

TurboVap[®]

Second Generation Solvent Evaporators



We've Listened – Here it Is

TurboVap® is a second generation product which builds on the solid foundations of the historic TurboVap product line and incorporates many new customer-driven features. It still features the highly efficient patented gas vortex shearing technology, which is synonymous with the TurboVap brand.



The patented gas vortex shearing technology is what makes TurboVap® evaporators so effective.

New Customer-driven Features

The new TurboVap® is designed around a common chassis with interchangeable accessories, allowing users to switch quickly between configurations for a wide range of sample sizes and applications. The TurboVap® EH setup allows seamless use of Extrahera sample/collection racks in the new system.

Notable enhancements include a well-lit glass tank for much greater visibility, removable/replaceable nozzles on the lid, on-the-fly nozzle adjustment, easily exchangeable manifolds to extend functionality, programmable evaporation flow gradients, easy access drain port and user friendly touch screen interface. The system can be vented from the bench or placed in a fume hood. Because the footprint is noticeably smaller on the modern unit, less space is required.

Flexible Rack System

A novel and innovative feature of the new TurboVap family is the Multi Rack that can be fully adjusted for a range of tube and vial sizes. By using the series of Multi Racks, TurboVap LV will accommodate tube and vial sizes from 1.5 mL up to 60 mL. Two versions of the 48 position rack are available to accommodate most common glassware sizes. When used in the 24 position mode, the 24 position Multi Rack will accommodate 24 x I-Chem/ASE/EPA vials or 24 x 50 mL centrifuge tubes/ Greiner. TurboVap II accommodates both 50 mL and 200 mL end point sensor tubes using two separate racks.



The flexible Multi Racks allow evaporation of samples in virtually any tube size. See page 6-7.



Biotage Evaporation System Selection Guide

TurboVap® II



TurboVap® LV



TurboVap® EH



Part Number	415001	415000	415540
Vial Capacity	6	24 or 48	2 x 24
Sample Volume	50 or 200 mL	1.5–60 mL	All 75 mm Extrahera Collection tubes
End-point Detection	0.5 or 1.0 mL	N/A	N/A
Key Applications	Food, water, soil and environmental solvent extraction.	Forensic, clinical chemistry, food, and pharmaceutical laboratories for concentration of solvents following SPE cleanup of drug samples or pesticide extracts.	Evaporation of samples processed on Biotage® Extrahera™



TurboVap®

One Platform, Three Systems

TurboVap® LV

Evaporation of up to 48 samples with independent control of flow in each row. Can be used in either 24 or 48 position mode. Compatible with tube sizes ranging from 10 to 30 mm (outer diameter) and from 32 up to 165 mm in length.

Read More

■ TurboVap® LV Product Note (PPS440) 



TurboVap® II

Evaporates six 50 or 200 mL samples with independent vial control. Automatic sensors detect when the solvent reaches the end-point volume and automatically stop the evaporation.

Read More

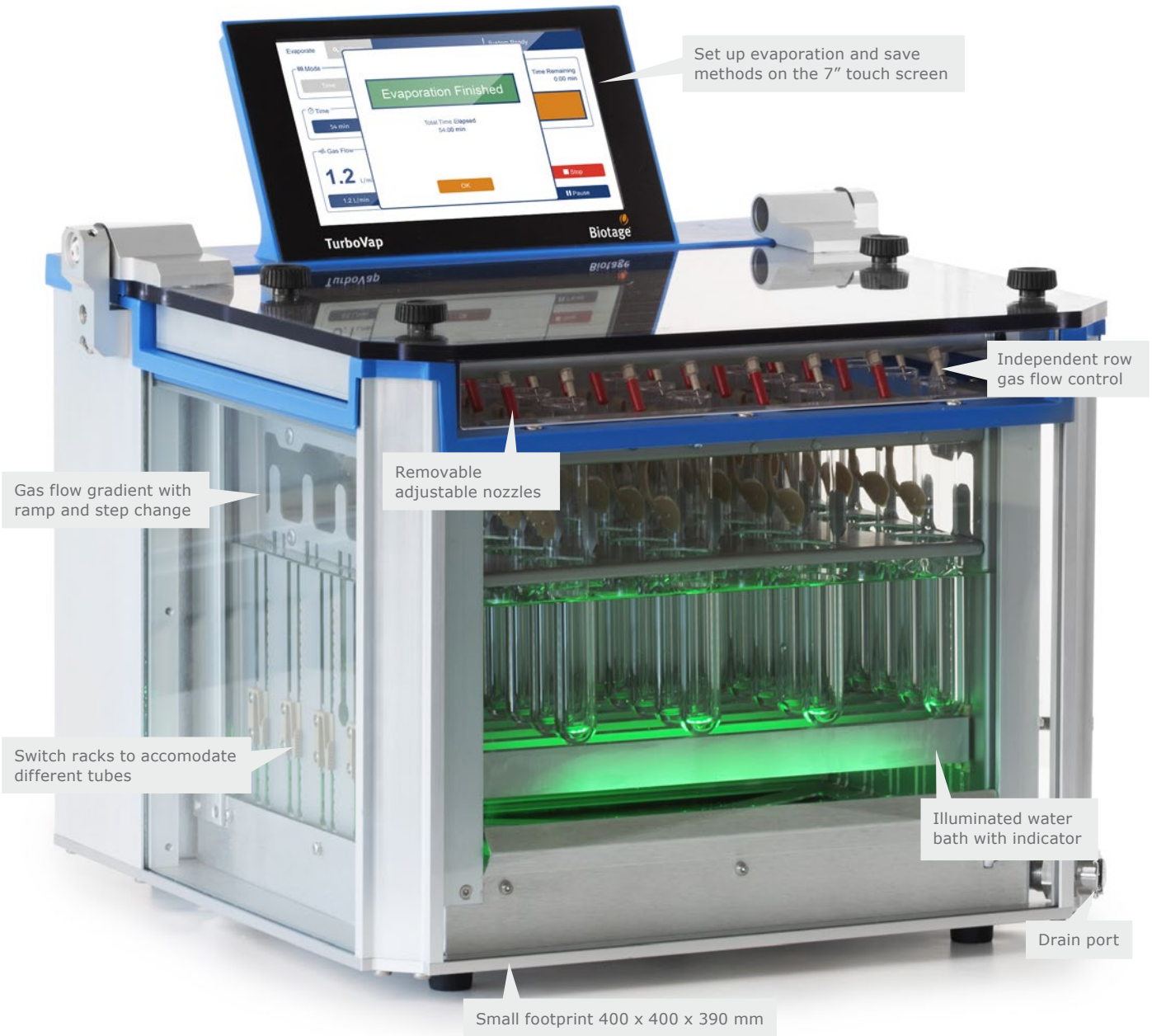
■ TurboVap® II Product Note (PPS442) 



TurboVap® EH

Jump seamlessly from Biotage® Extrahera™ to TurboVap® EH without moving tubes from one rack to another. TurboVap® EH takes 48 samples up to 18 x 75 mm.





Configurations

Multi Racks

Gas Manifolds

TurboVap® LV



48-position rack for 10–16 mm mini vials, PN **415489**.
48-position rack for 10–20 mm vials, PN **414964**.
24-position rack for 21–30 mm vials, PN **415129**.



48-nozzle manifold, PN **415408**.
Block nozzles with caps for use with the 24-position rack.

TurboVap® II

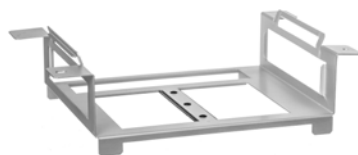


6-position rack with end-point sensors for 200 mL tubes, PN **415100**.
6-position rack with end-point sensors for 50 mL tubes, PN **415535**.
6-position rack for 50 or 200 mL tubes, PN **415494**.



6-nozzle manifold, PN **415222**.

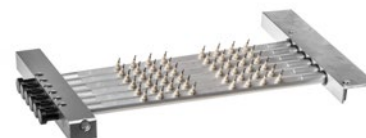
TurboVap® EH



Rack holder for two sample/collection tube racks, PN **415510**.



24-position sample/collection racks for 12 mm tubes, PN **415491**.
24-position sample/collection racks for 16 mm tubes, PN **415585**.
24-position sample/collection racks for 18 mm tubes, PN **415492**.

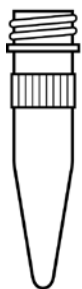


2x24-position manifold, PN **415490**.

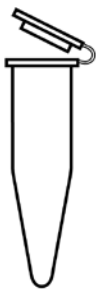
Tube and Rack Compatibility

Test Tube	Biotope Tube P/N	Matching TurboVap® II Rack	Matching TurboVap® LV Rack	Matching TurboVap® EH Rack
Evaporation Tube TurboVap II, 50 mL 0.5 mL End Point	C128508	415535		
Evaporation Tube TurboVap II, 50 mL 1 mL End Point	C128511	415535		
Evaporation Tube TurboVap II, 50 mL Centrifuge	C128512	415535		
Evaporation Tube TurboVap II, 200 mL 0.5 mL End Point	C128507	415100		
Evaporation Tube TurboVap II, 200 mL 1 mL End Point	C128506	415100		
Test Tubes 10 x 75 mm	C48985		414964	
Test Tubes 12 x 75 mm	C44651		414964	415510 in combo with 415491
Test Tubes 13 x 100 mm	C40707		414964	
Test Tubes 16 x 75 mm	413282		414964 415129	415510 in combo with 415585
Test Tubes 16 x 100 mm	C40708		414964 415129	
Test Tubes 16 x 125 mm	C45273		414964 415129	
Test Tubes 18 x 75 mm	414574		414964 415129	415510 in combo with 415492
Test Tubes 18 x 150 mm	N/A		414964 415129	
Test Tubes 20 x 150 mm	C40709		414964 415129	
Test Tubes 25 x 150 mm	N/A		415129	
Test Tubes 15 mL Conical	C44941		414964 415129	
Test Tubes 10 mL Conical	C47811		414964 415129	
Test Tubes 15 mL Conical	C47816		415129	
IChem/ASE/EPA Vials 40 mL (28 x 98 mm)	415148		415129	
50 mL centrifuge tubes or Greiner	N/A		415129	
GC/LC autosampler vials 12 x 32 mm	N/A		415489	
Screw and crimp cap vials 4 mL 15 x 45 mm	N/A		415489	
Flip cap microcentrifuge tubes 1.5 mL 42 x 11 mm	N/A		415489	
Flip cap microcentrifuge tubes 2.0 mL 42 x 11 mm	N/A		415489	
Screw cap microcentrifuge tubes 1.5 mL 46 x 11 mm	N/A		415489	
Screw cap microcentrifuge tubes 2.0 mL 46 x 11 mm	N/A		415489	

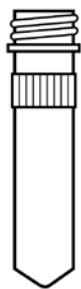
Tubes



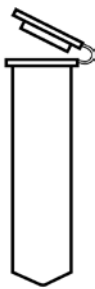
1.5 mL
Screw Cap
46 x 11 mm



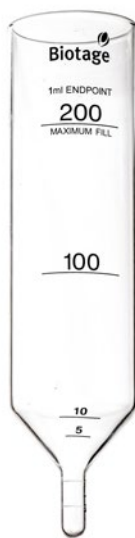
1.5 mL
Flip Cap
42 x 11 mm



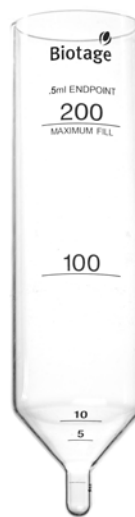
2 mL
Screw Cap
46 x 11 mm



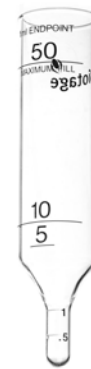
2 mL
Flip Cap
42 x 11 mm



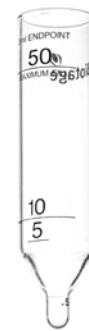
200 mL
1 mL endpoint
C128506



200 mL
0.5 mL endpoint
C128507



50 mL
1 mL endpoint
C128511



50 mL
0.5 mL endpoint
C128508



20 x 150
C40709



16 x 125
C45273



16 x 100
C40708



13 x 100
C40707



12 x 75
C44651



10 x 75 (mm)
C48985

Technical Specifications

Evaporation

Gas Supply	The system should operate using inert gas. Compressed air can be used but is not recommended with some solvents due to the possible risk of explosion.
Gas Connection	The gas inlet tube supplied with the system has a 6 mm outer diameter. The system is also shipped with two connectors for conversion to 1/4" or 3/8" outer diameter.
Gas Regulator	Not included. Available separately as an optional accessory (P/N 352281SP Pressure Regulator, and P/N 353480SP Supply Connection Set).
Pressure Required for Full Capability	6 bar (0.6 MPa, 87 PSI)
Maximum Pressure	9 bar (0.9 MPa, 130 PSI)
Water Temperature Range	Ambient to 90 °C
Heating Duration	40 min. (from 20 °C to 55 °C)
Max Gas Flow	» 48 positions: 3.5 litres/min » 24 positions: 5.5 litres/min » 6 positions: 7 litres/min
Solvent Compatibility	» Acetone » Acetonitrile » Chloroform » Dichloromethane » Diethyl ether » Dimethylformamide » Dimethylsulfoxide » Ethanol » Ethyl acetate » Heptane » Hexane » Isooctane » Isopropanol » Methanol » Methyl tert-butyl ether » Pentane » Tetrahydrofuran » Toluene » Water
Chemical Resistance	» Acetic acid 10% » Ammonium hydroxide 10% » Formic acid 5% » Phosphoric acid 5% » Propionic acid 10% » Trichloroacetic acid 5% » Triethylamine 10% » Trifluoroacetic acid 5%

Compatible Racks and Tube Sizes

TurboVap LV	» 48 positions for 10–16 mm (OD) x <45 mm (length) mini vials » 48 positions for 10–20 mm (OD) x 75–165 mm (length) tubes » 24 positions for 12–30 mm (OD) x 75–165 mm (length) tubes
TurboVap II	6 positions for 50 and 200 mL evaporation tubes with 0.5 and 1 mL end-point
TurboVap EH	» 24 Positions, 12 x 75 mm tubes » 24 Positions, 16 x 75 mm tubes » 24 Positions, 18 x 75 mm tubes

Interfaces

Touch Screen	7 inch touch screen
Auxiliary	Connection for end-point detection

System

Fume Hood/Ventilation	The system must be either connected to a ventilation system using the exhaust outlet at the rear of the system or placed in a well-ventilated fume hood or an equivalent enclosure to reduce the risk of exposure to harmful solvent vapours. The ventilation system or fume hood must be capable of exhausting 1 m ³ /min (35.3 ft ³ /min).
Connection	The exhaust hose supplied with the system is 3.8 meters (12.5 feet) and has a 50.8 mm (2") inner diameter.
Operating Temperature	18 °C to 32 °C
Storage Temperature	-25 °C to 60 °C
Humidity	20% to 90% RH (non-condensing)
Electrical Supply	100–127 V and 220–240 V at 50/60 Hz
Fuses	F10 A at the power inlet (1 required)
Max Power Consumption	1000 VA
Weight	17 kg (37.5 lbs) when the water bath is empty and maximum 29 kg (63.9 lbs) with deionized water, rack, and tubes.
Dimensions (W X D X H)	400 x 400 x 390 mm (15.7" x 15.7" x 15.4") including the hinges at the side and exhaust at the rear. The height with the lid open is 590 mm (23.2").
Max Sound Level	75 dB(A)
Certifications	CE marked and CB and NRTL certified

Ordering Information

Part Number	Description
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Base Systems

415000	TurboVap LV (includes 415408 manifold, but no rack)
415001	TurboVap II (includes 415222 manifold, but no rack)
415540	TurboVap EH (includes 415490 manifold, but no rack)

TurboVap® LV Configuration

415408	TurboVap LV Manifold (48 Nozzles)
415489	TurboVap LV Multi Rack (48 Positions, 10-16 mm Mini Vials)
414964	TurboVap LV Multi Rack (48 Positions, 10-20 mm Tubes)
415129	TurboVap LV Multi Rack (24 Positions, 21-30 mm Tubes)

TurboVap® II Configuration

415222	TurboVap II Manifold (6 Nozzles)
415100	TurboVap II Rack with End-Point Sensors (6 Positions, 200 mL Tubes)
415535	TurboVap II Rack with End-Point Sensors (6 Positions, 50 mL Tubes)
415494	TurboVap II Multi Rack without End-Point Sensors (6 Positions, 50/200 mL Tubes)

TurboVap® EH Configuration

415490	TurboVap EH Manifold (2 x 24 Nozzles)
415510	TurboVap EH Sample/Collection Rack Holder (2 Positions)
415491	Sample/Collection Rack (24 Positions, 12 x 75 mm Tubes)
415585	Sample/Collection Rack (24 Positions, 16 x 75 mm Tubes)
415492	Sample/Collection Rack (24 Positions, 18 x 75 mm Tubes)

Part Number	Description
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Tubes and Caps

C48985	10 x 75 mm Test Tube 1000-pack
C44651	12 x 75 mm Test Tube 1000-pack
C40707	13 x 100 mm Test Tube 1000-pack
413282	16 x 75 mm Test Tube 1000-pack
C40708	16 x 100 mm Test Tube 1000-pack
C45273	16 x 125 mm Test Tube 1000-pack
414574	18 x 75 mm Test Tube 304-pack
C40709	20 x 150 mm Test Tube 500-pack
C47811	10 mL Conical Centrifuge Test Tube 125-pack
C44941	15 mL Conical Centrifuge Test Tube 125-pack
C47816	15 mL Volumetric Test Tube for AutoTrace 12-pack
C44942	Snap Caps for 15 mL Conical Centrifuge Test Tubes (Polypropylene) 500-pack
C128506	Evaporation Tube TurboVap II 200 mL, 1 mL End-Point 12-pack
C128507	Evaporation Tube TurboVap II 200 mL, 0.5 mL End-Point 12-pack
C128508	Evaporation Tube TurboVap II 50 mL, 0.5 mL End-Point 12-pack
C128511	Evaporation Tube TurboVap II 50 mL, 1 mL End-Point 12-pack
C128512	Evaporation Tube TurboVap II 50 mL, Centrifuge 12-pack

Spare Parts

414892SP	Replacement Nozzle for TurboVap 8-pack
C46811	Nozzle Plug for TurboVap 25-pack
415231SP	Multi Rack Vial Spring 10-pack
415232SP	Multi Rack Height Adjustment Handles (Pair)
415229SP	Replacement End-Point Sensor for TurboVap II
415656SP	Aqua Stabil, 100 mL
C43067	Venting Hose 50.8 mm (2") ID, 3.8 meters (12.5 feet) long
414742SP	Fuse, 10AF/250VAC Fast, 6.3 x 32 mm
415814SP	Air/N ₂ Inlet Tubing, 6 mm OD
352281SP	Pressure Regulator
353480SP	Supply Connection Set



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