LOW RANGE
PORTABLE LIQUID SCINTILLATION COUNTING SYSTEM
Model # SSS-22LR

FEATURES:

•TRITIUM TO 10,000pCi/l
•MEASURES ALL BETA EMMITTERS AND LOW ENERGY GAMMA AND ALPHA EMITTERS
•DUAL PM TUBE DESIGN
•WINDOW IS SETTABLE FOR ANY ISOTOPE

LAM-10DSC

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 tubes

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
•Less wait time for phosphor

DT-S-22LR (Inside View)

APPLICATION:

The ***SSS-22LR*** Manual Liquid Scintillation Counting System accurately quantitatively measures Carbon-14, Tritium and most other radioactive materials. Measures low levels of Tritium even below 20,000 pCi/l, Clean Drinking Water Levels.

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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 photomultplier 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 Sensitivity:** 20,000 pCi/l in 30 min. Below 10,000 pC1/l in 3 hrs.
- **•H-3 Gross Efficiency:** >20%, Coincidence efficiency >10% .
- **•Count Times:** 1 sec. thru 100,000 sec (approx. 30 hrs)
- **•Voltage:** 0-2000 Volts - fully user settable.
- **•Readout:** Digital - 6 digit LCD,
- **•Outputs:** Standard: Serial port output
- **•Optional:** USB Port
- **•Power:** AC/Battery ; High capacity battery and built-in charger

Physical Spec:

MODEL SUB-ASSEMBLY	SSS-22LR ELECTRONICS	SSS-22LR DETECTORS
MODEL	**LAM-10DSC**	**DT-S-22LR**
Dimensions:	9” L X 4” W X 6” H	26” L X 26” W X 6” H
Weight:	3 Kg (7lbs) w/bat	6.8 Kg (15 lbs)
Shipping Weight:	4 Kg	7.5 Kg
# of PM Tubes:		2
# of Amplifiers:	2	
Coincidence Counting	Yes	
Recommended:		Low level H-3, C-14, S-35
Capacity:		3 Samples

- **•Sample Size:** Accepts standard Liquid Scintillation cassettes 250 ml each cell.
- **•Scintillation Fluors:** Accepts most scintillation fluors. Perkin-Elmer Ultima Gold-LLT is recommended for H-3 counting

OPTIONS:

A. Data logging software, Model # ORO-22P comes with data acquisition cable
B. Digital Printer Model MPM-40DT - Battery operated printer with date & time stamp not compatible with computer interface.
C. Set of 2 calibrated liquid standards, C-14 and H-3. User must mix TA solutions with liquid scintillant
D. Optional USB port or other Interfaces and Outputs: Clear instructions with all interfaces.