

Nitrogen Evaporator Comparison

Organamation MICROVAP vs. Porvair UltraVap



	Organamation MICROVAP	Porvair UltraVap
Price Range	\$1k - \$5k	\$13k - \$23k
Sample Capacity	6, 15, or 24 tubes 1 or 3 microplates	12, 24, or 48 test tubes 1 or 2 microplates
Flexibility	Conversion kits to switch between tubes & plates	Ability to switch manifolds for tubes & plates
Gas Flow Control	Independent gas control to each plate (for triple microplate model)	Independent gas control to each plate (for dual microplate model)
Nitrogen Consumption	2-8 L/min for test tube models 25-75 L/min for microplate models	60-90 L/min per manifold
Temperature Range	Ambient – 130 °C 40 °C – 130 °C for triple microplate model	Up to 60 °C or 80 °C depending on model
Safe With Corrosive Solvents?	Yes (rated for use with up to 3M HCl)	No, not for use with corrosive solvents
Safe With Explosive Solvents?	Yes	Yes
Placement	In fume hood	In fume hood or attached to ventilation system
Warranty	2 years	1 year

The MICROVAP and UltraVap are both highly popular nitrogen evaporators that are designed to dry down test samples in both microplates and test tubes. Now that you've compared their main specifications, let's get into when each evaporator would be preferred.

Price - **MICROVAP**

For labs that have a limited budget such as start-ups or academic labs who are restricted by grant funding, the MICROVAP provides a much more affordable option than the UltraVap. Heated MICROVAP models start at around \$3k, but unheated models are also available for much less. Even the highest capacity MICROVAP with additional features is **less than half the price** of the base model UltraVap. The simplicity of Organamation's units allow the cost of both the unit itself and the overall maintenance to remain low.

Capacity - **UltraVap**

For high throughput laboratories, the large capacity UltraVaps will be the better suited solution. The UltraVaps allow you to evaporate up to 48 test tubes at once per manifold, whereas the MICROVAP can only hold up to 24. The UltraVap can also accommodate 384 well microplates, while the MICROVAP can only accommodate 96 well plates.



Temperature - **MICROVAP**

When working with solvents that have a boiling point above 80 °C such as heptane, acetonitrile, or toluene, the MICROVAP will be a more suitable option as it can reach much higher temperatures, promoting faster evaporation rates. The MICROVAPs utilize a solid aluminum heat block which allows the bath temperature to reach up to 130 °C.

Digital Features - UltraVap

Unlike the MICROVAP which has button-interfaced controls, the Mistral and Levante UltraVaps include a digital touch screen where you can control the heat and gas flow. The digital system allows you to save preferences and methods in the system for future use. Although entirely preference-based, the touch screen feature can provide a more modern approach to the evaporation process.



Corrosive Solvents - MICROVAP

All MICROVAP units have an acid resistant version coated with PTFE to prevent corrosion from strong acids, bases, or otherwise corrosive solvents. If you'll be working with solvents such as hydrochloric acid, formic acid, or tetrahydrofuran, the PTFE-coated N-EVAP will provide a longer-lasting solution than the UltraVaps, which are not suitable for use with corrosive solvents.

Automation - UltraVap

For labs that require a more hands-off evaporation experience, the UltraVap Mistral or Levante will be better solutions than the MICROVAP. Saved methods can be programmed to precisely move the samples closer to the gas delivery needles as the solvent level goes down. These UltraVap models are also equipped with an RS232 connection allowing it to be connected to a robot liquid handling station. This is a great option for labs who are looking to completely automate their sample dry downs.

Nitrogen Consumption - MICROVAP

The MICROVAP requires much less nitrogen flow than the UltraVap making it the better option for labs who are looking to conserve their gas consumption. For comparison, the single plate UltraVaps require 60-90 L/min of nitrogen while the single plate MICROVAPs only require up to 25 L/min. Whether you're using nitrogen tanks or producing your own nitrogen with a generator, the minimal gas usage of the N-EVAP provides a much more affordable and economical option.



Limited Fume Hood Space - UltraVap

The UltraVap Mistral and Levante models have the option to either be used within a fume hood, or to be connected to a ventilation system using an exhaust outlet on the top of the unit. If your lab has limited fume hood space or even no fume hood at all, the UltraVap allows you to use it on just a regular benchtop workspace.

The general recommendation is to always use the MICROVAP within a fume hood, however a portable fume extractor can also be used in instances where that's not possible.



Simplicity - MICROVAP

For labs that are just looking for a simple, plug-and-play solution, the MICROVAP is the best option for you. The MICROVAP is designed to be easy to use, even for those with little to no experience with nitrogen evaporators. It has only the basic controls you need without all the fancy automation features. Its simple yet rugged design allows there to be very minimal maintenance costs, and is proven to last upwards of 20-30 years.



Remote Access - UltraVap

The Mistral and Levante UltraVap models use the latest CAN BUS interface technology, allowing them to be controlled remotely through a network. This interface also allows any number of evaporator units to be connected together in series, setting one as the “master” and others as “slave” units.

In Summary

MICROVAP

- More affordable
- Higher temperature range
- Less prone to solvent corrosion
- Less nitrogen needed
- Simple design for easy use

UltraVap

- Higher capacity
- More digital features
- More automated system
- Can be used outside the fume hood
- Allows for remote access