

# OmniTom<sup>®</sup>

*Point-of-care 16-slice CT scanner*



**SAMSUNG**



# Key advancements

OmniTom® is a 16-slice CT scanner that delivers the highest quality non-contrast, CT angiography, and CT perfusion scans at the point-of-care. The combination of rapid scan time, ultra-small footprint, and immediate image viewing makes OmniTom an indispensable tool for collecting real time data on critically ill patients.

## Improved dose efficiency

Introducing the N-DAS: Combining an ultra-low electronic noise detector and a 24-bit lossless imaging chain which reduces artificial image noise created by electronics. OmniTom is proud to support MITA smart dose and is XR-29 compliant with mA modulation, structured dose reporting, and standardized protocols.

## Ergonomic design

Made from the ground up with the single user in mind. Let OmniTom shoulder the weight with strategically placed attachment points for all accessories.

## Improved workflow

World's first medical device with an omni-wheel allowing for intuitive lateral, diagonal, and three-hundred and sixty-degree movement.

## Intuitive user interface

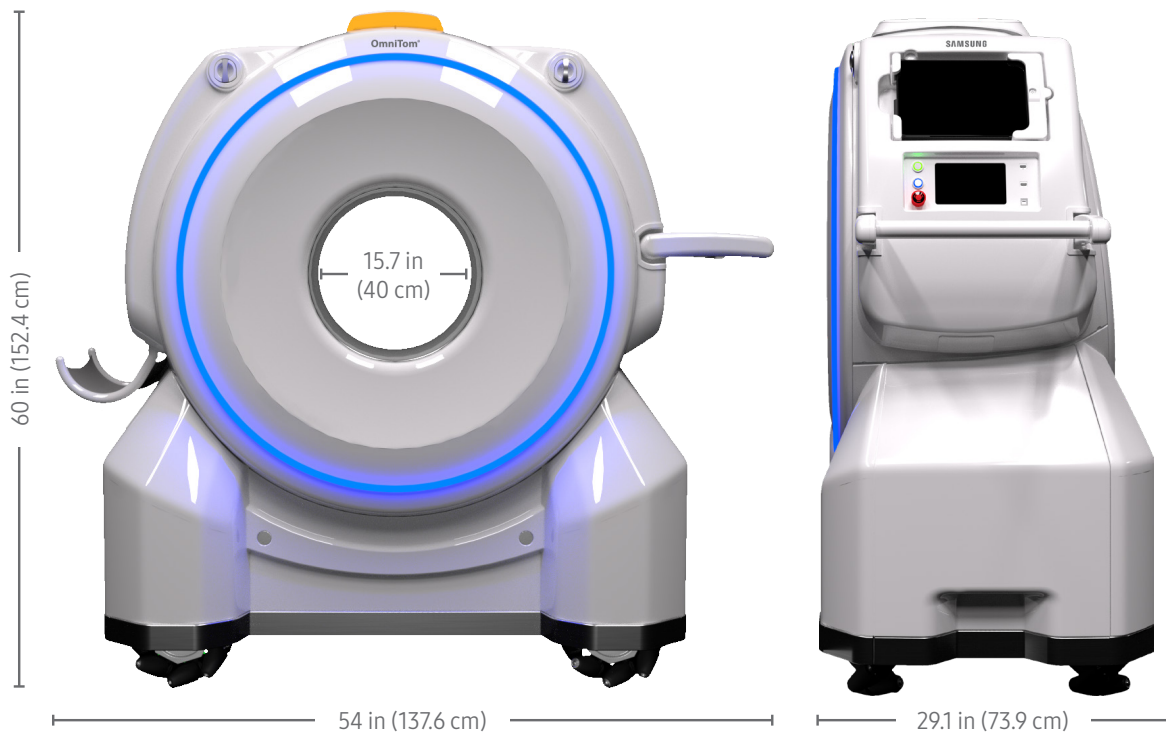
Programmed from the ground up for the modern electronics aficionado with rewarding touch interactions, vocal feedback, and beautiful animations. Completed to be simple to use, but with deep customization.

## Enhanced safety system

The smart sensing collision avoidance sensors visually warn the user of obstructions and stop the OmniTom before incident.

# First impressions

Bold, beautiful, and small enough to move through an ICU with ease. The beacon light ring not only visually tells the user of the system's status, but can be customized to change color during transport. Color depth and finish help to hide scuffs from everyday use. Made from the ground up with the single user in mind. Let OmniTom shoulder the weight with strategically placed attachment points for all accessories.



Weight: 1700 lbs (771 kg)

16-slice Point-of-care CT  
Noise Reduction  
Metal Artifact Reduction  
Computer Aided Diagnostics  
Axial, Helical, CT Angiography, &  
CT Perfusion



## Superior image quality

### Technology

The highly advanced N-DAS detectors are the first designed for point-of-care CT where the electronic noise is lower than photonic noise. N-DAS has been combined with a 24-bit processing chain that never compresses the data leading to clearer images with ultimately low artificial noise.

### AEC

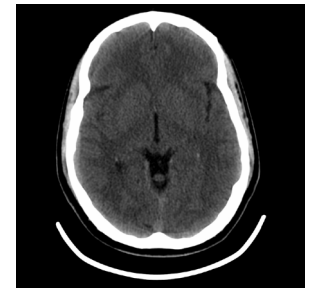
Automatic Exposure Control (AEC) provides mA modulation during helical and axial scanning in order to regulate dose and image quality.

### CT Angiography and CT Perfusion

Perform CT angiography and CT perfusion at the bedside. Automatic bolus tracking and contrast injector triggering maximize workflow efficiency.

### Advanced reconstruction

Fully featured advanced reconstruction for 3D and multiplanar reconstruction, mean slab, maximum/minimum intensity projection, and oblique datasets. Artifact corrections can be added to the primary reconstruction, including noise reduction, IDR, DDR, and windmill artifact reduction. Automatic performance of post reconstructions with the ability to perform metal artifact reduction\*.



\*Feature is under development and not 510(k) cleared.



# Improved workflow

## Critical care

“Clearly, the ability to image patients at their point-of-care in the ICU will facilitate rapid clinical decision-making and reduce the risks associated with transport...by reducing staff and time requirement for transport, the portable scanner may achieve annual cost savings of \$162,512. Equally as significant, having a scanner dedicated for ICU patients allows for the conventional scanner to perform an additional 1182 outpatient studies each year. Together taken, the introduction of the portable scanner may offer a net economic benefit of \$264,658 in the first year of its operation and a total benefit over 5 years greater than \$2,619,000.”<sup>1</sup>

## Operating room

“Intraoperative portable-head CT leads to change in operative plans in 32% of selected cases. This potentially avoids return to the operating room and can diagnose or rule out remote lesions in need of additional intervention. The portable configuration allows for increased versatility and cost-effectiveness compared to fixed systems.”<sup>2</sup>

## Pediatric ICU

“Two-thirds of CT scans obtained in the PICU were portable because of patients’ intensity of therapy and illness severity. Portable CT showed major new pathology in greater than 1/3 and led to a change in management in 1/4 of higher acuity patients scanned. The estimated radiation dose from portable CT is within the current national guidelines.”<sup>3</sup>

## Trauma

“After our preliminary experience, we suggest performing iCT in all cases of acute brain trauma needing surgical decompression or hematoma evacuation to rule out postoperative complications such as diffuse brain edema, newly occurring hemorrhages or hematomas, acute hydrocephalus etc. Rapid radiological evaluation of any pathological condition can be done directly in the OR this way, permitting prompt action and avoiding severe consequences.”<sup>4</sup>

1) Masaryk, Thomas J, Renee Kolonick, Tracy Painter, and David B Weinreb. “The Economic and Clinical Benefits of Portable Head / Neck CT Imaging in the Intensive Care Unit.” *Radiology Management* 30, no. 2 (2008).

2) Carlson, Andrew P, Jeremy Phelps, and Howard Yonas. “Alterations in Surgical Plan Based on Intraoperative Portable Head Computed Tomography Imaging.” *Journal of Neuroimaging : Official Journal of the American Society of Neuroimaging* 22, no. 4 (October 2012): 324–28. doi:10.1111/j.1552-6569.2011.00580.x.

3) LaRovere, Kerri L, Molly S Brett, Robert C Tasker, Keith J Strauss, and Jeffrey P Burns. “Head Computed Tomography Scanning during Pediatric Neurocritical Care: Diagnostic Yield and the Utility of Portable Studies.” *Neurocritical Care* 16, no. 2 (April 2012): 251–57. doi:10.1007/s12028-011-9627-3.

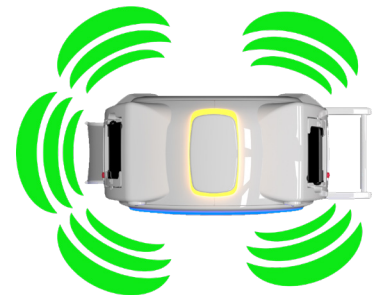
4) Taddei, Graziano, Alessandro Ricci, Francesco Di Cola, Giuliano Maselli, Sara Marzi, and Renato J Galzio. “The Usefulness of Intraoperative Mobile Computed Tomography in Severe Head Trauma.” *Neurosurgery* 23, no. 3 (January 2013): 401–3. doi:10.5137/1019-5149.JTN.5474-11.0.



# Safe and sound

## User safety

The S-Alert smart sensor system warns the user visually and audibly of upcoming obstacles, allowing the user to avoid incident. Visual cues alert the user and surrounding staff of when a scan is starting and when X-rays are being produced.



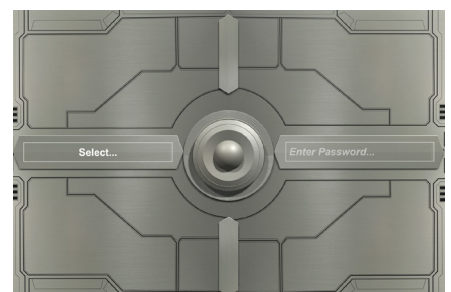
## Patient safety

Specialized radiolucent scan platforms have been designed for point-of-care usage. The ICU platform is securely attached to the head of the patient ICU bed and allow for artifact free imaging of the head and neck. Neonatal patients can be safely scanned on the standalone pediatric cradle.



## Patient information

Hardware that is equipped to deal with the most demanding FDA and hospital guidelines for data and communication encryption. Patient data is protected at all times with secure erase features, limited stored information on the control tablet, and location tracking for lost or stolen equipment.



# Radiation safety

The scatter map was measured using an adult full body phantom and a radiolucent patient table without using any additional shielding. Scatter dose depends on the object being scanned, the kVp settings, and scales linearly with the mAs technique.

## Safe for staff

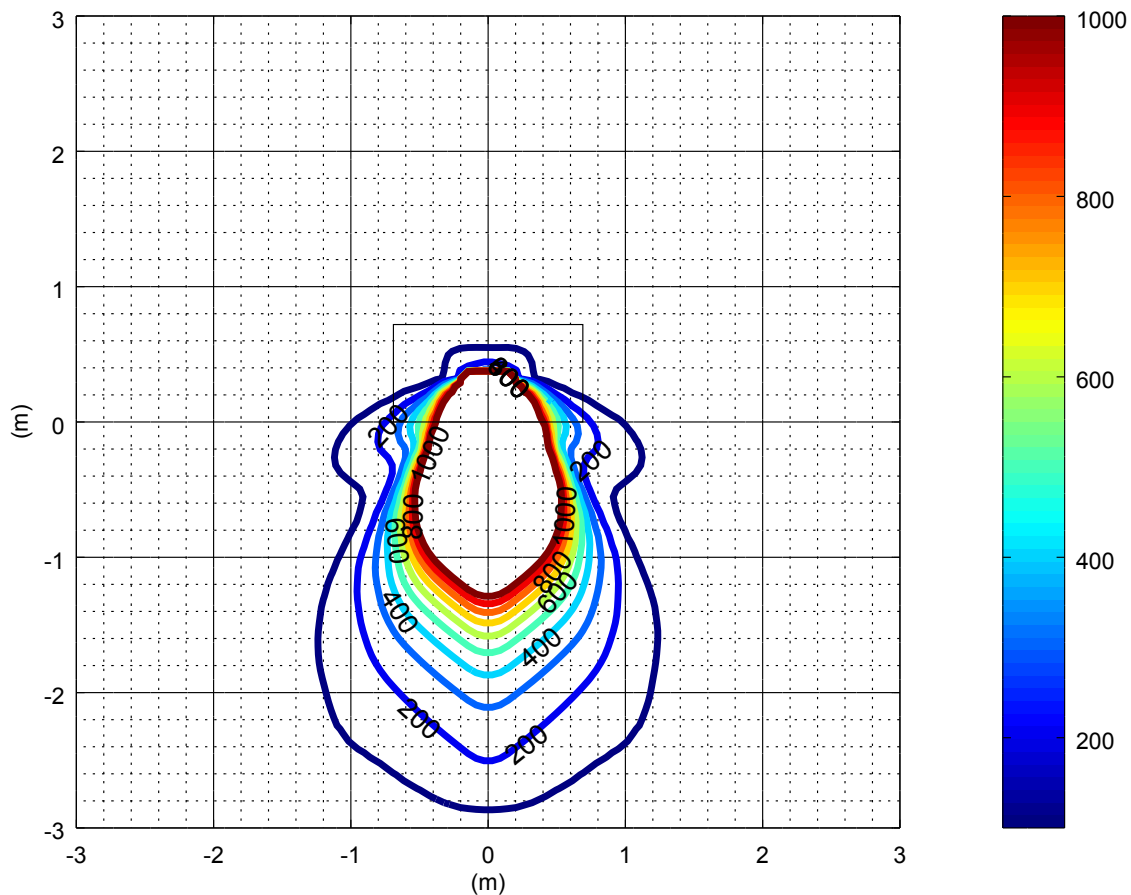
According to the ALARA standard 500mRem/year per operator, and using a typical brain scan protocol at a distance of 2 meters (6 feet) from the OmniTom's isocenter, your operator can perform over 26 scans per day, for 250 days per year without any additional lead protection. The OmniTom covers are internally coated with 0.5mm laminated lead providing maximum scatter reduction. In addition, three externally mounted 0.5mm Starlite® curtains (two front, one back) provide added shielding to the gantry.

## Safe for patients

OmniTom exceeds the American College of Radiology's recommended guidelines for Computed Tomography Dose Index (CTDI). It is compliant with NEMA XR-29 and MITA Smart Dose, offering radiation dose structured reporting, pediatric & adult reference protocols, CT dose check, and automatic exposure control.



Exposure isolines for 120 kVp, 70 mAs, Front and Back Curtains closed, No Patient Absorption



Measurement in  $\mu R$

Samsung NeuroLogica, the healthcare subsidiary of Samsung Electronics Co., Ltd., develops, manufactures, and markets innovative imaging technologies and is committed to delivering fast, easy and accurate diagnostic solutions to healthcare providers. Samsung NeuroLogica, the global corporate headquarters and manufacturer of Samsung computed tomography, is also the US headquarters for sales, marketing and distribution of all Samsung digital radiography and ultrasound systems. Samsung NeuroLogica's growing portfolio of advanced medical technologies are used worldwide in leading healthcare institutions helping providers enhance patient care, improve patient satisfaction, and increase workflow efficiency. Samsung is committed to being leaders in the field of healthcare imaging.



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