Nitrogen Evaporator Comparison
Organomation MULTIVAP vs. Biotage TurboVap

	Organomation MULTIVAP (dry bath models only)	Biotage TurboVap LV
Price Range	**$3k - $7k**	**$11k - $14k**
Sample Capacity	30, 48, or 80 samples	24 or 48 samples
Flexibility	Can hold one tube size per block	Can hold a range of tube sizes per rack, but only one at a time
Gas Flow Control	Independent gas control to each row	Independent gas control to each row
Nitrogen Consumption	26 L/min	160 L/min
Temperature Range	30 °C - 120 °C	Ambient to 90 °C
Safe With Corrosive Solvents?	Yes *(rated for use with up to 3M HCl)*	Yes *(rated for use with up to 0.1M HCl)*
Safe With Explosive Solvents?	Yes	Yes
Placement	In fume hood	In fume hood or attached to ventilation system
Warranty	1 year	1 year

The MULTIVAP and TurboVap are both highly popular nitrogen evaporators that are designed to concentrate down batches of test samples prior to analysis. Now that you've compared their main specifications, let's get into when each evaporator would be preferred.

Price - MULTIVAP

For labs that have a limited budget such as start-ups or academic labs who are restricted by grant funding, the MULTIVAP provides a much more affordable option than the TurboVap. Dry bath MULTIVAP models start at around $6k, but unheated models are also available for half that price. Even the highest capacity MULTIVAP with additional features is less than the base model TurboVap. The simplicity of Organomation's units allow the cost of both the unit itself and the overall maintenance to remain low.

Digital Features - TurboVap

Unlike the MULTIVAP which has a button-interfaced control box, the TurboVap includes 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 - MULTIVAP

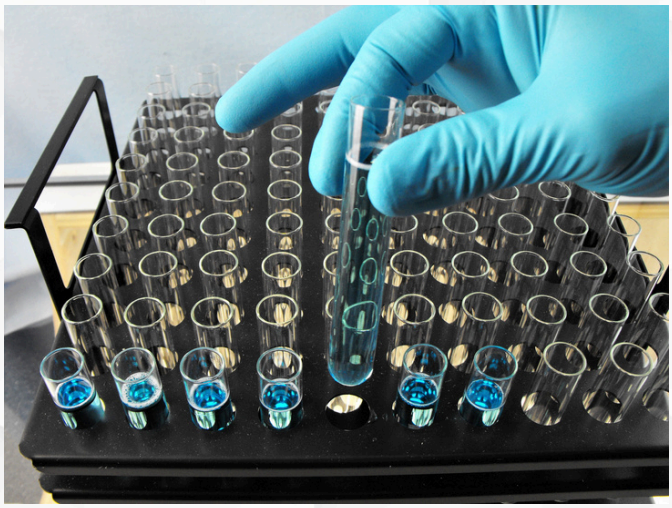
Although both units have an acid resistant version to prevent corrosion, the MULTIVAP is rated for a higher concentration of strong acids or bases such as hydrochloric acid, formic acid, or tetrahydrofuran. For comparison, the MULTIVAP is rated for concentrations of up to 3M of HCl while the TurboVap is only rated for concentrations of up to 0.1M HCl. If you'll be working with these types of corrosive solvents, the PTFE-coated MULTIVAP will provide a longer-lasting solution.

Test Tube Rack Flexibility - TurboVap

The TurboVap flexible sample racks are designed to hold a range of tube sizes to prevent a custom rack needed to be made, and to save storage space in your lab. The MULTIVAP heat blocks, on the other hand, include a set of inserts that are customized to fit just one sample size, requiring you to purchase additional inserts for each additional tube size used.

Capacity - MULTIVAP

For high throughput laboratories, the large capacity MULTIVAPs will be the better suited solution. The dry bath MULTIVAPs allow you to evaporate up to 80 samples at once, whereas the TurboVap can only hold up to 48. You may think that double the capacity means double the size, but the two units are actually quite similar. The footprint of the TurboVap is 15" x 15" while the MULTIVAP is ever so slightly smaller at 15" x 14".



Automation - TurboVap

For labs that require a more hands-off evaporation experience, the TurboVap will be the better solution. The TurboVap LV allows the gas flow to slowly increase throughout the evaporation cycle eliminating manual adjustments, and also includes an alarm that goes off once your samples have reached a specific volume.

The dry bath MULTIVAPs include a timer function that can shut the heat and gas flow off after a specified amount of time. Although it is not based on solvent volume, the timer can be just as useful once you're familiar with your evaporation rates.

Nitrogen Consumption - MULTIVAP

The MULTIVAP requires much less nitrogen flow than the TurboVap making it the better option for labs who are looking to conserve their gas consumption. For comparison, the 48 position TurboVap requires 160 L/min of nitrogen while the 48 position MULTIVAP only requires 16 L/min. Whether you're usingnitrogen tanks or producing your own nitrogen with a generator, the minimal gas usage of the MULTIVAP provides a much more affordable and economical option.

Tube Visibility - TurboVap

If it's important for you to keep an eye on your test tubes throughout the evaporation process, the TurboVap would be preferred. The TurboVap's water bath has a glass casing that allows your samples to remain visible as the solvent level goes down, which can be important when drying to a specific end-point or to complete dryness.

The dry bath MULTIVAP, on the other hand, has an aluminum heat block that holds your tubes, only allowing you to view your samples from the top.

Temperature - MULTIVAP

When working with solvents that have a boiling point above 90 °C such as heptane, pyridine, or toluene, the MULTIVAPs will be a more suitable option as they can promote faster evaporation rates. The dry bath MULTIVAPs utilize a solid aluminum heat block which allows the bath temperature to reach up to 120 °C.

Limited Fume Hood Space - TurboVap

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

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

In Summary

MULTIVAP

- More affordable
- Less prone to solvent corrosion
- Higher capacity
- Less nitrogen needed
- Higher temperature range

TurboVap

- More digital features
- Less test tube racks needed
- More automated system
- Easier tube visibility
- Can be used outside the fume hood