Weber
Drying

Vacuum for Drying

Perfection at affordable costs with Dutch DNA

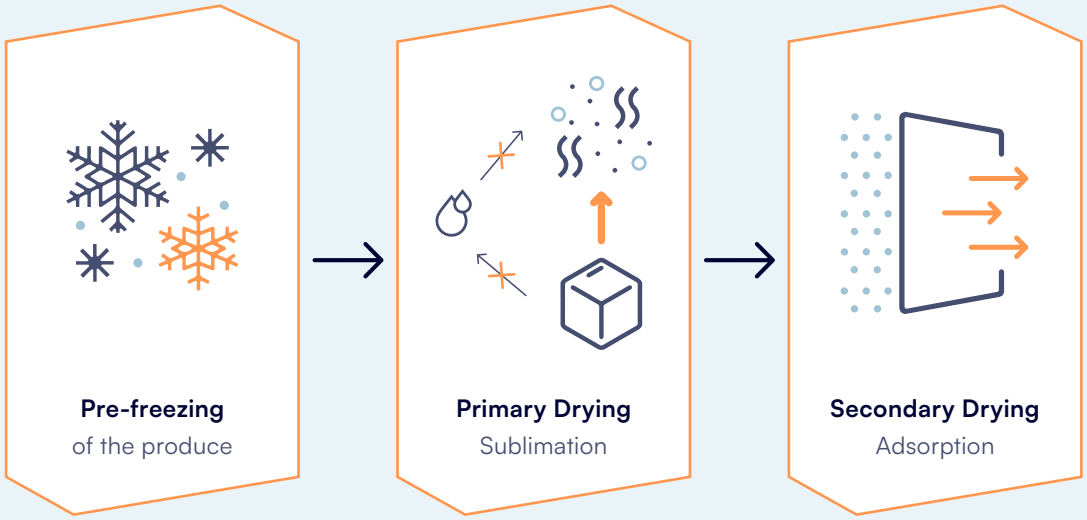
webervacuum.group

Sales | Rentals | Support | Refurbishments

Vacuum Freeze Drying Technology

Lyophilization or Freeze Drying is a process in which water is removed from a product after it is frozen and placed under a vacuum, allowing the ice to change directly from solid to vapor without passing through a liquid phase. The technology is used to preserve perishable materials, to extend shelf life or make the material more convenient for transport.

Pre-frozen materials are placed into a vacuum room, where through the combination of ultra-low vacuum and continuous heat transfer to the product placed in the room, drying can be achieved in shortest possible time.



Freeze drying is commonly used to dehydrate products like fruits, vegetables, herbs, medicines, ready meals, sea food, dog food, food flavorings, coffee, juice, eggs, and dairy. Three phases can be distinguished in the process: → **Pre-freezing of the produce** → **Primary Drying** (Sublimation) → **Secondary Drying** (Adsorption).

With the right technology & correct settings, **maximum quality preservation** be achieved, with **shortest drying times, at minimized energy costs**.

Vacuum Freeze Drying Applications

Freeze Drying is widely being used **in the Food Industry**, for creating addede value:

Fruits and vegetables

Produces lightweight, shelf-stable products that retain color, flavor, and nutrients. Perfect for tropical & soft fruits, and a wide range of vegetables.

Meat products

Preserves meats while maintaining texture and flavor.

Animal food

Transforming raw products into healthy treats for dogs & cats.

Seafood

Used to preserve fish and other aquatic products.

Beverages

Applied in processing drinks, like coffee and juices.

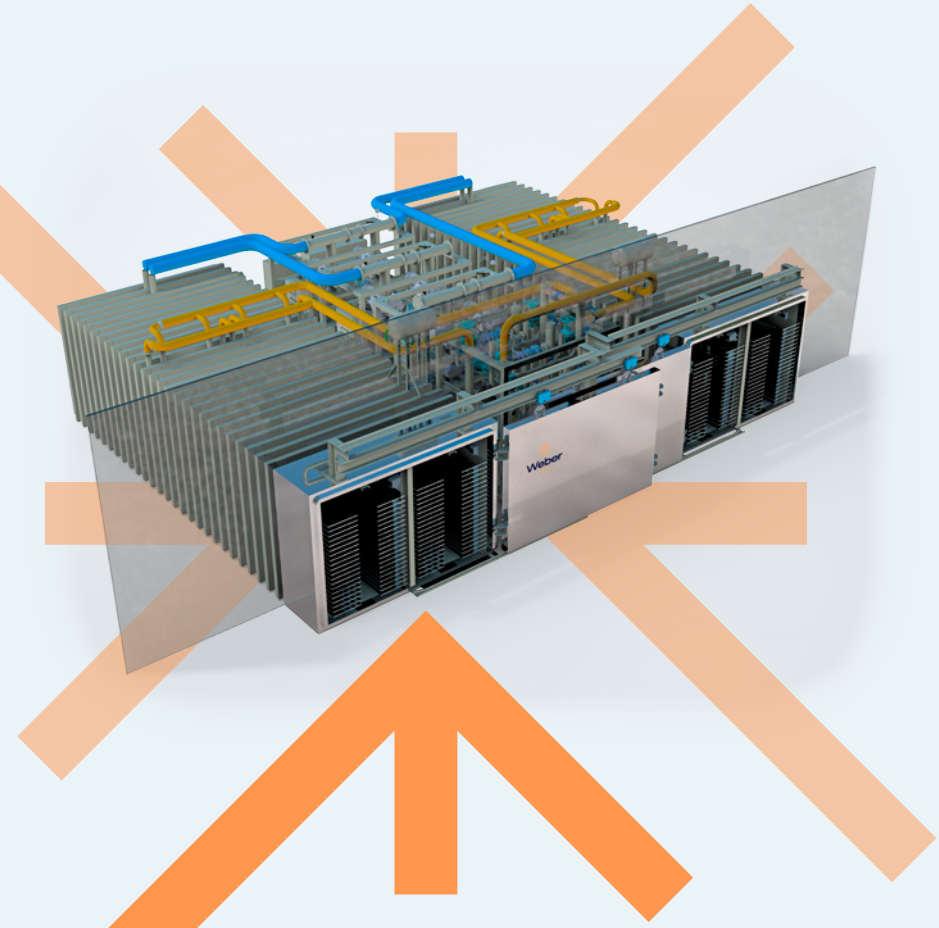
Although the technology is mature, new applications (like for snack food and and as additives in juices & more) are being marketed on a regular basis.

Pharmaceutical and biological applications are another segment.

Freeze drying is applied here to preserve delicate biological materials, and to stabilize & extend shelf life of pharmaceuticals. In between food & pharmaceuticals there also is a growing market of freeze drying medical herbs, berries etc., and other food & health supplements.

Finally, freeze drying can be used for many other applications, ranging from research & laboratory to preservation & restauration.

Weber Freeze Drying - Our Unique Features



Weber Drying, part of the **Weber Vacuum Group**, offers leading edge solutions for freeze drying your products. There are several reasons making Weber a preferred supplier for your drying requirements:

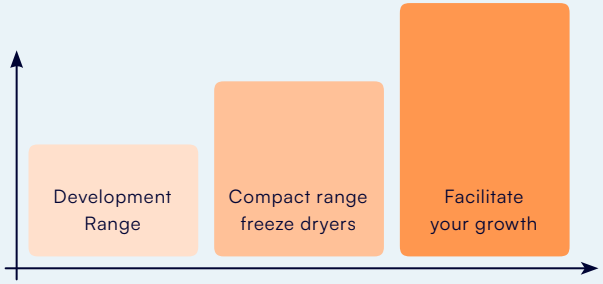
- ✓ With our **unique knowledge on vacuum technology**, we can offer best-in-class technology, using leading edge dry screw vacuum pumps with highest compression ratio booster pumps, ensuring ultrafast vacuum, and lowest energy & maintenance costs.
- ✓ For the cooling technology we work together with leading refrigerant partners, using **state of the art technology and latest environmental friendly refrigerants**, to ensure most energy & cost effective cooling.
- ✓ Room construction is key: Weber is a leading supplier of **square vacuum rooms, offering up to 30% in space savings** and huge costs savings on transport, and auxiliaries. No monorail is needed, adding also on logistics advantages.
- ✓ Additional benefits can be found in our **leading edge heat transfer technology** (reducing on energy needs, and increasing on drying speed) and our unique cold trap design, allowing for quickest defrosting at lowest energy needs.
- ✓ Ultimate control defines your quality: With our **unique WeDry software** you can perfectly control your process, in each stage; vacuum creation – sublimation – adsorption. **Supported by our research facilities** we can define the best conditions – for your requirements.

We can build solutions for each demand!
Tailor made solutions, both in square and round room configuration, on request.

Weber is THE innovative player in the field of Vacuum Freeze Drying. Offering fresh solutions, using disruptive technology, to bring your vacuum freeze drying operation to the next level. We will be happy to explain to you in detail what makes us the best choice in the market. Starting at compact and affordable research dryers, to standardized space saving solutions where you need only 500 m² of factory space to dry 16 tons per day.

WeDry your partner for growth

The Weber Vacuum group is more than a supplier of equipment. **We offer our customer solutions, and support them all the way.** From initial testing and advice, with the design, installation and commissioning of your freeze drying systems, to process optimization, maintenance and support, where needed.



Our machine range comprises of Development Range with which you can test — with similar results like with our production machines. With our pilot plant models you can produce highest quality marketing and small volume products.

As a next step we offer compact range freeze dryers, for mid-size production capabilities, followed by industrial freeze dryers, which can be combined in clusters, for ultimate efficiency & performance.

To facilitate your growth, financing support can also be offered. Backed b the Dutch government, favorable and uncomplicated loans can be provided through the Dutch Trade Finance Program, in collaboration with the Atradius group.

WeDry
Research & Development

Testing with your fresh products at your location is the perfect way to establish what opportunities Freeze Drying can bring to you. Using the right equipment is key.

With the Weber Laboratory Drying you can achieve production conditions — on smallest scale. Achieving ideal vacuum conditions (< 15 Pa) at shortest time (< 15 minutes) at perfect heating & cooling conditions, with full process control.

Our specialists guide you — all the way. Our Laboratory Freeze Dryer is offered on a monthly rental basis.

WeDry
Pilot Plants

The pilot plant is our smallest industrial design drying solution.
The characteristics of these models are identical to those of the larger models, but distinguish by manual loading of the trays, instead of using trolleys.

We offer two models, one for 3 trays (1 m2, 15 kg) and one for 15 trays (5 m2, 75 kg). The Freeze Dryer is virtually plug & play, all components are integrated, with the exception of a cooling tower or dry cooler, which has to be positioned outside.

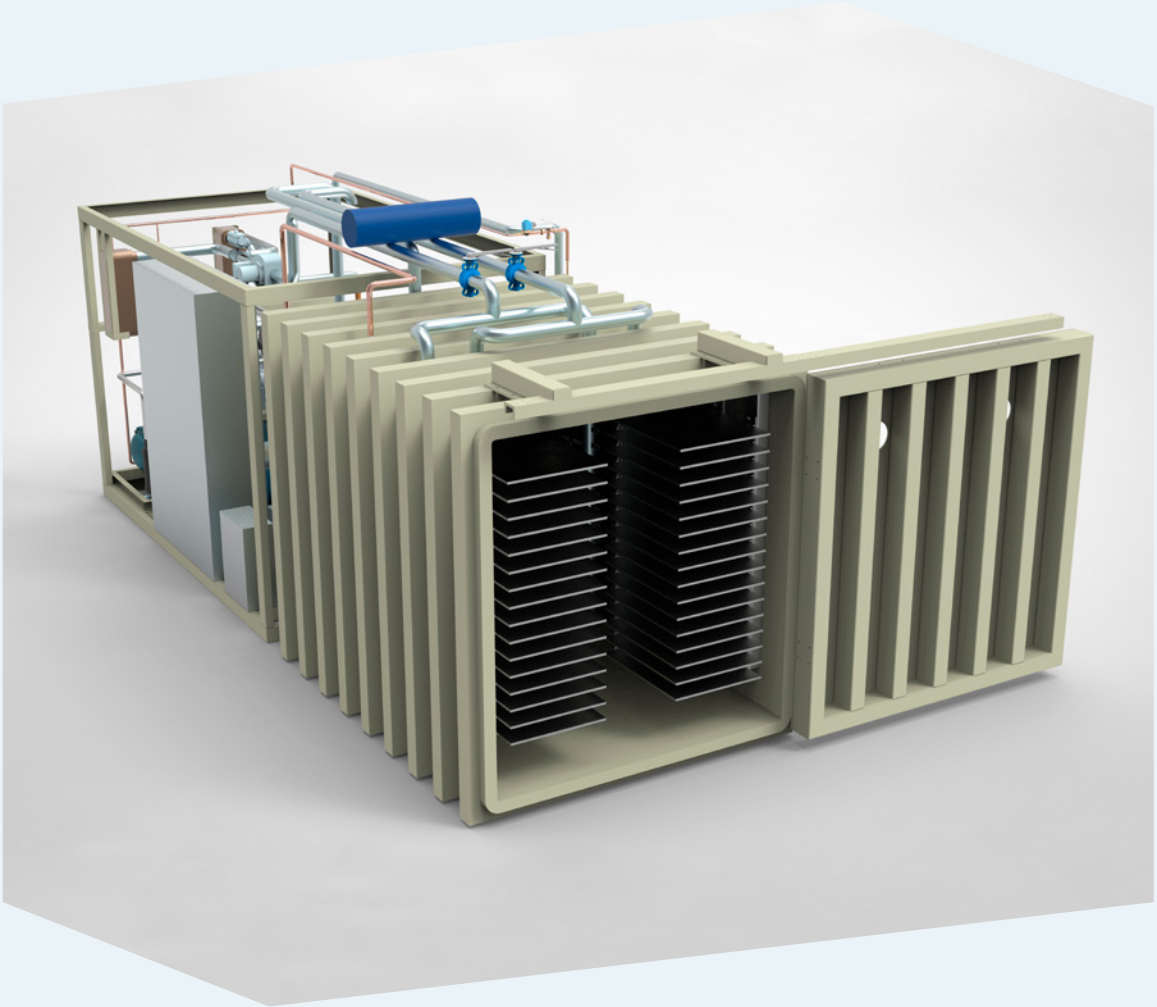
Our pilot plants are perfectly suited for large scale research & pre-marketing, but also for small scale production. Our WeDry range is available as “buy and sell back”, allowing you for longer term testing at flexible conditions, also allowing you to upgrade to a larger system against trade-in of the pilot plant.

WeDry
Compact Range

The compact range is a virtually plug & play system, which can be shipped as a complete unit, in a standard container. The technology can be fixed behind the room, but can also be split into a separate section on site, on request.

The range comprises of three models, all using compact trolleys with 30 trays, each trolley suitable to dry up to 150 kg of produce. We offer a single, double and triple trolley solution, for 150 - 300 and 450 kg of produce to dry.

Using latest generation refrigerants and leading brand compressors, highest cooling performance can be achieved. Heat recovery solutions and highest energy efficiency of the heating elements guarantee lowest energy consumption, and on vacuum technology fastest pump down times < 20 minutes to 133 Pa) and deepest vacuum (< 15 Pa) guarantee perfect product quality.



WeDry-S Industry Range

Our WeDry-S Industry Range is built in a unique square room design, allowing for highest productivity, at smallest footprint, thanks to the double row configuration. The modular design allows up to 4 rooms can be combined into one cluster with central vacuum technology (saving on investment and operational costs), multiple clusters can be used to build one factory.

The Industry range uses large trolleys, each with 76 trays, suitable to dry up to 375 kg. We offer solutions for two, four, six and eight trolleys, with a maximum load between 750 and 3.000 kg.

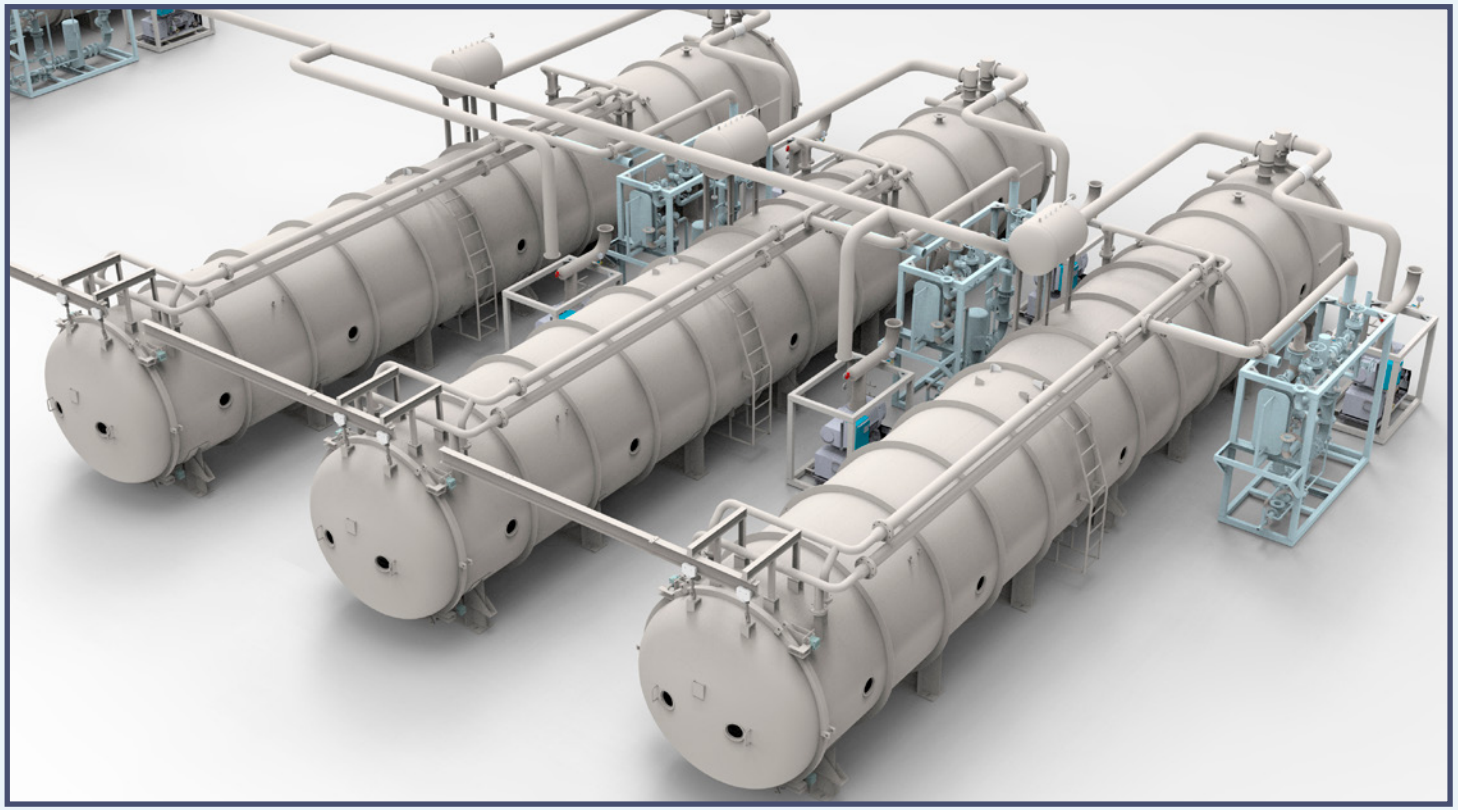
Our systems are supplied modular, and are designed to be combined with an Ammonia cooling plant, and steam heating. For the cooling plant we can work with dedicated partners, for the complete factory design we can support you defining the right conditions, and finding the right partners.

WeDry-R Industry Range

Our WeDry-R Industry Range is built in the conventional round oom design, allowing for traditional freeze drying, using trolleys on monorail. Also this design is modular, allows up to 4 rooms to be combined into one cluster with central vacuum technology, and multiple clusters can be used to build one factory.

Like with the square room design, large trolleys, suitable to dry up to 375 kg, are being used. We offer solutions for two, four, six and eight trolleys, placed behind each other, with a maximum capacity of 3.000 kg for the largest room..

For the Ammonia cooling plant (not included) we can work with dedicated partners, for the complete factory design we can support you defining the right conditions, and finding the right partners.



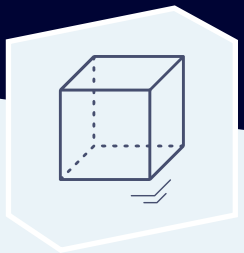
Weber Drying - Your first choice for Vacuum Freeze Drying

The Weber Vacuum Group is a worldwide leading supplier of vacuum technology – for Baking, Cooling and Drying applications.

For vacuum freeze drying, the Weber Vacuum Group offers unique solutions, combining:

Our history in vacuum technology (evaporation, sublimation, condensation) supplying over 500 systems in the market worldwide - since 2011.

In depth knowledge of the technology of freeze drying, obtained by incorporating the proprietary knowledge of China's leading supplier in this field (Yu Cheng) in 2020.



Excellence in the production of square room technology, resulting in the most space and energy efficient solutions available to the market.

Weber Drying is the new market leader on innovation in Freeze Drying, and proud to offer you premium soluitons, at best value for money. **Offering best value4money solutions**. European design, with Dutch DNA, build according ot both, according to both CE and UL standards. From research to high capacity production applications.

The Weber Vacuum Group offers **global support** to all our customers using our vacuum solutions for Baking, Cooling and Drying applications. This makes us unique in our global assistance, securing maximum service to all who use our technology.

Seeing is believing

View our videos on Vimeo →

The Weber Vacuum Group is a world leading supplier

At the Weber Vacuum Group, we are committed to supplyingtop-quality solutions — at affordable cost. We are leading in vacuum innovation, and are dedicated to delivering the highest standards in vacuum technology.

For Baking, Cooling and Drying applications.

It is our mission to provode our customers around the globe with the **"best value for money"** vacuum solutions. We strive for excellence, making each new machine better than the past, and aim to make every customer a satisfied Weber ambassador.

Support - We Care

Weber Cooling ONLY builds vacuum coolers — this is where we excel. All vacuum coolers are designed by our Dutch engineering team and build using premium (European) components.

As a result of our economies of scale (we produce up to 100 systems/year), our intelligent design and strategically, positioned and highly efficient production locations in Europe and Asia, we are able to offer a premium price/performance level.

Our global presence ensures the availability for installation support and after-sales service, worldwide. In collaboration with our partners, we are always nearby to assist you and can also offer you testing facilities, at our offices, or by bringing our research systems to you!

Contact

Weber Vacuum Group
NL-3334KC Zwijndrecht, Gildenweg 16 | The Netherlands
+31 884 256 250
info@webervacuum.group
webervacuum.group

© WeberVacuumGroup 20240903