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Portable Tritium Bubbler Model RPB100



The RPB100 Portable HTO Bubbler is a two-vial, single stage bubbler designed for emergency response and short-term sampling applications. It is a complete HTO collection system contained in its own custom carrying case.

PRINCIPLE OF OPERATION

Sample gas enters the instrument through a quick-connect gas inlet fitted with either a gas sampling funnel for local sampling or hose for remote sampling. The sample gas flows through two 500 ml standard vials of ethylene glycol which retain the HTO component. The sample gas, now less the tritiated water vapor, flows through a mass flow meter and user adjustable regulating valve to adjust sample flow. A vane pump pulls the sample gas through the system and exhausts it from the case. A VFD displays the flow rate, elapsed time, and totalized flow. The user can reset the elapsed time and totalized flow. After power (120VAC) interruption, the system recovers the elapsed time and totalized flow from EEPROM and continues operation.

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SPECIFICATIONS

Dimensions:	21.0 W X 17.0" H X 7.5"D (54cm X 43cm X 19cm)
Weight:	22 lbs (10 kg)
Flow measurement:	Electronic rotary flow meter (1-5 liters/min, 0.05 liter/min resolution). Flow is user controlled via manual 8 turn metering valve. Instantaneous and totalized flow are displayed on LCD.
Sensitivity:	Detection limit of HTO in ambient air is at least 1E-10 µCi/cc
System protection:	In-line filter to protect flow controller and pump; vacuum gauge to monitor pump performance.
Operating parameters:	5 to 40°C and 0 to 95% rh non-condensing.

FEATURES

SAMPLE INLET :	Quick disconnect receptacle accepts mate with ¼" Swagelok® fitting for various accessory sampling devices
BUBBLER VIALS :	One stainless steel two-vial bubbler assembly is connected with Swagelok® bulkhead fittings. This design permits removal of the vial assembly for easy cleaning with water and ethanol if necessary. The bubbler assembly collects HTO. Vial caps are threaded and fitted with O-rings in order to provide a quick and reliable seal with the 500 ml polyethylene vials.
DISPLAY :	Vacuum fluorescent display provides: "FLOW RATE: X.X L/MIN".....Instantaneous flow rate in liters per minute "ELAPSED TIME: HHH:MM".....Elapsed time since totalizer was reset by keyswitch "TOTAL FLOW: XXXX.X L".....Total flow since totalizer was reset by keyswitch
DISPLAY REFRESH :	As a vacuum fluorescent display can "burn in" a repeated image, the display will automatically go blank after a preset time in order to protect the display. This momentary push button will reactivate the screen should it be blank.
TOTALIZER RESET :	Key switch that resets the elapsed time and total flow to zero values to begin sample period. Unit can only be reset without key.
FLOW ADJUST :	This 8 turn metering valve controls the system flow rate from approximately 0.5 l/min to 4.5 l/min.
VACUUM GAGE :	The pump performance can be monitored by this 0-30" vacuum gage.
POWER SWITCH :	Controls AC power to the RPB100, "1" is ON, "0" is OFF