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TECHNOLOGY GROUP

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Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
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Custom engineering
so your equipment works exactly as you specify.

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1200L LC/MS



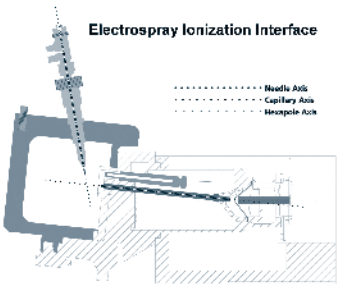
The Varian 1200L LC/MS is an affordable triple quad LC/MS system with spectacular performance.

The 1200L is the new benchmark for value in LC/MS. In the Varian tradition of quality engineering, the 1200L is a high performance LC/MS that fits within today's cost conscious economy. Now, a triple quadrupole LC/MS can be part of your immediate future. The 1200L offers all the performance specifications of the 1200, plus a mass range to 1500u and the ability to switch quickly between the GC interface and the LC interface.

The latest technologies are incorporated into the 1200L's design to deliver uncompromising performance and tailored solutions. The Atmospheric Pressure Ionization (API) interface and the transmission quadrupole analyzer set new standards for selectivity and sensitivity for pharmaceutical, clinical, toxicological, environmental, and other LC applications.

Varian's 1200L gives you more options for managing your budget and keeping pace with changing applications. Purchase a single quadrupole MS today and upgrade at any time to the full selectivity of triple quadrupole MS/MS. Purchase the 1200L LC/MS today and add the analytical capabilities of GC as needed. That's value!

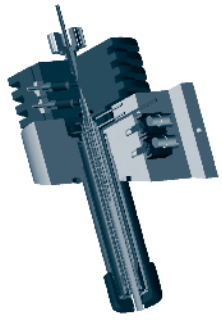
Long-lasting Performance with New API Interface



- Dramatically reduced residue build up at capillary inlet with off-axis spray needle and drying gas counter flow
- Optimum electrospray (ES) droplet formation and desolvation with multiple, fine adjustments for the spray needle as well as for the gas temperature and flow
- Efficient, rapid vaporization of mobile phases and analytes with turbulent flow APCI spray assembly
- Minimum carryover with tilted spray chamber and efficient drain
- Maximum uptime with easy-to-clean spray chamber and self-aligning API interface components

Maximum Sensitivity with Improved Quadrupole MS

Patented APCI Interface



- Maximum signal with optimized use of ion guides and no lenses between quadrupoles
- Ultra-low noise assured by the curved ion path and detector being off-axis relative to source
- Single high performance dual-stage turbomolecular pump
- High efficiency dynode detector with on-axis post-acceleration of ions from the final quadrupole

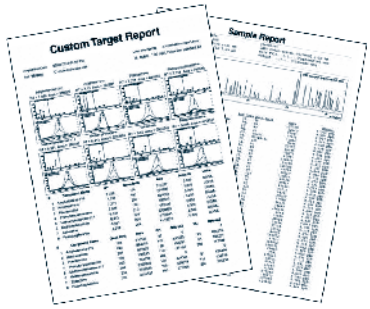
Superior Specificity of Tandem MS/MS

- Highly efficient dissociation achieved with the long, 180° curved collision cell
- Maximum performance and consistency with true triple quadrupole CID
- Unequalled detection limits, especially for complex matrices, due to the elimination of background chemical noise
- Structural elucidation of unknowns with precursor, product, and neutral loss scans

Varian MS Workstation

The Varian MS workstation, with a common software platform for all Varian mass specs, puts you in full control of all system modules, parameters, and data handling.

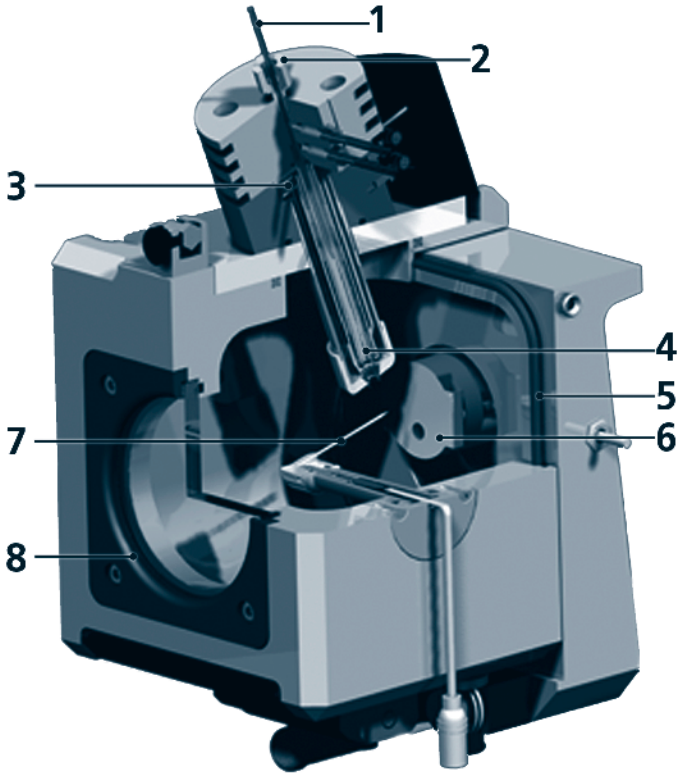
- Easy setup of new methods with the flexibility to combine any number of MS modes
- Convenient and complete qualitative and quantitative data analysis capabilities
- Quick data review with a variety of standard report formats
- Highlight critical data with application-specific EnviroPro and ToxPro reporting packages



The MS workstation's performance and wide array of features give you more complete answers, faster.

For brochures, configuration options and ordering information, contact your local Varian, Inc. office or distributor.

1200L APCI Maintenance



1200L MS APCI Chamber

1200L APCI Maintenance

Item #	Description	Part No.	Quantity
1	APCI Nebulizing Needle with Bonded PEEK tubing, 14 in.	**393754403**	1 Each
2	PEEK Nut & Ferrule, 10-32 Thread	**UCF300X**	10 /Pk
3	Ceramic Insulating Washer (white)	**393732301**	1 Each
4	APCI Quartz Vaporizer Tube Replacement Kit. Includes Vaporizer Tube, O-ring, and Ferrule	**393740191**	1 Kit
4	APCI Viton O-ring, for Quartz Vaporizer Tube	**393010906**	1 Each
4	APCI Ferrule, Polyimide, for Quartz Vaporizer Tube	**393733901**	1 Each
5	Spray Chamber O-ring	**2740252900**	1 Each
6	Shield	**393733701**	1 Each
7	APCI Corona Needle	**393734401**	1 Each
8	Spray Chamber Window O-ring	**2740269000**	1 Each

1200L LC/MS Maintenance

Here are some useful 1200 MS maintenance items that are not listed elsewhere.

Electrospray Chamber Maintenance

Description	Part No.	Quantity
ESI Needle with Bonded PEEK Tubing, 14 in.	**393754401**	1 Each
ESI Needle with Bonded PEEK Tubing, 60 in.	**393754402**	1 Each
PEEK Fingertight Nut and Ferrule for the Bonded Tube	**UCF300X**	10 /Pk

Capillary Interface Maintenance

Description	Part No.	Quantity (Each)
Capillary O-ring, Viton	**393010917**	1
Capillary Plug Assembly, Complete	**393755901**	1
Lens 4 Assembly	**393751201**	1
Lens 4 Interconnect Assembly	**393758601**	1
Screw, Nylon Lens Screw	**1290451000**	1
Silicone Capillary Cap	**2899577300**	1
Vespel Tip for the GC Transfer Line	**CUB0200103**	1

Ion Guide Maintenance

Description	Part No.	Quantity (Each)
Hexapole Q0 Ion Guide Assembly	**393750001**	1
Quadrupole Q0 Ion Guide Assembly	**393757101**	1

Rheodyne Valve Maintenance

Description	Part No.	Quantity
1 mL Syringe, 1001 TTL	**HM81320**	1 Each
Sample Loop 1.0 mL	**RE7755027**	1 Each
5 µL Flex-Loop	**AL32194**	1 Each
Needle Blunt tip, 2 in. long, 22 gauge, Kel-F hub	**HM90134**	6 /Pk
Plastic Tubing Cutter	**AL3206**	1 Each
RheBuild Kit For 7900	**RE7900999**	1 Kit
Rheodyne Injector	**2718115300**	1 Each
Zero Volume Adapter Fitting	**8998897300**	1 Each

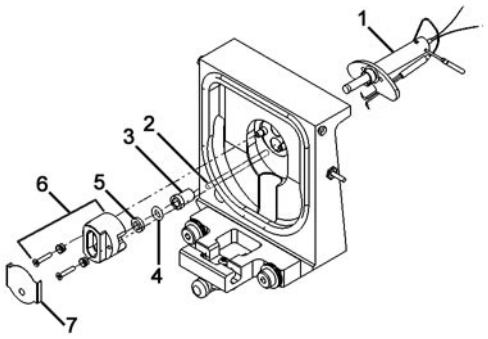
Mechanical Vacuum Pump Maintenance

Description	Part No.	Quantity
Model DS602 Mechanical Vacuum Pump	**393755601**	1 Each
Oil Mist Exhaust Filter	**2710100100**	1 Each
Oil, Vacuum Pump	**8829951700**	1 L

Additional Maintenance Items

Description	Part No.	Quantity
Aluminum Oxide Powder	**393706201**	100 g
Cal-gas Bulb	**CUB0200074**	1 Each
Cotton Tipped Applicators for Cleaning	**8899999000**	1000 /Pk
Insertion/Removal Tool	**CUB0300036**	1 Each
O-ring, LC Docking Station	**2740923200**	1 Each
Silicone Plug, Convectron Gauge	**2899577400**	1 Each
Solid Inlet (Vacuum Interlock) Seal	**CUB0200140**	1 Each
Tubing, Teflon, 1/8 in. x 0.100 in., 300 psig	**AL20096**	10 ft
Vacuum Cup, Handi Grip, 3 x 6 in., for Glass Cover Removal	**2990020600**	1 Each
Washer, Wave, 0.4ID x 0.5 OD, 3 WAVES, SS	**1492001000**	1 Each

1200L LC/MS Chamber Base Maintenance



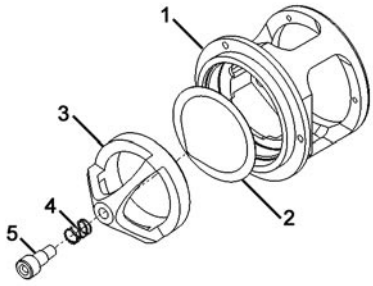
Note: Capillary Assembly Part. No. 393753001 requires the 1.0 mm Skimmer Part No. 393750100 and Capillary-Skimmer Distance Tool Part. No. 393729501. This combination will work with all 1200L MS detectors.

Capillary Assembly Part. No. 393753003 requires the 0.9 mm Skimmer Part No. 393750103 and Capillary-Skimmer Distance Tool Part. No. 393729502. This combination will only work with 1200L detectors with serial number 2000 and higher.

1200L LC/MS Chamber Base Maintenance

Item #	Description	Part No.	Quantity
1	Drying Gas Heater. Requires Installation by Varian Service Professionals.	**393755001**	1 Each
2	Capillary Assembly, for use with 1.0 mm Skimmer on all 1200L MS Detectors	**393753001**	1 Each
2	Capillary Assembly, for use with 0.9 mm Skimmer on 1200L MS Detectors with Serial Number 2000 and Higher	**393753003**	1 Each
3	Capillary Guide	**393751901**	1 Each
4	Capillary O-ring	**393010907**	1 Each
5	Capillary O-ring Washer	**393752201**	1 Each
6	Mycolex Capillary Support Field Kit	**393761091**	1 Kit
7	Shield	**393733701**	1 Each
	Capillary-Skimmer Distance Tool for 1.0 mm Skimmer	**393729501**	1 Each
	Capillary-Skimmer Distance Tool for 0.9 mm Skimmer	**393729502**	1 Each

1200L LC/MS Ion Transport Holder Skimmer Maintenance



Note: The 1.0 mm Skimmer requires Capillary Assembly Part. No. 393753001 and Capillary-Skimmer Distance Tool Part. No. 393729501. This combination will work with all 1200L MS detectors.

The 0.9 mm Skimmer requires Capillary Assembly Part. No. 393753003 and Capillary-Skimmer Distance Tool Part. No. 393729502. This combination will only work with 1200L MS detectors with serial number 2000 and higher.

1200L LC/MS Ion Transport Holder Skimmer Maintenance

Item #	Description	Part No.	Quantity (Each)
1	Ion Transport Holder	**393750301**	1
2	Skimmer, 1.0 mm	**393750101**	1
2	Skimmer, 0.9 mm	**393750103**	1
3	Skimmer Retainer	**393750201**	1
4	Compression Spring	**2170915600**	1
5	Capillary Adjust Nut	**393751401**	1

LC/MS Performance Testing Samples

Description	Part No.	Quantity (Each)
Negative ESI Sensitivity Sample (Nitrophenol) Hazardous	**393728301**	1
Negative ESI Sensitivity Sample (Raffinose) Hazardous	**393728001**	1
PPG Tuning Solution LCMS	**393734801**	1
Positive ESI Sensitivity Sample (Reserpine) Hazardous	**393727901**	1
Resolution Check (Cyclosporine A) Hazardous	**393728201**	1
Tuning Solution Concentrate (TAA)	**393728101**	1

Varian HPLC Solutions

HPLC Solutions

Varian, Inc. offers the broadest array of HPLC choices on the market. From basic preconfigured ProStar HPLC systems that can be modified and upgraded, to custom configured HPLC systems that our technical experts will develop to your exact specifications.

Varian's broad range of reliable and easy-to-use liquid chromatography instruments serve pharmaceutical, environmental, chemical, and other industrial R&D and QC/QA laboratories worldwide. Our analytical systems meet the rigorous requirements of routine analyses in addition to the performance standards of research and development. Every ProStar module is quality assured for reliability and performance by Varian's ISO 9001-certified factory. If you require any combination of sensitivity, high sample throughput, GLP compliance, or special services, expect this and more from Varian's ProStar line.



Varian ProStar 230 HPLC System

From Components to Systems . . . More Choices Offer Better Solutions

ProStar modules can be fully integrated and fully automated or operated as intelligent standalone units. In fact, each ProStar module can be easily integrated into your current HPLC system. Plus, ProStar modules can be upgraded to meet your ever-changing needs.

Because not all applications are the same, ProStar modules are designed to fit your specific need. To get the right HPLC system for your lab, you can choose a preconfigured system or choose each module individually to configure the system for your specific needs.

Designed for Biocompatibility

ProStar's Biocompatible HPLC systems are ideal for protein purification. Our PEEK fluid path ensures the activity of your samples. For more durable use, Titanium fluid paths are also available. Both PEEK and TI fluid paths are resistant to corrosion. Temperature-controlled autosamplers, column thermostats, and a wide variety of columns offer added flexibility.

From Discovery to Production

As the leader in preparative chromatography, Varian offers the most complete range of integrated systems to meet research, discovery, and production purification needs. Our turnkey PrepStar and SepTech systems with columns and software provide versatile solutions for applications using semipreparative, preparative, and process chromatography.

Two scale-up formats cover the full spectrum of sample types. High efficiency systems separate complex samples using small particle sorbents (5-10 µm) to deliver milligram to gram quantities of pure product (Scale-Up 1). High-throughput systems use larger particle sorbents (10-25 µm) with column overload strategies to deliver gram to multi-kilogram quantities of pure product in more economical platforms (Scale-Up 2).



HPLC Solvent Delivery Modules

The ProStar series offers fully integrated, fully automated, modular HPLC pumping systems for every application and budget.

For Analytical Applications:

- 210 / 218 Analytical to Prep
- 220 Isocratic
- 220 Isocratic
- 230 Ternary Gradient
- 240 Quaternary Gradient

For Preparative Applications:

- 210 / 218 Analytical to Prep
- SD-1 PrepStar
- SD-1 PrepStar



ProStar 220/230/240 Solvent Delivery Modules

Choose the 220 (Isocratic), 230 (Ternary) or 240 (Quaternary) best suited to your laboratory's needs. All of these models feature a patented pump design that offers unequaled reliability and ease of use.

ProStar 210 and PrepStar 218

From isocratic to quaternary, these compact pumps were designed for easy operation and maintenance. Featuring pump stroke counters and automatic leak tests, ProStar pumps help your laboratory meet established Good Laboratory Practice (GLP) protocols.

PrepStar SD-1

The innovative PrepStar SD-1 pump features breakthrough capabilities like high-pressure, pulse-free flow, and the widest range of flow rates available. Whether you want high-performance or high-throughput, the versatile SD-1 pump fits all your needs.

HPLC Detectors

Varian HPLC detectors range from a standard, single-channel UV-Vis detector for basic analysis to multi-wavelength detectors for research applications. For the ultimate in UV-Vis detection, the powerful 335 Diode Array Detector provides full spectral information of every peak in a sample. All UV-Vis detectors are designed to maximize reliability, performance and value, with features like optimized flow cell designs to minimize RI effects.

325 Dual Wavelength UV-Vis HPLC Detector

The 325 UV-Vis detector delivers superb sensitivity and a wide, dynamic absorbance range. A highly versatile instrument, the ProStar 325 incorporates easily into an existing HPLC system or operates as a stand-alone detector.

335 HPLC Diode Array Detector

The 335 Diode Array Detector with programmable slit widths delivers the highest sensitivity and spectral resolution from 190 nm to 950 nm. The dual-beam optics and a polychromator grating ensure greater accuracy and reliability.

340 Variable-Wavelength Detector

The economical 340 is designed for high performance and simple operation. Wavelength is manually selected, and autozero can be performed from either the front panel of the detector or from a contact closure initiated by a remote device.

350 Refractive Index Detector

The 350 Refractive Index Detector combines the highest performance and best baseline stability with ease of use and full automation capability. The 350 is a universal detector ideal for analysis of non absorbing compounds such as polymers, hydrocarbons, carbohydrates, alcohols and fatty acids.

363 Fluorescence Detector

Fluorescence spectroscopy enjoys two distinct benefits over UV-Vis spectroscopy - increased sensitivity and enhanced selectivity. Sensitivity is dramatically increased by looking for a fluorescence signal against a dark background. Selectivity is achieved by selecting both the excitation and emission wavelengths to screen out unwanted interferences. Varian's ProStar 363 Fluorescence Detector maximizes sensitivity and selectivity to give you total control over your analyses.

370 Electrochemical Detector

The ProStar 370 Electrochemical Detector is used for "classical" electrochemistry for those analytes that easily oxidize (phenols, aromatic amines, and thiols) or reduce (quinones and nitro compounds). For flexibility, the Pulse Mode can be applied to analytes that are not detectable in the normal DC mode, such as sugars, alcohols, certain amines, amino acids, and sulfur compounds.

HPLC AutoSamplers

From built-in sample preparation capabilities to an integrated column oven, Varian HPLC AutoSamplers offer great performance and value.

400 AutoSampler

The 400 is an economical, high-capacity autosampler specifically for automated, routine LC requirements in pharmaceutical, basic chemical, and environmental applications.

410 HPLC AutoSampler

With variable injection volumes and automixing/autodiluting, the ProStar 410 is perfect for laboratories with changing needs. It provides flexible operation without sacrificing reliability or performance.

430 AutoSampler

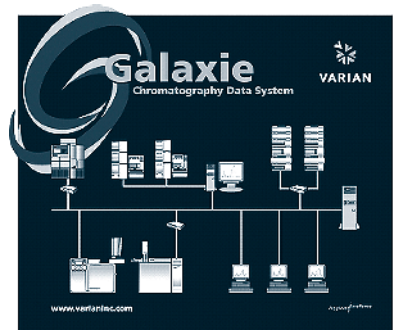
The 430 AutoSampler is Varian's most versatile HPLC injection system. Compatible with all types of 96- or 384-well plate formats as well as standard HPLC vials, the 430 is ideal for any of today's demanding HPLC applications.

HPLC Fraction Collectors

Our 701 and 704 Fraction Collectors are designed for high-throughput preparative LC Applications. They include smart, programmable peak-detection operation, and offer several options, including funnel-tube racks for large volume fraction collection.

For brochures, configuration options and ordering information, contact your local Varian, Inc. office or distributor.

Galaxie Chromatography Data System for HPLC and GC



- A superior stand-alone workstation or client/server solution
- Multi-vendor HPLC & GC control
- Unrivalled regulatory compliance
- Automated HPLC method development and validation
- Oracle/SQL database option
- Universal, bidirectional LIMS interfacing

The new Galaxie Chromatography Data System lets you control Varian HPLC and GC systems as well as similar instruments from other manufacturers. Galaxie's unique architecture readily expands from a single workstation to networks with hundreds of instruments. Galaxie allows you to:

- Control Varian HPLCs and GCs and view running analyses from anywhere on the network
- Also fully control instruments from Agilent, Waters, Perkin Elmer, Jasco and Shimadzu
- Reduce the requirement for PCs in laboratories and centralize method, data, and results storage
- Seamlessly link to LIMS for worksheet uploading and result exporting
- Meet Installation Qualification (IQ) and Operational Qualification (OQ) requirements
- Restrict access to methods, data and reports via secure, configurable user profiles
- Track records with the comprehensive audit trail function as well as review, approve, and lock records using electronic signatures, enabling GLP/cGMP and 21 CFR Part 11 regulatory compliance

The **Galaxie Fusion AE™** plug-in application integrates seamlessly with Galaxie and enables automated HPLC method development and validation. Galaxie Fusion AE simplifies and streamlines the regulatory compliance process, and speeds up sample throughput by rapidly optimizing and validating HPLC methods based on simultaneously entered multiple variables, such as mobile phase composition, flow rate, column packing functionality, injection volume, temperature, and pH, among others.

The **Galaxie Database** option (Galaxie DB) provides users with a relational database for the storage, archiving, and retrieval of data within the Galaxie environment. This plug-in stores data as binary large objects (BLOBs) within an Oracle or other SQL database for enhanced data security. Galaxie DB enables users to either store chromatographic data as BLOBs, in a file-based system within the database, or for added security, as a combination of flat files and BLOBs. Users can store and index multiple formats including chromatographic parameters, libraries, PDF and Microsoft Office™ documents within this database for complete data management.

MatchCompare is a Galaxie plug-in application that automates the time-consuming task of comparing quality control chromatograms of complex samples including flavors, fragrances, paints, and peptide digests. MatchCompare compares peaks between a reference and a sample chromatogram and identifies chromatographic peak matches even when retention times have shifted over several minutes. Matched peaks are graphically linked for easy identification. Missing peaks or impurities are represented by different colors both on-screen and in the report. Automatic peak matching with MatchCompare eliminates errors and speeds data review.

For brochures, configuration options and ordering information, contact your local Varian, Inc. office or distributor.

ProStar™ 210, PrepStar™ 218 Solvent Delivery Modules

- Easy scale-up with flow rates from 10 µL/min to 200 mL/min
- Economical and reliable operation
- Metal-free fluid paths for sensitive samples



A Unique Combination of Precision and Flexibility

With a wide range of flow rates, virtually all application needs are covered by either the ProStar 210 or PrepStar 218 solvent delivery modules. Smooth, precise solvent flow and system pressure are maintained with a built-in pressure unit. The ProStar 210 is ideal for microbore, classic analytical, and preparative flow rates up to 100 mL/min. The PrepStar 218 is the choice for applications requiring higher flow rates up to 200 mL/min or back-pressures up to 8700 psi. User-friendly pump heads are self-contained units that can be rapidly exchanged by simply loosening a finger-tight clamp.

Reliable Operation

Engineered for continuous use, the rugged ProStar 210 and PrepStar 218 deliver dependable performance using a single-piston, rapid-refill design with few moving parts. Piston wash option dramatically extends seal life in biochromatography applications with high concentration salt buffers.

Flow Path Material Options

PEEK and titanium pump heads are available to protect biological samples from trace amounts of metal ions that might be released from components in the fluid path.

Variety of Configurations

From isocratic to multi-module high-pressure gradient mixing systems, the ProStar 210 and PrepStar 218 are easily configured to fit your laboratory's needs. Depending on your requirements, add up to four solvent delivery modules for quaternary gradients.

Control and Data Handling

Galaxie Chromatography Data System, Galaxie Workstation, and Star Workstation all provide complete system control, data analysis, and multiple reporting options to help increase productivity.

Regulatory Compliance

Galaxie Chromatography Data System and Star Workstation include tools to help you meet your 21 CFP Part 11 compliance requirements. The ProStar 210 and PrepStar 218 modules are equipped with an internal diagnostic system that monitors piston, seal, and check valve wear. With the Star Workstation module log, users can track seal and check valve replacement dates and flag components that should be replaced. A complete IQ, OQ, and PQ documentation package and contracted services are available to help your laboratory meet regulatory requirements.

Specifications					
Flow accuracy:	±1% of selected flow rate or ± 0.05% of maximum flow rate, whichever is larger (0.1% for 5 mL heads)				
Flow reproducibility:	±0.1% of selected flow rate or ±0.05% of maximum flow rate, whichever is larger (0.01% for 5 mL heads)				
Module/Computer Interface:	• **Display**: backlit LCD with 2 lines, 48 characters • **Programs**: up to 100 methods with unlimited timed events • Digital serial input/output channel (RS422) • 3 programmable contact-closure relay outputs • 5 contact-closure inputs • Analog input (-0.5 to +2.5V), 18-bit A/D converter • 1 programmable analog output (0 to 10V)				
Dimensions and Weight					
Size:	**height**	7.8 in. 20 cm	**width**	11.5 in. 29 cm	**depth** 18 in. 46 cm
Weight:	48 lb / 21.8 kg for ProStar 210 52 lb / 23.6 kg for PrepStar 218				

ProStar Solvent Delivery Systems

Solvent Delivery Modules

Select a Solvent Delivery Module, a Pressure Module, and a Pump Head Kit.
For two or more solvents, select an Internal Dynamic Mixer.

Description	Flow Rate	Max. Pressure (psi)	Part No.	Quantity (Each)
ProStar 210 Isocratic Solvent Delivery Module	.01 to 100 mL/min	8700	**393550001**	1
PrepStar 218 Isocratic Solvent Delivery Module	.01 to 200 mL/min	8700	**393650001**	1

Pressure Modules

The 200 mL/min Pressure Module is only compatible with the PrepStar 218 Solvent Delivery Module.

Max. Flow Rate	Max. Pressure (psi)	PEEK	Titanium	Quantity (Each)
10 mL/min	4000	**393552801**		1
	8700		**393552501**	1
50 mL/min	4000	**393552901**		1
	6000		**393552601**	1
100 mL/min	1200		**393552701**	1
	2000	**393553001**		1
200 mL/min	3500		**393650501**	1

Pump Head Kits

The 200 mL/min Pump Head Kit is only compatible with the PrepStar 218 Solvent Delivery Module.

Max. Flow Rate	Feature	PEEK	SS	Titanium	Quantity (Each)
5 mL/min	Standard			**393594091**	1
10 mL/min	Piston Wash	**R007101073**	**R007101062**	**R007101063**	1
	Standard		**R007101061**		1
25 mL/min	Piston Wash	**R007101074**		**393594291**	1
	Standard		**R007101064**		1
50 mL/min	Piston Wash	**R007101075**	**R007101065**		1
100 mL/min	Piston Wash	**R007101076**		**R007101077**	1
200 mL/min	Piston Wash			**393650701**	1

Internal Dynamic Mixers

Use	Volume (mL)	PEEK	SS	Titanium	Quantity (Each)
Microbore	0.6		**393554601**	**393554701**	1
Analytical	1.2	**393555001**	**393554801**	**393554901**	1
Prep	10	**393555201**		**393555101**	1

Standalone Dynamic Mixers for ProStar™ 210/ 215, PrepStar™ 218/ SD-1

Dynamic Mixers

Requires a transformer, listed below.

Use	Volume (mL)	PEEK	SS	Titanium	Quantity (Each)
Microbore	0.6		**393554601**	**393554701**	1
Analytical	1.2	**393555001**	**393554801**	**393554901**	1
Prep	10	**393555201**		**393555101**	1

Dynamic Mixer Transformers

Description	Part No.	Quantity (Each)
120 Volt Transformer US Version	**393503301**	1
230 Volt Transformer EU Version	**393503201**	1
240 Volt Transformer UK Version	**393503101**	1

ProStar™ 210/ 215, PrepStar™ 218 Solvent Delivery Maintenance

Ceramic Check Valve Cartridges

Flow Rate	Pump Head Material	Inlet	Outlet	Quantity (Each)
5, 10, 25 mL/min	SS, Ti	**R007101678**	**R007101679**	1
10, 25 mL/min	PEEK	**R007101680**	**R007101681**	1

Ruby/Saphire Check Valve Cartridges

The 200 mL/min check valve cartridge is for the ProStar 218 only.

Flow Rate	Pump Head Material	Inlet	Outlet	Quantity (Each)
5, 10, 25 mL/min	SS, Ti	**R007101616**	**R007101617**	1
10, 25 mL/min	PEEK	**R007101618**	**R007101619**	1
50, 100 mL/min	PEEK	**R007101622**	**R007101623**	1
	SS, Ti	**R007101620**	**R007101621**	1
200 mL/min	Ti	**393654801**	**R007101417**	1

Piston Seals

Flow Rate	Pump Head Material	Graphite/Hastalloy	HDPE/Hastalloy	Quantity (Each)
5 mL/min	SS		**R007101634**	1
10 mL/min	PEEK	**R007101641**		1
	SS, Ti	**R007101636**	**R007101637**	1
25 mL/min	PEEK	**R007101647**		1
	SS, Ti	**R007101642**	**R007101643**	1
	Ti	**R000400128**		1
50 mL/min	PEEK	**R007101652**		1
	SS	**R000400116**	**R000400123**	1
100 mL/min	PEEK	**R007101656**		1
	SS	**R000400103**	**R000400124**	1
200 mL/min	Ti	**R000400131**	**R000400127**	1

Piston Seal Backup Rings

For all pump head materials.

Flow Rate	Part No.	Quantity (Each)
5 mL/min	**R007101629**	1
10 mL/min	**R007101630**	1
25 mL/min	**R007101442**	1
50 mL/min	**R000E50012**	1
100 mL/min	**R000E50013**	1

Piston Seal Tools

Order a seal holder and a plunger tool.

Flow Rate	Holder	Plunger	Quantity (Each)
5 and 10 mL/min		**R007101495**	1
5 mL/min	**R007101493**		1
10 mL/min	**R007101494**		1
25 mL/min	**R007101496**	**R007101498**	1
200 mL/min	**393655601**	**393655701**	1

Piston Assemblies

Spring included if needed.

Flow Rate	Pump Head Material	Part No.	Quantity (Each)
5 mL/min	SS	**R007101657**	1
10 mL/min	PEEK, SS, Ti	**R007101659**	1
	SS	**R007101658**	1
25 mL/min	PEEK	**R007101661**	1
	SS	**R007101660**	1
50 mL/min	PEEK, SS	**R007101663**	1
100 mL/min	PEEK	**R007101664**	1
200 mL/min	Ti	**393654301**	1

Pump Head Spare Parts Kits

Spare Parts Kits contain inlet and outlet check valve cartridges, backup seal and high pressure seal.

Flow Rate	Pump Head Material	Standard	Piston Wash	Quantity (Each)
5 mL/min	SS	**R007101665**		1
10 mL/min	PEEK	**R007101669**		1
	SS	**R007101666**		1
	SS, Ti		**R007101667**	1
25 mL/min	PEEK	**R007101672**		1
	SS	**R007101670**		1
	Ti	**R007101671**		1
50 mL/min	PEEK	**R007101675**		1
	SS	**R007101673**	**R007101674**	1
100 mL/min	PEEK	**R007101677**		1
	SS	**R007101676**		1
	Ti	**R007101789**		1

Prime/Purge Valves

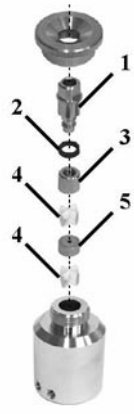
Size (in.)	PEEK	SS	Quantity (Each)
1/16		**R000481802**	1
	R000481567		1
1/8		**2ZB2XJ2SSP**	1

High Pressure Inlet Check Valve Kits

Kits include the check valve and replacement fittings.

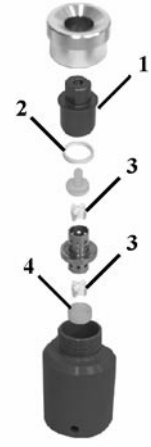
Flow Rate	Part No.	Quantity (Each)
5, 10, 25 mL/min	**393513791**	1
50, 100 mL/min	**393513691**	1

ProStar™ 210/ 215/ 218 0.6 mL and 1.2 mL Dynamic Mixer Maintenance



Item #	Description	Part No.	Quantity (Each)
1	Piston Body for SS Dynamic Mixer 0.6/1.2 mL Volume	**R007000102**	1
2	Seal for SS Dynamic Mixer 0.6/1.2 mL Volume	**R002540006**	1
3	Inlet Solvent Filter for Dynamic Mixer 0.6/1.2 mL Volume	**R007000105**	1
4	Magnetic Stir Bar	**R002500002**	1
5	Spacer for SS Dynamic Mixer 0.6/1.2 mL Volume	**R007100005**	1

ProStar™ 210/ 215/ 218 10 mL Dynamic Mixer Maintenance



Item #	Description	Part No.	Quantity (Each)
1	Piston Body for Ti Dynamic Mixer 10 mL Volume	**393501401**	1
2	Seal, 10 mm	**R002540014**	1
3	Magnetic Stir Bar	**R002500002**	1
4	Cap, Stir Bar Cage, Bottom, for Ti/PEEK Dynamic Mixer	**R007100135**	1

ProStar™ 220/ 230/ 240 Solvent Delivery Modules

- Isocratic, ternary and quaternary pumps
- Inert configurations
- Accurate, reproducible gradients regardless of solvent composition
- Ternary gradient pump handles up to four solvents
- No cavitation and air bubble concerns



Unequalled Reliability

Achieve great performance and unequalled reliability with Varian's newest generation ProStar 220 isocratic and ProStar 230/240 gradient pumps, featuring patented pump designs.

The ProStar 230/240 delivers excellent flow rate and proportioning accuracy over its entire range. Select flow rates from 10 µL/min to 10 mL/min for true analytical to semipreparative scale applications using up to 10 mm ID columns. In addition, variable one-, two-, or four-stroke proportioning modes enhance gradient schemes, thus minimizing inaccuracies.

The ProStar 220/230/240 can be custom configured in a variety of ways to suit individual needs. For example, these pumps can be interfaced to Varian or other manufacturers' components (autosamplers, detectors, etc.) using synchronization cables to communicate start, ready, and fault signals for seamless operation.

For maximum capabilities, Galaxie or Star® Workstation offers advanced data handling and single-point control of ProStar pumps. With this configuration, you get a completely integrated HPLC system with impressive abilities in automated analyses, data integration, and report generation.

Unique Pump Concept

The ProStar 230/240 uses in-line, high-speed proportioning valves with high-pressure mixing to achieve excellent reproducibility. A unique, mechanically activated inlet valve minimizes air bubble problems that are inherent in other pumps. The active check valve remains closed until the mechanically driven actuator forces it to open at precisely the correct time. As a result, the 220/230/240 pumps avoid the nagging problems of cavitation and pump stalls due to air bubbles.

Rapid refill and a built-in, low-volume pulse dampener eliminate pulses associated with many single-piston pumps. Choose from either a low-volume static mixer or a high-efficiency dynamic mixer for the best gradient baseline stability.

Outstanding Proportioning

The ProStar 230/240 single piston pump design with independent variable flow proportioning creates accurate solvent compositions and gradients throughout its entire flow range. With a total delay volume of 800 µL at an operating pressure of 1450 psi (100 bar), gradients using 2 mm microbore columns pose no problem. Electronic flow feedback ensures constant, repeatable flows regardless of pressure or solvent.

Inert Configurations

Aggressive mobile phases and metal-sensitive molecules demand corrosion-resistant flow-path materials. The inert ProStar 230/240 pump uses titanium, gold-plated, and polymeric materials to create a high-performance, corrosive-resistant solvent delivery system with piston wash capability.

Upgrade to Higher Performance

A ProStar 220 isocratic pump can be upgraded to the full capability of a current ternary 230 or quaternary 240 pump. Each module can be further upgraded to an inert system. This is a logical approach to keep up with your changing needs.

GLP Confidence

Multilevel diagnostics drive run and error logs to maintain a complete audit trail of operating parameters, set points, errors, and faults. In addition, built-in leak check routines, automatic piston positioning for seal replacement, and pump stroke counters validate instrument performance.

Specifications						
Maximum operating pressure:	6000 psi (410 atmospheres)					
Flow rate range:	0.01 to 10.0 mL/min. 0.01 mL/min steps between 0.00 and 1.00 mL/min, and 0.1 mL/min steps between 1.0 and 10.0 mL/min					
Flow precision:	0.3% RSD at 1.0 mL/min MeOH/water					
Flow accuracy:	± 0.5% at 1.0 mL/min isopropyl alcohol					
Compositional accuracy:	± 0.5% absolute					
Compositional precision:	± 0.1% absolute					
Delay volume:	700 µL + 1 µL/ATM pressure					
Pressure pulsation:	Less than 2% at 150 atmospheres (1 mL/min with 100% isopropyl alcohol)					
Proportioning modes:	1-, 2-, or 4-stroke (user selectable)					
Mixing:	High pressure; static or dynamic mixing modes					
Module/Computer Interface:	• **Display**: 40 characters, double-line, back-lit LCD • **Contact closure outputs**: six time-programmable external event relays, and three synchronization signals: READY, START, and FAULT • **Contact closure inputs**: three synchronization signals: READY, START, and FAULT • **Bus communication**: the 220/230/240 solvent delivery systems communicate with Galaxie or Star Workstation by means of the IEEE 488 Bus (GPIB)					
Environment:	Operates within specifications from 10 °C to 35 °C. Nonoperational storage from -20 °C to 65 °C. Operates in relative humidity from 5% to 95%.					
Dimensions and Weight						
Size:	**height**	11.5 in. 29.2 cm	**width**	11.5 in. 29.2 cm	**depth**	19.75 in. 50.2 cm
Weight:	61 lb / 27.7 Kg					

ProStar 220/ 230/ 240 Solvent Delivery Modules

Description	Part No.	Quantity (Each)
ProStar 220 Isocratic Solvent Delivery Module	**393613005**	1
ProStar 230 Ternary Gradient Solvent Delivery Module	**393613001**	1
ProStar 230I Inert Ternary Gradient Solvent Delivery Module	**393613002**	1
ProStar 240 Quaternary Gradient Solvent Delivery Module	**393613003**	1
ProStar 240I Inert Quaternary Gradient Solvent Delivery Module	**393613004**	1

ProStar™ 220/ 230/ 240 Maintenance

Installation and Maintenance Kits

Installation Kits include: Tool kit, pump head seal, piston guide, mixer, oil, application syringe, C-18 test column, and PEEK tubing 10 ft. x 0.01 in. ID
Maintenance Kit includes: Inlet valve, piston seal, mixer, and inlet and outlet solvent filters

Description	Part No.	Quantity (Each)
ProStar 220 Installation and Maintenance Kit	**391907494**	1
ProStar 230/240 Installation and Maintenance Kit	**391907493**	1
ProStar 220/230/240 Maintenance Kit	**393593691**	1

Pump Head Maintenance Parts

Description	Part No.	Quantity (Each)
Inlet Valve Replacement Kit	**391908590**	1
Outlet Check Valve with removable frit. Removable frit allows replacement of frit only.	**391946590**	1
Outlet Check Valve Frits. Includes: Removal Tool and instructions. For use with PN 391946590 only.	**391959490**	3 /Pk
Piston Replacement Kit	**391962590**	1
Piston Seal Replacement Kit. Contains high pressure seal, mixer frits and piston bushing	**391910190**	1
Piston Seal only	**391939700**	1
Proportioning Valve	**390566300**	1
Proportioning Valve without Coil	**391949690**	1
Replacement Mixer Filter Element	**2718038500**	1
Solid Core Damper Replacement Kit. Used to replace an existing Solid core damper. Does not contain parts necessary to upgrade U-tube damper.	**391967590**	1
Solvent Reservoir Filter, 10 micron	**2718038700**	1

ProStar™ 230I/ 240I (Inert) Maintenance

Installation and Maintenance Kit

Kit Includes: Tool kit, piston seal, piston guide oil lubricant, application syringe, C-18 Test Column, and PEEK tubing 10 ft. x 0.01 in. ID

Description	Part No.	Quantity (Each)
ProStar 230I/240I Inert Installation and Maintenance Kit	**391907495**	1

Maintenance Parts

Description	Part No.	Quantity (Each)
Inert Check Valve Replacement Kit	**391960090**	1
Inert Inlet Valve Replacement Kit	**391960490**	1
Inert Piston Seal	**391960900**	1
Inert Prime/Purge Valve Assembly	**391961200**	1
Inert Purge Valve with Mounting Bracket	**391961190**	1
Replacement Mixer Filter, Titanium	**391962390**	1
Replacement Seal for Purge Valve	**2814902800**	1

ProStar™ HPLC System Accessories

Description	Part No.	Quantity (Each)
Bracket for PEEK Prime/Purge Valve, for Mast	**R000048616**	1
Bracket for Rheodyne Injection Valve, for Mast	**R000048605**	1
Bracket for SS, Ti Purge Valves, for Mast	**R000048606**	1
Column Hanger for 1 Inch OD Column, for Mast	**R000048602**	1
Column Hanger for 1/2 Inch OD Column, for Mast	**R000048601**	1
Column Hanger for 1/4 Inch OD Column, for Mast	**R000048610**	1
Hamilton Priming Valve Bracket, for Mast	**R000048611**	1
Hamilton Priming Valve for 5 and 10 mL/min Pump Heads	**HM86727**	1
Mast Kit for ProStar and PrepStar Solvent Delivery Modules	**393557491**	1
Mast Mounting Clamp to Mount Mast to Pumps	**R000048607**	1
Stainless Steel Prime Purge Valve	**R000481802**	1
Titanium Prime Purge Valve	**R000220193**	1

ProStar™ 325 Dual Wavelength UV-Vis Detector

- Save time diluting samples with extended absorbance range
- Information-rich data with peak ratio/dual wavelength detection
- Microbore to preparative applications with a single detector



Built-in versatility for analytical to preparative HPLC

The ProStar 325 UV-Vis detector delivers superb sensitivity and a wide, dynamic absorbance range. A highly versatile instrument, the ProStar 325 incorporates easily into an existing HPLC system or operates as a stand-alone detector.

Simplicity with Increased Productivity

Dual pathlength flow cells coupled with the ProStar 325's extended absorbance range dramatically reduce the need for sample dilutions—saving valuable time.

The ProStar 325 supports detection up to 40 absorbance units higher than most UV-Vis detectors. The deuterium source provides stable, precise wavelength settings in the ultraviolet spectrum, and the quartz halogen lamp covers the visible range.

Information-Rich Detection

Simultaneously handling two user defined UV or two visible wavelengths the ProStar 325 further enhances productivity with increased analyte information. Peak purity is readily assessed with dual wavelength and peak ratio capabilities.

Flexible Platform

The ProStar 325 is available in a variety of configurations with options to meet all UV-Vis analytical requirements. Start with a single or dual wavelength detector and select from a range of flow cells. As requirements change, a software package easily upgrades a single wavelength detector to a dual wavelength detector.

From analytical to preparative flow rates, the ProStar 325 is quickly configured with flow cells for scaleup work. Interchangeable, cartridge-style flow cells handle microliter per minute flow rates to hundreds of milliliters per minute.

Handheld Computer Control

Detection parameters are quickly and comfortably downloaded to the detector with the cordless, handheld computer. Make wavelength changes, turn the lamp on and off, or view chromatograms right from your workstation chair.

Control and Data Handling

Galaxie Chromatography Data System, Galaxie Workstation, and Star Workstation all provide complete system control, data analysis, and multiple reporting options to help increase productivity.

Tool-Free Maintenance

Routine maintenance is easy with front panel access. With simple thumb-screws securing the lamps and flow cells, no tools are needed.

Regulatory Compliance

Galaxie Chromatography Data System and Star Workstation include tools to help you meet your 21 CFP Part 11 compliance requirements. Varian offers complete IQ, OQ, and PQ documentation packages and contract services to help meet regulatory requirements.

Specifications						
Wavelength range:	190 to 900 nm					
Light sources:	Deuterium for UV and quartz halogen for Vis					
Spectral bandwidth:	6 nm					
Wavelength precision:	±0.1 nm					
Wavelength accuracy:	±1 nm at 260 nm					
Noise, single wavelength:	±5 x 10-6 AU peak-to-peak at 254 nm, 2 sec. response time, 1 mL/min MeOH, 9 mm flow cell					
Noise, dual wavelength:	±10 x 10-6 AU peak-to-peak at 254/280 nm, 2 sec. response time, 1 mL/min MeOH, 9 mm flow cell					
Noise, dry cell:	Typically, ±3 x 10-6 AU peak-to-peak at 254 nm, 2 sec. response time, 9 mm flow cell					
Drift:	Less than 1 mAU/hr					
Linearity:	With acetone in water; analytical 1% to 2 AU; preparative 1% to 20 AU at 265 nm					
Absorbance range:	Up to 70 AU with preparative flow cell					
Response time:	Selectable 0.05, 0.5, 1, and 2 sec.					
Data rate:	20 Hz single channel					
Analog detector outputs:	Two with selectable absorbance range of 0.001 to 100 AU full scale at 1V					
Flow cell pressure rating:	1000 psi maximum for all cells					
Maximum flow rates, single pathlength flow sells:	Semimicro 4 mm, 1.5 µL; 20 mL/min					
	Analytical 9 mm, 15 µL; 100 mL/min					
Maximum flow rates, dual pathlength flow sells:	Preparative 9 mm x 1 mm; 500 mL/min					
	Super Preparative 4 mm x 0.15 mm; 10 L/min					
Module/Computer Interface:	• **External**: Ethernet, IR with handheld computer • **Contact closure outputs**: four time-programmable external event relays, one peak sense relay, three synchronization signals (ready out, start out, and fault out) • **Contact closure inputs**: lamp off, autozero, three synchronization signals (ready in, start in, and fault in) • **Software**: Star Workstation; Galaxie Workstation; Galaxie Chromatography Data System; handheld computer • **Dual channel ratio calculation**: peak detection through Star or Galaxie software					
Environment						
Operation:	10 °C to 35 °C; relative humidity from 5% to 95%					
Nonoperational storage:	-20 °C to 65 °C					
Dimensions and Weight						
Size:	**height**	8.3 in. 21.1 cm	**width**	11.7 in. 29.6 cm	**depth**	18.7 in. 47.7 cm
Weight:	34.2 lb/15.5 kg					

ProStar 325 UV/Vis Detectors

Description	Part No.	Quantity (Each)
ProStar 325 UV Single Wavelength Detector	**10080100**	1
ProStar 325 UV Dual Wavelength Detector	**10081400**	1
ProStar 325 UV/Vis Single Wavelength Detector	**10081300**	1
ProStar 325 UV/Vis Dual Wavelength Detector	**10081500**	1

ProStar 325 UV/Vis Detector Accessories

Description	Part No.	Quantity (Each)
325/335 Analog Signal Cable	**110744200**	1
325/335 Relay Interface Board	**210187590**	1
325/335 Sync Interface Board	**210186590**	1
Dual Wavelength Option, Field Upgrade	**110723100**	1
Ethernet 8-port 10/100 Base-T Switch	**392612922**	1
Ethernet Category 5 Patch Cable, 10 feet	**392612901**	1
Ethernet Category 5 Patch Cable, 20 feet	**392612902**	1
Flow Cell, Analytical	**210181800**	1
Flow Cell, Microbore	**210182100**	1
Flow Cell, Preparative	**210181900**	1
Flow Cell, Super Preparative	**210182000**	1
Handheld Computer with Cradle	**7891084900**	1
Shielded Recorder/Integrator/Contact Cable	**110744100**	1

ProStar 325 UV/Vis Detector Maintenance

Description	Part No.	Quantity (Each)
D2 Lamp (Prealigned)	**110715400**	1
Quartz Halogen Lamp	**5610136500**	1

ProStar™ 335 Diode Array Detector

- Single detector for all UV-Vis absorbance applications
- Complete results with information-rich data
- Routine trace analysis



Built-in Versatility for Microbore to Preparative HPLC

The ProStar 335 with programmable slit widths delivers the highest sensitivity and spectral resolution from 190 nm to 950 nm. The ProStar 335 easily handles all microbore to preparative applications with two diode arrays and dual-pathlength flow cells. The dual-beam optics and polychromator grating ensure greater accuracy and reliability.

Versatile Platform

The ProStar 335 significantly extends absorbance range detection with a combined 2048-elements over two diode arrays. The dual-pathlength flow cells and extended absorbance range make the ProStar 335 the only true scale-up diode array detector. From microbore to preparative flow rates, the ProStar 335 is quickly configured with flow cells for scaleup work. Interchangeable, cartridge-style flow cells handle microliter per minute flow rates to hundreds of milliliters per minute.

Information-Rich Data

The ProStar 335 uses the most comprehensive spectral processing software packages for fast spectral data reduction. Automatic peak identification is easy with user-customized library searches. Compare spectra of an unknown analyte with stored spectral data of known compounds. Obtain the most complete and accurate purity information available by mathematically comparing dissimilarities between spectra across the width of the peak. In addition, PolyView 2000 under Star® Workstation determines the composition of a mix of known components in unknown amounts using the proven technique of Multicomponent Analysis (MCA). Also with MCA, quantitative analysis of groups of up to six overlapping peaks can be obtained.

Superior Resolution

Along with programmable slit widths, Seamless Spectral Coverage Technology (SSCT) further supports greater sensitivity and spectral resolution. SSCT eliminates second order light to give the most accurate spectral information. Unique focusing lenses in the flow cell dramatically reduce refractive index effects. With superb optical and spectral resolution, the ProStar 335 routinely provides detailed information with even trace amounts of analyte.

Control and Data Handling

Galaxie Chromatography Data System, Galaxie Workstation, and Star Workstation all provide complete system control, data analysis, and multiple reporting options to help increase productivity.

Regulatory Compliance

The ProStar 335 maintains an onboard electronic logbook with information on lamp energy and lamp hours. Varian offers complete IQ, OQ, and PQ documentation packages, and contract services to help meet regulatory requirements. Validation manuals are available for Standard Operating Procedures (SOP) to comply with GLP and GMP requirements.

Tool-Free Maintenance

Routine maintenance is easy with front panel access. With simple thumb-screws securing the lamps and flow cells, no tools are needed.

Specifications					
Wavelength range:	190 to 950 nm				
Wavelength accuracy:	± 1 nm, 656 D2 line, verified with the 486 D2 line				
Light Source:	D2 and Quartz Halogen				
Spectral resolution/ optical bandpass:	1 nm per photodiode with a total of 1024 photodiodes for single array, and 2048 for a dual array				
Photodiodes for dual array Digital resolution:	1 nm				
Linearity range:	5% to 2 AU, 2.5 AU upper limit				
Noise:	± 1x10-5 AU				
Drift:	1x10-3 AU/hr				
Sensitivity setting range:	1 µAU to 100 AU with software				
Filter setting range:	via software				
Slit width:	1, 2, 4, 8, and 16 nm, programmable				
Diode width:	1 nm				
Module/Computer Interface:	• **Software**: Star Workstation; Galaxie Workstation; Galaxie Chromatography Data System; handheld computer				
Environment					
Operation:	10 °C to 35 °C; relative humidity from 5% to 95%				
Nonoperational storage:	-20 °C to 65 °C				
Dimensions and Weight					
Size:	height	8.3 in. 21.1 cm	width	11.7 in. 29.6 cm	depth 18.7 in. 47.7 cm
Weight:	34.2 lb/15.5 kg				

ProStar 335 Diode Array Detector

Description	Part No.	Quantity (Each)
ProStar 335 DAD, Microbore to Analytical, Single Array	**10083800**	1
ProStar 335 DAD, Analytical to Prep, Dual Array	**10083900**	1

ProStar 335 Diode Array Detector Accessories

Description	Part No.	Quantity (Each)
325/335 Analog Signal Cable	**110744200**	1
325/335 Relay Interface Board	**210187590**	1
325/335 Sync Interface Board	**210186590**	1
Ethernet 8-port 10/100 Base-T Switch	**392612922**	1
Ethernet Category 5 Patch Cable, 10 feet	**392612901**	1
Ethernet Category 5 Patch Cable, 20 feet	**392612902**	1
Flow Cell, Analytical	**210181800**	1
Flow Cell, Microbore	**210182100**	1
Flow Cell, Preparative	**210181900**	1
Flow Cell, Super Preparative	**210182000**	1
Shielded Recorder/Integrator/Contact Cable	**110744100**	1

ProStar 335 Diode Array Detector Maintenance

Description	Part No.	Quantity (Each)
D2 Lamp (Prealigned)	**110715400**	1
Quartz Halogen Lamp	**5610136500**	1

ProStar™ 340 UV-Vis Detector

- Small, compact design
- Precision optics
- Multiple flow cell choices



Great Performance at Both Ends of the Spectrum

The ProStar 340 detector is designed for single wavelength UV-Vis measurements guaranteed to meet tough performance and reliability requirements. The ProStar 340 detector makes the most of your tight budget.

The ProStar 340 is a variable wavelength UV-Vis absorbance detector for true high-performance liquid chromatography. With various combinations of available flow cells and lamps, the 340 can be adapted for applications ranging from capillary to preparative scale. The precision-designed optics use a dual-beam, reference diode to ensure stable, flat baselines at sensitivities down to 0.005 AU.

Selection of Flow cells

The multifaceted ProStar 340 detector adapts to your specific application needs. Choose from eight different flow cell configurations, including microbore for LC/MS, bio/inert, analytical, or preparative.

GLP features

Prealigned deuterium and tungsten lamps are easy to replace and produce consistent results every time. Start-up checks further enhance the detectors' GLP and maintenance features.

Specifications					
Deuterium (D2) lamp:	190 - 380 nm				
Tungsten (W) lamp:	380 - 800 nm				
Bandwidth:	6 nm				
Wavelength accuracy:	± 1 nm				
Wavelength precision:	± 0.1 nm				
Range selections:	2.0, 1.0, 0.5, 0.2, 0.1, 0.05, 0.02, 0.01, 0.005, 0.002, 0.001, and 0.0005 AUFS				
Absorbance linearity:	@ 254 nm; better than 1% to 1.5 AU				
Noise (single-wavelength):	< ±2 x 10 -5 AU from 220 - 280 nm				
Drift (after 1 hr. warm-up):	<x 10 -4 AU/hour				
Module/Computer Interface:	• **Display**: LED absorbance and lamp energy • **Communications**: • **Remote inputs**: Auto-zero, event marker, lamp shut-off • **Remote outputs**: N/A • **Analog outputs** - Integrator: 1.0V/AU - Recorder: 10 mV, 100 mV or 1.0V • **Power requirements:** 100/120/220/240 Vac nominal; 200 VA; 50/60 Hz				
Dimensions and Weight					
Size:	height 6.25 in. 15.9 cm	width 11.4 in. 29.0 cm	depth 13.25 in. 33.7 cm		
Weight:	20 lb / 9.1 kg				

ProStar 340 UV-Vis Detector

Order Flow Cell Separately.

Description	Part No.	Quantity (Each)
ProStar 340 UV-Vis Detector without flowcell	**393638302**	1

ProStar 340/345 UV-Vis Accessories

Description	Part No.	Quantity (Each)
Flow Cell 10 mm Path 15 µL, SS. Analytical LC	**R000088511**	1
Flow Cell 240 um Path 35 nl, Borosilicate. Capillary LC	**R000088512**	1
Flow Cell 3 mm Path 1.2 µL, SS. Microbore LC	**R000088507**	1
Flow Cell 3 mm Path 4.5 µL, SS. Semiprep and Glass Column	**R000088508**	1
Flow Cell 6 mm Path 9 µL, KelF. Analytical biocompatible LC	**R000088509**	1
Flow Cell 6 mm Path 9 µL, SS. Analytical LC	**R000088506**	1
Tungsten Lamp Upgrade Kit with mounting plate	**R000088519**	1
Variable Path Flow Cell 0-3 mm Path, SS. Preparative LC 1/8 in. Fittings, 2000 psi, 137 bar	**R000088510**	1
Variable Path Flow Cell 0-3 mm, Titanium. Preparative LC 2000 psi, 137 bar	**R000088513**	1

ProStar 340/345 UV-Vis Maintenance

Description	Part No.	Quantity (Each)
Deuterium Lamp, Prealigned	**R000088515**	1
Tungsten Lamp, Prealigned	**R000088516**	1

ProStar™ 350/352 Refractive Index Detector

- Maximum sensitivity
- Designed for automated operation
- Analytical and preparative models available



Refractive Index - The Universal Detector for Nonabsorbing Compounds

The Varian ProStar 350 refractive index (RI) detector is engineered to be the most stable and sensitive analytical RI in the laboratory today. This universal detector is ideal for the analysis of nonabsorbing compounds such as polymers, hydrocarbons, carbohydrates, alcohols, and fatty acids.

The ProStar 350 detector is specifically designed to meet the demanding requirements of analytical applications. When you need preparative HPLC and require flow rates exceeding 20 mL/minute, the ProStar 352 preparative refractive index detector provides the baseline stability and capacity necessary for these higher flow rates.

Ease-of-Use

Both the ProStar 350 and 352 models can be externally controlled, permitting a device, such as a pump, to automatically activate functions such as electronic optical zero, reference cell flush, or polarity reversal operations. Fully automated operation is easily established when mobile phase changes are required.

Maximum Sensitivity

The ProStar 350 combines low noise with active flow cell temperature control, yielding improved detection limits.

Baseline Stability

Flow cell thermostating in the ProStar 350 eliminates 99.9% of the temperature effect on the RI baseline. Stable baselines mean lower detection limits for both models. Temperatures are controlled with piezo-electrical heating in five degree increments from 30 to 50 degrees Celsius.

Specifications		
	ProStar 350	**ProStar 352**
Refractive index range:	1.00 – 1.75	1.00 – 1.75
Attenuation range:	0.01 to 32 x 10^{-5} RIU/FS	1 to 256 x 10^{-4} RIU/FS
Noise:	2.5 x 10^{-9} RIU	1.5 x 10^{-7} RIU
Linear range:	100 x 10^{-5} RIU	200 x 10^{-4} RIU
Flow cell volume:	7 µL	20 µL
Pressure maximum	100 psi	100 psi
Flow rate maximum:	20 mL/min	150 mL/min
Detection limit: (Sucrose in water)	0.05 µG/mL	3 µG/mL
Response time setting:	1.5, 3.0 or 6.0 sec	0.5, 1.5 or 3.0 sec
Active thermostating:	30-50 °C	none
Communications Output	• **Integrator:** 1 Volt maximum • **Recorder:** 10 mV/FS	• **Integrator:** 1 Volt maximum • **Recorder:**10 mV/FS
Communications Input	• autozero • auto purge valve • integrator signal polarity reversal • injection marker	• autozero • auto purge valve • integrator signal polarity reversal • injection marker
Power consumption:	70 VA maximum	70 VA maximum
Dimensions and Weight		
Size:	**height** 5.5 in. 14.0 cm **width** 10.25 in. 26.0 cm **depth** 18.9 in. 48.0 cm	**height** 5.5 in. 14.0 cm **width** 10.25 in. 26.0 cm **depth** 18.9 in. 48.0 cm
Weight:	35 lb / 16 kg	35 lbs / 16 kg

ProStar 350/352 Refractive Index Detector

Description	Max. Flow Rate	Part No.	Quantity (Each)
ProStar 350 Refractive Index Detector	20 mL/min	**391970700**	1
ProStar 352 Preparative Refractive Index Detector	150 mL/min	**393519901**	1

ProStar 350/352 Refractive Index Detector Accessories

Description	Part No.	Quantity (Each)
Sync Cable-Allows ProStar Modules to send auto-zero, reverse polarity or auto-purge signal to detector	**391972101**	1

ProStar 350/352 Refractive Index Detector Maintenance

Description	Part No.	Quantity (Each)
Replacement Lamp Assembly	**392602810**	1

ProStar™ 363 Fluorescence Detector

Increased Sensitivity for All Fluorescence Applications

- Continuous Xenon lamp maximizes sensitivity
- Time-programmable wavelength changes optimize sensitivity
- Fully integrated with Galaxie and Star Workstation software



Advantages of Fluorescence Spectroscopy

Fluorescence spectroscopy enjoys two distinct benefits over UV-Vis spectroscopy—increased sensitivity and enhanced selectivity. Sensitivity is dramatically increased by looking for a fluorescence signal against a dark background. Selectivity is achieved by selecting both the excitation and emission wavelengths to screen out unwanted interferences. Varian's ProStar 363 Fluorescence Detector maximizes sensitivity and selectivity to give you total control over your analyses.

Sensitivity is the Key

The ProStar 363 provides the highest sensitivity by using a continuous Xenon lamp. Continuous lamps generate a significantly more stable signal than flash lamps. Consequently, drift and noise are dramatically reduced. The unique optical design of the ProStar 363 permits simultaneous measurement of both emission and excitation signals, thus accurately correcting for lamp fluctuations. The combination of the lamp and optics provide the quietest signal possible, resulting in more reproducible fluorescent measurements.

Total Control Over Wavelength Selection

The dual monochromator design of the ProStar 363 ensures the ability to select wavelengths specific to the compounds of interest. No cut-off filters are needed for multiple sample analysis. Time programming wavelength changes assures that each peak's intensity is maximized.

Scan Both Excitation and Emission Spectra

The ProStar 363 is fully capable of scanning both the excitation and emission spectra. The optimal excitation and emission wavelength information for each compound can then be used for time programming wavelength changes to ensure maximum sensitivity for every compound.

Easy System Control

Program the detector either through the easy-to-use front panel or via Star Workstation software. Run progress can be viewed either on the front display or Star Workstation. Built-in GLP functions include wavelength calibration and a lamp hour counter.

Specifications			
Optical design:	Dual monochromators		
Sensitivity:	S/N 350:1, Raman line of water		
Wavelength range:	200-731 nm standard; 200-900 nm with optional extended wavelength PMT		
Wavelength accuracy:	± 3 nm		
Wavelength precision:	± 0.5 nm		
Spectral bandwidth:	15 nm for excitation, user selectable 15 or 30 nm for emission		
Light source:	150W continuous Xenon lamp		
Flow cell:	Quartz, PTFE, 12 µL illuminated volume		
Analog outputs:	2, for output to fraction collector or data systems		
Module/Computer Interface:	**Display**: 2 x 24 character, high contrast LCD		
Spectra storage:	Up to 8 spectra, either excitation or emission can be added to or subtracted from each other		
Environment			
Operation:	10 °C to 40 °C; relative humidity from 5% to 95%		
Nonoperational storage:	-20 °C to 65 °C		
Dimensions and Weight			
Size:	**height** 12.0 in. 30.5 cm	**width** 11.5 in. 29.2 cm	**depth** 18.5 in. 47.0 cm
Weight:	42 lb / 19 kg		

ProStar 363 Fluorescence Detector

Description	Part No.	Quantity (Each)
ProStar 363 Fluorescence Detector	**393572801**	1
ProStar 363 Fluorescence Detector with 800 MIB (2 ADC channels)	**393572802**	1
ProStar 363 Fluorescence Detector with 800 MIB (4 ADC channels)	**393572803**	1

ProStar 363 Fluorescence Detector Accessories

Description	Part No.	Quantity (Each)
12 µL Flow Cell, Cell Only	**392613109**	1
Cable to connect ADC to ProStar 363	**393592201**	1
Star 800 MIB w/2 ADC Channels	**390793701**	1
Star 800 MIB w/4 ADC Channels	**390793702**	1
Star 800 MIB w/serial & 2 ADC Channels	**390793711**	1
Star 800 MIB w/serial & 4 ADC Channels	**390793712**	1

ProStar 363 Fluorescence Detector Maintenance

Description	Part No.	Quantity (Each)
12 µL Flow Cell, Cell Only	**392613109**	1
Extended Wavelength PMT (200-900 nm)	**5618000200**	1
Long-Life Xenon Lamp 2000 Hour Lamp	**392613103**	1
Xenon Lamp 1500 Hour Lamp	**392613102**	1

ProStar™ 370 Electrochemical Detector

- Sensitive: greatly improved noise suppression
- Accurate: integrated, shielded column/flow cell oven
- Flexible: time-based, full parametric control



The ProStar 370 Electrochemical Detector reacts to compounds that undergo electrochemical reactions, and has three modes of operation to optimize performance. The DC mode is used for "classical" electrochemistry for those analytes that are easily oxidized (phenols, aromatic amines, and thiols) or are easily reduced (quinones and nitro compounds). The Pulse Mode can be applied to analytes that are not detectable in the DC mode, such as sugars, alcohols, certain amines, amino acids, and sulfur compounds. Further, a Scan mode, which varies the electrical potential, speeds up method development work.

Both chromatographic separations and Electrochemical Detector responses are strongly affected by temperature fluctuations. A Faraday shielded, precisely thermostatted oven in the detector accommodates both the flow cell and the column to virtually eliminate temperature fluctuations, and maximize chromatographic and detector performance.

The VT-03 flow cell, developed for maximum sensitivity (=S/N ratio) in standard, microbore and capillary LC applications, can be equipped with a variety of working and reference electrodes covering a wide range of LC-EC applications. Working electrodes include glassy carbon, Pt, Au, Ag and Cu with a salt-bridge Ag/AgCl reference electrode.

ProStar 370 Electrochemical Detector

Description	Part No.	Quantity (Each)
370 Electrochemical Detector 110V/230V	**393520603**	1

ProStar 370 Electrochemical Detector Accessories

Description	Part No.	Quantity (Each)
High Density Glassy Carbon Working Electrode, VT-03 Flow Cell	**393520609**	1
Ag Working Electrode, Ag/AgCl Salt Bridge Reference, VT-03 flow cell, 2 mm Ag WE, sb REF	**391970806**	1
Au Working Electrode, Ag/AgCl Salt Bridge Reference, VT-03 flow cell, 3 mm Au WE, sb REF	**391970805**	1
Cu Working Electrode, Ag/AgCl Salt Bridge Reference, VT-03 flow cell, 3 mm Cu WE, sb REF	**391970808**	1
Pt Working Electrode, Ag/AgCl Salt Bridge Reference, VT-03 flow cell, 3 mm Pt WE, sb REF	**391970807**	1

Specifications					
DC mode					
Recorder range:	10 pA - 5 µA in 1, 2, 5 increments				
Integrator range:	1, 10 or 1000 nA/V				
Filter:	0.1 - 5 s in 1, 2, 5 increments				
Noise:	Better than 1.5 pA with load of 0.5 µF (+ 300 ohm) and 0.1 s filter, with 1 s better than 1 pA				
Pulse mode					
Range:	10 nA - 5 µA in 1, 2, 5 increments				
Pulse duration:	t1 and t2: 100 - 2000 ms, t3: 0 - 2000 ms				
Sample duration:	20, 40, 60, 80 or 100 ms				
Scan mode					
Range:	10 nA - 5 µA in 1, 2, 5 increments				
Cycle:	Half, full or continuous				
Scan rate:	1 - 50 mV/s in 1, 2, 5 increments Start/stop, hold				
Auto mode					
	DC (5 files), pulse (4 files), master/slave selection, run duration, number of runs, time-based control (resolution 1 s, 20 command lines) of cell potential, range, filter, auto zero, offset, output contacts and electrically actuated VALCO injector				
Rear panel I/O connections:	Main power, Recorder (12 bits) and integrator (analog), Aux 1 & 2 (open collector), switching relay 1 & 2, cell off, cell on, +24 V (max 0.5 A), common (ground); hold/busy, start, auto zero, overload, inject marker and electrical actuator control, detection of manual injector position, common RS 232C connector				
Dimensions and Weight					
Size:	height 17.3 in. 44.0 cm	width 8.7 in. 22 cm	depth 17.3 in. 44.0 cm		
Weight:	33 lb / 15 kg without flow cell and column				

Specifications - Flow Cell VT-03 *Confined wall-jet design, working volume determined by spacer thickness and working electrode (WE) diameter*	
Spacers:	25, 50 or 120 µm, stackable
Working electrode diameters:	0.7, 2, 3 mm
Cell volume:	0.01 µL minimum (working electrode and spacer dependent)
Working electrodes:	glassy carbon, Pt, Au, Ag and Cu
Reference electrodes:	salt-bridge Ag/AgCl
Auxiliary electrodes:	stainless steel (VT-03)
Wetted materials:	PCTFE, FEP, silver, silver chloride, and working electrode

ProStar™ 310 UV-Vis Detector Accessories & Maintenance

Description	Part No.	Quantity (Each)
Back Pressure Regulator Kit, 40 psi (3 bar) fixed	**391939300**	1
Deuterium Lamp Kit, pre-aligned	**391615691**	1
Flow Cell Kit. 15 µL volume, 8 mm Path length	**391914190**	1
Flow Cell Kit. 4.5 µL volume, 4 mm Path length	**391607090**	1
GPIB Interface Kit	**391934490**	1
Installation and Maintenance Kit Includes: PEEK Tubing, 10 ft x 0.01 in. ID., Fittings and Tubing Cutter	**391913492**	1
Sync Cable Kit	**391994890**	1
UV Detector Test Sample	**8200504805**	1



ProStar™ 320 UV-Vis Detector Accessories & Maintenance

Description	Part No.	Quantity (Each)
Analytical Dual Path length Flowcell	**393546401**	1
Back Pressure Regulator Kit, 40 psi (3 bar) fixed	**391939300**	1
Preparative Dual Path length Flowcell	**393546501**	1
Shielded Recorder/Integrator/Contact Cable	**R007200141**	1
Super Prep Dual Path Length Flowcell	**393563801**	1
UV Detector Test Sample	**8200504805**	1
Xenon Flashlamp	**R007200556**	1

ProStar™ 330 Photodiode Array Detector Accessories & Maintenance

Description	Part No.	Quantity (Each)
Cable, Generic I/O & Start Cable	**393571601**	1
Cable, ProStar 330 to ProStar 220/ 230/ 240 I/O & Start Cable	**393571701**	1
Deuterium Lamp	**393570502**	1
Flow Cell, Analytical, 10 mm Path Length	**393570507**	1
Flow Cell, High Pressure	**393570505**	1
Flow Cell, Microvolume	**393570504**	1
Flow Cell, Preparative. Flows Up to 300mL/min	**393570510**	1
Flow Cell, Semipreparative. Flows Up to 30 mL/min	**393570506**	1
Mercury Lamp	**393570503**	1
Single Channel Analog Output Board	**393570501**	1

ProStar™ 400 AutoSampler

- Easy access valve, needle, and vials
- Built-in vial sensor
- Simple-to-learn user interface
- Compact design



Low-cost, Rugged Design for Everyday Operation

The ProStar 400 is an economical, high capacity autosampler specifically engineered for automated, routine LC requirements in the pharmaceutical, chemical and environmental fields. Unlike some of its more expensive counterparts, the ProStar 400 boasts a small footprint, high throughput, and rugged design — all at a much lower cost than you would expect.

Injection Principle

The ProStar 400 AutoSampler's Pressure Assisted Sampling (PAS) design enables greater injection volume reproducibility. Plus, there are no bubble or cavitation problems to contend with because a built-in compressor pressurizes the contents of the vial through a double needle design. Combined with a simple sampling dispenser, PAS flawlessly delivers precise injection volumes into the sample loop.

Injection Modes

In addition to PAS injections, the 400 can be programmed for full-loop injections for ultimate reproducibility.

Options

Whether you need integrated cooling, a metal-free injector, or large volume injections, the ProStar 400 has a variety of options to suit your needs.

Communication

With a full complement of inputs and outputs for remote start/stop, next vial, and injection, the ProStar 400 is compatible with any HPLC system in your laboratory. The ProStar 400 also incorporates a serial interface for integration and control through the Galaxie and Star Workstation.

ProStar™ 400 AutoSampler

Biocompatible	Standard Sample Tray	Sample Tray Cooling	Quantity (Each)
Yes	**393529103**	**393529104**	1
No	**393529101**	**393529102**	1

Specifications			
Analytical sample capacity:	96 Standard vials (92 if wash option is exercised)		
Large volume option:	48 x 5 mL vials		
Injection volume:	20 µL Standard sample loop. 5 to 4,000 µL full-loop injections. Up to 5 mL with pressure only mode.		
Injections/vial:	Maximum of 9		
Needle wash:	Programmable		
Reproducibility:	Less than 0.5% RSD full-loop		
Carryover:	Less than 2%		
Module/Computer Interface:	• **Communication outputs**: - Inject marker (TTL + contact NO/NC) - Vial number BCD output (TTL) - Stop I/O (TTL) - Auxiliary 1 (open collector) - Auxiliary 1 inverted (open collector) - +24 V DC (0.5 max) inputs - Stop I/O (TTL) - Freeze runtime (TTL) - Next vial (TTL) - Next injection (TTL) - Serial interface for Galaxie and Star Workstation		
Power requirements:	115 Vac; 50/60 Hz; 200 VA 220 Vac; 50/60 Hz; 200 VA		
Dimensions and Weight			
Size:	**height** 11.1 in. 28.3 cm	**width** 11.8 in. 30 cm	**depth** 17.3 in. 44.0 cm
Weight:	34 lb /15.5 kg 41 lb / 18.4 kg (with cooling option)		

ProStar™ 400 AutoSampler Accessories

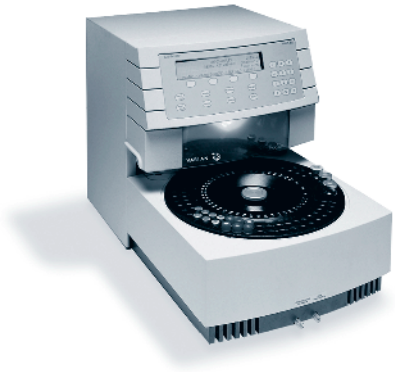
Description	Part No.	Quantity (Each)
Cable, RS-485/422 serial communication cable for Star workstation control	**393546291**	1
Cable, synchronization cable kit	**392604590**	1
Cover, Plexiglas sample tray cover	**392602714**	1
EPROM upgrade AI-3 to ProStar 400	**393614790**	1
ProStar 400 large volume option. Allows injection volumes up to 4 mL. 48 sample vial capacity	**391968900**	1

ProStar™ 400 AutoSampler Maintenance

Description	Part No.	Quantity (Each)
Needle, air needle for standard vials	**190000805**	1
Needle, liquid sampling needle	**190000804**	3 /Pk
Needle, serum needle for large volume option	**190000836**	3 /Pk
Pump tubing cassette, single channel	**190000850**	1

ProStar™ 410 AutoSampler

- Flexibility with multiple injection modes
- Integrated column oven for optimal performance
- Biocompatible and sample cooling options available



Intelligent Automation at Your Fingertips

The ProStar 410 AutoSampler offers the best of both worlds. It is intelligent for research applications yet rugged enough for routine quality control work. With Pressure Assisted Sampling Aspiration (PASA), the 410 AutoSampler applies pressure within the vial while the sample is withdrawn by a high resolution syringe. Air bubbles and in-vial vacuum problems are eliminated resulting in excellent reproducibility.

Flexible and Reliable

The 410 AutoSampler's three injection modes combine flexibility, ease-of-use, and precision. Choose from:

- Full Loop - overfills the sample loop for maximum precision.
- Partial Loop - program variable injection volumes easily.
- Microliter Pickup - withdraws the exact amount to be injected without sample loss.

Compact and Easy-to-Use

The compact design with integrated column oven saves bench space. Access to the syringe, injector, and needle is easy with the lift-up front panel. The electronic GLP log book tracks syringe, injector, and needle information for timely, preventive maintenance.

Interchangeable Sample Trays

Sample trays are available in three configurations: 84 x 2 mL vials with three 10 mL vials; 96 x 2 mL vials; or 24 x 10 mL vials for large injection volumes. Trays can be interchanged in under a minute.

Auto Mix Sample Preparation

Internal standard addition, sample dilution, or derivatization steps are easily programmed to reduce sample preparation time and errors associated with manual procedures. Using vial-to-vial transfers or dedicated large volume reagent vials, the 410 AutoSampler accomplishes many types of sample preparation routines.

Maximum Performance

Varian offers Star® or Galaxie™ Workstation control as well as Galaxie Chromatography Data System control. With added features such as sample tray temperature programming, a full-size column oven, and choice of software control, the ProStar 410 AutoSampler does exactly what you need, when you need it!

Versatility

The ProStar 410 AutoSampler is the ideal autosampler for both analytical and preparative injection volumes. Sample volumes up to 10 mL are easily handled for preparative applications.

Specifications					
Standard sample tray:	84 x 2 mL vials with 3 x 10 mL vials				
Optional sample trays:	96 x 2 mL vials, or 24 x 10 mL vials				
Dispenser unit:	50 µL syringe standard 1000 µL or 2500 µL syringes, optional				
Injection volume:	1 to 5000 µL with preparative option up to 10 mL				
Injection methods:	Nine methods in memory				
Needle wash:	Integrated, programmable large reservoir				
Vial detection:	Yes				
Reproducibility:	• Full Loop: less than 0.3% RSD • Partial Loop: less than 0.5% RSD • Microliter Pickup: less than 1% RSD				
Carryover:	Less than 0.05%				
Optional sample cooling:	4 °C to 15 °C programmable				
Power requirements:	115 Vac; 50/60 Hz; 150 VA 220 Vac; 50/60 Hz; 150 VA				
Dimensions and Weight					
Size:	**height** 13.4 in. 34 cm	**width** 11.8 in. 30 cm	**depth** 19.7 in. 50 cm		
Weight:	42 lb /19 kg 46 lb / 21 kg with cooling option				

ProStar™ 410 AutoSampler

Flow Rate	Biocompatible	Standard Sample Tray	Sample Tray Cooling	Quantity (Each)
Analytical	Yes	**393529003**	**393529004**	1
	No	**393529001**	**393529002**	1
Preparative	No	**393529005**	**393529006**	1

ProStar™ 410 AutoSampler Accessories

Description	Part No.	Quantity (Each)
Cable, inject marker, start out	**392607969**	1
Cable, next injection input	**392607975**	1
Cable, RS-485/422 serial communication cable for Star workstation control	**393546291**	1
Cover, cooling tray cover	**392607986**	1
Preparative upgrade option, includes needle, syringe, injection valve and large volume sample tray	**393590791**	1
Reservoir/Wash bottle rack	**392607780**	1
Tray, large capacity option, 96 position for 2 mL vials, 12 mm OD	**R000088210**	1
Tray, large volume option, 24 position for 10 mL vials, 23 mm OD, with 1 mL syringe and LSV needle	**R000088211**	1
Tray, standard, 84 position, 2 mL vials and 3 x 10 mL wash vials	**392607952**	1
Valve, Valco Injection Valve, PEEK	**392607980**	1
Valve, Valco Injection Valve, SS	**392607979**	1
Valve, Valco Preparative Injection Valve, SS	**392611027**	1



*Contact your Varian, Inc. sales representative for a free copy, or use Scanview online at **www.varianinc.com**, under Consumables, click Applications Online.*

ProStar™ 410 AutoSampler Maintenance

Description	Part No.	Quantity
Needle, air needle	**392607901**	1 Each
Needle, air needle, preparative	**392611025**	1 Each
Needle, liquid sampling needle assembly	**392607912**	1 Each
Needle, liquid sampling needle, preparative	**392611026**	1 Each
Plunger tip for 1000 µl syringe	**392607964**	10 /Pk
Plunger tip for 250 µl syringe	**392607963**	10 /Pk
Rotor Seal for PEEK Injection Valve	**392607981**	1 Each
Rotor Seal for SS Injection Valve	**190017500**	1 Each
Stator for PEEK Injection Valve	**392607982**	1 Each
Syringe, 1000 µL	**392607962**	1 Each
Syringe, 250 µL	**392607810**	1 Each
Syringe, 2500 µL	**392611028**	1 Each
Tubing, Syringe-to-Waste Tubing	**392607971**	1 Each

Did you know that you can increase HPLC column lifetime by using pressure that are 10 % below the maximum pressure rating?

ProStar™ 420 AutoSampler

- Low volume, no loss sampling
- Use of multiple sample vial formats
- Options include a biocompatible configuration and thermostatted sample tray

Intelligent Automation at Your Fingertips



The ProStar 420 AutoSampler is a versatile multifunctional instrument for HPLC. It is ideal for both routine analyses and for method development. With the ProStar 420's modular footprint requiring only 28 cm (11 in.) of space, your laboratory work area is efficiently used. Impressive sampling technology is used to achieve the highest injection precision allowing the ProStar 420 to inject from as little as 5 µL volumes. The flexibility of the ProStar 420 will astound you with features like integrated solvent stream switching and column selection valves, plus the ability to accept multiple vial sizes, even inexpensive PCR microtubes.

Advanced Injection System

The ProStar 420 utilizes a unique double needle design. This consists of a stainless steel outer needle which is used to puncture the septum, followed by a PEEK capillary which is used to aspirate the preprogrammed sample amount into the sample loop. No more septum coring, bending or plugging of the sample needle. The Pressure Assisted Sampling (PAS) technique slightly pressurizes the contents of the vial for unbeatable sampling accuracy and reproducibility. PAS in combination with the ProStar 420's 0.004 µL dispensing precision, gives excellent injection precisions down to 1 µL levels to satisfy the demands of research as well as for high throughput routine analysis laboratories. The ProStar 420's flexible sample tube can accommodate biomolecules by using either the nonmetal Silcosteel® or PEEK materials.

Variety of Vial Sizes

For maximum flexibility the sample carousel is composed of 8 segments, each containing different vial sizes that can be mixed and matched. Vials ranging from 0.16 to 10 mL sizes can be used for injecting volumes ranging from 1 to 1,000 µL. By using a vial height sensor, the ProStar 420 guarantees consistent depth penetration of the sampling needle, independent of vial height variations up to a 48 mm (1.9 in.) size. Maximum vial and volume options offer the user the greatest amount of flexibility.

Automated Features

A versatile reagent mixing routine enables aspirating and dispensing a programmed volume from any vial into any other vial in the sample carousel. Using an aspirating/dispensing cycle with a programmable syringe speed makes automated pre-column derivatizations, dilutions, pH adjustments, etc., possible. The programmable sampling height capability allows injections from difficult samples such as two-phase mixtures, or samples containing precipitates. The ProStar 420 can be fitted with two integrated stream selection valves for fully automated sample cleanup or preconcentration. The valve option can also be used as a column selection valve. For additional flexibility and performance, the ProStar 510 Column Thermostat can be mounted next to the ProStar 420. This allows the optional side mounted Valco Injection Valve and optional stream selection valves to be mounted inside the oven compartment, thus controlling the sample's temperature throughout the chromatographic process.

Specifications					
Sample capacity:	Standard 96 x 1.8 mL vials, 12 vials per segment				
Optional trays:	160 x 0.5 mL vials, 20 vials per segment 72 x 4 mL vials, 8 vials per segment 32 x 10 mL vials, 4 vials per segment				
Injection volume:	1 to 1,000 µL				
Injection methods:	Loop overfill, partial loop fill, µL pick-up with no sample loss				
Replicate injection number:	Up to 9				
Needle wash:	User programmable, 300 – 9,999 µL Separate needle wash port and waste				
Wash solvent:	250 mL integrated wash solvent bottle				
Syringe dispenser:	100 µL, 250 µL (standard), 500 µL or 1,000 µL				
Vial detection:	Missing Vial detection through vial sensor				
Reproducibility:	• **Loop Overfill**: less than 0.3% RSD • **Partial Loop**: fill less than 0.5% RSD for injection volumes greater than 5 µL • **Microliter Pick-up**: less than 1.0% RSD for injection volumes greater than 5 µL				
Carryover:	Less than 0.01% with needle wash				
Minimum sample volume:	• **Partial loop fill injections**: 35 µL • **Pick-up injections**: 5 µL				
Module/Computer Interface:	• **Communication Output**: Inject marker, Vial marker, Labeled vial marker, Stop I/O (contact closure and TTL), Vial number BCD or HEX (TTL), 4 Auxiliaries (contact closure), 2 programmable outputs (contact closure) • **Input**: Next Injection, Next vial, Freeze, Stop I/O, 4 programmable inputs (all TTL) • **Serial Interface**: RS 422/485 for Galaxie or Star Workstation • Optional tray cooling • Peltier type cooling elements. • **Range**: 4 to 40 °C programmable (Cooling capacity min. 20 °C below ambient)				
Power requirements:	115 Vac; 50/60 Hz; 250 VA 220 Vac; 50/60 Hz; 250 VA				
Dimensions and Weight					
Size:	**height** 17.3 in. 44 cm	**width** 11 in. 28 cm	**depth** 21.3 in. 54 cm		
Weight:	48 lb / 22 kg 66 lb / 30 kg with cooling option installed				

ProStar 420 AutoSampler

Select the combination of features that fit your specific needs.

Biocompatible	Stream Switching	Injection Valve	Standard Sample Tray	Sample Tray Cooling	Quantity (Each)
Yes	Yes	Standard	**393528907**	**393528908**	1
	No	Side-mounted		**393528909**	1
		Standard	**393528903**	**393528904**	1
No	Yes	Standard	**393528905**	**393528906**	1
	No	Standard	**393528901**	**393528902**	1

ProStar™ 420 AutoSampler Accessories

ProStar 420 Autosampler Tray Segments

Tray segments accept the following vial sizes: 0.5 mL/ 7 mm OD; 2 mL/ 12 mm OD; 4 mL/ 15 mm OD; 10 mL/ 23 mm OD
Vials per segment: 0.5 mL/ 20 vials; 2 mL/ 12 vials; 4 mL/ 9 vials; 10 mL/ 4 vials
The "10 mL" segments accept 6 mL or 10 mL vials.

Segment	0.5 mL	2 mL	4 mL	10 mL	Quantity (Each)
Segment #1	**392607731**	**392607771**	**392607741**	**392607751**	1
Segment #2	**392607732**	**392607772**	**392607742**	**392607752**	1
Segment #3	**392607733**	**392607773**	**392607743**	**392607753**	1
Segment #4	**392607734**	**392607774**	**392607744**	**392607754**	1
Segment #5	**392607735**	**392607775**	**392607745**	**392607755**	1
Segment #6	**392607736**	**392607776**	**392607746**	**392607756**	1
Segment #7	**392607737**	**392607777**	**392607747**	**392607757**	1
Segment #8	**392607738**	**392607778**	**392607748**	**392607758**	1

ProStar 420 Accessories

Description	Part No.	Quantity (Each)
Cable, RS-485/422 Serial Communication Cable For Star Workstation Control	**393546291**	1
Cable, Start In/Start Out Cable	**393516101**	1
EPROM Field Upgrade Kit, AI-1A to ProStar 420	**393614792**	1
Valve, Micro Injector Valve With Motor	**392607883**	1
Valve, Preparative Injector Valve With Motor	**392607882**	1
Valve, Valco Biocompatible Injection Valve	**392611061**	1
Valve, Valco Injection Valve	**392611060**	1

ProStar™ 420 and 430 AutoSampler Maintenance

Description	Part No.	Quantity
Bottle, Wash Solvent Bottle 250 mL	**R000088055**	1 Each
Needle Body	**R000088051**	1 Each
Needle Wash Insert Vial	**R000088050**	1 Each
Needle, Air/Prepuncturing Needle	**R000088053**	1 Each
Needle, Sample Needle, Extra Long, Fused Silica, With Tubing, Nuts & Ferrules	**392607839**	1 Each
Needle, Sample Needle, Extra Long, PEEK, With Tubing, Nuts & Ferrules	**R000088066**	1 Each
Needle, Sample Needle, Extra Long, With Tubing, Nuts & Ferrules	**R000088065**	1 Each
Needle, Sample Needle, Fused Silica, With Tubing, Nuts & Ferrules	**392607838**	1 Each
Needle, Sample Needle, Large Bore Prep	**R000088064**	1 Each
Needle, Sample Needle, Peek, With Tubing, Nuts & Ferrules	**R000088068**	1 Each
Needle, Sample Needle, With Tubing, Nuts & Ferrules	**R000088052**	1 Each

Description	Part No.	Quantity
Needle, Sample, Silica-coated Steel Needle, With Tubing, Nuts & Ferrules	**392607835**	1 Each
Plunger Tip for 100 µL Syringe	**392607831**	10 /Pk
Plunger Tip for 250 µL Syringe	**392607963**	10 /Pk
Plunger Tip for 500 µL Syringe	**392607832**	10 /Pk
Plunger Tip for 1000 µL Syringe	**392607964**	10 /Pk
Syringe, 100 µL	**R000088057**	1 Each
Syringe, 250 µL	**392607810**	1 Each
Syringe, 500 µL	**R000088059**	1 Each
Syringe, 1000 µL	**392607962**	1 Each
Syringe, 10 ml	**R000088067**	1 Each
Tubing, 500 µL Buffer Tubing	**392607804**	1 Each
Tubing, 2000 µL Buffer Tubing	**392607805**	1 Each
Tubing, 15 ml Buffer Tubing	**392607847**	1 Each
Tubing, Syringe Wash Tubing	**392607972**	1 Each
Tubing, Syringe-to-waste Tubing	**392607971**	1 Each

ProStar™ 430 AutoSampler

- Accommodates variable well plate sample trays
- Delivers fast cycle times for LC/MS
- Metal-free sample path for sensitive samples
- Optional sample tray cooling and heating



Flexible Operation

With its advanced capabilities, the ProStar 430 AutoSampler is the most versatile HPLC injection system. Compatible with all types of 96- or 384-well plate formats as well as standard HPLC vials, the 430 is ideal for any of today's demanding HPLC applications.

Precise and Reliable Injections

The ProStar 430 AutoSampler's breakthrough loop injection technique with Pressure Assisted Sampling (PAS) combines precision with simplicity in a highly reliable design. PAS eliminates air bubble problems and sample contamination because it doesn't use a needle port that can easily wear out. The ProStar 430 AutoSampler's high-resolution syringe drive control partitions syringe movement into 0.004 µL steps and achieves incredible injection precision at 1 µL or less.

Choose From Three Injection Modes

Full Loop Injection Mode
When there is excess sample, the 430 overfills the installed injection loop for the best reproducibility (RSD less than 0.3%).

Partial Loop Fill Injection Mode
Programmable injections from 1 µL to 60% of loop volume offer high precision (RSD less than 0.5%) while minimizing sample loss.

Microliter Pickup Injection Mode
The exact injection volume is sampled. Then, a wash solvent positions the sample into the loop. There is no sample loss, and reproducibility is better than 1.0% RSD.

Automated Features

To guarantee maximum injection performance and long term reliability when using well-plate formats, the ProStar 430's dual concentric needle system pierces virtually any seal, including tough polypropylene caps, without damaging the inner needle. During sampling, a spring-loaded retainer holds the well plate and seal in place, thus preventing the plate or seal from being pulled out of position. Autosampler capacity is increased with the optional microtiter plate feeder, enabling the system to handle from up to 7 trays or 2,304 samples. The plate feeder makes the ProStar 430 ideal for high-throughput applications such as LC and LC/MS.

While the ProStar 430 handles a wide variety of well plates, it also holds conventional 2 mL HPLC vials. With a touch of a button, quickly select from 96-deep-well plates, standard 96-well plates, 384-well plates, PCR tubes, or 48 standard vials. In addition to routine sample analysis, the ProStar 430 AutoSampler performs a wide variety of liquid handling tasks including extractions, dilutions, derivatizations, and internal standard additions.

GLP Compliance

The ProStar 430 automatically tracks the number of valve rotations, the length of time the unit has been continuously powered up, the number of movements for the injection syringe, and any errors that occurred during operation. This log assists in both troubleshooting and routine maintenance to comply with your in-house Performance Qualification (PQ) requirements.

Versatile Configuration

All types of well plates, vials, and PCR tubes (open, capped, or sealed) can be used with the ProStar 430 AutoSampler. Select needles made out of stainless steel, PEEK, or fused silica, and an optional PEEK injection valve for full biocompatibility. Also, optional sample tray cooling is available.

Specifications						
Capacity Options:	• One 96-well microtiter plate, low well • One 96-well microtiter plate, deep well • One 384-well microtiter plate, low well • One 48-vial plate with 2 mL vials (12 mm OD x 32 mm L) • Optional feeder unit extends capacity to seven 96-low-well microtiter plates, or three 96-deep-well plates, or 384-low-well plates					
Injection volume:	0.1 to 1,000 µL (in 0.1 µL increments)					
Injections per sample position:	1 to 9					
Injection methods:	24 methods in memory					
Mix/dilute:	9 methods in memory					
Needle wash:	4 programmable modes					
Wash solvent:	External reservoir (optional stream selection valve for up to 6 solvents)					
Optional sample thermostatting with cooling:	5 to 40 °C programmable, with cooling option to 12 °C below ambient temperature					
Power requirements:	115 Vac; 50/60 Hz; 250 VA 220 Vac; 50/60 Hz; 250 VA					
Dimensions and Weight						
Size:	**height**	17.3 in. 44 cm	**width**	11 in. 28 cm	**depth**	15.7 in. 40 cm
Weight:	51 lb /23 kg 57 lb / 26 kg with cooling option installed					

ProStar 430 AutoSamplers

Select the combination of features that fit your specific needs.

Biocompatible	Plate Feeder	Stream Switching	Solvent Switching	Injection Valve	Standard Sample Tray	Sample Tray Cooling	Quantity (Each)
Yes	Yes	Yes		Standard	**393529224**	**393529233**	1
		No		Standard	**393529222**	**393529231**	1
	No	Yes		Standard	**393529204**	**393529214**	1
		No		Standard	**393529202**	**393529212**	1
				Side-mounted	**393529207**	**393529217**	1
No	Yes	Yes	Solvent Switching	Standard	**393529226**	**393529235**	1
				Standard	**393529223**	**393529232**	1
		No	Solvent Switching	Standard	**393529225**	**393529234**	1
				Standard	**393529221**		1
	No	Yes	Solvent Switching	Standard	**393529206**	**393529216**	1
				Standard	**393529203**	**393529213**	1
		No	Solvent Switching	Standard	**393529205**	**393529215**	1
				Standard	**393529201**	**393529211**	1

ProStar™ 430 AutoSampler Accessories

ProStar 430 Accessories

Description	Part No.	Quantity (Each)
Cable, RS-485/422 Serial Communication Cable For Star Workstation Control	**393546291**	1
Cable, Start In/start Out Cable	**393516101**	1
EPROM Field Upgrade Kit, AI-96 to ProStar 430	**393614793**	1
Plate Holder, ProStar 430	**392607880**	1
Valve, Micro Injector Valve With Motor	**392607883**	1
Valve, Preparative Injector Valve With Motor	**392607882**	1
Valve, Valco Biocompatible Injection Valve	**392611061**	1
Valve, Valco Injection Valve	**392611060**	1

ProStar 430 96-Well Plates

Description	Part No.	Quantity
Collection Plate, Round 96-well, 1 mL	**5132101**	50 /Box
Collection Plate, Square 96-well, 1 mL	**5133008**	50 /Box
Collection Plate, Square 96-well, 2 mL	**5133009**	50 /Box
Collection Plate, Square 96-well, 350 µL	**5133007**	50 /Box
Sealing Caps, Piercible Round 96-well Sealing Cap, Polypropylene	**392607765**	50 /Box
Sealing Caps, Round 96-well Sealing Caps	**5132200**	50 /Box
Sealing Mat, 96-well Square Well Sealing Mat	**5133005**	50 /Pk

ProStar 430 Vial Sample Tray

Description	Part No.	Quantity (Each)
Tray, 48-vial Sample Tray for ProStar 430, Holds 48 12 x 32 mm 2 mL Vials	**392612190**	1

ProStar™ 400, 410 and 420 LC AutoSampler Vials

- 12 x 32 mm vials from 100 µL to 2 mL volumes
- 6 and 10 mL vials for large samples or solvents
- Economical case sizes
- See our complete vial selection on pages 299 to 309

Our ProStar 400, 410, and 420 AutoSamplers use 2 mL 12 x 32 mm vials in the 9 mm screw top and crimp top wide opening types, and standard opening 8/425 screw top vials. These vials are listed below in kits, and on pages 301, 302, and 303 as separate vial, cap, and low volume insert components.

Our 12 x 32 mm polypropylene limited volume vials are available in 100 and 750 µL sizes, and these are listed on page 304.

For larger samples and solvents, these AutoSamplers use 4 mL, 6 mL, or 10 mL vials, depending on the vial tray. These vials are listed below as kits, and on page 306 and 307 as separate components.

Our Vial Septa Selection Guide on page 299 can help you determine the best vial septa material for your application. Use our Ultra GC/MS/PTFE septa if you observe septa contamination in your LC/MS or LC analyses.

Our recommended vial kits are shown below. If you do not find the vials you need here, please see our complete vial and crimper selection on pages 299 to 309.

Vial Kits: 2 mL Screw Top 9 mm Wide Opening Vial Kits

Vials and polypropylene caps with septa inserted. 12 x 32 mm vials.

Material	Septa	100 /Pk	1000 /Case
Clear Glass	Ultra GC/MS	**392611979**	**392620530**
	Silicone/PTFE	**392611549**	**392620532**
	Butyl/PTFE	**392611633**	**392620534**
Amber Glass	Ultra GC/MS	**392612016**	**392620531**
	Silicone/PTFE	**392611550**	**392620533**
	Butyl/PTFE	**392611834**	**392620535**

Vial Kits: 2 mL Crimp Top Wide Opening Vial Kits

Vials and aluminum crimp caps with septa inserted. 12 x 32 mm vials.

Material	Septa	100 /Pk	1000 /Case
Clear Glass	Ultra GC/MS	**392620515**	**392620540**
	Silicone/PTFE	**392611525**	**392620542**
	Butyl/PTFE	**392611818**	**392620544**
Amber Glass	Ultra GC/MS	**392620516**	**392620541**
	Silicone/PTFE	**392611526**	**392620543**
	Butyl/PTFE	**392611819**	**392620545**

Vial Kits: 2 mL Screw Top Standard Opening Vial Kits

Vials and polypropylene caps with septa inserted. 12 x 32 mm vials.

Material	Deactivation	Ultra GC/MS	Silicone/PTFE	Butyl/PTFE	Quantity (/Pk)
Clear Glass	Not Deactivated	**392612022**	**392611530**	**392611826**	100
	Silanized		**392611535**		100
Amber Glass	Not Deactivated			**392611827**	100

Vial Kits for LSV Trays: Screw Top 0.3 and 4 mL Vial Kits

Vials and aluminum crimp caps with septa inserted. 15 mm x 45 mm vials.

Volume (mL)	Material	Silicone/PTFE	Butyl/PTFE	Quantity (/Pk)
0.3	Clear Glass		**392611854**	100
4	Clear Glass		**392611852**	100
	Amber Glass	**392611602**	**392611853**	100
	Clear Glass	**392611601**		100

Vial Kits for Super LSV Trays: Crimp Top 6 and 10 mL Vial Kits

Vials and aluminum crimp caps with septa inserted

Volume (mL)	Material	OD	Height (mm)	Silicone/PTFE	Butyl/PTFE	Quantity (/Pk)
6	Clear Glass	22 mm	38	**392611619**	**392611620**	100
10	Clear Glass	23 mm	46	**392611613**	**392611614**	100

ProStar™ AutoSampler Sample Loops

Sample Loops for Valco C1, C2, C2XL, and C3 Injector and Switching Valves

Order PEEK sample loops for valves with PEAK stators.

Volume	PEEK	SS	Quantity (Each)
5 µL	**VLCZSL5PK**	**VLCSL5**	1
10 µL	**VLCZSL10PK**	**VLCSL10**	1
20 µL	**VLCZSL20PK**	**VLCSL20**	1
50 µL	**VLCZSL50PK**	**VLCSL50**	1
100 µL	**VLCZSL100PK**	**VLCSL100**	1
250 µL	**VLCZSL250PK**	**VLCSL250**	1
500 µL	**VLCZSL500PK**	**VLCSL500**	1
1 mL	**VLCZSL1KPK**	**VLCSL1K**	1
2 mL	**VLCZSL2KPK**	**VLCSL2K**	1
5 mL	**VLCZSL5KPK**	**VLCSL5K**	1
10 mL		**VLCSL10K**	1



Did you know that you can increase silica-based HPLC column lifetime by using buffers with a pH between 2 and 7?

ProStar™ 701 and 704 Fraction Collectors

Sample Collection Optimized with Built-in Peak Detection

Monitors the signal from start to end, collecting your valuable sample with extreme accuracy. Any combination of time windows, signal level, and slope discrimination can be used to minimize errors and maximize recoveries.

Multiple Collection Modes Enhance Sample Fraction Consistency

Fractions can be collected in time- or drop-counting modes or in combinations, such as time fractions within a peak or drop-counting within a peak. With an optional valve, the unwanted eluent is automatically diverted to waste, thus improving collection efficiencies. A variety of tubes, vessels, and large volume bottles are available.

No Volume Limit

12, 16, 18-mm tube rack or 28-mm scintillation vials can be used. The ProStar 701 can be fitted with 96-well plates for combinatorial chemistry applications. For preparative HPLC, where high flow-rates are used, the ProStar 701 and ProStar 704 can be upgraded with a funnel rack system to effortlessly handle large volume, multi-liter sample collection.

Cold-room Operation Compatibility

Both modules are capable of operating in temperatures down to 0 °C at high humidity. Internal heaters protect sensitive components from water condensation, making these systems cold room compatible.

Easy Programming

Advanced microprocessor control allows you to program almost any collection mode with just a few keystrokes. A large front panel display makes programming fast and easy. The ProStar 701 stores up to 4, and the ProStar 704 stores up to nine programs.

ProStar™ 701 Fraction Collector

- Sample collection optimized with built-in peak detection
- Multiple collection modes
- Variety of sample racks and vials
- Cold-room operation compatibility



- Two rack capacity
- Programmable Peak Detection
- Variety of racks and vessels
- Includes: 1 rack for 13 mm tubes (144)

ProStar™ 701 Fraction Collector

Description	Part No.	Quantity (Each)
ProStar 701 Fraction Collector 110V	**393531101**	1
ProStar 701 Fraction Collector 220/240V	**393531102**	1

ProStar™ 704 Fraction Collector

- Sample collection optimized with built-in peak detection
- Multiple collection modes
- Variety of sample racks and vials
- Cold-room operation compatibility



- One rack capacity
- Programmable Peak Detection
- Variety of racks and vessels
- Includes: 1 rack for 13 mm tubes (144)
- Requires: Line Transformer

ProStar™ 704 Fraction Collector

Description	Part No.	Quantity (Each)
ProStar 704 Fraction Collector	**393531401**	1
100 Volt Line Transformer	**392607516**	1
110 Volt Line Transformer	**392607515**	1
220/240 Volt Line Transformer, Euroshuko	**392607517**	1

ProStar™ 701/ 704 Fraction Collector Accessories

ProStar 701 & 704 Accessories

Description	Part No.	Quantity (Each)
Rack, 1.5 mL Microcentrifuge Tubes, 72	**R000088409**	1
Rack, 12 mm Diameter Tubes, 144	**R000088410**	1
Rack, 13 mm Diameter Tubes, 144	**R000088411**	1
Rack, 16 mm Diameter Tubes, 100	**R000088412**	1
Rack, 18 mm Diameter Minivials, 72	**R000088418**	1
Rack, 18 mm Diameter Tubes, 72	**R000088413**	1
Rack, 25 mm Diameter Tubes, 36	**R000088414**	1
Rack, 28 mm Scintillation Vials, 36	**R000088415**	1
Rack, 96-Well Microtiter Plate	**R000088445**	1

ProStar 701 Accessories

Description	Part No.	Quantity (Each)
Funnel Rack for ProStar 701. Allows Collection of 26 Fractions with Unlimited Volume.	**R000088417**	1
Preparative Adapter Kit, 701. Contains Preparative Drop Former Modification, Preparative Rack-26 Funnel, Bracket, Tubing and Connectors.	**393615802**	1
Preparative Drop Former, 701	**393615803**	1

ProStar 704 Accessories

Description	Part No.	Quantity (Each)
100 Volt Line Transformer	**392607516**	1
110 Volt Line Transformer	**392607515**	1
220/240 Volt Line Transformer, Euroshuko	**392607517**	1
Cable, Events Cable	**R000088486**	1
Funnel Rack for ProStar 704. Allows Collection of 36 Fractions with Unlimited Volume.	**R000088429**	1

ProStar™ 701/ 704 Fraction Collector Maintenance

ProStar 701 Maintenance

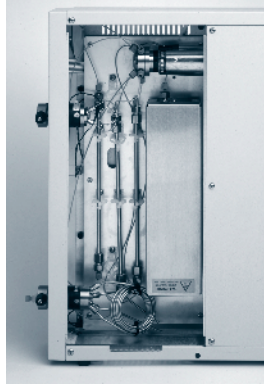
Description	Part No.	Quantity (Each)
Diverter Valve, Preparative, Inert	**393615801**	1
Diverter valve, Semipreparative, Inert	**393615701**	1
Drain Valve for Flows Greater Than 100 mL/min	**R000088421**	1

ProStar 704 Maintenance

Description	Part No.	Quantity (Each)
Anti-drip Valve, for flows 0 to 100 mL/min	**R000088428**	1
Drain Valve, for flows 0 to 100 mL/min	**R000088427**	1

ProStar™ Column Valve Organizer (CVO)

The solution for unsightly tubing, valves and free-hanging columns. The ProStar Column Valve Organizer is a module where up to 4 manual Rheodyne injector and prime/purge valves can be mounted in an organized fashion. Valves are mounted on its four front panel sections, and columns are mounted inside the unit using column mounting hardware. The entire unit can be either free standing, or attached to a ProStar/PrepStar stacked system.

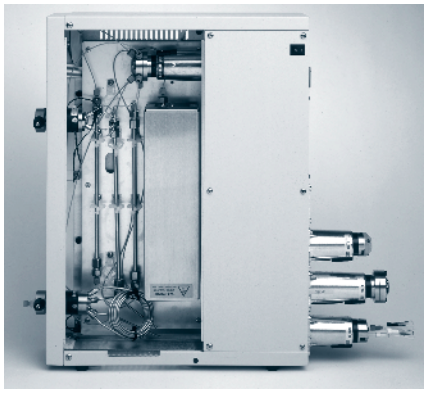


ProStar™ Column Valve Organizer (CVO)

Description	Part No.	Quantity (Each)
ProStar Column Valve Organizer, includes panels without holes. Order column mounting kit separately.	**393580701**	1
Column Mounting Kit for one 21 mm Column	**393587891**	1
Column Mounting Kit for one 41 mm Column	**393587991**	1
Panel with 1 hole for Injector Valve	**393582701**	1
Panel with 1 hole for Prime/Purge Valve	**393589101**	1
Panel with 2 holes for Injector and Prime/Purge Valve	**393582801**	1

ProStar™ 500 Column Valve Module

- Electronically controlled, motorized fluid processor for HPLC
- Can accommodate up to two individually controlled heaters
- Can accommodate up to 6 analytical or 2 semi-prep columns
- Allows the user to time select valves, port positions, and heater set points



Automated HPLC Valve Solution

The ProStar 500 is a complete, ready-to-use solution for automated HPLC valve requirements. The ProStar 500 Column Valve Module (CVM) can accommodate up to 4 automated Rheodyne "Fast-Actuating" valves. Also, the ProStar 500 CVM can be fitted with up to 4 manual Rheodyne valves for full scale-up or manual switching requirements. The 500 CVM is either programmed through a 2-line LCD display with keyboard or through its optional PC based CVM control software package.

Software Control

Time programmed valve changes are possible through the use of the CVM PC control software. The built-in electronic communications make the ProStar 500 CVM compatible with virtually all makes of LC. The CVM PC software is an independent Windows application that is compatible with Star Workstation and other workstations. For Star Workstation users, this program is activated through AutoLink. The CVM 500 PC software control kit and universal power supply are included, making installation fast and easy.

Column Valve Modules

Order column heaters for your laboratory voltage.

Description	Part No.	Quantity (Each)
ProStar 500 Column Valve Module Base Unit without valves and heaters	**393587402**	1
CVM w/electronically actuated 6 column selection valve, SS and single column heater, 120V	**393587404**	1
CVM w/electronically actuated 6 column selection valve, SS and single column heater, 240V	**393587406**	1
CVM w/electronically actuated 6 solvent selection and 6 column selection, SS	**393587408**	1
CVM w/electronically actuated 6 column selection, SS and dual heaters, 120V	**393587410**	1
CVM w/electronically actuated 6 column selection, SS and dual heaters, 240V	**393587412**	1
CVM w/electronically actuated prep fraction collection, SS and diverter valves, SS up to 100 mL/min	**393587414**	1

ProStar™ 500 Column Valve Module Accessories

Column Mounting Kits

Description	Part No.	Quantity (Each)
Column Mounting Kit for one 21 mm Column	**393587891**	1
Column Mounting Kit for one 41 mm Column	**393587991**	1

Collector/Diverter Valves - Two Position

Use a diverter valve to switch unwanted solvent flow between fraction collector and waste.

Description	Part No.	Quantity (Each)
Diverter valve, Prep, PEEK	**393586802**	1
Diverter valve, Prep, SS	**393586801**	1
Diverter valve, Semi-Prep, PEEK	**393588802**	1
Diverter valve, Semi-Prep, SS	**393588801**	1

Collector/Diverter Valves - Ten Position

Use diverter valve to switch unwanted solvent flow between fraction collector and waste. For use up to a 1 in. column

Description	Part No.	Quantity (Each)
10-Fraction collector valve, Semi-prep, SS	**393587601**	1

Collector/Diverter Valves - 12 Position

Use diverter valve to switch unwanted solvent flow between fraction collector and waste. For use up to a 2 in. column

Description	Part No.	Quantity (Each)
12-Fraction collector valve, Prep, PEEK	**393586902**	1
12-Fraction collector valve, Prep, SS	**393586901**	1

Column Selection Valves

Use Rheodyne valves with postion switches and the same mounting plates as for the CVO for mounting manual valves.

Description	Part No.	Quantity (Each)
3-Column selection valve, PEEK	**393588502**	1
3-Column selection valve, SS	**393588501**	1
6-Column selection valve, PEEK	**393586602**	1
6-Column selection valve, SS	**393586601**	1

Solvent Selection Valves

Use Rheodyne valves with postion switches and the same mounting plates as for the CVO for mounting manual valves.

Description	Part No.	Quantity (Each)
6-Solvent selection valve	**393586701**	1

Column Heaters

Each column heater can hold 2 analytical columns.

Description	Part No.	Quantity (Each)
Column Heater Assembly, 120V	**393580001**	1
Column Heater Assembly, 240V	**393580002**	1

Rebuild Kit

Description	Part No.	Quantity (Each)
CVM Standard Accessory Kit, to rebuild CVM	**393584791**	1

ProStar™ 500
Column Valve Module Maintenance

Column Heaters

Each column heater can hold 2 analytical columns.

Description	Part No.	Quantity (Each)
Column Heater Assembly, 120V	**393580001**	1
Column Heater Assembly, 240V	**393580002**	1

Rebuild Kit

Description	Part No.	Quantity (Each)
CVM Standard Accessory Kit, to rebuild CVM	**393584791**	1

ProStar™ 510 Column Oven

- Rapid Heating at 10 °C/Min
- Small footprint
- Manual injection valve mounting port
- Allows thermostatted side-mounted valves on ProStar 420/430 AutoSampler
- Cooling available for subambient and fast cool-down operation



Flexible Temperature Control

The ProStar 510 is the column oven that provides exact and reproducible temperature control. Large area heating plates guarantee a safe and stable operation at a temperature range from 5 °C above ambient up to 90 °C, while forced air circulation ensures excellent temperature uniformity in the column area. With the ProStar 510 it is possible to perform column temperature programs to optimize a separation.

Improved Chromatography

A temperature controlled column area contributes to the reproducibility of retention times. Separations are more consistent at a constant temperature, and some separations are more efficient at elevated or subambient temperatures. With a temperature controlled column area, room temperature changes will no longer affect your separations. An injector can be mounted inside the oven to achieve a maximum temperature stability of the HPLC system.

Cooling Option

With the optional Peltier cooling, the ProStar 510 allows a temperature range from 5 °C up to 90 °C, and temperature changes are achieved in shorter time.

Universal

The ProStar 510 column thermostat is compatible with most HPLC instruments. It has a remote I/O connector for communication with other HPLC components.

Specifications						
Temperature accuracy:	Better than 0.1 °C, measured at 30 °C in the center of the compartment					
Temperature stability:	Better than 0.1 °C, measured at 30 °C in the center of the compartment					
Temperature reproducibility:	Better than 0.1 °C, measured at 30 °C in the center of the compartment					
Temperature gradient:	Better than 0.2 °C, measured in the column area					
Temperature change:	10 °C/min increase. With Cool option, 3 °C/min decrease from 70 °C to 30 °C					
Power requirements:	110 Vac 60 Hz, 220 Vac 50 Hz, 400 VA max					
Size:	**height**	20.5 in. 51.4 cm	**width**	6.8 in. 17 cm	**depth**	13.0 in. 32.5 cm
Weight:	35.2 lb / 16 kg					

ProStar™ 510 Column Oven

Description	Part No.	Quantity (Each)
ProStar 510 Column Oven	**393572101**	1
ProStar 510 Column Oven with Cooling	**393572102**	1

ProStar™ 520 Column Oven

- Column oven for dHPLC DNA analyses
- Safety feature detects organic solvent leaks
- Controls column and injector valve temperature

Column Oven for dHPLC DNA Analysis

The Varian ProStar 520 Column Oven is specifically designed to provide the stable, accurate column temperatures that are required for detecting DNA mutations using the denaturing HPLC technique. The oven performance is ideal for high throughput screening techniques.

The oven operates from 10 °C above ambient to 99 °C in 0.1 °C increments. It is stable to ± 0.1 °C, and can be calibrated in the lab to an accuracy of 0.1 °C.

Inside the oven, there is room for the Helix DNA column, the heat exchanger, the presaturator column, and the injector valve. The side mount injector valve on a ProStar 430 AutoSampler can be inserted into the left side of the oven to provide valve temperature control.

Safety

The oven has a vapor sensor to detect any organic solvents in the oven. It will automatically shut down the oven heater if there is a leak from any of the tubing. In addition, there is a drain for any water or buffer leaks.



*Contact your Varian, Inc. sales representative for a free copy, or use Scanview online at **www.varianinc.com**, under Consumables, click Applications Online.*

ProStar™ 520 Column Oven

Description	Part No.	Quantity (Each)
ProStar 520 Column Oven, 110V	**393303801**	1
ProStar 520 Column Oven, 230V	**393303802**	1

Did you know that an increased or decreased HPLC column temperature can change the selectivity of the column phase, and therefore the elution of sample components?

PrepStar™ SD-1 Solvent Delivery Module



- Preparative chromatography with maximum performance and versatility
- Run both analytical and preparative columns for seamless scale-up
- For maximum versatility, flow rates start from 0.001 mL/min and go up to 3200 mL/min
- Pulse-free pumping design extends life of column
- State-of-the-art flow precision
- PC compatible

The PrepStar SD-1 is an innovative HPLC solvent delivery system engineered with preparative chromatographers in mind. A powerful drive unit and dual interchangeable pump heads provide pumping capacity to 3.2 L/min at pressures up to 375 psi for superior throughput with large, high-resolution microparticulate columns.

For bench-scale prep, 200 mL/min and 50 mL/min heads provide flow at pressures up to 6,000 psi and 10,000 psi, respectively.

Corrosion-resistant titanium pump heads address the needs of biochemists for compatibility with salt-containing buffers and freedom from unwanted metal ions.

Each pump head has a piston washing chamber to prevent deposition of abrasive salt residues behind the high-pressure seal, thereby greatly extending seal life.

Major new technology includes dual independent linear piston drives. Independent drives free the SD-1 from the operating constraints of mechanical cam profiles, and makes it the first dual piston pump to produce entirely pulse-free flow under all operating conditions, without auxiliary hydromechanical pulse dampers. Totally pulse-free flow favors improved column performance and extended column life by saving expensive preparative columns from the constant pressure-pulse pounding typical of other large piston and diaphragm pumps.

Specifications					
Operating voltages:	90 - 264 Vac				
Operating Frequencies:	50 - 60 Hz				
Dimensions and Weight					
Size:	height	10.5 in. 26.7 cm	width	16 in. 40.6 cm	depth 22 in. 55.9 cm
Weight:	75 lb / 34 kg				

SD-1 Solvent Delivery Module

Order a pump head kit separately.

Description	Part No.	Quantity (Each)
PrepStar SD-1 solvent delivery module	**R007105050**	1

SD-1 Pump Head Kits

Isocratic kits include 2 pump heads. Binary gradient kit includes 4 pump heads and requires two SD-1 solvent delivery modules.

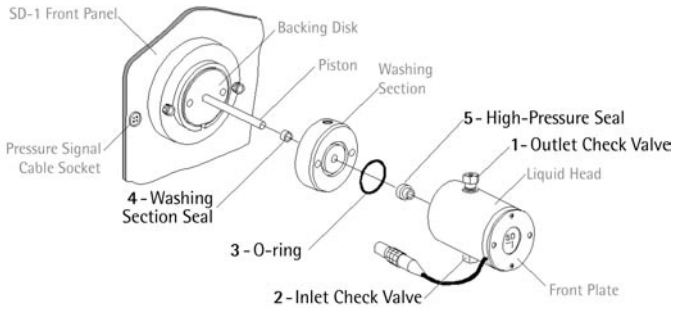
Pump	Maximum Flow Rate	Maximum Pressure (psi)	SS	Titanium	Quantity (Kit)
Isocratic	50 mL/min	10000	**R007105060**		1
		6000		**R007105063**	1
	200 mL/min	6000		**R007105064**	1
	500 mL/min	2500		**R007105066**	1
	800 mL/min	1500		**R007105065**	1
	3200 mL/min	375		**R007105068**	1
Binary Gradient	3200 mL/min	375		**393519001**	1

PrepStar™ SD-1 Accessories

Inlet Accessories

Description	Part No.	Quantity (Each)
1/16 in. High Pressure Inlet Kit Includes High Pressure Tee	**393513891**	1
1/8 in. High Pressure Inlet Kit Includes High Pressure Tee	**393513991**	1
1/4 in. High Pressure Inlet Kit Includes High Pressure Tee	**393514091**	1

PrepStar™ SD-1 Maintenance



SD-1 Check Valves

Item #	Description	Part No.	Quantity (Each)
1	Outlet Check Valve for SD-1, 50/200 mL/min Heads	**R007105627**	1
	Outlet Check Valve for SD-1, 500/800 mL/min Heads	**R007105687**	1
	Outlet Check Valve for SD-1, 3200 mL/min Head	**393518501**	1
2	Inlet Check Valve for SD-1 50 mL/min Head	**R007105656**	1
	Inlet Check Valve for SD-1 200 mL/min Head	**R007105626**	1
	Inlet Check Valve for SD-1 500/800 mL/min Heads	**R007105686**	1
	Inlet Check Valve for SD-1, 3200 mL/min Head	**393518301**	1

SD-1 Pump Seals

Item #	Description	Part No.	Quantity
3	O-rings for 50/200/500 mL/min Heads	**R007105622**	2 /Pk
	O-rings for 800 mL/min Head	**R007105682**	2 /Pk
	O-ring for 3200 mL/min Head	**R002535045**	1 Each
4	Piston Wash Seals for 50 mL/min Head	**R007105651**	2 /Pk
	Piston Wash Seals for 200 mL/min Head	**R007105621**	2 /Pk
	Piston Wash Seals for 800 mL/min Head	**R007105681**	2 /Pk
	Piston Wash Seals for 3200 mL/min Head	**R007105733**	1 Each
5	High Pressure Seals for 50 mL/min Head	**R007105650**	2 /Pk
	High Pressure Seals for 200 mL/min Head	**R007105620**	2 /Pk
	High Pressure Seals for 800 mL/min Head	**R007105680**	2 /Pk
	High Pressure Seal for 3200 mL/min Head	**R007105734**	1 Each
4 & 5	Complete Seal Kit for SD-1 50 mL/min Head seal kits contain both the high pressure and wash seals	**R007105655**	1 Kit
	Complete Seal Kit for SD-1 200 mL/min Head seal kits contain both the high pressure and wash seals	**R007105625**	1 Kit
	Complete Seal Kit for SD-1 800 mL/min Head seal kits contain both the high pressure and wash seals	**R007105685**	1 Kit

SD-1 Pump Head Spare Parts

Description	Part No.	Quantity
Outlet Fittings for SD-1 50/200 mL/min System	**R007105603**	5 /Pk
Outlet Fittings for SD-1 500/800 mL/min System	**R007105605**	5 /Pk

SD-1 Maintenance Kits

Description	Part No.	Quantity (Kit)
Maintenance Kit with 200 mL Heads	**393593391**	1
Maintenance Kit with 500 mL Heads	**393593191**	1
Maintenance Kit with 800 mL Heads	**393593491**	1
Maintenance Kit with 3200 mL Heads	**393593291**	1

PrepStar™ SD-1 Dynamic Mixers

- Can be used with any HPLC system
- Requires no mast mounting bracket



SD-1 Dynamic Mixers

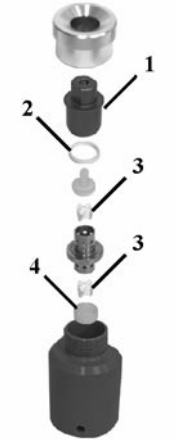
Order the appropriate transformer below.

Use	Volume (mL)	PEEK	SS	Titanium	Quantity (Each)
Microbore	0.6		**393502101**	**393509701**	1
Analytical	1.2	**393502001**	**393501801**	**393501901**	1
Preparative	10	**393502301**		**393502201**	1

SD-1 Dynamic Mixer Transformers

Description	Part No.	Quantity (Each)
120 Volt Transformer US Version	**393503301**	1
230 Volt Transformer EU Version	**393503201**	1
240 Volt Transformer UK Version	**393503101**	1

PrepStar™ SD-1 10 mL Dynamic Mixer Maintenance



Item #	Description	Part No.	Quantity (Each)
1	Piston Body for Ti Dynamic Mixer 10 mL Volume	**393501401**	1
2	Seal, 10 mm	**R002540014**	1
3	Magnetic Stir Bar	**R002500002**	1
4	Cap, Stir Bar Cage, Bottom, for Ti/PEEK Dynamic Mixer	**R007100135**	1

PrepStar Solvent Delivery Systems

PrepStar™ SD-2 Solvent Delivery Module

- Most economical scale-up format for using lower cost, larger particle sorbents
- Reduce costs with the SD-2's single pump low pressure gradient (LPG) capability
- Process kilograms of sample with up to 1200 mL/min flow rates at back pressures up to 1,500 psi



PrepStar SD-2 Solvent Delivery Module

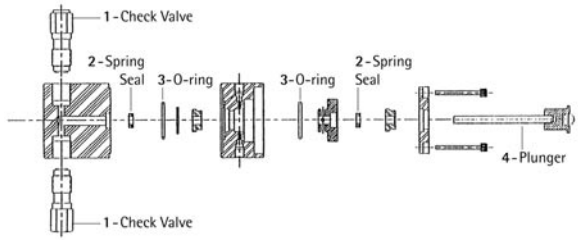
Description	Part No.	Quantity (Each)
PrepStar SD-2 Solvent Delivery Module	**PCG03SD2PMP**	1
Voltage Converter 230V to 115V Necessary for labs with 230V power	**PCG502500120**	1

PrepStar SD-2 Pump Heads

Includes one set of pump heads.
Order with the SD-2 Solvent Delivery Module - factory installed only.

Maximum Flow Rate	Maximum Pressure (psi)	Part No.	Quantity (Set)
200 mL/min	5000	**PCG54G0T0001A**	1
800 mL/min	2500	**PCG54S0T0001A**	1
1200 mL/min	1500	**PCG54L250001A**	1

PrepStar™ SD-2 Maintenance



PrepStar SD-2 Maintenance

Item #	Description	Part No.	Quantity (Each)
1	Check Valve Cartridge	**PCG549A00005T**	1
2	Spring Seal, White, 5 mm for 200 mL System	**PCG601660210**	1
	Spring Seal, White, 10 mm for 800 mL System	**PCG601660010**	1
3	Viton O-ring	**PCG60130088100**	1
4	Plunger, 5 mm, for 200 mL System	**PCG6030F3026781**	1
	Plunger, 10 mm, for 800 mL System	**PCG6030F3026771**	1

PrepStar SD-2 Parts Kits

Parts Kits include one plunger, check valves, seals, fittings, and fuses to perform routine maintenanceon one SD-2 solvent delivery module.

Description	Part No.	Quantity (Kit)
200 mL/min Solvent Delivery Module Parts Kit	**PCG03SD2KIT2**	1
800 mL/min Solvent Delivery Module Parts Kit	**PCG03SD2KIT8**	1
1200 mL/min Solvent Delivery Module Parts Kit	**PCG03SD2KIT12**	1

Preparative Mast Kits

- Preparative Mast Kits work with all PrepStar 218, SD-1, and SD-2 Preparative Solvent Delivery Systems
- Kits include everything you need but the tubing

Preparative Mast Kits

Kits include a Rheodyne preparative injector valve, prime valve, static mixer, and sample loop. 50 and 100 mL sample loops are available for the 1200 mL/min Mast Kit.

Material	Flow Rate	Sample Loop (mL)	Part No.
SS	50 mL/min	5	**393411005**
	200 mL/min	10	**393411001**
	800 mL/min	20	**393411002**
	1200 mL/min	20	**393411003**
Biocompatible	200/800 mL/min	20	**PCG0393411004**

Sample Loops

Note: The 50 and 100 mL sample loops only fit the Prep Mast 1200 mL/min injector valve.

Material	Volume (mL)	Part No.
SS	5	**PCG06E320005**
	10	**PCG06E320006**
	20	**PCG06E320007**
	50	**PCG06E320008**
	100	**PCG06E320010**
PEEK	10	**PCG06E3P0006**
	20	**PCG06E3P0007**

PrepStar™ 530 System

- Preparative solvent selector, gradient former, autoinjector, and fraction collector in one PrepStar 530 Fluid Module
- Configurations for flow rates from 25 to 1200 mL/min
- Complete computer control using our LC ReSponder software and a PrepStar 530 Control Module
- Safe fraction collection of hazardous materials with the PerpStar 530 Remote Fraction Collector (RFC) Module



The PrepStar 530 Control Module is top-left, and the PrepStar 530 Fluidics Module is bottom-right. Also shown are three PrepStar 218 pumps, a Mast Kit, and a PC running the LC ReSponder control software.

The PrepStar 530 family of modules provides electronic control of the fully integrated and automated fluid control activities for Varian's Preparative bench-top HPLC systems. The PrepStar 530 Fluidics module manages sample injection, solvent selection, gradient formation, and fraction collection activities. A Remote Fraction Collection (RFC) Module is also available to provide for the safe handling and collection of toxic compounds or hazardous materials (labeled compounds) in a hood, away from the actual operation of the prep HPLC pumping system. The PrepStar 530 is operated with the Varian LC ReSponder control software. LC ReSponder control SW provides for the control of the process activities and provides for internal documentation of all the system operations in a 21 CFR Part 11 environment.

PrepStar 530 Control Module

The PrepStar 530 Control Module is the main control and PC interface unit of the PrepStar 530 modular system, and can be used with PrepStar 218, SD-1, or SD-2 pumps. Order a PrepStar 530 Fluidics Module or RFC Module separately.

Description	Part No.	Quantity (Each)
PrepStar 530 Control Module	**PCG03530OPTO**	1

PrepStar 530 Fluidics Modules

The PrepStar 530 Fluidics Module is used to select solvents, form binary gradients, inject samples through Pump A, and collect fractions. It includes the LC ReSponder control software, 8 solvent inlet ports, 10 fraction collector ports, and 1 waste port. Order a PC for the LC ReSponder control software separately. Requires a PrepStar 530 Control Module to operate.

Select a PrepStar 530 Fluidics Module based on the maximum flow rate and the pump model. 1-pump configurations use Low Pressure Gradient formation (LPG), and 2-pump configurations use High Pressure Gradient formation (HPG). The ProStar 530 Fluidics Modules for SD-2 pumps include a solvent recycle valve, and a Low Pressure Gradient formation valve for 1-pump SD-2 configurations. Please contact your local Varian, Inc. office or dealer for configuration and ordering information.

Maximum Flow Rate	Pump Model	1 Pump	2 Pumps	Quantity (Each)
25/50 mL/min	PrepStar 218/SD-1		**PCG0393400100**	1
100/200/800 mL/min	PrepStar 218/SD-1		**PCG0393400114**	1
200/800 mL/min	SD-2	**PCG0393400134**	**PCG0393400124**	1
1200 mL/min	SD-2		**PCG0393400125**	1

PrepStar 530 Remote Fraction Collector - RFC

The PrepStar 530 Remote Fraction Collection Module is used to collect difficult-to-handle fractions. The RFC requires the PrepStar 530 Control Module and a 530 Fluidics Module to operate.

Description	Part No.	Quantity (Each)
PrepStar 530 Remote Fraction Collection Module	**PCG03SD2RFC**	1

PrepStar 218/SD-1/SD-2 Mast Kits

Mast Kits conveniently mount and organize valves and sample loops, and include a Rheodyne preparative injector valve, prime valve, static mix chamber, and sample loop.

Material	Flow Rate	Sample Loop (mL)	Part No.	Quantity (Kit)
SS	50 mL/min	5	**393411005**	1
	200 mL/min	10	**393411001**	1
	800 mL/min	20	**393411002**	1
	1200 mL/min	20	**393411003**	1
Biocompatible	200/800 mL/min	20	**PCG0393411004**	1

PrepStar 530 Accessories

Note: LC ReSponder Software is included with all PrepStar 530 systems, and can only be used with a PrepStar 530 Control Module or Interface Box.

Description	Part No.	Quantity (Each)
LC ReSponder™ Interface Box for Operation with Non-PrepStar 530 Systems	**PCG41499002**	1
LC ReSponder™ Software	**PCG41490LCRESP1**	1
LC ReSponder™ Software with Enhanced 21 CFR Part 11 LC Security Sofwtare Features	**PCG41490LCRESP3**	1
PC, Desktop PC with Windows XP, 17 in. Flat Pannel Monitor, Printer, 110 Vac only	**PCG4141F0440**	1
PC, Laptop PC with Windows XP, Printer, 110 Vac only	**PCG4141F0441**	1

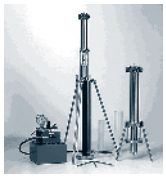
PrepStar 530 and LC ReSponder Software Validation Documentation

Description	Part No.	Quantity (Set)
IQ/OQ Validation Documentation for PrepStar SD-2 Pumps	**PCG03SD2IQOQ**	1
IQ/OQ Validation Documentation for PrepStar 530/LC ReSponder Control Software with Basic 21 CFR Part 11 Features	**PCG03PSLCIQOQ**	1
IQ/OQ Validation Documentation for full SD-1 or SD-2 Bench-top system (pumps) and PrepStar 530/LC ReSponder Control Software with Basic 21 CFR Part 11 Features	**PCG03BTIQOQ**	1
IQ/OQ Validation Documentation for Enhanced 21 CFR Part 11 LC Security Sofwtare Features - Networking and e-mail Notification	**PCG03BTIQOQ21**	1

Load & Lock Preparative HPLC Column Systems

Laboratory Load & Lock™ Packing Stations

- Easy user installation, column packing and unpacking in minutes
- Axial compression system
- Packed Laboratory Load & Lock columns can be moved and used anywhere, without moving the packing station
- Stationary and Mobile Models



Laboratory Load & Lock™ Packing Stations

Description	Part No.	Quantity (Each)
Load & Lock 4002-3A Tripod Air-driven Hydraulic Packing Station for 22 to 75 mm ID columns with or without Water Jackets	**PCG933A040023A**	1
Load & Lock 4002-3B SS Mobile Cart, Air-driven Hydraulic Packing Station for 22 to 75 mm ID columns with or without Water Jackets	**PCG933A040023B**	1

Laboratory Load & Lock™ Columns

- Easy user installation, column packing and unpacking in minutes
- Unique fluid/sample distribution system
- Performs both Dynamic and Static Axial Compression (DAC/SAC)
- Axial compression system can be locked in a static compressed holding mode.
- SAC prevents constant bed recompression, or column unpacking if system overpressures
- Packed bed lengths from 10 to 75 cm
- Columns can be packed, removed from the packing station, and then used anywhere
- Mobile packing stations available
- Water jackets available for column bed temperature control
- Scaleable up to 600 mm/24 in. ID columns with our SepTech production systems

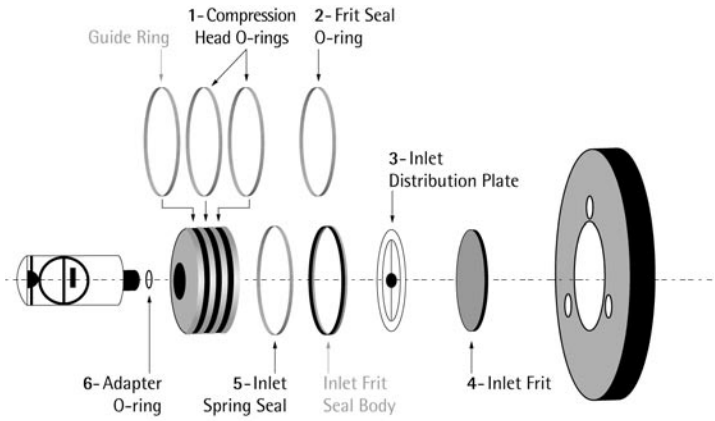
Load & Lock Columns

ID (mm)	Length (cm)	No Water Jacket	Water Jacket	Quantity (Each)
22	40	**PCG931054001**	**PCG931054001WJ**	1
50	50	**PCG932054002L**	**PCG932054002LWJ**	1
75	50	**PCG933104003**	**PCG933104003WJ**	1

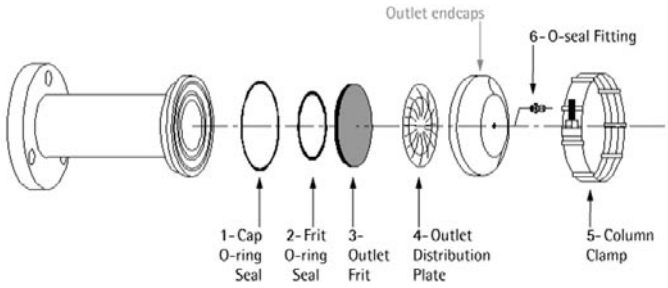
Be sure to see our HPLC Bulk Packing Materials on pages 161-164.

Did you know that voids in an HPLC column packing can come from pressure pulses during injection?

Laboratory Load & Lock™ Column Maintenance



Load & Lock Inlet Diagram



Load & Lock Outlet Diagram

Inlet Maintenance Items

Item #	Description	Material	22 mm	50 mm	75 mm	100 mm	Quantity (Each)
1	Compression Head O-ring	TFE	**PCG60136088112**	**PCG60136173201**	**PCG60136269294**	**PCG60136375394**	1
2	Frit Seal O-ring	TFE	**PCG60136094106**	**PCG60136174188**	**PCG60136274288**	**PCG60136375394**	1
3	Inlet Distribution Plate	316 SS	**PCG931A12102**	**PCG932A12102**	**PCG933A12102**	**PCG934A12102**	1
4	Inlet Frit	316 SS	**PCG931A2LL1IF**	**PCG932A2LL2IF**	**PCG933A2LL3IF**	**PCG934A2LL4IF**	1
5	Inlet Spring Seal	PTFE/SS	**PCG60160069096**	**PCG60160171196**	**PCG60169269294**	**PCG60160340397**	1

Inlet Adapter O-rings

Item #	Description	22 and 50 mm	75 and 100 mm	Quantity (Each)
6	Adapter O-ring	**PCG60136025038**	**PCG60130EN050069**	1

Outlet Maintenance Items

Item #	Description	Material	22 mm	50 mm	75 mm	100 mm	Quantity (Each)
1	Cap O-ring Seal	EPDM	**PCG60130125138**	**PCG60130250263**	**PCG60130400425**	**PCG60130475500**	1
		TFE	**PCG60136125138**	**PCG60136250263**	**PCG60136400425**	**PCG60136475500**	1
2	Frit O-ring Seal	EPDM	**PCG60130113125**	**PCG60130213225**	**PCG60130313338**	**PCG60130413433**	1
		TFE	**PCG60136113125**	**PCG60136213225**	**PCG60136313338**	**PCG60136413433**	1
3	Outlet Frit	316 SS	**PCG931A2LL1OF**	**PCG932A2LL2OF**	**PCG933A2LL3OF**	**PCG934A2LL4OF**	1
4	Outlet Distribution Plate	316 SS	**PCG931A12202**	**PCG932A12202**	**PCG933A12202**	**PCG934A12202**	1
5	Column Clamp	SS	**PCG881AACLAMP**	**PCG882AACLAMP**	**PCG883AACLAMP**	**PCG884AACLAMP**	1

Outlet O-seal Fittings

Item #	Description	22 mm	50 and 75 mm	100 mm	Quantity (Each)
6	O-seal Fittings	**PCG361420101**	**PCG361420202**	**PCG361420200**	1

Common Items for All Column IDs

Description	Part No.	Quantity (Each)
1/8 in. Fingertight Fitting, SS	**PCG363020200**	1
Ferrule, Lite-Touch Inlet Ferrule & Ring, PEEK/SS	**PCG3690P0200LT**	1
Screw, 1/8 in. SS Compression Screw	**PCG362720002**	1
Tubing, 1/8 in. OD, PEEK, per foot	**PCG3501P3202**	1 Per/foot

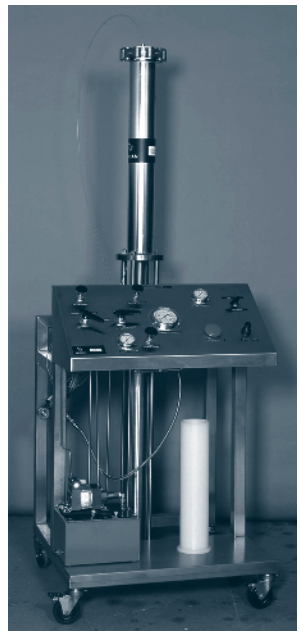
Load & Lock Preparative HPLC Column Systems

Process Load & Lock™ Column Systems

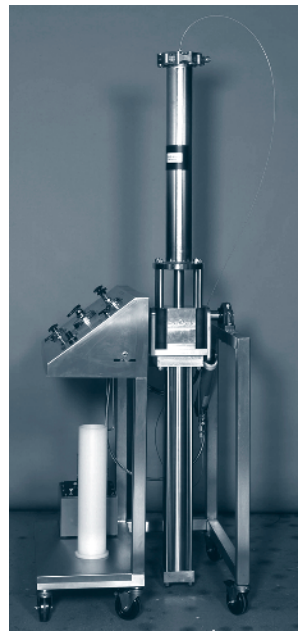
- Saves sorbent costs by purchasing sorbents in bulk
- Minimizes your time for packing and unpacking columns
- Purify gram to kilogram quantities
- Provides both Dynamic (DAC) and Static Axial Compresion (SAC) for maximized use of various sorbent types
- Integrated, mobile, easy-to-handle hydraulic packing station and column system
- Column IDs up to 600 mm allow for rapid scale-up to production
- Temperature-controlled water jackets increase separation speed

Varian. Inc. offers Load & Lock Process Column Systems with increased column IDs for producing gram to kilogram quantities of materials. All configurations include a mobile stand for safe and convenient movement of the column systems. The process packing station and column are built as one sturdy integrated unit for ease-of-use and long life time. The process columns have a hydraulic tilting mechanism to tilt the column 90° for ease of unpacking, using the plunger to push out the used sorbent (see side view photo above).

For larger scale applications, Varian, Inc. manufactures process column systems up to 600 mm ID x 80 cm length. Please contact your local Varian, Inc. office or distributor for configuration and ordering information.



Process Load & Lock Front View



Side View Shows Column Tilt Mechanism

Process Load & Lock™ Column Systems

Please call for pricing on our individually prepared columns.

ID (mm)	Length (cm)	No Water Jacket	Water Jacket	Quantity (Each)
100	50	**PCG934204004M**	**PCG934204004MWJ**	1
125	80	**PCG935204005L**	**PCG935204005LWJ**	1
150	80	**PCG936204006HP**	**PCG936204006WJ**	1
200	80	**PCG938204008**	**PCG938204008WJ**	1

Be sure to see our HPLC Bulk Packing Materials on pages 161-164.



RamPak™ 100/150 mm Column Packing System

The RamPak Self-packing column system accommodates either 100 mm or 150 mm ID columns. It operates on air pressure only, so no electrical connection is required. Order Column Kit separately.

Be sure to see our HPLC Bulk Packing Materials on pages 161 to 164, and our 10 mm to 41 mm ID Dynamax preparative HPLC columns on pages 152 to 160.



RamPak Column Packing Station

Description	Part No.	Quantity (Each)
RamPak Column Packing Station, Accommodates either 100 mm or 150 mm Column Kit. Order Column Kit Separately.	**393525601**	1

RamPak Column Kits

Contains column tube, column end fittings, necessary connecting tubing. Requires RamPak Column Packing Station.

Description	Part No.	Quantity (Each)
100 mm Column Kit for RamPak	**393525791**	1
150 mm Column Kit for RamPak	**393525891**	1

RamPak 100/150 mm Maintenance

Columns and Maintenance Items for 100 and 150 mm ID RamPak Systems

ID (mm)	Description	Part No.	Quantity (Each)
100	Bed Support Frit, 100 mm	**393532201**	1
	Complete Bed Support Assembly, 100 mm	**393525101**	1
	Empty Column Tube, 100 mm	**393525901**	1
	Flow Distribution Disk, 100 mm	**393532101**	1
	Piston Seal, 100 mm	**393532601**	1
	Piston Teflon Guide Sleeve, 100 mm	**393524901**	1
	Teflon Bed Support Body, 100 mm	**393532301**	1
150	Bed Support Frit, 150 mm	**393526501**	1
	Complete Bed Support Assembly, 150 mm	**393525301**	1
	Empty Column Tube ,150 mm	**393523101**	1
	Flow Distribution Disk ,150 mm	**393525401**	1
	Piston Seal ,150 mm	**393532701**	1
	Piston Teflon Guide Sleeve, 150 mm	**393525201**	1
	Teflon Bed Support Body, 150 mm	**393525501**	1

RamPak™ 41/77mm Maintenance

These columns and maintenance items will keep your RamPak 41 and 77 mm ID systems in top shape.

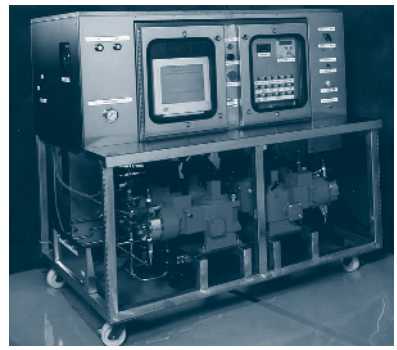
Also, see our HPLC Bulk Packing Materials on pages 161 to 164, and our 10 mm to 41 mm ID Dynamax preparative HPLC columns on pages 152 to 160.

Columns and Maintenance Items for 41 and 77 mm ID RamPak Systems

ID (mm)	Description	Part No.	Quantity (Each)
41	41.4 mm Column Kit for RamPak, Contains Column Tube, Column End Fittings & Necessary Connecting Tubing	**393508991**	1
	Assembly, Spacer, 41 mm	**393595491**	1
	Bed Support Frit, 41 mm	**R007002011**	1
	Complete Bed Support Assembly, 41 mm	**393515701**	1
	Empty Column Tube, 41 mm	**393506401**	1
	Flow Distribution Disk, 41 mm	**393506801**	1
	Piston PEEK Guide Sleeve, 41 mm	**393506701**	1
	Piston Sea,l 41 mm	**R002540003**	1
	Teflon Bed Support Body, 41 mm	**393507001**	1
77	77 mm Column Kit for RamPak, Contains Column Tube, Column End Fittings & Necessary Connecting Tubing	**393509091**	1
	Bed Support Frit, 77 mm	**393507801**	1
	Complete Bed Support Assembly, 77 mm	**393515801**	1
	Empty Column Tube, 77 mm	**393528301**	1
	Flow Distribution Disk, 77 mm	**393507701**	1
	Piston PEEK Guide Sleeve ,77 mm	**393507501**	1
	Piston Seal, 77 mm	**393508001**	1
	Teflon Bed Support Body, 77 mm	**393507901**	1

Did you know that voids in an HPLC column packing can come from pulsation of the pump?

Varian SepTech™ HPLC Production Skid Systems



Varian SepTech HPLC Production Skid Systems

Varian provides a complete line of SepTech bench-top, pilot plant and process systems and columns for purification of materials ranging from grams to tons of final product. Skid Systems for preparative and process/production liquid chromatography are custom designed to meet your unique purification needs.

Experienced Support

When you select a SepTech Skid System from Varian, you are getting more than a product. We have over 21 years of experience in the design and delivery of prep and process liquid chromatography systems in the Life Science/Pharmaceutical industry. With over 500 prep system installations world-wide we have the experience necessary to define and design the best system for your operation. If you need help in getting your application up and running, we offer contract method development, scale-up and kilogram level purification services. With Varian you can develop and improve your purification process without using your valuable time.

Perfect for Your Application

Since every lab and process has varying requirements we design every skid system from the ground up to best suit your needs. Some of the options available are:

- Automated or manual sample injections
- Low and high pressure gradient systems
- Integrated fraction collection with recycle
- Multi-detector options: UV, RI, pH, conductivity, flow rate, pressure, etc.
- Safety, validation and full 21 CFR Part 11 features.

Flexible yet Powerful Software

In today's workplace, the capability of a system's software can be its biggest asset. With the SepTech HPLC systems, the software allows for multi-functional control for such operations as binary gradient formation, sample fractionation, column switching, solvent container level sensing, and vapor sensing.

The software has been designed to meet both cGMP and GLP requirements. Documentation and validation protocols are provided for DQ, IQ, and OQ.

The SepTech Skid System control software provides for multi-level entry security and multi-user password protection so that unauthorized personnel cannot access the system and meets the GAMP 4.0 21 CFR Part 11 needs. Enhanced 21 CFR Part 11 features provided for special: data storage capability through networking with a local or corporate server, security features that notify the administrator of possible unwarranted entry tries, and file security in a Windows environment.

Operator control of the system can be handled at the console and/or located remotely in a "safe zone", or at the manager's desk.

Safety

The SepTech Skid System is designed for operation in a process environment and can be enhanced to accommodate operation in explosion hazard areas. Optional solvent level/bubble/vapor sensors ensure shutdown of the system before hardware damage can occur.

For configuration and ordering information, contact your local Varian, Inc. office or distributor.

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