

# SIEMENS SOMATOM FORCE DECT

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The Radio-diagnosis department of Eras University has been equipped with **SIEMENS SOMATOM FORCE (384 Slices) DUAL SOURCE & DUAL ENERGY CT SCANNER ( World's fastest CT equipped with frontier software )** since 26<sup>th</sup> December 2015.

## LOW DOSE EARLY DETECTION

The **SOMATOM FORCE** is setting new benchmarks by performing CT scans for early detection of lung cancer at doses approximately 50% lower than currently possible in patients who require regular CT scans for monitoring borderline findings.

This together with outstanding spatial resolution, can help in improving the detection of occult lesions. Besides localizing suspicious lesions, separation of high and low kV spectra can be improved for precise differentiation by up to 30% with true Dual Energy and unique selective photon shield II, giving additional indications about the malignant lesion.

In **TURBO FLASH** mode, minimized motion impairment and unparalleled image quality assist in reducing the risk of missing lesions.

## KIDNEY FRIENDLY SCANNING

The **SOMATOM FORCE** enables radiologists to routinely perform exams at lower kVp (70-90) even in elderly, substantially reducing the amount of **CONTRAST MEDIA** needed in patients with borderline renal function. Consequently, residual renal function can be maintained and the kidneys are better protected against **NEPHROTOXIC** drugs.

## **FREE-BREATHING CT IMAGING**

Motion blur and unwanted artifacts can obscure diagnostic image quality. With **SOMATOM FORCE**, image quality can be significantly improved, by minimizing motion artifacts even in challenging cases like; obese or elderly patients, unconscious or uncooperative cases and small children.

## **FASTEST & MOST VERSATILE SCANNING**

Using ultra-high-pitch imaging, it provided the industry's fastest acquisition speed, covering an entire thorax range in less than a second, an entire heart in one quarter of a second, thus practically **FREEZING MOTION**.

The SOMATOM FORCE now expands these capabilities with TURBO FLASH mode, increasing speed to an unmatched 737 mm/s, or providing a field of view (FoV) of up to 50 cm at flash speed coverage, thus bringing the benefits of flash scanning to obese and acute care patients.

## **PERFUSION IMAGING AT HALF THE DOSE**

The SOMATOM FORCE significantly lowers the hurdle of body perfusion by not only extending the coverage to 22cm for perfusion but particularly by reducing the applied dose by up to 50%. For example, perfusion study of liver now has become possible at a dose comparable to conventional multiphase examinations.

DECT may allow the detection of subtle emboli by revealing perfusion defects in patients with pulmonary thromboembolism.

**Brain perfusion** and dynamic (4D) imaging of the brain are now possible with DECT.

## **Dual-energy CT ATTRIBUTES**

DECT is increasingly useful in diagnosing cases of **GOUT** where synovial fluid fails to demonstrate monosodium urate crystals.

**Dual-energy multidetector CT** with advanced postprocessing techniques improves characterization of renal stone composition beyond that achieved with single-energy multidetector CT acquisition with basic attenuation assessment.

**DECT** imaging can facilitate characterization of coronary artery plaque because of its capability of material decomposition.

Assessment of myocardial ischemia and infarction by **DECT** as an addition to coronary CT angiography is a promising step toward comprehensive evaluation of coronary heart disease with a single noninvasive modality.

**DUAL-energy CT** shows brain ischemia and hyperbaric oxygen therapy efficacy in acute CO intoxication.

**Dual-energy CT** follow-up after stroke thrombolysis alters assessment of hemorrhagic complications.

## CHARACTERISTICS

**TUBE** 2 x Vectron™ X-ray tubes

**DETECTOR** 2 x stellar detector with 3D scatter collimator

**ACQUIRED SLICES** = 384 ( 2 x 192 )

**ROTATION TIME** = up to 0.25 s

**TEMPORAL RESOLUTION** = 66 ms

**GENERATOR POWER** = 240 kW ( 2 x 120 kW)

**KV SETTINGS** = 70-150 kV

**SPATIAL RESOLUTION** = 0.3 mm x 0.3 mm x 0.3 mm

**MAX. SCAN SPEED** = 737 mm/s with Turbo Flash

**TABLE LOAD** = up to 307 kg

**GANTRY OPENING** = 78 cm

**Thus by being two-steps ahead in all the above aspects means better outcome for the institutions and patients.**

***SECOND BEST IS NOT AN OPTION***