

# Large-scale Evaporators



By **ecodyst**

EVAPORATION

Teledyne LABS is proud to be a distributor of Ecodyst's complete line of evaporators and self-cooling condensers. Evaporation follows chromatography in the purification process, and this arrangement naturally flows from Teledyne LABS' expertise in flash and preparative chromatography and Ecodyst's groundbreaking developments in evaporator design and operation.

## Ecodyst has created a modern line of evaporators and concentrators.

Rotary evaporator technology hadn't evolved much over the past 50 years. Now, thanks to Ecodyst, our evaporation solutions deliver a significant leap forward. We make something better, faster, greener, more economical. Our innovations include:

- Direct cooling of a metal condenser coil with refrigerant from the compressor, leading to pull-down times of just minutes while using far less electricity than a recirculating chiller and eliminating the need for dry ice, water or coolants.
- Replacing a rotating flask with a stationary flask that is stirred instead of rotated and directly heated, both features creating greater energy efficiency.
- Uninterrupted operation is now possible as the stationary evaporating flask can be filled via siphon feed valve and a drain on the evaporating flask conveniently allows collection of residual product – something traditional rotavaps can't do.
- Can be fully automated and incorporated into in-line processes like synthesis or extraction systems.
- Designed to handle an extremely wide range of solvents, including water and all common solvents used throughout industry.

By shifting paradigms and setting a new benchmark for solvent recovery, our groundbreaking technology is safer, easy to use and saves you time and money. We invite you to discover the solutions we offer to labs of all types and sizes.





### EcoChyll X3

Two sizes: 12L



### EcoChyll X5

Two sizes: 22L, 50L



### EcoChyll X7

Four sizes: 22L, 50L, 72L, 100L



### EcoChyll X9

200L

## EcoChyll® High Speed Evaporator System Recovery Rates

EcoChyll System	Recovery Rates (Liters/Hour)
12L EcoChyll X3	5-8
22L EcoChyll X5	8-12
50L EcoChyll X7	15-20
72L EcoChyll X7	25-35
100L EcoChyll X7	45-55
200L EcoChyll X9	80-120

\*Estimates are for ethanol; other solvents have different evaporation rates



## EcoChyll® X3 High Speed Evaporator

Available Sizes: 12 Liter

Engineered for high-speed solvent recovery and evaporation in small- to medium-sized laboratories, the EcoChyll X3 is our most robust medium-size cooling system. Based on the same pioneering technology as our disruptive EcoChyll range of evaporators, the EcoChyll X3 bridges the gap between small-footprint lab equipment and the fullscale, high-throughput alternatives. With a 12L size and compact form, it is the ideal supplement for rotary evaporators in the lab.

With twin metallic condenser coils, the EcoChyll X3 carries out continuous direct cooling of incoming vapors in an efficient and environmentally friendly manner. A key performance indicator of the entire range of EcoChyll lab equipment is the ability to free up operator time due to low intervention requirements.

The EcoChyll X3 enables scientists in smaller facilities to automate their processes, ultimately saving time and money without compromising the quality of results.

### EcoChyll X3: Key Advantages

- Best-in-class evaporation rates
- Continuous sample feed valve for uninterrupted operation
- Cost-effective by eliminating expensive rotary motor with overhead stirring
- Easy-to-use, with simple product drainage not requiring removal of large evaporation vessels
- Excellent energy efficiency



## EcoChyll® X5 High Speed Evaporator

Available Sizes: 22 & 50 Liters

Available Options: with Receiving Flask

Designed for budget-conscious users of evaporation lab equipment, the EcoChyll X5 is an extremely efficient alternative to existing evaporative technologies. Based on the same metallic condenser coil technology that elevates each instrument in the EcoChyll line, the EcoChyll X5 features a single coil in a robust, space-friendly unit. With a 22 or 50 liter capacity and a small footprint, it is a premium compromise between cost and convenience.

This high-value evaporation unit is a turnkey solution for solvent recovery. Built with pioneering smart-cooling technology, the EcoChyll X5 automates the vapor cooling process to free up user time for other operations.

### EcoChyll X5: Key Advantages

- Best-in-class evaporation rates
- Continuous sample feed valve for constant operation
- Cost-effective compromise for mid-volume extractions (22 or 50 Liter)
- Easy-to-use, with simple product drainage
- Exceptional energy efficiency
- Low cost of ownership—pays for itself within three years
- Stationary glassware for guaranteed safety





## EcoChyll® X7 High Speed Evaporator

Available Sizes: 22, 50, 72 & 100 Liters

Available Options: with Receiving Keg

Built for industrial-scale evaporation, the EcoChyll X7 high-speed evaporator from Ecodyst combines high loading capacities with rapid, continuous cooling for efficient and fast solvent recovery. Thanks to proprietary intelligent direct self-cooling condensers, the EcoChyll X7 high-cooling capacity and large surface-area condensers can reliably condense large volumes of solvents.

This industrial-scale rotary vacuum evaporator is a turnkey solvent recovery system trusted by chemists in both research and commercial laboratory settings. Based on innovative self-cooling technology, this smart system is both eco-friendly and efficient. The EcoChyll X7 continuous cooling solution is guaranteed to increase productivity for high-throughput solvent recovery and extraction applications, while keeping user safety and usability at the forefront of all applications.

### EcoChyll X7: Key Advantages

- Best-in-class evaporation rates
- Continuous sample inlet-feed valve for uninterrupted operation
- Cost-effective by eliminating expensive rotary motor with overhead stirring
- Easy-to-use, with simple product drainage not requiring removal of large evaporation vessels
- Excellent energy efficiency
- High-speed stirring for increased surface area and vapor generation
- System modularity for easy upgrades
- Safe operation, with all glassware remaining stationary throughout operation
- Twice the loading capacity of traditional rotavaps (<100 L)
- Chemical-resistant dual condenser with over 9,000 cm<sup>2</sup> cooling surface area



## EcoChyll® X9 High Speed Evaporator

Available Size: 200 Liters

Available Options: with Receiving Flask

With a true 200L capacity, the X9 has the highest capacity of any rotary-style evaporator in the world, capable of replacing 8 standard 50 liter rotary evaporators. Capable of evaporating up to 120 liters per hour of ethanol, it is also far faster than any rotary evaporator. While evaporating at a rate as fast as eight 50L rotary evaporator setups from other leading brands, it costs less than two. Operating costs are also far lower due to the EcoChyll's energy efficient design, lower manpower requirement, and elimination of the need for glycol or other refrigerant.

The EcoChyll X9 large capacity evaporation unit is a high-speed and ultra-efficient system for demanding, high-throughput evaporation applications. Based on unique triple-coil self-cooling technology, this work-horse solution is the best evaporation unit for large-scale extractions, with a greater maximum capacity than any alternative on the market. The EcoChyll X9 evaporation unit was engineered to address the bottleneck in botanical extraction laboratories servicing the booming hemp industry. With a 16,000-watt heating mantle and high cooling capacity, the EcoChyll X9

comprehensively exceeds the performance of up to eight 50-liter traditional rotavaps.

### EcoChyll X9: Key Advantages

- Extremely high evaporation rates at a fraction of the falling-film evaporator energy usage
- No special infrastructure modification required
- Multifunctional evaporation unit enabling both solvent recovery and extraction
- One-person operation with minimal interference required
- Continuous sample inlet-feed valve for uninterrupted operation
- Twice the loading capacity of traditional rotavaps (<100 L)
- Safe operation, with all glassware remaining stationary throughout operation
- Chemical-resistant triple condenser with over 14,000 cm<sup>2</sup> cooling surface area

# BENCHTOP ROTAVAPS



Ecodyst benchtop rotary evaporators truly are the future, today. Proprietary technologies bring you a rotavap that's quiet, efficient, fast and convenient. Choose among the EcoChyll X1 self-cooling condenser, the Hydrogen rotary evaporator, and the Hydrogen Performance rotavap.

All feature a small footprint to conserve precious lab space, and innovative technologies that will stand the test of time. The need for dry ice or glycol is a thing of the past. Conserve time, money, and support a sustainable future with Ecodyst.

## TEAMWORK

Teledyne LABS' innovative CombiFlash Torrent® chromatography instruments and Ecodyst X-series of condenser/evaporators deliver a championship-caliber team to your lab.

The two are a natural combination of Teledyne LABS' decades-old expertise in flash chromatography and Ecodyst's ground-breaking rotavap technology.

Teledyne LABS and Ecodyst pair to form a perfect match of robust construction, leading design and unsurpassed performance.



**Teledyne LABS enhances the visibility for our brands, products, and services, aiding customers in finding solutions that meet their current and future needs.**

