

AIRBORNE TRITIUM TRITIDES PORTABLE DETECTOR

Model - T-TIDE-22

FEATURES:

- MEASURES ALL TRITIUM EMITTERS AND TRITIDES
- REAL-TIME FLOW THROUGH SYSTEM
- DUAL PM TUBE DESIGN
- SETTABLE WINDOW CAN BE SET FOR OTHER ISOTOPES IF DESIRED
- COMPUTER INTERFACE
- AC/DC POWER
- ELECTRONICS AND DETECTOR ALL-IN-ONE CARRYING CASE



T-TIDE-22 – Electronics
(LAM-10DSC)

APPLICATION:

A Flow-Through Liquid Scintillation Counting System is useful for measurement of a variety of radionuclides including Tritium and Tritium Tritides.

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 photomultiplier counters.

An Energy Analyzer further selects the pulses and delivers the true signal.

A Detection cell is optically coupled to selected photomultiplier tubes.

A User Manual is provided.

FLOW PATH DESCRIPTION:

- Sample air enters
- Sample enters the LSC bubbler cell
- Dual photomultiplier tube measures Tritium content
- Sample flows out of LSC bubbler cell through water trap filter
- Pressure sensor measures air entering Mass Flow Sensor
- Sample passes through a Mass Flow Sensor
- Sample passes through pump
- Sample flows back into the atmosphere or gas collection system



T-Tide-22



TECHNICAL ASSOCIATES
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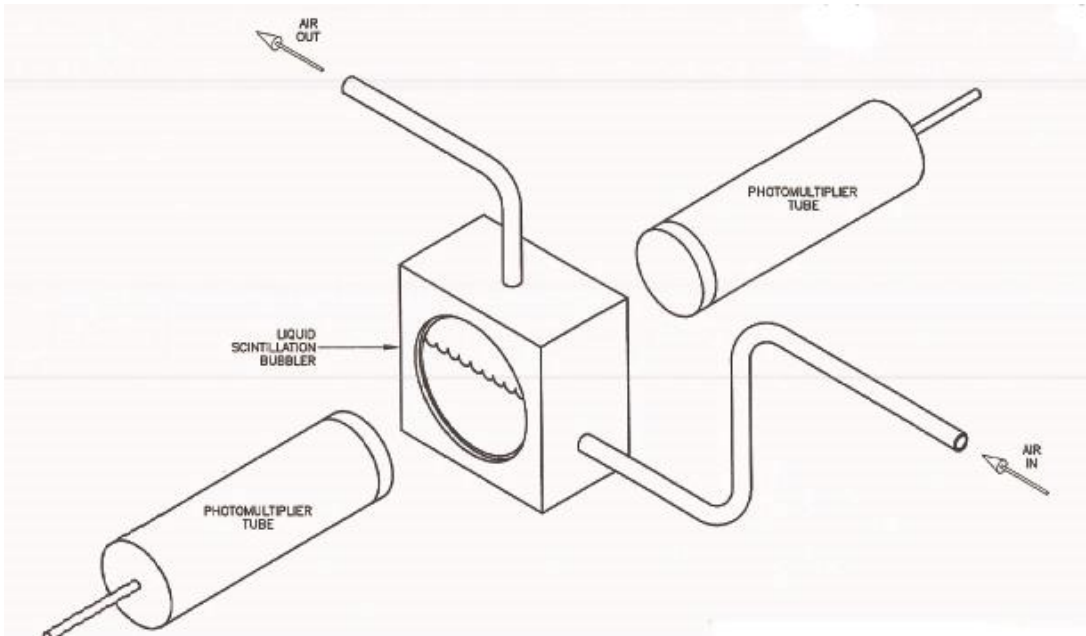
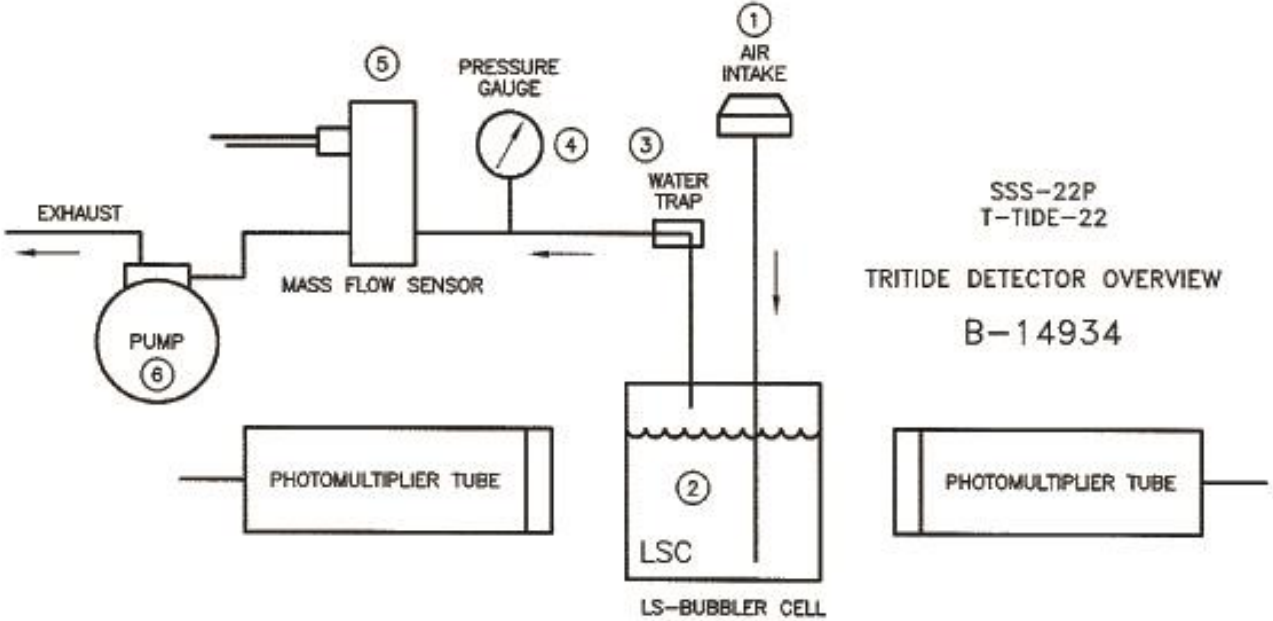
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T-TIDE-22 FLOW PATH



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FLOW-THROUGH LIQUID SCINTILLATION BUBBLER CELL

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

PM TUBE & PRE-AMP NOISE ELIMINATION FEATURES:

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

DATA ANALYSIS & PRESENTATION:

- Scintillation counts 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 feed to a digital scaler and optional digital printer.
- This process allows long count times for measurement of very minute samples.
- USB interface to computers or data stations.

SPECIFICATIONS:

- **H-3 Gross Efficiency:** >20%,
- **Coincidence efficiency:** >10% .
- **Count Times:** 1 sec. thru 10,000 sec. (2.7 hours).
- **Voltage:** 0-1500 Volts - fully user settable.
- **Readout:** Digital - 6 digit LCD, (LED optional).
- **Outputs:** Standard: Serial output
- **Optional:** USB Port
- **Power:** Rechargeable Lithium batteries and AC adapter
- **Sample Size:** Custom Liquid Scintillation vials 200 ml.
- **Scintillation Fluors:** Accepts most scintillation fluors.
Perkin-Elmer Ultima Gold-LLT recommended for H-3 counting



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MODEL SUBASSEMBLY	ELECTRONICS	DETECTOR
MODEL	LAM-10DS	T-TIDE-22
Dimensions	10" L X 7" W X 7"H	22" L X 16" W X 6"H
Weight	3 Kg (7 lbs)	6.8 Kg (15 lbs)
Shipping Weight	4 Kg	9 Kg
Number of PM Tubes		2
Number of Amplifiers	2	
Coincidence Counting	Yes	
Nuclides of Interest		H-3
Capacity		200 ml

OPTIONS:

- Optional Interfaces and Outputs: Clear instructions with all interfaces.
- Data logging software, Model # ORO-22TT
- Data acquisition interface and cable with driver, Model # DAQ-3



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