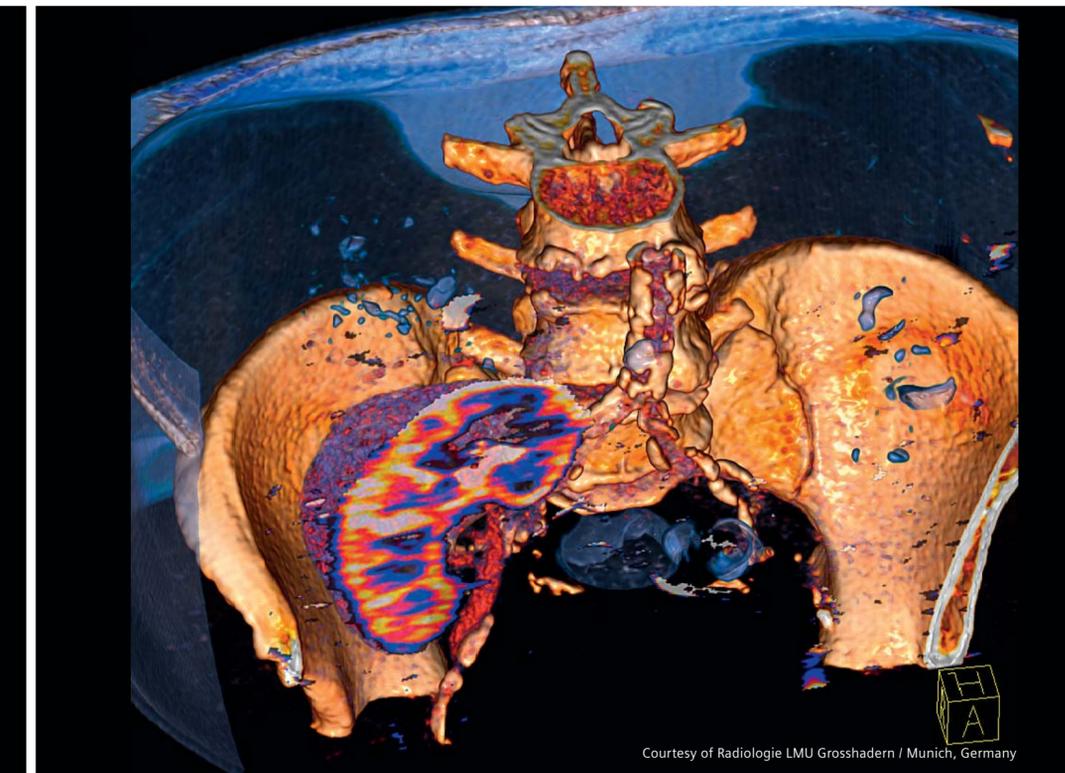
Breathing artifacts are often a serious problem in CT imaging of the lung and upper abdomen. For many patients, especially elderly patients or those with diseases in their airways, holding their breath for even a few seconds can be a challenge. The SOMATOM® Definition Flash can, for example, scan an entire thorax in only 0.6 seconds, so that breath-hold is no longer a requirement.

"CT of the lung can be accomplished using the HPM [high-pitch mode] at a low radiation dose with a diagnostic image quality even without suspended respiration."

Baum Mueller S et al. Computed tomography of the lung in the high-pitch mode: is breath holding still required? Invest Radiol. 2011 Apr;46(4):240-5.

collimation: 128 x 0.6 mm
spatial resolution: 0.33 mm
scan time: 0.93 s
scan length: 378 mm
rotation time: 0.28 s
100/100 kV, 121 effective mAs
DLP: 181 mGycm
CTDIvol: 4.03 mGy
eff. dose: 5.07 mSv

Whole Organ Perfusion



Courtesy of Radiologie LMU Grosshadern / Munich, Germany

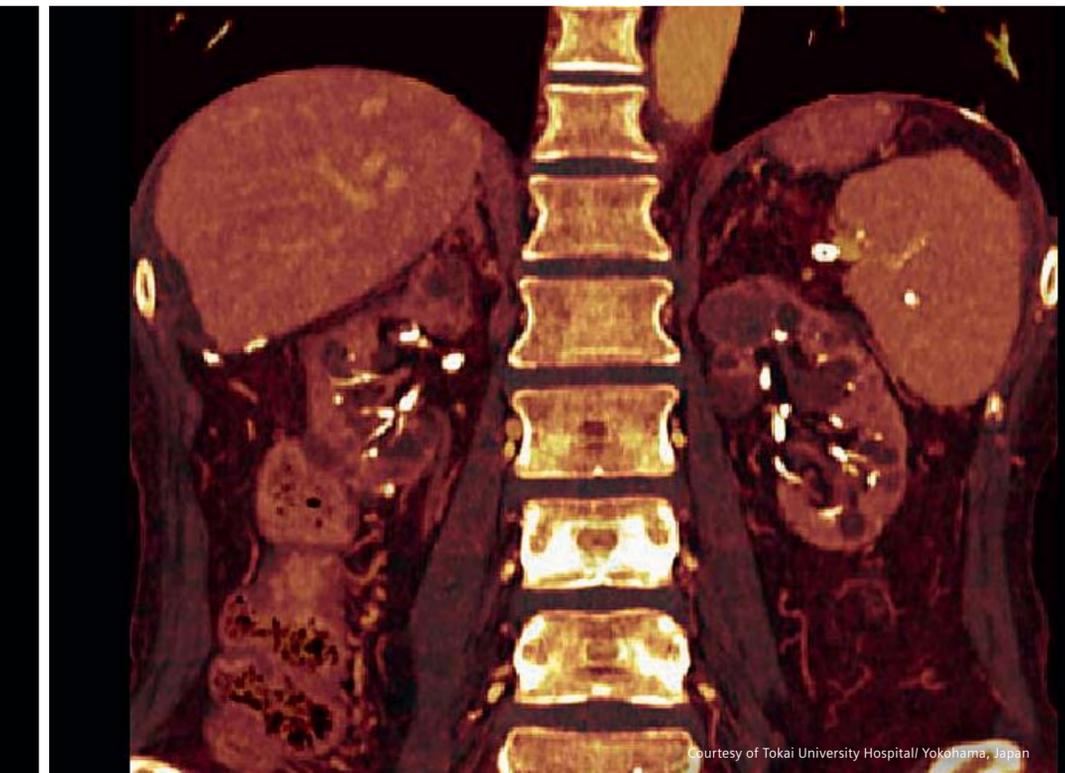
With the industry's leading dynamic perfusion coverage of up to 48 cm, the SOMATOM Definition Flash enables the early assessment of therapeutic success in cancer treatment. syngo Volume Perfusion CT provides images of blood flow, blood volume and permeability from one set of dynamic CT images, thereby allowing the assessment of perfusion disturbances and perfusion changes during therapy.

"Most importantly, 4D CT of the liver provided both qualitative and quantitative information on perfusion patterns in normal and metastatic liver tissue with a high degree of reliability."

Goetti R et al. Quantitative computed tomography liver perfusion imaging using dynamic spiral scanning with variable pitch: feasibility and initial results in patients with cancer metastases. Invest Radiol. 2010 Jul;45(7):419-26.

collimation: 128 x 0.6 mm
spatial resolution: 0.33 mm
scan time: 40 s
scan length: 182 mm
rotation time: 0.28 s
100 kV, 130 effective mAs
DLP: 1447 mGycm
CTDIvol: 77.24 mGy
eff. dose: 21.7 mSv

Dose-neutral Dual Energy



Courtesy of Tokai University Hospital/ Yokohama, Japan

Our unique Dual Energy solution provides functional information without any dose penalty. One of our many examples is syngo DE Virtual Unenhanced, which generates virtual unenhanced images so that the unenhanced scan can be eliminated from all protocols. Requiring one single scan instead of two saves radiation dose, scan time and costs.

"Dual Energy CT is feasible without additional dose."

Schenzle JC et al. Dual energy CT of the chest: how about the dose? Invest Radiol. 2010 Jun;45(6):347-53.

collimation: 32 x 0.6 mm
spatial resolution: 0.33 mm
scan time: 19 s
scan length: 435 mm
rotation time: 0.5 s
100/50Sn140 kV, 140/119 effective mAs
DLP: 523 mGycm
CTDIvol: 11.57 mGy
eff. dose: 7.85 mSv