

98/99

CATALOG



How to Order

Products listed in this catalog can be purchased directly from OI Analytical or from authorized distributors in locations throughout the World. Please refer to the listing of OI Analytical distributors and representatives included with this catalog, or contact OI Analytical for the representative nearest you.

Contact OI Analytical:

Sales: (800) 653-1711
FAX: (409) 690-0440
Parts: (800) 673-3750
Service: (800) 336-1911

**International
Sales, Parts, & Service: (409) 690-1711**

www.oico.com

**e-mail: oimail@oico.com
orders@oico.com**

Order Mailing Address:

OI Analytical
Order Entry Department
P.O. Box 9010
College Station, TX 77842-9010

When ordering please provide:

- Name, account number, company name, shipping and billing addresses, and telephone number(s).
- Your company's purchase order number or credit card number in the U.S.A. (Visa, MasterCard, AMEX).
- OI Analytical part number, description, and quantity of item(s) ordered.
- Tax exempt number (if applicable).



Our commitment to your satisfaction begins when you consider buying an OI Analytical instrument. We strive to develop and maintain a one-on-one relationship to carry you successfully through the purchase experience and throughout your future with OI Analytical's instruments.

This highly regarded relationship is cultivated through customer focused programs.



OI Analytical has made a long-term commitment to outstanding customer service with a continuously growing network of support services designed to provide high quality service to our customers. OI Analytical offers a wide range of extended warranties and service contracts designed to fit your needs. Call and ask for details at 1-800-653-1711.



OI Analytical offers several finance programs for your convenience. Renting and leasing programs as well as our rent-to-own program are available to help you get the equipment you need.



**Customer
Communications**

A domestic toll-free technical support hotline is available for instrument support as well as specialized applications. On-site specific applications training and hands-on seminars are available.

OI Analytical is proud to provide the highest quality instruments available, backed by a commitment to quality, service, and support.

1-800-653-1711

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Message from the President

Dear Colleague,

Our 1998/99 Product Catalog offers you a wide range of analytical instruments, which we hope will help you better meet the challenges of an increasingly demanding market. Our commitment to quality begins with the product design, where we strive to provide you highly reliable, easy-to-operate products that give you outstanding performance and high value.

At OI Analytical, we are organized to serve your needs with a number of resources, including:

- On-site visits by field sales specialists;
- Immediate phone response by our sales/service center;
- Installation and repair by field service;
- Support by application experts;
- Application/technical notes and literature;
- Web site with full information;
- Seminars; and
- Management available to support you through escalation of unsolved problems.

Our commitment to your success is the primary concern of our sales specialists, who help ensure you select the right product configuration for your needs, and our customer service team, who are available to assist in installation and after-sale support.

We understand that your success is the key to our future. We believe that winning your confidence is the only way we will have a chance to be your supplier of choice in the future. If you are not satisfied with our products or service, just call me... I will respond to your needs.



A handwritten signature in black ink that reads "Will".

William W. Botts
President/CEO



Analytical Microwave Systems™ for sample preparation reduce your total preparation time by more than 90% versus conventional hot plate techniques while improving precision. OI Analytical's new waterless pressure system enhances ease-of-operation, and our analytical microwave vessels feature a unique, patented design for superior performance and include three types of vessels: ventable (low pressure), moderate pressure (200 psi maximum), and high pressure (600 psi maximum).

Gel Permeation Chromatography Cleanup has proven to be the most versatile and convenient sample cleanup technique for a wide range of sample matrices. The cleanup systems available from OI Analytical reduce GC maintenance, improve data quality, and reduce sample losses and errors.

Rounding out our product line for sample preparation, OI Analytical's automated system for liquid/solid extraction provides greater throughput and better precision, reduces manpower requirements, and increases safety in the laboratory. Soxtherm™ automatically processes six samples up to five times faster than manual Soxhlet methods.

Sample Preparation

Closed Vessel Microwave Systems

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Gel Permeation Chromatography Cleanup

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Closed Vessel Microwave Systems

Analytical Microwave Systems

Microwave technology can significantly reduce sample preparation time. Pressure and temperature control points have up to 10 individual programmable stages. Reversing 360° rotational platform assures even-energy exposure in up to 12 samples during one preparation run. WinWave™ Windows®-based software allows remote operation and control of the microwave system with an IBM-compatible computer.

- Waterless Pressure Sensor
- Windows®-Based Control
- High and Low Pressure Vessels Available
- Compliance with USEPA and CLP Methods

- WinWave (RS-232-C) allows remote operation from an IBM-compatible computer and controls up to four systems with proper configuration.
- Real-time graphing and data acquisition of temperature and pressure parameters.
- Pressure and temperature control points have up to 10 individual programmable stages.
- Reversing rotational platform assures even-energy absorption in 12 samples during one preparation run.
- Waterless pressure sensor (no valves to turn).
- Three choices of vessels: high pressure (600 psi), moderate pressure (200 psi), or ventable variable (up to 110 psi).



Analytical Microwave System with Moderate Pressure Vessels and Hand-held Controller



To order call 1-800-653-1711 (USA/Canada) or 409-690-1711



Closed Vessel Microwave Systems

Analytical Microwave Systems with Pressure Control

Includes an oven with a sealed, corrosion resistant, coated cavity; a rotational platform; sample monitor ports; magnetron thermal overload protection; an exhaust module; WinWave software; and a waterless pressure control system (1000 psi).

Model 7165 650 Watt System

100 VAC270249
120 VAC270256

Model 7195 950 Watt System

100 VAC270272
120 VAC270280
220/230 VAC270298

Analytical Microwave Systems with Pressure and Temperature Control

Includes an oven with a sealed, corrosive resistant, coated cavity; a rotational platform; sample monitor ports; magnetron thermal overload protection; a waterless exhaust module; WinWave software; a pressure control system; and an IR Fiber-Optic Thermometry System for accurate temperature control. *This item is not available outside of the U.S.A.*

Model 7195 650 Watt System

120 VAC276816

Model 7195 950 Watt System

120 VAC280081

Controller Options

IBM-Compatible Laptop Computer and WinWave270389

Includes notebook 486 PC, monochrome display, 4MB RAM, 200MB hard disk, 3.5" 1.44MB floppy drive, 1 parallel port, 1 serial port, and pre-installed MS-DOS and Windows software.

Service Contracts 
AT • YOUR • SERVICE

OI Analytical offers a wide range of extended warranties and service contracts designed to fit your needs. Call and ask for details **1-800-336-1911**.

Temperature Control and Waterless Pressure Control Analytical Microwave System

Temperature Control System

OI Analytical's temperature control module uses unique, passive, infrared fiber-optic temperature sensing (the original in the industry) and provides accurate, reliable temperature control up to 200°C. Passive infrared reacts instantly to temperature change without thermal lag or temperature overrun, a distinct advantage over the thermocouple and other fiber-optic temperature systems that must rely on surface contact or thermal transfer.

The durable fiber-optic monofilament Teflon®-coated probe ensures temperature reading integrity unlike stranded phosphorescent-coated technology. Broken strands or chipped coatings can give inaccurate readings. The monofilament design has no strands to break or coating to chip, which ensures constant accurate readings for the most precise temperature sensing system available today.

- Fiber-optic monofilament Teflon-coated probe.
- Temperature control up to 200°C.
- Passive infrared sensing measures direct target material temperature.
- Monofilament design provides constant accurate readings.

Fiber-Optic Temperature System

110/120 VAC 279968

Fiber-Optic Temperature System

220 VAC 279976



Temperature Control System

Pressure Control System

Monitors pressure inside a control vessel and controls the variable pressure regimens. This system uses a titanium pressure transducer (rated to 1000 psig) to cover the full pressure range of the digestion vessels (0–600 psig). No water lines are required to fill or backflush. It has a corrosion-free design without any valves to turn and works with both moderate and high pressure vessel sets.

Pressure Control System 291575



Customer Communications

A domestic toll-free technical support hotline is available for instrument support as well as specialized applications. On-site specific applications training and hands-on seminars are available.

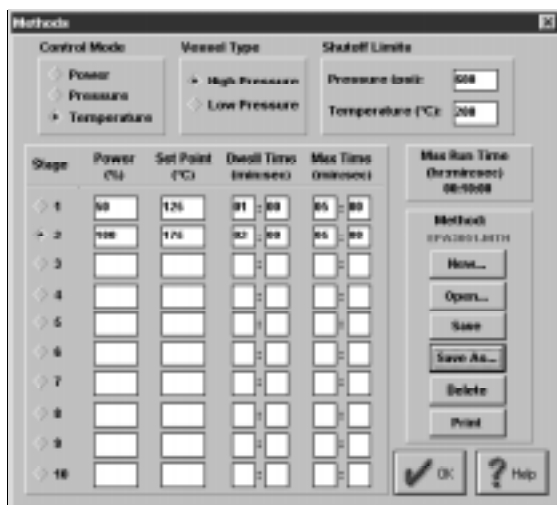
OI Analytical is proud to provide the highest quality instruments available, backed by a commitment to quality, service, and support. Call 1-800-653-1711.



To order call 1-800-653-1711 (USA/Canada) or 409-690-1711



Accessories and Software Analytical Microwave System



WinWave 2.0 Methods Screen



WinWave 2.0 System Screen

Exhaust Module

Includes blower assembly (125 CFM), 6-foot exhaust hose, 3-foot inlet hose, and three attachment clamps.

120 VAC (100 VAC, 120 VAC)250902

220 VAC, 50 Hz250910

WinWave™ Software Package274480

Includes software for remote operation of OI Analytical's Microwave System with IBM-compatible PC. Includes 3.5" disk, RS-232-C adapter, and a 6-conductor modular cable.

Microwave Calibration Kit M272765

Includes digital thermometer, accurate to $\pm 0.1^{\circ}\text{C}$, and 1000-mL volumetric beaker.

Microwave Leak Detector RRRSA09035

Includes detection probe, detection meter, and carrying case.

Digestion Vessel Modules Analytical Microwave System

OI Analytical's patented microwave vessels were the first in the industry to offer dual wall construction for maximum thermal stability and minimal heat loss. The outer vessel casement is transparent molded polythermal resin for safe exposure to a wide range of acid reagents while providing sample visibility. The heavy-duty PFA Teflon inner liner is acid resistant and microwave transparent with a convenient recessed lip to aid in rinsing back acids and pouring.

The patented large diameter safety membrane completely covers the vessel's inner liner and seals the samples in a contamination-free environment isolated from all other vessel components. This minimizes cleaning between runs and eliminates the risk of cross-contamination. The unique, five-piece vessel design and isolated liner provide for easy setup, quick change over, and superior safe performance.

High Pressure Microwave Vessel Module

(600 psi maximum)284877

Includes 10 heavy-duty, double-wall assemblies, 120 safety disks, circular vessel rack, collection reservoir, 10 vent tubes and microprobe.

- Dual Pressure Relief Mechanism
- Operational Pressures up to 600 psi
- Dual-Wall Design for Safety and Maximum Thermal Stability



High Pressure Vessel Module

Complete with control vessel (Part #284877). For temperature monitoring, add the thermocouple assembly (Part #279976).



To order call 1-800-653-1711 (USA/Canada) or 409-690-1711



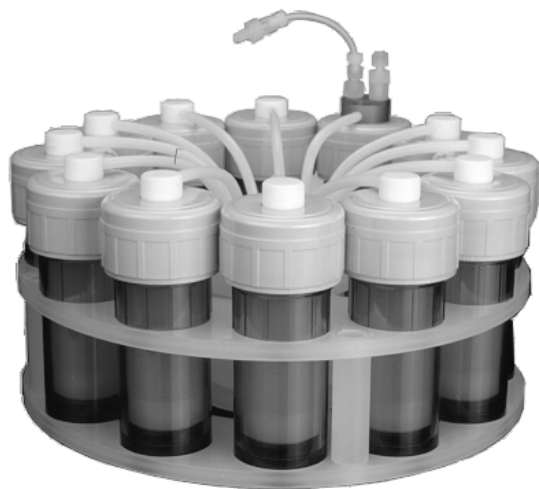
Digestion Vessel Modules Analytical Microwave System

**Moderate Pressure Microwave Vessel Module
(200 psi maximum) 287912**
Includes 12 double-wall vessel assemblies, 120 safety disks, circular vessel rack, collection reservoir, 12 vent tubes, and microprobe.

**Ventable Single Wall
Digestion Vessels/Modular 302968**
For nonvolatile trace metals. Vessels release pressure at approximately 100 psi and reseal. Ideal for lead wipes or other lead sample preparations. Includes 12 vessels and vent tubes with rack.



PFA Teflon Ventable Vessel Module
(Part #302968)



Moderate Pressure Vessel Module
Complete with control vessel (Part #287912). For temperature monitoring, add the thermocouple assembly (Part #279968).

O·Analytical 
FINANCING

OI Analytical offers several finance programs for your convenience. Leasing programs as well as our rent-to-own program are available to help you get the equipment you need.

Gel Permeation Chromatography Cleanup

Gel Permeation Chromatography (GPC) Cleanup

GPC cleanup, as referenced in all regulatory methods including USEPA SW-846 Method 3640 and CLP's Statement of Work, has proven to be the most versatile and convenient sample cleanup technique for a wide range of sample matrices including foods, tissues, grains, plants, and environmental samples such as soil, sludge, and hazardous waste.

Model AS-2000 Autovap®

Sample Processing System 981-005

Provides fully automated GPC cleanup and on-line evaporation. Incorporates new high performance GPC and Autovap modules as an integrated system. Uses either low pressure/high capacity Envirobeads® S-X3 columns, Optima columns, or high efficiency Envirosep-ABC™ columns. Three modes of operation: GPC only, evaporation only, or GPC/evaporation.

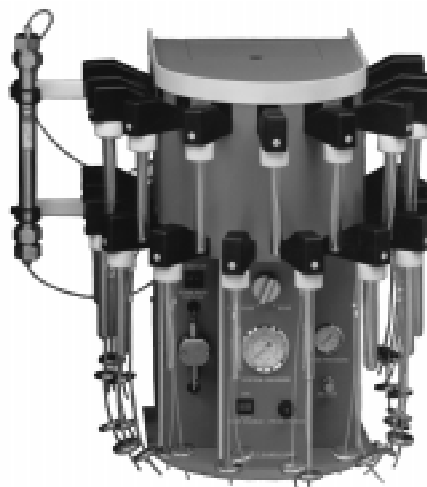
Column selection required.

- Three modes of operation with 23-sample capacity.
- Closed loop design minimizes operator exposure to hazardous materials.
- Exclusive dual liquid level sensing offers two concentration end points: controlled dryness with quantitative resuspension and low volume end point.
- Automatic sample transfer from the evaporation chamber to a sealed storage vial.
- Microprocessor controlled for unattended operation.
- Automatically rinses sample path to eliminate cross-contamination.
- Evaporates most common solvents with boiling ranges up to and including water.
- Operates with all approved GPC columns, low or high pressure.

- Reduces GC Maintenance
- Improves Data Quality



CE



Model AS-2000 Autovap



To order call 1-800-653-1711 (USA/Canada) or 409-690-1711



Gel Permeation Chromatography Cleanup

Model Autoprep 1000 System or Autoprep 500 System

For GPC cleanup. Uses either low pressure/high capacity Envirobeads S-X3 columns, Optima columns, or high efficiency Envirosep-ABC columns. Includes autoloading design with microprocessor control and five operating programs. Automatically processes 23 samples (Autoprep 1000) or 12–18 samples (Autoprep 500) through GPC cleanup. *Column selection required.*

Features of the Model Autoprep 1000

- High capacity and high efficiency column options.
- Automatically cleans up to 23 crude residue extracts.
- Ultrasonic detector regulates sample loop loading.
- Flow path is automatically rinsed between samples to eliminate carryover contamination.
- Microprocessor controlled with up to five operating programs.
- Interchangeable sample loops.
- Reduces sample losses, errors, and poor recoveries.
- Extends the life of analytical columns.
- Greatly reduces GC or GC/MS downtime.
- Universal cleanup technique for a wide range of organic compounds.

- Extends the Life of Analytical Columns
- Reduces Sample Losses and Errors

Features of the Model Autoprep 500

- Automated sample loading of 12 or 18 samples.
- Automated sample processing and system rinsing.
- Interchangeable sample loops.
- Ultrasonic detector regulates sample loop loading.
- High capacity and high efficiency column options.
- Specifically designed for USEPA Method 3640A.
- Processes soils and sludges, tissue, foods, and hydrocarbon waste samples.
- Greatly reduces GC or GC/MS downtime.
- Universal cleanup technique for a wide range of organic compounds.

Autoprep 1000	981-006
Autoprep 500 (12 place)	981-017
Autoprep 500 (18 place)	981-020



Model Autoprep 500

Accessories

Gel Permeation Chromatography Cleanup

Model SP-1000 GPC Sample Processor 981-004

Single sample automated system with user-selectable parameters including: dump time, collect time, wash time, and pump run time. Complete with low pressure/high capacity Envirobeads S-X3 column.

Envirobeads® S-X3

Column Kit..... 626-330 to 626-334

Select glass column assembly, low pressure/high capacity, packed and tested with choice of solvents. Includes column cutoff valve and required hardware.

Optima PTFE Column Kit 624-340 to 624-346

Teflon column, low pressure, reduced solvent usage with one-half the run time of the traditional column. Packed and tested with choice solvents. Includes column cutoff valve and required hardware.

Envirosep-ABC™ Columns 626-335

High pressure column system, includes in-line filter with 2 micron frit, 60 mm x 21.2 mm guard column, 350 mm x 21.2 mm cleanup column, and required hardware.

UVD-1000 627-400

254-mm fixed wavelength UV detector with strip chart recorder. Integrates with all GPC systems to meet USEPA calibration requirements.

Autovap® 1000 981-007

Integrates with the Autoprep 1002B or Autoprep 1000 to provide unattended on-line evaporation of the GPC collect fraction or other extracts up to 250 mL. Concentrates up to 23 samples per run and transfers them to a sealed vial. The Autovap 1000 precisely controls temperature and vacuum, while monitoring the sample level with dual liquid level sensors.

Smart-UPS Uninterruptible

Power Supply 416-102

Power supply (600 Watt) protects against brownout, momentary power surges or power loss, and low line power conditions to prevent sample loss during the extraction.

SRS-1000 Solvent Recovery System 627-401

Integrates with Model AS-2000 Autovap Sample Processing System to automatically collect up to 90% of evaporated solvent. Includes 8 L Nalgene™ reservoir and roller cart.

Column Mounting Kit..... 626-321

Integrates with AS-2000, AP-1000, or AP-500 system. For use with Envirobeads or Optima columns.

RENTING

Allow OI Analytical to meet your short-term equipment needs with our renting program. Most products are available for same day delivery.



Extraction System

OI Analytical offers an automated liquid/solid extraction system that provides greater throughput and better precision, reduces manpower requirements, and increases safety in the laboratory.

Soxtherm™ - Solids Extractor 981-012

Completely automated Soxhlet extractor processes six samples in parallel while capturing evaporated solvent for recycling or waste disposal. This system performs USEPA SW-846 Method 3541.

High Capacity Recirculating Chiller 418-005

Provides coolant for up to two Soxtherm units.

- Gravimetric or Trace Analysis
- Fast, Accurate, Reliable, Safe
- Reduces Manpower Requirements



Soxtherm

Methods Guide

USEPA Methods		Analytical Microwave System	Extraction and Recovery	GPC Clean-up
USEPA 130.1	Total-Hardness			
USEPA 206.4	Total-Arsenic			
USEPA 212.3	Total-Boron			
USEPA 310.2	Alkalinity			
USEPA 325.1 & 325.2	Chloride			
USEPA 335.1	Cyanide Amenable to Chlorination			
USEPA 335.3	Total-Cyanide			
USEPA 340.3	Total-Fluoride			
USEPA 350.1	Ammonia			
USEPA 353.1 & 353.2	Nitrate-Nitrite			
USEPA 365.1	Orthophosphate, Total-Phosphorus			
USEPA 375.1	Sulfate			
USEPA 410.4	Chemical Oxygen Demand (COD)			
USEPA 415.1	TOC by Wet Chemical Oxidation			
USEPA 420.2	Phenols			
USEPA 502.1	Volatile Halogenated Organic Compounds			
USEPA 502.2	Volatile Organics			
USEPA 503.1	Volatile Aromatics and Unsaturated Organics			
USEPA 524.1	Volatile Organic Compounds			
USEPA 524.2	Volatile Organic Compounds			
USEPA 601	Purgeable Halocarbons			
USEPA 602	Purgeable Aromatics			
USEPA 603	Acrolein and Acrylonitrile			
USEPA 608	Organochlorine Pesticides and PCBs	✓	✓	
USEPA 624	Purgeable Organics			
USEPA 625-S	Priority Pollutants in Wastewater Sludge			✓
USEPA 3015	Microwave Digestion of Aqueous Samples	✓		
USEPA 3051	Sediments, Soils, Sludges, & Oils	✓		
USEPA 3052	Total Microwave Digestion	✓		
USEPA 5035	Volatile Organics in Soil & Waste Samples			
USEPA 8010	Halogenated Volatile Organics			
USEPA 8015	Nonhalogenated Volatile Organics			
USEPA 8020	Aromatic Volatile Organics			
USEPA 8021	Volatile Organics			
USEPA 8030	Acrolein, Acrylonitrile, Acetonitrile			
USEPA 8240	Volatile Organics			
USEPA 8260	Purgeable Organics			
USEPA 8275A	Semivolatile Organic Compounds			
USEPA 9060	TOC in Groundwater			
USEPA TO-1	Volatile Organic Compounds in Ambient Air			
USEPA TO-2	Highly Volatile Organics in Ambient Air			
USEPA 5040, 5041 VOST	Volatile Organic Sampling Train (VOST)			

ASTM Methods		Analytical Microwave System	Extraction and Recovery	GPC Clean-up
ASTM D1068-90	Iron, Total			
ASTM D1252-88	Chemical Oxygen Demand (COD)			
ASTM D1687-92	Chromium VI Dissolved			
ASTM D2036-91	Cyanide Amenable to Chlorination			
ASTM D2579-93	TC & TOC in Water			
ASTM D2972-93	Arsenic, Total			
ASTM D3120-92	Trace Sulfur in Light Petroleum Hydrocarbons			
ASTM D3246-92	Sulfur in Petroleum Gas			
ASTM D3867-90	Nitrate-Nitrite			
ASTM D3871-84(1990)	Purgeable Organic Compounds in Water			
ASTM D3961-89(1993)	Trace Sulfur in Liquid Aromatic Hydrocarbons			
ASTM D4779-93	TOC in High Purity Water			
ASTM D4839-94	TOC in Water			
Standard Methods				
Std. Method 3500C	Total-Arsenic			
	Total-Aluminum, Cadmium, Chromium, Copper, Iron, Lead, Potassium; Chromium VI Dissolved			
Std. Method 3500D	Total-Copper, Zinc			
Std. Method 3500E	Total-Boron			
Std. Method 4500B	Chloride, Total-Fluoride			
Std. Method 4500E	Nitrate-Nitrite, Orthophosphate, Phosphorus(Total)			
Std. Method 4500F	Cyanide Amenable to Chlorination			
Std. Method 4500G	Ammonia, Nitrate-Nitrite			
Std. Method 4500H	Chemical Oxygen Demand (COD)			
Std. Method 5200D	TOC by Combustion Oxidation			
Std. Method 5310B	TOC by Persulfate-Ultraviolet or Heated-Persulfate Oxidation Method			
Std. Method 5310C	TOC by Wet Chemical Oxidation			
Std. Method 5310D (505C)	Volatile Organics			
Std. Method 6210B, C, D	Volatile Aromatic Organics			
Std. Method 6220B, C	Volatile Aromatic Organics			
Std. Method 6220D	Volatile Aromatic Organics			
Std. Method 6230B, C	Volatile Halocarbons			
Std. Method 6230D	Volatile Halocarbons			
Std. Method 6230E	Volatile Halocarbons			
Std. Method 6232C	Trihalomethanes			
Std. Method 6232D	Trihalomethanes			
USP Methods				
USP Oxidizable Sub. Test	Oxidizable Substances Test Substitute			
USP 467 Method II	Volatile Organics			

The chart above is a guide to this catalog. This information is intended only as a reference for this catalog and is not intended to define method requirements. Complete method information is available in the Annual Book of ASTM Standards, Federal Register, Standard Methods for the Examination of Water and Wastewater, and USP XXII.

Since 1987, OI Analytical has provided complete GC-based solutions for numerous analytical applications. As a Premier Channel Partner with Hewlett-Packard, we offer our “Value Added Systems Solutions” by incorporating our unique sample introduction and GC detector technology into fully integrated and applications specific systems.

Our applications expertise and instrumentation know-how provide the complete solution to the most challenging analytical problems. Systems are available based on USEPA methods for VOC in waters; soils and solid wastes; pesticide analysis by USEPA, FDA, and USDA methods; and systems based on ASTM or international regulatory groups. Customize your system for specific applications by adding any of OI Analytical’s expanding line of GC detectors, sample introduction instrumentation, or autosamplers.

All systems are completely tested to the specific methodology, include installation and system familiarization, and are backed with a full year warranty. Let OI Analytical be your single source solution to your complete GC system requirements.

GC Analytical Systems

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System VOC Analysis System

System VOC Analysis System - EPC

Includes HP 6890 Plus GC, Model 4560 Purge-and-Trap Sample Concentrator, Low-Dead-Volume Injector with PCM electronic flow control, Model 5350 Tandem PID/ELCD, VOC column, full EPC for carrier gas and detectors, factory installation and quality assurance checkout, field installation, familiarization, and extended warranty on GC detectors.

System VOC - EPC HP 6890 (110 V)..... 285130

VOC Squared Analysis System - EPC

Includes HP 6890 Plus GC, Model 4560 Purge-and-Trap Sample Concentrator, Low-Dead-Volume Injector with PCM electronic flow control, two Model 5350 Tandem PID/ELCDs, two dissimilar VOC columns, inlet column splitter, full EPC carrier gas and detectors, factory installation and quality assurance checkout, field installation, familiarization, and extended warranty on GC detectors.

VOC Squared - HP 6890 (110 V) 292946

Dual VOC Analysis System - EPC

Includes HP 6890 Plus GC, two Model 4560 Purge-and-Trap Sample Concentrators, two Low-Dead-Volume Injectors with PCM electronic flow control, two Model 5350 Tandem PID/ELCDs, full EPC control on all pneumatics, two VOC columns, factory installation and quality assurance checkout, field installation, familiarization, and extended warranty on GC detectors.

Dual VOC - HP 6890 (110 V)..... 292953

Note: *For systems delivered in the U.S.A. only: System field installation includes verification with an appropriate system standard at a 5-ppb level via the sample concentrator with an OI Analytical-approved column. Operator familiarization includes basic instrument/system operation, routine maintenance procedures, and a recommendation for stocking expendable items.*

**GC/MS Systems
Also Available**



OI Analytical Purge and Trap and Detectors Combine with the HP 6890 Plus GC in the System VOC

*Specially configured GC systems, including non-EPC and 220/240 VAC systems, are available upon request.

System BTEX Analysis System

System BTEX Analysis System

Includes HP 6890 Plus GC, Model 4560 Purge-and-Trap Sample Concentrator, Low-Dead-Volume Injector with PCM electronic flow control, Model 4450 Tandem PID/FID, BTEX column, full EPC control for carrier gas and detectors, factory installation and quality assurance checkout, field installation, familiarization, and extended warranty on GC detectors.

System BTEX - EPC (110 V)292961

Two-Column BTEX Analysis System

Includes HP 6890 Plus GC, Model 4560 Purge-and-Trap Sample Concentrator, Low-Dead-Volume Injector with PCM electronic flow, Model 4430 PID, HP-EPC FID (HP Option 211), two BTEX columns, inlet splitter, full EPC control for carrier gas and detectors, factory installation and quality assurance checkout, field installation, familiarization, and extended warranty on GC detectors.

Two-Column BTEX - EPC (110 V)292979

Dual BTEX Analysis System

Includes HP 6890 Plus GC, two Model 4560 Purge-and-Trap Sample Concentrators, two Low-Dead-Volume Injectors with PCM electronic flow, two Model 4450 Tandem PID/FIDs, two BTEX columns, full EPC control for carrier gas and detectors, factory installation and quality assurance checkout, field installation, familiarization, and extended warranty on GC detectors.

Dual BTEX - EPC (110 V)292987

Note: *For systems delivered in the U.S.A. only:* System field installation includes verification with an appropriate system standard at a 5-ppb level via the sample concentrator with an OI Analytical-approved column. Operator familiarization includes basic instrument/system operation, routine maintenance procedures, and a recommendation for stocking expendable items.



OI Analytical Purge and Trap and Detectors Combine with the HP 6890 Plus GC in the System BTEX

*Specially configured GC systems, including non-EPC and 220/240 VAC systems, are available upon request.

Pesticides Analysis System

Pesticides Analysis System - EPC ELCD (Dual Halogen Mode)

The Pesticides Analysis System includes HP 6890 Plus GC, EPC capillary split/splitless inlet (HP Option 112), column splitter, two pesticide columns, two Model 5320 Electrolytic Conductivity Detectors (Dual ELCD), two Halogen Mode Kits, full EPC control for carrier gas and detectors, factory installation and quality assurance checkout, field installation, familiarization, and extended warranty on GC detectors.

Pesticides System - EPC ELCD (110 V) 284943

Pesticides Analysis System - EPC XSD™

The Pesticides Analysis System includes HP 6890 Plus GC, EPC capillary split/splitless inlet (HP Option 112), column splitter, two pesticide columns, two Model 5360 Halogen Specific Detectors with vent options, full EPC control for carrier gas and detectors, factory installation and quality assurance checkout, field installation, familiarization, and extended warranty on GC detectors.

Pesticides System - EPC XSD (110 V) 284950

Pesticides Analysis System - EPC PFPD/XSD

The Pesticides Analysis System includes HP 6890 Plus GC, EPC capillary split/splitless inlet (HP Option 112), column splitter, two pesticide columns, Model 5380 PFPD, Model 5360 XSD with vent option, full EPC control for carrier gas and detectors, factory installation and quality assurance checkout, field installation, familiarization, and extended warranty on GC detectors.

Pesticides System -

EPC PFPD/XSD (110 V) 292995

Note: *For systems delivered in the U.S.A. only:* System field installation includes verification with an appropriate system standard at a 5-ppb level with an OI Analytical-approved column. Operator familiarization includes basic instrument/system operation, routine maintenance procedures, and a recommendation for stocking expendable items.



**OI Analytical Purge and Trap and Detectors Combine with
the HP 6890 Plus GC in the Pesticides Analysis System**

*Specially configured GC systems, including non-EPC and 220/240 VAC systems, are available upon request.



To order call 1-800-653-1711 (USA/Canada) or 409-690-1711



Fluorinated By-Products Analyzer

Fluorinated By-Products Analyzer (FBA)

The Fluorinated By-Products Analyzer is a dedicated analyzer for monitoring fluorinated by-products in various process streams such as butane or LPG. These compounds, if present at elevated levels, can lead to corrosion problems and destruction of catalyst beds at refineries. Capable of measuring contamination to the low ppb level in only 2–3 minutes, this complete, automated system offers numerous advantages over the standard Wickbold method commonly used for this analysis. The FBA is available as a lab-based or on-line process system.



On-Line Fluorinated By-Products Analyzer

Lab-Based FBA GC System

Includes an HP 6890 Plus GC, manual or optional EPC packed injection port, liquid gas sampling valve with all required tubing and connectors, EPC controlled Model 5320 ELCD, fittings and column required for analysis, factory installation and quality assurance checkout, field installation, familiarization, and extended warranty on GC detectors.

FBA System - EPC (HP 6890) (110 V) 293001

On-Line Process FBA

This true process FBA is a Class I Div. II rated analyzer for installation on-line. The basic analyzer is designed as an “add-on” module for an existing process analyzer used for sample handling and data processing. Custom configurations are available upon request.

On-Line FBA Analyzer (110 V) 300988

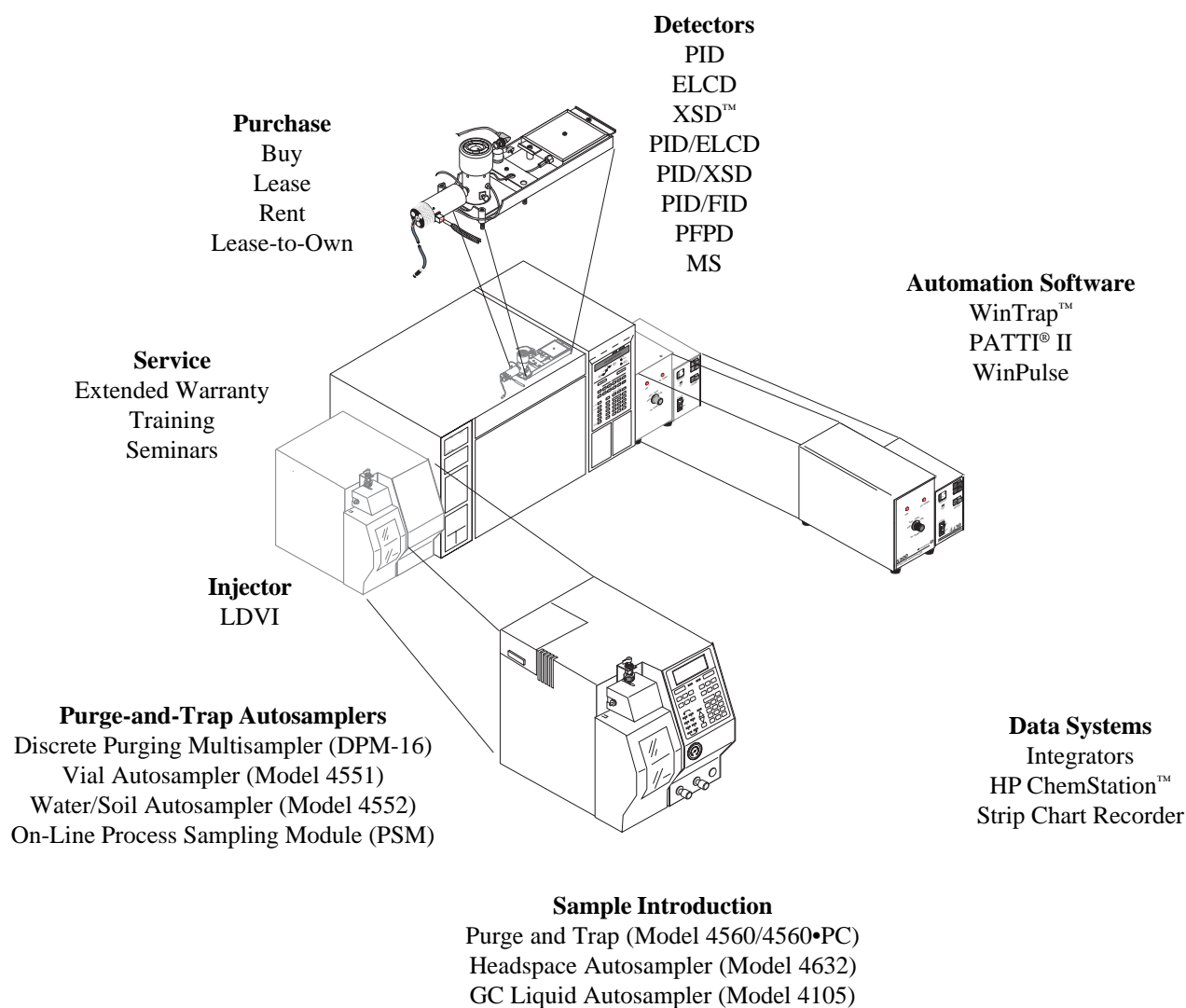
Note: *For systems delivered in the U.S.A. only:* System field installation includes verification with an appropriate system standard. Operator familiarization includes basic instrument/system operation, routine maintenance procedures, and a recommendation for stocking expendable items.

Service
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OI Analytical offers a wide range of extended warranties and service contracts designed to fit your needs. Call and ask for details **1-800-336-1911**.

Customer Designed Systems

Create your own customized GC system by adding OI Analytical components to your GC (see diagram below). Specific components are available for configuration on certain models of gas chromatographs from the following manufacturers: Hewlett-Packard, Varian, Shimadzu, Chrompack, and Perkin-Elmer. Contact an OI Analytical sales representative for information on manufacturers not listed.



To order call 1-800-653-1711 (USA/Canada) or 409-690-1711



Applications Guide

Applications	GC Systems		Sample Introduction										GC Detectors							Analyzers					Sample Prep				
	System VOC	System BTEX	Pesticides Analysis System	P & T Concentrator	GC Liquid Autosampler	Vial Autosampler	Discrete Purging Multisampler	Multiple Heater Controller	Air-Tube Multisampler	Headspace Sampler	Water/Soil Autosampler	Cryo-Focusing System	ELCD	PFPD	PID	XSD	PID/XSD	PID/FID	PID/ELCD	Monitoring System - FM-2000	TOC Analyzer	Flow Solution 3000	Flow Solution IV	Triple Check Analyzer	Aqua-Check Analyzer	Analytical Microwave System	Extraction and Recovery	GPC Clean-up	
Air Pollution/Industrial Hygiene																													
BTEX/TPH																													
Highly Volatile Organics in Ambient Air																													
Principal Organic Hazardous Constituents																													
Volatile Aromatic Halocarbons																													
VOST Analysis																													
Metals in Filtered Air Particulate																													
Drinking Water/Groundwater																													
Metals																													
Pesticides/Herbicides																													
Total Organic Carbon (TOC)																													
Total Trihalomethanes																													
Volatile Organic Compounds (VOCs)																													
pH																													
Conductivity																													
Dissolved Oxygen																													
Total Dissolved Solids																													
Temperature																													
Environmental																													
Metals in Soil/Sludge/Sediment																													
Pesticides																													
TOC in Solid/Sludge																													
TOC in Salt/Brines																													
Semivolatile Organic Compounds																													
Volatile Organic Compounds																													
EPA Priority Pollutants																													
Halogenated Pesticides																													
Phosphorus Pesticides																													
Nitrogen-Based Pesticides																													
Polychlorinated Biphenyls (PCBs)																													
Volatile Organic Compounds																													
Petrochemical																													
BTEX																													
Halogenated Contaminated Products																													
Sulfur Analysis																													
Olefins																													
Raw and Finished Products																													
Total Fluorine and Alkylation Products																													
Total Petroleum Hydrocarbons (TPH)																													
Product Testing																													
Foods, Flavors, Fragrances																													
Nitrosamines																													
Polynuclear Aromatic Hydrocarbons																													
Volatile Organic Compounds																													
Metals in Finished Products																													
TCLP/EP Toxicity																													
Volatile Organic Compounds																													
Ultrapure Water																													
Pharmaceutical																													
Power Generation																													
Semiconductor																													
Underground Storage Tank																													
Aromatic Volatile Organics																													
BTEX, BTEX/MTBE																													
BTEX/Halogenated Volatile Organics																													
Halogenated Volatile Organics																													
Metals in Tank Sludge																													
Waste Characterization																													
Appendix IX Organochlorine Pesticides																													
Appendix IX Volatiles																													
BTEX																													
Total Organic Carbon (TOC)																													

The chart above is a guide to this catalog. This information is intended only as a reference for this catalog and is not intended to define method requirements. Complete method information is available in the Annual Book of ASTM Standards, Federal Register, Standard Methods for the Examination of Water and Wastewater, and USP XXII.

Methods Guide

USEPA Methods		System VOC	System BTEX	Pesticides Analysis System
USEPA 130.1	Total-Hardness			
USEPA 206.4	Total-Arsenic			
USEPA 212.3	Total-Boron			
USEPA 310.2	Alkalinity			
USEPA 325.1 & 325.2	Chloride			
USEPA 335.1	Cyanide Amenable to Chlorination			
USEPA 335.3	Total-Cyanide			
USEPA 340.3	Total-Fluoride			
USEPA 350.1	Ammonia			
USEPA 353.1 & 353.2	Nitrate-Nitrite			
USEPA 365.1	Orthophosphate, Total-Phosphorus			
USEPA 375.1	Sulfate			
USEPA 410.4	Chemical Oxygen Demand (COD)			
USEPA 415.1	TOC by Wet Chemical Oxidation			
USEPA 420.2	Phenols			
USEPA 502.1	Volatile Halogenated Organic Compounds	✓		
USEPA 502.2	Volatile Organics	✓		
USEPA 503.1	Volatile Aromatics and Unsaturated Organics		✓	
USEPA 524.1	Volatile Organic Compounds			
USEPA 524.2	Volatile Organic Compounds			
USEPA 601	Purgeable Halocarbons	✓		
USEPA 602	Purgeable Aromatics	✓		
USEPA 603	Acrolein and Acrylonitrile			
USEPA 608	Organochlorine Pesticides and PCBs			✓
USEPA 624	Purgeable Organics			
USEPA 625-S	Priority Pollutants in Wastewater Sludge			
USEPA 3015	Microwave Digestion of Aqueous Samples			
USEPA 3051	Sediments, Soils, Sludges, & Oils			
USEPA 3052	Total Microwave Digestion			
USEPA 5035	Volatile Organics in Soil & Waste Samples	✓	✓	
USEPA 8010	Halogenated Volatile Organics	✓		
USEPA 8015	Nonhalogenated Volatile Organics		✓	
USEPA 8020	Aromatic Volatile Organics		✓	
USEPA 8021	Volatile Organics	✓	✓	
USEPA 8030	Acrolein, Acrylonitrile, Acetonitrile			
USEPA 8240	Volatile Organics			
USEPA 8260	Purgeable Organics	✓		
USEPA 8275A	Semivolatile Organic Compounds			
USEPA 9060	TOC in Groundwater			
USEPA TO-1	Volatile Organic Compounds in Ambient Air			
USEPA TO-2	Highly Volatile Organics in Ambient Air			
USEPA 5040, 5041 VOST	Volatile Organic Sampling Train (VOST)			

ASTM Methods		System VOC	System BTEX	Pesticides Analysis System
ASTM D1068-90	Iron, Total			
ASTM D1252-88	Chemical Oxygen Demand (COD)			
ASTM D1687-92	Chromium VI Dissolved			
ASTM D2036-91	Cyanide Amenable to Chlorination			
ASTM D2579-93	TC & TOC in Water			
ASTM D2972-93	Arsenic, Total			
ASTM D3120-92	Trace Sulfur in Light Petroleum Hydrocarbons			
ASTM D3246-92	Sulfur in Petroleum Gas			
ASTM D3867-90	Nitrate-Nitrite			
ASTM D3871-84(1990)	Purgeable Organic Compounds in Water			
ASTM D3961-89(1993)	Trace Sulfur in Liquid Aromatic Hydrocarbons			
ASTM D4779-93	TOC in High Purity Water			
ASTM D4839-94	TOC in Water			
Standard Methods		System VOC	System BTEX	Pesticides Analysis System
Std. Method 3500C	Total-Arsenic			
	Total-Aluminum, Cadmium, Chromium, Copper, Iron, Lead, Potassium; Chromium VI Dissolved			
Std. Method 3500D	Total-Aluminum, Cadmium, Chromium, Copper, Iron, Lead, Potassium; Chromium VI Dissolved			
Std. Method 3500E	Total-Copper, Zinc			
Std. Method 4500B	Total-Boron			
Std. Method 4500E	Chloride, Total-Fluoride			
Std. Method 4500F	Nitrate-Nitrite, Orthophosphate, Phosphorus (Total)			
Std. Method 4500G	Cyanide Amenable to Chlorination			
Std. Method 4500H	Ammonia, Nitrate-Nitrite			
Std. Method 5200D	Chemical Oxygen Demand (COD)			
Std. Method 5310B	TOC by Combustion Oxidation			
	TOC by Persulfate-Ultraviolet or Heated-Persulfate Oxidation Method			
Std. Method 5310C	Persulfate Oxidation Method			
Std. Method 5310D (505C)	TOC by Wet Chemical Oxidation			
Std. Method 6210B, C, D	Volatile Organics	✓	✓	
Std. Method 6220B, C	Volatile Aromatic Organics		✓	
Std. Method 6220D	Volatile Aromatic Organics		✓	
Std. Method 6230B, C	Volatile Halocarbons	✓		
Std. Method 6230D	Volatile Halocarbons	✓		
Std. Method 6230E	Volatile Halocarbons	✓		
Std. Method 6232C	Trihalomethanes	✓		
Std. Method 6232D	Trihalomethanes	✓		
USP Methods		System VOC	System BTEX	Pesticides Analysis System
USP Oxidizable Sub. Test	Oxidizable Substances Test Substitute			
USP 467 Method II	Volatile Organics	✓	✓	

OI Analytical continues its tradition of providing the latest technology with the Model 4560 Purge-and-Trap Sample Concentrator. Leading the market to improve system performance, increase system reliability, and reduce overall cycle times, the Model 4560 is the cornerstone of our sample introduction line. The Model 4560's patented features (Cyclone Water Management™, rapid trap heating, the Infra-Sparge™ Sample Heater, and electronic flow control compatibility with many GC models) increase productivity, accuracy, and sensitivity. OI Analytical's MicroTrap™ option significantly improves GC/MS sensitivity in purge-and-trap analysis.

Automate your laboratory with OI Analytical's wide range of autosamplers while maintaining precision and accuracy. Whether sampling water, soil, or a combination of both, OI Analytical has the autosampler for you. Our Model 4552 Water/Soil Autosampler is the perfect choice for USEPA Method 5035. The Process Sampling Module (PSM) is specifically designed for the automated continuous sampling of water streams. Automatic samplers for both headspace and liquid sampling complete the sample line. These units are compatible with multiple GC models and are designed to offer maximum performance in an extremely reliable product.

GC Sample Introduction

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Air-Analysis Products	33
Headspace Sampler	34
GC Liquid Autosampler	34
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Sample Concentrators

Model 4560 Purge-and-Trap Sample Concentrator

Includes the Cyclone Water Management™ System, rapid trap heating and cooling, protective sparge (foam) filter, 14-method storage, 5-method sequencing, and full on-screen self-diagnostics. Includes 5-mL frit sparger and frit sparger hardware, Tenax®/silica gel/charcoal (#9) trap, Tenax only (#7) trap, spare fuses, 5" cleaned copper tubing, OI test standard, operator's manual, and unit's factory QA/QC test chromatograms (blank and standard). Accepts 18-mm frit or needle spargers, or 18-mm disposable spargers. Classified by IEC and listed to UL Standards for Safety.

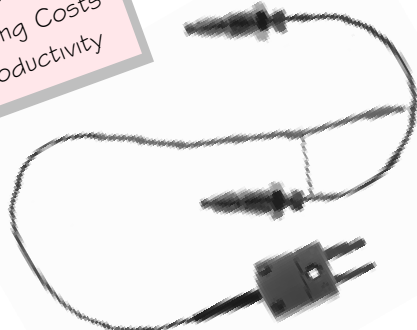
Model 4560 (100/110 V) 225433
Model 4560 (220 V)..... 248799

Model 4560•PC Sample Concentrator

The Model 4560•PC offers the performance of the Model 4560 at a lower cost. The instrument is controlled through software (WinTrap™ or PATTI® II) instead of the operator keypad and display of the Model 4560. The Model 4560•PC includes the Cyclone Water Management System, rapid trap heating and cooling, protective sparge (foam) filter, and traps and spargers listed above. Software is required for operation of this unit.

Model 4560•PC (100/110 V) 250100
Model 4560•PC (220 V) 250225

- Improved Sensitivity
- Lower Operating Costs
- Increased Productivity



MicroTrap



**Model 4560 Sample Concentrator with
 Infra-Sparge Option and Internal Carrier Flow Option**

Model 4560 MicroTrap™ Option For GC/MS

This new, low flow trap option offers improved chromatographic performance. The MicroTrap eliminates the need for either a split injection or the use of a jet separator, increasing the sensitivity of GC/MS analysis of volatile compounds. This microbore trap results in efficient transfer of the compounds of interest from the purge and trap to the GC column at flow rates as low as 1–2 mL/min.

MicroTrap “A” Carboxen™ 1000 Kit 291435
MicroTrap “B” Carbosieve Kit 291443
MicroTrap “A” Carboxen 1000
Replacement 283549
MicroTrap “B” Carbosieve Replacement 287649

Sample Concentrator Accessories

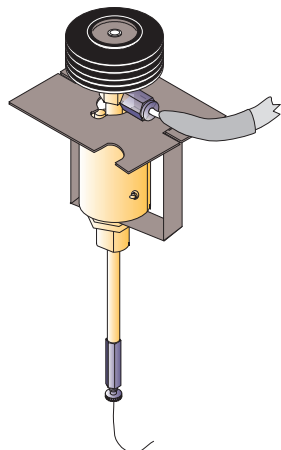
Infra-Sparge™ Sample Heater

Provides fast, accurate, and reliable heating of soil or water samples that are directly injected, loaded, or transferred into the Model 4560 sparge vessel. Uses unique high-intensity infrared heating with direct sample temperature feedback through an inert thermocouple submerged in the sample. Simply change spargers to heat 5- or 25-mL frit or needle spargers, or 10-mL disposable glassware. *Factory installation required.*

Infra-Sparge Sample Heater (100/110V) 225649
Infra-Sparge Sample Heater (220V) 242487



Infra-Sparge Sample Heater Option

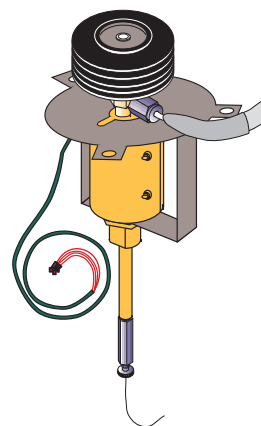


Low-Dead-Volume Injector
for HP 5890 GC

Low-Dead-Volume Injector (LDVI)

A stand-alone GC injector designed for direct injection (both manually or with an auto injector) or to receive a gas sample desorbed from a sample concentrator, without reconfiguring the GC inlet. Splitless volatile analyses can be performed by injection or via a purge and trap without system modification. It is useful for quickly diagnosing system problems and troubleshooting instrument hardware. (100/110/220 V)

LDVI w/o Flow Control - HP 6890 280578
LDVI w/ Flow Control (ICM) - HP 5890 236422
LDVI w/o Flow Control - HP 5890 229195
LDVI w/o Flow Control -
Varian 3400/3600 229237
LDVI w/o Flow Control -
Shimadzu (100/110 V) 273334
LDVI w/o Flow Control -
Shimadzu (220 V) 270397
EPC Inlet Flow Module for LDVI (PCM) -
HP 6890 285015
Union for 4560 to Shimadzu GC 291625



Low-Dead-Volume Injector
for HP 6890 GC

Sample Concentrator Accessories

Cryo-Focusing Module™

The Cryo-Focusing Module (CFM) focuses analytes in a gaseous sample onto a short length of liquid nitrogen-cooled fused silica capillary tubing or onto the inlet of the capillary GC column. The module rapidly vaporizes the analytes onto the capillary column, producing optimal chromatographic results. Using megabore precolumns in the design virtually eliminates problems related to water transfer onto the column at liquid nitrogen temperatures. This design makes this the CFM particularly useful for refocusing analytes being transferred from the purge-and-trap sample concentrator to the GC.

CFM - HP 6890 (110 V)	297598
CFM - HP 5890 (110 V)	210120
CFM - HP 5890 (220 V)	252908
Low-Dead-Volume-Interface for CFM	217869

Model 4560 Starter/Support Kit228056

Includes 5-mL Luer-Lok sample syringe, 10- μ L standard syringe, 502.2/524.2 standard, and tooling for minor repairs to the Model 4560. Recommended for laboratories new to purge-and-trap analysis.

Model 4560 Parts and Supplies

for One Year254714

Includes quantities of selected expendable and nonexpendable parts to provide the self-maintained laboratory with a small stock of commonly used parts and supplies.

Needle Sparge Hardware Kit227397

Required for needle sparging on the Model 4560. Includes needle purge gas line, side-hole purge needle, and a package of Mud-Dawgs™ to adapt the Model 4560 for needle sparging of soils or solids. *Requires 18-mm needle sparger or disposable glassware for operation, see pages 51 and 52.*

Anhydrator for the Model 4460A193136

Provides additional level of water management for the Model 4460A Sample Concentrator. Prevents < 0.5 μ L of all trapped water from reaching the column or detector. (Not recommended for any analysis containing polar analytes.)

RENTING

Allow OI Analytical to meet your short-term equipment needs with our renting program. Most products are available for same day delivery.



To order call 1-800-653-1711 (USA/Canada) or 409-690-1711



Sample Concentrator Flow Options (Manual and EPC)

Internal Carrier Flow Control227934

Allows carrier gas to be provided and controlled by the Model 4560 Sample Concentrator. Conveniently located where access to the pneumatic bay of the GC is limited. A single gas connection to the sample concentrator provides both purge and carrier flow. Controls carrier flow 0–15 mL/min. *Factory installation required.*

EPC PCM Flow Module for HP 6890285015

Add electronic flow control for your purge-and-trap sample concentrator when using an HP 6890 GC. This inlet flow module gives you electronic flow control on your GC carrier gas when coupled to the Model 4560 Purge and Trap. Flow control is easily controlled and adjusted from the front panel of the GC or HP ChemStation.

Internal Carrier Module (ICM) - HP 5890 ...229286

Designed to mount on the front panel (Injector A or B) of the HP 5890 Series II GC. This inboard carrier may be used to provide carrier flow to any GC injector or external device when no source of carrier flow control is provided.

HP 6890 EPC Volatiles Inlet (Option 142)

An HP 6890 volatiles interface with EPC, 0–100 psi. Operating mode can be split, splitless, or direct. Silcosteel® treated for inertness. No direct injection capability as with the LDVI.

HP 6890 Volatiles Inlet (Option 142)285031



Internal Carrier Flow Control Option

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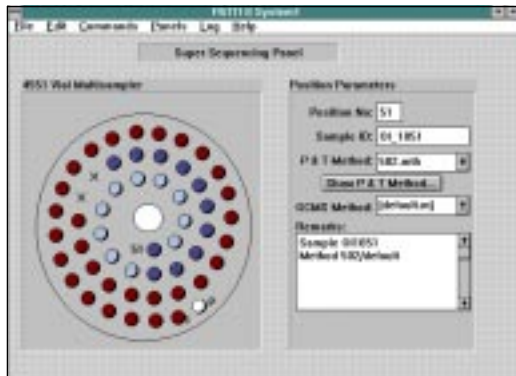
OI Analytical offers a wide range of extended warranties and service contracts designed to fit your needs. Call and ask for details **1-800-336-1911**.

Sample Concentrator Software

Purge-and-Trap Total Interface (PATTI® II)

A software package that provides single or multi-instrument remote control of the Model 4560 Sample Concentrator through a Windows® environment. Allows nearly unlimited purge-and-trap method creation, storage, retrieval, and printing, as well as real-time purge-and-trap status monitoring and control. Super sequencing capabilities allow method sequencing to both the Model 4560 and HP GC or GC/MS ChemStation through a single graphical sequence table. PATTI II software allows super sequencing with the Model 4551 Vial Autosampler, the DPM-16, or a combination of the two. Requires Windows 3.1 or later. ChemStation super sequencing requires GC ChemStation revision 3.01 or later.

PATTI II for the Model 4560232389



PATTI II Screen

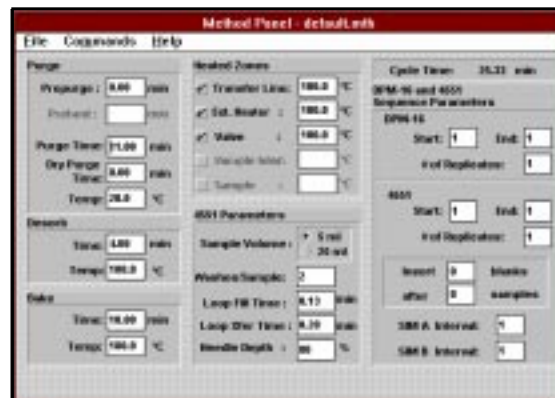


PATTI II Screen

WinTrap™ Control Software

WinTrap software provides remote control of the Model 4560 Purge-and-Trap Sample Concentrator through a Windows environment. Allows method creation, storage, retrieval, and printing, as well as real-time purge-and-trap status monitoring and control. (Includes limited method sequencing capability; see PATTI II, listed on this page).

WinTrap for the Model 4560250191



WinTrap Screen



To order call 1-800-653-1711 (USA/Canada) or 409-690-1711



Purge-and-Trap Water Autosamplers

Model 4551 Vial Autosampler

The Model 4551 Vial Autosampler fully automates the analyses of up to 51 clean water or particulated water samples. The Model 4551 removes specific sample volumes from standard 40-mL VOA vials to the common sparger on the Model 4560 Sample Concentrator. Rinses, blanks, and replicates are programmable through the Model 4560 keypad, and the unique docking design saves valuable benchspace. The DPM-16 can also be connected to the 4560/4551 Vial Sampling System to permit soil/solid/sludge analysis. Basic unit is configured with 5-mL sample loop (25-mL loop optional). *Requires regulated gas supply at 25–30 psi, not included.*

Model 4551 (100 V)	271494
Model 4551 (110 V)	235671
Model 4551 (220 V)	248633
Model 4551 w/ Vial Cooling (110 V)*	261677
Model 4551 w/ Vial Cooling (100 V)*	271502
Model 4551 w/ Vial Cooling (220 V)*	264168

**Requires the Model 4560 to have Infra-Sparge Sample Heater installed.*



Model 4560 Purge-and-Trap Sample Concentrator with a Model 4551 Vial Autosampler and SAM Option

Standard Additions Module (SAM) Option

The newest automated internal standard and surrogate additions module for use with the Model 4551. The SAM allows for two separate 1- μ L standard or surrogate additions to the water sample during the transfer from the Model 4551 to the Model 4560 Purge and Trap. The SAM contains two separate reservoirs that can add standards at user-defined programmable sampling intervals.

SAM Option - Model 4551 **282244**

Accessories

Model 4551 to DPM-16 Interface Kit 237495
25 mL Sample Loop Kit - Model 4551 263772



OI Analytical offers several finance programs for your convenience. Leasing programs as well as our rent-to-own program are available to help you get the equipment you need.

CALL 1-800-653-1711

Purge-and-Trap Water/Soil Autosamplers

Model 4552 W/S Autosampler

The Model 4552 allows automated purge and trap of water samples, soil samples, or both in the same run. The removable sample tray holds up to 51 samples and may be cooled to 4°C to meet USEPA requirements. Water samples are transferred to a sample concentrator sparge vessel for analysis. A sampling syringe transfers sample volumes of 1 to 25 mL, which are automatically diluted from a blank water reservoir. Soil samples are purged in the vial using either standard 40-mL VOA vials or patented double-ended SoilVials™. Features include a built-in dual internal standard addition capability, sample stirring, and the lowest degree of sample carryover, by rinsing sample pathways with hot water and purging them with gas after each run. The Model 4552 can be interfaced to either the Model 4460A, the Model 4560, or Tekmar Purge-and-Trap Sample Concentrators.

Requires interface kit and cable.

Model 4552 (100/110 V)276568
Model 4552 (220 V).....276576

Model 4552 Waters Only Autosampler

A lower cost alternative to the Model 4552 Water/Soil Autosampler, this autosampler runs only clean (nonparticulated) drinking water and wastewater samples only. Similar to the 4552 W/S Autosampler but with all components used for soil sampling removed. (No upgrade to run soil samples is available.) *Requires interface kit and cable.*

Model 4552 Waters Only (110 V).....293126
Model 4552 Waters Only (220 V).....293134

Interface Kits

Interface Kit for Model 4560276592
 Interface Kit for Model 4460A/Tekmar LSC-2 ..276584
 Interface Kit for Tekmar 2000/3000293043



Model 4552 W/S Autosampler

Model 4552 W/S Autosampler Accessories/Options

Bar Code Reader276709
 Calibration Bar and Pin 03-505419-90
 Needle Sparge Conversion to SoilVial276717
 Recirculating Bath for Vial Cooling261909
 Rinse Water Kit276725
 Sample Tray 03-505223-00
 SoilVial Conversion to Needle Sparge276733
 Windows® Software 03-505629-00

Interface Cables

	Part #
Handshake Pigtail to HP 6890	252213
Handshake Pigtail to HP 5890	185868
Handshake Pigtail to Varian 3400	188409
Handshake Pigtail to Shamadzu 17A	244483
To OI 4460/4560 to HP 5890	284935
To OI 4560 to HP 6890	03-505789-00
To OI 4460/4560 to Varian 3400/3700	03-505638-00
To OI 4460/4560 to HP 5890, RTE HP 1000 GC/MS software, HP 5970 MSD, or HP 5988 MS	03-505639-00
To Tekmar LSC-2 or Model OI 4460	284935
To Tekmar LSC-2000/3000	03-505633-00
To Tekmar LSC-2000/3000 to HP 5890	03-505634-00
To Tekmar LSC-2000/3000 to Varian 3400/3700	03-505635-00
To Tekmar 2000/3000 with HP 6890	03-505697-00
To Tekmar 2000/3000 with HP 5890 with 5970/71/72 MSD and Unix-B or MS-DOS, and HP 5890/5989 MS Engine	03-505698-00
To Tekmar LSC-2000/3000 with HP 5995/85/87/88/92	03-505876-00.



To order call 1-800-653-1711 (USA/Canada) or 409-690-1711



Purge-and-Trap Water and Soil Autosamplers

Process Sampling Module (PSM)

The new PSM is an on-line automated module for sampling single (pressurized) water streams. This on-line system avoids the need to collect samples using labor intensive manual sampling. Used in conjunction with the Model 4560 Purge and Trap and subsequent analysis by GC or GC/MS, the PSM provides continuous automated sampling and analysis of water streams.

PSM (110 V)289330

Discrete Purging Multisampler (DPM-16)

This 16-position autosampler interfaces to any OI Analytical sample concentrator and purges each sample in independent spargers, transferring volatiles to the concentrator's trap for desorption. Equipped with side-hole purge needles and sent with a pack of Mud-Dawgs, the DPM-16 is ideal for purging soils/solids/sludges but may also be used for water/particulated water samples. Air-tube or VOST desorber accessories are also available. Accepts 18-mm disposable culture tubes or 18-mm reusable glassware kit, not included.

DPM-16 (100/110 V)247734

DPM-16 (220 V)248625



Process Sampling Module (PSM)

Tandem Discrete Purging Multisampler

This 31-position autosampler interfaces to any OI Analytical sample concentrator and purges each sample in independent spargers, transferring volatiles to the concentrator's trap for desorption. Equipped with side-hole purge needles and sent with a pack of Mud-Dawgs, the DPM-16 is ideal for purging soils/solids/sludges but may also be used for water/particulated water samples. Air-tube or VOST desorber accessories are also available. Accepts 18-mm disposable culture tubes or 18-mm reusable glassware kit, not included. *Service installation required.*

Tandem DPM-16 (100/110 V)243089

Tandem DPM-16 (220 V)248609

DPM-16 to Model 4551 Interface Kit237495

Includes hardware to adapt position 16 on the DPM-16 to receive samples transferred from the Model 4551. Includes extended drain, sample transfer lines, and required hardware. Required when both the DPM-16 and Model 4551 are interfaced simultaneously to the Model 4560 Sample Concentrator.



DPM-16 Discrete Purging Multisampler

Autosampler Accessories

Tandem Multisampler Control Interface (TMCI)

Allows the connection of two 16-position discrete autosamplers into one sampler with 31-sample capacity. (Included with the Tandem DPM-16, parts #243089 and #248609.) *Service installation required.*

TMCI (100/110 V) **241182**
 TMCI (220 V) **248617**

Multiple Heater Controller (MHC-16)

This 16-station automatic heater controller works in conjunction with DPM-16 or MPM-16 autosamplers. Recommended for USEPA methods that require sample heating (e.g., 8000 series methods). *Requires heater jacket or air-tube desorption kit.*

MHC-16 (100/110 V) **192450**
 MHC-16 (220 V) **248336**

DPM-16 or MPM-16 PEEK Purge Line Kit

Add flexible PEEK purge line to any OI Discrete Purging Autosampler. Useful in circumstances that require frequent changing between frit spargers and needle spargers.

Purge Line Kit **222729**

Heater Jacket Kits

25-mL Needle, 10-mL Disposable Spargers .. **198697**

Heater jacket kit contains 16 heater jackets for 110 V or 220 V MHC-16s.

5-mL Needle Spargers **198689**

Heater jacket kit contains 16 heater jackets for 110 V or 220 V MHC-16s.

5/25-mL Frit Spargers **218651**

Heater jacket kit contains 16 heater jackets for 110 V or 220 V MHC-16s.



Customer Communications

A domestic toll-free technical support hotline is available for instrument support as well as specialized applications. On-site specific applications training and hands-on seminars are available.

OI Analytical is proud to provide the highest quality instruments available, backed by a commitment to quality, service, and support. **Call 1-800-653-1711.**



To order call **1-800-653-1711** (USA/Canada) or **409-690-1711**



Air-Analysis Products

Air-Tube Desorber - 18 mm (100/110 V)..... 247999

Adds 1/4" or 6-mm air-tube desorption capability to a sample concentrator with an 18-mm sparge mount.

Air-Tube Desorber Accessories - 18 mm

Adds 1/4" or 6-mm air-tube desorption capability to any sample concentrator or discrete purging autosampler with an 18-mm sparge mount. For air tubes of 4"-5" length. Includes heating mantle, air tube, 18 mm-1/4" adapter, and purge gas plumbing hardware. Includes single-position heater controller for power. *Requires MHC-16 for use on DPM-16 or MPM-16.*

Kit (16/kit) (for 110/220 V MHC) 247981

Single (for 110/220 V MHC) 250878

Single (110 V) (for 4560) 247999

Single (220 V) (for 4560) 248682

Air-Tube Desorber - 6 mm (100/110 V)..... 187872

Adds 1/4" or 6-mm air-tube desorption capability to a Model 4460A Sample Concentrator that can reduce to a 1/4" mount.

Air-Tube Desorber Accessories - 6 mm

Adds 1/4" or 6-mm air-tube desorption capability to the Model 4460A/4560 sample concentrator or MPM-16 that can reduce to a 1/4" mount. For air tubes of 4"-5" length. Includes heating mantle, air tube, and purge gas plumbing hardware. Uses 4460A/4560's external heater circuit for use on Model 4460A/4560.

Requires MHC-16 for use on MPM-16.

Kit (16/kit) (for 110/220 V MHC-16) 197871

Single (110 V) (for MHC or 4460A/4560)..... 187872

VOST Desorber Accessory (110/220 V) 236653

Adds a single-position VOST desorption capability to a DPM-16 or MPM-16. Includes VOST tube heater assembly, required plumbing, and hardware to mount tubes in pairs. Each VOST desorber requires two sparge mount positions on the autosampler (one position is used as a water knockout). VOST tube desorption requires the MHC-16.



Air-Tube Desorber
Accessory



VOST Desorber
Accessory

Headspace Sampler and GC Liquid Autosampler

Model 4632 Headspace Sampler

The Model 4632 automates headspace sampling and injection of up to 32 10-mL samples. The sample heating oven holds up to six 10-mL vials for equilibration. Headspace gas is sampled and injected into the gas chromatograph by a sample loop connected to a needle by a four-port valve. This eliminates the carryover caused by transfer lines. The sample oven, valve, and sample loop can all be heated up to a temperature of 180°C. The Model 4632 mounts on top of a gas chromatograph and uses no benchspace. It is available for most gas chromatographs. Includes shaking apparatus and 6-position oven for heating sample vials. Optional WinSpace™ control software available. Specify mounting kit for GC model being used.

Model 4632 (100/110 V) 276469

Model 4632 (220 V)..... 276477

Mounting kits include brackets, mounting hardware, and cabling for specific gas chromatographs.

HP 5890 GC Mounting Kit 276485

HP 6890 GC Mounting Kit 276493

Shimadzu 17A GC Mounting Kit 276501

Shimadzu 17A Ver. 2 GC Mounting Kit..... 294470

Shimadzu 14A GC Mounting Kit 296512



Model 4632 Headspace Sampler



Model 4105 GC Liquid Autosampler

Model 4105 GC Liquid Autosampler

The Model 4105 is a 105-position microprocessor-controlled gas chromatograph liquid autosampler with integrated control electronics. Using an XY robotic mechanism to draw liquid from the sample vials, the Model 4105 automates injection of up to 105 2-mL vials. The autosampler mounts on top of the gas chromatograph and uses no benchspace. Standard microliter syringes and standard 2-mL sample vials are used to reduce the cost of expendables. The Model 4105 injects samples into multiple injection ports without additional hardware and is available for most gas chromatographs. Selection of injection port is fully programmable and allows injection in multiple ports for maximum productivity.

Model 4105 (100/110 V) 276519

Model 4105 (220 V)..... 276527

Mounting kits include brackets, mounting hardware, and cabling for specific gas chromatographs.

HP 5890 GC Mounting Kit 276535

HP 6890 GC Mounting Kit 276543

Shimadzu 17A GC Mounting Kit 276550

Applications Guide

Applications	GC Systems			Sample Introduction							GC Detectors							Analyzers					Sample Prep							
	System VOC	System BTEX	Pesticides Analysis System	P & T Concentrator	GC Liquid Autosampler	Vial Autosampler	Discrete Purging Multisampler	Multiple Heater Controller	Air-Tube Multisampler	Headspace Sampler	Water/Soil Autosampler	Cryo-Focusing System	ELCD	PFPD	PID	XSD	PID/XSD	PID/FID	PID/ELCD	Monitoring System - FM-2000	TOC Analyzer	Flow Solution 3000	Flow Solution IV	Triple Check Analyzer	Aqua-Check Analyzer	Analytical Microwave System	Extraction and Recovery	GPC Clean-up		
Air Pollution/Industrial Hygiene	BTEX/TPH																													
	Highly Volatile Organics in Ambient Air																													
	Principal Organic Hazardous Constituents																													
	Volatile Aromatic Halocarbons																													
	VOST Analysis																													
Drinking Water/Groundwater	Metals in Filtered Air Particulate																													
	Metals																													
	Pesticides/Herbicides																													
	Total Organic Carbon (TOC)																													
	Total Trihalomethanes																													
	Volatile Organic Compounds (VOCs)																													
	pH																													
	Conductivity																													
	Dissolved Oxygen																													
	Total Dissolved Solids																													
Environmental	Temperature																													
	Metals in Soil/Sludge/Sediment																													
	Pesticides																													
	TOC in Solid/Sludge																													
	TOC in Salt/Brines																													
	Semivolatile Organic Compounds																													
	Volatile Organic Compounds																													
	EPA Priority Pollutants	Halogenated Pesticides																												
Phosphorus Pesticides																														
Nitrogen-Based Pesticides																														
Polychlorinated Biphenyls (PCBs)																														
Volatile Organic Compounds																														
Petrochemical	BTEX																													
	Halogenated Contaminated Products																													
	Sulfur Analysis																													
	Olefins																													
	Raw and Finished Products																													
	Total Fluorine and Alkylation Products																													
	Total Petroleum Hydrocarbons (TPH)																													
Product Testing	Foods, Flavors, Fragrances																													
	Nitrosamines																													
	Polynuclear Aromatic Hydrocarbons																													
	Volatile Organic Compounds																													
	Metals in Finished Products																													
TCLP/EP Toxicity	Volatile Organic Compounds																													
Ultrapure Water	Pharmaceutical																													
	Power Generation																													
	Semiconductor																													
Underground Storage Tank	Aromatic Volatile Organics																													
	BTEX, BTEX/MTBE																													
	BTEX/Halogenated Volatile Organics																													
	Halogenated Volatile Organics																													
	Metals in Tank Sludge																													
Waste Characterization	Appendix IX Organochlorine Pesticides																													
	Appendix IX Volatiles																													
	BTEX																													
	Total Organic Carbon (TOC)																													

The chart above is a guide to this catalog. This information is intended only as a reference for this catalog and is not intended to define method requirements. Complete method information is available in the Annual Book of ASTM Standards, Federal Register, Standard Methods for the Examination of Water and Wastewater, and USP XXII.

Methods Guide

USEPA Methods		Purge-and-Trap Sample Concentrator	GC Liquid Autosampler	Vial Autosampler	Discrete Purging Multisampler	Multiple Heater Controller	Air-Tube Multisampler	Headspace Sampler	Water/Soil Autosampler	Cryo-Focusing System
USEPA 130.1	Total-Hardness									
USEPA 206.4	Total-Arsenic									
USEPA 212.3	Total-Boron									
USEPA 310.2	Alkalinity									
USEPA 325.1 & 325.2	Chloride									
USEPA 335.1	Cyanide Amenable to Chlorination									
USEPA 335.3	Total-Cyanide									
USEPA 340.3	Total-Fluoride									
USEPA 350.1	Ammonia									
USEPA 353.1 & 353.2	Nitrate-Nitrite									
USEPA 365.1	Orthophosphate, Total-Phosphorus									
USEPA 375.1	Sulfate									
USEPA 410.4	Chemical Oxygen Demand (COD)									
USEPA 415.1	TOC by Wet Chemical Oxidation									
USEPA 420.2	Phenols									
USEPA 502.1	Volatile Halogenated Organic Compounds	✓	✓	✓	✓	✓	✓	✓	✓	✓
USEPA 502.2	Volatile Organics	✓	✓	✓	✓	✓	✓	✓	✓	✓
USEPA 503.1	Volatile Aromatics and Unsaturated Organics	✓	✓	✓	✓	✓	✓	✓	✓	✓
USEPA 524.1	Volatile Organic Compounds	✓	✓	✓	✓	✓	✓	✓	✓	✓
USEPA 524.2	Volatile Organic Compounds	✓	✓	✓	✓	✓	✓	✓	✓	✓
USEPA 601	Purgeable Halocarbons	✓	✓	✓	✓	✓	✓	✓	✓	✓
USEPA 602	Purgeable Aromatics	✓	✓	✓	✓	✓	✓	✓	✓	✓
USEPA 603	Acrolein and Acrylonitrile	✓	✓	✓	✓	✓	✓	✓	✓	✓
USEPA 608	Organochlorine Pesticides and PCBs	✓	✓	✓	✓	✓	✓	✓	✓	✓
USEPA 624	Purgeable Organics	✓	✓	✓	✓	✓	✓	✓	✓	✓
USEPA 625-S	Priority Pollutants in Wastewater Sludge	✓	✓	✓	✓	✓	✓	✓	✓	✓
USEPA 3015	Microwave Digestion of Aqueous Samples	✓	✓	✓	✓	✓	✓	✓	✓	✓
USEPA 3051	Sediments, Soils, Sludges, & Oils	✓	✓	✓	✓	✓	✓	✓	✓	✓
USEPA 3052	Total Microwave Digestion	✓	✓	✓	✓	✓	✓	✓	✓	✓
USEPA 5035	Volatile Organics in Soil & Waste Samples	✓	✓	✓	✓	✓	✓	✓	✓	✓
USEPA 8010	Halogenated Volatile Organics	✓	✓	✓	✓	✓	✓	✓	✓	✓
USEPA 8015	Nonhalogenated Volatile Organics	✓	✓	✓	✓	✓	✓	✓	✓	✓
USEPA 8020	Aromatic Volatile Organics	✓	✓	✓	✓	✓	✓	✓	✓	✓
USEPA 8021	Volatile Organics	✓	✓	✓	✓	✓	✓	✓	✓	✓
USEPA 8030	Acrolein, Acrylonitrile, Acetonitrile	✓	✓	✓	✓	✓	✓	✓	✓	✓
USEPA 8240	Volatile Organics	✓	✓	✓	✓	✓	✓	✓	✓	✓
USEPA 8260	Purgeable Organics	✓	✓	✓	✓	✓	✓	✓	✓	✓
USEPA 8275A	Semivolatile Organic Compounds	✓	✓	✓	✓	✓	✓	✓	✓	✓
USEPA 9060	TOC in Groundwater	✓	✓	✓	✓	✓	✓	✓	✓	✓
USEPA TO-1	Volatile Organic Compounds in Ambient Air	✓	✓	✓	✓	✓	✓	✓	✓	✓
USEPA TO-2	Highly Volatile Organics in Ambient Air	✓	✓	✓	✓	✓	✓	✓	✓	✓
USEPA 5040, 5041 VOST	Volatile Organic Sampling Train (VOST)	✓	✓	✓	✓	✓	✓	✓	✓	✓

ASTM Methods		Purge-and-Trap Sample Concentrator	GC Liquid Autosampler	Vial Autosampler	Discrete Purging Multisampler	Multiple Heater Controller	Air-Tube Multisampler	Headspace Sampler	Water/Soil Autosampler	Cryo-Focusing System
ASTM D1068-90	Iron, Total									
ASTM D1252-88	Chemical Oxygen Demand (COD)									
ASTM D1687-92	Chromium VI Dissolved									
ASTM D2036-91	Cyanide Amenable to Chlorination									
ASTM D2579-93	TC & TOC in Water									
ASTM D2972-93	Arsenic, Total									
ASTM D3120-92	Trace Sulfur in Light Petroleum Hydrocarbons									
ASTM D3246-92	Sulfur in Petroleum Gas									
ASTM D3867-90	Nitrate-Nitrite									
ASTM D3871-84(1990)	Purgeable Organic Compounds in Water	✓	✓	✓	✓	✓	✓	✓	✓	✓
ASTM D3961-89(1993)	Trace Sulfur in Liquid Aromatic Hydrocarbons									
ASTM D4779-93	TOC in High Purity Water									
ASTM D4839-94	TOC in Water									
Standard Methods										
Std. Method 3500C	Total-Arsenic									
	Total-Aluminum, Cadmium, Chromium, Copper, Iron, Lead, Potassium; Chromium VI Dissolved									
Std. Method 3500D	Total-Copper, Zinc									
Std. Method 3500E	Total-Boron									
Std. Method 4500B	Chloride, Total-Fluoride									
Std. Method 4500E	Nitrate-Nitrite, Orthophosphate, Phosphorus(Total)									
Std. Method 4500F	Cyanide Amenable to Chlorination									
Std. Method 4500G	Ammonia, Nitrate-Nitrite									
Std. Method 4500H	Chemical Oxygen Demand (COD)									
Std. Method 5200D	TOC by Combustion Oxidation									
Std. Method 5310B	TOC by Persulfate-Ultraviolet or Heated-Persulfate Oxidation Method									
Std. Method 5310C	TOC by Wet Chemical Oxidation									
Std. Method 5310D (505C)	Volatile Organics	✓	✓	✓	✓	✓	✓	✓	✓	✓
Std. Method 6210B, C, D	Volatile Aromatic Organics	✓	✓	✓	✓	✓	✓	✓	✓	✓
Std. Method 6220B, C	Volatile Aromatic Organics	✓	✓	✓	✓	✓	✓	✓	✓	✓
Std. Method 6220D	Volatile Aromatic Organics	✓	✓	✓	✓	✓	✓	✓	✓	✓
Std. Method 6230B, C	Volatile Halocarbons	✓	✓	✓	✓	✓	✓	✓	✓	✓
Std. Method 6230D	Volatile Halocarbons	✓	✓	✓	✓	✓	✓	✓	✓	✓
Std. Method 6230E	Volatile Halocarbons	✓	✓	✓	✓	✓	✓	✓	✓	✓
Std. Method 6232C	Trihalomethanes	✓	✓	✓	✓	✓	✓	✓	✓	✓
Std. Method 6232D	Trihalomethanes	✓	✓	✓	✓	✓	✓	✓	✓	✓
USP Methods										
USP Oxidizable Sub. Test	Oxidizable Substances Test Substitute									
USP 467 Method II	Volatile Organics	✓	✓	✓	✓	✓	✓	✓	✓	✓



To order call 1-800-653-1711 (USA/Canada) or 409-690-1711



OI Analytical's line of unique GC detector products continues to expand. In 1984, OI Analytical introduced the Electrolytic Conductivity Detector (ELCD) for the analysis of halogenated VOCs in water and soils. Since then OI Analytical's GC detector line has grown to a market leading position through the introduction of additional stand-alone detector offerings and the revolutionary, patented tandem detector design. The tandem design, including the PID/ELCD, PID/FID, and the recently introduced PID/XSD, eliminates transfer lines, improves performance, and occupies only one detector port.

Our recent introduction of the latest technology in flame photometric detectors, the PFPD, is proving itself as the detector of choice for extremely low-level, highly selective detection of sulfur and phosphorous containing compounds.


All detectors are available for installation on HP GCs as well as many other market leading GCs. OI Analytical's GC detector line represents the leading edge of technology.

GC Detectors

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Model 5380 Pulsed Flame Photometric Detector

Model 5380 Pulsed Flame Photometric Detector

The Model 5380 is the latest advance in flame photometric detector design. Compared to standard FPDs, the PFPD offers a significant enhancement in selectivity for sulfur and phosphorus compounds, as well as improved sensitivity; it uses only 10% of combustion gas required for standard FPDs. Two analog outputs for each separate element being analyzed permit simultaneous S and P, S and hydrocarbon, or many other dual element outputs. The WinPulse™ software program, included with the PFPD, permits ease-of-use and optimization of the PFPD operational parameters. The PFPD can also be optimized for the selective detection of 28 different elements (not simultaneously). The PFPD is available with either manual flow control or Electronic Flow Control (EPC) of detector gases. 

Model 5380 PFPD w/Pneumatics

Includes 5380 Detector Controller, PFPD sensor assembly with GC specific mounting brackets, PMT and optical filter optimized for sulfur analysis (other types available as options), manual flow control, WinPulse software package, supplies, and operator's manual. *Requires two appropriate signal cables.*

Model 5380 w/Pneu - HP 6890 (110 V)286278

Model 5380 w/Pneu - HP 6890 (220 V)285080

Model 5380 w/Pneu - HP 5890 (110 V)283127

Model 5380 w/Pneu - HP 5890 (220 V)285072

Model 5380 w/Pneu - Shimadzu (110 V)285098

Model 5380 w/Pneu - Shimadzu (220 V)287656

- Improved Sensitivity
- Improved Selectivity
- Windows®-Based Control



Model 5380 Pulsed Flame Photometric Detector

Model 5380 PFPD w/out Pneumatics

When using the EPC flow control in the HP 6890 to provide detector gas flow control. Includes 5380 Detector Controller, PFPD sensor assembly with GC specific mounting brackets, PMT and optical filter optimized for sulfur analysis (other types available as options), WinPulse software package, supplies, and operator's manual. *Requires Aux or OIM EPC Flow Module (#275974), PFPD EPC detector kit (#286355), and two appropriate signal cables.*

Model 5380/EPC Pneu - HP 6890 (110 V)289603

Model 5380/EPC Pneu - HP 6890 (220 V)289611

OI Analytical detectors are available for additional GC models not listed above. Please contact the OI Analytical Sales Department for more information.



To order call 1-800-653-1711 (USA/Canada) or 409-690-1711



Model 5380 Pulsed Flame Photometric Detector

Model 5380 PFPD - HP 6890 Valve Box

Specially configured mounting bracket is included for installing the PFPD in the valve box area of the HP 6890 GC. (No valve oven can be installed in the GC when using this option.) *Requires HP 6890 cabling and heater control to be installed in the GC.*

Model 5380 w/Pneu - Valve Box (110 V)296400

Model 5380 w/Pneu - Valve Box (220 V)296418

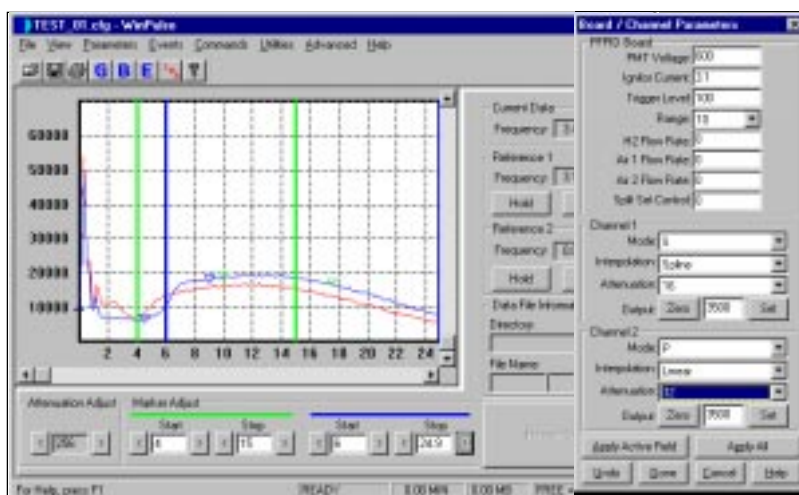
Model 5380 w/o Pneu - Valve Box (110 V)296384

Model 5380 w/o Pneu - Valve Box (220 V)296392

PFPDView Software

PFPDView software package is a new software option for the PFPD. This software reprocesses (post-run) an entire chromatographic run under different PFPD operational parameters without the need for rerunning the chromatographic analysis. A new data output file is generated from the program, in A.I.A format, allowing subsequent reprocessing by most chromatographic data handling packages.

PFPDView Software Package293118



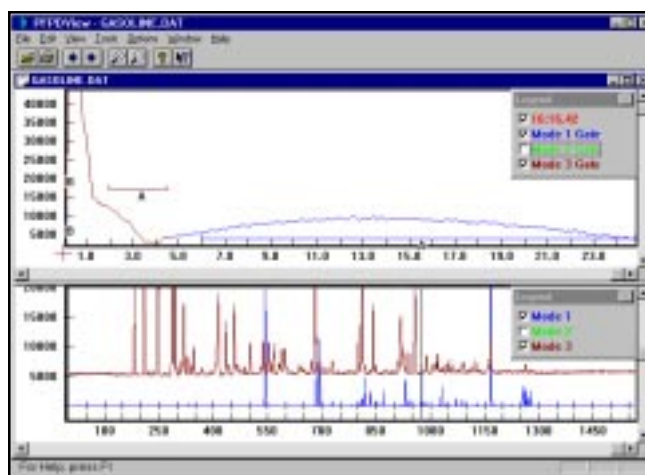
WinPulse Screen



Customer Communications

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OI Analytical is proud to provide the highest quality instruments available, backed by a commitment to quality, service, and support. **Call 1-800-653-1711.**



PFPDView Screen

Model 4430 Photoionization Detector

Model 4430 Photoionization Detector

The Model 4430 is OI Analytical's base model PID. The PID features a unique Window Sweep design that prevents the sample stream from coming in contact with and contaminating the lamp window. This minimizes the down time normally required for window cleaning in other PIDs and allows the analysis of photosensitive compounds that would otherwise polymerize on the window surface. This model uses the GC's own electrometer board (and bias voltage if required). Some GC models must be equipped with gas supplies for both sweep gas and makeup gas (typically carrier gas).

Model 4430 Photoionization Detector - HP 6890

Includes PID sensor with sweep gas design, lamp power supply module, mounting bracket assembly, 10.0 eV lamp, electrometer and interface cards, and operator's manual. *Requires appropriate 6890 EPC or manual gas module and one electrometer slot on the HP 6890 GC.*

Model 4430 PID (110 V)274654
Model 4430 PID (220 V)274662

Model 4430 Photoionization Detector - HP 5890

Includes PID sensor with sweep gas design, lamp power supply module, mounting bracket assembly, 10.0 eV lamp, electrometer card, gas flow module, and operator's manual. *Requires one electrometer slot on the HP 5890 GC.*

Model 4430 PID (110 V)187310
Model 4430 PID (220 V)234336



Model 4430 Photoionization Detector

Model 4430 Photoionization Detector - Varian*

Includes PID sensor with sweep gas design, lamp power supply module, 10.0 eV lamp, mounting bracket assembly, and operator's manual. ** Requires gas supply and electrometer board on the GC.*

Model 4430 PID - Var. 3400/3600 (110 V) ... 193524
Model 4430 PID - Var. 3400/3600 (220 V) ... 276766
Model 4430 PID - Var. 3800 (110 V) 301036
Model 4430 PID - Var. 3800 (220 V) 301044

Model 4430 Photoionization Detector - Shimadzu

Includes PID sensor with sweep gas design, lamp power supply module, 10.0 eV lamp, electrometer cable, mounting bracket assembly, polarizing voltage cable, and operator's manual. *Requires gas supply and electrometer board on the GC.*

Model 4430 PID (110 V) 250720
Model 4430 PID (220 V) 274415

OI Analytical detectors are available for additional GC models not listed above. Please contact the OI Analytical Sales Department for more information.

* Orders for OI Analytical detectors for Varian 3400/3600 GC must also include the purchase of a detector heater block. See page 48 for the appropriate heater block.

Model 5320 Electrolytic Conductivity Detector

Model 5320 Electrolytic Conductivity Detector

The Model 5320 ELCD is the third generation of halogen selective ELCDs available from OI Analytical. With its newly developed cell, reactor, solvent system, and electronics, the Model 5320 represents a true advance in detector technology for capillary gas chromatography. Designed to provide the same detector performance specifications as our earlier models, the 5300 series provides even greater reliability and ease-of-use at a significant cost savings. An appropriate signal cable to the GC data handling system is required. Some models of GCs require a reactor gas supply (H₂).



Model 5320 Electrolytic Conductivity Detector

Model 5320 ELCD - HP 6890

Includes 5300 Detector Controller with reactor temperature control, cell assembly power supply, quick-release reactor design, 1/16" low-internal-volume detector base, integrated cell/solvent assembly with quick-change resin cartridge, start-up kit, and operator's manual. *Requires detector signal cable (page 47) and appropriate 6890 EPC or manual gas module.*

Model 5320 ELCD (100/110 V) 274738
Model 5320 ELCD (220 V) 274746

Model 5320 ELCD - HP 5890

Includes 5300 Detector Controller with reactor temperature control, cell assembly power supply, quick-release reactor design, 1/16" low-internal-volume detector base, integrated cell/solvent assembly with quick-change resin cartridge, gas flow module, start-up kit, and operator's manual. *Requires detector signal cable (page 47).*

Halogen Mode

Model 5320 ELCD (100/110 V) 274910
Model 5320 ELCD (220 V) 274928

OI Analytical detectors are available for additional GC models not listed above. Please contact the OI Sales Department for more information.

Model 5320 ELCD - Varian*

Includes 5300 Detector Controller with reactor temperature control, cell assembly power supply, quick-release reactor design, 1/16" low-internal-volume detector base, integrated cell/solvent assembly with quick-change resin cartridge, start-up kit, and operator's manual. *Requires detector signal cable (page 48) and gas flow module*

Model 5320 - Varian 3400/3600 (110 V) 291278
Model 5320 - Varian 3400/3600 (220 V) 291310
Model 5320 - Varian 3800 (110 V) 301036
Model 5320 - Varian 3800 (220 V) 301044

Model 5320 ELCD - Shimadzu 17A

Includes 5300 Detector Controller with reactor temperature control, cell assembly power supply, quick-release reactor design, 1/16" low-internal-volume detector base, integrated cell/solvent assembly with quick-change resin cartridge, start-up kit, and operator's manual. *Requires detector signal cable (page 48) and gas flow module.*

Model 5320 ELCD (100/110 V)
Model 5320 ELCD (220 V)

*Please
Inquire*

* Orders for OI Analytical detectors for Varian 3400/3600 GC must also include the purchase of a detector heater block. See page 48 for the appropriate heater block.

Model 5322 Dual Electrolytic Conductivity Detector

Model 5322 Dual ELCD

The Model 5322 ELCD consists of two detectors for mounting onto a single gas chromatograph (uses two detector ports). The detectors are operated from two 5300 Detector Controllers. Each 5300 Detector Controller provides a 0–1 V signal for one detector. Appropriate cables are required. Some models of GCs require a reactor gas supply (H₂).

Model 5322 Dual ELCD - HP 6890

Includes 5300 Detector Controller with reactor temperature control, cell assembly power supply, quick-release reactor design, two 1/16" low-internal-volume detector bases and mounting assemblies, two integrated cell/solvent assemblies with quick-change resin cartridge, two-line gas flow module, start-up kits, and operator's manual. *Requires two detector signal cables (page 47) and appropriate 6890 EPC or manual gas module.*

Halogen Mode

Model 5322 Dual ELCD (110 V) 294249

Model 5322 Dual ELCD (220 V) 294256

Model 5322 Dual ELCD - HP 5890

Includes 5300 Detector Controller with reactor temperature control, cell assembly power supply, quick-release reactor design, two 1/16" low-internal-volume detector bases and mounting assemblies, two integrated cell/solvent assemblies with quick-change resin cartridge, start-up kits, and operator's manual. *Requires two detector signal cables (page 47).*

Model 5322 Dual ELCD (110 V) 285122

Model 5322 Dual ELCD (220 V) 294231

Model 5322 Dual ELCD - Varian 3400/3600

Includes 5300 Detector Controller with reactor temperature control, cell assembly power supply, quick-release reactor design, two 1/16" low-internal-volume detector bases and mounting assemblies, two integrated cell/solvent assemblies with quick-change resin cartridge, start-up kits, and operator's manual. *Requires two detector signal cables (page 48), gas flow module, and appropriate heater block (page 48).*

Model 5322 Dual ELCD (110 V) 294199

Model 5322 Dual ELCD (220 V) 294207

RENTING

Allow OI Analytical to meet your short-term equipment needs with our renting program. Most products are available for same day delivery.




To order call 1-800-653-1711 (USA/Canada) or 409-690-1711



Model 5360 Halogen Specific Detector (XSD)

Model 5360 Halogen Specific Detector

OI Analytical's Model 5360 XSD has been specifically developed for the selective detection of halogenated compounds. The simple design improves reliability and reproducibility, reduces maintenance, and completely eliminates the need for organic solvents and reaction tubes. An excellent alternative in many applications currently using either ELCs or Electron Capture Detectors (ECD). 

Model 5360 XSD - HP 6890

Includes 5300 Detector Controller with temperature control and detector electrometer, XSD sensor, quick-release XSD reactor, mounting assembly/bracket, start-up kit, and operator's manual. *Requires detector signal cable (page 47) and appropriate 6890 EPC or manual gas module.*

Model 5360 XSD (100/120 V)274779

Model 5360 XSD (220 V).....274787

Model 5360 XSD - HP 5890

Includes 5300 Detector Controller with temperature control and detector electrometer, XSD sensor, quick-release XSD reactor, mounting assembly/bracket, 1-line gas flow module, start-up kit, and operator's manual. *Requires detector signal cable (page 47).*

Model 5360 XSD (100/120 V)250662

Model 5360 XSD (220 V).....274894

Kit - Adding XSD to existing 4430 PID285809

Model 5360 XSD - Varian

Includes 5300 Detector Controller with temperature control and detector electrometer, XSD sensor, quick-release XSD reactor, mounting assembly/bracket, start-up kit, and operator's manual. *Requires detector signal cable (page 48), dedicated detector base, and appropriate gas supply.*

Model 5360 XSD - 3400/3600 (110 V)279661

Model 5360 XSD - Varian 3800 (110 V)301077



Model 5360 Halogen Specific Detector

Model 5360 XSD - Shimadzu 17A (Version 2 or 3)

Includes 5300 Detector Controller with temperature control and detector electrometer, XSD sensor, quick-release XSD reactor, mounting assembly/bracket, start-up kit, and operator's manual. *Requires detector signal cable (page 48) and appropriate gas supply.*

Model 5360 XSD (110 V).....290643

Model 5360 XSD (220 V).....291906

Venting Option for Model 5360

Permits venting of the column effluent from the Model 5360 XSD. Contains all hardware and cabling required for installation onto the detector. Control is via the GC timed events relay.

Venting Option - HP 6890279877

Venting Option - HP 5890246074

Venting Option - Varian280511

Venting Option - Shimadzu290635

OI Analytical detectors are available for additional GC models not listed above. Please contact the OI Analytical Sales Department for more information.

Model 5350 Tandem PID/ELCD Detector

Model 5350 Tandem PID/ELCD Detector

The Model 5350 Tandem PID/ELCD is a versatile instrument, specified in many USEPA methods, for the determination of volatile organic compounds. The PID/ELCD uses OI Analytical's patented tandem design to provide dual detector capability to a GC while only using a single GC detector port. The low cost Model 5350 uses individual control boxes for the PID and ELCD for optimized selectivity. Appropriate cables and gas supplies are required.



Model 5350 PID/ELCD Tandem Detector

Model 5350 Tandem PID/ELCD - HP 6890

Includes 5300 Detector Controller with reactor temperature control, cell assembly power supply, quick-release reactor design, mounting bracket assembly, integrated cell/solvent assembly with quick-change resin cartridge, PID sensor with sweep gas design, 10.0 eV lamp, PID 4430 lamp power supply, PID electrometer, start-up kits, and operator's manuals. *Requires ELCD signal cable (page 47) and appropriate 6890 EPC or manual gas module.*

Model 5350 PID/ELCD (110 V) 274811
Model 5350 PID/ELCD (220 V) 274829

Model 5350 Tandem PID/ELCD - HP 5890

Includes 5300 Detector Controller with reactor temperature control, cell assembly power supply, quick-release reactor design, mounting bracket assembly, integrated cell/solvent assembly with quick-change resin cartridge, PID sensor with sweep gas design, 10.0 eV lamp, PID 4430 lamp power supply, PID electrometer, 2-line gas flow module, start-up kits, and operator's manuals. *Requires ELCD signal cable (page 47).*

Model 5350 PID/ELCD (110 V) 274936
Model 5350 PID/ELCD (220 V) 274944

* Orders for OI Analytical detectors for Varian 3400/3600 GC must also include the purchase of a detector heater block. See page 48 for the appropriate heater block.

Model 5350 Tandem PID/ELCD - Varian*

Includes 5300 Detector Controller with reactor temperature control, cell assembly power supply, quick-release reactor design, mounting bracket assembly, integrated cell/solvent assembly with quick-change resin cartridge, PID sensor with sweep gas design, 10.0 eV lamp, PID 4430 lamp power supply, start-up kits, and operator's manuals. *Requires ELCD and PID signal cables, electrometer board, and dual gas supplies.*

Model 5350 PID/ELCD - 3400/3600 (110 V) 294215
Model 5350 PID/ELCD - 3400/3600 (220 V) 294223
Model 5352 Dual - 3400/3600 (110 V) 291951
Model 5350 PID/ELCD - 3800 (110 V) 301085
Model 5350 PID/ELCD - 3800 (220 V) 301093

Model 5350 Tandem PID/ELCD - Shimadzu

Includes 5300 Detector Controller with reactor temperature control, cell assembly power supply, quick-release reactor design, mounting bracket assembly, integrated cell/solvent assembly with quick-change resin cartridge, PID sensor with sweep gas design, 10.0 eV lamp, PID 4430 lamp power supply, PID electrometer, 2-line gas flow module, start-up kits, and operator's manuals. *Requires PID and ELCD signal cables, electrometer board, and dual gas supplies.*

Model 5350 PID/ELCD (110 V) 293027
Model 5350 PID/ELCD (220 V) 293035



To order call 1-800-653-1711 (USA/Canada) or 409-690-1711



Model 5390 Tandem PID/XSD Detector

Model 5390 Tandem PID/XSD Detector

OI Analytical has recently been issued a patent on the tandem PID/XSD (patent #5,578,271). OI Analytical's tandem detector design eliminates the need for and problems associated with transfer lines between detectors operated in series. This design also allows simultaneous detection with two detectors while only occupying a single detector port on the GC. The Model 5390 uses individual control boxes for the PID and XSD. Appropriate cables and gas supplies are required.



Model 5390 PID/XSD Tandem Detector

Model 5390 Tandem PID/XSD - HP 6890

Includes 5300 Detector Controller with temperature control and detector electrometer, XSD sensor, quick-release XSD reactor, mounting assembly/bracket, PID sensor with sweep gas design, 10.0 eV lamp, PID 4430 lamp power supply, PID electrometer, start-up kits, and operator's manuals. *Requires XSD signal cable and appropriate 6890 EPC or manual gas module.*

Model 5390 PID/XSD (110 V).....275073

Model 5390 PID/XSD (220 V).....280644

Model 5390 Tandem PID/XSD Detector - HP 5890

Includes 5300 Detector Controller with temperature control and detector electrometer, XSD sensor, quick-release XSD reactor, mounting assembly/bracket, PID sensor with sweep gas design, 10.0 eV lamp, PID 4430 lamp power supply, PID electrometer, 2-line gas flow module, start-up kits, and operator's manuals. *Requires XSD signal cable.*

Model 5390 PID/XSD (110 V)..... 275065

Model 5390 PID/XSD (220 V)..... 280636


Kit to add XSD to Existing PID - HP 5890 ..285809



OI Analytical offers several finance programs for your convenience. Leasing programs as well as our rent-to-own program are available to help you get the equipment you need.

Model 4450 Tandem PID/FID Detector/Model 4410 and 4415 FID

Model 4450 Tandem PID/FID Detector

The Model 4450 is a tandem detector system incorporating the Model 4430 PID and Model 4410 FID. Excellent simultaneous results can be obtained with the PID/FID using either packed or capillary columns. 

Model 4450 Tandem PID/FID Detector - HP 6890

Includes PID sensor with sweep gas design, lamp power supply, 10.0 eV lamp, FID sensor, two electrometer cards, mounting bracket assembly, and operator's manuals. *Requires two electrometer slots on the HP 6890 GC and appropriate 6890 EPC or manual gas module.*

Model 4450 PID/FID (110 V)274837
Model 4450 PID/FID (220 V)274845

Model 4450 Tandem PID/FID Detector - HP 5890

Includes PID sensor with sweep gas design, lamp power supply, 10.0 eV lamp, FID sensor, two electrometer cards, 2-line PID/FID gas flow module, mounting bracket assembly, and operator's manuals. *Requires two electrometer slots on the HP 5890 GC.*

Model 4450 PID/FID (110 V)192138
Model 4450 PID/FID (220 V)258749

Model 4410 FID - HP 5890

Includes FID body, gas flow module, electrometer card, and operator's manual. Specifically designed for tandem PID/FID operation. *Requires Model 4430 PID. Requires one electrometer slot on the HP 5890 GC.*

Model 4410 FID (for PID/FID) (90–110 V) ...195354



**Model 4450 Tandem Photoionization/
Flame-Ionization Detector (PID/FID)**

Model 4415 FID - Varian*/Shimadzu 17A

The Model 4415 FID is a new FID available for tandem operation with the Model 4430 PID on non-Hewlett-Packard GCs. This new model uses the GC's FID electrometer to provide tandem PID/FID capability to most GC models. Includes FID body, cables, and operator's manual. Specifically designed for tandem PID/FID operation. *Requires Model 4430 PID, GC's FID electrometer, and an appropriate gas supply.*

Model 4415 FID -

Varian 3400/3600 (110/220 V)283341
Model 4415 FID - Varian 3800 (110/220 V) ..301101
Model 4415 FID - Shimadzu 17A (110 V)284612

OI Analytical detectors are available for additional GC models not listed above. Please contact the OI Analytical Sales Department for more information.

* Orders for OI Analytical detectors for Varian 3400/3600 GC must also include the purchase of a detector heater block. See page 48 for the appropriate heater block.



To order call 1-800-653-1711 (USA/Canada) or 409-690-1711



Detector Accessories for HP 5890 Series II and 6890 Series GCs

Cables for 5300/5200/4400 Detectors Part

5360/5380/5200/4440/4420 Detectors		
Cable	BNC to HP 5890 AIB	229641
Cable	BNC to HP 6890 AIB	274852
Cable	BNC to HP Integrator	229633
Cable	BNC to Spade Lugs	215962
5320 Detector		
Cable	Cell Amp to HP 5890 AIB	246371
Cable	Cell Amp to HP 6890 AIB	246389
Cable	Cell Amp to HP Integrator	246397
Cable	Cell Amp to Spade Lugs	246405
Cable	HP 6890 External Events	252569
Cable	HP 6890 Analog Signal Cable to Spade Lugs	252551

*BNC Connectors are used on Models 52XX, 5360, and 5380 detecto.rs

Electrometers Part

PID or FID Electrometer Card	HP 5890	187344
PID or FID Electrometer Card	HP 6890	274860
PID or FID Interface Card	HP 6890	274878
HP Analog Input Board (AIB)	HP 5890	187716
HP Analog Input Board (AIB)	HP 6890	274886
OI Single Channel Electrometer (110 V)	All GCs	194720
OI Dual Channel Electrometer (110 V)	All GCs	194910

Gas Flow Modules - HP 5890 Part

1-Line 5220	225037
2-Line Dual ELCD (5222)	232371
2-Line PID/ELCD	187302
2-Line PID/FID	192013
Inlet Pressure Control Accessory (IPCP)	204776

Gas Flow Modules - HP 6890 Part

Inlet Gas Flow Modules	
PCM (EPC) Pneumatic Control Module Kit	285015
Volatiles Inlet with PCM Flow Module	284992
Detector Gas Flow Modules	
AUX-EPC Module	275974
FID EPC Module	275032
Manual FID (may require pressure regulator)	275016
OIM EPC (must supply exact detector configuration with order)	285049
Pressure Regulator for Manual FID Gas Flow Module	275040

Reactor Bases

Model 5320 ELCD 1/16" HP 5890.....	279828
Model 5320 ELCD 1/16" HP 6890.....	279885
Model 5220 ELCD 1/32" HP 5890.....	226175
Model 5360 XSD 1/16" HP 5890	246066
Model 5360 XSD 1/16" HP 6890	279869

Detector Base	Column I.D.	Ferrule I.D.	Part #	Kit
1/32"	0.53	0.8 mm	255786	6/pk
1/32"	0.32	0.5 mm	255794	6/pk
1/32"	<0.32	0.4 mm	236505	each
1/16"	0.53	0.8 mm	196105	10/pk
1/16"	0.32	0.5 mm	196113	10/pk
1/16"	<0.32	0.4 mm	208330	10/pk

Detector Accessories for Varian GCs

Cables for 5360/5200/4400 Series Detectors and Reactor Upgrade

5360/5200/4440/4420 to Spade Lugs (72") 215962

Cable takes detector signal from 5300/5200 Detector Controller to spade lug connectors.

Gas Flow Valve

2-Line, Varian 3400/3600 (PID/ELCD) 193417

PID Accessories

Model 4430 Start-up Kit - Varian 186973

Heater Blocks for Varian 3400/3600 GC

OI Analytical detectors for Varian GCs require one of the heater blocks listed below.

Heater Block A3400 Varian Base (PID/ELCD) 253088

Heater Block B3400 Varian Base (ELCD) 253070

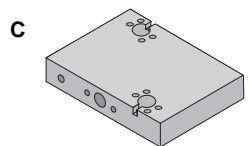
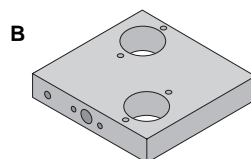
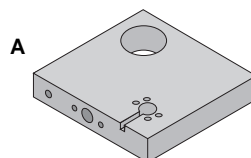
Heater Block C3400 Varian Base (PID) 264184

Heater Block A3600 Varian Base (PID/ELCD) 259432

Heater Block B3600 Varian Base (ELCD) 259424

Heater Block C3600 Varian Base (PID) 259440

Please inquire about detector accessories for the new Varian 3800 GC. (Heater blocks are not required for the Varian 3800 GC.)



Varian 3400 and 3600 Configuration	Heater Block		
	A	B	C
1 ELCD	✓	✓	
1 PID	✓		✓
1 PID/ELCD	✓		✓
2 ELCDs		✓	
2 PIDs			✓
2 PID/ELCDs			✓
1 ELCD & 1 PID	✓		
1 ELCD & 1 PID/ELCD	✓		
1 PID & 1 PID/ELCD			✓

Heater Blocks for Varian GC



To order call 1-800-653-1711 (USA/Canada) or 409-690-1711



Applications Guide

Applications	GC Systems		Sample Introduction										GC Detectors							Analyzers					Sample Prep																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
	System VOC	System BTEX	Pesticides Analysis System	P & T Concentrator	GC Liquid Autosampler	Vial Autosampler	Discrete Purging Multisampler	Multiple Heater Controller	Air-Tube Multisampler	Headspace Sampler	Water/Soil Autosampler	Cryo-Focusing System	ELCD	PFPD	PID	XSD	PID/XSD	PID/FID	PID/ELCD	Monitoring System - FM-2000	TOC Analyzer	Flow Solution 3000	Flow Solution IV	Triple Check Analyzer	Aqua-Check Analyzer	Analytical Microwave System	Extraction and Recovery	GPC Clean-up																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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The chart above is a guide to this catalog. This information is intended only as a reference for this catalog and is not intended to define method requirements. Complete method information is available in the Annual Book of ASTM Standards, Federal Register, Standard Methods for the Examination of Water and Wastewater, and USP XXII.

Methods Guide

USEPA Methods		Electrolytic Conductivity (ELCD)	Pulsed Flame Photometric Detector	Photoionization (PID)	Halogen Specific (XSD)	PID/XSD	PID/Flame-Ionization (PID/FID)	PID/ELCD
USEPA 130.1	Total-Hardness							
USEPA 206.4	Total-Arsenic							
USEPA 212.3	Total-Boron							
USEPA 310.2	Alkalinity							
USEPA 325.1 & 325.2	Chloride							
USEPA 335.1	Cyanide Amenable to Chlorination							
USEPA 335.3	Total-Cyanide							
USEPA 340.3	Total-Fluoride							
USEPA 350.1	Ammonia							
USEPA 353.1 & 353.2	Nitrate-Nitrite							
USEPA 365.1	Orthophosphate, Total-Phosphorus							
USEPA 375.1	Sulfate							
USEPA 410.4	Chemical Oxygen Demand (COD)							
USEPA 415.1	TOC by Wet Chemical Oxidation							
USEPA 420.2	Phenols							
USEPA 502.1	Volatile Halogenated Organic Compounds	✓		♦				✓
USEPA 502.2	Volatile Organics				♦			
USEPA 503.1	Volatile Aromatics and Unsaturated Organics		✓			✓	✓	✓
USEPA 524.1	Volatile Organic Compounds							
USEPA 524.2	Volatile Organic Compounds							
USEPA 601	Purgeable Halocarbons	✓		♦				✓
USEPA 602	Purgeable Aromatics		✓			✓	✓	✓
USEPA 603	Acrolein and Acrylonitrile							✓
USEPA 608	Organochlorine Pesticides and PCBs	✓		♦				
USEPA 624	Purgeable Organics							
USEPA 625-S	Priority Pollutants in Wastewater Sludge							
USEPA 3015	Microwave Digestion of Aqueous Samples							
USEPA 3051	Sediments, Soils, Sludges, & Oils							
USEPA 3052	Total Microwave Digestion							
USEPA 5035	Volatile Organics in Soil & Waste Samples		✓	✓	✓	✓	✓	✓
USEPA 8010	Halogenated Volatile Organics	✓		♦				✓
USEPA 8015	Nonhalogenated Volatile Organics						✓	
USEPA 8020	Aromatic Volatile Organics		✓			✓	✓	✓
USEPA 8021	Volatile Organics							✓
USEPA 8030	Acrolein, Acrylonitrile, Acetonitrile					✓		
USEPA 8240	Volatile Organics							
USEPA 8260	Purgeable Organics							
USEPA 8275A	Semivolatile Organic Compounds							
USEPA 9060	TOC in Groundwater							
USEPA TO-1	Volatile Organic Compounds in Ambient Air							
USEPA TO-2	Highly Volatile Organics in Ambient Air							
USEPA 5040, 5041 VOST	Volatile Organic Sampling Train (VOST)							

ASTM Methods		Electrolytic Conductivity (ELCD)	Pulsed Flame Photometric Detector	Photoionization (PID)	Halogen Specific (XSD)	PID/XSD	PID/Flame-Ionization (PID/FID)	PID/ELCD
ASTM D1068-90	Iron, Total							
ASTM D1252-88	Chemical Oxygen Demand (COD)							
ASTM D1687-92	Chromium VI Dissolved							
ASTM D2036-91	Cyanide Amenable to Chlorination							
ASTM D2579-93	TC & TOC in Water							
ASTM D2972-93	Arsenic, Total							
ASTM D3120-92	Trace Sulfur in Light Petroleum Hydrocarbons			✓				
ASTM D3246-92	Sulfur in Petroleum Gas			✓				
ASTM D3867-90	Nitrate-Nitrite							
ASTM D3871-84(1990)	Purgeable Organic Compounds in Water	✓			♦		✓	✓
ASTM D3961-89(1993)	Trace Sulfur in Liquid Aromatic Hydrocarbons			✓				
ASTM D4779-93	TOC in High Purity Water							
ASTM D4839-94	TOC in Water							

Standard Methods		Electrolytic Conductivity (ELCD)	Pulsed Flame Photometric Detector	Photoionization (PID)	Halogen Specific (XSD)	PID/XSD	PID/Flame-Ionization (PID/FID)	PID/ELCD
Std. Method 3500C	Total-Arsenic							
	Total-Aluminum, Cadmium, Chromium, Copper, Iron, Lead, Potassium; Chromium VI							
Std. Method 3500D	Copper, Iron, Lead, Potassium; Chromium VI							
Std. Method 3500E	Total-Copper, Zinc							
Std. Method 4500B	Total-Boron							
Std. Method 4500E	Chloride, Total-Fluoride							
	Nitrate-Nitrite, Orthophosphate, Phosphorus(Total)							
Std. Method 4500F	Phosphorus(Total)							
Std. Method 4500G	Cyanide Amenable to Chlorination							
Std. Method 4500H	Ammonia, Nitrate-Nitrite							
Std. Method 5200D	Chemical Oxygen Demand (COD)							
Std. Method 5310B	TOC by Combustion Oxidation							
	TOC by Persulfate-Ultraviolet or Heated-Persulfate Oxidation Method							
Std. Method 5310C	Persulfate Oxidation Method							
Std. Method 5310D (505C)	TOC by Wet Chemical Oxidation							
Std. Method 6210B, C, D	Volatile Organics							
Std. Method 6220B, C	Volatile Aromatic Organics			✓		✓	✓	✓
Std. Method 6220D	Volatile Aromatic Organics							
Std. Method 6230B, C	Volatile Halocarbons	✓			♦		✓	
Std. Method 6230D	Volatile Halocarbons							✓
Std. Method 6230E	Volatile Halocarbons							
Std. Method 6232C	Trihalomethanes							
Std. Method 6232D	Trihalomethanes	✓		✓	♦		✓	

USP Methods		Electrolytic Conductivity (ELCD)	Pulsed Flame Photometric Detector	Photoionization (PID)	Halogen Specific (XSD)	PID/XSD	PID/Flame-Ionization (PID/FID)	PID/ELCD
USP Oxidizable Sub. Test	Oxidizable Substances Test Substitute							
USP 467 Method II	Volatile Organics						✓	

The FM-2000 is a complete, continuous, field portable, GC-based monitoring system. At the heart of the FM-2000 is its unique interchangeable plug-in module that can be switched in and out of the instrument in less than a minute with no tools required, virtually eliminating any loss of monitoring uptime due to instrument maintenance or service. Its unique modular design provides both flexibility in applications and ease-of-maintenance. The FM-2000 product line offers this modular and flexible system in a compact, rugged package, which can be easily customized to meet your specific monitoring needs and requirements.

MINI-LINK™ is a data storage, display, and communication software program that permits multicomponent, multipoint calibrations. The MINI-NET™ data network allows for storage and reporting of all analytical results, minimum/maximum values, and Time Weighted Average reporting and is capable of networking data from up to 50 FM-2000s via dedicated lines or modems.

GC Monitoring Systems

Model FM-2000 Complete Systems

FM-2000 with FID	52
FM-2000 with PID	52
FM-2000 with FPD.....	52

Additional Detectors

Flame-Ionization Detector.....	52
Flame Photometric Detector.....	52
Halogen Specific Detector.....	52

GC Plug-in Modules

GC Plug-in Modules	53
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Model FM-2000 Continuous Monitoring System

Model FM-2000 Continuous Monitoring System

The Model FM-2000 is designed for continuous operation, easy transport, applications flexibility, ruggedness, and reliability in both field and fixed-site applications. The FM-2000 is a modular and extremely flexible system, easily customized for specific monitoring needs and requirements.

FM-2000 Monitoring System with FID

Complete GC system that includes the FM-2000, Model 5310 Flame-Ionization Detector, required cables, sample pump, operator's manual, expendable supplies, single-use MINI-NET software, and 3 days training.

FM-2000 w/FID FM-2000FID

FM-2000 Monitoring System with PID

Complete GC system that includes the FM-2000, Model 5330 Photoionization Detector, required cables, sample pump, operator's manual, expendable supplies, MINI-NET software, and 3 days training.

FM-2000 w/PID FM-2000PID

FM-2000 Monitoring System with FPD

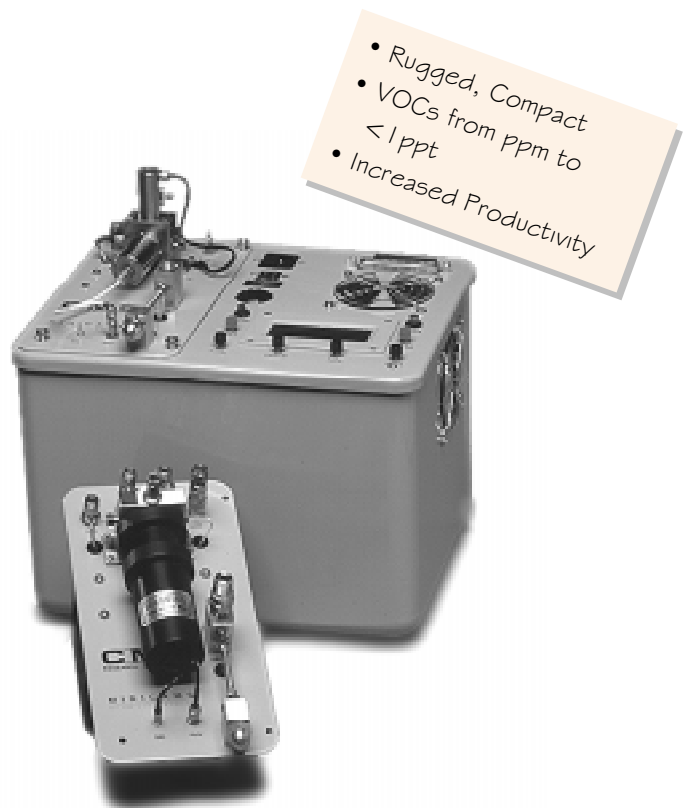
Complete GC system that includes the FM-2000, flame photometric detector, required cables, sample pump, operator's manual, expendable supplies, MINI-NET software, and 3 days training.

FM-2000 w/FPD FM-2000FPD

FM-2000 Monitoring System with XSD

Complete GC system that includes the FM-2000, halogen specific detector, required cables, sample pump, operator's manual, expendable supplies, MINI-NET software, and 3 days training.

FM-2000 w/XSD FM-2000XSD



Model FM-2000

Additional Detectors

Add as part of systems or as an add-on detector at a later date.

Flame-Ionization Detector FID-510

Model 5310 Flame-Ionization Detector for installation onto an existing Model 5330 PID.

Flame-Ionization Detector FIO-100

CMS flame-ionization detector for installation onto an existing FPD.

Flame Photometric Detector FPD-500

CMS flame photometric detector for installation onto an existing CMS FID.

Halogen Specific Detector (XSD) XSD-560

Model 5360 XSD for installation with an existing Model 5330 PID.



To order call 1-800-653-1711 (USA/Canada) or 409-690-1711



FM-2000 Accessories

GC Plug-in Module with FPD GCF-100A

Equipped with a flame photometric detector, column, PCT assembly, and electronics. Mounts directly into the FM-2000 chassis.

GC Plug-in Module with CMS FID GCI-100A

Equipped with a CMS flame-ionization detector, column, PCT assembly, and electronics. Mounts directly into the FM-2000 chassis.

GC Plug-in Module with OI FID GCI-510

Equipped with an OI Model 5310 FID, column, PCT assembly, and electronics. Mounts directly into the FM-2000 chassis.

GC Plug-in Module with PID GCP-530

Equipped with a photoionization detector, column, PCT assembly, and electronics. Mounts directly into the FM-2000 chassis.

GC Plug-in Module with FID/FPD GCS-100

Equipped with a tandem FID/FPD, column, PCT assembly, and electronics. Mounts directly into the FM-2000 chassis.

GC Plug-in Module with PID/FID GCP-540

Equipped with a tandem PID/FID, column, PCT assembly, and electronics. Mounts directly into the FM-2000 chassis.

GC Plug-in Module with XSD XSD-101

Equipped with a halogen specific detector, column, PCT assembly, and electronics. Mounts directly into the FM-2000 chassis.

*Service
Contracts*

AT • YOUR • SERVICE

OI Analytical offers a wide range of extended warranties and service contracts designed to fit your needs. Call and ask for details **1-800-336-1911**.



FPD Plug-In Module

FM-2000 Accessories

Stream Selection System SSS-120
12-port, automatic system. Permits automatic sequencing between up to 12 different sample points. Includes 1/8-inch compression-type fittings.

Stream Selection System SSS-040
Four-port, manual system. Permits sequencing between four different sample points.

Sample Selection System SAS-001
For manual selection of sampling type. Choose between two different size sample loops (0.1 or 10 mL) or direct sampling to the FM-2000 PCT sorbent concentration system.

Loop Sampling LOP-100

Low Volume Sampler LVS-001
Permits injection of a consistent sample volume into the FM-2000 using a fixed sample loop. Also capable of operating in conjunction with the Stream Selection System.

Heated Injector Port INJ-100
Direct injection port for syringe. Allows injection of gases and liquids.

Stack Gas Conditioning System SSA-050
This dilution-based system samples high temperature, high moisture content gas streams. Fail-safe feature ensures proper operation to avoid raw stack gas from reaching the monitor. Includes controller, Teflon heated sample line, and stainless steel stack probe. Unit is a dilution-based system.

Thermal Desorber, Single Tube STD-100
Thermally desorbs compounds collected on 6- or 8-mm O.D. solid sorbent tubes into the FM-2000 for analysis.

Linear Mass Flowmeter LMF-010
Measures and monitors sample flow rates (1 slpm, air). Other flow ranges are available upon request.

Sample Flow Controller SFC-010
Includes a 1-LPM (1000-sccrm) linear mass flowmeter.

Sample Flow Controller SFC-002
Includes a 200-sccrm linear mass flowmeter.

PCTs (pkg. of 10) Specify Application
Package of 10 preconcentrator tubes. Verify type of tube used with application before ordering.

PCTs (pkg. of 100) Specify Application
Package of 100 preconcentrator tubes. Verify type of tube used with application before ordering.

Expendables Supply Kit ESK-200
Contains a supply of most expendable items required during normal operation.



Stack Gas Conditioning System



To order call 1-800-653-1711 (USA/Canada) or 409-690-1711



FM-2000 Supplies and Software

Gas Purification Kit GPK-100
Purification kit with charcoal, molecular sieve, and indicating Drierite. Three kits recommended for each FM-2000.

Air Regulator RGA-100
Two stage regulator for air cylinders. Stainless steel diaphragm, 2nd stage delivers 0–200 psi. CGA-346 fitting with 1/8" compression fitting on 2nd stage.

Hydrogen Regulator RGH-100
Two stage regulator for H₂ cylinders. Stainless steel diaphragm, 2nd stage delivers 0–200 psi. CGA-350 fitting with 1/8" compression fitting on 2nd stage.

Carrier Gas Regulator RGN-100
Two stage regulator for N₂ cylinders. Stainless steel diaphragm, 2nd stage delivers 0–200 psi. CGA-580 fitting with 1/8" compression fitting on 2nd stage.

Case, Field FM-2000, Foam-Lined 11475
High-impact, plastic, foam-lined carrying case for a single FM-2000. Also has compartments for operator's manual, printer, and expendable supplies.

Enclosure, Environmental ENV-100
Customized enclosure built around customer's exact requirements for weatherproofing of electrical certifications.

Sample Pump, Oilless SPU-100
Oilless sample pump used for drawing sample into the FM-2000. 0.1 hp, 1.5 ft³/min, 1/4" NPI fittings, 110 VAC.

Dot Matrix Printer - Refurbished DMP-080R
Dot matrix printer with interface cable, paper, and ink cartridge.

Strip Chart Recorder DPR-100
Single channel strip chart recorder. Includes supply of paper and pens.

MINI-LINK Software MSL-100
A data storage, display, and communication software package that operates on a dedicated PC. Permits multi-point and multicomponent calibrations. Computer not included.

MINI-LINK System MLS-100
Similar to MSL-100 except laptop computer included.

MINI-NET Data Network DBN-200
Allows multipoint reporting, minimum/maximum values, and TWA reporting. Handles data from up to 50 FM-2000s via dedicated lines or modems. Computer and one modem included.

MINI-NET Remote Data System DBN-500
Similar to DBN-200 except this program accepts data from a single FM-2000. Computer included.

MINI-NET Breakout Box MNB-100
Links six FM-2000s to a host computer.

Short Range Modem and Cable SRM-100

Floppy Disk Drive FDD-400
An external floppy disk drive: 1.44MB used for the real-time data storage of results on data files. Includes housing and ten floppy disks.

Applications Guide

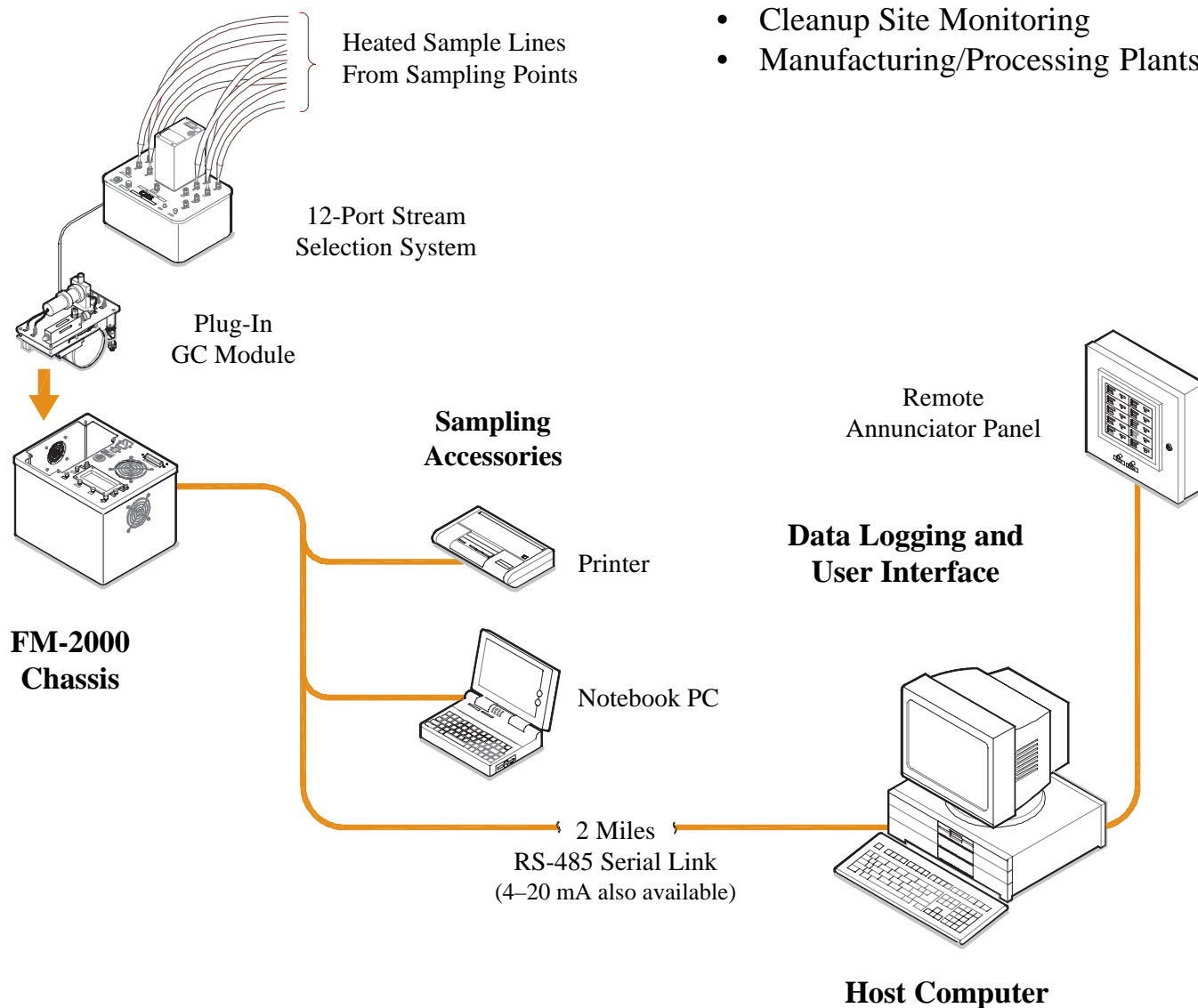
Applications	GC Systems		Sample Introduction						GC Detectors							Analyzers					Sample Prep								
	System VOC	System BTEX	Pesticides Analysis System	P & T Concentrator	GC Liquid Autosampler	Vial Autosampler	Discrete Purging Multisampler	Multiple Heater Controller	Air-Tube Multisampler	Headspace Sampler	Water/Soil Autosampler	Cryo-Focusing System	ELCD	PFPD	PID	XSD	PID/XSD	PID/FID	PID/ELCD	Monitoring System - FM-2000	TOC Analyzer	Flow Solution 3000	Flow Solution IV	Triple Check Analyzer	Aqua-Check Analyzer	Analytical Microwave System	Extraction and Recovery	GPC Clean-up	
Air Pollution/Industrial Hygiene	BTEX/TPH	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓									
	Highly Volatile Organics in Ambient Air	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓									
	Principal Organic Hazardous Constituents	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓									
	Volatile Aromatic Halocarbons	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓									
	VOST Analysis	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓									
Drinking Water/Groundwater	Metals in Filtered Air Particulate	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓										
	Metals																					✓	✓				✓		
	Pesticides/Herbicides			✓		✓							✓	✓		✓												✓	✓
	Total Organic Carbon (TOC)																				✓								
	Total Trihalomethanes	✓			✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓									
	Volatile Organic Compounds (VOCs)	✓	✓	✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓									
	pH																					✓	✓	✓	✓	✓			
	Conductivity																					✓	✓	✓	✓	✓			
	Dissolved Oxygen																					✓	✓	✓	✓	✓			
	Total Dissolved Solids																					✓	✓	✓	✓	✓			
Temperature																													
Environmental	Metals in Soil/Sludge/Sediment																											✓	
	Pesticides			✓		✓	✓					✓				✓	✓											✓	✓
	TOC in Solid/Sludge																				✓							✓	✓
	TOC in Salt/Brines																				✓							✓	✓
	Semivolatile Organic Compounds			✓		✓	✓																					✓	✓
EPA Priority Pollutants	Volatile Organic Compounds	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓								✓	✓
	Halogenated Pesticides			✓		✓	✓					✓				✓	✓	✓	✓	✓								✓	✓
	Phosphorus Pesticides												✓																
	Nitrogen-Based Pesticides			✓		✓	✓					✓	✓			✓	✓	✓	✓	✓								✓	✓
Petrochemical	Polychlorinated Biphenyls (PCBs)			✓		✓	✓					✓				✓	✓	✓	✓	✓								✓	✓
	Volatile Organic Compounds	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓								✓	✓
	BTEX	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓								✓	✓
	Halogenated Contaminated Products	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓								✓	✓
	Sulfur Analysis												✓																
Product Testing	Olefins		✓																										
	Raw and Finished Products												✓															✓	
	Total Fluorine and Alkylation Products	✓									✓																		
	Total Petroleum Hydrocarbons (TPH)	✓	✓		✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓								✓	✓
	Foods, Flavors, Fragrances	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓					✓	✓
	Nitrosamines												✓	✓															
TCLP/EP Toxicity	Polynuclear Aromatic Hydrocarbons																											✓	✓
	Volatile Organic Compounds	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓								✓	✓
	Metals in Finished Products																											✓	✓
Ultrapure Water	Pharmaceutical	✓	✓	✓																									
	Power Generation	✓	✓	✓																									
	Semiconductor	✓	✓	✓																									
	Aromatic Volatile Organics		✓																										
Underground Storage Tank	BTEX, BTEX/MTBE		✓		✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓										
	BTEX/Halogenated Volatile Organics	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓										
	Halogenated Volatile Organics	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓										
	Metals in Tank Sludge																											✓	✓
Waste Characterization	Appendix IX Organochlorine Pesticides			✓		✓																						✓	✓
	Appendix IX Volatiles	✓		✓		✓																							
	BTEX	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓										
Total Organic Carbon (TOC)																					✓								

The chart above is a guide to this catalog. This information is intended only as a reference for this catalog and is not intended to define method requirements. Complete method information is available in the Annual Book of ASTM Standards, Federal Register, Standard Methods for the Examination of Water and Wastewater, and USP XXII.

FM-2000 Configuration Diagram

FM-2000 Air Monitoring System

- Field Installations
- Cleanup Site Monitoring
- Manufacturing/Processing Plants





To order call 1-800-653-1711 (USA/Canada) or 409-690-1711



OI Analytical offers the ALPKEM product line—analyzers for Flow Injection Analysis (FIA) and Segmented Flow Analysis (SFA) to perform a wide range of analyses, including the measurement of nitrite/nitrate, phosphate, ammonia, chloride, alkalinity, sulfate, and more. The Flow Solution® IV and Flow Solution 3000 incorporate Expanded Range (ER)[™] photometric detection technology, which allows single calibration ranges covering 3 to 4 orders of magnitude with no dilutions. These products are powerful, automated, continuous flow systems for ion analysis that provide high volume, rapid results via simultaneous multichannel operation.

The ALPKEM cyanide analyzers perform Total, WAD, and CATC (USEPA Method OIA 1677) cyanide analyses in a number of industrial applications and can be equipped with an autosampler to enhance productivity. The CNSolution[™] and the CNLab[™] use an innovative gas diffusion ligand-exchange procedure for WAD cyanide, which is more rapid, sensitive, and selective than the traditional distillation methods.

Flow Analyzers

Flow Analyzers

Flow Solution 3000	60
Flow Solution IV	61
Flow Solution 300	62
Software	62

Cyanide Analyzers

CNSolution 3000	63
CNLab 3202	63
Accessories	64

Selected Chemistries

Flow Solution 3000	65
Flow Solution IV	66

Flow Analyzers for Automated Ion Analysis

The Flow Solution® 3000

With its compact size and small footprint that minimize benchspace requirements, the Flow Solution 3000 offers the same high level of automation previously available only on larger, more expensive ion analysis systems.

The included 120-place autosampler and Windows®-based WinFLOW™ software allow random access sampling, automatic recalibration based upon QC results, plus real-time results and data editing. The Flow Solution 3000 comes standard with ALPKEM's Expanded Range (ER)™ detection technology that allows single calibration ranges of 3 to 4 orders of magnitude.

With USEPA and DIN methods and a large user base, the Flow Solution 3000 is a proven, high productivity workhorse for environmental compliance testing.

- Expanded Range detection yields wide dynamic range.
- Low (ppb and, on some analyses, ppt) minimum levels.
- Compact size and small footprint.
- One to 10 channels of data collection.
- Flow Injection Analysis or Segmented Flow Analysis.
- Easy LIMS import and export capabilities.
- Automatic QC capability coupled with recalibration.
- USEPA-compliant methods.
- 120-place random access autosampler included.
- WinFLOW software included.

Flow Solution 3000 (1 Channel) A001561

Flow Solution 3000 (2 Channel) A001570

Flow Solution 3000 (3 Channel) A002758

Flow Solution 3000 (4 Channel) A002759



Flow Solution 3000 (2 Channel)



To order call 1-800-653-1711 (USA/Canada) or 409-690-1711



Flow Analyzers for Automated Ion Analysis

The Flow Solution® IV

A powerful, automated, continuous flow system for ion analysis that provides high volume, rapid results via simultaneous multichannel operation. By incorporating Expanded Range (ER)[™] photometric detection technology, single calibration ranges covering 3 to 4 orders of magnitude are achievable with no dilutions. The Flow Solution IV is expandable to 12 channels.

Included WinFLOW Windows-based data acquisition (DAQ) and instrument control software allows random access sampling, automatic recalibration, user-defined parameters, real-time results, QC monitoring, and LIMS communication.

- Expanded Range (ER) photometric detection.
- Low (ppb) minimum levels.
- 270 sample capacity X-Y-Z random access sampler.
- 24 channel digital peristaltic pump.
- Automatic QC capability coupled with recalibration.
- Advanced linear and curvilinear calibration models.
- One to 12 channels of simultaneous detection.
- Segmented Flow Analysis or Flow Injection Analysis.
- Easy LIMS import and export capabilities.
- Real-time editing and results.
- USEPA-compliant methods.

Flow Solution IV (1 Channel System)	A002470
Flow Solution IV (2 Channel System)	A002471
Flow Solution IV (3 Channel System)	A002472
Flow Solution IV (4 Channel System)	A002572
Flow Solution IV (5 Channel System)	A002573
Flow Solution IV (6 Channel System)	A002574
Flow Solution IV (1 Chn. Sys. with FIA)	A002575
Flow Solution IV (2 Chn. Sys. with FIA)	A002576
Flow Solution IV (3 Chn. Sys. with FIA)	A002577
Flow Solution IV (4 Chn. Sys. with FIA)	A002578
Flow Solution IV (5 Chn. Sys. with FIA)	A002579
Flow Solution IV (6 Chn. Sys. with FIA)	A002580

- Automated Ion Analyzer
- Expandable to 12 Channels



Flow Solution IV
(2 Channel System)

Flow Analyzers and Software

The Flow Solution® 300 (1 Channel) A002365

ALPKEM's low-cost, single channel analyzer for ion analysis. The Flow Solution 300 (FS300) is designed to operate with either manual injection for laboratories with small to medium sample volumes or with an optional autosampler for greater automation. The FS300 has been specifically designed for environmental testing and offers analytical methods that are USEPA and DIN approved. The included DOS®-based LabFlow software package is used for instrument control and data acquisition with real-time data reporting. The unit's small size and portability make it ideal for on-site analyses of time-critical environmental and industrial processes.

- Affordable, entry-level lab automation.
- Easy four-step operation.
- USEPA and DIN approved methods.
- Low (ppb) minimum levels.
- Flow Injection Analysis or Segmented Flow Analysis.
- Real-time results.
- Manual injection or 120-place autosampler (optional).
- Field upgradeable to Flow Solution 3000.

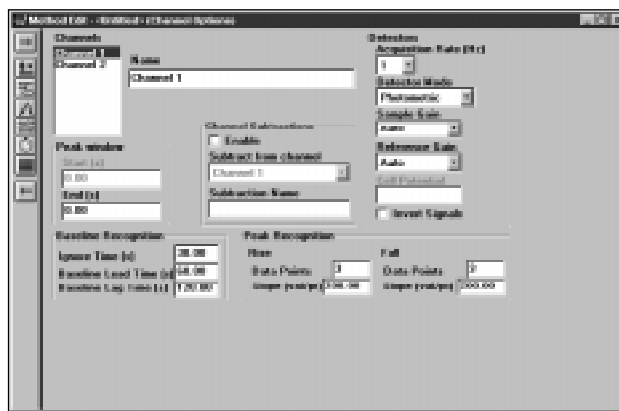
- USEPA and DIN Approved Methods
- Optional 120-Place Autosampler



Flow Solution 300

WinFLOW™

Windows-based software designed to automate flow analyzer systems. Allows for random access sampling, automatic recalibration, user-defined parameters, real-time results, QC monitoring, and LIMS communication. Standard on all ALPKEM Flow Solution 3000 and Flow Solution IV analyzers. Includes hardware and software to interface the system with a PC. Available with ALPKEM's ER detector as an upgrade for Technicon AAI, ALPKEM RFA, and Perstorp Analytical Flow Systems. *WinFLOW was formerly known as EnviroFlow.*



WinFLOW Method Editor Screen

Software (3.5" disks) A002938

Software/Firmware (3.5" disks) A002939

Software (CD-ROM) A002877

Software/Firmware (CD-ROM) A002878

WinFLOW Upgrades

1 Channel System with ER Detector A002359

2 Channel System with ER Detector A002360

3 Channel System with ER Detector A002361

4 Channel System with ER Detector A002362

5 Channel System with ER Detector A002363

6 Channel System with ER Detector A002364

1 Channel System with A/D Module A002426

2 Channel System with A/D Module A002427

3 Channel System with A/D Module A002428

4 Channel System with A/D Module A002429

5 Channel System with A/D Module A002430

6 Channel System with A/D Module A002431



To order call 1-800-653-1711 (USA/Canada) or 409-690-1711



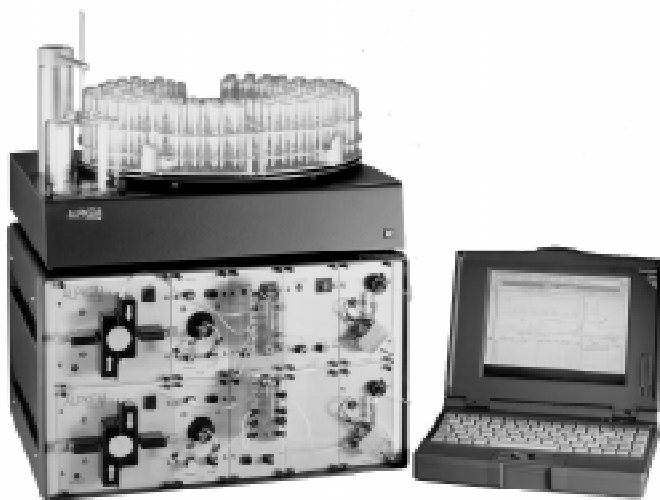
Cyanide Analyzers

CNSolution™ 3000 Cyanide Analyzer

ALPKEM's high throughput system for cyanide measurement. Incorporating a single or dual channel analyzer, WinFLOW Windows-based software, and random access autosampler, the CNSolution uses an innovative gas diffusion ligand-exchange procedure to measure weak acid dissociable (WAD) cyanide or cyanide amenable to chlorination (CATC) species in 90 seconds. Ultraviolet irradiation of the sample can be added to measure total cyanide every two minutes. WAD, CATC, and total cyanide can be measured accurately down to 2 µg/L (ppb).

- No distillation required.
- WAD or CATC cyanide analysis in 90 seconds.
- Total cyanide via UV digestion every two minutes.
- Eliminates pyridine and barbituric acid.
- No interference from sulfide or thiocyanate.
- WinFLOW Windows-based software.
- 120-place Random Access Autosampler.
- 2 ppb minimum level (ML).
- 0.5 ppb method detection limit (MDL).

CNSolution 3000 (1 Channel) A002368
 CNSolution 3000 (2 Channel) A002369



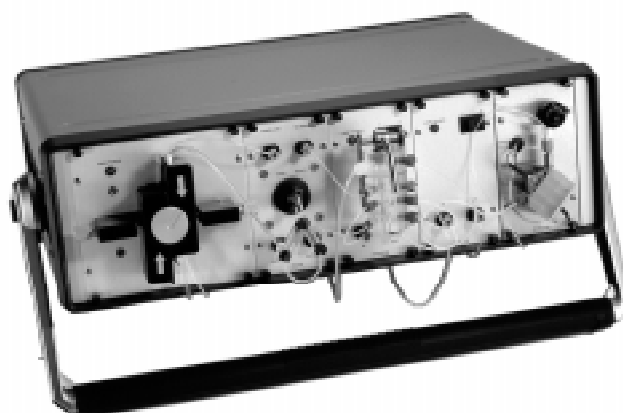
CNSolution 3000

CNLab™ 3202 Cyanide Analyzer

ALPKEM's low-cost dedicated cyanide analyzer. It uses a gas diffusion ligand-exchange procedure for weak acid dissociable (WAD) or cyanide amenable to chlorination (CATC) cyanide analysis. WAD cyanide results are obtained in only 90 seconds, and with the available total cyanide cartridge, total cyanide results are obtained in only seven minutes. CNLab uses a DOS-based software package for instrument control and data acquisition. The unit's small size and portability make it ideal for on-site cyanide analyses of time-critical environmental and industrial processes.

- No distillation required.
- WAD or CATC cyanide analysis in 90 seconds.
- Total cyanide in seven minutes.
- Nonhazardous reagents and waste.
- No interference from sulfide or thiocyanate.
- Less than 2 mL of sample is required for analysis.
- Easy-to-use DOS-based CNLab software.
- 2 ppb minimum level (ML).
- Field upgradeable to multichannel CNSolution.

CNLab 3202 Cyanide Analyzer A001444



CNLab 3202

Cyanide Analyzer Accessories

EnviroPrep MIDI-Distillation System

Prepares water, sludge, or soil samples for post-distillation cyanide analysis quickly, easily, and cost-effectively. Operates with CNSolution. Methods are available for total and weak acid dissociable (WAD) cyanide and cyanide amenable to chlorination (CATC).

10-Place EnviroPrep MIDI 1010 A000935

4-Place EnviroPrep MIDI 1004 A000954

40-Place Tube Rack A000969

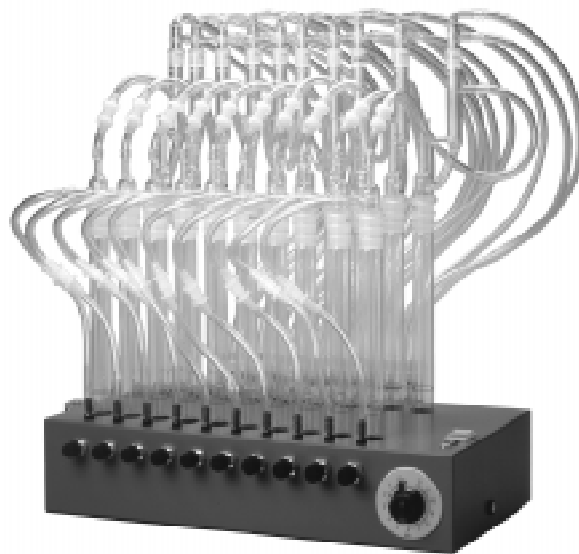
For use with the EnviroPrep MIDI-Distillation System.

Vacuum Pump A000986

For use with the EnviroPrep MIDI-Distillation System.

Replacement Glassware Set A000960

For use with the EnviroPrep MIDI-Distillation System.



10-Place EnviroPrep MIDI 1010



4-Place EnviroPrep MIDI 1004

Service OI Analytical 
Contracts

AT • YOUR • SERVICE

OI Analytical offers a wide range of extended warranties and service contracts designed to fit your needs. Call and ask for details **1-800-336-1911**.



To order call 1-800-653-1711 (USA/Canada) or 409-690-1711



Selected Chemistries

Flow Solution 3000

Selected Chemistries

Flow Solution IV



To order call 1-800-653-1711 (USA/Canada) or 409-690-1711



OI Analytical has been a leader in designing and manufacturing TOC analyzers since 1970. With the addition of the Model 1020 Combustion TOC Analyzer and the Solids Module, OI Analytical continues the tradition of providing high quality and reliable products to meet customer needs. The Model 1020 combines traditional combustion methods with today's improved catalyst technology to excel at analyzing the most difficult real-world samples. The Solids Module is used as a stand-alone unit or easily interfaces with and is controlled through the TOC Analyzer to analyze aqueous and solid samples.

Now you can acquire true water quality characteristics of samples with on-site water measurements performed with OI Analytical's Aqua-Check and Triple Check Water Analyzers, which simultaneously measure the pH, conductivity, and temperature of water and aqueous solutions. These analyzers are hand-held, computer-controlled, digital recording field instruments that are ideal for applications ranging from well water to seawater.

Total Organic Carbon and Water Analyzers

TOC Analyzers

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Water Analyzers

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Model 1010 Total Organic Carbon Analyzer

Model 1010 Total Organic Carbon Analyzer

For wet oxidation methodology. Includes basic Model 1010 for total inorganic carbon (TIC), total organic carbon (TOC), and total carbon (TC) analysis; keyboard; monitor; and start-up kit with operator's manual. 50/60 Hz.

- Same-sample TIC/TOC measurement.
- Small, compact size.
- Ultralow-level sensitivity.
- Single or multi point calibration.
- Sequence programming for unattended operation.
- File storage of up to 10 methods and 10 run sequences.
- Programmable rinse capability.
- CO₂ specific detector.
- For laboratory or on-line applications.

Add-on solids module option for the Model 1010 performs semi-automated analysis of soils and other solid samples.

Model 1010 (100/110 V) 250639

Model 1010/Solids (100/110 V) 296749

Model 1010 (220/240 V) 274464

Model 1010/Solids (220/240 V) 296756

Model 1010 Total Organic Carbon Analyzer with WinTOC™ for Windows®-based PC Control

Same as Model 1010 (listed previously), without keyboard and monitor. WinTOC requires a computer with Microsoft Windows 3.1 or later, 8MB RAM, 10MB HD space available, mouse, at least 486/100 MHz CPU (Pentium 90 recommended), available COM port, and 3.5" floppy drive. Add-on solids module option for the Model 1010 performs semi-automated analysis of soils and other solid samples.

Model 1010/WinTOC (100/110 V) 250621

Model 1010/WinTOC/Solids (100/110 V) 296723

Model 1010/WinTOC (220/240 V) 274456

Model 1010/WinTOC/Solids (220/240 V) 296731

Model 1010 Pharmaceutical Package 289637

The latest in high temperature wet oxidation technology to fully comply with United States Pharmacopeia (USP-23) guidelines. Includes Model 1010 TOC Analyzer with WinTOC™ software, Model 1051 Autosampler, printer, validation package, reagents, and installation of the Model 1010 and Model 1051.

Model 1010 ICR Package 289645

The latest in wet oxidation technology to fully comply with the routine TOC monitoring included in the ICR (D/DBPR) drinking water rule. Includes Model 1010 TOC Analyzer, keyboard, monitor, printer, reagents, and installation of the Model 1010.



Model 1010 with Keyboard, Monitor, and Model 1051 Autosampler



To order call 1-800-653-1711 (USA/Canada) or 409-690-1711



Model 1020 Total Organic Carbon Analyzer

Model 1020 Total Organic Carbon Analyzer

For combustion methodology. Includes basic Model 1020 for total inorganic carbon (TIC), total organic carbon (TOC), total carbon (TC), and nonpurgeable organic carbon (NPOC) analysis; keyboard; monitor; and start-up kit with operator's manual. 50/60 Hz.

- Approved combustion methodology.
- TC/TIC/TOC/NPOC measurement.
- Small, compact size.
- Excellent sensitivity at medium to high levels.
- Single or multipoint calibration.
- Sequence programming for unattended operation.
- File storage of up to 10 methods and 10 run sequences.
- Programmable rinse capability.
- Single catalyst for entire range.
- High temperature operation without catalyst.

An add-on solids module option for the Model 1020 TOC Analyzer performs semi-automated analysis of soils and other solid samples.

Model 1020 (100/110 V)	284257
Model 1020/Solids (100/110 V)	296707
Model 1020 (220/240 V)	284265
Model 1020/Solids (220/240 V)	296715

- Combustion Oxidation
- USEPA and ASTM Approved Methods
- Add-on Solids Module
- Optional Autosampler

Model 1020 Total Organic Carbon Analyzer with WinTOC™ for Windows®-based PC Control

Same as Model 1020 (listed previously), without keyboard and monitor. WinTOC requires a computer with Microsoft Windows 3.1 or later, 8MB RAM, 10MB HD space available, mouse, at least 486/100 MHz CPU (Pentium 90 recommended), available COM port, and 3.5" floppy drive.

Model 1020/WinTOC (100/110 V)	284273
Model 1020/WinTOC/Solids (100/110 V)	296772
Model 1020/WinTOC (220/240 V)	284281
Model 1020/WinTOC/Solids (220/240 V)	296764

Model 1020 ICR Package

290296
Latest in combustion technology to fully comply with routine monitoring for TOC included in the ICR (D/DBPR) drinking water rule. Includes Model 1020 TOC Analyzer, keyboard, monitor, printer, reagents, and installation of the Model 1020.



Model 1020 with Keyboard and Monitor

Solids Module and Model 1051 Autosampler

Solids Module (Stand-Alone)

Used in a stand-alone capacity, the solids module performs semi-automated analysis of soils and other solid samples.

- Analysis of solids, soils, sludges, slurries, etc.
- Allows analysis of aqueous and solid samples.
- Automated sample introduction.
- Vertical design saves benchspace.
- Temperature ramping allows a single run to determine total organic carbon.

Solids Module (100/110 V)	283713
Solids Module (220/240 V)	289280
Solids Module w/Controller	297739
Controller for Solids Module	297747



CE

Stand-Alone Solids Module

Model 1051 Autosampler

Includes autosampler module and interface cable. 12-, 53-, or 88-sample capacity; 100-mL, 40-mL, or 14-mL vials with one priority position for unattended analysis of samples.

- Docks directly with Model 1010 or 1020 chassis to minimize benchspace requirements.
- Programmable rinses through Model 1010 or 1020 provide maximum flexibility.
- Transfers water or particulated water samples with no system clogging.
- Spiral-design carousel optimizes sampling accuracy.
- Removable, lightweight sample carousel makes sample loading and unloading easy.
- Automates 12, 53, or 88 samples.
- Preacidification option reduces sample analysis time.

Model 1051 Autosampler for Model 1010

12-position, 100-mL vials	295840
53-position, 40-mL vials	250647
88-position, 14-mL vials	284851

Model 1051 Autosampler for Model 1020

53-position, 40-mL vials	284299
88-position, 14-mL vials	284869

Vial Rack (for Model 1010 only)

12-position, 100-mL	295832
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CE

Model 1051 Autosampler



To order call 1-800-653-1711 (USA/Canada) or 409-690-1711



Software and Accessories Model 1010 and Model 1020 TOC Analyzers

WinTOC Software

Provides instrument control and simplifies data analysis and sample auditing. WinTOC requires a computer with Microsoft Windows 3.1 or later, 4MB RAM, 5MB HD space available, mouse, at least 386/25 MHz CPU (486 recommended), available COM port, and 3.5" floppy drive.

- Allows control of a TOC Analyzer from a PC.
- Data acquisition, retrieval, reanalysis, exporting, and storage capability.
- System monitoring.
- Display panels of run conditions, methods, and sequences.
- Post-run reporting capability.
- Allows reintegration of peaks.
- Storage of methods and sequences.

WinTOC for Model 1010 TOC Analyzer 250613

WinTOC for Model 1020 TOC Analyzer 296129

WinTOC Upgrade 280933

Firmware, manual, diskette, and upgrade instructions included.

Preacidification Module for Model 1010

Revisions A, B, C 250746

Revisions D and later 290331

Solids Module 283713

Add-on option for the Model 1010 or Model 1020 TOC Analyzer. Performs semi-automated analysis of soils and other solid samples.

WinTOC Software for Solids Module 296145

Solids Module Operator's Manual 287243

Model 1010 Halide Scrubber 274621

Aids in the analysis of seawater, brine, and high chloride samples. Easily interfaced with Model 1010 TOC Analyzer.

High/Low Alarm Relay 274472

Allows setting of high and low TIC and TOC limits that activate relay closures for external warning devices. Includes relay board and connector. Relays are rated 240 VAC/10 A or 24 VDC/8 A.

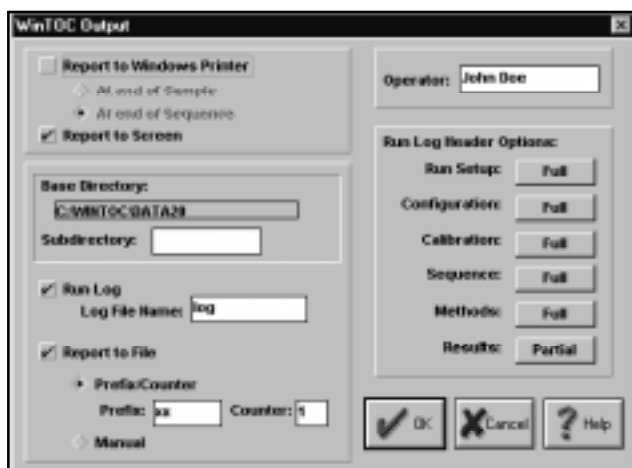
Model 1010 Operator's Manual 273243

Model 1020 Operator's Manual 278556

Printer 273235

Includes 80-column dot matrix printer for automatic printout of TIC, POC, and TOC values, interface cable, and printer paper, 110 VAC ($\pm 10\%$). 50/60 Hz.

Printer, Color Graphics 300822



WinTOC Output Panel

Accessories

Model 700 TOC Analyzer

Model 700 Accessories

Halide Scrubber 263194

Aids in the analysis of seawater, brine, and high chloride samples. Easily interfaced with existing Model 700.

Precombusted Ampules (200/case) 130021

Model 700 TOC Operator's Manual 196949
Quick Reference Sheet (Laminated) 225987

Printer 169004

Includes 80-column dot matrix printer for automatic printout of TIC, POC, and TOC values, interface cable, and printer paper. 110 VAC ($\pm 10\%$). 50/60 Hz.

Paper, 9-1/2" x 11" (400 sheets) 138546

Paper, 9-1/2" x 11" (2500 sheets) 138554

Ribbon Cartridge 178871

Septum-Piercing Assembly, 40 mL 173328-28

For 40-mL vial autosampler (Part #169012-28). Includes stainless steel septum-piercing needle assembly, vial hold-down assembly, 20 open-top screw caps, and 50 septa for 40-mL vials.

Septum-Piercing Assembly, 14 mL 173328-16

For 14-mL vial autosampler (Part #169012-16). Includes stainless steel septum-piercing needle assembly, vial hold-down assembly, 20 open-top screw caps, and 50 septa for 14-mL vials.



Customer Communications

A domestic toll-free technical support hotline is available for instrument support as well as specialized applications. On-site specific applications training and hands-on seminars are available.

OI Analytical is proud to provide the highest quality instruments available, backed by a commitment to quality, service, and support. **Call 1-800-653-1711.**



To order call 1-800-653-1711 (USA/Canada) or 409-690-1711



Water Analyzers

Aqua-Check™ Water Analyzer

Analyzes water “on-site” to acquire the true water quality characteristics of the sample in order to ensure accuracy in dissolved oxygen and other analyte measurements. You can now make reliable measurements of all important water parameters quickly, conveniently, and simultaneously at the test site—even in deep wells.

Aqua-Check meters can be purchased with RS-232 computer interface, Auto Barometric Pressure Compensation, or both. RS-232 computer interface allows parameters that have been read and stored in the meter to be downloaded into a personal computer. Aqua-Check probes are purchased separately and are chosen by cable length.

- Simultaneously measures pH, dissolved oxygen, conductivity, and temperature.
- Readings displayed in all customary units, plus variations.
- Readings automatically compensated for the effects of salinity, temperature, barometric pressure, and sensor “field effects.”
- Data logging, storage, and retrieval.
- Calibration and operation as simple as placing the probe in a series of solutions and pushing a button.
- Probe is small enough to fit down a 2” monitoring well but tough enough for ocean monitoring at depths up to 50 feet.
- Splash-proof membrane keypad protects the analyzer from spills and the environment.

• Quick, Accurate Results at the Test Site
 • Small, Durable Probe

Aqua-Check Water Analyzer

110 V	A51500
220 V	A001834
110 V with RS-232	A51501
220 V with RS-232	A001835
110 V with Barometer	A51600
220 V with Barometer	A001836
110 V with RS-232 and Barometer	A51601
220 V with RS-232 and Barometer	A001837

Aqua-Check Probe with

10-ft Cable	A5501
25-ft Cable	A5502
50-ft Cable and Reel	A5505
100-ft Cable and Reel	A5510
150-ft Cable and Reel	A5515
200-ft Cable and Reel	A5520
300-ft Cable	A001567
400-ft Cable	A001840



Aqua-Check Water Analyzer

Water Analyzers and Accessories

Triple Check™ Water Analyzer

A hand-held, computer-controlled, digital recording field instrument that simultaneously measures the pH, conductivity, and temperature of water and aqueous solutions.

- Simultaneously measures pH, conductivity, and temperature.
- Completely portable.
- Automatic compensation.
- Data logging, storage, and retrieval.
- Sensors for pH, conductivity, and temperature are field replaceable.
- Simple operation.
- Splash-proof membrane keypad protects the analyzer from spills and the environment.
- Optional RS-232 output.

Triple Check Water Analyzer

110 V A52200

220 V A001838

110 V with RS-232 A52201

220 V with RS-232 A001839



Triple Check Water Analyzer

Water Analyzer Kits

Calibration Kit - Aqua-Check 300772

For calibrating an Aqua-Check meter and probe.

Includes conductivity standards (one pint each of 74 μ S, 718 μ S, 6.668 mS, and 58.7 mS), deionized water (one pint), pH buffers (one pint each 4, 7, and 10), calibration guide, and accessory kit (Part #297879).

This kit replaces Part #A9055.

Calibration Kit - Triple Check A002560

For calibrating a Triple Check meter and probes.

Includes a conductivity standard kit (Part #A001479), two pH probe boots, 1.25 mL of pH boot solution, pH buffers (one pint each 4, 7, and 10), and deionized water (one pint).

Conductivity Standard Kit A001479

Includes four conductivity standards (one pint each of 74 μ S, 718 μ S, 6.668 mS, and 58.7 mS).

DO Sensor Membrane Cap

Replacement Kit 297861

For polishing dissolved oxygen sensors or replacing membrane cap. Includes two DO sensor membrane caps, DO polishing strip, DO filling solution (1.25 oz) and grease (1 mL). *This kit replaces Part #A5350.*

Accessory Kit for Oxygen/pH Sensors

for Aqua-Check 297879

Accessory kit for caring for DO and pH sensors.

Includes two DO membrane caps, DO polishing strip, DO filling solution (1.25 oz), pH boot solution (1.25 oz), two pH boots, and grease (1 mL). *This kit replaces Part #A300-0005-00.*

pH Boot Kit A5351

Includes two pH boots and pH boot solution (1.25 oz).



To order call 1-800-653-1711 (USA/Canada) or 409-690-1711



Methods Guide

USEPA Methods		TOC Analyzer	Triple Check Analyzer	Aqua-Check Analyzer
USEPA 130.1	Total-Hardness			
USEPA 206.4	Total-Arsenic			
USEPA 212.3	Total-Boron			
USEPA 310.2	Alkalinity			
USEPA 325.1 & 325.2	Chloride			
USEPA 335.1	Cyanide Amenable to Chlorination			
USEPA 335.3	Total-Cyanide			
USEPA 340.3	Total-Fluoride			
USEPA 350.1	Ammonia			
USEPA 353.1 & 353.2	Nitrate-Nitrite			
USEPA 365.1	Orthophosphate, Total-Phosphorus			
USEPA 375.1	Sulfate			
USEPA 410.4	Chemical Oxygen Demand (COD)			
USEPA 415.1	TOC by Wet Chemical Oxidation	✓		
USEPA 420.2	Phenols			
USEPA 502.1	Volatile Halogenated Organic Compounds			
USEPA 502.2	Volatile Organics			
USEPA 503.1	Volatile Aromatics and Unsaturated Organics			
USEPA 524.1	Volatile Organic Compounds			
USEPA 524.2	Volatile Organic Compounds			
USEPA 601	Purgeable Halocarbons			
USEPA 602	Purgeable Aromatics			
USEPA 603	Acrolein and Acrylonitrile			
USEPA 608	Organochlorine Pesticides and PCBs			
USEPA 624	Purgeable Organics			
USEPA 625-S	Priority Pollutants in Wastewater Sludge			
USEPA 3015	Microwave Digestion of Aqueous Samples			
USEPA 3051	Sediments, Soils, Sludges, & Oils			
USEPA 3052	Total Microwave Digestion			
USEPA 5035	Volatile Organics in Soil & Waste Samples			
USEPA 8010	Halogenated Volatile Organics			
USEPA 8015	Nonhalogenated Volatile Organics			
USEPA 8020	Aromatic Volatile Organics			
USEPA 8021	Volatile Organics			
USEPA 8030	Acrolein, Acrylonitrile, Acetonitrile			
USEPA 8240	Volatile Organics			
USEPA 8260	Purgeable Organics			
USEPA 8275A	Semivolatile Organic Compounds			
USEPA 9060	TOC in Groundwater	✓		
USEPA TO-1	Volatile Organic Compounds in Ambient Air			
USEPA TO-2	Highly Volatile Organics in Ambient Air			
USEPA 5040, 5041 VOST	Volatile Organic Sampling Train (VOST)			

ASTM Methods		TOC Analyzer	Triple Check Analyzer	Aqua-Check Analyzer
ASTM D1068-90	Iron, Total			
ASTM D1252-88	Chemical Oxygen Demand (COD)			
ASTM D1687-92	Chromium VI Dissolved			
ASTM D2036-91	Cyanide Amenable to Chlorination			
ASTM D2579-93	TC & TOC in Water	✓		
ASTM D2972-93	Arsenic, Total			
ASTM D3120-92	Trace Sulfur in Light Petroleum Hydrocarbons			
ASTM D3246-92	Sulfur in Petroleum Gas			
ASTM D3867-90	Nitrate-Nitrite			
ASTM D3871-84(1990)	Purgeable Organic Compounds in Water			
ASTM D3961-89(1993)	Trace Sulfur in Liquid Aromatic Hydrocarbons			
ASTM D4779-93	TOC in High Purity Water	✓		
ASTM D4839-94	TOC in Water	✓		
Standard Methods				
Std. Method 3500C	Total-Arsenic			
	Total-Aluminum, Cadmium, Chromium,			
Std. Method 3500D	Copper, Iron, Lead, Potassium; Chromium VI			
Std. Method 3500E	Total-Copper, Zinc			
Std. Method 4500B	Total-Boron			
Std. Method 4500E	Chloride, Total-Fluoride			
	Nitrate-Nitrite, Orthophosphate,			
Std. Method 4500F	Phosphorus(Total)			
Std. Method 4500G	Cyanide Amenable to Chlorination			
Std. Method 4500H	Ammonia, Nitrate-Nitrite			
Std. Method 5200D	Chemical Oxygen Demand (COD)			
Std. Method 5310B	TOC by Combustion Oxidation	✓		
	TOC by Persulfate-Ultraviolet or Heated-	✓		
Std. Method 5310C	Persulfate Oxidation Method			
Std. Method 5310D (505C)	TOC by Wet Chemical Oxidation	✓		
Std. Method 6210B, C, D	Volatile Organics			
Std. Method 6220B, C	Volatile Aromatic Organics			
Std. Method 6220D	Volatile Aromatic Organics			
Std. Method 6230B, C	Volatile Halocarbons			
Std. Method 6230D	Volatile Halocarbons			
Std. Method 6230E	Volatile Halocarbons			
Std. Method 6232C	Trihalomethanes			
Std. Method 6232D	Trihalomethanes			
USP Methods				
USP Oxidizable Sub. Test	Oxidizable Substances Test Substitute	✓		
USP 467 Method II	Volatile Organics			



To order call 1-800-653-1711 (USA/Canada) or 409-690-1711

