

**PORTABLE LIQUID SCINTILLATION  
COUNTING SYSTEM**  
Model # SSS-12P & SSS-22P

**FEATURES:**

- MEASURES ALL BETA EMITTERS AND LOW ENERGY GAMMA EMITTERS
- DUAL PM TUBE DESIGN – **SSS-22P**
- SINGLE PM TUBE DESIGN – **SSS-12P**
- SETTABLE WINDOW CAN BE SET FOR ANY ISOTOPE
- ALL IN ONE VERSION NOW AVAILABLE – **SSS-22-PAL**

**GAMMA BACKGROUND RADIATION REJECTION FEATURES:**

- Energy analyzer window rejects pulses with energies outside the window setting
- Optional Lead shielding around detector

**COUNTING ASSEMBLY FEATURES:**

- Excellent repeatability
- Fully light tight system
- Fail safe interlock to protect PM tubes
- High transmission optical coupling to PM tube

**MOST 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
- 3 Vial capacity for faster thru-put and easy comparison sample calibration sample or to background

- LES Photomultiplier Tube (inside)
- Scintillation Vial Holder
- Spring loaded sample transport mechanism for dependable optical coupling



**Inside view of SSS-12P Detector**

**APPLICATION:**

The **SSS-12P** Manual Liquid Scintillation Counting System accurately quantitatively measures Carbon-14, Tritium and most other radioactive materials. But for measuring low levels of Tritium and C-14, Model # **SSS-22P** is recommended. Optionally, gamma ray counting is achieved by inserting and optically coupling an NaI(Tl) scintillation well crystal on the PM tube.



**LAM-10DSC**



**DT-S-12P/22P**

# PORTABLE LIQUID SCINTILLATION COUNTING SYSTEM

## Model # SSS-12P & SSS-22P

### SYSTEM DESCRIPTION

Measuring Principal: The most sensitive method of detecting and quantitating beta emitting isotopes is to intimately mix the sample with liquid scintillation fluor and count each individual scintillation event with a photomultiplier counter. Followed by an energy analyzer which further selects the pulses and delivers the true signal. PC interface and hard copy printer are optional. Detection cell optically coupled to selected photomultiplier tube. 3 Vial capacity for faster thru-put and easy comparison sample to calibration standard or to background.

### DATA ANALYSIS AND PRESENTATION

Scintillation counts which are detected by PM tubes are processed by a fully adjustable single channel analyzer which is centered on the energy peak 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 a digital scaler and optional digital printer. (Thus allowing long count times for measurement of very minute samples as well as completely eliminating artifacts caused by ratemeter time constants.) Optional USB interface to most scientific or personal computers or data stations.

### SPECIFICATIONS:

- H-3 Gross Efficiency:** >20%, Coincidence efficiency >10% .
- Count Times:** 1 sec. thru 99 sec. (1 sec. increments), and 1 min. thru 99 min. (in 1 min. increments).
- Voltage:** 0-2000 Volts - fully user settable.
- Readout:** Digital - 6 digit LCD, (LED optional).
- Outputs:** Standard: Serial pulse output
- Optional:** pcmcia CARD DAQ-2 card for portable pc.
- Power:** 3 D Cells + AC adapter
- Physical Spec:**

MODEL SUB-ASSEMBLY	SSS-12P ELECTRONICS	SSS-12P DETECTORS	SSS-22P ELECTRONICS	SSS-22P DETECTORS
MODEL	PRS-5	DT-S-12P	LAM-10DS	DT-S-22P
<b>Dimensions:</b>	9" L X 4" W X 6" H	22" L X 16" W X 6" H	10" L X 7" W X 7" H	22" L X 16" W X 6" H
<b>Weight:</b>	2.3 Kg ( 5lbs) w/bat	6.8 Kg (15 lbs)	3 Kg (7 lbs)	6.8 Kg (15 lbs)
<b>Shipping Weight:</b>	3 Kg	7.5 Kg	4 Kg	9 Kg
<b># of PM Tubes:</b>		1		2
<b># of Amplifiers:</b>	1		2	
<b>Coincidence Counting</b>	No		Yes	
<b>Required:</b>				H-3
<b>Recommended:</b>				C-14, S-35
<b>Capacity:</b>		1 Vial		3 Vials

- Sample Size:** Accepts standard Liquid Scintillation vials 20-25 ml.
- Scintillation Fluors:** Accepts most scintillation fluors. Perkin-Elmer Ultima Gold-LLT is recommended for H-3 counting

### OPTIONS:

- A. Digital Printer Model MPM-40DT - Battery operated printer with date & time stamp.
- B. Set of 2 calibrated liquid standards, C-14 and H-3. User must mix TA solutions with liquid scintillant
- C. Optional Interfaces and Outputs: Clear instructions with all interfaces.
- D. Data logging software, Model # ORO-22P
- E. Data acquisition interface and cable with driver, Model # DAQ-3
- F. Increase from 3 to 6 sample capacity
- G. All in one version now available. 9" x 25" x 20" SSS-22-PAL