GC Products Catalog

Version 0604

O·I·Analytical

A World of Solutions

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- Tax exempt number (if applicable).

Publication 19480504GC

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Message from the President

Dear Valued Customer:

We are pleased to publish our new product catalog. This catalog is filled with quality instrumentation, parts, and supplies for analytical laboratories. We hope you find this OI Analytical catalog easy to use, with distinct sections identifying parts and supplies and detailed drawings to help make ordering even easier. We update product information frequently. For complete and current information, be sure to visit the OI Analytical website at ***www.oico.com***.

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Our goal is to be your supplier of choice. If you are not satisfied with our products or service...just call me!

William W. Botts
President/CEO

Table of Contents

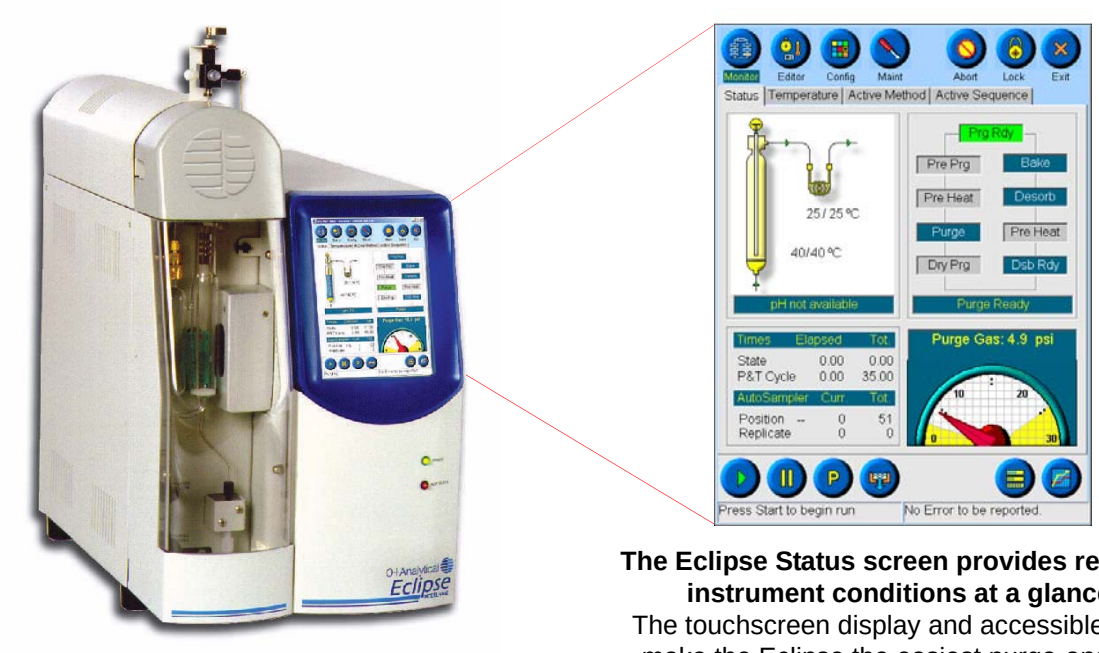
GC Sample Introduction Products

Since 1986, OI Analytical continuously improves purge-and-trap productivity, accuracy, cycle time and sensitivity. OI Analytical pioneered features such as Cyclone Water Management™, rapid trap heating, the Infra-Sparge™ Sample Heater, Silcosteel® sample pathways, and the MicroTrap™. Continuing our tradition of leading-edge technology, we now introduce our third-generation purge-and-trap sample concentrator, the Model 4660 Eclipse. Its innovative technology significantly enhances laboratory productivity with the highest reliability that you've come to expect from OI Analytical products. New from the ground up, the Eclipse's unique, patented features and options offer improvements in every aspect of VOC analysis, from rapid cycle time with improved reproducibility, to over one hundred enhanced maintenance features that keep your system up and running.

OI Analytical offers the widest range of purge-and-trap autosamplers on the market, allowing you to match the autosampler to your exact laboratory and sample requirements. Whether sampling water or other liquids, soil or solids, or any combination, OI Analytical has the right product for your application. The market-leading Model 4552 Water/Soil Autosampler (Archon) is the perfect choice for USEPA Method 5035. The Model 4551A Purge-and-Trap Water Autosampler docks directly under the Eclipse, saving valuable benchspace. The Model 4506 AMPS provides 24-hour continuous, automated VOC monitoring of single or multiple water streams. These units are compatible with all GC models and are designed to offer maximum performance and reliability.

Eclipse Purge-and-Trap Sample Concentrator

Introducing the New Generation of Purge-and-Trap Technology



The Eclipse Status screen provides real-time instrument conditions at a glance.
The touchscreen display and accessible icons make the Eclipse the easiest purge-and-trap sample concentrator to operate.

- Intuitive Windows CE touchscreen user interface
- pH Express* fully automates sample pH measurement
- Foam Buster*, Foam Sensor*, and foam filter prevent system contamination
- Sparge Overfill Sensor (SOS)* averts system flooding
- Electronic pressure sensing with one-touch automated leak check capability
- Electronic log tracks all changes, events, faults, and errors
- Rapid Swap™ modular design and integrated diagnostics simplify instrument maintenance
- Includes PC-based operational software and direct LAN/Ethernet connectivity.
- Low-volume pneumatics (<3 mL) ensure superb chromatography

* Optional

The Model 4660 Eclipse, the next generation in purge-and-trap technology, provides numerous innovative features for unprecedented ease of use, improved productivity, rapid cycle time, lower maintenance, and significantly improved instrument reliability. Built on proven technology, the Eclipse's new features combine with OI Analytical's well-established, standard purge-and-trap advantages including Cyclone Water Management, rapid direct trap heating, and Infra-Sparge Sample Heater.

Intuitive Touchscreen Interface

Its intuitive Windows® CE user interface makes the Eclipse exceptionally easy to use. The large, full-color integrated LCD touchscreen provides real-time instrument status at a glance. Program, edit, or view methods and sequences without external keypads or controllers. Access instrument electronic logs and system diagnostics with one-touch icons to simplify and automate equipment use and maintenance. Every Eclipse includes Eclipse PC software, providing remote access and control from any PC connected through the instrument's direct Ethernet/LAN connection.

New Generation Technology Gives You the Edge

The innovative pH Express™ option completely automates sample pH measurement, ending costly, labor-intensive manual measurement and reporting. All pH sample readings log in the Eclipse's log file and are easily imported into a database or LIMS system. The Foam Buster™, Foam Sensor, and foam filter provide three levels of defense for the ultimate protection against system downtime caused by foaming samples. The Sparge Overfill Sensor™ (SOS) option prevents accidental sparge tube overfilling, preventing maintenance problems or expensive downtime. Electronic pressure monitoring provides one-touch automated leak checks, alarm functions, and a digital pressure display.

Eclipsing the Competition With Innovation

Direct trap heating
Rapid trap heating and cooling provides optimal chromatographic performance

Foam Buster and Foam Sensor
Avoid downtime caused by foaming samples

Patented Water Management System
Provides simply the best system available for consistent water removal

Electronic pressure control
Provides system monitoring and automated one-button leak checks

Patented Infra-Sparge Sample Heater
Accurate, fast, and consistent heating improves compound recoveries and %RSDs

Graphical user interface
Easy-to-use, intuitive interface operates via a touchscreen or networked PC, reducing errors and the new user's learning curve

Sparge Overfill Sensor
Eliminates accidental system flooding

One-touch icons
Setup, maintenance, and service functions keep you running and get you back online faster

Electronic log
Track all events, faults, and errors for accurate record keeping and troubleshooting

pH Express
Fully-automated sample pH sensing eliminate time-consuming and expensive manual pH measurements

LAN connectivity
Provides direct network-wide access to all instruments

Easy and fast component access
Simplifies system service and maintenance

Rapid Swap modular design
Eliminates GC downtime

Eclipse PC Sample Concentrator

The Eclipse PC Sample Concentrator offers the same performance as the Eclipse at a lower cost. The Eclipse PC does not include the Windows CE touchscreen display. The Eclipse PC software running on a local or remote PC controls the unit. Requires appropriate handshake cables to interface with the autosampler and GC. See “Cables–Eclipse” on page 60.

Product	PN
Eclipse Sample Concentrator (115 V)	321606
Eclipse Sample Concentrator (230 V)	321616
Eclipse PC Sample Concentrator (115 V)	321607
Eclipse PC Sample Concentrator (230 V)	321617

✓ Download or request document numbers 1917 and 1944 for more information

Requires appropriate handshake cables to interface with the autosampler and GC. See “Cables–Eclipse” on page 60

Electronic pressure monitoring and one-touch leak check

Electronic log tracks changes, events, and errors

The Maintenance screen accesses multiple maintenance and service functions

Eclipse Modules and Accessories

Eclipse pneumatics and electronics modules

pH Express

Rapid Swap Eclipse Modules

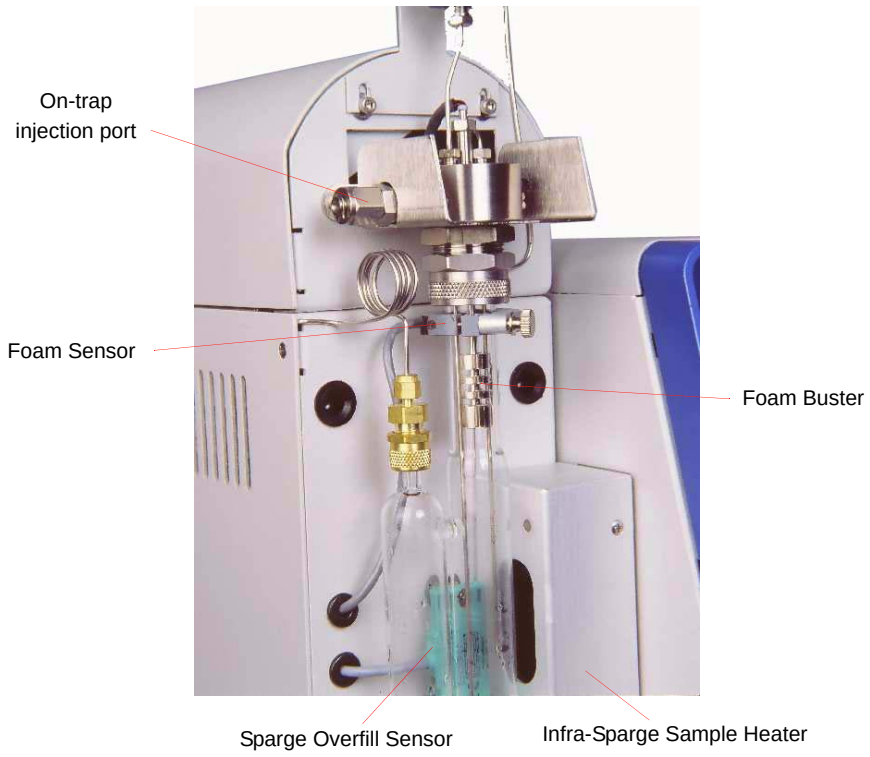
The Eclipse's revolutionary Rapid Swap modular design avoids system downtime for maintenance and repair. Exchange the electronics or pneumatics module in less than three minutes by simply removing four captive screws and disconnecting two cables. Keep a spare module on the shelf to swap when a module needs maintenance or repair. Your GC system continues running and generating revenue, while your module is repaired at your convenience.

Product	PN
Eclipse electronics module with touchscreen (115 V)	321091
Eclipse electronics module with touchscreen (230 V)	321618
Eclipse electronics module without touchscreen (115 V)	321747
Eclipse electronics module without touchscreen (230 V)	321748
Eclipse pneumatics module (115 V)	321090
Eclipse pneumatics module (230 V)	321619

pH Express

Completely automate and record water pH verification, as required by USEPA methods. Eliminate time-consuming and costly manual processes. The Eclipse automatically enters sample pH measurements into its electronic log for subsequent data reporting and exporting to LAN-based databases or LIMS systems. The pH Express features fully automated calibration. It is also available as a lower cost, manually-calibrated version.

Product	PN
pH Express, automated calibration	321164
pH Express, manual calibration	321614



Foam Buster

Break up foam before it contaminates sample pathways with the Foam Buster. Thermal energy breaks up the foam before it enters internal lines. Obtain valid VOC analyses from foaming samples handled by the Foam Buster instead of losing them down the drain. Avoid the time and cost of reanalysis, or additional sample preparation steps with the Foam Buster. *Requires frosted sparge vessels and attachment ferrule. Patent pending.*

Foam Sensor

Detect foaming samples with the optional Foam Sensor. With foam present, the optical Foam Sensor stops the run before sample pathway contamination occurs. Use the Foam Sensor alone or with the Foam Buster for added protection against foam. *Patent pending.*

Sparge Overfill Sensor (SOS)

Prevent sparge vessel overfilling and accidental system flooding with the Sparge Overfill Sensor (SOS). The SOS automatically detects liquid present in the sparge vessel and prevents unintended glassware double-filling, resulting in costly P&T and GC system flooding.

On-Trap Injection Port

The removable, glass-lined on-trap injection port allows direct, manual syringe injection of analytes into the trap for easy troubleshooting. Its removable design eliminates problems from septum bleed, leaking connections, and additional dead volume or adsorptive sites as seen in other designs.

Infra-Sparge Sample Heater

Heat soil or water samples in the Eclipse sparge vessel quickly, accurately, and reliably. The Infra-Sparge Sample Heater ensures maximum sample heating repeatability and significantly improves polar compound recoveries. The rapid-heating Infra-Sparge Sample Heater employs unique high-intensity, infrared heat with highly-reproducible direct sample temperature feedback through an inert thermocouple submerged in the sample.
OI Analytical's patented Cyclone Water Management system prevents transfer of excess water to the trap. *Requires factory installation.*

Air-Tube Accessory

Analyze air samples using this optional Eclipse accessory. Replace the purge-and-trap sparge vessel with a standard 6-mm or ¼" O.D. air tube (glass or stainless steel).

Air-Tube accessory

Product	PN
Foam Sensor	321610
Foam Buster	321611
Foam Sensor and Foam Buster package	321612
Sparge Overfill Sensor (SOS)	321165
On-Trap injection port	321676
Infra-Sparge Sample Heater for Eclipse (100/110 V)	321702
Infra-Sparge Sample Heater for Eclipse (220 V)	321703
Air-Tube accessory, 18 mm (115 V)	321706
Air-Tube accessory, 18 mm (230 V)	321707

Additional Sample Concentrator Accessories

Product	PN
Eclipse starter and support kit Includes a 5-mL Luer-Lok® sample syringe, 10-µL standard syringe, Method 502.2/524.2 standard, and tooling for minor repairs to the Eclipse Sample Concentrator. Recommended for laboratories new to purge-and-trap analysis.	228056
Ethernet cable for Eclipse to network	321902
Ethernet twisted pair cable for Eclipse to PC	321901
Frit sparger, 25 mL	321479
Frosted frit sparger, 25 mL	321081
Frosted frit sparger, 5 mL	321080
Frosted needle sparger, 25 mL	321697
Frosted needle sparger, 5 mL	321696
Frosted sparger attachment ferrule	321698
Heated transfer line, 60" (115 V)	321146
Heated transfer line, 60" (230 V)	321147
Needle sparge hardware kit for Eclipse with Foam Buster	321918
Needle sparge hardware kit for Eclipse without Foam Buster Adapts the Eclipse for needle sparging of soils or solids. Includes a needle purge gas line, side-hole purge needle, and a package of Mud-Dawgs™. Requires 18-mm needle sparger or disposable glassware for operation. See “Glassware Selection Guide” on page 95.	321615
One-year parts and supplies kit for Eclipse Includes selected quantities of commonly-used purge-and-trap expendable and nonexpendable parts.	321709
Sample pathway preventive maintenance kit for Eclipse Contains tubing, fittings, and ferrules used in the sample pathway.	322233
Sample pathway refurbishment kit for Eclipse Contains all parts included in the sample pathway preventive maintenance kit (PN 322233) plus the six-port valve, sample valve, cross, and sparge mount manifold.	322230
Transfer line tube assembly, 4 feet	321692
Transfer line tube assembly, 5 feet	321693
Union, connects Eclipse to Shimadzu GC	291625

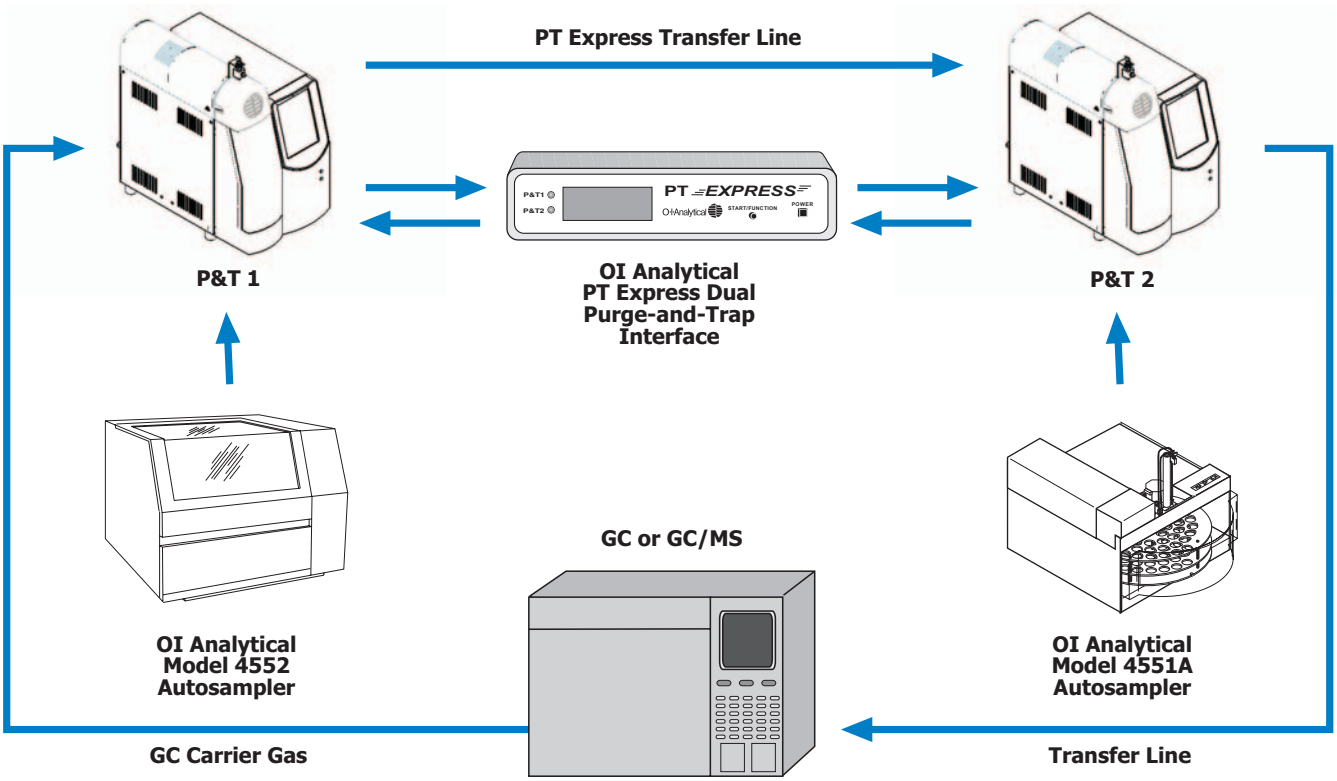
For a complete list of Eclipse handshake and Ethernet cables, see “Cables–Eclipse” on page 60.

PT Express Dual Purge-and-Trap Interface

- Doubles laboratory productivity
- Maintains sample sequence integrity and optimum versatility
- Fully complies with USEPA Method 5035
- Simple and easy to use

✓ Download or request document number 1811 for more information

The PT Express™ significantly increases a VOC laboratory's throughput by coupling two OI Analytical purge-and-trap sample concentrators and autosamplers to a single GC or GC/MS. With VOC GC analysis times continuing to decrease with improved column and instrument design, the overall purge-and-trap cycle time has now become the limiting factor in decreasing analytical cycle time. The PT Express overcomes this limitation by synchronizing the purge-and-trap systems to prepare the next sample while the first is still being analyzed, usually doubling GC and GC/MS productivity. The PT Express is compatible with the OI Analytical Eclipse and Model 4560 Sample Concentrators and any OI Analytical autosamplers used for water, soil, or air sample analysis. *Requires cable selection. See page 10.*

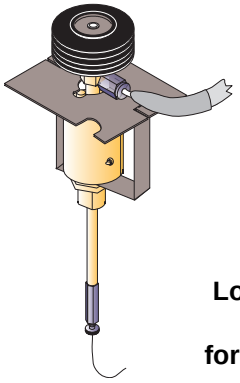


The PT Express synchronizes sample delivery from two purge-and-trap sample concentrators and autosamplers to a GC or GC/MS.

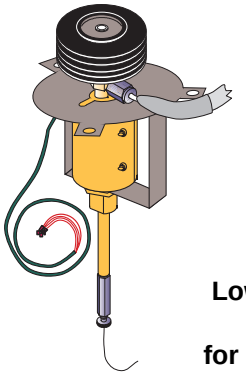
Product	PN
PT Express	320540
Cable, PT Express to Eclipse/Model 4560	320533
Cable, PT Express to Eclipse/Model 4560/Model 4552	320504
Cable, PT Express to Agilent 6890 remote	320534
Cable, PT Express to universal GC	320667
PT Express transfer line for Model 4560 (110 V), 27"	320652
PT Express transfer line for Model 4560 (220 V), 27"	320653
PT Express transfer line for Model 4560 (110 V), 30"	320654
PT Express transfer line for Model 4560 (220 V), 30"	320666

Sample Concentrator GC Accessories

Low-Dead-Volume Injector (LDVI)



Low-Dead-Volume Injector for Agilent 5890 GC



Low-Dead-Volume Injector for Agilent 6890 GC

This standalone GC injector optimizes interfacing a purge-and-trap sample concentrator to a GC with standard GC detectors (generally not used for interfacing mass spectrometers). Directly inject a sample into the LDVI or receive a gas sample desorbed from a sample concentrator without reconfiguring the GC inlet. Perform splitless volatile analyses by injection or via a sample concentrator without system modification. Use the LVDI's injection capability for quickly diagnosing system problems and troubleshooting instrument hardware. (100/110/220 V)

Product	PN
LDVI without flow control, Agilent 6890	280578
EPC inlet flow module for LDVI (PCM), Agilent 6890	285015
LDVI without flow control, Agilent 5890	229195

EPC PCM Flow Module for Purge and Trap, LVDI, and Agilent 6890

Add electronic flow control to a purge-and-trap sample concentrator when using an Agilent 6890 GC. This inlet flow module provides electronic flow control of GC carrier gas when coupled to the Model 4560 Sample Concentrator. Easily control and adjust flow from the GC's front panel or through Agilent ChemStation.

Agilent 6890 Volatiles Inlet (Option 142)

The Agilent 6890 volatiles interface with EPC, 0–100 psi operates in split, splitless, or direct mode but provides no direct injection capability as with the LDVI. It is Silcosteel-treated for inertness.

Product	PN
EPC PCM flow module, for use with sample concentrator, LVDI, and Agilent 6890	285015
Agilent 6890 volatiles inlet (option 142)	285031

Model 4551A Purge-and-Trap Water Autosampler

Eclipse Sample Concentrator with the Model 4551A Autosampler and Standards Addition Module (SAM)

- Automates VOC analysis of up to 51 samples
- Easily swapped sample carousel allows unlimited sample-load capacity to maximize GC throughput
- Direct docking to the OI Analytical Eclipse or Model 4560 Sample Concentrator minimizes benchspace requirements
- Proven sampling system provides maximum uptime and low support costs
- Programmable multiple rinses and blanks yields maximum flexibility
- Optional Standards Addition Module automates standard/surrogate addition from two independent reservoirs
- Water or lightly-particulated water (<100 µm) samples transfer without system clogging
- Spiral-design carousel promotes optimal septum-piercing accuracy
- Removable, lightweight sample carousel allows easy sample loading and unloading

✓ Download or request document number 1436 for more information

The Model 4551A Autosampler fully automates analyses of up to 51 clean water or lightly-particulated water samples. The easily-swapped carousel allows unlimited sample-load capacity to maximize GC throughput. The Model 4551A removes 5- or 25-mL sample volumes from standard 40-mL VOA vials and transfers them to the sparger on the Eclipse or Model 4560 Sample Concentrator. Program rinses, blanks, and replicates through the sample concentrator or PC software. The autosampler docks under the sample concentrator, saving valuable benchspace. The Model 4551A uses a tray and stationary needle assembly, avoiding high-maintenance, moving x-y arms and vial grippers. It provides improved system productivity through faster cycle times and lower maintenance downtime. The basic unit is configured with a 5-mL sample loop (25-mL loop optional). *Requires a gas supply regulated at 25–30 psi, not included.*

Product	PN
Model 4551A for Eclipse (100–230 V)	321710
Model 4551A for Eclipse with vial cooling (100–120 V)*	321711
Model 4551A for Eclipse with vial cooling (230–240 V)*	321712
Model 4551A for Model 4560 (100–230 V)	282749
Model 4551A for Model 4560 with vial cooling (100–120 V)*	319501
Model 4551A for Model 4560 with vial cooling (230–240 V)*	319456
Upgrade kit to Model 4551A for Eclipse	321608
Sample loop, 25 mL	259507
Refrigerated recirculating water bath	261909

**Requires an Infra-Sparge Sample Heater installed on the Eclipse Sample Concentrator. Does not include the refrigerated recirculating water bath.*

✓ Download or request document number 1573 for more information

Standards Addition Module (SAM)

Automate internal standard and surrogate addition with the SAM option. Add two separate 1-µL standard or surrogate additions to water samples during transfer from the Model 4551A to the Eclipse Sample Concentrator. The SAM contains two separate reservoirs that can add standards at user-defined, programmable sampling intervals.

Product	PN
SAM option for Model 4551A and Eclipse	316828

Download the latest product and applications information at www.oico.com.

Model 4552 Purge-and-Trap Water/Soil Autosampler

The Model 4552 Autosampler complies with USEPA Method 5035

- Market-leading water/soil autosampler
- Proven reliability through solid design
- Unique hot water rinse for the lowest sample carryover
- 51-postion capacity using an easily-removeable sample tray
- Internal and matrix spike standards addition
- Multiple method sequences per sample or sample tray

✓ Download or request document number 0756 for more information

The top-of-the-line Model 4552 automates purge-and-trap sample analyses of both liquids and soil or solids in the same run. The removable sample tray holds up to 51 samples and can cool to 4°C (optional) to meet USEPA method requirements. A sampling syringe transfers 1–25 mL sample volumes, which are automatically diluted from a blank water reservoir. Soil samples purge 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 sample carryover with hot water sample pathway rinsing and purging with gas after each run. The Model 4552 interfaces to the Eclipse, Model 4560, any Tekmar, or other manufacturer's sample concentrator. *Requires interface kit and cable. See "Model 4552 Interface Kits, Accessories, and Options" on page 15 and "Model 4552 Interface Cables" on page 15.*

Model 4552 Water Only Autosampler

A lower cost alternative to the Model 4552 Water/Soil Autosampler, this autosampler runs clean (nonparticulated) drinking water and wastewater samples only. It is similar to the Model 4552 Water/Soil Autosampler but with all components used for soil sampling removed. (No upgrade to run soil samples is available.) *Requires interface kit and cable. See "Model 4552 Interface Kits, Accessories, and Options" on page 15 and "Model 4552 Interface Cables" on page 15.*

Product	PN
Model 4552 Water/Soil Autosampler (100/110 V)	276568
Model 4552 Water/Soil Autosampler (220 V)	276576
Model 4552 Water Only Autosampler (110 V)	293126
Model 4552 Water Only Autosampler (220 V)	293134

Model 4552 Interface Kits, Accessories, and Options

Product	PN
Interface kit for Eclipse	321728
Interface kit for Model 4560	276592
Interface kit for Model 4460A or Tekmar LSC-2	276584
Interface Kit for Tekmar 2000/3000/3100	293043
Bar code reader	276709
Calibration bar and pin	03-505419-90
Needle sparge conversion kit to SoilVial	276717
Recirculating bath for vial cooling	261909
Rinse water kit	276725
Sample tray	03-505223-00
SoilVial conversion kit to needle sparge	276733
Model 4552 Windows software	03-505629-00

Model 4552 Interface Cables

Product	PN
Handshake pigtail cable to Agilent 6890	252213
Handshake pigtail cable to Agilent 5890	185868
Handshake pigtail cable to Varian 3400	188409
Handshake pigtail cable to Shimadzu 17A	244483
Cable to OI 4460/4560 to Agilent	284935
Cable to OI 4460/4560 to Varian 3400/3700	251694
Cable to OI 4460/4560 to Agilent 5890, RTE Agilent 1000 GC/MS software, Agilent 5970 MSD, or Agilent 5988 MS	03-505875-00
Cable to Tekmar LSC-2000/3000 to spade lugs	03-505872-00
Cable to Tekmar LSC-2000/3000 to Agilent 5890	03-505869-00
Cable to Tekmar LSC-2000/3000 to Varian 3400/3700	03-505868-00
Cable to Tekmar 2000/3000 with Agilent 6890	03-505873-00
Cable to Tekmar 2000/3000 with Agilent 5890 with 5970/71/72 MSD and Unix-B or MS-DOS, and 5890/5989 MS Engine	03-505874-00
Cable to Tekmar LSC-2000/3000 with Agilent 5995/85/87/88/92	03-505876-00

Model 4506 Automated Multipoint Process Sampler (AMPS)

- Automated 24-hour toxic compound monitoring of up to six water supplies
- Allows unattended operation and eliminates manual sampling
- Inert sampling system maintains sample integrity and minimizes carryover
- Fully compliant with all USEPA VOC sampling and method requirements

✓ Download or request document number 1338 for more information

The AMPS is an automated, on-line, multipoint, continuous sampler for the Eclipse (or Model 4560) Sample Concentrator. Unattended sampling of up to six different water streams eliminates the need for labor-intensive, repeated hourly or daily manual sampling. Program sequences via easy-to-use WinAMPS Windows-based software. Customize any automated program required for discharge, process, or drinking water monitoring. The AMPS provides unattended, 24-hour water monitoring that follows all standard USEPA and other regulatory VOC analysis methods (unlike other systems on the market).

Product	PN
Model 4506 AMPS	309864
Sample head kit	312264
Blank water filter kit	312249
Sample loop kit, 5-mL	312561
Standards Addition Module (SAM) for AMPS and Eclipse	312439

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Searching for a replacement part?
See page 117 for a complete list of
replacement parts and supplies.

GC Detector Products

OI Analytical's long history of supplying innovative, reliable, selective, and sensitive detector solutions to some of the most challenging analytical applications began in 1984 with OI Analytical's Electrolytic Conductivity Detector (ELCD) and the first (patented) tandem detector configuration for the Photoionization Detector (PID). This innovative approach lead to the creation of many USEPA and other worldwide regulatory methods that specify using OI Analytical's detector technology.

Our detector line continues to grow with the introduction of the Halogen Specific Detector (XSD™) and the Pulsed Flame Photometric Detector (PFPD). These new products expand the range of application solutions available to you. We strive to provide our customers with state-of-the-art analytical tools for solving the most difficult application problems.

All detectors are available for installing on most GC makes and models.

Model 5380 Pulsed Flame Photometric Detector

Model 5380 PFPD

- Improved sensitivity and selectivity
- Simultaneous S and P outputs with dual channel output
- Selective detection of 28 specific elements
- Dual-gate capabilities for optimized selectivity
- Equimolar S response
- Multi-element capability

✓ Download or request document numbers 0104 and 0740 for more information

The Model 5380 PFPD is the latest advance in flame photometric detector design. Compared to standard FPDs, the PFPD offers significantly enhanced selectivity and improved sensitivity for sulfur (S) and phosphorus (P) compounds while using only 10% of combustion gas as standard FPDs. Two analog outputs, one for each separate element being analyzed, permit real-time simultaneous S and P, S and hydrocarbon, or many other dual-element outputs. WinPulse™ Window-based software included with the PFPD optimizes operational parameters. The PFPD selectively detects over 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 with Pneumatics

Includes the 5380 Detector Controller, PFPD assembly with GC-specific mounting bracket, 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 and proper hardware to input the 0–1 volt signal into the data system used.*

Product	PN
Model 5380 with pneumatics (110 V), Agilent 6890	286278
Model 5380 with pneumatics (220 V), Agilent 6890	285080
Model 5380 with pneumatics (110 V), Agilent 5890	283127
Model 5380 with pneumatics (220 V), Agilent 5890	285072
Model 5380 with pneumatics (110 V), Shimadzu 17A version 3 or later	285098
Model 5380 with pneumatics (220 V), Shimadzu 17A version 3 or later	287656
Model 5380 with pneumatics (110 V), Thermo Finnigan Trace 2000	319821
Model 5380 with pneumatics (220 V), Thermo Finnigan Trace 2000	320379

Need more information on petrochemical sample analysis? Visit us at www.oico.com or call us and request document 2074, "Petrochemical Application Support Library CD."

Model 5380 PFPD without Pneumatics

Use this PFPD with an Agilent 6890 (or certain other GC makes and models) when the GC's EPC flow control provides detector gas flow control. Includes 5380 Detector Controller, PFPD assembly with GC-specific mounting bracket, PMT and optical filter optimized for sulfur analysis (other types available as options), WinPulse software package, supplies, and operator's manual. *Requires Agilent 6890 cabling and heater control to be installed in the GC. Requires Aux (275974 and 286344) or OIM PFPD EPC Flow Module (312686), and two appropriate signal cables.*

Product	PN
Model 5380 without pneumatics (110 V), Agilent 6890	289603
Model 5380 without pneumatics (220 V), Agilent 6890	289611

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

Model 5380 PFPD for Agilent 6850 (EPC)

This PFPD is specifically designed for installing on the Agilent 6850 GC. Includes the 5380 Detector Controller, PFPD assembly with GC specific mounting bracket, signal board, PMT and optical filter optimized for sulfur analysis (other types available as options), WinPulse software package, supplies, and operator's manual. *Requires OIM EPC Flow Module (285049) and two appropriate signal cables.*

Product	PN
Model 5380 (110 V), Agilent 6850	312694
Model 5380 (220 V), Agilent 6850	312363

Model 5380 PFPD for the Agilent 6890 Valve Box

A specially-configured mounting bracket is included for installing the PFPD in the Agilent 6890 GC's valve box area (no valve oven can be installed in the GC when using this option). *Requires Agilent 6890 cabling and heater control to be installed in the GC. Requires Aux (275974 and 286344) or OIM PFPD EPC Flow Module (312686), and two appropriate signal cables.*

Product	PN
Model 5380 with pneumatics (110 V), valve box	296400
Model 5380 with pneumatics (220 V), valve box	296418
Model 5380 without pneumatics (110 V), valve box	296384
Model 5380 without pneumatics (220 V), valve box	296392

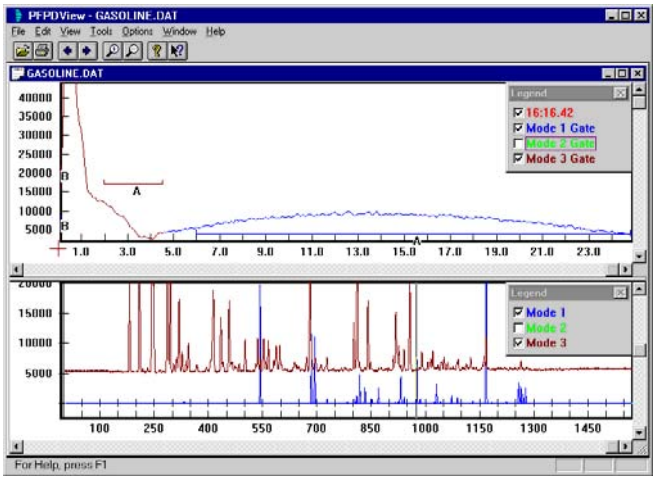
- Displays post-run pulse emission profiles and up to five chromatograms using different gate parameters
- Provides heteroatom structural information of unknown compounds
- Reanalyzes off-line chromatographic runs under different PFPD parameters
- Improves sensitivity and selectivity with post-run gate optimization
- Enhances interhetroatom selectivity with off-line optimization of dual gate modes
- Provides dual gate response ratios for elemental identification and multi-element analysis

✓ Download or request document number 1435 for more information

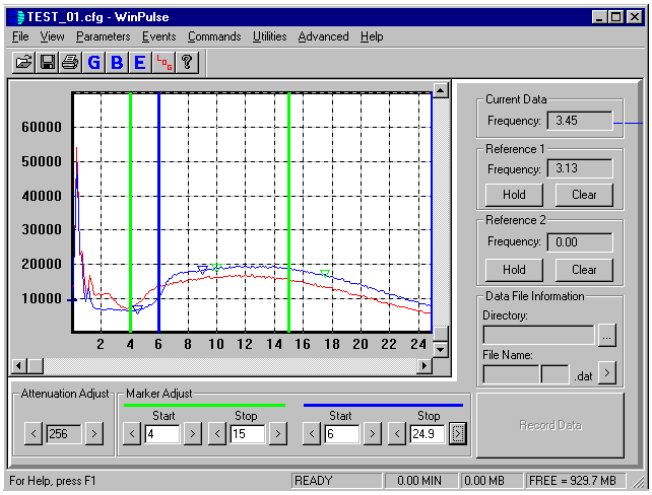
PFPDView Software

PFPDView software option for the PFPD allows the operator to reprocess (post-run) an entire chromatographic run under different PFPD operational parameters without rerunning the analysis. PFPDView is ideal for method development, obtaining structural information on unknown compounds, troubleshooting, gate optimization, and more. Display up to five chromatograms simultaneously using different gate parameters. Export newly-created data files to a data system in standard A.I.A. format.

Product	PN
PFPDView software	312330

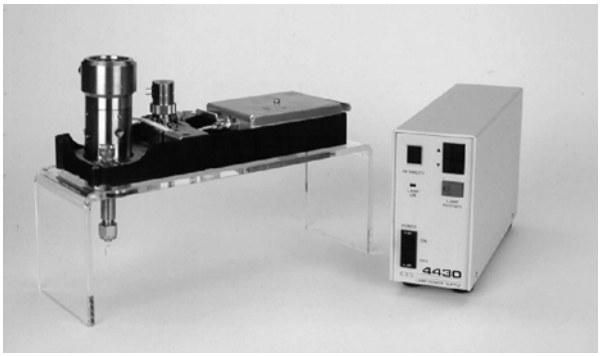


PFPDView screen



WinPULSE screen

Model 4430 Photoionization Detector



Model 4430 Photoionization Detector

- Unique Window Sweep™ UV lamp design minimizes window surface fouling by column effluent
- Lampsaver™ circuit turns off the lamp when not in use, extending lamp lifetime
- Directly interfaces to the ELCD, XSD, or FID to form tandem detector systems, requiring only one detector port
- Vents undesirable sample solvents

✓ Download or request document number 0243 for more information

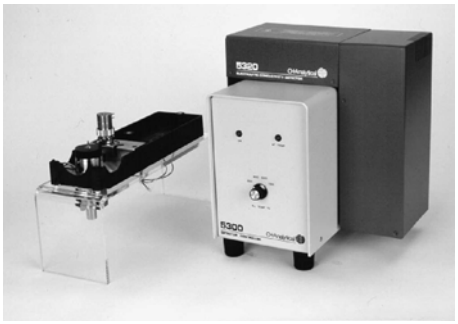
The market-leading Model 4430 PID features a unique Window Sweep™ design that prevents the column effluent from contacting and contaminating the lamp window. This minimizes downtime for window cleaning and allows analyzing photosensitive compounds that would otherwise polymerize on the window surface. The Model 4430 uses the GC's own FID electrometer board (and bias voltage if required). The GC must be equipped with gas supplies for both sweep gas and makeup gas (typically carrier gas) or reaction gas for a second detector if operating in tandem mode.

Product	PN
Model 4430 PID for Agilent 6890 (110 V)	274654
Model 4430 PID for Agilent 6890 (220 V) Includes PID with sweep gas design, lamp power supply module, mounting bracket assembly, 10.0-eV lamp, electrometer, interface cards, and operator's manual. *Requires appropriate 6890 OIM EPC gas module and one electrometer slot on the Agilent 6890 GC.*	274662
Model 4430 PID for Agilent 5890 (110 V)	187310
Model 4430 PID for Agilent 5890 (220 V) Includes PID 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 Agilent 5890 GC.*	234336
Model 4430 PID for Varian 3400/3600 (110 V)*	193524
Model 4430PID for Varian 3400/3600 (220 V)* Includes PID with sweep gas design, lamp power supply module, 10.0-eV lamp, mounting bracket assembly, and operator's manual.* *Requires gas supply, electrometer board on the GC, and appropriate heater block (see "Detector Accessories for Varian GCs" on page 34)*	276766
Model 4430 PID for Varian 3800 (110 V)	301036
Model 4430 PID for Varian 3800 (220 V)	301044
Model 4430 PID for Shimadzu (110 V)	250720
Model 4430 PID for Shimadzu (220 V) 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.*	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 a detector heater block. See "Detector Accessories for Varian GCs" on page 34.

Model 5320 Electrolytic Conductivity Detector



Model 5320 Electrolytic Conductivity Detector

- Simplified design improves reliability
- Minimal operator interface and adjustments make the detector easy to learn, maintain, and service
- Detector controller is compatible with the Model 5360 XSD
- Directly interfaces to most GC makes and models

✓ Download or request document numbers 0104 and 0700 for more information

The Model 5320 ELCD is OI Analytical's third-generation halogen-selective ELCD. With its newly-developed cell, reactor, solvent system, and electronics, the Model 5320 represents a true advance in GC detector technology. The 5300 ELCD series provides even greater reliability and ease-of-use at a significant cost savings while achieving the same detector performance as our earlier model. An appropriate signal cable to the GC data handling system is required. Some models of GCs require a gas flow module (H_2).

Product	PN
Model 5320 ELCD for Agilent 6890 (100/110 V)	274738
Model 5320 ELCD for Agilent 6890 (220 V) 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, startup kit, and operator's manual. Requires detector signal cable (see "Detector Accessories for Agilent 5890 Series II and 6890 Series GCs" on page 32) and 6890 OIM EPC gas module.	274746
Model 5320 ELCD halogen mode for Agilent 5890 (100/110 V)	274910
Model 5320 ELCD halogen mode for Agilent 5890 (220 V) 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, startup kit, and operator's manual. *Requires detector signal cable (see "Detector Accessories for Agilent 5890 Series II and 6890 Series GCs" on page 32).*	274928
Model 5320 for Varian 3400/3600 (110 V)*	291278
Model 5320 for Varian 3400/3600 (220 V) 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, startup kit, and operator's manual. *Requires detector signal cable, gas flow module, and appropriate heating block (see "Detector Accessories for Varian GCs" on page 34).*	291310
Model 5320 for Varian 3800 (110 V)	301051
Model 5320 for Varian 3800 (220 V) 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, startup kit, and operator's manual. *Requires detector signal cable and gas flow module (see "Detector Accessories for Varian GCs" on page 34).*	301069

Experience worry-free instrument ownership with an OI Analytical service contract or extended warranty. Call and ask us for more information at (800) 336-1911.

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 a detector heater block. See "Detector Accessories for Varian GCs" on page 34.

Model 5322 Dual ELCD

The Model 5322 ELCD consists of two detectors for mounting on a single GC (uses two detector ports). The detectors operate with two 5300 Detector Controllers. Each detector provides a 0–1 V signal. Appropriate signal cables are required to match the output of the data system used. Some GC models also require a gas flow module (H_2).

Product	PN
Model 5322 Dual ELCD halogen mode for Agilent 6890 (110 V)	294249
Model 5322 Dual ELCD halogen mode for Agilent 6890 (220 V) 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, startup kits, and operator's manual. *Requires two detector signal cables (see "Detector Accessories for Agilent 5890 Series II and 6890 Series GCs" on page 32) and appropriate 6890 OIM EPC gas module.*	294256
Model 5322 Dual ELCD for Agilent 5890 (110 V)	285122
Model 5322 Dual ELCD for Agilent 5890 (220 V) 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, startup kits, and operator's manual. *Requires two detector signal cables (see "Detector Accessories for Agilent 5890 Series II and 6890 Series GCs" on page 32).*	294231

Download the latest product and applications information at www.oico.com.

Model 5360 and 5360A Halogen Specific Detector (XSD)

Model 5360A Halogen Specific Detector

- Provides high sensitivity with selective halogenated compound detection
- Stable and easily-changed detector probe assembly and reactor simplifies maintenance
- Requires only air (20–30 mL/minute) to operate
- Model 5360A XSD includes an improved heated-base design for Agilent 6890 GCs
- 5300 Detector Controller can be used with the Model 5320 ELCD
- Includes designs for many GC models
- Enhanced venting option improves performance

✓ Download or request document numbers 0104 and 0700 for more information

OI Analytical's Model 5360 and Model 5360A XSD selectively detect halogenated compounds. Their simple design improves reliability and reproducibility. It significantly reducing maintenance versus the ELCD by eliminating the need for organic solvents and reaction tubes. The XSD provides an excellent alternative in many applications currently using either the ELCD or electron capture detectors (ECD). The new Model 5360A for the Agilent 6890 GC includes a heated-base design for improved performance that minimizes baseline rise during temperature programming and improves venting capabilities.

Product	PN
Model 5360A XSD for Agilent 6890 (100/120 V)	319522
Model 5360A XSD for Agilent 6890 (220 V) Includes the 5300 Detector Controller with temperature control and detector electrometer, XSD sensor, quick-release XSD reactor, mounting base assembly with new heated base design, startup kit, and operator's manual. *Requires detector signal cable (see "Detector Accessories for Agilent 5890 Series II and 6890 Series GCs" on page 32) and appropriate 6890 OIM EPC gas module.*	319757
Model 5360 XSD for Agilent 5890 (110 V)	250662
Model 5360 XSD for Agilent 5890 (220 V) Includes the 5300 Detector Controller with temperature control and detector electrometer, XSD sensor, quick-release XSD reactor, mounting assembly and bracket, one-line gas flow module, startup kit, and operator's manual. *Requires detector signal cable (see "Detector Accessories for Agilent 5890 Series II and 6890 Series GCs" on page 32).*	274894
Model 5360 XSD for Shimadzu (110 V)	290643
Model 5360 XSD for Shimadzu (220 V) Includes the 5300 Detector Controller with temperature control and detector electrometer, XSD sensor, quick-release XSD reactor, mounting assembly and bracket, startup kit, and operator's manual. *Requires detector signal cable (see "Detector Accessories for Varian GCs" on page 34) and appropriate gas supply.*	291906
Kit for adding XSD to existing Model 4430 PID	285809

Product	PN
Model 5360 XSD for Varian 3800 (110 V)	301077
Model 5360 XSD for Varian 3800 (220 V) Includes 5300 Detector Controller with temperature control and detector electrometer, XSD sensor, quick-release XSD reactor, mounting assembly and bracket, startup kit, and operator's manual. *Requires detector signal cable (see "Detector Accessories for Varian GCs" on page 34) and appropriate gas supply.*	306290
XSD venting option for Agilent 6890	319514
XSD venting option for Agilent 5890	246074
XSD venting option for Varian 3800	306449
XSD venting option for Shimadzu 17A Permits venting of the column effluent from the Model 5360/5360A XSD. Contains all hardware and cabling required for installation onto the detector. Controlled via the GC timed events relay.	290635

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

Model 5350 PID/ELCD Tandem Detector

- Unique tandem design eliminates transfer lines and minimizes dead volume
- Patented tandem detector design uses only one GC detector port
- Unique UV lamp Window Sweep™ design minimizes fouling from window surface contamination
- Lampsaver™ circuit turns off the lamp when not in use, extending lamp lifetime
- Incorporates quick-change, disposable deionizing resin cartridge and simplified solvent system
- Model 5300 Detector Controller used for the ELCD is also compatible with the OI Analytical Halogen Specific Detector (XSD)
- ✓ Download or request document numbers 0104 and 1047 for more information

The Model 5350 Tandem PID/ELCD is a versatile instrument specified in many USEPA methods for the determining volatile organic compounds. The PID provides aromatic and olefin response and the ELCD selectively detects halogenated compounds. The PID/ELCD uses OI Analytical's patented tandem design to provide dual detector capability to a GC using only one GC detector port. The low-cost Model 5350 uses individual control boxes for the PID and ELCD. Appropriate cables and gas supplies are required.

Product	PN
Model 5350 PID/ELCD for Agilent 6890 (110 V)	274811
Model 5350 PID/ELCD for Agilent 6890 (220 V) Includes the 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, startup kits, and operator's manuals. *Requires ELCD signal cable (see "Detector Accessories for Agilent 5890 Series II and 6890 Series GCs" on page 32) and appropriate 6890 OIM EPC gas module*	274829
Model 5350 PID/ELCD for Agilent 5890 (110 V)	274936
Model 5350 PID/ELCD for Agilent 5890 (220 V) Includes the 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, two-line gas flow module, startup kits, and operator's manuals. *Requires ELCD signal cable (see "Detector Accessories for Agilent 5890 Series II and 6890 Series GCs" on page 32).*	274944
Model 5350 PID/ELCD for Varian 3800 (110 V)*	301085
Model 5350 PID/ELCD for Varian 3800 (220 V)* Includes the 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, startup kits, and operator's manuals. *Requires ELCD and PID signal cables, electrometer board, and dual gas supplies (see "Detector Accessories for Varian GCs" on page 34).*	301093

The Tandem PID/ELCD are available for the Varian 3400/3600 GCs on request. Please contact the OI Analytical Sales Department for more information. Orders for OI Analytical detectors for Varian 3400/3600 GC must include a detector heater block. See "Detector Accessories for Varian GCs" on page 34.

Model 5390 Tandem PID/XSD

Model 5390 PID/XSD Tandem Detector

- Unique tandem design eliminates transfer lines and minimizes dead volume
- Patented tandem detector design uses only one GC detector port
- Unique UV lamp Window Sweep™ design minimizes fouling from window surface contamination
- Lampsaver™ circuit turns off the lamp when not in use, extending lamp lifetime
- Low maintenance and increased stability and reliability
- ✓ Download or request document numbers 0104 and 0880 for more information

As an alternative to the OI Analytical Tandem PID/ELCD, the Model 5390 Tandem PID/XSD allows simultaneous detection of aromatics and halogenated compounds while only occupying a single detector port on the GC. OI Analytical holds a patent on the tandem PID/XSD design (U.S. patent no. 5,578,271). The Model 5390 uses individual control boxes for the PID and XSD. *Requires appropriate gas flow module, signal cable, and gas supplies.*

Product	PN
Model 5390 PID/XSD for Agilent 6890 (110 V)	275073
Model 5390 PID/XSD for Agilent 6890 (220 V) Includes 5300 Detector Controller with temperature control and detector electrometer, XSD sensor, quick-release XSD reactor, mounting bracket assembly, PID sensor with sweep gas design, 10.0-eV lamp, PID 4430 lamp power supply, PID electrometer, startup kits, and operator's manuals. *Requires XSD signal cable and appropriate 6890 OIM EPC gas module.*	280644
Model 5390 PID/XSD for Agilent 5890 (110 V)	275065
Model 5390 PID/XSD for Agilent 5890 (220 V) Includes 5300 Detector Controller with temperature control and detector electrometer, XSD sensor, quick-release XSD reactor, mounting bracket assembly, PID sensor with sweep gas design, 10.0-eV lamp, PID 4430 lamp power supply, PID electrometer, two-line gas flow module, startup kits, and operator's manuals. *Requires XSD signal cable.*	280636
Kit to add XSD to existing PID for Agilent 5890	285809
Kit to add XSD to existing PID for any GC	320829

For international pricing, contact your local OI Analytical representative. For contact information, visit us at www.oico.com.

Model 4450 Tandem PID/FID with the Model 4410 and 4415 Flame-Ionization Detector

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

- Eliminating transfer lines improves peak shape and detector performance
- Patented tandem detector design uses only one GC detector port
- Tandem detector design enables obtaining screening and confirmatory information using a single sample injection
- Uses GC electronics or OI Analytical's dual channel electrometer

✓ Download or request document number 233 for more information

Model 4450 Tandem PID/FID Detector

The Model 4450 is a tandem detector system incorporating the Model 4430 PID and Model 4410 FID using a single detector port on the GC. Many regulatory methods for VOC analysis including USPEA, GRO, and MA VPH methods specify this tandem detector. Obtain excellent simultaneous results with the PID/FID using either packed or capillary columns.

Product	PN
Model 4450 PID/FID for Agilent 6890 (110 V)	274837
Model 4450 PID/FID for Agilent 6890 (220 V) Includes the 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 Agilent 6890 GC and appropriate 6890 EPC or manual gas module.*	274845
Model 4450 PID/FID for Agilent 5890 (110 V)	192138
Model 4450 PID/FID for Agilent 5890 (220 V) Includes the PID sensor with sweep gas design, lamp power supply, 10.0-eV lamp, FID sensor, two electrometer cards, two-line PID/FID gas flow module, mounting bracket assembly, and operator's manuals. *Requires two electrometer slots on the Agilent 5890 GC.*	258749
Model 4410 FID for Agilent 5890 (for PID/FID) (90 V) Includes the 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 Agilent 5890 GC.*	195354

See our complete list of consumables on page 19.

Model 4415 FID for Varian GCs or the Shimadzu 17A

The Model 4415 FID is an FID available for tandem operation with the Model 4430 PID on non-Agilent GCs. This new model uses the GC's FID electrometer to provide tandem PID/FID capability to most GC models.

Product	PN
Model 4415 FID for Varian 3400/3600/3800 (110/220 V)* Includes FID body, cables, and operator's manual. Specifically designed for tandem PID/FID operation. *Requires Model 4430 PID, GC's FID electrometer, appropriate gas supply, and appropriate heater block (for Varian only)*	283341
Model 4415 FID for Shimadzu 17A (110 V) Includes FID body, cables, and operator's manual. Specifically designed for tandem PID/FID operation. *Requires Model 4430 PID, GC's FID electrometer, and appropriate gas supply*	284612

*Orders for OI Analytical detectors for Varian 3400/3600 GC must also include purchasing a detector heater block. See "Detector Accessories for Varian GCs" on page 34 for the appropriate heater block.

Customer Communications

Have a question about our instruments or an application? Call us about onsite specific applications training and hands-on seminars.
Call us at our toll-free technical support hotline (800) 336-1711.

Detector Accessories for Agilent 5890 Series II and 6890 Series GCs

Still have questions? Call us and let us help!
(800) 653-1711

Signal Cables

Product	PN
5360/5380/5200/4440/4420 Detectors	
Cable, BNC to Agilent 5890 AIB	229641
Cable, BNC to Agilent 6890 AIB	274852
Cable, BNC to Agilent integrator	229633
Cable, BNC to spade lugs	215962
5320 Detector	
Cable, cell amp to Agilent 5890 AIB	246371
Cable, cell amp to Agilent 6890 AIB	246389
Cable, cell amp to Agilent Integrator	246397
Cable, cell amp to spade lugs	246405
Cable, Agilent 6890 external events	252569
Cable Agilent 6890 analog signal cable to spade lugs	252551

*BNC Connectors are used on Models 52XX, 5360, and 5380 detectors

Electrometers

Product	GC	PN
PID or FID electrometer card	Agilent 5890	187344
PID or FID electrometer card	Agilent 6890	274860
PID or FID interface card	Agilent 6890	274878
Agilent analog input board (AIB)	Agilent 5890	187716K
Agilent analog input board (AIB)	Agilent 6890	274886
OI Analytical single channel electrometer (110 V)	All GCs	194720
OI Analytical dual channel electrometer (110 V)	All GCs	194910

Gas Flow Modules for Agilent 5890

Product	PN
One-line 5220	225037
Two-line dual ELCD (5322)	232371
Two-line PID/ELCD	187302
Three-line PID/FID	192013

Gas Flow Modules for Agilent 6890

Product	PN
Inlet Gas Flow Modules	
PCM (EPC) pneumatic control module kit	285015
Detector Gas Flow Modules	
Aux-EPC module	275974
OIM EPC (must supply exact detector configuration with order)	285049
OIM EPC kit for Model 5380 PFPD	312686

Reactor Bases

Product	PN
Model 5320 ELCD 1/16" Agilent 5890	279828
Model 5320 ELCD 1/16" Agilent 6890	279885
Model 5360 XSD 1/16" Agilent 5890	246066
Model 5360 XSD 1/16" Agilent 6890	279869
Model 5360A XSD 1/16" Agilent 6890	319520

Ferrules for Detector Bases

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

Need more information on the S-PRO 3200 Series GC Sulfur Systems?
Visit us at www.oico.com and download "S-PRO 3200 Automated GC Systems for Sulfur Analysis" (document number 1700) or call us and request a copy.

Detector Accessories for Varian GCs

Signal Cables

Product	PN
BNC to spade lugs (72") Carries the detector signal from the 5200/5300/5380 Detector Controller to spade lug connectors.	215962
Analog/status (PID/FID) to Varian data	302877
Single/dual BNC to Varian data	302885
Single/dual 5320 to Varian data	302893
5350 Signal (PID/ELCD) to Varian data	302901
5320 to Varian 800 MIB	320408
5360 to Varian 800 MIB	320409

PID Accessories

Product	PN
Model 4430 startup kit for Varian 3400	186973
Model 4430 startup kit for Varian 3800	305367

Heater Blocks for Varian 3400/3600 GC

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

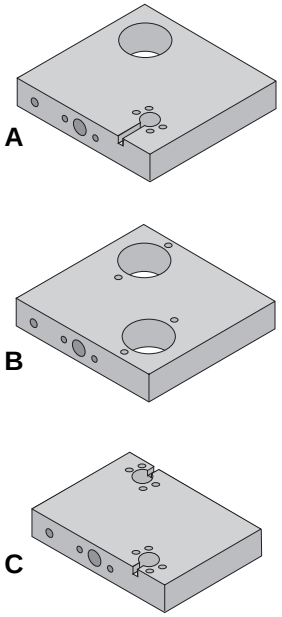
Product	PN
Heater block A, 3400 Varian base (PID/ELCD)	253088
Heater block B, 3400 Varian base (ELCD)	253070
Heater block C, 3400 Varian base (PID)	264184
Heater block A, 3600 Varian base (PID/ELCD)	259432
Heater block B, 3600 Varian base (ELCD)	contact Varian

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

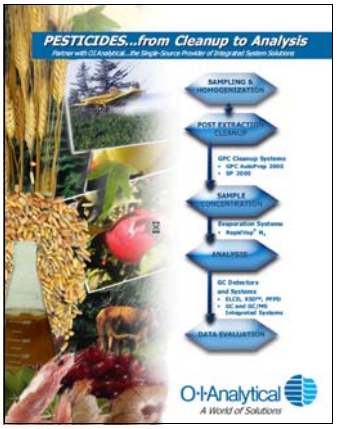
)

Heater blocks for Varian 3400 and 3600 GCs

Varian 3400 and 3600 Configuration	A	B	C
1 ELCD or 1 XSD	✓	✓	
1 PID	✓		✓
1 PID/ELCD	✓		✓
1 PID/XSD	✓		✓
2 ELCDs or 2 XSDs		✓	
2 PIDs			✓
2 PID/ELCDs or 2 PID/XSDs			✓
1 ELCD & 1 PID	✓		
1 XSD & 1 PID	✓		
1 ELCD & 1 PID/ELCD	✓		
1 ELCD & 1 PID/XSD	✓		
1 XSD & 1 PID/ELCD	✓		
1 XSD & 1 PID/XSD	✓		
1 PID & 1 PID/ELCD			✓
1 PID & 1 PID/XSD			✓



Need more information on sample preparation and pesticides analysis? Visit us at www.oico.com and download "Pesticides...from Cleanup to Analysis" (document number 0104) or call us and request a copy.



GC Analytical System Products

Since 1987, OI Analytical has provided complete gas chromatography (GC)-based solutions for numerous analytical applications. As a Premier Channel Partner with Agilent® Technologies, we offer systems incorporating our growing line of unique sample introduction and GC detector technologies into fully-integrated and application-specific systems.

We also provide system solutions for other GC platforms. Our Sales department works with other GC manufacturers to help you get the system you need.

Our applications expertise and instrumentation know-how help develop complete solutions to your most challenging analytical problems. Available systems analyze volatile organic compounds (VOC) in all matrices based on USEPA methods; pesticides by USEPA, USDA, and FDA methods; and ASTM or international regulatory groups. We also offer systems using OI Analytical's newest selective GC detectors, the Model 5380 Pulsed Flame Photometric Detector (PFPD) and the Model 5360A Halogen Specific Detector (XSD™), and Agilent GC/mass spectrometry (MS) technologies.

Let OI Analytical be the single-source solution to your complete GC system requirements.

S-PRO 3200 Series GC Sulfur Systems

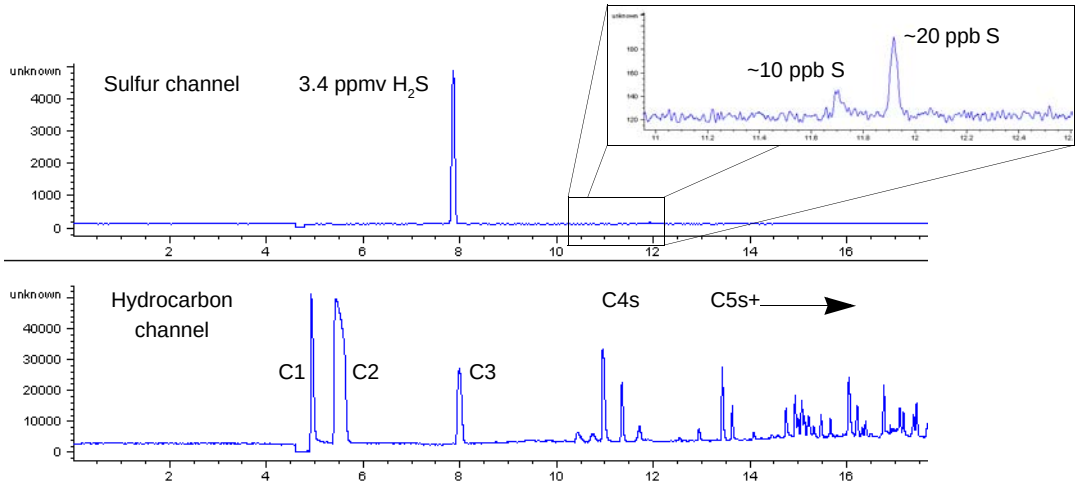
- Integrated permeation tube oven
- Automated injection of gas or LPG samples, and calibration or check samples
- OI Volatiles Interface for low dead volume split or splitless injection
- Sulfinert-treated pathways
- Proven PFPD technology
- Single-digit ppb sulfur analysis sensitivity
- Full EPC control
- ✓ Download or request document number 1700 for more information

See document numbers 1657 and 1762 for more S-PRO system application information.

OI Analytical configures the S-PRO 3200 Series GC systems for sulfur compound analyses in both gaseous and LPG samples. These new PFPD-based systems provide low-level (ppb) sulfur analysis in a completely automated, low-maintenance GC system. The system can even generate its own S-standards using an integrated permeation tube oven. The S-PRO 3200 systems consist of a permeation tube oven, automated gas sampling valves, a specially-designed inert, low-volume split/splitless inlet, and OI Analytical's speciality sulfur detector, the PFPD. The systems use all-electronic flow control and specially-treated, highly-inert, Sulfinert™-coated sample pathways. The permeation tube oven provides extremely stable, NIST-traceable, multiple low-level sulfur standards for calibration or QC check samples. This feature eliminates costs and errors commonly associated with sulfur standards in gas cylinders.

Order permeation tube(s) separately for all systems based on specific application requirements. Specially-configured GC systems are available upon request. Data systems are sold separately.

Product	PN
S-PRO 3200 Sulfur Analysis System for automated sampling of gaseous samples. Includes Agilent 6890 GC, permeation tube chamber (with Aux EPC Module), OI Volatiles Interface, automated air-actuated, dual-valve system in a heated valve box, complete Sulfinert sample pathway, and 100-µL gas sample loop, Model 5380 PFPD, PFPD OIM flow module, dual-signal cables, AIBs, and column (installation and familiarization included in the US).	319644
S-PRO 3205 Sulfur Analysis System for manual sampling of gaseous samples. Includes Agilent 6890 GC, permeation tube chamber (with Aux EPC Module), OI Volatiles Interface, manually-operated, dual-valve system in a heated valve box, complete Sulfinert sample pathway and 100-µL gas sample loop, Model 5380 PFPD, PFPD OIM flow module, dual-signal cables, AIBs, and column (installation and familiarization included in the US).	318717
S-PRO 3210 Sulfur Analysis System for automated sampling of liquid (LPG) samples. Includes Agilent 6890 GC, permeation tube chamber (with Aux EPC Module), OI Volatiles Interface, automated air-actuated, dual-valve system in a heated valve box, complete Sulfinert sample pathway, 2-µL liquid (LPG) sample loop, Model 5380 PFPD, PFPD OIM flow module, dual-signal cables, AIBs, and column (installation and familiarization included in the US).	318725
S-PRO 3215 Sulfur Analysis System for manual sampling of liquid (LPG) samples. Includes Agilent 6890 GC, permeation tube chamber (with Aux EPC Module), OI Volatiles Interface, manually-operated, dual-valve system in a heated valve box, complete Sulfinert sample pathway, 2-µL liquid (LPG) sample loop, Model 5380 PFPD, PFPD OIM flow module, dual-signal cables, AIBs, and column (installation and familiarization included in the US).	318733



PFPD chromatogram of 3.4-ppmv H_2S and two unknown sulfur compounds in a natural gas matrix. The data were acquired on the OI Analytical S-PRO 3200 Series GC System using a 0.5-mL gas sample loop, 9:1 split ratio, Agilent GS-GasPro® column, and isothermal GC oven program.

Need more information on the S-PRO 3200 Series GC Sulfur Systems?
Visit us at www.oico.com and download "S-PRO 3200 Automated GC Systems for Sulfur Analysis" (document number 1700) or call us and request a copy.

System VOC

- Preconfigured packages include all necessary hardware
- Uses 0.45 mm I.D. capillary columns, with or without cryo-focusing
- Eclipse Sample Concentrator provides built-in patented Cyclone Water Management™, Windows CE user interface, rapid trap heating and cooling, and unique multilevel foam protection against system contamination
- Tandem PID/ELCD requires only one detector port, allowing mounting up to four detectors on one GC
- ELCD features rapid-release reactor design, quick-change disposable resin cartridges, and Ni tubes
- PID sweep gas minimizes lamp fouling and maintains system calibrations for longer times
- Principal applications include USEPA Methods 502.2, 524.2, 601,602, 624, 8020, 8021, and 8024

✓ Download or request document number 0690 for more information

The System VOC series of high-performance environmental GC systems analyzes volatile organic compounds in water, soils, and other matrices. These state-of-the-art capillary column-based systems run standard purge-and-trap methods such as USEPA Method 8020/8021, 601/602 and 502.2. A complete line of mass spectrometer-based systems for VOC analysis is also available. All MS systems comply with USEPA methods for VOC analysis by purge and trap/GC/MS, including Methods 524.2, 8024, and 624. Installation and startup using appropriate standards/methods are included in systems delivered in the U.S.

Product	PN
System VOC Analysis System with EPC (110 V) Includes Agilent 6890 GC, Eclipse 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.	285130
VOC Squared Analysis System with EPC (110 V) Includes Agilent 6890 GC, Eclipse 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.	292946
Dual VOC Analysis System with EPC (110 V) Includes Agilent 6890 GC, two Eclipse 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.	292953
GC/MS VOC Analysis System with diffusion pump (110 V) Includes Agilent 6890 GC, EPC split/splitless injector with a VOC optimized injector liner, Agilent 5973N diffusion pump bundle (includes ChemStation™, computer, monitor, and printer), Eclipse Purge-and-Trap Sample Concentrator, VOC column, ion gauge controller, factory installation and quality assurance checkout, field installation, and familiarization.	316836
GC/MS VOC Analysis System with turbo pump (110 V) Includes Agilent 6890 GC, EPC split/splitless injector with a VOC optimized injector liner, Agilent 5973N turbo pump bundle (includes ChemStation, computer, monitor, and printer), Eclipse Purge-and-Trap Sample Concentrator, VOC column, ion gauge controller, factory installation and quality assurance checkout, field installation, and familiarization.	316844

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

Specially-configured GC systems including 220/240 VAC systems are available on request.

System BTEX

- Preconfigured packages include all necessary hardware
- Uses 0.53 mm I.D. capillary columns, with or without cryo-focusing
- Eclipse Sample Concentrator provides built-in patented Cyclone Water Management™, Windows CE user interface, rapid trap heating and cooling, and unique multilevel foam protection against system contamination
- Tandem PID/FID has excellent sensitivity and linearity
- Tandem PID/FID requires only one detector port, allowing mounting up to four detectors on one GC
- PID sweep gas minimizes lamp fouling and maintains system calibrations for longer times
- Principal applications include USEPA Methods 502, 602, and 8020, and related GRO and MA VPH methods

✓ Download or request document number 0690 for more information

The System BTEX measures volatile organic compounds in soil and water. OI Analytical configures the new Eclipse Purge-and-Trap Sample Concentrator and Model 4450 Tandem Photoionization/Flame-Ionization Detector (PID/FID) on an Agilent GC equipped with the appropriate columns (RTx-5™ column or Stabilwax® or similar). This complete system uses leading technology to analyze gasoline-range aromatic hydrocarbons. The system runs USEPA VOC methods such as 8020, 602, and 502. It also performs related gasoline range organics (GRO) and Massachusetts volatile petroleum hydrocarbons (MA VPH) methods with alternate column. Simultaneous detection with both a PID and FID provides confirmational analysis as well as basic structural information for detected compounds in a single GC analysis. Customized systems and specialized configurations to meet specific method requirements are available. Onsite installation and system familiarization are included with each System BTEX configuration package delivered in the U.S.

Product	PN
System BTEX Analysis System with EPC (110 V) Includes Agilent 6890 GC, Eclipse 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.	292961
Two-column BTEX Analysis System with EPC (110 V) Includes Agilent 6890 GC, Eclipse Purge-and-Trap Sample Concentrator, low-dead-volume injector with PCM electronic flow, Model 4430 PID, Agilent EPC FID (Agilent 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.	292979
Dual BTEX Analysis System with EPC (110 V) Includes Agilent 6890 GC, two Eclipse 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.	292987

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

Specially-configured GC systems including 220/240 VAC systems are available on request.

Pesticide Analysis Systems

- Choose separate detectors for separate or simultaneous organochlorine and organophosphorus pesticide analysis
- Preconfigured packages include all necessary hardware for analysis
- Fully integrated system provides easy use and accurate results
- PFPD provides simultaneous organophosphorus and organosulfur pesticide analysis
- ELCD or XSD analyzes organochloride pesticides

✓ Download or request document number 0104 for more information

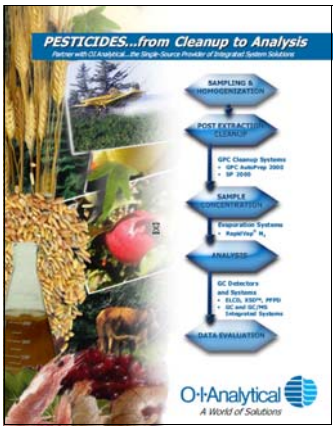
OI Analytical Pesticide Analysis Systems are high-performance GC packages developed specifically for the selective detection of organochlorine, organophosphorus, and organosulfur pesticides. These pesticide systems offer versatility in specific detection through a variety of highly-selective, single-or dual-detector combinations using OI Analytical's Pulsed Flame Photometric Detector (PFPD), Halogen Specific Detector (XSD), or Electrolytic Conductivity Detector (ELCD). OI Analytical's selective detectors in parallel with mass spectrometers offer a powerful solution for the most difficult sample matrices.

Product	PN
Pesticide Analysis System with EPC and ELCDs for dual halogen mode (110 V) Includes Agilent 6890 GC, EPC capillary split/splitless inlet (Agilent 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.	284943
Pesticide Analysis System with EPC and XSDs (110 V) Includes Agilent 6890 GC, EPC capillary split/splitless inlet (Agilent option 112), column splitter, two pesticide columns, two Model 5360A XSDs 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.	284950
Pesticide Analysis System with EPC, PFPD, and XSD (110 V) Includes Agilent 6890 GC, EPC capillary split/splitless inlet (Agilent 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.	292995

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

Specially-configured GC systems including 220/240 VAC systems are available on request.

Need more information on sample preparation and pesticides analysis? Visit us at www.oico.com and download "Pesticides...from Cleanup to Analysis" (document number 0104) or call us and request a copy.



Gel Permeation Chromatography Cleanup

Gel permeation chromatography (GPC) cleanup 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. GPC cleanup is referenced in all regulatory methods including USEPA SW-846 Method 3640, the Contract Laboratory Program's Statement of Work, and the *FDA Pesticide Analytical Manual*.

GPC AutoPrep 2000

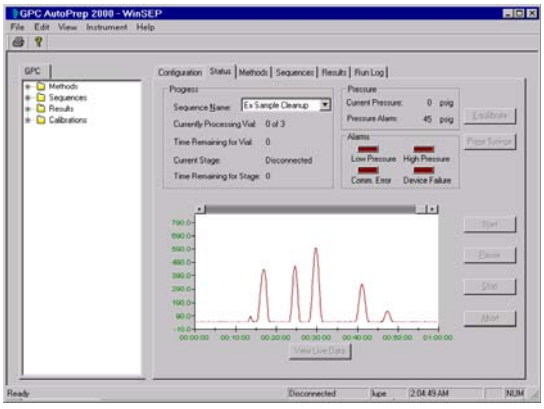
Automatically remove interfering co-extractives, such as fats, from target analytes in environmental and food samples prior to GC, GC/MS, or HPLC analysis. The GPC AutoPrep 2000 automatically cleans up to 60 samples in a single run. Choose from a wide selection of OI Analytical GPC columns to match your specific sample and matrix. With Windows®-based WinSEP™ software, the GPC AutoPrep 2000 provides flexibility and total control over the GPC cleanup process. *Column selection required. See "Gel Permeation Chromatography Cleanup Accessories" in the Sample Preparation Products Catalog.*

- High capacity and high efficiency column options
- Up to 60 crude residue extracts automatically cleaned
- Longer analytical column lifetime
- Automatic flow path rinse between samples to eliminate carryover contamination
- Interchangeable sample loops
- Reduced sample losses, fewer errors, and greater recoveries
- Less GC or GC/MS downtime
- Variety of sample and collection vessels

✓ Download or request document numbers 0104, 1463, and 1734 for more information

- WinSEP Windows-based control software with real time detector plots and extensive quality assurance package
- Run logs, password protection, and flexible reporting structure
- Diagnostics screen for easy troubleshooting

✓ Download or request document numbers 1717 and 1734 for more information



WinSEP GPC control software Status screen

- Applicable to all GPC cleanup methods
- For laboratories with smaller sample throughput
- Manual syringe sample loading to interchangeable sample loops
- Variety of column options
- Column calibration with OI Analytical's UV Detector/ Chart Recorder
- Run time, start, flow rate, and duration of collected fraction controlled directly from the easy-to-use keypad
- Less GC, GC/MS, or HPLC downtime
- Longer analytical column lifetimes

✓ Download or request document numbers 1734 and 1789 for more information

Model SP 2000

Use this simple, highly-affordable, and compact system to remove high molecular weight lipids, proteins, natural resins, cellular components, and sulfur from environmental and food samples prior to GC, GC/MS, and HPLC analysis. The SP 2000 provides a lower cost alternative to the fully-automated GPC AutoPrep 2000. It is ideal for laboratories with smaller sample throughput. *Column selection required. See "Gel Permeation Chromatography Cleanup Accessories" in the Sample Preparation Products Catalog.*

Product	PN
GPC AutoPrep 2000 (110 V)	311209
GPC AutoPrep 2000 (220 V)	311209EU
Model SP 2000	320389
UVD-1000 UV detector/chart recorder (110 V)	308837
UVD-1000 UV detector/chart recorder (220 V)	308837EU
Smart-UPS uninterruptible power supply	416-100

See the "Sample Preparation Products Catalog" for complete information on Gel Permeation Chromatography cleanup products for pesticides analysis.

RapidVap N2 Evaporation System

The RapidVap® N2 Evaporation Systems offer a more efficient, automated alternative to Kuderna-Danish and rotary evaporators and can be used with a broad range of aggressive chemicals. The RapidVap N2 Systems speeds evaporation using a nitrogen or dry gas stream blown directly downward on the sample. Apply vortex motion and dry heat to further accelerate processing. The block holds eight 450 mL samples, making it efficient for environmental and residue testing. In many GPC applications, the samples should not evaporate to dryness. The unique Cool-Zone block and tube design significantly reduce evaporation rate after achieving an end point. The Cool-Zone insulates the samples, allowing adequate time to remove the samples before they completely dry.

- Faster evaporation for greater throughput
- Maintenance-free microprocessor-controlled motor
- Teflon®-coated, corrosion-resistant aluminum sample block and chamber
- Phenol-free gasket for a positive seal without phenol contamination
- Unique Cool-Zone for processing to a desired end point
- Visual and audible alarms

✓ Download or request document number 2073 for more information

Product	PN
RapidVap N2 Evaporation System (115 V)	981-019
RapidVap N2 Evaporation System (230 V)	981-019EU
Tubes, 600 mL with1.5-mL stems (8/pk)	320940

Fluorinated By-Products Analyzer

On-line Fluorinated By-Products Analyzer

✓ Download or request document number 1120 for more information

The Fluorinated By-Products Analyzer (FBA) monitors fluorinated by-products in various petrochemical process streams such as butane or LPG. If present at elevated levels, these compounds can lead to corrosion problems and catalyst bed destruction at refineries. Capable of measuring contamination to ppb levels in only two to three minutes, this complete, automated system offers numerous advantages over the standard Wickbold method commonly used for this analysis. The FBA is available as a laboratory-based GC system or as an on-line process system.

Laboratory-Based FBA GC System

The laboratory-base FBA GC system includes an Agilent 6890 GC, 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.

On-line Process FBA

This true process FBA is a Class I Div. II-rated analyzer for installing on-line. OI Analytical designed the basic analyzer as an add-on module for an existing process analyzer used for sample handling and data processing. Custom configurations are available on request.

Product	PN
Laboratory-Based FBA System with Agilent 6890 (110 V)	293001
On-line FBA Analyzer (110 V)	300988

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

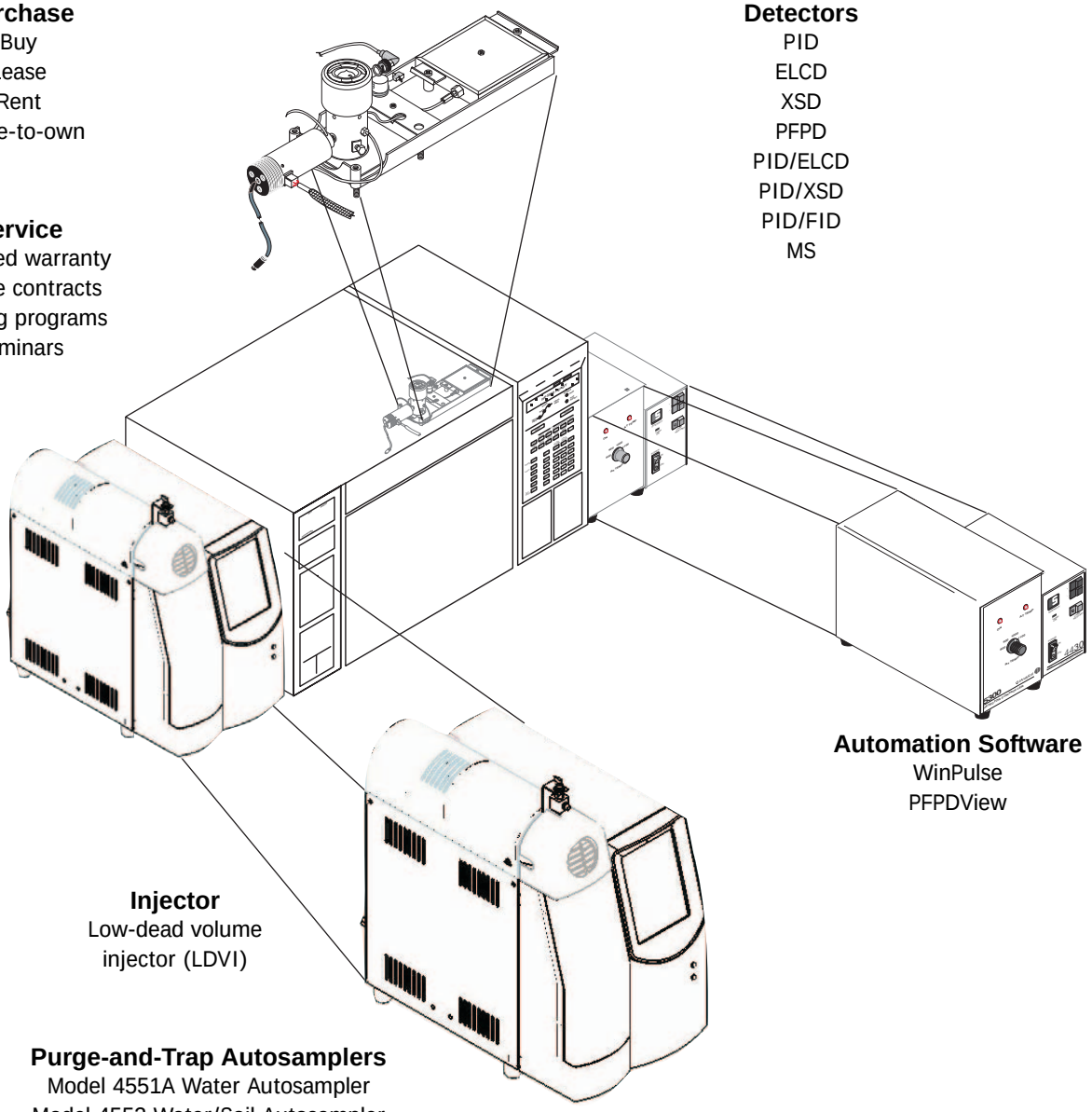
Custom-Designed Systems

Create your own customized GC system by adding OI Analytical components to your GC (see diagram below). We offer specific components for installing on certain GC models from the following manufacturers: Agilent Technologies, Varian®, Shimadzu®, Thermo Finnigan®, and Perkin Elmer®. Contact an OI Analytical sales representative for information on manufacturers not listed.

Purchase
Buy
Lease
Rent
Lease-to-own

Service
Extended warranty
Service contracts
Training programs
Seminars

Detectors
PID
ELCD
XSD
PFPD
PID/ELCD
PID/XSD
PID/FID
MS

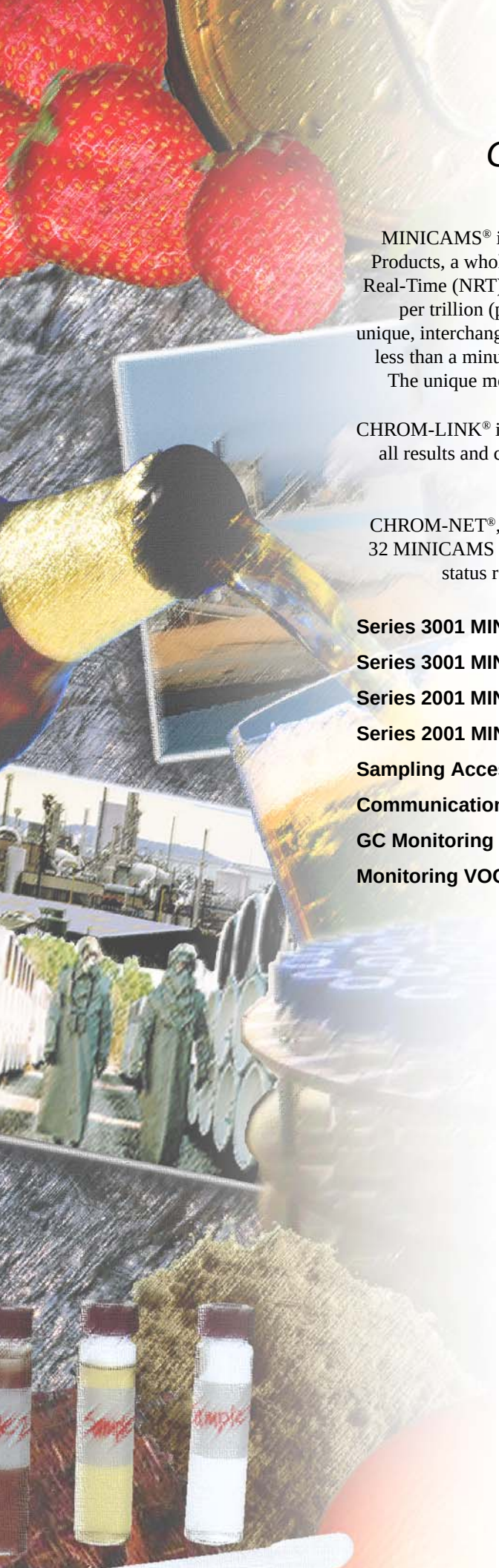


Automation Software
WinPulse
PFPDView

Injector
Low-dead volume
injector (LDVI)

Purge-and-Trap Autosamplers
Model 4551A Water Autosampler
Model 4552 Water/Soil Autosampler
Automated Multipoint Process Sampler (AMPS)

Sample Introduction
Eclipse Sample Concentrator



GC Monitoring System Products

MINICAMS® is a gas chromatography-based monitoring system available from CMS Field Products, a wholly-owned subsidiary of OI Analytical. The system provides automatic Near-Real-Time (NRT) monitoring of volatile organic compounds (VOCs) in air from the low parts per trillion (ppt) to parts per million (ppm) range. The heart of these systems contains the unique, interchangeable plug-in GC module. Switch the module in and out of the instrument in less than a minute, minimizing monitoring downtime for instrument maintenance or service. The unique modular design provides both flexibility in applications and easy maintenance.

CHROM-LINK® is an air-monitoring data acquisition, storage, and display package that recalls all results and chromatograms for every analysis and provides added calibration capabilities (including multilevel calibrations).

CHROM-NET®, a complete air monitoring data acquisition and reporting system, links up to 32 MINICAMS to a single host PC. CHROM-NET stores chromatograms, concentration and status reports, calibrations, and operating conditions in a database for easy retrieval.

Series 3001 MINICAMS

Series 3001 MINICAMS with FPD and vertical PCT option

The Series 3001 MINICAMS, a near-real-time air monitoring and alarm system, is designed for continuous operation, easy transport, applications flexibility, ruggedness, and reliability in both field- and fixed-site applications. The MINICAMS is a modular and extremely flexible system, easily customized for specific monitoring needs and requirements.

Product	PN
Series 3001 MINICAMS with FPD Complete monitoring system includes a plug-in GC module with a flame photometric detector (for sulfur- or phosphorus-containing compounds), solid-sorbent sample preconcentration, sample pump, compressed gas regulators, software, required cables, operator's manual, expendable supplies, and two-day orientation training at CMS for two staff members (up to a maximum of six people per customer order)	FM-3001FPD
Series 3001 MINICAMS with XSD™ Complete monitoring system includes a plug-in GC module with a halogen-specific detector (for chlorine-containing compounds), solid-sorbent sample preconcentration, sample pump, compressed gas regulators, software, required cables, operator's manual, expendable supplies, and two-day orientation training at CMS for two staff members (up to a maximum of six people per customer order).	FM-3001XSD
Series 3001 MINICAMS with PFPD Complete monitoring system includes a plug-in GC module with a pulsed flame photometric detector (for sulfur- and phosphorus-containing compounds), solid-sorbent sample preconcentration, sample pump, compressed gas regulators, software, required cables, operator's manual, expendable supplies, and two-day orientation training at CMS for two staff members (up to a maximum of six people per customer order).	FM-3001PFPD
Flame-Ionization detector Add as part of systems or as an add-on detector at a later date. CMS FID for installation onto an existing FPD.	FIO-100

Series 3001 MINICAMS Plug-in Modules

Product	PN
GC module with CMS FID Equipped with a CMS flame-ionization detector (FID), solid-sorbent sample preconcentration, column, and electronics for mounting directly into the MINICAMS chassis.	GCI-100A
GC module with FPD Equipped with a flame photometric detector (FPD), solid-sorbent sample preconcentration, column, and electronics for mounting directly into the MINICAMS chassis.	GCF-100A
GC module with FPD/FID Equipped with a CMS combination FPD/FID, solid-sorbent sample preconcentration, column, and electronics for mounting directly into the MINICAMS chassis.	GCF-100A/ FIO-100
GC module with XSD Equipped with a halogen specific detector (XSD), solid-sorbent sample preconcentration, column, and electronics for mounting directly into the MINICAMS chassis.	XSD-101
GC plug-in module with PFPD Equipped with a pulsed flame photometric detector (PFPD), solid-sorbent sample preconcentration, column, and electronics for mounting directly into the MINICAMS chassis.	GCPF-100

The standard configuration for the Series 3001 MINICAMS and plug-in GC modules includes solid-sorbent sampling and preconcentration when low parts-per-billion detection limits are required. A vertical PCT option is available. An alternative, fixed-volume loop can be used for monitoring chemical concentrations in the parts-per-million range or extremely volatile compounds that cannot be captured on a solid sorbent. Contact CMS at (205) 733-6900 or CMSSales@oico.com for details and recommendations on the most appropriate sampling configuration.

CUSTOMER CARE

CMS offers training programs customized to meet the need of the customer and the monitoring application. Training can be provided either at CMS or onsite. Contact CMS at (205) 733-6900 or CMSSales@oico.com for details.

Series 2001 MINICAMS

— Rugged, compact
— VOCs from ppm to <1 ppt
— Increased productivity

FM-2001 Continuous Monitoring System

The Series 2001 MINICAMS, a near-real-time air monitoring and alarm system, is designed for easy transport, applications flexibility, ruggedness, and reliability in both field- and fixed-site applications. Easily customize the modular and extremely flexible Series 2001 system for specific monitoring needs and requirements.

Product	PN
Series 2001 with FID Complete monitoring system includes a plug-in GC module with a flame-ionization detector (FID), solid-sorbent sample preconcentration, sample pump, software, required cables, operator's manual, expendable supplies, and two-day orientation training at CMS for two staff members (up to a maximum of six people per customer order).	FM-2001FID
Series 2001 with PID Complete monitoring system includes a plug-in GC module with a photoionization detector (PID), solid-sorbent sample preconcentration, sample pump, software, required cables, operator's manual, expendable supplies, and two-day orientation training at CMS for two staff members (up to a maximum of six people per customer order).	FM-2001PID
Flame-Ionization detector (FID) Add as part of systems or as an add-on detector at a later date. Model 5310 FID for installing onto an existing Model 5330 PID.	FID-510

Series 2001 MINICAMS Plug-in GC Modules

Product	PN
GC plug-in module with CMS FID Equipped with a CMS FID, solid-sorbent sample preconcentration, column, and electronics for mounting directly into the MINICAMS chassis.	GCI-100A
GC plug-in module with OI Analytical FID Equipped with a Model 5310 FID, solid-sorbent sample preconcentration, column, and electronics for mounting directly into the MINICAMS chassis.	GCI-510
GC plug-in module with PID Equipped with a Model 5330 PID, solid-sorbent sample preconcentration, column, and electronics for mounting directly into the MINICAMS chassis.	GCP-530
GC plug-in module with PID/FID Equipped with a tandem PID/FID, solid-sorbent sample preconcentration, column, and electronics for mounting directly into the MINICAMS chassis.	GCP-540

The standard configuration for the Series 2001 MINICAMS and plug-in GC modules includes solid-sorbent sampling and preconcentration when low parts-per-billion detection limits are required. An alternative, fixed-volume loop can be used for monitoring chemical concentrations in the parts-per-million range or extremely volatile compounds that cannot be captured on a solid sorbent. Contact CMS at (205) 733-6900 or CMSSales@oico.com for details.

CUSTOMER CARE

CMS offers training programs customized to meet the need of the customer and the monitoring application. CMS offers training either at CMS or onsite. Contact CMS at (205) 733-6900 or CMSSales@oico.com for details.

Sampling Accessories

Continuous Sampling System

Use the Continuous Sampling System (CSS) with the MINICAMS or other sorbent-based air monitoring systems to sample air continuously for volatile and semivolatile organic compounds using solid-sorbent sampling. The CSS collects air samples alternately on two sorbent tubes that are sequentially and periodically desorbed and transferred to the MINICAMS or other system for analysis. The CSS allows automated near-real-time air monitors to sample air continuously without “blind spots” and lowers detection limits by collecting larger sample volumes of air.

Product	PN
Continuous Sampling System	CSS-100
Stream Selection System, 12 ports Automatic system permits automatic sampling of up to 12 different sample points in operator-defined sequences.	SSS-121
Stream Selection System, two ports Automatic system permits automatic sampling of one or two different sample points.	SSS-021
Low-volume sampler Permits sampling of high concentration gas streams using MINICAMS configured with solid-sorbent sampling. May be operated with the Stream Selection System.	LVS-001
Thermal desorber, single tube Thermally desorbs air samples collected manually on 6- or 8-mm O.D. solid-sorbent tubes into the MINICAMS for analysis.	STD-100
Variable split sampler Special sampling device for concurrent two-line sampling. Contact CMS for additional details and relevant applications.	VSS-020B
Linear mass flowmeter Measures and monitors sample flow rates at 2 L/min (2 SLPM) air.	LMF-xxx
Mass flow controller Measures and controls sample flows, available in both 1 and 2 L/minute.	LMFC-XXX
Heated sampling lines CMS offers heated sample transfer lines in various configurations and lengths. Contact CMS for more information.	HSL-xxx

Communication and Monitoring Data Acquisition Accessories

Product	PN
CHROM-LINK Data System Air-monitoring data acquisition, storage, display, and control package that recalls all results, parameters, and chromatograms for every analysis; provides added calibration capabilities including multilevel calibrations.	CHL-100
CHROM-NET Data System A proprietary monitoring data acquisition, storage, display, and reporting package that links up to 16 MINICAMS to a single host PC. Includes computer, monitor, and data acquisition hardware including one set of cables for a single MINICAMS. Contact CMS for hardware requirements for each additional MINICAMS connection. Additional hardware expands the system to 32 MINICAMS. Contact CMS for additional details and recommendations.	CHR-100
CHROM-NET Client Server For large installations, allows linking of multiple CHROM-NET host computers into a local area network (LAN). Individual hosts transmit their MINICAMS data (analytical results and operational parameters) to a central database server through an Ethernet switch. The server can be configured to transfer concentration reports and status to a Laboratory Information System (LIMS) or other third-party system. Please call CMS Field Products for assistance with specific installation designs.	CHR-100
Converters Long range converters for use with CHROM-NET and MINICAMS to allow RS485 communications between the host PC and individual monitoring systems.	COVL-485
Process control interface Provides hard-wired connections from the MINICAMS to a facility control system providing customer-specified outputs for monitoring status, instrument mode, sample point, and agent concentration. It includes an isolated 4–20 mA output to provide concentration information and six configurable relays capable of providing normally open/normally-closed contacts for user-specified outputs.	PDAR-xxx
Status relay device Contains a 0–10 VDC output and three contact closures, configured to transmit ALARM/NO ALARM, ERROR/NO ERROR, and SAMPLE/PURGE statuses from the MINICAMS to a programmable logic controller (PLC) or other device.	SRD-100
Monitoring status panels Multiple panels can be controlled by the CHROM-NET monitoring data acquisition and reporting package to provide the status of each sample point in the networked monitoring system. The light set (up to 20 sets) configurations are easily defined by the user for specific installations. The Master Status Panel includes an alarm horn and is capable of driving an external horn/beacon assembly. Addition of optional Slave Status Panels (ANS-100) allows use of up to 120 light sets.	ANM-100
Floppy-disk drive External floppy-disk drive enables MINICAMS monitoring reports and operating parameters to be saved directly to a floppy disk, includes enclosure.	FDD-400
Printer Includes cable, operator's manual, and ink cartridge for local logging of MINICAMS concentration reports and operating parameters.	DMP-100

GC Monitoring Systems Supplies and Diagnostic Tools

Supplies

Product	PN
Foam-lined case High-impact, plastic, foam-lined carrying case for a single system. Has compartments for operator's manual, and expendable supplies.	11475
Expendables supply kit for Series 2001 Contains a supply of most expendable items required during normal operation of the Series 2001.	ESK-200
Expendables supply kit for MINICAMS Contains a supply of most expendable items required during normal operation of the Series 3001.	ESK-300
PCTs Sample preconcentrator tubes (PCT) are available in packages of 10, 100, or 1000 tubes. Consult with CMS for proper selection of PCT based on specific application.	Specify Application
Purification kit with charcoal, molecular sieve, and indicating Drierite. One kit required for each support gas.	GPK-100
Air regulator Two-stage regulator for air cylinders.	RGA-100
Hydrogen regulator Two-stage regulator for hydrogen cylinders.	RGH-100
Nitrogen regulator Two-stage regulator for nitrogen cylinders.	RGN-100
In-line regulator In-line regulator, 0–60 psi, including fittings.	RGI-100
Regulator corral Regulator corral, including three in-line regulators and mounting bracket.	RGC-03

Repair and Diagnostic Tools

Product	PN
MINICAMS Analyzer Allows troubleshooting of electrical problems that may arise in the FM-2000 or MINICAMS.	MDD-100
Hydrogen leak detector	LKD-200
Digital flow check meter	DFM-100
Linear mass flowmeter (200 sccm air)	LMF-001
Repair parts kit Kits are customized according to the GC detector.	RPK-500
MINICAMS tool kit	MTK-050

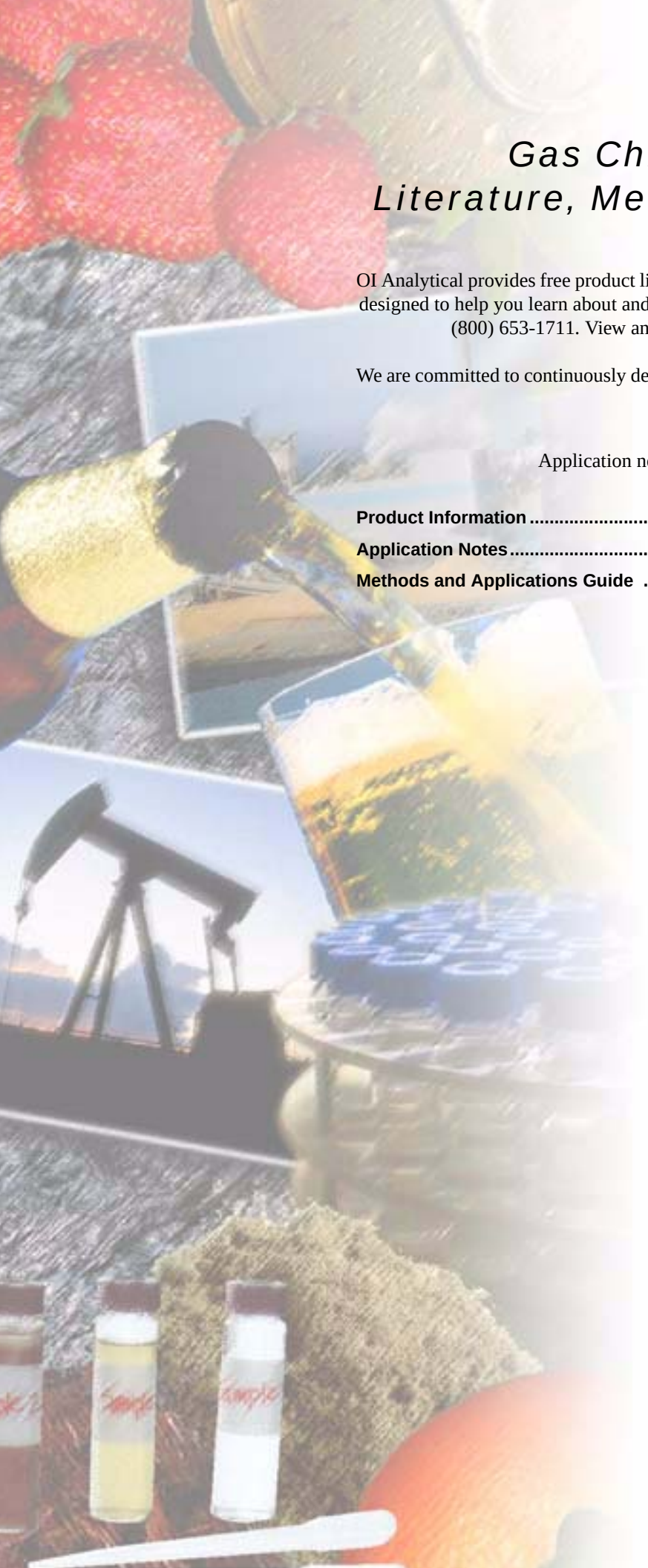
Monitoring VOCs Using the MINICAMS

CMS Fields Products evaluated more than 100 different compounds including numerous toxic industrial compounds (TIC) as candidates for air monitoring using the MINICAMS. Several factors govern the most suitable MINICAMS configuration and selection of an appropriate monitoring method. These factors also influence the attainable monitoring levels and corresponding detection limits for the compound(s) of interest in a monitoring campaign.

Sorbent-based monitoring methods offer much higher sensitivity for a given compound than fixed-volume loop-based methods. Nonspecific detectors such as the FID offer lower sensitivity than selective detectors such as the FPD, but are applicable to a broader range of compound types. Providing suitable monitoring capability for multiple agents may dictate column, detector, and operating parameter settings that are optimized for the set of compounds, which may result in less sensitivity than is possible with a MINICAMS optimized for a single compound.

A partial list of compounds previously evaluated by CMS is provided below. For specific information on recommended MINICAMS configurations and monitoring methods for particular compounds, please contact CMS Field Products at (205) 733-6900 or CMSSales@oico.com.

Acetaldehyde	Cyclohexane	Ethylene dichloride	*n*-Pentane
Acetic anhydride	Cyclohexanone	Ethylene oxide	Perchloroethylene
Acetone	Cyclohexylamine	Freon 113	Phosgene (CG)
Acetonitrile	1,2-Dibromoethane	Glutaraldehyde	Phosphine
Acrolein	1,1-Dichloroethane	Glycidyl methacrylate	Styrene
Acrylic acid	1,2-Dichloroethane	*n*-Heptane	1,1,2,2-Tetrachloroethane
Acrylonitrile	1,1-Dichloroethylene	Hexachloro-1,3-butadiene	Tetrahydrofuran
Aniline	1,2-Dichloroethylene	Hexamethylene diisocyanate	Thiophenol
Benzene	1,2-Dichloropropane	*n*-Hexane	Toluene
Benzothiazole	1,3-Dichloropropene	Hydrogen sulfide	Toluene-2,4-diisocyanate
Benzyl chloride	Diethylenetriamine	Isoamyl acetate	1,1,1-Trichloroethane
Biphenyl (phenyl benzene)	Diethyl ether (ethyl ether)	Isopropanol	1,1,2-Trichloroethane
1-Butanol	Diethyl malonate	Methanol	Trichloroethylene
Butyl acrylate	Diisopropyl methylphosphonate	2-Methoxyethanol	1,2,3-Trichloropropane
n-Butylacetate	Dimethyl disulfide	Methyl acrylate	Tridecane
n-Butyl sulfide	*N,N*-Dimethyl formamide	Methyl bromide	Triethyl phosphate
Carbon disulfide	Dimethyl methylphosphonate	Methylene chloride	Triethyl phosphite
Carbon tetrachloride	Dimethyl sulfate	Methyl ethyl ketone	1,3,5-Trimethylbenzene
Cellosolve acetate	Dimethyl sulfide	Methyl isobutyl ketone	Tripropyl phosphate
Chlorobenzene	Diphenyl ether	Methyl mercaptan	Vinyl acetate
tris(2-Chloroethyl) amine	Epichlorohydrin	Methyl salicylate	Vinyl chloride
bis(2-Chloroethyl) ether	Ethanol	Naphthalene	Xylenes
bis(2-Chloroethyl) ethyl amine	Ethyl acetate	Nicotene	*o*-Xylene
Chloroethyl ethyl sulfide	Ethyl acrylate	Nitrobenzene	*p*-Xylene
Chloroform	Ethyl benzene	*m*-Nitrotoluene	
Chloropicrin	Ethyl chloride	*n*-Octane	
Cyanogen chloride	Ethyl lactate	Pentadecane	



Gas Chromatography Products Literature, Methods, and Applications

OI Analytical provides free product literature, technical application notes, and maintenance tips designed to help you learn about and use OI Analytical instruments. Request copies by calling (800) 653-1711. View and download literature from our website at ***www.oico.com***.

We are committed to continuously developing new applications. Please call us or visit us on the web for the most current application note listing.

Application notes with an asterisk (*) are only available on the website.

Product Information

Air Analysis	0135	Air-Tube Desorber accessory specifications (for use with Models 4460A and 4560 Series Sample Concentrators)
	0393	VOST accessory specifications (for use with MPM-16 and DPM-16 autosamplers)
Autosamplers	0756	Model 4552 W/S Autosampler specifications
	1436	Model 4551A Vial Autosampler specifications
Detectors (GC)	0233	Model 4450 PID/FID Tandem Detector Configuration specifications
	0243	Model 4430 Photoionization Detector (PID) specifications
	0697	Model 5360/5360A Halogen Specific Detector (XSD™) specifications
	0700	Model 5320 Electrolytic Conductivity Detector (ELCD) specifications
	0740	Model 5380 Pulsed Flame Photometric Detector (PFPD) specifications
	0880	Model 5390 PID/XSD Tandem Detector Configuration specifications
	1047	Model 5350 PID/ELCD Tandem Detector Configuration specifications
	1435	PFPDView (Model 5380 PFPD control software) specifications
Fluorinated By-Products Analyzer	1120	Fluorinated By-Products Analyzer (FBA) specifications
GC Systems	0104	Pesticides...from Cleanup to Analysis
	0554	Model FM-2000 GC Monitoring System specifications (for continuous air monitoring)
	0690	GC Volatiles Systems specifications
	1700	S-PRO 3200 Series GC System for Sulfur Analysis brochure
Maintenance and Support Information	1725	Customer and Technical Support Services brochure

Purge-and-Trap Sample Concentrators

1029	MicroTrap™ for Purge and Trap specifications
1338	Automated Multipoint Process Sampler (AMPS) specifications
1573	Standards Addition Module (SAM) specifications
1811	PT Express™ Dual Purge-and-Trap Interface brochure
1917	Eclipse™ Purge-and-Trap Sample Concentrator specifications
1944	Model 4660 Eclipse Purge-and-Trap Sample Concentrator brochure

Sample Preparation

0104	Pesticides...from Cleanup to Analysis
1463	GPC AutoPrep 2000 specifications
1717	WinSEP™ (GPC AutoPrep 2000 control software) specifications
1734	Gel Permeation Chromatography (GPC) Cleanup Systems brochure
1770	AIM500 Block Digestion System specifications
1789	Model SP 2000 specifications
2065	UVD-1000 UV Detector/Chart Recorder specifications

Application Notes

BTEX/Hydrocarbon Analysis

0047*	Determination of Hydrocarbon's Class Using PID/FID
0048	Hydrocarbon Confirmation Analysis Using PID/FID
0054*	New PID/FID for GC
0506	An Analyzer for the Rapid Analysis of BTEX and GRO in Water and Soil
0887	Rapid Sample Screening for BTEX in Soils Using Static Headspace/GC/Flame-Ionization-Photoionization Detection
1105	BTEX Analysis Using Static Headspace with Gas Chromatography/Mass Spectrometry
1442	Analysis of BTEX in Soil and Water Matrices by USEPA Method 5021 Using the Model 4632M Headspace Autosampler
2074	Petrochemical Application Support Library

Pesticides/PCB Analysis

0068	Chlorinated Pesticide Detection Using ELCD
0080	Selective Detection of PCBs in Transformer Oil Using ELCD
0129*	OI Analytical Applications: Model 4420 Pentachlorophenol
0130	Applications for Model 4420 ELCD: PCBs in Transformer Oil
0192	Applications of ELCD for Selective Detection of Halogen, Nitrogen, and Sulfur Pesticides
0222*	Screening Pesticides and PCBs
0273	Maintaining Optimal Performance of the ELCD in Pesticides and PCB Analysis
0357*	The Introduction of an Improved ELCD for Gas Chromatographic Analysis of Pesticides
0437	A System Configuration for Dual Method, Simultaneous Analysis of Volatile and Semivolatile Organic Compounds by GC
0441*	Maintaining a Dual Column, Dual ELCD GC System for Extended Analysis of Multi-Residue Pesticide Extracts
0457*	Analysis of Organochlorine Pesticide Residues Using Simultaneous Injection of Two Capillary Columns with Electron Capture and Electrolytic Conductivity Detectors
0503*	Comparative Analysis of Propargite by FPD- and ELCD-Equipped Gas Chromatograph
0614	An Alternative Method for the Determination of *n*-Methyl Carbamates in Milk

	0982	Analysis of USEPA Method 608 Chlorinated Pesticides Using the OI Analytical XSD
	1076	A New Pulsed Flame Photometric Detector for the Analysis of Pesticides
	1079	Analysis of Chlorinated Pesticides Using Gas Chromatography with a Halogen Specific Detector
	1174	Analysis of Polychlorinated Biphenyls Using Gas Chromatography with a Halogen Specific Detector
	1195	Analysis of Organophosphorus Pesticides Using Gas Chromatography with Pulsed Flame Photometric Detection
	1379	Multi-element Analysis of Pesticides Using GC Systems Equipped with Multiple Selective GC Detectors (*Pittcon 1999*)
	1546	Analysis of a Complex Garlic Extract for Chlorinated Pesticides Using the OI Analytical Model 5360 Halogen Specific Detector
	1764	Analysis of Sulfur-Containing Carbamate Pesticides Using a Pulsed Flame Photometric Detector (*Pittcon 2002*)
	2054	Using the GPC AutoPrep 2000 System for Cleanup of Olive Oil Prior to Pesticides Analysis by GC/XSD or GC/PFPD (*Pittcon 2004*)
Purge-and-Trap/VOC Analysis	0083	Positive Identification of Purgeable Halocarbons
	0106	Analysis of VOCs in Water Using Ion Trap Detector
	0146*	Analysis of Volatile Compounds in Drinking Water
	0230	Finally! Totally Automated Volatiles Analysis Using Interactive Purge-and-Trap Communications and Control with the PC
	0285	Detection Limits and Analysis Time Using Wide and Narrow Bore Capillary Columns for Purge-and-Trap GC/MS Analyses
	0294	Using the OI Analytical Cryo-Focusing Module to Optimize Purge-and-Trap Chromatography with Small-Bore Capillary Columns
	0297	Volatile Organics Analysis: Building a State-of-the-Art Purge-and-Trap GC/MS System
	0403	Use of a Cryo-Focusing Module as a Water Management Tool in Purge-and-Trap/GC/MS Analysis
	0404	Efficiency of Cryo-Focusing Traps for Purge-and-Trap Gas Chromatography
	0405	Theory and Operation of Water Management Methods in Purge-and-Trap Gas Chromatography
	0406	A Comparison of Sample Heating Techniques Used in Purge-and-Trap Gas Chromatography

0409	Operation of Purge-and-Trap Systems in the Real World: Performance and Pitfalls
0420	OI Analytical Model 4560 Sample Concentrator- Cyclone Water Management System
0433	A Low-Dead-Volume Injector for Both Semi-Volatile and Volatile Gas Chromatographic Analysis
0442	An Automated GC/MS System for the Analysis of Volatile and Semivolatile Organic Compounds in Water
0444	Model 4560 Sample Concentrator-Sample Heating Techniques
0451	Advantages of the OI Analytical Tenax/Silica Gel/Carbon Molecular Sieve (#10) Trap
0452	OI Analytical Model 4560 Sample Concentrator-Rapid Trap Heating
0506	An Analyzer for the Rapid Analysis of BTEX and GRO in Water and Soil
0518	Cycle Time as a Productivity Factor in Purge-and-Trap Analysis
0525	GC/MS Analysis of Volatiles in Less Than 15 Minutes!
0653	“Trends in Purge and Trap” Journal of Chromatographic Science, August 1994
0775	Parameter Optimization to Eliminate the Need for Cryogenic Focusing in Purge and Trap/Gas Chromatography/Mass Spectrometry
0875	A New Purge-and-Trap Sample Concentrator Optimized for Low Desorb Flow Operation
0983	Purge-and-Trap Analysis of Trihalomethanes
1008	A New MicroTrap for Purge-and-Trap Sample Concentration
1024	Maximize P&T/GC/MS Productivity with the MicroTrap
1077	A New Standard Additions Module for Purge-and-Trap Autosampling
1103	Purgeable Halogenated Hydrocarbon Analysis Using Static Headspace with Gas Chromatography/Mass Spectrometry
1104	Purgeable Aromatic Hydrocarbon Analysis Using Static Headspace with Gas Chromatography/Mass Spectrometry
1106	Low-Level Purgeable Aromatic Hydrocarbon Analysis Using Static Headspace with Gas Chromatography/Mass Spectrometry
1107	Trihalomethane Analysis Using Static Headspace Gas Chromatography/Mass Spectrometry
1173	High Speed Purge-and-Trap/Gas Chromatographic Analysis of BTEX Samples

1285 Proper Trap Selection for the OI Analytical Model 4460A Purge-and-Trap Sample Concentrator

1286 Proper Trap Selection for the OI Analytical Model 4560 Purge-and-Trap Sample Concentrator

1327 USEPA Method 524.2 Revision 4: Optimization of the Analysis of VOAs in Water by GC/MS

1358 Analysis of Environmental Endocrine Disrupters Using the OI Analytical Model 4560 Purge-and-Trap Sample Concentrator and GC/MS-SIM Detection

1371 Shorter Purge-and-Trap Desorption Times with Direct Trap Heating (*Pittcon 1999*)

1377 Description of a New Multipoint Water Sampler for Continuous, On-line Sampling and Analysis of VOCs by Purge and Trap/GC (*Pittcon 1999*)

1388 Acetaldehyde in Polyethylene Terephthalate (PET) Using the Air-Tube Desorber Accessory

1412 Low-Level Volatiles in Soil and Water by USEPA Method 5035 Using the Model 4552 Water/Soil Autosampler (*Pittcon 2000*)

1418 Blood Alcohol Analysis Using the Model 4632M Headspace Autosampler

1420 Blood Alcohol Determination Using the Model 4632M Headspace Autosampler and PLOT Column

1426 Analysis of Methyl *tert*-Butyl Ether (MTBE)

1432 Analysis of Organic Pollutants in the Pharmaceutical Industry Using USEPA Method 1666 (*Pittcon 2000*)

1440 Analysis of Toner Resin Polymers Using the Model 4632M Headspace Autosampler

1441 Identification of Flavors and Fragrances by Purge-and-Trap GC/MS

1445 Analysis of Organic Solvents in Pharmaceutical Products Using United States Pharmacopoeia (USP) Method 467 (*Pittcon 2000*)

1454 Improved Volatile Organic Compound Analysis Using a New Vial Autosampler for Water Matrices (*Pittcon 2000*)

1618 Low-Level Sulfur Compounds in Beer by Purge and Trap with a Pulsed Flame Photometric Detector (PFPD)

1735 Geosmin and 2-Methylisoborneol by Purge and Trap (*Pittcon 2002*)

1743 Improved Performance and Productivity of Purge-and-Trap Analyses (*Pittcon 2002*)

1908 Reduced VOC Sample Analysis Times Using a New Dual Purge-and-Trap System (*Pittcon 2003*)
includes OI Analytical Recommended Purge-and-Trap Operating Conditions

	1912	Introducing the Eclipse: A New Generation of Purge-and-Trap Sample Concentrators (*Pittcon 2003*)
	1932	Fast Cycle Times for VOC Analyses: The Whole Story
	1934	The Eclipse Purge-and-Trap Sample Concentrator Initial Laboratory Test Results, Part I
	1937	The Eclipse Purge-and-Trap Sample Concentrator Initial Laboratory Test Results, Part II
	1996	Analysis of Fuel Oxygenates Using the Eclipse Purge-and-Trap Sample Concentrator (*Pittcon 2004*)
Selective Detectors	0511	Applications of the ELCD for the Selective Detection of Halogenated Contaminants in Petroleum Products
	0767	A New Halogen Specific Detector: The Model 5360 XSD
	0788	Determination of Semivolatile Organic Compounds in Soils Using Thermal Extraction/GC/PID/ELCD
	1127	Using Dual Gate Subtraction to Enhance the Selectivity of a Pulsed Flame Photometric Detector (PFPD)
	1166	Model 5380 PFPD Photomultiplier Tube and Optical Filter Configurations
	1172	Halogen and Compound Dependence of Response of an Electrolytic Conductivity Detector for Gas Chromatography
	1253	Organo-Tin Analysis by Capillary Gas Chromatography
	1373	Optimization of a Pulsed Flame Photometric Detector for Nontraditional Elements (*Pittcon 1999*)
	1379	Multi-element Analysis of Pesticides Using GC Systems Equipped with Multiple Selective GC Detectors (*Pittcon 1999*)
	1426	Analysis of Methyl *tert*-Butyl Ether (MTBE)
	1502	Determination of Volatile Sulfur Compounds in Beverages Using Static Headspace and Pulsed Flame Photometric Detection
	1546	Analysis of a Complex Garlic Extract for Chlorinated Pesticides Using the OI Analytical Model 5360 Halogen Specific Detector
	1618	Low-Level Sulfur Compounds in Beer by Purge and Trap with a Pulsed Flame Photometric Detector (PFPD)
	1656	Using the Halogen Specific Detector (XSD) as an Alternative to the ELCD in USEPA Methods (*Pittcon 2001*)
	1711	Options for Quantifying Sulfur Compounds by PFPD
	1762	Initial Experiences from the Field with the OI Analytical S-PRO 3200 GC System (*Pittcon 2002*)

	1763	Determination of Total Sulfur Content in Petrochemical Samples Using a Pulsed Flame Photometric Detector (PFPD) (*Pittcon 2002*)
	1764	Analysis of Sulfur-Containing Carbamate Pesticides Using a Pulsed Flame Photometric Detector (*Pittcon 2002*)
	1801	"The Future of GC Detectors in the Era of Mass Spectrometer Detection," American Laboratory, October 2001
	1901	A Newly Approved ASTM Standard for Analysis of Thiophene in Benzene using a Pulsed Flame Photometric Detector (*Pittcon 2003*)
	1906	Analysis of Sulfur-Containing Flavor Compounds by GC/MS with a Pulsed Flame Photometric Detector (*Pittcon 2003*)
	2074	Petrochemical Application Support Library
Field and Mobile Monitoring	0673	Mobile Field Monitoring Using the Model FM-2000: A System Description and Operations Guide
	0674	Monitoring for Volatile Organic Compounds (VOCs) Using the FM-2000 Continuous Air Monitoring Systems
Maintenance and Support Information	0051	Model 4430 PID Troubleshooting for High Baseline
	0158	Vent Valve Configurations for ELCD
	0176	Model 4460A/HP-MSD Cable Interface
	0190	Service Pesticide Standard
	0206*	PID Window Cleaning
	0284	Model 4420 Cell Cleaning Procedure
	0374*	ELCD Transfer Line Rinsing
	1166	Model 5380 PFPD Photomultiplier Tube and Optical Filter Configurations
	1285	Proper Trap Selection for the OI Analytical Model 4460A Purge-and-Trap Sample Concentrator
	1286	Proper Trap Selection for the OI Analytical Model 4560 Purge-and-Trap Sample Concentrator

Methods and Applications Guide

Application	Technique	Method	Detectors	System	Sample Introduction	Sample Preparation
Air pollution/ industrial hygiene	Ammonia by automated visible spectrometry	NIOSH 6015				
Air pollution/ industrial hygiene	Aromatic hydrocarbons by gas chromatography (GC)	NIOSH	Flame-Ionization Detector (FID), Photoionization Detector (PID)/ FID			Solvent desorption, thermal desorption
Air pollution/ industrial hygiene	BTEX/TPH	USEPA TO-1, TO-2	PID, PID/ Halogen Specific Detector (XSD), PID/FID	System VOC	Purge-and-trap (P&T) sample concentrator, Air-Tube option	
Air pollution/ industrial hygiene	Chlorinated pesticides and herbicides by GC	NIOSH 9200, various	Electrolytic Conductivity Detector (ELCD), XSD	Pesticide Analysis System		Solvent desorption
Air pollution/ industrial hygiene	Highly-volatile organics in ambient	USEPA TO-1, TO-2	XSD, PID/XSD, PID/FID, PID/ ELCD	System VOC	P&T sample concentrator, Air-Tube option	
Air pollution/ industrial hygiene	Mercaptans by GC	NIOSH	Pulsed Flame Photometric Detector (PFPD)			Solvent desorption
Air pollution/ industrial hygiene	Organic solvents by GC	Various NIOSH	FID, PID/FID, ELCD, PID, XSD			Solvent desorption, thermal desorption
Air pollution/ industrial hygiene	Organophospho-rous pesticides by GC	NIOSH 5600	PFPD			Solvent desorption
Air pollution/ industrial hygiene	Polychlorinated biphenyls (PCB) by GC	NIOSH 5503	XSD, ELCD (alternatives)			Solvent desorption
Air pollution/ industrial hygiene	Polynuclear aromatic hydrocarbons by GC	NIOSH 5515	FID, PID/FID			Solvent desorption
Air pollution/ industrial hygiene	Principal organic hazardous constituents		PID, XSD, PID/ XSD, PID/FID, PID/ELCD		P&T sample concentrator	
Air pollution/ industrial hygiene	Volatile aromatic hydrocarbons		ELCD, PID, XSD, PID/XSD, PID/FID, PID/ ELCD		P&T sample concentrator, Air-Tube option	
Air pollution/ industrial hygiene	VOST analysis	USEPA 5040, 5041			P&T sample concentrator	
Drinking water	Chlorophenoxy herbicides, liquid/liquid extraction, GC with electron capture detector (ECD)	USEPA 515; AOAC 992.32	XSD, ELCD (alternatives to ECD)			
Drinking water	Organochlorine pesticides and PCBs, liquid/ liquid extraction, GC with ECD	USEPA 505, 508	XSD, ELCD (alternatives to ECD)	Pesticide Analysis System		

Application	Technique	Method	Detectors	System	Sample Introduction	Sample Preparation
Drinking water	Volatile halogenated organic compounds, P&T, GC with PID and ELCD	USEPA 502.1	ELCD, PID, XSD (alternative)	System VOC	P&T sample concentrator, P&T water autosampler	
Drinking water	Volatile organics, GC with PID and ELCD	USEPA 502.2	XSD (alternative to ELCD), PID/ ELCD	System VOC	P&T sample concentrator, P&T water autosampler	
Drinking water	Volatile organics, P&T, GC with mass selective detector	USEPA 524.2			P&T sample concentrator, P&T water autosampler	
Metals digestion	Acid digestion of elements from sediments using closed vessel microwave heating	ASTM 5258				Microwave digestion
Metals digestion	Microwave-assisted acid digestion of aqueous samples and extracts	USEPA 3015				Microwave digestion
Metals digestion	Microwave-assisted acid digestion of sediments, soils, and oils	USEPA 3051				Microwave digestion
Metals digestion	Microwave-assisted acid digestion of siliceous and organically-bound matrices	USEPA 3052				Microwave digestion
Petrochemical	COS in propylene	ASTM D5303	PFPD	S-PRO 3200		
Petrochemical	Determination of sulfur compounds in natural gas	ISO 6326	PFPD			
Petrochemical	Determination of sulfur compounds in natural gas by GC	ISO 19739:2004	PFPD			
Petrochemical	Standard test method for analyzing organic contaminants on silicon wafer surfaces by thermal desorption GC	ASTM D1982-99	PFPD			
Petrochemical	Standard test method for comparison of waterborne oils by GC	ASTM D3328	FID, PFPD			

Application	Technique	Method	Detectors	System	Sample Introduction	Sample Preparation
Petrochemical	Standard test method for determination of sulfur compounds in natural gas and gaseous fuels by GC and flame photometric detection (FPD)	ASTM D6228	PFPD			
Petrochemical	Standard test method for determination of trace thiophene in refined benzene by GC	ASTM D4735	PFPD			
Petrochemical	Standard test method for sulfur compounds in light petroleum liquids and sulfur-selective detection	ASTM D5623	PFPD			
Petrochemical	Standard test method for trace carbonyl sulfide in propylene by GC	ASTM D5303	PFPD			
Petrochemical	Sulfur in natural gas and gaseous fuels	ASTM D6228	PFPD			
Petrochemical	Trace sulfur in light petroleum hydrocarbons	ASTM D3120	PFPD			
Petrochemical	Trace sulfur in liquid aromatic	ASTM D3961	PFPD	S-PRO 3200		
Product testing	Organochlorine and organophosphorous pesticide residues by GC	AOAC 985.22	XSD, ELCD, PFPD	Pesticide Analysis System		Gel permeation chromatography (GPC)
Product testing	Organophosphorous pesticide residues	AOAC 974.22	PFPD	Pesticide Analysis System		
Product testing	Organophosphorous pesticide residues	AOAC 968.24	PFPD	Pesticide Analysis System		
Product testing–agricultural products	Synthetic pyrethoids in agricultural products	AOAC 998.01	XSD, ELCD	Pesticide Analysis System		GPC
Product testing–animal fats	Organochlorine pesticide residues in animal fats	AOAC 984.21	XSD, ELCD	Pesticide Analysis System		GPC
Product testing–animal feeding stuffs	Determination of organochlorine pesticide residues by GC	ISO 14181:2000	XSD, ELCD	Pesticide Analysis System		GPC
Product testing–animal feeding stuffs	Determination of organophosphorous pesticide residues by GC	ISO 14182:1999	PFPD	Pesticide Analysis System		GPC

Application	Technique	Method	Detectors	System	Sample Introduction	Sample Preparation
Product testing–animal feeding stuffs	Determination of the content of fatty acids by GC	ISO 17764:2002	FID			
Product testing–fertilizer	Total nitrogen by segmented flow analysis (SFA)	Salicylate	Expanded Range (ER), photometric	Flow Solution IV		Dialysis
Product testing–fertilizer	Total phosphorous by on-line UV/ persulfate digestion	Phosphovanadomolybdate	ER, photometric	Flow Solution IV	Flow injection analysis (FIA) (optional)	UV digestion
Product testing–food	Determination of organochlorine and organophosphorous pesticides in foods	FDA Pesticide Analytical Manual	PFPD, XSD, ELCD	Pesticide Analysis System		GPC
Product testing–food	Organochlorine pesticides and PCB residues in fish	AOAC 983.21	XSD, ELCD	Pesticide Analysis System		GPC
Product testing–milk and milk products	Determination of nitrate and nitrite content using segmented flow analysis	ISO 14673-2:2004	ER, photometric	Flow Solution IV		
Product testing–rice	Determination of amylose in rice extracts by SFA	Iodine	ER, photometric	Flow Solution IV		
Product testing–tobacco	Determination of organochlorine pesticide residues by GC	ISO 4389:2000	XSD, ELCD	Pesticide Analysis System		GPC
Product testing–tobacco	Determination of the content of reducing carbohydrates by continuous flow analysis (CFA)	ISO 15154:2003	ER, photometric			
Product testing–tobacco	Determination of the content of reducing substances by CFA	ISO 15153:2003	ER, photometric	Flow Solution IV		
Product testing–tobacco	Determination of the content of total alkaloids as nicotine by CFA	ISO 15152:2003	ER, photometric	Flow Solution IV		
Product testing–tobacco	Determination of the nitrate content by CFA	ISO 15517:2003	ER, photometric	Flow Solution IV		
Product testing–tobacco	Nicotine by SFA	Cyanogen chloride/ aniline	ER, photometric	Flow Solution IV		
Product testing–tobacco	Total and reducing sugars by SFA	*p*-Hydroxybenzoic acid hydrazide	ER, photometric	Flow Solution IV		
Product testing–tobacco	Volatile base by on-line distillation and SFA	Phenate	ER, photometric	Flow Solution IV		On-line distillation
Product testing–wine	Determination of reducing sugars by SFA	Cupric/neocuproine	ER, photometric	Flow Solution IV		

Application	Technique	Method	Detectors	System	Sample Introduction	Sample Preparation
Product testing–wine	Determination of total acidity by SFA	Bromocresol purple	ER, photometric	Flow Solution IV		
Product testing–wine	Determination of total sulfites by SFA	*p*-Rosaniline	ER, photometric	Flow Solution IV		
Product testing–wine	Determination of volatile acidity by SFA	Iodide/iodate	ER, photometric	Flow Solution IV		
Seawater	Ammonia by SFA	Phenate	LED/ER, photometric	Flow Solution IV		
Seawater	Nitrite nitrogen and nitrate plus nitrite nitrogen by SFA	Cadmium reduction	LED/ER, photometric	Flow Solution IV		
Seawater	Orthophospho-rous by SFA	Molybdenum blue	LED/ER, photometric	Flow Solution IV		
Seawater	Silica by SFA	Molybdenum blue	LED/ER, photometric	Flow Solution IV		
Soil quality	Determination of the content of volatile aromatic hydrocarbons, naphthalene, and volatile halogenated hydrocarbons by P&T with thermal desorption GC	ISO 15009:2002	PID/ELCD, PID/XSD	System VOC, System BTEX	P&T sample concentrator, P&T water autosampler	
Soil quality	Nitrate plus nitrite nitrogen in soil and plant extracts by SFA	Cadmium reduction	ER, photometric	Flow Solution IV		Dialysis
Soil quality	Orthophosphate in soil and plant extracts by SFA	Molybdenum blue	ER, photometric	Flow Solution IV		Dialysis
Soil quality	Soil and plant ammonia by SFA	Phenate	ER, photometric	Flow Solution IV		Dialysis
Soil quality	Total Kjeldahl nitrogen (TKN) in soil and plant digests by SFA	Salicylate	ER, photometric	Flow Solution IV		Dialysis
Soil quality	Total phosphorous in soil and plant digests by SFA	Molybdenum blue	ER, photometric	Flow Solution IV		Dialysis
Solid and hazardous waste	BTEX/MTBE by P&T, GC	USEPA 8021b	PID, PID/FID	System BTEX	P&T sample concentrator, P&T water autosampler	
Solid and hazardous waste	Gasoline range and diesel range organics by GC	USEPA 8015 modified	PID/FID	System BTEX	P&T sample concentrator, P&T water autosampler	
Solid and hazardous waste	Halogenated volatile organics by GC	USEPA 8010	ELCD, XSD	System VOC	P&T sample concentrator, P&T water autosampler	

Application	Technique	Method	Detectors	System	Sample Introduction	Sample Preparation
Solid and hazardous waste	Organochlorine pesticides and PCBs by GC	USEPA 8081a	XSD, ELCD (alternatives to ECD)	Pesticide Analysis System		GPC by USEPA 3640A
Solid and hazardous waste	Organophospho-rous pesticides by GC with FPD	USEPA 8141a	PFPD	Pesticide Analysis System		GPC by USEPA 3640A
Solid and hazardous waste	Semivolatile organics by GC/ mass spectrometry (MS)	USEPA 8270				GPC by USEPA 3640A
Solid and hazardous waste	Total petroleum hydrocarbons by GC	Various state methods	FID, PID/FID			
Solid and hazardous waste	Volatile organics by GC/MS	USEPA 8260			P&T sample concentrator, P&T water autosampler	
Solid and hazardous waste	Volatile organics by P&T, GC	USEPA 8021b	PID/FID, PID/ ELCD	System VOC, System BTEX	P&T sample concentrator, P&T water autosampler	
Wastewater and industrial effluents	Chlorinated acid herbicides by GC	USEPA 615; Standard Methods 6640 B	HECD, XSD (alternatives to ECD)	Pesticide Analysis System		GPC
Wastewater and industrial effluents	Chlorinated hydrocarbons by GC	USEPA 612	XSD, ELCD (alternatives to ECD)			GPC
Wastewater and industrial effluents	Differentiation of diesel and crude oil by GC	USEPA 1663	FID, PID/FID			
Wastewater and industrial effluents	Haloethers by GC	USEPA 611; Standard Methods 6251	XSD, ELCD (alternatives to ECD)			
Wastewater and industrial effluents	Organochlorine pesticides and PCBs by GC	USEPA 608; Standard Methods 6630 B&C; ASTM D3086, D5812	XSD, ELCD	Pesticide Analysis System		GPC
Wastewater and industrial effluents	Organohalide pesticides and PCBs by GC	USEPA 617	XSD, ELCD	Pesticide Analysis System		GPC
Wastewater and industrial effluents	Organohalide pesticides and PCBs by GC	USEPA 1656	XSD, ELCD	Pesticide Analysis System		GPC
Wastewater and industrial effluents	Organophospho-rous pesticides by GC with FPD	USEPA 614, 614.1	PFPD	Pesticide Analysis System		GPC
Wastewater and industrial effluents	Organophospho-rous pesticides by GC with FPD	USEPA 617	PFPD	Pesticide Analysis System		GPC
Wastewater and industrial effluents	Organophospho-rous pesticides by GC with FPD	USEPA 1657	PFPD	Pesticide Analysis System		GPC
Wastewater and industrial effluents	Phenoxy acid herbicides by GC	USEPA 1658	XSD, ELCD (alternatives to ECD)	Pesticide Analysis System		GPC
Wastewater and industrial effluents	Purgeable aromatics by GC and PID	USEPA 602; Standard Methods 6200 C	PID, PID/FID	System VOC, System BTEX	P&T sample concentrator, P&T water autosampler	

Application	Technique	Method	Detectors	System	Sample Introduction	Sample Preparation
Wastewater and industrial effluents	Purgeable halocarbons by P&T, GC with PID and ELCD	USEPA 601; Standard Methods 6200 C	ELCD, PID, PID/ELCD, XSD (alternative)	System VOC	P&T sample concentrator, P&T water autosampler	
Wastewater and industrial effluents	Purgeable organics by GC/MS	USEPA 624; ASTM D5790; Standard Methods 6232 C			P&T sample concentrator, P&T water autosampler	
Wastewater and industrial effluents	Semivolatile organics by GC/MS					GPC
Wastewater and industrial effluents	Volatile pesticides by GC	USEPA 618	XSD, ELCD (alternatives to ECD)			
Water quality	Ammonia nitrogen in water by the automated phenate method using SFA or FIA	USEPA 350.1	ER, photometric	Flow Solution IV	FIA (optional)	
Water quality	Anionic surfactants as MBAS by CFA	Standard Methods 5540C modified	ER, photometric	Flow Solution IV		
Water quality	Boron by SFA	Azomethine-H	ER, photometric	Flow Solution IV		
Water quality	Bromide by SFA or FIA	Fluorescein and chloramine-T	ER, photometric	Flow Solution IV	FIA (optional)	
Water quality	Chloride by SFA or FIA	USEPA 325.2	ER, photometric	Flow Solution IV	FIA (optional)	
Water quality	Color by SFA or FIA	Standard Methods 2020B modified	ER, photometric	Flow Solution IV	FIA (optional)	
Water quality	Colorimetric determination of postdistillation cyanide	USEPA 335.3	ER, photometric	Flow Solution IV		
Water quality	Colorimetric determination of total cyanide by on-line UV digestion and distillation	USEPA 335.3	ER, photometric	Flow Solution IV		UV digestion, on-line distillation
Water quality	Determination of ammonia, part 2, automated spectrometric method	ISO 7150-2:1986	ER, photometric	Flow Solution IV	FIA (optional)	
Water quality	Determination of chloride by CFA and FIA	ISO 15682:2000	ER, photometric	Flow Solution IV	FIA (optional)	
Water quality	Determination of chromium(VI), spectrometric method using 1,5-diphenylcarbazide	ISO 11083:1994 modified	ER, photometric	Flow Solution IV		

Application	Technique	Method	Detectors	System	Sample Introduction	Sample Preparation
Water quality	Determination of dissolved sulfide, photometric method using molybdenum blue	ISO 10530:1992	ER, photometric	Flow Solution IV	FIA	
Water quality	Determination of free and total cyanide by CFA	ISO 14403:2002	ER, photometric	Flow Solution IV		
Water quality	Determination of nitrite nitrogen and nitrate nitrogen and the sum of both by SFA and FIA	ISO 13395:1996	ER, photometric	Flow Solution IV	FIA (optional)	
Water quality	Determination of orthophosphate and total phosphorous content by FIA and SFA	ISO 15681:2003	ER, photometric	Flow Solution IV	FIA (optional)	
Water quality	Determination of phenol index by CFA and FIA	ISO 14402:1999	ER, photometric	Flow Solution IV	FIA (optional)	
Water quality	Determination of soluble silicates by CFA and FIA	ISO 16264:2002	ER, photometric	Flow Solution IV	FIA (optional)	
Water quality	Determination of surfactants, part 1, determination of anionic surfactants by measurement of the methylene blue index (MBAS)	ISO 7875-1:1976 modified	ER, photometric	Flow Solution IV		
Water quality	Hardness by FIA	USEPA 130.1	ER, photometric	Flow Solution IV	FIA	
Water quality	Hexavalent chromium by SFA or FIA	Standard Methods 3500 Cr modified	ER, photometric	Flow Solution IV	FIA (optional)	
Water quality	Nitrite nitrogen, and nitrate plus nitrite nitrogen by SFA or FIA	USEPA 353.2	ER, photometric	Flow Solution IV	FIA (optional)	
Water quality	On-line total organic carbon (TOC) monitoring	ASTM 5173-97	Infrared	Model 1010 Analyzer		
Water quality	Organochlorine pesticide residues in water	AOAC 990.96	XSD, ELCD	Pesticide Analysis System		GPC
Water quality	Orthophospho-rous by SFA or FIA	USEPA 365.1	ER, photometric	Flow Solution IV	FIA (optional)	
Water quality	Oxidizable substance test substitute	USP oxidizable substance test	Infrared	Model 1010 Analyzer		
Water quality	Phenols by on-line distillation SFA	USEPA 420.2	ER, photometric	Flow Solution IV	On-line distillation	

Application	Technique	Method	Detectors	System	Sample Introduction	Sample Preparation
Water quality	Phenols by SFA or FIA (postdistillation)	USEPA 420.2	ER, photometric	Flow Solution IV	FIA (optional)	
Water quality	Silica by SFA	USEPA 370.1 modified	ER, photometric	Flow Solution IV		
Water quality	Sulfate by SFA or FIA	USEPA 375.2	ER, photometric	Flow Solution IV	FIA (optional)	
Water quality	Sulfide by CFA	USEPA 376.2 modified	ER, photometric	Flow Solution IV	FIA	
Water quality	TKN by gas diffusion and FIA	pH indicator	ER, photometric	Flow Solution IV		
Water quality	TKN by the automated salicylate method (SFA or FIA)	USEPA 351.2	ER, photometric	Flow Solution IV	FIA (optional)	Block digestor
Water quality	TOC	USP 643	Infrared	Model 1010 Analyzer		
Water quality	TOC by combustion oxidation	Standard Methods 5301B	Infrared	Model 1020A Analyzer		
Water quality	TOC by persulfate-ultraviolet or heated-persulfate oxidation method	Standard Methods 5301C	Infrared	Model 1010 Analyzer		
Water quality	TOC by wet chemical oxidation	USEPA 415.1	Infrared	Model 1010 Analyzer, Model 1020A Analyzer		
Water quality	TOC in groundwater	USEPA 9060	Infrared	Model 1010 Analyzer, Model 1020A Analyzer		
Water quality	TOC in high-purity water	ASTM D4779-93	Infrared	Model 1010 Analyzer		
Water quality	TOC in water	ASTM D4839-94	Infrared	Model 1010 Analyzer, Model 1020A Analyzer		
Water quality	TOC, DOC, and SUVA	USEPA 415.3	Infrared	Model 1010 Analyzer, Model 1020A Analyzer		
Water quality	Total carbon (TC) and TOC in water	ASTM D2579-93	Infrared	Model 1010 Analyzer		

Application	Technique	Method	Detectors	System	Sample Introduction	Sample Preparation
Water quality	Total cyanide by UV digestion and FIA	OIA-1678	Amphometric	CNSolution 3000	FIA	UV digestion
Water quality	Total iron by SFA	FerroZine®	ER, photometric	Flow Solution IV		
Water quality	Total phosphorous by SFA or FIA	USEPA 365.1	ER, photometric	Flow Solution IV	FIA (optional)	
Water quality	Weak acid dissociable (WAD) cyanide by FIA	USEPA OIA-1677	Amphometric	CNSolution 3000	FIA	

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 XXV.*

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- Purchaser-supplied accessories or consumables.
- Modification or misuse by purchaser.
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- Improper or inadequate site preparation.
- Purchaser-induced contamination or leaks.

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Catalog Information

Methods and Applications

The method and application information contained herein 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*, and *USP XXII*.

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