



# 7200

Preconcentrator

*The Next Generation in GC/GCMS Air Analysis.*

*New Option!*

**MillionAir™**



Advanced injection control

10<sup>6</sup> Concentration Range without Dilution

## The 7200 Preconcentrator



7200 Preconcentrator

The next generation GC & GCMS sample preparation system for the precise analysis of vapor-phase volatile compounds.

The 7200 Preconcentrator represents the next generation in GC and GCMS sample preparation systems for the analysis of vapor-phase volatile compounds. The 7200 takes the industry standard, 7100A's 3-stage preconcentration and water management technology, and elevates it to a whole new level. Many of the past limitations often seen in rotary valve based devices are now eliminated by combining digital valve isolation control with advanced robotic autosamplers, dropping the potential for carryover and cross-contamination far below previously obtainable levels.

A Silonite-D™ coating throughout the flow path virtually eliminates unwanted chemical reactions, ensuring complete recovery of volatile and light semi-volatile compounds. The 7200's advanced water and CO<sub>2</sub> management technologies provide superior recovery of polar and non-polar organics, while an inert heated flow path allows analysis of hydrocarbons in the range of C<sub>2</sub>-C<sub>18</sub> (depending upon trapping configuration).

### Features

- **Quantitative Measurements**

Volumes from 1–1000cc. Digital flow path management for improved system hygiene and precise volume determination of complex gas matrices including: Landfill Gas, Helium Diffusion Sampling, High Methane, and more!

- **Ultra-Wide Calibrated Dynamic Range**

Handles high & low concentrations with fewer dilutions.

- **Silonite-D™ Coated Flow Paths**

Silonite-D™ provides amazing inertness and durability you can trust!

Four built-in inlets are available on the 7200 for direct sample introduction, or as inlets for multi-position autosamplers such as the 7650-M and 7016D. Internal traps feature an optimized geometry that improves trap temperature consistency during analysis. Accu-Sample™ technology (patent pending) combines digital valve control with direct volume measurement rather than indirect time integrated flow measurements to allow better small volume accuracy down to 10cc over a wider pressure range while permitting both air and non-air matrices to be analyzed accurately. An optional loop injection valve can be added to reduce quantitative sample volume measurements down to 1.0cc.

### System Hygiene

Like the previous generation 7100A Preconcentrator, the 7200 also has the ability to backflush the lines out to the sample ports to eliminate the previous sample in each line prior to connecting the next sample. However, with laboratories now faced with analyzing both ambient air and soil gas samples routinely, system hygiene must go beyond a simple backflush. Isolation to prevent undesired exposure to traps, tubing, and valve rotors during the analytical process has become much more important. The 7200 features a shorter sample path than its predecessor, while also having the ability to prevent any cross-contamination while moving its Stream Select Valve to the next desired port. This is accomplished by isolating the downstream flow path using Entech's new digital rotary valve technology. In addition, the new 7650-M robotic autosampler for the 7200 shortens exposure times to potentially high concentration samples to seconds rather than hours or days as with rotary valve based autosamplers. This further reduces the possibility of both carryover and cross-contamination when analyzing higher concentration soil gas samples.

### Quality Assurance

The 7200 comes equipped with tools for validating system performance, including the ability to perform automated leak checking and matrix spiking. The 7200 also records critical parameters during each sample preconcentration to verify proper system operation, such as trapping flow rates, flow volumes, trap pressure drop, trapping temperatures, water management parameters, desorption temperatures, autosampler position, and sample transfer times. Data is saved as a SQL database for easy integration into a Laboratory Information Management System (LIMS). An automated summary is also generated to provide critical run-time parameters in an easy to interpret, single page report.

Description	Unit	Part #
<b>7200 Preconcentrator</b>		
<b>Instruments and Options:</b>		
7200 Preconcentrator (Preconcentrator bundle with 1cc Loop)	EA	7200-01*
7200 Preconcentrator Silonite Coated Flow Paths (Preconcentrator bundle with 1cc Loop)	EA	7200-01S*
7200 Preconcentrator (Preconcentrator bundle without 1cc Loop Option)	EA	7200-02*
7200 Preconcentrator Silonite Coated Flow Paths (Preconcentrator bundle without 1cc Loop Option)	EA	7200-02S*

\* High Voltage Operation - Add "-HV" to the end of the part number for the 220V+ versions.

## Leak Checking

A major source of error in GC inlet systems is the presence of leaks that go undetected. The 7200 performs automated leak checking using both pressure and vacuum techniques to ensure that a leak-tight system exists before samples are analyzed. A report is generated giving the starting and ending pressure during the monitoring period. Leak checking can be done either by selecting individual sample ports, or by selecting a sequence table, which defines a group of samples on the autosampler. Leak checking of samples when using Entech robotic autosamplers such as the 7650-M is not required since all samples remain air-tight and completely isolated until they are accessed for analysis.

## Next Generation MillionAir™ System

The combination of the 7200 Preconcentrator and the 7650-M Autosampler, creates the perfect solution for laboratories needing to maximize the dynamic range of their air analyzer. Entech's MillionAir™ System gets its name by being able to handle samples with more than a million fold difference in concentration without pre-dilution (typically 0.04 PPBv to 100,000 PPBv). Air labs have always been faced with the dilemma of having to screen potentially high concentration air samples to determine if dilution will be needed, while at the same time preventing the contamination of their analyzer. Older rotary valve autosamplers used by all other manufacturers expose potentially high concentration samples to inlet lines for hours or even days, creating a background in the system that may take days or even weeks of flushing to eliminate. With the MillionAir™ system, contact with the sample is only seconds long. The 7650-M contains its own loop valve that bypasses the 7200 primary traps altogether, injecting the sample through the M3 cryofocuser into the GCMS either for screening purposes or for quantitative analysis. Samples can be screened in as little as 6 minutes using an isothermal analysis to determine levels of TCE, PCE, and BTEX, which are the major contaminants in soil gas that can raise havoc in other systems when hot samples are processed without dilution. With the Entech MillionAir™ system, both screening and analysis using sample volumes as low as 0.1cc can extend the calibration curve well into the PPM range, drastically reducing the number of samples that have to be diluted before analysis. The MillionAir™ system is the ideal solution for today's competitive TO-15 laboratory.



7200 | 7650-M MillionAir™ System

## ECTD/MP&T/Dry Purge

*Supports extended cold trap dehydration, microscale purge & trap, and dry purge water management techniques for unrivaled flexibility and maximum compound class recovery.*

## Accu-Sample™ Technology

*Superior volume measurement at 10cc volumes, while reducing cross contamination and carryover.*

## Advanced Modular Design

*All-new cryo-modules and external bulkhead heaters reduce cold spots, improving performance. Easy access for component replacement.*

## Ultra-Inert Flow Paths

*Redesigned, Silonite-D coated flow paths maximize heavy and polar VOC recovery while reducing carryover.*

**Reliable, Flexible,  
Economical, & Smart  
automated VOC analysis.**





**7032A**  
Autosampler



**4700**  
Precision Diluter



**7016D**  
Canister Autosampler



**5400B**  
Thermal Transfer System



**3108D**  
Canister Cleaning System

*The Recognized Global Leaders  
in Environmental Air Analysis.*

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7200 Preconcentrator – 190319-7.1



**7200 | 7650-M**  
Air Analysis System