

RMD RadCam 2000™ Gamma-Ray Imaging System

ø **Fast**

ø **Portable**

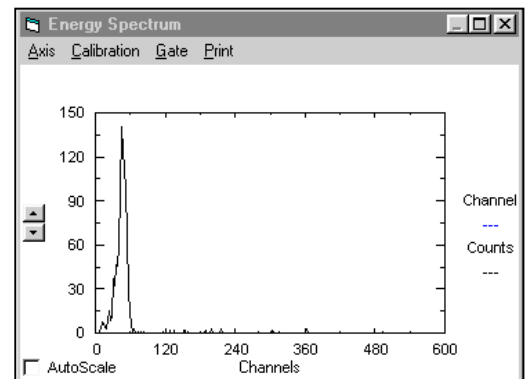
ø **Spectroscopic**



The RadCam 2000™ makes images of gamma radiation superimposed over a black and white video image of the same field of view. The intensity of the gamma radiation is presented in color with progressively brighter colors corresponding to higher gamma activity. In addition, spectra showing the isotopes present are shown for user-selected areas of the image.

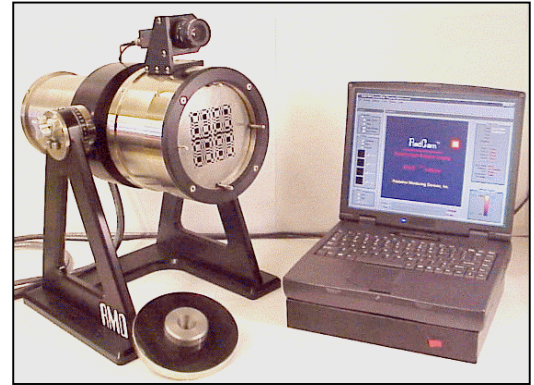


The main window and associated energy spectrum of the RadCam 2000™ image as acquired by IMAGE 2000™ software of two ⁵⁷Co gamma-ray sources each approximately 4×10^8 Bq. The image was taken in 2 minutes at a distance of 40 m from the



Standard System

- ¼ System runs in each of four basic modes
 - μ Pin-hole collimator (high intensity applications)
 - μ Coded Aperture collimator (greater system sensitivity)
 - μ Wide system field-of-view
 - μ Narrow system field-of-view
- ¼ System includes one coded-aperture collimator, one pinhole collimator, and the IMAGE 2000™ software.
- ¼ RadCam 2000™ IMAGE 2000 software
 - μ Obtain image
 - μ Display an energy spectrum from an area-of-interest in the image
 - μ Display an entire image based on spectral region-of-interest



Options

The standard system configuration is suitable for most applications. Factory-installed options may be useful in a particular applications.

- 1C: Wheeled cart.
- 2B: Battery. For system use without 100-110VAC power.
- 3D: Dosimetric Capability (includes laser range finder and software)
- 4AR: Automatic rotation of coded aperture (hardware and software)
- 5E: Ethernet control via wire network of LAN

Performance

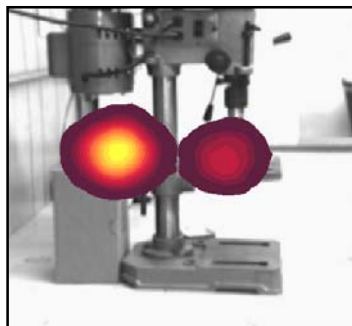
| | |
|------------------------------|---|
| Gamma Energy Range | Less than 30 keV to greater than 1.5 MeV |
| Sensitivity/ Detection Limit | Better than 3.7×10^4 Bq for ^{137}Cs at 1m with 10:1 SNR. Similar for equivalent gamma intensities of Pu and U (0.5 mg) |
| Dynamic Response | Single Image better than 10:1 SNR |
| Activity Dynamic Range | Less than 3.7×10^4 Bq to more than 3.7×10^{11} Bq |
| System Field-of-View | Coded Aperture Wide 40°/Narrow 20° Pinhole Aperture Wide 40°/Narrow 20° |
| Nominal Time-to-Image | 30 s with coded aperture and 3.7×10^4 Bq point source at 1 m 2 min with CA and 3.7×10^8 Bq point source at 40 m |
| Image Interval | 4-mode. Counts, Time, Either, Both |

General

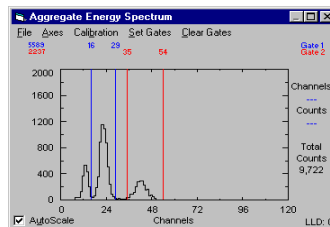
| | |
|------------------|--|
| Detector | Position-Sensitive Photomultiplier Tube |
| Scintillator | Sodium Doped Cesium Iodide (CsI(Na)) |
| Aperture | Sintered Tungsten Coded Mask or Tungsten Pinhole |
| Operating System | Microsoft™ Windows 95, Windows 98, or Windows NT 4.0 |
| Control Software | IMAGE 2000™ rapid, real-time, image display, and processing. |
| - | MS Windows standard file handling, naming, and saving. |
| - | |

IMAGE 2000™ Software

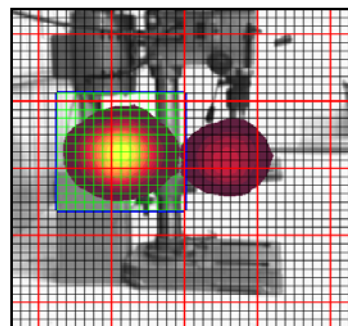
Acquire data. Reveal the **Location**, **Intensity**, and **Energy** of gamma isotopes



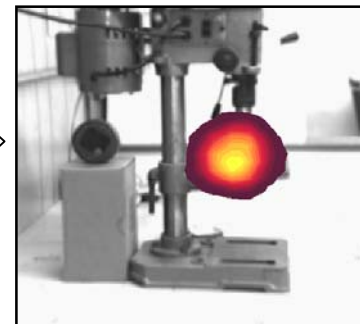
Acquire data



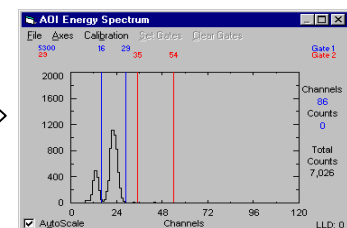
Gate on energy of interest (red gate, gate 2 here)



Gate on area of interest (green pixels with blue border)



View image based on an energy region of interest



View spectrum based on an area region of interest

The IMAGE 2000™ is an integral part of the standard RadCam 2000™ system.