

**Savant SpeedVac®
Concentrators**



Quick and efficient sample preparation

Analyze • Detect • Measure • Control™

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SpeedVac

Thermo Electron Savant SpeedVac® Systems

Thermo Electron has been manufacturing centrifugal vacuum concentrators for well over 30 years. As market leader, Thermo Electron is able to offer a diverse product range providing solutions for a wide variety of solvent applications. These range from the traditional drying down of DNA preparations in water and methanol to the more complex and aggressive application presented by the combinatorial and drug discovery sectors of the pharmaceutical industry.



SpeedVac

Choosing Your Savant SpeedVac System

There are several issues you need to consider when choosing your Savant SpeedVac system. Selecting the correct system is crucial for optimum performance and reliability. Thermo Electron has a wide range of integrated and modular systems so you can select a system which ideally suits your needs.

Solvent Type

Considerations are whether you are running aqueous or aggressive solvents, strong acids such as HCl or TFA? Pump performance and evaporation efficiency are based on solvent types: are you able to use a diaphragm pump which requires minimum maintenance or do you need the deeper vacuum that an oil pump will provide?

Boiling Points

Boiling points of solvents vary greatly and additional accessories such as a radiant cover or VaporNet® may be necessary to optimize performance.

Sample Size and Capacity

Choosing a large capacity system may be necessary if you are handling large sample volumes, or need a high throughput of samples.

Fully Integrated System or Separate Components

Fully integrated systems require less set up time and are easily transported. Component systems offer greater flexibility with a choice of pumps, refrigerated vapor traps and the ability to use the system in conjunction with other equipment such as a gel dryer.

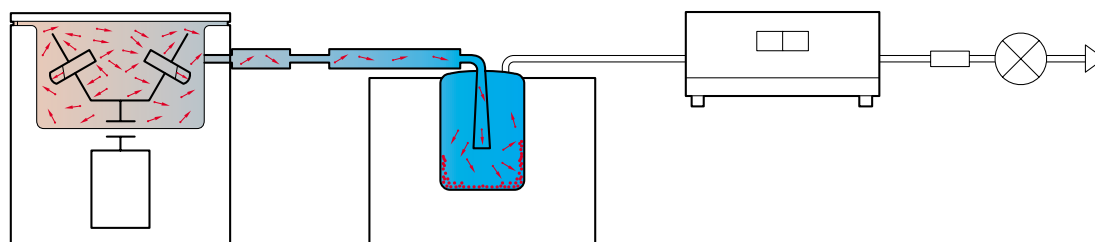
Principles of the Savant SpeedVac System

Savant SpeedVac systems generally consist of three main components: the concentrator bowl, the refrigerated trap, and the vacuum pump. Systems available in the Savant SpeedVac range offer various combinations of the above components. Accessories are available which will enhance the

performance of your Savant SpeedVac system, depending on your application such as radiant covers, chemical traps and the VaporNet system.

Savant SpeedVac systems are available as integrated models where all the components are in one box, or component systems where each part of the system is purchased separately to make up a system.

Schematic Diagram of a Savant SpeedVac System



SpeedVac Concentrator bowl
available in various sizes with control options

Refrigerated solvent trap
available in different temperature ranges

VaporNet
optional accessory

Vacuum pump
oil or diaphragm



Thermo Electron–The SpeedVac® Experts

Thermo Electron offers a full line of centrifugal vacuum concentrators to assist in any application requiring solvent removal. The Savant SpeedVac® Systems are available as fully integrated compact systems or can be customized to your specific application with only the components you require.

The most comprehensive product offering

Thermo can accommodate all levels of throughput, from personal bench-top units to high capacity production orientated systems.

We also provide systems specially designed for specific applications, from Savant DNA SpeedVac Systems to Savant SpeedVacs that can with-stand the continual use of harsh organic solvents used in combinatorial chemistry applications.

Unrivaled levels of customization

To further increase Thermo's ability to offer a Savant SpeedVac solution for all applications, we offer a customization program which allows customers access to Thermo R & D scientists to design a rotor or sample carrier to fit a specific application perfectly.

Applications

The Thermo Electron range of Savant SpeedVac Systems are suitable for a wide range of applications, our technical specialists will aid you in selection of a system, to suit your needs based on your sample, solvent and capacity requirements.

Typical applications

• Aqueous Solvents

Typical applications include the removal of aqueous low concentrations of non-aggressive and organic solvents, typical solvent concentrations are acetonitrile and water or methanol and water.

• DNA Extraction

Drying down DNA precipitates with 100% recovery, typically from methanol and water.

• Organic Solvents Non-Aggressive

Methanol, Ethanol, Acetonitrile

• Organic Solvents Aggressive (Low Boiling Point solvents)

Chloroform, Ethyl Acetate, Acetone, Methylene, Chloride, Hexane

• Aggressive High Boiling Point solvents

DMSO, DMF, Toluene, Nitrobenzene

• Strong Acids and Bases

TFA, HCl, Acetic Acid, Formic Acid, Ammonium Hydroxide, Sodium Hydroxide

KEY REFERENCE

You will see six symbols used throughout this section which can be used as a quick reference guide to determine which solvents are suitable for each instrument and accessory. These are to be used as a general rule-of-thumb. For any questions regarding solvent compatibility, please contact our customer services department.



Equipment suitable for use with **non-aggressive organic** solvents (Ethanol, Methanol, Acetonitrile)



Equipment suitable for use with **aggressive organic** solvents (Acetone, Methylene Chloride, Hexane, DMSO, Toluene, DMF)



Equipment suitable for use with **aqueous** solvents (water-based samples)



Equipment suitable for use with **acid concentrations less than 1.0N** (TFA, HCl, Nitric Acid)



Equipment suitable for use with **strong acids and bases at concentrations greater than 1.0N** (Ammonium Hydroxide, Sodium Hydroxide, TFA, HCl, Nitric Acid)



Equipment designed for the rigors of increased throughput and the associated solvents used in combinatorial chemistry (DMSO, TFA, Methylene Chloride)



SpeedVac

Savant DNA SpeedVac® Concentrators

Savant DNA120 SpeedVac Concentrator

The Savant DNA120 is a high performance DNA SpeedVac Concentrator offering rapid and efficient concentration and drying of small-volume DNA/RNA samples.

Product Features

- Corrosion resistant, TEFLON® coated chamber provides years of lasting service
- Built-in, oil free vacuum pump provides maintenance-free operation
- Integrated and compact design
- Extremely quiet operation

- Choice of three drying rates
- Optional swing-out rotor for two shallow-well microplates (RD2MP)
- Optional post-trap assembly (ANT100)
- Dual digital timers for independent control of heat and run times (DNA120/DNA120 OP only)

Savant DNA120 OP available for use with oligos, comes complete with a glass cover and an ANT100 post trap with ammonia neutralizing solution ANS121.

DNA120



Savant ISS110 SpeedVac Concentrator

The Savant ISS110 is a high capacity DNA SpeedVac designed for efficient processing of large batches of DNA/RNA samples.

Product Features

- ETFE coated vacuum pump
- 4-liters -50°C refrigerated vapor trap
- Temperature control:- ambient, medium, high

- Can accommodate up to 120 x 1.5 ml microtubes and shallow-well microplates (with optional RH120-11 rotor)
- Many optional rotors available including the RH2MP for two shallow-well microplates

ISS110



Ordering Information and Specifications

Model	DNA120/DNA120OP	DNA110	ISS110
Vacuum Pump Displacement	ETFE diaphragm pump 36 l/min @ 60 Hz 30 l/min @ 50 Hz	ETFE diaphragm pump 36 l/min @ 60 Hz 30 l/min @ 50 Hz	ETFE diaphragm pump 36 l/min @ 60 Hz 30 l/min @ 50 Hz
Max. Vacuum	>10 torr (9 mbar)	>10 torr (9 mbar)	>10 torr (9 mbar)
Dimensions W x D x H	11 x 25 x 11 (in) 290 x 630 x 290 (mm)	11 x 25 x 11 (in) 290 x 630 x 290 (mm)	25 x 26 x 15 (in) 620 x 660 x 380 (mm)
Refrigerated Trap Capacity	–	–	4 liters
Operating Temp.	–	–	-55°C
Weight lbs. (kg)	86 (39)	86 (39)	152 (69)
Max. Tube Capacity	72 x 0.5 ml	48 x 0.5 ml	120 x 1.5 ml
Rotor	RD36	RD24	RH64-11
Applications	 DNA120 DNA1200P		

Please order your CryoCool® separately

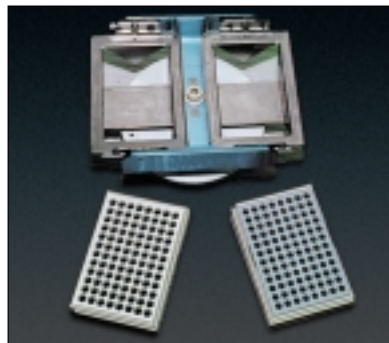
Ordering Information

Cat No	Description	Voltage
DNA110-115	Basic DNA SpeedVac system	115 V/60 Hz
DNA110-220	Basic DNA SpeedVac system	220 V/60 Hz
DNA110-230	Basic DNA SpeedVac system	230 V/50 Hz
DNA120-115	Enhanced Performance DNA SpeedVac system with timer	115 V/60 Hz
DNA120-220	Enhanced Performance DNA SpeedVac system with timer	220 V/60 Hz
DNA120-230	Enhanced Performance DNA SpeedVac system with timer	230 V/50 Hz
DNA1200P-115	DNA SpeedVac system with timer, for oligos	115 V/60 Hz
DNA1200P-220	DNA SpeedVac system with timer, for oligos	220 V/60 Hz
DNA1200P-230	DNA SpeedVac system with timer, for oligos	230 V/50 Hz
ISS110-115	Basic integrated SpeedVac system	115 V/60 Hz
ISS110-220	Basic integrated SpeedVac system	220 V/60 Hz
ISS110-230	Basic integrated SpeedVac system	230 V/50 Hz

Rotors for Savant DNA SpeedVac® Concentrators

Rotors Available

Cat No	Description
RD24	Rotor for holding 24 x 1.5 ml microcentrifuge tubes
RD48	Rotor for holding 48 x 0.5 ml microcentrifuge tubes
RD36	Rotor, for holding 36 x 1.5 ml microcentrifuge tubes
RD72	Rotor, for holding 72 x 0.5 ml microcentrifuge tubes
RD2MP	Swing bucket microplate rotor, with 2 carriers. Each carrier holds one 96-well shallow-well microplate



RD2MP: Rotor for microplates

Chemical Trap Kits for the Savant DNA SpeedVac Concentrators

Various chemical trap kits are available for the Savant DNA SpeedVac. These fit on the exhaust of the system. A carbon trap can be used for absorbing residual radioactive organic solvent vapors. If you are drying down oligos (DNA120 OP recommended), ammonia neutralizing solution will neutralize any residual ammonium hydroxide vapors.

A colour indicator shows when the neutralizing solution is depleted and must be changed. ANT100 post trap is required for use with neutralizing solution.



Chemical trap kit (includes DC120R cartridge only)

Accessories Available

Cat No	Description
DTK120R	Chemical trap kit, for absorbing volatile radioactives, includes activated carbon cartridge and all fittings
DC120R	Disposable chemical cartridge, for volatile radioactivity (use with DTK120R)
DC120A	Disposable cartridge with color indicator for trapping acids and residual water vapor
DC120R/4	Disposable chemical cartridge, for volatile radioactivity, package of 4 (use with DTK120R)
ANS121/4	Ammonia neutralizing solution, package of 4 bottles (use with ANT100 post-trap)
SCT120	Chemical trap



SpeedVac

Automated Integrated Savant SpeedVac® Concentrators

Thermo's Integrated Savant SpeedVac® Concentrators set the standard for convenient and efficient sample concentration and drying. Both systems feature a microprocessor control panel with digital display. Both SPD1010 and SPD2010 can be used with most solvents and offer extremely quiet operation and minimal maintenance.

Both models fully incorporate four individual components: concentrator bowl, refrigerated trap, vacuum gauge and a diaphragm pump.

Product Features







- Easily programmable
- Integrated design for plug-in and use simplicity and control
- Digital display for viewing and setting parameters (time, temperature, vacuum)
- Vacuum control for vacuum ramping and ultimate level setting to optimize drying times and eliminate bumping of different solvent mixtures
- All-in-one design makes setup and installation easy
- Refrigerated trap utilizes GCF400 glass condensation flasks for easy solvent changeover/removal and eliminates the time consuming step of thawing the trap to drain
- Dual timers for independent control of heater and run time
- Large variety of rotors available for both the SPD1010 and larger chamber SPD2010 for maximum flexibility and container choice



SPD2010
pictured

- Oil-free vacuum source eliminates the need to add/change oil and the vapor hazards associated with oil
- Standard TEFLON® coated chamber
- Radiant cover for chemical resistance and added heat source (enhanced drying times)

Ordering Information and Specifications

Model	SPD2010	SPD1010
Volume Range/Tube	0.4 to 500 ml	0.4 to 100 ml
Maximum Tube Capacity	200 x 12 mm x 75 mm	72 x 12 mm x 75 mm
Vacuum Pump		
Type	Oil-free ETFE diaphragm pump	
Displacement	30 l/min @ 50 Hz (36 l/min @ 60 Hz)	
Maximum Vacuum	> 10 torr (~9.3mbar)	
Refrigerated Trap		
Capacity	4 liters	
Operating Temperature	-50°C	
Heat Setting	45 to 80°C in 5°C increments, off	
Heated Cover	on/off, slaved to heat timer	
Vacuum Control Ramp Rate	1 to 5	
Ultimate Vacuum Level Setting	30.0 to 5.1 torr (40 to 6.8 mbar)	
Timer Setting	1 min to 9 hours and 59 mins, continuous	
Dimensions, W x D x H	31 x 27 x 19 (in), 770 x 690 x 470 (mm)	25 x 26 x 15 (in), 620 x 660 x 380 (mm)
Weight, lb (kg)	182 (83)	152 (69)
Rotor	RH200-12	RH40-12
Application	  	  

Note: please order CryoCool® separately

Ordering Information

Cat No	Description	Voltage
SPD1010-115	SPD1010 Integrated SpeedVac System (CryoCool not included)	115 V/60 Hz
SPD1010-220	SPD1010 Integrated SpeedVac System (CryoCool not included)	220 V/60 Hz
SPD1010-230	SPD1010 Integrated SpeedVac System (CryoCool not included)	230 V/50 Hz
SPD2010-220	SPD2010 Integrated SpeedVac System (CryoCool not included)	220 V/60 Hz
SPD2010-230	SPD2010 Integrated SpeedVac System (CryoCool not included)	230 V/50 Hz

Solvent Symbols:

 = Aqueous  = Acids (<1.0N)  = Organics  = Acids (>1.0N)  = Aggressive Organics  = Combinatorial Chemistry

SPD Series Small Capacity Savant SpeedVac® Concentrators

Thermo's Savant 'SPD-Series' SpeedVac® concentrators are ideal for the concentration or drying of biological and non-biological materials in all kinds of solvents. Available in 3 models which all provide reliability and versatility, each unit has a coated TEFLON chamber and the SPD131DDA also has TEFLON valves and tubing which makes it resistant to aggressive solvents. SpeedVac concentrators are part of a component system consisting of concentrator, vapor trap, vacuum pump and accessories.



SPD111V



SPD121P



SPD131DDA
Ideal for drug
discovery applications

SPD131DDA

Product Features - SPD111V

- Suitable for molecular biology applications
- Deep aluminium TEFLON® coated chamber, accommodates deep-well plates
- Built in automatic bleeder valve
- Variable drying rate
- Connector for vacuum source
- Time/temperature display incorporating membrane touch pad switches
- Safety coverlock
- Radiant cover for accelerated evaporation (optional)
- Manual/auto timed run

Product Features - SPD121P

- As SPD111V, plus:
- Enhanced evaporation model suitable for organics
 - Two valve manifold
 - Built-in vacuum gauge and vacuum display
 - Endpoint mode terminates run when pre-set vacuum level is reached
 - TEFLON® plumbing and tubing
 - Radiant cover improves drying time by applying radiant heat to samples
 - Time/vacuum run

Product Features - SPD131DDA -

- As SPD121P, plus:
- Resistant to TFA, DMSO, and other solvents used in combinatorial chemistry applications
 - Radiant lamps within the chamber
 - Heated lid for processing high boiling solvents (DMSO, DMF)
 - Wider vapor port and tubing for enhanced vapor throughput - reducing drying times
 - Adjustable vacuum level for preventing bumping of difficult solvent mixtures and optimizing drying times

Note: Rotors are not included with the concentrator bowls and must be ordered separately.

Ordering Information and Specifications - Small Capacity Sample Concentrators

Model	SPD111V	SPD121P	SPD131DDA
Bleeder Valve	Yes	Yes (Dual)	Yes (Dual)
Volume Range/Tube	See rotor table	See rotor table	See rotor table
Maximum Tube Capacity	See rotor table	See rotor table	See rotor table
Dimensions (W x D x H)	14 x 18 x 13 (in), 360 x 450 x 330 mm	14 x 18 x 13 (in), 360 x 450 x 330 mm	14 x 18 x 13 (in), 360 x 450 x 330 mm
Weight lbs. (kg)	37 (17)	44 (20)	44 (20)
Temperature Settings	Adjustable from 35°C to 80°C, off	Adjustable from 35°C to 80°C, off	Adjustable from 45°C to 80°C, off
Standard Cover	Glass	Radiant glass	Heated glass
Infrared Chamber Lamps	-	-	2
Vacuum Control		0.1 to 20 torr endpoint shut off	0.1 to 20 torr
Exhaust Port Size	Standard	Standard	Oversized
Magnetic Assembly	UMASPD	UMASPD	SUMAXSPD
Maximum Microplate Capacity			
Deepwell	2	2	2
Shallow well	6	6	6
Application			

The new Savant SPD-Series SpeedVacs® will accommodate all rotors for the SC110A Order rotor separately. For volume range and maximum tube capacity see rotor table on page 219-220

Ordering Information

Cat No	Description	Voltage
SPD111V-115	SpeedVac Concentrator, Basic Molecular Biology Model (rotor not included)	115 V/60 Hz
SPD111V-220	SpeedVac Concentrator, Basic Molecular Biology Model (rotor not included)	220 V/60 Hz
SPD111V-230	SpeedVac Concentrator, Basic Molecular Biology Model (rotor not included)	230 V/50 Hz
SPD121P-115	SpeedVac Concentrator, Enhanced Evaporation Model (rotor not included)	115 V/60 Hz
SPD121P-220	SpeedVac Concentrator, Enhanced Evaporation Model (rotor not included)	220 V/60 Hz
SPD121P-230	SpeedVac Concentrator, Enhanced Evaporation Model (rotor not included)	230 V/50 Hz
SPD131DDA-115	SpeedVac Concentrator, Acid-resistant Model (rotor not included)	115 V/60 Hz
SPD131DDA-220	SpeedVac Concentrator, Acid-resistant Model (rotor not included)	220 V/60 Hz
SPD131DDA-230	SpeedVac Concentrator, Acid-resistant Model (rotor not included)	230 V/50 Hz

SpeedVac

High Capacity Savant SpeedVac® Concentrators

High capacity SpeedVac Concentrator ideal for aqueous and organic solvents

Product Features - SC210A

- Large rotor selection to accommodate a variety of tube sizes and types
- Teflon® coated chamber provides long lasting durability against harsh solvents
- Three selectable heating levels to optimize evaporation
- Automatic bleeder valve automatically provides vacuum at the beginning of a run and bleeds chamber to atmospheric pressure at the end of a run
- Radiant cover maximizes evaporation/sublimation rates (optional)



SC210A

Ideal for combinatorial chemistry applications with aggressive solvents. Supplied with heavy duty rotor system as standard

Product Features - SC250EXP

- 4 IR heat lamps for drying high-boiling-point solvents such as DMSO and DMF
- Dual vacuum control of RAMP and LEVEL eliminates samples from bumping and/or freezing, provides optimization for various sample types
- KALREZ®, TEFLON® and TEFLON® coated materials along the entire vapor path for maximum chemical resistance and durability
- Dual valve mechanism for improved durability and exhausting
- Comes complete with enlarged vacuum port, extra wide tubing and new extra large mouth glass condensation flask (GCF400)
- Comes standard with 4 position, UPR-4A microplate rotor, heavy SUMAX400 magnetic assembly and choice of shelf carriers (UPC-1, UPC-2 or UPC-5)
- Heated glass lid reduces drying times and prevents condensation
- Digital display of parameters (time, temperature and vacuum)



SC250EXP

Ideal for drug discovery applications

Ordering Information and Specifications

Model	SC250EXP	SC210A
Bleeder Valve	Automatic (Dual)	Automatic
Volume Range/Tube	See rotor table and rotor blocks	See rotor table
Maximum Tube Capacity	See rotor table and rotor blocks	See rotor table
Dimensions (W x D x H) mm	18 x 25 x 18 (in), 460 x 670 x 460 (mm)	18 x 25 x 18 (in), 450 x 620 x 460 (mm)
Weight lbs. (kg)	127 (58)	102 (46)
Temperature Settings	Off, 45 to 80°C, in 5°C increments	3 presets – low, med, high (ambient, 43°C, 65°C)
Standard Cover	Heated glass	Plexiglas, optional radiant glass
Infrared Chamber Lamps	4	-
Exhaust Port Size	Oversized	Standard
Magnetic Assembly	SUMAX400	UMA200
Maximum Microplate Capacity	Deepwell 8 Shallow well 20	8 12
Application*		
Rotor	Complete with UPR-4A rotor and choice of shelf carriers	Order separately
Vacuum Gauge	Digital	-

Ordering Information

Cat No	Description	Voltage
SC210A-115	High-capacity SpeedVac Plus concentrator (rotor not included)	115 V/60 Hz
SC210A-220	High-capacity SpeedVac Plus concentrator (rotor not included)	220 V/60 Hz
SC210A-230	High-capacity SpeedVac Plus concentrator (rotor not included)	230 V/50 Hz
SC250EXP-115	SC250 Express Concentrator, with 4-pl rotor, choice of carriers, 1x GF4000 and wide tubing	115 V/60 Hz
SC250EXP-220	SC250 Express Concentrator, with 4-pl rotor, choice of carriers, 1x GF4000 and wide tubing	220 V/60 Hz
SC250EXP-230	SC250 Express Concentrator, with 4-pl rotor, choice of carriers, 1x GF4000 and wide tubing	230 V/50 Hz



Savant SpeedVac® Rotors

Savant SpeedVac rotors are available in a wide variety of styles and sizes to accommodate all your sample requirements. They are designed to efficiently handle and accommodate microtubes, bottles, glass and plastic tubes, flasks and even microplates. Individual tube volumes range from 0.4 up to 500 ml. The polypropylene rotors are fully autoclavable.



RH40-12: 40-place 12 x 75 mm rotor



RH40-11: 40 x 1.5 ml rotor



MPTR8-210: rotor for 96 well plates



RD2MP: Rotor for microplates for use with DNA SpeedVacs



RH8-200: 8 x 250 ml rotor



RH20-12: 20 place 12 x 75 mm rotor with black anodized metal tube holders

Custom rotors are also available

Upper Magnetic Assemblies - Magnetic Drive for Savant SpeedVac Concentrators

Cat No	Description	Concentrator Model	Application
UMA100	Upper magnetic assembly	SPD1010, SC110, SC110A, AES1010*, ISS110	
UMA200	Upper magnetic assembly	SC210A, AES2010*, SPD2010	
SUMAX300	Stainless steel upper magnetic assembly	SC250EXP, AES2050DDA*, SC210A, AES2010*	
SUMAX400	Heavy duty magnetic assembly	SC250EXP, SC210A, AES2010*, AES250DDA*, SPD2010, SC250DDA*	
SUMAXSPD	Stainless steel upper magnetic assembly with TEFLON ceramic bearings	SPD131DDA	
UMASPD	Upper magnetic assembly	SPD101B*, SPD111V, SPD121P	

* Discontinued products

Solvent Symbols:




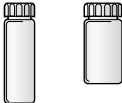

= Aqueous = Organics = Acids (>1.0N) = Aggressive Organics = Combinatorial Chemistry

Rotor Selection Guide

	Working Volume (ml)	No. of Tubes	Description	Models	Models	Rotor Model
				SC110/SC110A SS11, SS21, SS31 AES1010, ISS110 SPD1010, SPD111V SPD121P, SPD131DDA	SC210A SS22, SS32 SPD2010,	
Microcentrifuge	1.2 - 1.6	40	1.5 - 2.0 ml	•		RH40-11
Tubes	1.2 - 1.6	64	1.5 - 2.0 ml	•		RH64-11
	1.2 - 1.6	120	1.5 - 2.0 ml	•		RH120-11
	1.2 - 1.6	200	1.5 - 2.0 ml		•	RH200-12*

Rotors

Rotor Selection Guide Continued...

	Working Volume (ml)	No. of Tubes	Description	Models SC110/SC110A SS11, SS21, SS31 AES1010, ISS110 SPD1010, SPD111V SPD121P, SPD131DDA	Models SC210A SS22, SS32 SPD2010,	Rotor Model
Glass and Plastic Tubes 	0.3	100	0.5 ml (8 x 29 mm)	•		RH100-8
	0.3	40	0.4 ml (6 x 50 mm)	•		RH40-6
	0.3	100	0.4 ml (6 x 50 mm)	•		RH100-6
	4	20	12 x 75 mm	•		RH20-12
	4	40	1.5 - 2.0 (12 x 75 mm)	•		RH40-12
	4	72	12 x 75 mm	•		RH72-12
	4	200	12 x 75 mm		•	RH200-12*
	8	10	13 x 100 mm	•		RH20-12
	8	32	13 x 100 mm	•		RH32-13
	8	118	13 x 100 mm		•	RH200-12*
	12	48	16 x 125 mm		•	RH48-18-125*
	12	85	16 x 125 mm		•	RH88-16-125***
	10	60	17 x 100 mm, 16 x 100 mm		•	RH60-17-100*
	15	8	17.5 x 102 mm, 15 ml Corex® tubes	•		RH8-17.5
	10	8	18 x 100 mm, 17 x 95 mm, 16 x 100 mm	•		RH8-18
	15	48	18 x 125 mm		•	RH48-18-125*
	24	4	18 x 150 mm	•		RH4-18-150
	24	32	18 x 150 mm, 16 x 125 mm		•	RH32-18-150*
	30	6	25 x 105 mm, 30 ml Corex® tubes	•		RH6-25
	40	12	28 x 150 mm		•	RH12-29
Centrifuge Tubes 	12	10	15 ml conical (16 x 120 mm)	•		RH10-15
	12	30	15 ml conical (17 x 120 mm)		•	RH60-17-100*
	12	52	15 ml conical (16 x 120 mm)		•	RH52-15*
	40	6	50 ml conical (28 x 115 mm)	•		RH6-50*
	40	12	50 ml conical (28 x 115 mm)		•	RH12-29
	40	26	50 ml conical (28 x 115 mm)		•	RH26-50*
	40	48	50 ml conical (28 x 115 mm)		•	RH48-50***
Flasks 	35	8	50 ml pear-shaped flask	•		RH8-50†
	80	4	100 ml pear-shaped flask	•		RH4-100††
	80	8	100 ml pear-shaped flask		•	RH8-200††
	200	6	250 ml pear-shaped flask		•	RH6-400††
	400	4	500 ml pear-shaped flask		•	RH4-500*††
	80	8	100 ml recovery flask		•	RH8-100†
Vials 	2	60	12 x 32 mm	•		RH60-12-40
	3.0	192	1 dram vial (4 ml)		•	RH192-15*
	2.0	60	12 x 40 mm vials	•		RH60-12-40
	2.4	12	20 x 47 mm v-vials	•		RH12-20
	3	24	1 dram vials (15 x 45 mm), 4 ml	•		RH24-15
	4	12	20 x 60 mm v-vials	•		RH12-20
	5.6	24	18 x 52 mm mini-scintillation vials	•		RH24-18
	16	12	28 x 60 mm scintillation vials	•		RH12-28
	16	50	28 x 60 mm scintillation vials		•	RH50-28-60*
	Bottles	250	8	250 ml centrifuge bottles		•
Microtiter Plates 	0.3	2 plates	Multiwell plates (shallow)	•		RH2MP
	0.3	12 plates	Multiwell plates (shallow)		•	MPTR12-210
	1 - 2	8 plates	Multiwell plates (Beckman deepwell)		•	MPTR8-210
	24	6	18 x 150 mm tubes for SPD111V, SPD121P + SPD131DDA			RH6-18-150**
	0.3	6	Multiwell plates (shallow) SPD concentrators only			RHSW6MP**
1 - 2	2	Multiwell plates (deepwell) SPD concentrators only			RHDW2MP**	

Custom made rotors are also available * For use in SC250EXP SpeedVacs with RAD200 adapter ** Only available for the SPD111V, SPD121P and SPD131DDA Concentrators only *** Add U to part no. for use with UMA200 and add S to part no. for use with SUMAX300/400

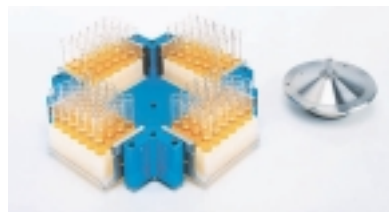
† Flasks available separately †† Flasks and adapters available separately

PRO Rotor System

The PRO Rotor System is a high capacity solvent resistant rotor, available in 3 options. The PRO Rotor System is provided as standard with the SC250EXP.

The following machines will also accommodate the PRO Rotor System:

SC210, SC210A AES2010, SPD2010



PRO-10 rotor system

The Pro Rotor Systems available are identical apart from the type of carrier used. There are 3 types of carrier set available:

- UPC-1 a single shelf carrier for rotor blocks
 - UPC-2 a double shelf carrier for deepwell microplates
 - UPC-5 a five shelf carrier for shallow well microplates
- Note: All carriers are interchangeable

Additional Rotors and Rotor Blocks

Cat No	Description	No. of tubes or plates	SpeedVac Model
PRO-10	Includes single-shelf, heavy-duty rotor kit, consisting of UPR-4A rotor, UPC-1 carrier set and SUMAX300 upper magnetic assembly	See rotor block table	SPD2010 SC210A SC250EXP, AES2010
PRO-20	Includes double-shelf, heavy-duty rotor kit, consisting of UPR-4A rotor, UPC-2 carrier set and SUMAX300 upper magnetic assembly	8 deep-well plates	SPD2010 SC210A SC250EXP, AES2010
PRO-50	Includes five-shelf, heavy-duty rotor kit, consisting of UPR-4A rotor, UPC-5 carrier set and SUMAX300 upper magnetic assembly	20 shallow-well-plates	SPD2010 SC210A SC250EXP, AES2010
RAD200	Adapter for use with SUMAX300		

*RAD200 is required if you need to run standard polypropylene rotors on the SUMAX300 and SUMAX400 upper magnetic assembly

Carriers & Rotor Blocks

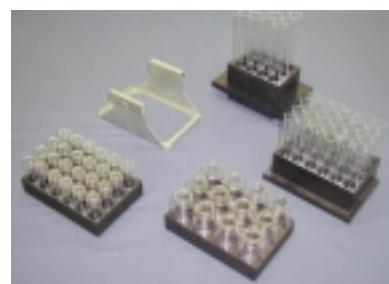
For use with the swing-out horizontal universal plate rotor. Interchangeable carriers compatible with Thermo Electron rotor blocks for vials or tubes, 96-well plates, UPR-4A rotor and PRO rotor systems.

Load Capacity of Carriers

Cat No	Description	Shallow-well Microplates	Deep-well Plates	Rotor Blocks for Vials and Tubes
UPC-1	Single-shelf, set of 4 carriers	4	4	4
UPC-2	Double-shelf, set of 4 carriers	8	8	–
UPC-5	Five-shelf, set of 4 carriers	20	–	–

Sample Capacity of Aluminium Rotor Blocks - UPC1 carriers only

Cat No	Description	No of Tubes
RBA12-25-52	24 x 52 mm, 2 dram vials	12
RBA12-27-60	27 x 60 mm, 5 dram vials	12
RBA12-28-58	28 x 58 mm, 20 ml scintillation vials	12
RBA15-16-125	16 x 125 mm tubes	15
RBA24-15-45	15 x 45 mm, 1 dram vials	24
RBA24-16-100	16 x 100 mm tubes	24
RBA24-17-31	17 x 31 mm, 3 ml vials	24
RBA24-19-65	19 x 65 mm flat bottom vials	24
RBA35-13-100	13 x 100 mm tubes	35
RBA126-6-32	6 x 32 mm tubes	126
RBA20-12-125	12 x 125 mm tubes	20
RBA24-17-60	17 x 60 mm tubes	24
RBA25-11-39	1.5 ml microcentrifuge tubes	25
RBA30-8-30	0.5 ml microcentrifuge tubes	30
RBA6-28-110	28 x 110 mm tubes	6
RBSH	Rotor block adapter for Array-It Side Holders (Microarrays), set of two	1 slide holder (holds 27 slides)



Polypropylene blocks available, please call for details



Vapor Traps

Refrigerated Vapor Traps

Refrigerated vapor traps available in -104°C refrigerated trap and -50°C and -5°C refrigerated trap.

Product Features

- Available in three temperature ranges -50°C, -104°C and -5°C
- CFC and HCFC free refrigerants
- -5°C specifically designed for trapping high-boiling solvents such as DMSO and DMF
- -104°C used for trapping low-boiling solvents such as Chloroform or Methylene Chloride
- Rapid cooling rate
- Digital LED temperature readout on RVT4104
- Includes one GCF400 flask and FC400 flask cap

Note: Additional GCF400 glass condensation flask recommended for easy trap maintenance. CryoCool® and tubing kit are ordered separately, see below and page 225



RVT400

Ordering Information and Specifications

Model	RVT400	RVT4104	RVT405DDA
Temperature	-50°C	-104°C	-5°C
Capacity	4 liters	4 liters	4 liters
Dimensions, W x H x D	14 x 12 x 24 (in) 350 x 310 x 600 (mm)	20 x 13 x 26 (in) 510 x 330 x 660 (mm)	14 x 12 x 24 (in) 350 x 310 x 600 (mm)
Weight, lbs (kg)	55 (25)	150 (68)	55 (25)

Ordering Information

Cat No	Description	Voltage
RVT400-115	Refrigerated vapor trap (-50°C, 4 liters), with GCF400	115 V/50/60 Hz
RVT400-230	Refrigerated vapor trap (-50°C, 4 liters), with GCF400	230 V/50/60 Hz
RVT405DDA-115	Refrigerated Vapor Trap for DDA, (-5°C, 4 liters), with GCF400	115 V/50/60 Hz
RVT405DDA-230	Refrigerated Vapor Trap for DDA, (-5°C, 4 liters), with GCF400	230 V/50/60 Hz
RVT4104-115	Ultra-low temperature refrigerated vapor trap (-104°C, 4 liters), with GCF400	115 V/50/60 Hz
RVT4104-230	Ultra-low temperature refrigerated vapor trap (-104°C, 4 liters), with GCF400	230 V/50/60 Hz

Vapor Trap Upgrade Kit

Available for all systems originally equipped with the GIT400 glass insert trap, must be ordered with all refrigerated solvent traps.



Ordering Information

Cat No	Description
CAFS400	Standard upgrade kit, consists of two (2) GCF400 glass condensation flasks, rubber cap, tubing, connectors and tube cutter
GCF400	Glass condensation flask
FC400	Flask cap for GCF400

Please order your CryoCool separately SCC1

Universal Vacuum System

The Universal Vacuum System is a combined oil-free vacuum source and solvent recovery system, in a single integrated unit. The easy-to-use wide mouth glass condensation flask allows safe handling of recovery solvents. This unit can be connected to any of the concentrators to provide a complete SpeedVac system.

Product Features - UVS400

- Low maintenance, oil-free and corrosion resistant system
- Wide mouth glass condensation flask with self-sealing cover
- Small foot print
- Single stage refrigeration system
- Efficient operation with all SpeedVac concentrators, gel dryers and other vacuum-dependant equipment
- Optional post trap (ANT100) may be added to neutralize ammonia or acid
- Chemical trap (DTK120R) may be added to absorb volatile radioactivity and residual vapors

- Supplied with two GCF400 glass condensation flasks
- Available with VaporNet® order UVS400A

Product Features - UVS800DDA

As UVS400 with the following additional features

- 3-stage high efficiency oil free pump
- Teflon® tubing and vapor path
- Post trap ANT100 included
- Order ANS121/4 ammonia neutralizing solution separately
- VaporNet® solvent recovery enhancement



UVS400 shown

Note: Cryocool must be ordered for use with all refrigerated cold traps, and the universal vacuum source. Please order separately.

Ordering Information and Specifications

Model	UVS400	UVS800DDA
Vacuum Pump	Oil-free ETFE diaphragm pump	Oil-free ETFE/PFA diaphragm pump
Displacement	36 l/min @ 60 Hz 30 l/min @ 50 Hz	36 l/min @ 60 Hz 30 l/min @ 50 Hz
Max. Vacuum	<10 torr (<13.3 mbar)	<0.6 torr (<0.75 mbar)
Capacity	4 liters	4 liters
Operating Temp.	-50°C VaporNet®	-50°C VaporNet
Solvent Recovery Enhancement	VaporNet	VaporNet
Dimensions W x D x H	14 x 24 x 18 (in), 350 x 600 x 450 (mm)	14 x 24 x 18 (in), 350 x 600 x 450 (mm)
Weight lbs. (kg)	113 (51)	126 (57)

* Order UVS400SPD which is configured for use with SPD121P, SPD131DDA and SC250EXP SpeedVacs.

Ordering Information

Cat No	Description	Voltage
UVS400-115	Universal vacuum system with refrigerated vapor trap (-55°C, 4 liters), w/ (2) GCF400, (2) FC400	115 V/60 Hz
UVS400A-220	Universal vacuum system with refrigerated vapor trap (-55°C, 4 liters), w/ (2) GCF400, (2) FC400,	220 V/60 Hz
UVS400A-230	Universal vacuum system with refrigerated vapor trap (-55°C, 4 liters), w/ (2) GCF400, (2) FC400, includes VaporNet	230 V/50 Hz
UVS800DDA-115	Universal vacuum system for drug discovery application, (0.6 torr), with VaporNet and refrigerated vapor trap (-50°C, 4L), w/ (2) GCF400, (2) FC400	115 V/60 Hz
UVS800DDA-220	Universal vacuum system for drug discovery application, (0.6 torr), with VaporNet and refrigerated vapor trap (-50°C, 4L), w/ (2) GCF400, (2) FC400	220 V/60 Hz
UVS800DDA-230	Universal vacuum system for drug discovery application, (0.6 torr), with VaporNet and refrigerated vapor trap (-50°C, 4L), w/ (2) GCF400, (2) FC400	230 V/50 Hz

Tubing Kits for SpeedVac® Systems

When ordering a Refrigerated Vapor Trap (RVT) or Universal Vacuum System (UVS), you will require one of the following tubing kits depending on which concentrator bowl specified.

Ordering Information and Specification

Cat No	Description
TFK100	Tubing and fitting kit for SC110A series concentrator + UVS400A
TFK150	Tubing and fitting kit for SC110A series concentrator + UVS400A + gel dryer
TFK200	Tubing and fitting kit for SC210A concentrator + UVS400A
UTP-TYG	Universal tubing package, PVC tubing, for models SC110/110A, SC210A & SPD111V (any RVT or UVS)
UTP-TEF 0.5	Universal TEFLON tubing package, 0.5" diam tubing, with connectors, for model SPD121P (any RVT or UVS)
UTP-TEF 0.75	Universal TEFLON tubing package, 0.75" diam tubing, with connectors, for model SPD131DDA (any RVT or UVS)
UTK 80	Tubing kit for SC250EXP (any RVT or UVS)



ValuPump

ValuPump Vacuum Pumps



available for use with acids or DMSO/DMF

Product Features

- 4 models to choose from to suit your application
- Low noise level, 48 dBA
- Three-position gas ballast control
- Standard oil drain kit simplifies oil change
- Two separate oil inlet ports
- Thermal overload switches with automatic reset
- Recommended for applications requiring high vacuum
- Complete with MF190 mist eliminator and oil drain kit
- Recirculating oil filter (VPOF110)

Ordering Information and Specifications - Oil Pumps

Cat No	VLP80/VLP80DDA*	VLP120	VLP200	VLP285
Displacement	76 l/min @ 60 Hz 62 l/min @ 50 Hz	116 l/min @ 60 Hz 97 l/min @ 50 Hz	195 l/min @ 60 Hz 162 l/min @ 50 Hz	283 l/min @ 60 Hz 237 l/min @ 50 Hz
Maximum Vacuum	1.5 mtorr/1.95 x 10 ⁻³ mbar	1.5 mtorr/1.95 x 10 ⁻³ mbar	1.5 mtorr/1.95 x 10 ⁻³ mbar	1.5 mtorr/1.95 x 10 ⁻³ mbar
Oil Capacity	0.7 liters	0.7 liters	0.75 liters	1.0 liter
Dimensions (W x D x H)	6 x 17 x 9 (in) 160 x 420 x 230 (mm)	6 x 17 x 9 (in) 160 x 420 x 230 (mm)	6 x 19 x 11 (in) 160 x 470 x 260 (mm)	6 x 19 x 11 (in) 160 x 470 x 260 (mm)
Weight lbs (kg)	48 (22)	48 (22)	57 (26)	58 (26)
Vacuum Inlet Fitting, mm	12.7 OD	12.7 OD	12.7 OD	12.7 OD

* VLP80DDA includes VPOF110 oil filter and stainless steel oil drain kit

Ordering Information

Cat No	Description	Voltage
VLP120-115	Vacuum pump, includes Oil Mist Eliminator (OME190), (2) filters and line cord	115 V/50/60 Hz
VLP120-230	Vacuum pump, includes Oil Mist Eliminator (OME190), (2) filters and line cord	230 V/50/60 Hz
VLP200-115	Vacuum pump, includes Oil Mist Eliminator (OME190), (2) filters and line cord	115 V/50/60 Hz
VLP200-230	Vacuum pump, includes Oil Mist Eliminator (OME190), (2) filters and line cord	230 V/50/60 Hz
VLP285-115	Vacuum pump, includes Oil Mist Eliminator (OME190), (2) filters and line cord	115 V/50/60 Hz
VLP285-230	Vacuum pump, includes Oil Mist Eliminator (OME190), (2) filters and line cord	230 V/50/60 Hz
VLP80-115	Vacuum pump, includes Oil Mist Eliminator (OME190), (2) filters and line cord	115 V/50/60 Hz
VLP80-230	Vacuum pump, includes Oil Mist Eliminator (OME190), (2) filters and line cord	230 V/50/60 Hz
VLP80DDA-115	High-Vacuum Pump with VPOF110, includes Oil Mist Eliminator (OME190), (2) filters and line cord	115 V/50/60 Hz
VLP80DDA-230	High-Vacuum Pump with VPOF110, includes Oil Mist Eliminator (OME190), (2) filters and line cord	230 V/50/60 Hz

Oil Free Vacuum Pumps

Product Features

- ETFE coated heads and ETFE/PFA diaphragms
- OFP400 recommended for evaporating samples in acidic environments such as HCl, TFA, Acetic or Formic Acid, aggressive/volatile organics (methylene chloride, acetone, hexane) and strong bases (ammonium hydroxide)
- Quiet, efficient operation
- Attains vacuum level of below 1 torr
- Suitable for use with the Refrigerated Vapour Trap RVT4104 or RVT400
- Oil-free pumps eliminate maintenance associated with oil pumps



Ordering Information - Oil-Free Pumps

Cat No	OFP400
Model	
Pump Type	4-headed ETFE/PFA diaphragm
Displacement	36 l/min @ 60 Hz 30 l/min @ 50 Hz
Maximum Vacuum	0.6 torr (0.75 mbar)
Dimensions (W x D x H)	8 x 15 x 18 (in), 210 x 390 x 460 (mm)
Weight (kg)	22.5

Ordering Information

Cat No	Description	Voltage
OFP400-115	Oil free ETFE/PFA 4-headed diaphragm vacuum pump	115 V/50/60 Hz
OFP400-230	Oil free ETFE/PFA 4-headed vacuum pump	230 V/50/60 Hz

Accessories for SpeedVac Systems



Digital Vacuum Gauge



Deluxe Convenience Cart



Freeze Drying Chamber



CryoCool® Heat Transfer Fluid



Vacuum Pump Lubricating Oil



Vacuum Pump Oil Filter

Ordering Information

Cat No	Description
DVG50-230	Digital vacuum gauge, complete with pressure transducer, 230 V/50/60 Hz
DVG50-115	Digital vacuum gauge, complete with pressure transducer, 115 V/50/60 Hz
CC120/DX	Deluxe convenience cart
FDC206	Freeze drying chamber, 6 ports
SCC1	CryoCool heat transfer fluid, 1 liter
SCC5	CryoCool heat transfer fluid, 5 liters
SP01-B	Vacuum pump lubricating oil, 1 liter
SP01	Vacuum pump lubricating oil, 1 liter, case of 12
SP01-SB	Vacuum pump lubricating oil, synthetic, 1 liter
SP01-S	Vacuum pump lubricating oil, synthetic, 1 liter, case of 12
SFF1-B	Vacuum pump flushing fluid, 1 liter
SFF1	Vacuum pump flushing fluid, 1 liter, case of 12
VPOF110	Vacuum pump oil filter for models VLP80, VLP120, VLP200 and VLP285
AO310	Activated alumina cartridge for VPOF100 and VPOF110
MF190	Mist filter replacement cartridge for OME190 oil mist eliminator

Chemical Trap Kits

A chemical trap is highly recommended to absorb residual volatile vapors that may bypass the primary cold trap. Chemical trap kits are designed to efficiently and easily trap vapors and reduce emissions. Replaceable cartridges install easily inside the trap for quick changes once the trap becomes saturated. Dry chemical traps (SCT120 and cartridge) are installed between the cold trap and the oil-filled high-vacuum pump to help prevent pump damage from contaminating solvent vapors. Solution-based traps (ANT100 plus solution) and dry chemical traps are used on the exhaust of oil-free pumps to reduce emissions.



Chemical trap kit DTK120R

Ordering Information

Cat No	Description
DTK120R	Chemical trap kit, for absorbing volatile radioactives, includes activated carbon cartridge and all the fittings
SCT120	Chemical trap (order DC120A or DC120R cartridges separately)
DC120A	Disposable cartridge, with color indicator for trapping acids and water vapor
DC120A/4	Disposable cartridge, with color indicator, for trapping acids and water vapor, package of 4
DC120R	Disposable activated charcoal cartridge, for trapping radioactivity
DC120R/4	Disposable activated charcoal cartridge, for trapping radioactivity, package of 4
ANT100	Ammonia neutralizing trap assembly for SPD1010, SPD2010, ISS110, UVS400A and UVS800DDA
ANS121/4	Ammonia neutralizing solution (4 bottles) for use with ANT100
NSA300TF/4	Acid neutralizing solution (4 bottles) for use with ANT400



Explorer

Explorer SpeedVac Concentrator



High capacity, bench top concentrator for production and development applications designed to withstand the rigors of the combi-chem environment.

Product Features

- High capacity – the standard 6-position rotor accommodates a large number of samples in a wide variety of formats
- Unique “clam-shell” design for easy, safe access to samples
- Dual cold trap options including the direct-drain configuration or use of the convenient glass flask which can be inserted into the trap
- High efficiency cold trap reduces drying times
- Constructed of highly chemically resistant materials such as TEFLON®, Kalrez®, high grade stainless steel and anodized aluminium able to withstand constant use with solvents such as TFA, HCl, DMSO, DCM, DMF and acetonitrile
- Oil-free, maintenance-free vacuum pump
- Easy-to-use, intuitive control panel
- IntelliTemp temperature monitoring and control
- Five pre-programmed vacuum ramps are available to minimize or prevent sample “bumping”
- Power operated lid for convenience and safety
- Control software for PC operation and data-logging

Advanced Controls for Enhanced Performance and Convenience

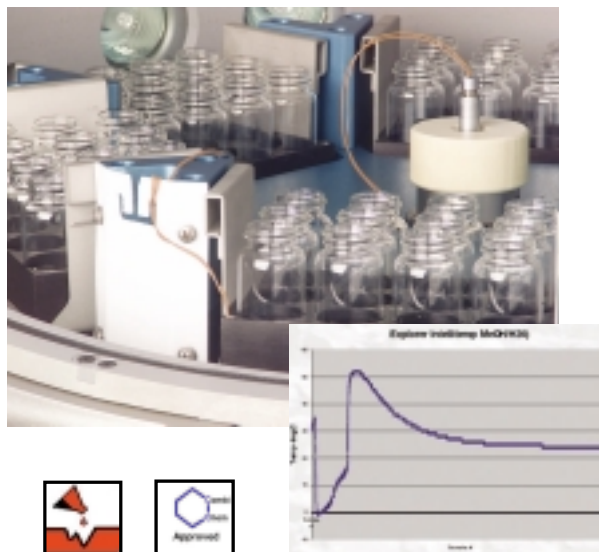
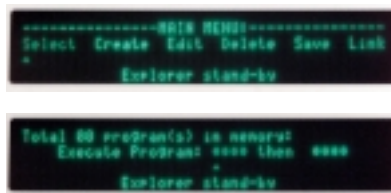
Frequently used protocols can be created to determine the primary controls which are:

- Vacuum level
- Temperature
- IntelliTemp
- Heat time
- Radiant lamp time
- Run time
- Vacuum ramp

These can be saved under a user defined alphanumeric file name and recalled at a later time for use. Additionally, two saved protocols can be linked and executed sequentially. This is particularly useful to maximize evaporation rates of solvent mixtures, where each is optimally evaporated under different conditions.

IntelliTemp Temperature Monitoring and Control

Accurate monitoring and control of the run by temperature is possible with the Explorer's IntelliTemp system. The IntelliTemp probe can be inserted directly into the sample or used to monitor the block or carrier temperature. The "Auto-Dry" function automatically ends the run when a pre-set temperature is reached.



Specifications

Model	Explorer
Adjustable Temp Range	35 to 85°C
IR Lamps	4 (ON/OFF/Timed)
Vacuum Pump Capacity	36 l/min @ 60 Hz; 32 l/min @ 50 Hz
Vacuum Display	Atmosphere – 500 mtorr
Adjustable Vacuum Setting	200 –0.7 torr, max
Adjustable Vacuum Ramp	1 to 4, OFF, custom
Display	Real-time LED display of parameters
User Program Controls	Store (Name), Link, Edit, Recall
Rotor	6-position microplate rotor with IntelliTemp (your choice of single, double or 5-place plate carriers)
Dimensions H x W x D	25.0 x 35.5 x 25.6 (in), 635 x 902 x 651 (mm)
Additional Required Ventilation Space	4" on each side

Ordering Information Explorer

Model	Description	Voltage
EXPLORER-220*	Explorer SpeedVac Vacuum Concentrator, complete with 6-position rotor,	220 V/60 Hz
EXPLORER-230	(1) glass flask and exhaust recovery vessel	230 V/50 Hz

* Cryocool not included

