

# AIRBORNE TRITIUM TRITIDES

## 气溶胶氚化合物

### PORTABLE DETECTOR

#### 便携式探测器

#### Model - T-TIDE-22

#### FEATURES: 特点

- MEASURES ALL TRITIUM EMITTERS
- 测量所有氚发射物
- REAL-TIME FLOW THROUGH SYSTEM
- 实时流气式系统
- DUAL PM TUBE DESIGN
- 双光电倍增管设计
- SETTABLE WINDOW CAN BE SET FOR OTHER ISOTOPES IF DESIRED
- 可设置窗可设定任何想要核素
- PC INTERFACE
- 电脑接口
- AC/DC POWER
- AC/DC电源
- ELECTRONICS AND DETECTOR ALL-IN-ONE CARRYING CASE
- 电子学和探测器集中在一个提箱里



T-TIDE-22 – Electronics  
(LAM-10DSC)

#### APPLICATION: 应用

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

流气式液闪计数系统可用于测量包括氚和氚化合物在内的各种核素

#### SYSTEM DESCRIPTION: 系统说明

**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.

**测量方法:** 探测和量化  $\beta$  核素最灵敏的方法是将样品和液体闪烁体充分混合，用光电倍增管计数器计数每一次闪烁事件

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

**能量分析仪**进一步选择脉冲并传递真实信号

**A Detection cell** is optically coupled to selected photomultiplier tubes.

**检测盒**光学耦合到光电倍增管

**A User Manual is provided.**

**提供用户手册**



TECHNICAL ASSOCIATES

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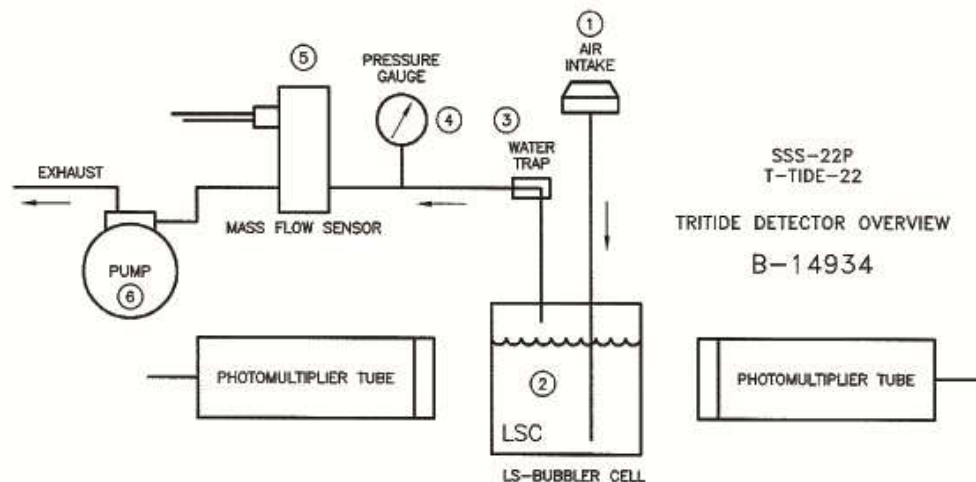
便携式探测器

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## FLOW PATH DESCRIPTION: 流路说明

- Sample air enters
- 气样进入
- Sample enters the LSC bubbler cell
- 样品进入液闪鼓泡器
- Dual photomultiplier tube measures Tritium content
- 双光电倍增管测量氚物质
- Sample flows out of LSC bubbler cell through water trap filter
- 样品经过集水器过滤器流出液闪鼓泡器
- Pressure sensor measures air entering Mass Flow Sensor
- 压力传感器测量进入到质流传感器的空气
- Sample passes through a Mass Flow Sensor
- 样品流经质流传感器
- Sample passes through pump
- 样品流经泵
- Sample flows back into the atmosphere or gas collection system
- 样品流返回到大气或气体收集系统

## T-TIDE-22 FLOW PATH 流路图



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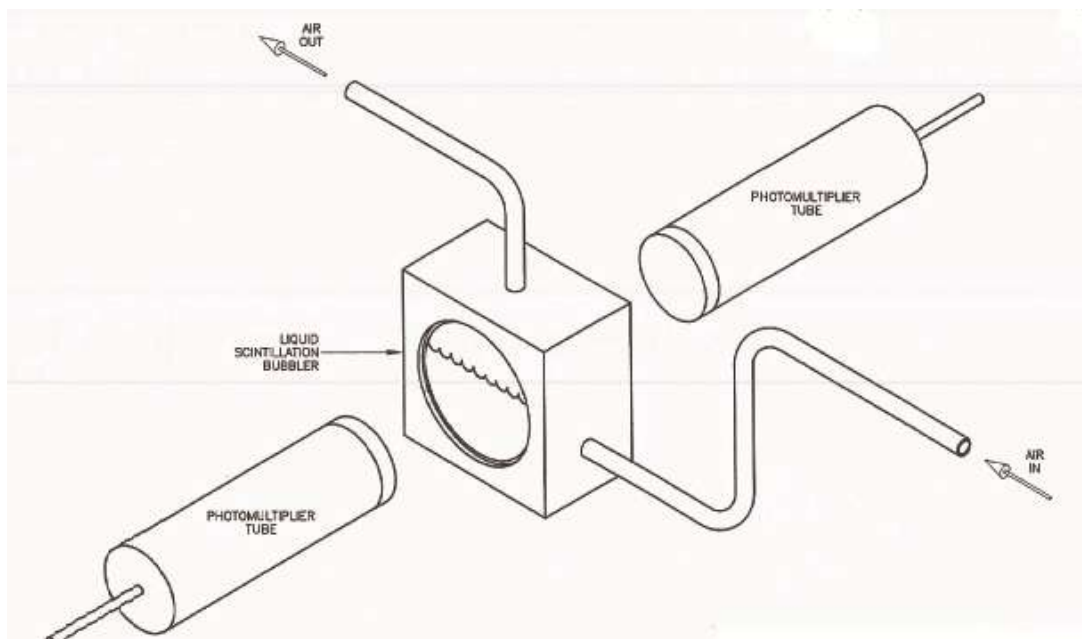
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### FLOW-THROUGH LIQUID SCINTILLATION BUBBLER CELL

#### **GAMMA BACKGROUND RADIATION 伽马本底辐射抑制功能 REJECTION FEATURES:**

- Energy analyzer window rejects pulses with energies outside the window setting
- 能量窗排除设定窗以外的能量
- Optional Lead Shielding around detector.
- 可选择探头周围带铅屏蔽

#### **COUNTING ASSEMBLY FEATURES: 计数组件特点**

- Excellent repeatability 卓越重复性
- Fully light tight system 系统完全密光
- Fail safe interlock to protect PM tubes 故障安全联锁保护PM管
- High transmission optical coupling to PM tube 光学耦合到光电倍增管高传输效率



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

#### 光电倍增管&放大器噪音抑制功能

- High quality PM tubes and preamps.
- 高质量光电倍增管和放大器
- Fully adjustable energy analyzer window rejects low energy pulses.
- 完全可调整能力分析窗抑制低能脉冲

### DATA ANALYSIS & PRESENTATION: 数据分析& 显示

- 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.
- PM管探测到的闪烁计数通过位于被测核素能量峰值中心的单道分析仪处理，这样既可去除超过本底辐射的较高能量脉冲又能去除PM管或电路产生的低能计数，脉冲反馈到计数器和选购的数字打印机
- This process allows long count times for measurement of very minute samples.
- 此过程允许对每一份样品长时间测量
- USB interface to computers or data stations.
- USB电脑接口或数据站

### SPECIFICATIONS:

#### 规格

- |                          |   |
|--------------------------|---|
| •H-3 Gross Efficiency:   | >20%,   |
| •总效率:                    |   |
| •Coincidence efficiency: | >10% .  |
| •符合效率:                   |   |
| •Count Times:            | 1 sec. thru 10,000 sec. (2.7 hours).          |
| •计数时间:                   |   |
| •Voltage:                | 0-1500 Volts - fully user settable.           |
| •电压:                     |   |
| •Readout:                | Digital - 6 digit LCD, (LED optional).        |
| •读数:                     |   |
| •Outputs:                | Standard: Serial output                       |
| •输出:                     |   |
| •Optional:               | USB Port & Memory Stick                       |
| •选择:                     |   |
| •Power:                  | Rechargeable Lithium batteries and AC adapter |



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- 电源: 可充电锂电池或AC适配器
- **Sample Size:** Custom Liquid Scintillation vials 200 ml.
- 样品尺寸: 液闪200ml小瓶
- **Scintillation Fluors:** Accepts most scintillation fluors.  
Perkin-Elmer Ultima Gold-LLT recommended for H-3 counting
- 液体荧光剂: 接受大多数闪烁荧光剂, 测氚推荐Perkin-Elmer Ultima Gold-LLT

MODEL SUBASSEMBLY 型号组件	ELECTRONICS 电子学	DETECTOR 探测器
<b>MODEL</b>	<b>LAM-10DS</b>	<b>T-TIDE-22</b>
Dimensions 尺寸	10" L X 7" W X 7"H	22" L X 16" W X 6"H
Weight 重量	3 Kg (7 lbs)	6.8 Kg (15 lbs)
Shipping Weight 装船重量	4 Kg	9 Kg
Number of PM Tubes PM管数量		2
Number of Amplifiers 放大器数量	2	
Coincidence Counting 符合计数	Yes	
Nuclides of Interest 兴趣核素		H-3
Capacity 容量		200 ml

#### OPTIONS: 选购

- Optional Interfaces and Outputs: Clear instructions with all interfaces.
- 选择接口和输出
- Data logging software, Model # ORO-22TT
- 数据录入软件, Model # ORO-22TT
- Data acquisition interface and cable with driver, Model # DAQ-3
- 数据采集接口和缆线带驱动Model # DAQ-3



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