Philips Mx8000 Infinite Detector Technology

Changes the way medicine is practiced

Let's make things better.

PHILIPS

Infinite Detector Technology

Breaking the multislice barrier with 38 slices/second

IDT is the road map technology for the future of multislice CT applications.

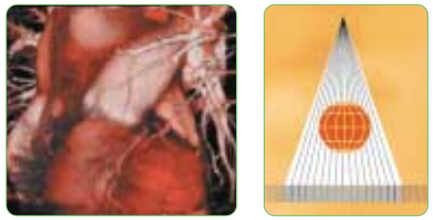
MX8000™ WITH INFINITE DETECTOR TECHNOLOGY (IDT)

IDT is not simply an improvement on the current quad or eight detector multislice computed tomography (CT) performance – it's an exponential leap. Since pioneering the first-ever multislice application scanner more than 10 years ago, Philips with the pedigree of Picker and Elcint has been a visionary in its approach to innovative, advanced CT applications.

Infinite Detector Technology is the brainstorm of a research and development team that continuously engineers methods to help you deliver better healthcare outcomes. Advanced technology that only Philips has had the foresight to create.

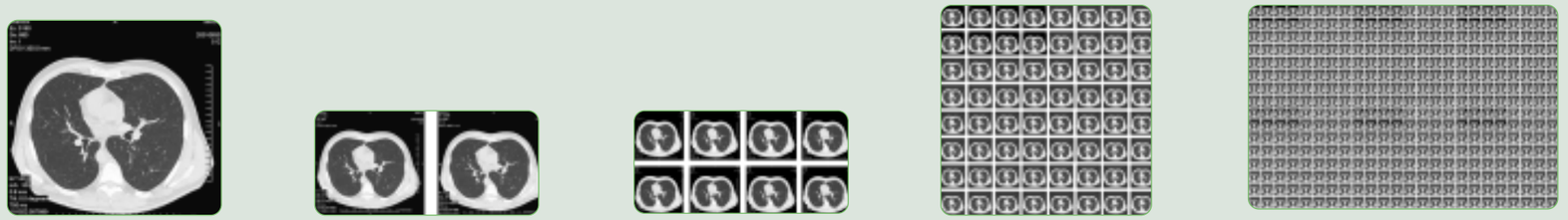
With IDT, you now have access to multislice capabilities that change everything. Through extensive experience and customer feedback, we realized it's not just about going a little farther, a little faster. IDT was precisely engineered to reward you with advanced applications, now performed routinely, that make a difference. It is designed to change outcomes. Improve lives. Change everything about the way medicine is practiced.

Infinite Detector Technology



Cone Beam Reconstruction

MULTISLICE LEADERSHIP



1989
Spiral Single Slice
1 slice/sec.

1992
Dual (MxTwin)Multislice
2 slices/sec.

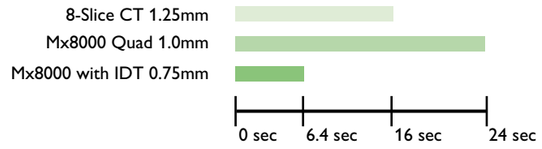
1997
Mx8000 Quad
8 slices/sec.

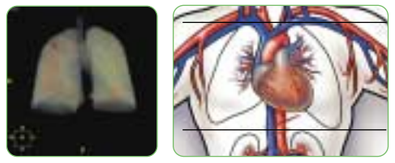
2000
Mx8000 IDT
38 slices/sec.

Future
LAD
192 slices/sec.

With Philips IDT you don't have to **compromise** any parameter

HIGH-RESOLUTION IMAGING





240mm lung coverage

IDT IMPACT lung

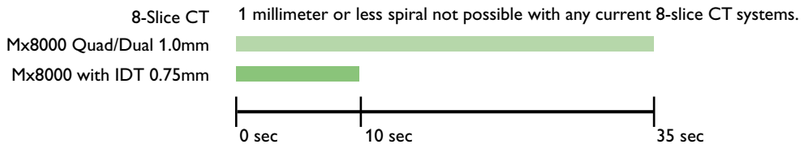
With IDT, lung nodules are found earlier. More small lesions are found early enough to treat. Meanwhile, speed of scan can be completed in less than 6.5-seconds – required especially for accurate lung volume measurements.

WHAT IS IMPORTANT TO YOU?

Every aspect of Infinite Detector Technology is refined to provide performance that quickly and powerfully responds to your clinical challenge.

- **Time**
- **Low Dose**
- **High Quality**
- **Thinner Slices**

CARDIAC CHARACTERIZATION

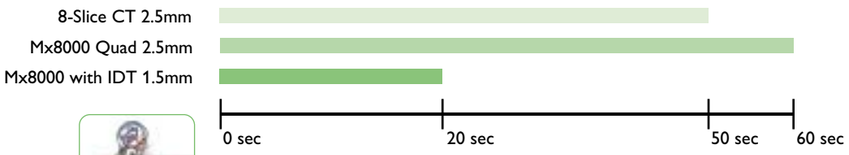


140mm cardiac coverage

IDT IMPACT heart

Soft versus hard plaque lesions can be accurately characterized and small caliber vessel stenosis for major and subsegmental arteries is possible.

HIGH SPEED, HIGH QUALITY SCANNING

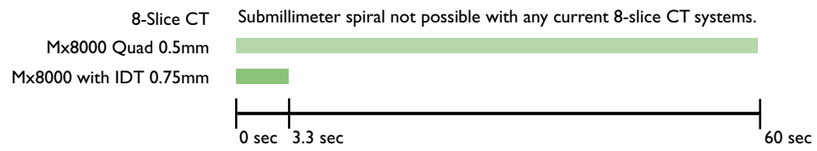


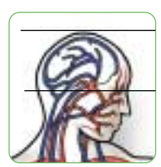
1500mm body coverage

IDT IMPACT body

IDT always acquires with thin-slice imaging for whole body and vascular scanning. Data may be reconstructed and displayed at any slice thickness desired. Body imaging: no more thin-slice repeat exam – the same data may be repeatedly reconstructed at thick or thin slices without rescanning the patient. Vascular: Replace body angiograms, especially traumatic situations where rapid, accurate imaging is required in ER/late night situations.

ISOTROPIC NEUROVASCULAR DETAIL





120mm head coverage

IDT IMPACT head

High-speed, submillimeter spiral detail required for small caliber vessel stenosis evaluation and aneurysm diagnosis/ characterization and combination cerebral-carotid CTA.

What's behind IDT

More than 1,000 man-years of research and development. The collective wisdom from clinical and technical experts worldwide led Philips with the pedigree of Picker and Elcint to integrate sophisticated and refined characteristics that deliver extreme diagnostic power to physicians worldwide.

TACH™ TECHNOLOGY

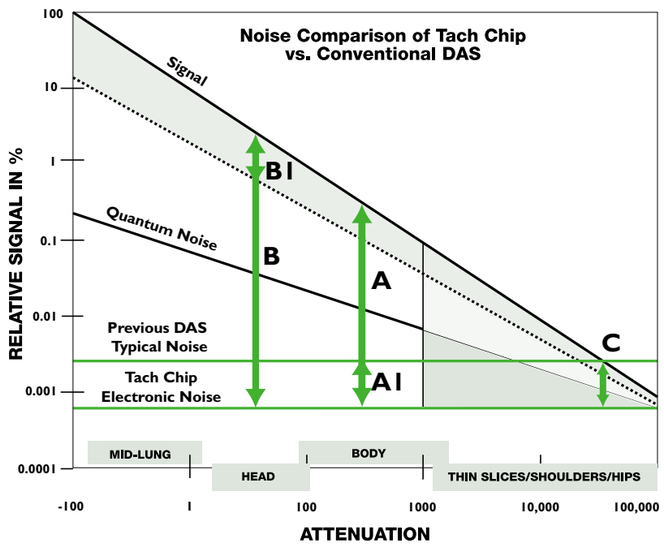
produces thin slice, low dose, and high quality imaging. At the heart of the Infinite Detector system is the exclusive, Philips-patented Tach Technology data acquisition chip. Tach makes large-area multislice detectors a reality by efficiently capturing a clear direct-digital signal onboard the detector array, transferring that data at an astounding 1 Gigabit per second. It is the only mechanism available in the world that is fast enough to allow a large area multislice CT to collect high resolution Dynamic Focal Spot (DFS) data (24 Lp/cm). Result: routine low dose AND high quality imaging.

SUBMILLIMETER ISOTROPIC IMAGING

at 38 submillimeter spiral slices per second. Mx8000 IDT is a large-area multislice CT scanner capable of acquiring up to 16 submillimeter slices simultaneously (38 0.75mm slices/second). With full rotation time of 420 msec. Mx8000 with Infinite Detector Technology is optimized for isotropic detail and high image quality with low dose protocols. Imagine – no more repeat scans at thin slices. They're all thin! All the time!

Tach technology

Tach DAS Signal Electronic and Photon Noise



A. Scan at the same dose levels and improve image quality (S/N ratio) compared to non-Tach systems.

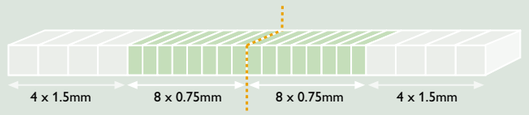
A1. Represents additional signal gained due to Tach.

B. Lower the dose and maintain same image quality compared to non-Tach systems.

B1. Represents the amount of lower dose due to Tach.

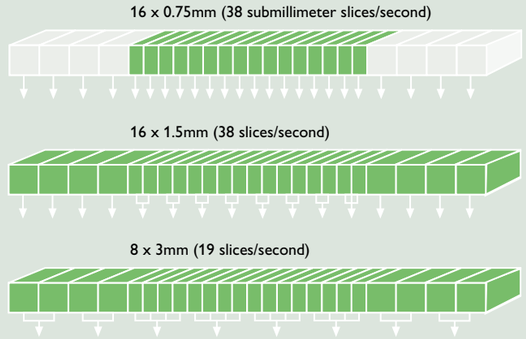
C. Signals that would otherwise be drowned out by noise are detectable with Tach. As a result, Tach extends the range of low-dose applications/anatomy examined with diagnostic image quality.

SUBMILLIMETER ISOTROPIC IMAGING



segments:	4 x 1.5mm, 16 x 0.75mm, 4 x 1.5mm
segments per colum:	24
Basic slice thickness:	16 x 0.75mm 16 x 1.5mm (fused 2 x 0.75mm) 8 x 3mm (fused 4 x 0.75 & 2 x 1.5mm)
advantages:	Permits detailed submillimeter isotropic imaging with high S/N ratio for low-dose, high quality imaging.

BASIC OPERATIONAL MODES



CONE BEAM RECONSTRUCTION ALGORITHM (COBRA™)

COBRA cone beam reconstruction is Philips' exclusive new multislice concept. It enables true three-dimensional data acquisition and reconstruction. With Philips' revolutionary geometry, the volume - rather than multiple slices - is the starting point for acquisition, reconstruction, processing and assessment.

COBRA will improve diagnostic efficacy and efficiency by enabling clinicians to image at consistent resolution over a large, clinically-relevant volume in a short amount of time. Nodule detection in the lungs, trauma exams, and peripheral run-offs are just a few of the studies that will benefit from this breakthrough.

Cone Beam Reconstruction

EXPAND YOUR CT SCANNER CAPABILITIES

Philips can expand your CT scanner capabilities and provide solutions for each clinical application's unique cone beam challenges.

Multi-axial Scanning

- Customized COBRA interpolators reduce dose
- High signal-to-noise
- Nearly 100% dose efficiency

Multislice Spiral

- Highly evolved spiral interpolators
- Rapid spiral multislice-0.25 sec/image recon
- Advanced applications capabilities

Cardiac

- Prospectively gated or retrospectively tagged data*
- Increased accuracy of coronary anatomy visualization
- Simplified differentiation of intransvascular plaque
- Extreme cardiac applications become routine
- Comprehensive, one-stop cardiac evaluation

CCT*

- Lowest dose CT fluoro
- Large areas of coverage monitored during critical exams
- More accurate tracking of devices

* Available in Version 3.0 with IDT.

Philips Medical Systems is part of Royal Philips Electronics

INTERESTED?

Would you like to know more about our imaginative products? Please do not hesitate to contact us. We would be happy to provide specific information about our products and services, or put you on our mailing list for news about new product developments, upcoming events or for our clinical journal, MedicaMundi. We would be glad to hear from you.

On the web
Contact us through our web site:
www.medical.philips.com

Via e-mail
Our e-mail for all remarks and requests is:
medical@philips.com

By fax
We can be reached at the following fax number:
+31 40 27 64 887

By postal service
Please write to us at the following address:
Philips Medical Systems
Global Information Center
I.B.R.S. / C.C.R.I. Numéro 11088
5600 VC Eindhoven
Pays-Bas / The Netherlands
(no stamp required)

Asia
Regional Office Asia Pacific
Tel: +852 2821 5364
Fax: +852 2527 6727

Europe
Regional Office Netherlands
Tel: +31 40 27 62 614
Fax: +31 40 27 64 250

Germany / Eastern Europe
Regional Office Germany
Tel: +49 1805 767 222
Fax: +49 1805 767 229

Middle East / Africa
Regional Office Dubai
Tel: +971 4 3095 247
Fax: +971 4 3095 200

Latin America
Regional Office Brazil
Tel: +55 11 5188 0764
Fax: +55 11 5188 0761

North America
Regional Office USA
Tel: +1 425 487 7000
Fax: +1 425 487 8130

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