

PORTABLE TRITIUM IN AIR SURVEY MONITOR

Model Series 200 SB

Model 200SB ~ Model 200 SB HTO

FEATURES:

- LOW COST, LIGHT WEIGHT PORTABLE TRITIUM IN AIR SURVEY METER
- AVAILABLE IN: $\mu\text{Ci}/\text{m}^3$, MBq/m^3 , DAC, MPCa
- WIDE RANGE – FAST RESPONSE
- SENSITIVITY: $10 \mu\text{Ci}/\text{m}^3$ ($0.1 \text{ MBq}/\text{m}^3$)
- LARGE 3 LPM PUMP
- DUAL 200cc ION CHAMBERS, GAMMA COMPENSATED
- HTO DISCRIMINATION – **MODEL 200SB-HTO**
- SINGLE ADJUSTABLE LEVEL ALARM
- ALARMS: LOW FLOW, BATTERY, LEVEL
- SENSITIVE FOR OCCUPATIONAL EXPOSURE
- DYNAMIC BACKGROUND COMPENSATION
- BATTERY OPERATION (OPTIONAL AC JACK)



DESCRIPTION:

MODEL 200SB is a low-cost portable Tritium in air monitor with a fast response and wide range.

- A subtractive balanced chamber electrometer circuit decreases background effects to negligible levels and its deionized and filtered intake reduces spurious effects from smoke dust and existing ionization in the air.
- Inlet and outlet hoses allow point monitoring of fume hoods, rooms, exhausts, etc.
- Model 200SB will measure airborne Tritium as free hydrogen or as volatile chemicals in concentrations as low as $10 \mu\text{Ci}/\text{m}^3$ of air.
- All instruments are calibrated at the factory. Calibration check may be performed in the field with a microCurie level gamma source.
- Background chamber may be shielded to check linearity of response on a gamma calibration range.
- User friendly calibration controls are provided.



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MEASURING TRITIUM IN WATER & OIL MIXTURES: Strategies

Tritium is radioactive hydrogen and hydrogen atoms regularly jump or exchange between different adjacent oil and water molecules.

In a mixture of normal water mixed with tritiated oil, both components will, over time, share the Tritium equally.

In **GASEOUS** Samples, the same principals apply.

1. A vapor separation system is recommended.
2. Use Model 200SB Tritium Ion Chamber to make the measurements.

SPECIFICATIONS:

Ranges:	Compact, easy to read digital LCD readout. <u>Select one of the following ranges:</u> 10 to 199,990 $\mu\text{Ci}/\text{m}^3$ 1 to 19,999 MBq/m^3 1 to 19,999 DAC (1 DAC = $10\mu\text{Ci}/\text{m}^3$) 1 to 19,999 MPCa (1 MPCa = $10\mu\text{Ci}/\text{m}^3$)
Background:	Essentially eliminated by subtractive balanced chambers.
Smoke, Dust & Ion Elimination:	HEPA Filter and deionizer reduce effects to negligible level.
Internal Air Pump:	High Volume 2-3 lpm.
Gamma Compensation:	Dual Ion Chambers; side by side
Ion Chamber Volume:	220 cm^3 port to port; 200 cm^3 effective
Response Rate:	5 seconds to reach 90% of final reading
Alarms:	Single adjustable alarm set-point. Visual / Audio: Low Air Flow, High Level, Low Battery.
Controls:	(3) Switches – Power On/Off, Sample, Measure.
Environment:	32° F to 122° F (0° C to +50° C); RH 0-98%
Calibration:	Can be calibrated using Tritium gas, calibrated electrical resistor, or small gamma check source.
Portability:	Model 200SB is provided with carrying handle.
Case:	Deep drawn aluminum case, with handle and gasket lid, easily cleanable anodized finish.
Battery:	(2) 'D' Size Alkaline, Carbon-Zinc, or NiCd.

WEIGHT & DIMENSIONS:

Dimensions:	Instrument Case (excluding handle): 5.2"W x 7.6"L x 4.4" H.
Weight:	5 lbs. (2.3 kg)

OPTIONS:

Model 200SB-HTO includes (6) Hose Connections and a desiccant dryer for specific HTO measurement even in the presence of HT or other radioactive gases as well as external and internal Gamma fields.



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