

ICS-4000 Gamma Ray Spectrometer

Identify Isotopes with the ICS-4000 Gamma Ray Spectrometer

The Model ICS-4000 isotope identifier is an easy to use field-portable gamma ray spectrometer, suitable for a variety of field survey and analysis applications. A sensitive cadmium zinc telluride (CZT) detector, 4000 channel multichannel analyzer and powerful microprocessor are combined to allow sophisticated laboratory-grade analysis in the field. This instrument comes complete with a 160 isotope library with the capacity for additions as required.



Applications include:

- radioactive materials identification in labs, hospitals, landfills and power plants
- hazmat response
- nuclear non-proliferation
- airport security
- environmental sampling
- pollution migration studies
- nuclear medicine
- health physics

ICS-4000 Specifications

Weight	1.5 lb.
Dimensions	10" x 3.4" x 1.2"
Case	Aluminum - hand held
Keyboard	Ambidextrous with large tactile buttons for use with hazmat suit
Operating Temperature	32-110° F, 0-50° C
Power	6.6V rechargeable Li with built in charger. AC adapter available
Battery Capacity	1.5 amp hours
Life	Approx. 7 hours (less with continual back-light or speaker)
Battery Charge time	Approx. 7 hours
Spectrometer	
Channels / Data Acquisition	4000
Maximum Counts/Channel	4 x 10 ⁹
Gain Stabilization	Software controlled

Energy range	10 keV - 2 MeV
Display	
Type	LCD with EL back-light
Size	1.75" x 2.5"
Resolution	128 x 64 pixels
Detector	
Type	CZT 10 x 10 x 2 mm
Resolution	1.6% @ 662 keV - 10% at 60 keV
Preamplifier	
Output noise	< 9 keV
Shaping Amplifier	
Shaping time (in <i>us.</i>)	.5
ADC	
Conversion rate	925 kHz
Conversion time (in <i>us.</i>)	1.1 <i>Us</i>
Differential non-linearity (+/-)	+/- 1 channel
Lower Level Discriminator	10 keV
Upper Level Discriminator	2 MeV
Processor and Memory	
Processor	16 Bit 20 MHz MCU
Data Memory	2 M byte Flash
Program Memory	512 K bytes Flash
Menu Set-up Features	
Set-Up mode	Screen display, units, ROI's, preset limits, audio, gain, clock/timers
Audible Count rate indicator	Audible beep volume user selectable
File and Display Menu	Save, view and download spectra.
Communications Menu	Connect to PC via RS232 cable to serial port - Windows based software provided for download
Modes of Operation	
PHA Mode	ROI's, total counts, cursor counts, PHA presets, LLD & ULD
Spectrum display functions	Channel vs. energy histogram 6 Levels of zoom Movable cursor - scrolling spectrum Rate of spectrum update 1 per sec.
Isotope ID mode	Update Frequency - 1 per 1-5 sec.
Dose/Rate mode	Dose alarm, selectable units Update frequency - 1/sec Count rate display units - units user can select Dose rate units Rads, Sieverts, rem User selectable

