

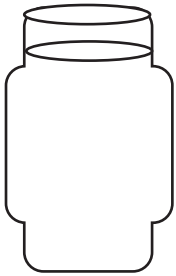
The Rapiscan Secure 1000® series of products has been used by law enforcement, airports and others for close to 20 years, safely and effectively. The Secure 1000 produces exposures that are well within safety standards set by FDA and the American National Standards Institute (ANSI). In fact, the Secure 1000 operates at less than 15% of the allowable safe exposure levels set by FDA and ANSI, and is inherently incapable of reaching even the mid- or upper-ranges of allowable levels.

**Safety Facts**

- The typical dose rate for Background Radiation at sea level generally ranges from 7 to 13 microrem/hr. A screening by a Secure 1000 results in a dose that is significantly less than the dose one normally receives in one hour from background radiation.
- A screening by a Secure 1000 results in a dose that is approximately equivalent to two minutes of air travel (at 30,000 feet) or the dose one receives from eating one banana (bananas contain small quantities of radioactive potassium).
- ANSI and FDA have established a maximum limit for a radiation dose per screening to be 25 microrem. The dose from a Secure 1000 is less than 15% of the dose allowed by regulations and standards.

**Rapiscan Secure 1000® Series Safety Features**

**Inherent Limits on X-Ray Output**



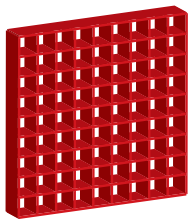
**X-ray source maximum output.**

During normal operation, the x-ray tube in the Secure 1000 operates at about 70% of its maximum KV, and 50% of its maximum power rating. The x-ray source cannot produce increased levels of output (increases that would be significant compared with applicable ANSI standards) without the tube being destroyed.

**Small X-ray aperture.**

The small x-ray aperture limits the amount of x-ray exiting the system. This aperture is approximately 0.06" x 0.06", just large enough to illuminate a single pixel in the image being acquired. For comparison, this aperture is several hundred times smaller than the aperture of the airport x-ray baggage scanners.

Secure 1000 x-ray aperture .06" x .06"

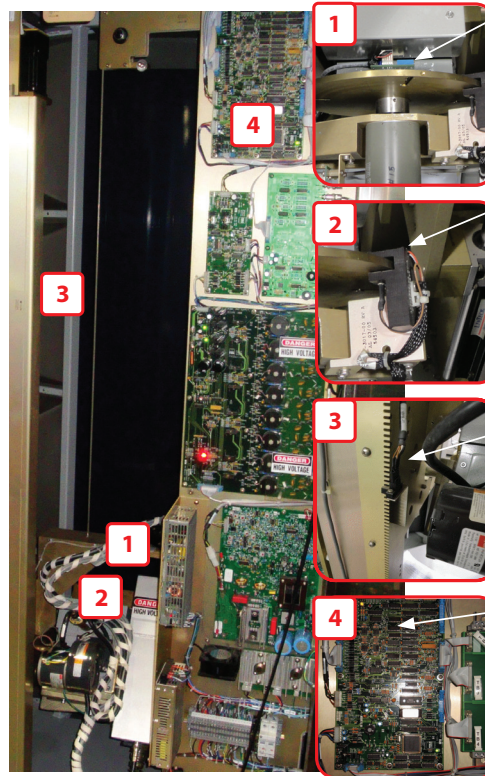


**Imaging Capability as an indicator of low energy.**

The Secure 1000 operates by detecting minute levels of backscattered x-rays. This is accomplished by an array of extremely sensitive x-ray detectors. This detector array is more than one-thousand times as sensitive as typical x-ray survey meters. This provides an inherent safety factor.

**Active Limits on X-Ray Output**

The Secure 1000 actively monitors multiple critical parameters, using independent redundant monitors. At the initiation of every scan, and every 10 milliseconds during a scan, the system affirmatively determines that each parameter is operating normally, within very small tolerances. If any parameter is not affirmatively determined to be operating within those small tolerances, the system immediately defaults to a power-down state. To achieve this, the system uses four independent sensors:



**Reference Detector**

A sensor placed in the direct beam, which provides an analog signal indicating when the x-ray beam is energized.

**Chopper Rotation Sensor**

An optical sensor mounted on the chopper wheel. This sensor produces an electronic pulse when each slit passes the location, that is, four times each rotation.

**Scanning Motion Sensor**

An optical sensor that produces pulses as the x-ray source is moved in the vertical direction.

**Watchdog Circuit**

An automatic shutdown feature that senses abnormal operation and shuts down x-ray generation.

For more information, visit [www.rapiscansystems.com](http://www.rapiscansystems.com).