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The Nucleus of Quality Air Monitoring Programs

Tritium Bubbler Model MRB500H3



Front View



Rear View

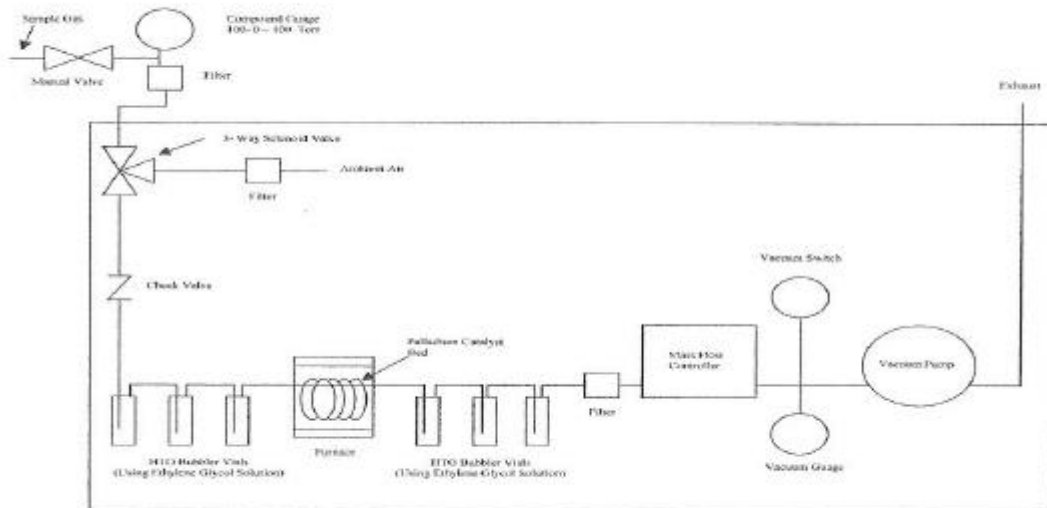
The MRB500H3 Tritium Bubbler is the state-of-the-art discriminating tritium collection instrument.

Sample gas enters the instrument and flows through two (2) standard scintillation counter ready vials filled with ethylene glycol, which retain the HTO component. The sample gas, now less the tritiated water vapor, flows through a heated palladium sponge catalyst bed, which oxidizes the sample gas. The oxidized sample gas flows through two (2) more vials with ethylene glycol that retain the remaining tritium components (originally HT and tritiated organics). A precision mass flow controller regulates the sample flow through the instrument. The user has control over the flow rate and catalyst bed temperature. The third vial in each trap serves the function of a trap.

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MRB500H3 Tritium Bubbler Specifications:

Dimensions:	W × H × D
Inches	16.88 × 10.5 × 16.7
Cm	42.88 × 26.67 × 42.42
Line power:	110V/60 Hz
Weight:	35 lbs. (16 kg)
Collection efficiency:	>99% when catalyst bed temperature is set to specified level.
Catalyst bed:	Custom bed containing quality inspected palladium sponge of 4 to 10 mesh surrounded by front panel adjustable furnace (0 to 600°C). Over/under temperature alarm and temperature overrun protection included.
Flow control:	Electronic mass flow controller (20-200 scc/min) with flow display and adjustment located on front panel. Pressure and flow alarm indications warn of out-of-spec operation.
System protection:	In-line filter to protect flow controller and pump; Check-valve and venting mechanism to protect against ethylene glycol back-flow; Vacuum gauge to monitor pump performance; Pressure gauge to monitor system performance; Audible and dry contact fault alarm.
Operating parameters:	5 to 40°C and 0 to 95% rh non-condensing
Sensitivity:	Detection limit of ambient air is at least 1E-10 µCi/cc



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