

DryVap™
Concentrator System



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A Revolutionary High Performance Solvent Concentrator System

 **Horizon**
technology



FULLY AUTOMATED DryVap™ CONCENTRATOR

**Are high demands
placed on your
laboratory to increase
sample throughput,
shorten sample turn-
around times, achieve
reproducible results,
and provide lower
detection limits?**

For environmental applications the Horizon Technology DryVap™ Concentrator System is designed to automatically remove water and concentrate samples through evaporation of the extraction solvent, for GC, GC/MS, and HPLC/MS analysis.

For biopharmaceutical, pharmaceutical and other applications the Horizon Technology DryVap™ Concentrator System removes residual solvents from your sample in far less time than traditional evaporation methods. The precise application of vacuum, heat and nitrogen sparge, allows gentle and predictable evaporation of all residual solvent from your sample, so you can quickly move on to the next step.

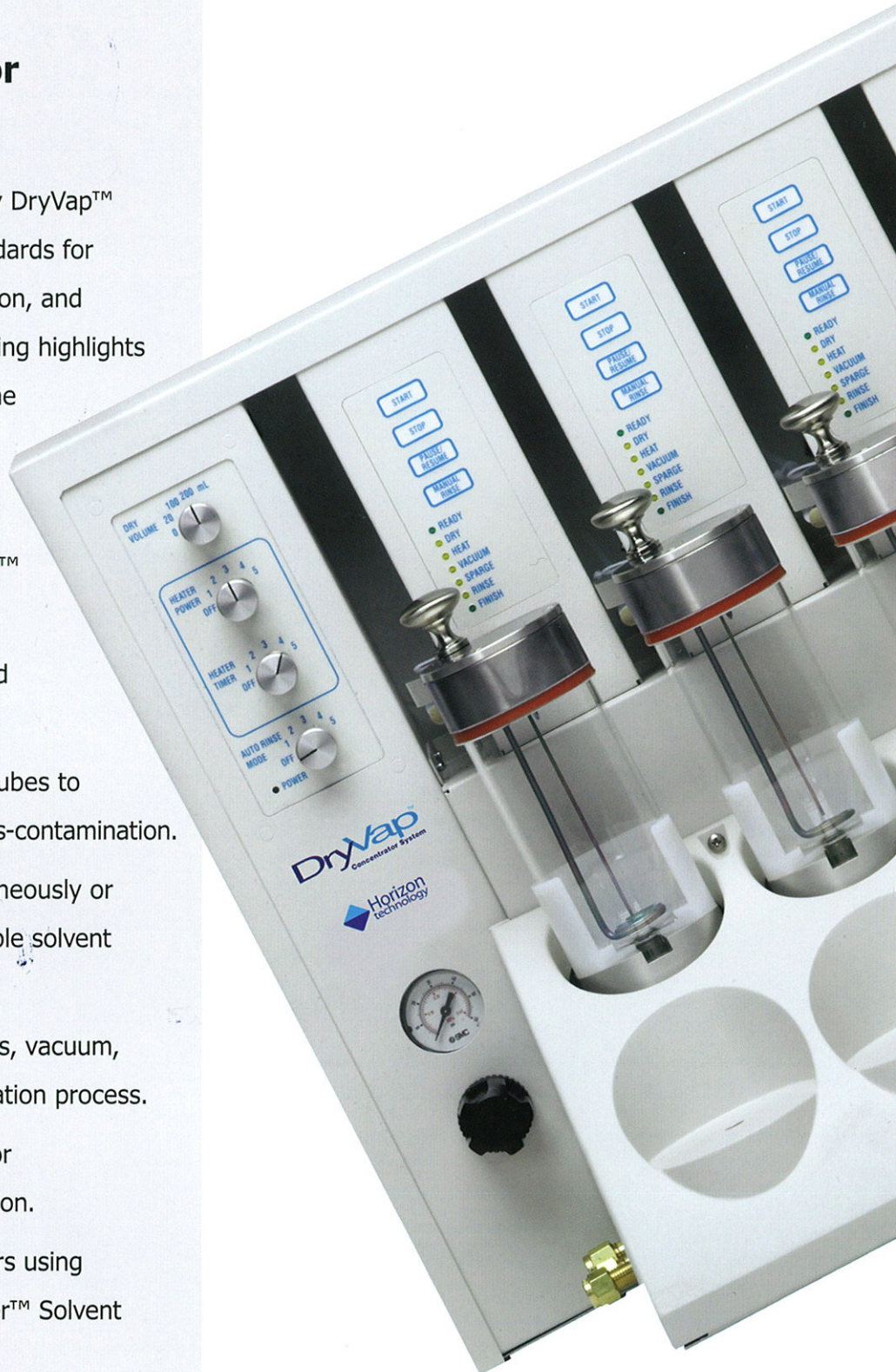
Samples are automatically dried of any residual water using Horizon Technology DryDisk™ Separation Membranes, and then concentrated to volume using a combination of heat, vacuum, and sparge gas. Designed to emulate the traditional Kuderna Danish (KD) method, the DryVap™ Concentrator System combines what were once manual steps into one automated process.

The first fully automated system

DryVap™ Concentrator System – Hardware

The easy-to-use Horizon Technology DryVap™ Concentrator System sets new standards for rapid sample drying and concentration, and reproducibility of results. The following highlights some of the unique capabilities of the DryVap™ Concentrator System.

- Automatic in-line solvent drying with Horizon Technology DryDisk™ Separation Membranes.
- Automatic endpoint detection and shut-off.
- Individually sealed evaporation tubes to prevent loss of analytes and cross-contamination.
- Six (6) samples handled, simultaneously or individually, with four (4) selectable solvent dry times.
- Unique combination of sparge gas, vacuum, and heat to control the concentration process.
- Master control panel with logic for independent control of each station.
- Solvent recovery of solvent vapors using the Horizon Technology Reclaimer™ Solvent Recovery System.
- A variety of evaporation tubes available.



to combine sample drying and rapid

Evaporation Tubes

- Direct to GC Vial 200 mL Evaporation Tube.
- 200 mL Evaporation Tube with:
 - 1 mL tip and an optical endpoint at 1 mL for sample concentration.
 - 1 mL tip and an optical endpoint at 0.9 mL.
 - 0.5 mL tip and an optical endpoint at 0.5 mL.
 - 0.5 mL tip and an optical endpoint at 0.4 mL.
- 200 mL Evaporation Tube with solid tip for compound drying or for > 1 mL endpoints.



Direct to
CG Vial

Multiple Size
Optical Endpoint



Solid Tip

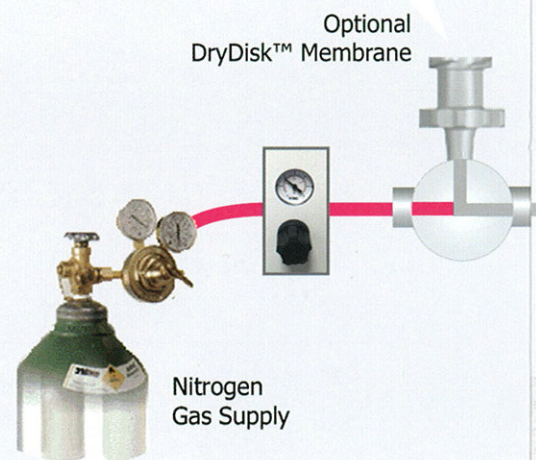
DryDisk™ Separation Membrane

The DryVap™ System is the first system to incorporate in-line sample drying.

Utilizing Horizon Technology's patented DryDisk™ Separation Membrane technology, the operator can rapidly dry a liquid sample "in-line" by simply utilizing the built-in port for each evaporation tube. Available in a 60 mL DryDisk tube, and a 200 mL DryDisk holder.

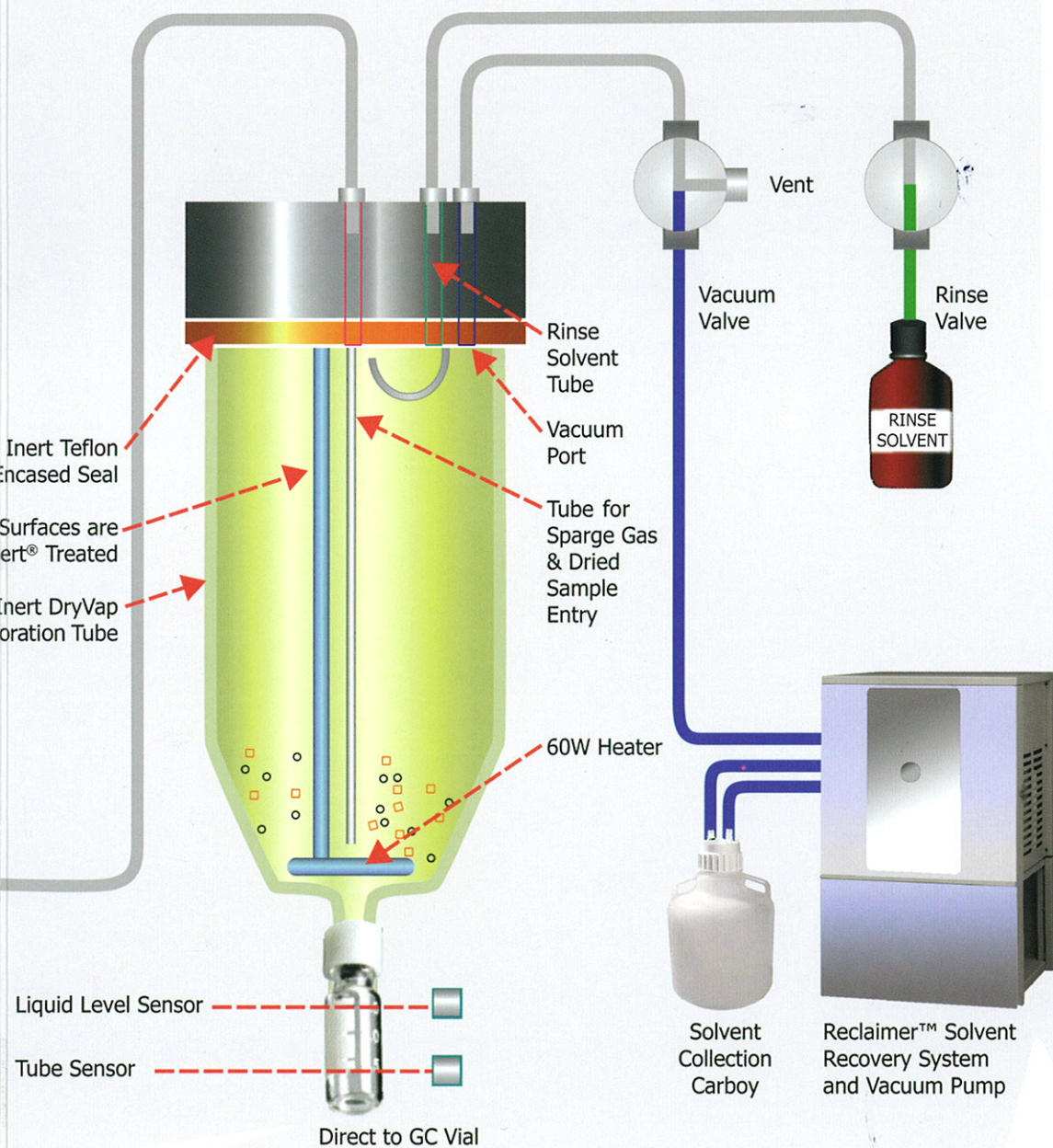


Residual water
from sample using
the DryDisk™
Separation Membrane.



Once the evaporation has begun, an internal thermocouple senses when the solvent level approaches the top of the heater, and will immerse the heater. Further concentration to an endpoint volume or to total dryness is accomplished by sparging, using a gentle nitrogen flow. Because each tube is individually sealed, blanketed with inert gas, and no heat is being applied to the evaporation vessel, the sample remains stable for a considerable period, without any loss of analyte. This unique combination of features ensures exceptional speed while maintaining results.

sample evaporation by combining



- Rapid evaporation of sample.
- Automatic end point detection.
- The condensation cloud improves the recoveries of the more volatile compounds.
- Tight seal on vessel. No loss of analytes or cross-contamination.



automatically turn off the
gas stream and vacuum.
The sample can remain in the vessel
for high and consistent

The Horizon Technology Reclaimer™ Solvent Recovery System condenses vapors generated by the DryVap™ Concentrator System back into liquid form, and captures them into a solvent resistant collection bottle.

vacuum, heat and sparge gas.

**Do you want
to protect the
environment
from harmful
solvent vapors?**



Reclaimer™ Solvent Recovery System

Designed specifically to handle solvent vapors, the Horizon Technology Reclaimer™ Solvent Recovery System operates at -18°C and when concentrating 1,200 mL of solvent from the DryVap™ Concentrator System, is capable of condensing and capturing up to 95% of the solvent vapor. The Reclaimer™ Solvent Recovery System is designed to reach optimal condensing efficiency to help laboratories meet regulatory requirements for solvent vapor emission.

DryVap™ Concentrator System – Software

- Microsoft Windows-based, user-friendly interface for controlling and monitoring the DryVap™ Concentrator System.
- Every parameter can be modified and saved as a method.
- Connects to a standard PC.
- Files can be downloaded to other PCs for method transfer.

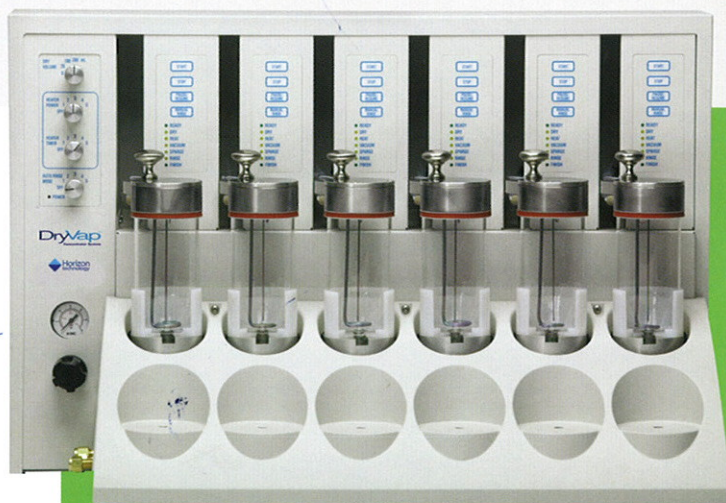


HIGH PERFORMANCE SYSTEM

The superior analyte recovery rate achieved by the DryVap™ Concentrator System delivers more accurate results with greater consistency than previous techniques. Unattended operation not only frees up laboratory personnel for other tasks, it also eliminates variability between chemists' techniques. When equipped with the DryDisk™ Separation Membrane, the DryVap™ Concentrator System can dry and concentrate most samples in under 30 minutes.

The Reclaimer™ Solvent Recovery System is designed to condense and collect solvent vapors which are generated by the DryVap® Concentrator System. Using a vacuum pump, the solvent vapors are pulled through a cold condenser coil, where the solvent vapors are chilled and converted back into a liquid form. The solvent then flows by vacuum and gravity into a plastic, solvent resistant collection bottle.

Every parameter in the DryVap™ Concentrator System can be optimized and saved as a method with the DryVap Control software. This gives you the ability to consistently and precisely remove residual solvent from your samples run after run, increase the productivity of your lab, and improve the quality and consistency of your data.



**Horizon Technology
understands the
challenges today's
laboratories face.**

**The automated
concentration systems
we develop and
manufacture, help
laboratory managers
meet their
business objectives.**

TECHNICAL SPECIFICATIONS

Utility Requirements	Vacuum: an inert pump and regulator to maintain 1 SCFM at 15" Hg. Spurge gas: Nitrogen or other inert gas at 60 psi. Rinse solvent: Optional rinse solvent.
Environmental	Operating Temperature: 20 to 40 degrees C Storage Temperature: 10 to 50 degrees C Relative Humidity: 0 to 90% (non condensing) Altitude: 7,500 feet
Wetted Materials and Construction:	Metals: 300 series stainless steel coated with Sulfinert®, Plastics, Polymers, Composites Sample in contact with: PTFE (Teflon), PFA (Teflon), ETFE (Tefzel), UHMWPE (ultra high molecular weight polyethylene) Waste in contact with: FEP tubing Glass: Borosilicate glass
Physical Properties	Maximum size (inches) – 27 5/8" wide x 18 3/4" high x 17 1/4" deep (excluding open doors and external plumbing and accessories, i.e. power cord) Weight (lbs) – 82 lbs
Electrical Properties	Power Consumption: 340 VA (at 120V and at 220V) Input Voltage: 120-240 VAC , 47 – 63 Hz Fuse: 5 AMP MAXIMUM (1 Fuse, US .25" X 1.25") (2 Fuses, Europe 5mm x 20 mm) Fuse Type: 250V, 5A, SLO BLO
International Safety	CE, TUV, RoHS
Solvent Compatibility	Acceptable solvents: acetone, acetonitrile, ethyl acetate, hexane, methanol, methylene chloride, MTBE, and petroleum ether.

LOCATIONS

UNITED STATES & CANADA

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United Kingdom, Spain, Germany,
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The Netherlands, Belgium, Italy

ASIA PACIFIC

Australia, New Zealand,
China, India, Korea, Taiwan

MEDITERRANEAN

Israel