

Mobile CT head scanner

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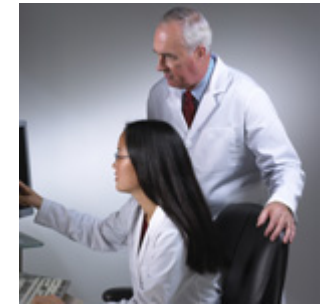
Mobile head CT scanner

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CereTom OVERVIEW

1. CereTom™ by **NeuroLogica** Corp.
 2. World's first cordless and wireless head and neck mobile CT
 3. Can be used in on-the-go locations, such as bedside, ER, ICU and even in ambulances and private offices.
 4. Optimized for scanning anatomy that can be imaged in the 25 cm field of view, primarily head and neck.
 5. Capable of performing non contrast CT, CT angiography and CT Perfusion.
1. Up to 8 slices per revolution
 2. Max continuous operating 140 kV and 7.5 mA, 30 seconds.



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CereTom EQUIPMENT

1. Bore Sized to Accommodate Heads with Room for Masks, ICPs, Bandages, etc.
2. Scan Plane is Close to Outer Surface to Allow Scanning of the Neck.
3. Battery Compartment.
4. "Centipede" Drive System Moves the CT Over the Patient.
5. Transport Handles.
6. Colour Touch Screen LCD.

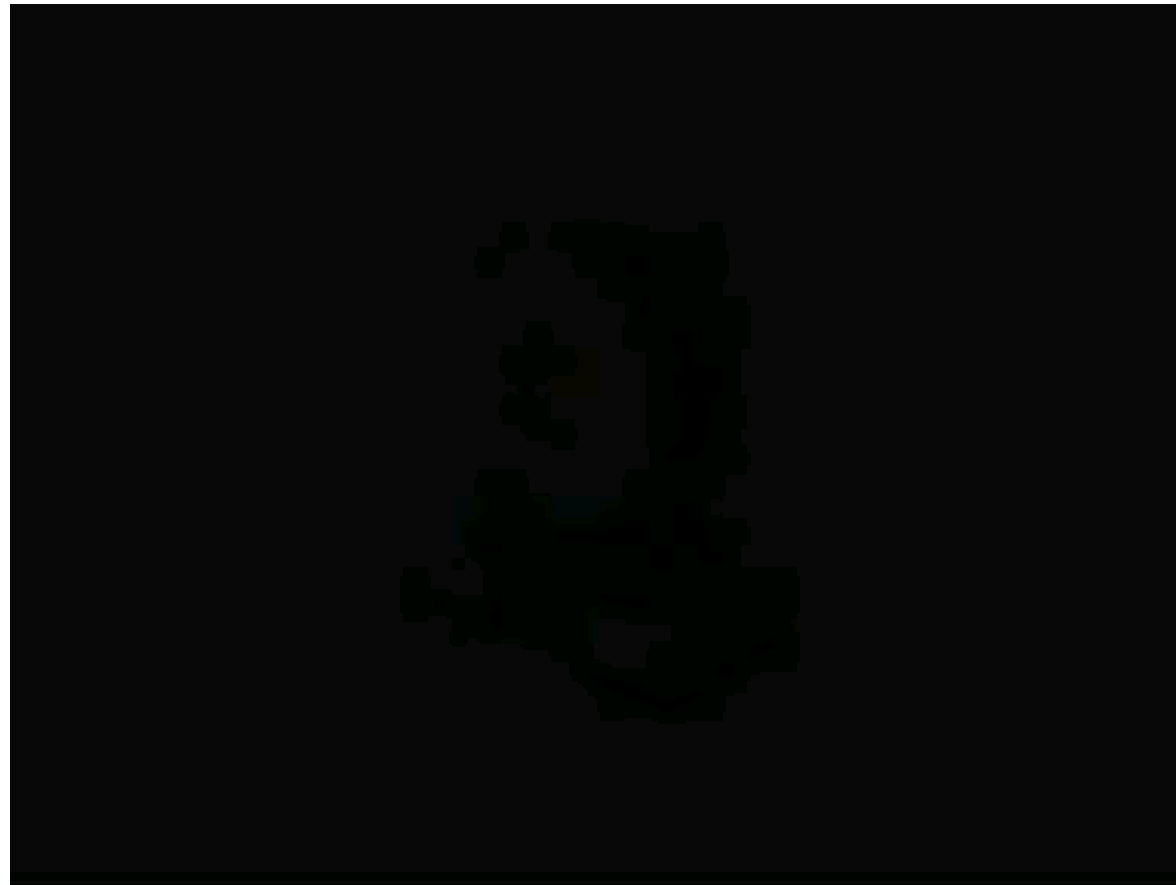


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CereTom OPERATION



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CereTom OPERATION

“Wouldn't this mean that a registered CT tech would have to ride in ambulances with the EMT's??

Also, the motion caused by bouncing along the sides of the road would totally ruin the images.

And the ambulance walls would have to be made of lead to prevent radiation from getting to the public out on the roads.

Good idea, just not very realistic. “



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CereTom SAFETY ISSUES

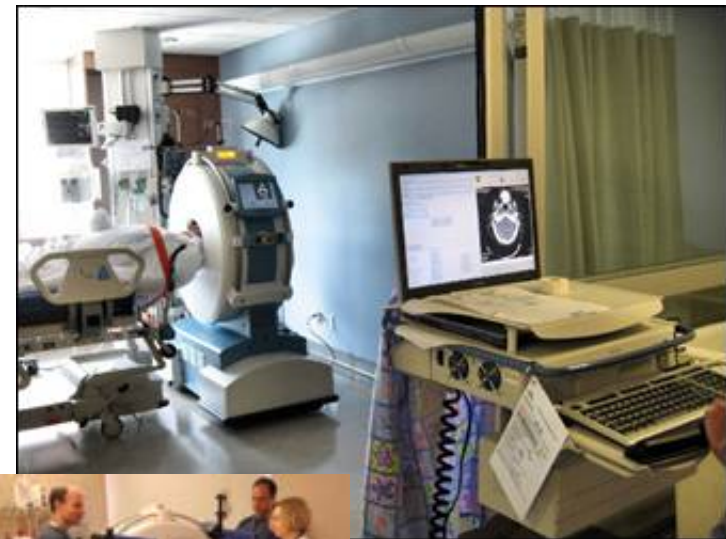
1. No audible warning when X-rays emitted from tube.
2. There does not seem to be a method to pause/terminate a scan from the laptop, only from the Ceretom unit itself via emergency stop/cancel button.
3. The Ceretom (not laptop) sometimes hangs while preparing for a scan, and requires a hard reset.
4. An air calibration is required more often than most scanners (2-4 times per day).
5. No warning before radiation is emitted during air calibration (either visual or audible).
6. A foot could possibly be caught under the tracks or wheels when moving the scanner between acquisition and travel modes.
7. Side wings in iso-dose map are due to gap in protective side flaps, could these not be attached to the scanner front cover.
8. Nice new laptop is unsecured and therefore likely to be stolen.
9. If the finger slides down the screen when initiating a scan, the button looks pressed but nothing happens (i.e. it does not count down).

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CereTom RADIATION SAFETY



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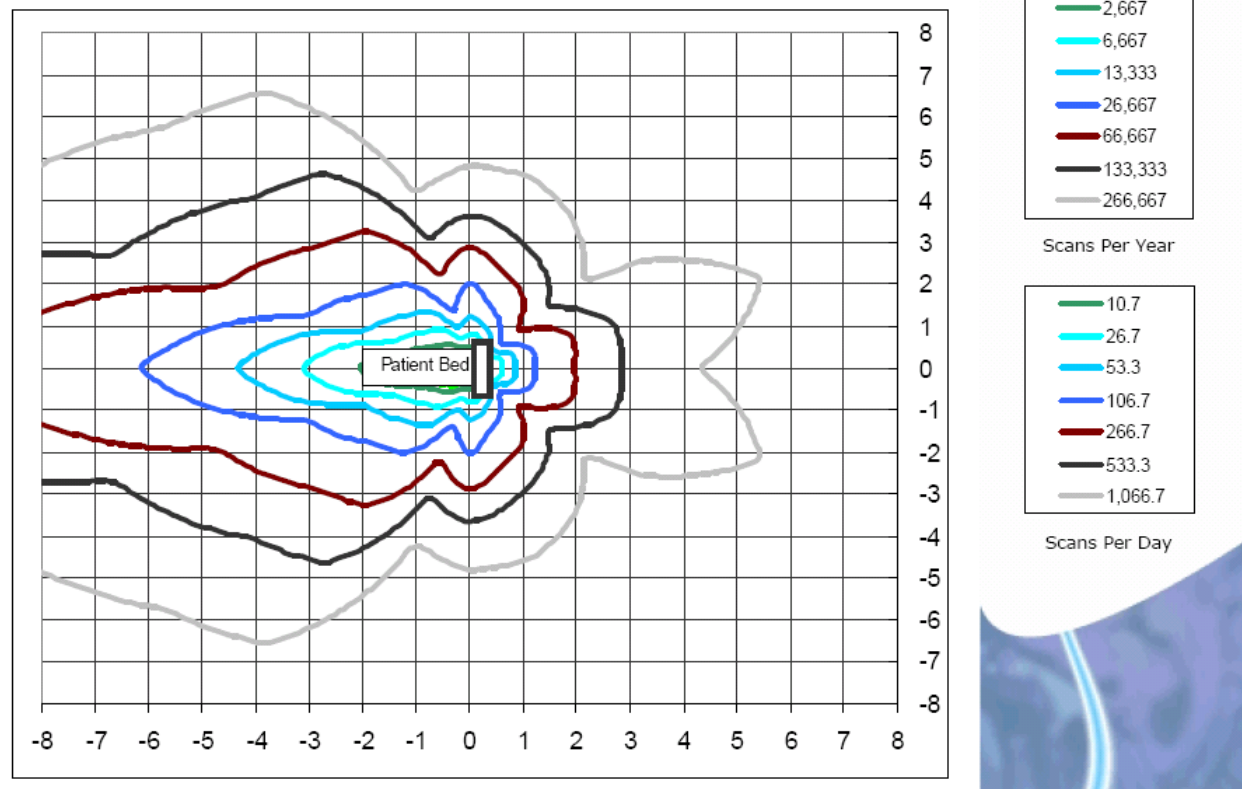
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CereTom RADIATION SAFETY

CereTomTM NEURO **Portable 8 Slice CT Scanner**

Shielding Upgrade Data Sheet



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CereTom RADIATION SAFETY

1. Hierarchy of control measures: engineering controls, systems of work, PPE. Only if for medical reasons as to why moving certain patients to a dedicated shielded CT room is impracticable, is the use of systems of work and PPE permissible.
2. On ward: engineering controls must still take precedent. I.e. shielding fixed/ attached to the equipment. [Note: shields have been retrospectively fitted to the sides (0.5 mm Pb) and end (1 mm Pb) of the equipment.]
3. Significant radiation dose rates are indicated out of the head end through the 1 mm Pb shield – not feasible to increasing the lead. (Note; If used with a cot, alternative arrangements are required since the end shielding would be removed.)
4. Mobile shielding screens around patient/ equipment to protect surrounding staff and other patients.

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CereTom RADIATION SAFETY

1. Administrative controls ensure shielding in place, other patients are as far away as practicable, that wherever possible all staff do not enter the area, that the radiographer stands behind a screen, and that all members of the public/ visitors are excluded.
2. Controlled area around patient. All persons, including the radiographer, excluded. Suitable radiation monitoring of the area is required.
3. Routine calibrations (daily, weekly & monthly) QC checks with the phantom required - shielded area required.
4. During calibrations, X-rays turn on and off a number of times. Not clear when finished and scanner can be safely approached.
5. Requires suitable warning signals indicating when the X-ray tube is in a state of readiness (power is supplied) and when radiation emission is underway.

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CereTom RADIATION SAFETY

- Based on a workload of a very low number of scans on an individual patient per day and a Controlled Area of approximately 3m radius, doses to nearby patients and staff appear to be adequately restricted.
- Local prior risk assessment would ascertain this and also what actions would be required if staff were required to enter the controlled area prior to completion of the scan.
- In more restricted environments, further reduction measures such as additional mobile protective screens may be required.
- Users will however need to consider the use of mobile shielding screens for staff operating the equipment within the Controlled Area.

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