

MULTI-HEAD GAMMA SCINTILLATION COUNTING SYSTEM

Model # SSS-10G

FEATURES:

- FAST THRU-PUT
- ALL SAMPLE VIALS COUNTING SIMULTANEOUSLY
- HIGH SENSITIVITY I^{125} , I^{131} , ALL GAMMAS
- CAN READ DIRECTLY IN μ Curies
- SOFTWARE GUIDED CALIBRATION

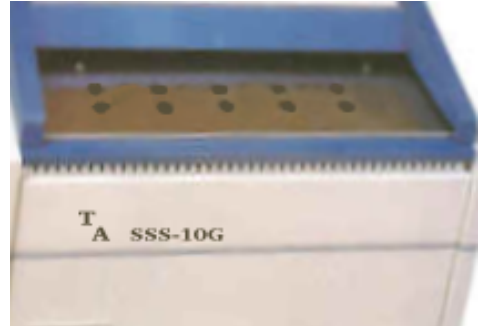


Figure 1: SSS-10G

APPLICATION: The SSS-10G Gamma-well Scintillation Counting System accurately quantitatively measures all Gammas from 20KeV to 5 MeV and from I^{125} to Co^{60} and above.

SYSTEM DESCRIPTION: Measuring Principal: Spectroscopic Grade 2" diameter x 2" NaI(Tl) with central well-cavity, is the most sensitive method of detecting and quantitating gamma emitting isotopes. The preamplifiers are followed by an energy analyzer which further selects the pulses and delivers the true signal.

These pulses are transmitted to the computer, where background is subtracted and calibration factor is applied. The readout can be in cpm or in μ Curies or in any other unit appropriate to the users needs. The data is clearly displayed on the screen and hard copy graphics printer is included.

Model SSS-10G has much faster sample thru-put than "one sample at a time" older chain drive systems. Each of the 10 vial well crystals is optically coupled to a selected photomultiplier. Extremely good sensitivity and figure of merit is thus achieved.

GAMMA BACKGROUND RADIATION REJECTION FEATURES:

- Lead shielding around detector
- Energy Analyzer window rejects pulses with energies outside window setting.

Settable window can be set for any isotope.

COUNTING ASSEMBLY FEATURES:

- Excellent repeatability
- Fully light tight system
- High transmission optical coupling to PM tubes

PM TUBE AND PRE-AMP NOISE IS ELIMINATED BY THESE FEATURES:

- High quality PM tubes and preamps
- Fully adjustable energy analyzer window rejects low energy pulses

TA **TECHNICAL ASSOCIATES**
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\$Revision: 1.1 \$

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DATA ANALYSIS AND PRESENTATION

For each channel, scintillation counts are processed by a fully adjustable single channel analyzer which is set to exclude gammas above and below the energy of the isotope being measured. This deletes both higher energy pulses from background radiation and lower energy counts from the PM tube or circuit noise. The pulses are then fed to the data acquisition board in the included computer. (Thus allowing long count times for measurement of very minute samples as well as completely eliminating artifacts caused by ratemeter time constants).

The Provided System Software Guides The User Thru The Calibration Process:

1. Place calibrated quantity of nuclide of interest into detector's well.
2. Start count.
3. Type in μ Curie content of source, name of isotope (and energy if known).
4. State whether you are going to count same nuclide in all 10 wells or a different one in each well
5. Press "Store"

SPECIFICATIONS:

Count Times:	1 second thru 99,999 seconds in 1 second increments.
Readout:	14" color LCD monitor.
Power:	110VAC, 60 Hz (Optional 220V, 50 Hz).
Dimensions:	Electronics console 19" W x 16" x 12" H.
Sample Size:	Accepts standard Scintillation vials or tubes up to 16mm (0.63"), unlimited height.

1GigaHz COMPUTER INCLUDES:

30 Gig Hard Drive	Full Graphics Printer, Color + BW
1 GigaHz Processor CPU	Network Board
128 Meg RAM	All Cables
14" color LCD monitor	Win XP Software (or higher)
CD-W/R Drive creates CDs	Keyboard
10 Channel Data Acquisition Board	Mouse
Specific Counting Software for Gamma Counting	

Another unique feature of this instrument is the ability to readout digitally into Excel or other spread sheet/data based programs, in addition to graphical presentations on screen and via print-out.

With low activity samples very long counting time may be used to detect and accurately measure levels that were previously undetectable.

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Model SSS-10G SPECIFICATIONS:

Detector Model PGS-10G - 10 each

Crystal:	Nal(Tl); diameter 2". (Optional 1.5").
Efficiency (2π):	80% for I^{125} , Co^{57} .
Well Size:	0.65" diameter x 1.4" deep, 7.66 cc capacity.
PM Tube:	TPM-50, 10 stage, selected for accurate scintillation counting.

Shielding: 6mm of lead. Greater shielding is **Optional**.

Superior Data Collection Handling and Analysis:

All detectors are measuring and accumulating data all the time.

This is superior to systems that only sample count rate for each channel.

System logic continuously observes all 10 detectors.

All data is available both locally on the PC and **Optional** remotely via the Network Card.

This system is carefully constructed for rugged and robust service.

All data along with user settings are automatically saved to floppy disk and hard copy is produced by the printer.

Elements in the System:	10 Scintillation well detectors.
	10 Pre-amplifiers.
	10 Discriminators.
	1 Power Supply.
	1 Ten channel data acquisition card, with 10 counters on board.
	1 Suite of Gamma Counter Software.
	1 Pentium Computer.

Hard Copy Readout:

Graphic Printer Gives:

- Digital data printout in spread sheet format.
- All data is automatically saved to Hard Drive where it is available for transfer to floppy disk or CD. It is also available for additional analysis at a later time.

Overall System:

Shipping Weight: Standard Model 140 kg (Depends on Amount of Shielding Selected).

Power Requirements: 110VAC, 50-60 Hz (**Optional** 220 VAC).

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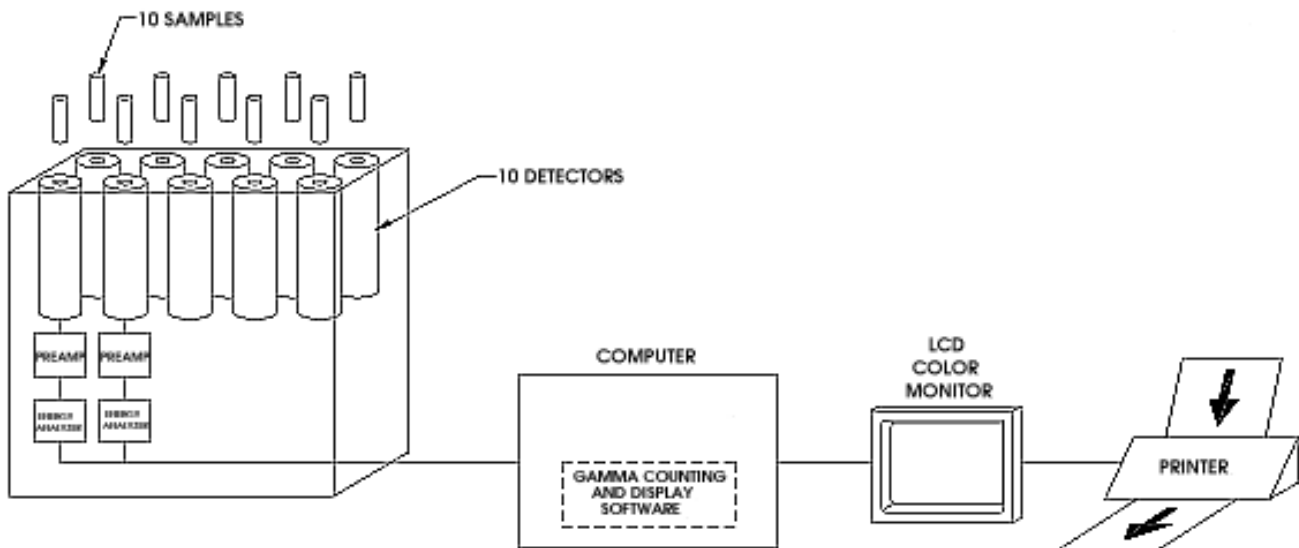
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Options:

- A. Multi-Channel analyzer to replace standard SCA's on one, two, or ten detectors.
- B. Dual Energy System: Multiple SCAs observing each detector channel.
- C. Calibrated Sources: Set of 3 calibrated standards - I^{129} , Ba^{133} , and Co^{60} .
- D. Larger monitor.
- Additional Interfaces and Outputs: Clear instructions with all interfaces.
- E. Modem Board for Computer.



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