

# MIL-WATER SAFETY TEST SYSTEM

Model ~ SSS-22LRX

Meets New Requirements for Military Drinking Water

TB MED 577/ NAVMED P-5010/AFMAN 48-138\_IP May 2010

## FEATURES:

- MEETS EPA DRINKING WATER LEVELS FOR MANY ISOTOPES
- MEASURES ALL BETA EMMITTERS & LOW ENERGY GAMMA AND ALPHA EMITTERS
- NEW STATISTICAL SIGNIFICANCE DISPLAY
- DUAL PM TUBE DESIGN
- WINDOW IS SETTABLE FOR ANY ISOTOPE ENERGY
- DATA ANALYSIS, ARCHIVE & RETRIEVAL
- USB PORT
- TRITIUM BELOW 10,000pCi/l
- PORTABLE
- AC / BATTERY WITH BUILT IN CHARGER



SSS-22LRX  
Electronics Display  
Plate



SSS-22LRX  
Detector

## GAMMA BACKGROUND RADIATION REJECTION FEATURES:

### COUNTING ASSEMBLY:

- Pulse rejection: excellent repeatability with energies outside adjustable energy analyzer window setting
- Fully light tight system
- Optional Lead shielding around detector

### BUILT-IN COMPUTER:

- Data analysis, archive & retrieval & download
- Fail safe interlock to protect PM tubes
- Long counts for low level measurements
- Statistical significance display
- High transmission optical coupling to PM tubes

### PM TUBE & PRE-AMP NOISE ELIMINATION:

- High quality PM tubes and preamps
- 3 Vial capacity for faster thru-put & easy comparison to calibration sample or to background
- Less wait time for phosphor



Real - Time  
Air & Water  
Specialists



**TECHNICAL ASSOCIATES**  
**OVERHOFF TECHNOLOGY**

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US NUCLEAR CORP

# MIL-WATER SAFETY TEST SYSTEM

## Model ~ SSS-22LRX

### DESCRIPTION

The **SSS-22LRX** 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, which are Clean Drinking Water Levels.

#### 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.
- An energy analyzer further selects the pulses and delivers the true signal.
- USB port for PC interface.
- Optional Hard copy printer.
- Detection cell optically coupled to selected photomultiplier tube.
- 3 Vial capacity for faster thru-put and easy sample comparison 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.)

USB interface to most scientific or personal computers or data stations.

### SPECIFICATIONS:

<b>Count Times:</b>	1 sec. thru 100,000 sec (approx. 30 hrs)
<b>Voltage:</b>	0-2000 Volts - fully user settable.
<b>Readout:</b>	Digital - 6 digit LCD,
<b>Outputs:</b>	USB Port
<b>Power:</b>	AC/Battery ; High capacity battery and built-in charger
<b>Optional:</b>	Printer

### TRITIUM SENSITIVITY

It is important to see down to the 500 to 1000pCi/l range.

Nuclear Power Plant ground water is typically in the 200 to 500pCi/l range.

We recommend our most advanced, top of the line LSC counter the SSS-LRX

The SSS-2LRX will measure down to

1000 pCi/l in 1 hour

500 pCi/l in 3 hours

200 pCi/l in 6 hours



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## SPECIFICATIONS:

MODEL SUB-ASSEMBLY	SSS-22LRX ELECTRONICS	SSS-22LR ELECTRONICS	SSS-22LR DETECTORS
MODEL	FM-9W	LAM-10DSC	DT-S-22LR
Dimensions:	10" L X 16" W X 18" H	9" L X 4" W X 6" H	26" L X 26" W X 6" H
Weight:	4 Kg ( 8lbs) w/bat	3 Kg ( 7lbs) w/bat	6.8 Kg (15 lbs)
Shipping Weight:	5 Kg	4 Kg	7.5 Kg
# of PM Tubes:	2	2	2
# of Amplifiers:	2	2	2
Coincidence Counting	Yes	Yes	Yes
Recommended:			Very Low level H-3, C-14, S-35
Capacity:	3 Samples	3 Samples	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:

- Data logging software, Model # ORO-22P comes with data acquisition cable
- Set of 2 calibrated liquid standards, C-14 and H-3. User must mix TA solutions with liquid scintillant



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