

AMARU

FOOD FREEZE DRYER

for small businesses



PRESERVE MORE, WASTE LESS – UNLOCK THE POWER OF FREEZE-DRYING

Ever wished fresh food could last months or even years without losing quality? Freeze-drying, also known as **lyophilization**, makes this possible. It's a natural preservation method that keeps food nutrient-rich, full of flavor, and incredibly light.

WHAT IS LYOPHILIZATION?

Lyophilization is a method of drying that removes water from food, preserving its structure and nutrients. Unlike conventional drying methods that use heat, freeze-drying operates under low temperatures and reduced pressure to achieve sublimation - the direct transition of water from solid (ice) to gas (vapor), bypassing the liquid phase.

This process ensures that the food maintains its original qualities, making it ideal for long-term storage without compromising taste or nutritional value.



WHY SHOULD YOU FREEZE-DRY FOOD?

People turn to freeze-drying for many reasons:

- **Extend shelf life:** Store food for months or years, naturally.
- **Retain nutrients & flavor:** Keep up to 97% of vitamins, minerals, and aroma.
- **Reduce weight & storage space:** Freeze-dried food is light & easy to transport.
- **Rehydrate instantly:** Some foods, like soups or fruits, return to their original form with water.
- **Expand your product range:** Freeze-dry delicate products that can't be preserved any other way (melons, ice cream, dairy).

A GROWING MARKET – CONSUMERS WANT QUALITY

More and more consumers seek natural, high-quality food that stays fresh without preservatives. But did you know that the vast majority of freeze-dried fruit sold in the EU today comes from Asia? Where was the fruit grown? What chemicals were used? Even the vendors often don't know.

With AMARU, you control your production from start to finish - ensuring better quality, fresher ingredients, and full transparency for your customers.

Most freeze dryers are not designed for commercial-scale production. AMARU is different. It's built for small and medium businesses that need a reliable, scalable solution for continuous operation 24x7. Certified under the EU Machinery Directive.



ENGINEERED FOR PERFORMANCE

- ✓ **Certified for Commercial Use** – Meets the highest safety and performance standards under EU regulations.
- ✓ **Consistent Freezing Power** – True freezing performance down to -40°C, ensuring sublimation happens properly.
- ✓ **Low Energy Consumption** – Only 33.5 kWh per 30-hour cycle, making it one of the most efficient in its class.
- ✓ **Fast Defrost & Quick Turnaround** – The chamber defrosts in just 30 minutes, so you can start a new cycle.
- ✓ **Compact Yet Powerful** – Small 1.5 sqm footprint, but you can stack two units to reach 30 kg capacity.
- ✓ **Flexible & Scalable** – Start small and expand as needed without changing your workflow.
- ✓ **Durable & Repairable** – Built with industrial-grade components for 10+ years of serviceability.

DESIGNED FOR EASE OF USE

Unlike some complex freeze-drying systems, AMARU is straightforward to operate:

- **Pre-Program Your Recipes** – Save up to 37 custom drying programs for different products.
- **Automatic Slow Air Intake** – Prevents powder agitation at the end of the cycle.
- **ISO Valve System** – Protects against ice burn and prevents oil backflow during power outages.
- **User-Friendly Touchscreen** – Simply set cooling & drying time, press Start, and let AMARU do the rest.
- **Screen Lock Feature** & a **Localized Menu** available in the most commonly used languages.



PROVEN RELIABILITY – BUILT TO LAST, TRUSTED BY PROFESSIONALS

Our first AMARU unit was installed 8 years ago and has been running 24/7 with only basic maintenance. In demanding environments where downtime is not an option, AMARU has proven to be a workhorse that businesses can rely on.

AMARU FREEZE-DRYER LINEUP – SCALABLE & RELIABLE

Every business has different freeze-drying needs. Whether you’re just starting out or expanding your production, AMARU offers a modular, scalable solution designed for continuous professional use.

With four capacity options, compact design, and high energy efficiency, you can choose the model that fits your production volume while ensuring top-tier performance, reliability, and ease of use.

AMARU



Single-unit freeze dryers. The 5-shelf system handles all types of batches and is ideal for up to 10kg. The 7-shelf system is perfect for lightweight products that can take up more space but usually contain less water.



5-shelf system



7-shelf system

DESCRIPTION	AMARU 5	AMARU 7
Batch capacity up to	10 kg	15 kg
Number of trays	5	7
Total tray area	0.8 m ²	1.1 m ²
Spacing between shelves	5 cm	3.5 cm
Tray size (WxL)	33x49 cm	
Drying time (typical)	30 hours	
Defrost time	< 30 minutes	
Min. chamber temperature	-40°C	
Min. chamber pressure	< 100 mTorr	
Power Consumption	27 kWh / 24h	
Control Unit	Touchscreen 4.3”	
Dimensions (H x W x D)	84 x 122 x 79.5 cm	
Weight	~175 kg	
Noise Level	< 70 dBa	
Power supply	230V, 50 hz	
Max. power	3 kW	

AMARU Double

The AMARU Double versions combine two independent units stacked together, effectively doubling your freeze-drying capacity while maintaining the same compact footprint.

Each unit operates separately, providing greater flexibility – it allows you to run different batches at the same time or continue production even if one unit is undergoing maintenance.

This design ensures higher reliability, minimizes downtime, and allows businesses to scale up efficiently without increasing floor space. Energy efficiency remains high with modular control over both units



AMARU 5 Double	AMARU 7 Double	DESCRIPTION
20 kg	30 kg	Batch capacity up to
10	14	Number of trays
1.6 m ²	2.2 m ²	Total tray area
5 cm	3.5 cm	Spacing between shelves
33x49 cm		Tray size (WxL)
30 hours		Drying time (typical)
< 30 minutes		Defrost time
-40°C		Min. chamber temperature
< 100 mTorr		Min. chamber pressure
54 kWh / 24h		Power Consumption
Touchscreen 4.3"		Control Unit
220 x 122 x 79.5 cm		Dimensions (H x W x D)
~355 kg		Weight
< 70 dBa		Noise Level
2x 230V, 50 hz		Power supply
2x 3 kW		Max. power



* This system is fully modular and expandable over time. Start with an AMARU 5-shelf unit and easily upgrade to a 7-shelf system with minimal investment.

NEW AMARU LITE – SAME CORE PERFORMANCE, LOWER PRICE

AMARU Lite

For early-stage businesses, test kitchens, and artisan producers looking for a reliable start in freeze-drying without the full investment upfront.



Same chamber, same shelf system, same output – streamlined for affordability.

AMARU Lite offers up to 15 kg per batch, with a refurbished high-quality vacuum pump, manual vacuum release, and no ISO valve – keeping the essentials and trimming the rest.

Available in both 5-shelf and 7-shelf configurations. Fully compatible with all AMARU accessories (except the Deheater).

DESCRIPTION	AMARU Lite	AMARU
Batch capacity up to	15 kg	15 kg
Number of trays	5 or 7	5 or 7
Vacuum Pump	Refurbished, high-quality	Pfeiffer Vacuum (new)
ISO Valve	Not Included	Included
Vacuum Release	Manual	Automatic (EM valve)
Control Unit	4.3" Touchscreen	4.3" Touchscreen
Stainless Steel Tray Set Included	Yes	Yes
Accessory Compatibility	All except Deheater	All
Exterior Finish	Light Ivory color, zinc-coated back panels	Ruby Red color, powder-coated steel

Even with its **lower price tag**, AMARU Lite delivers the same high-quality freeze-drying results as the standard AMARU.

It features the same stainless steel chamber and tray system, the intuitive touchscreen interface, and fully automated drying cycles - including ultra-fast defrosting between batches.

The core performance, drying capacity, and long-term reliability remain unchanged - making AMARU Lite a smart and **affordable way to start or scale** your freeze-drying business without compromising on output or hygiene standards.

WHY AMARU? A SMARTER CHOICE FOR YOUR BUSINESS

Choosing the right freeze-dryer is a critical decision for your business. Reliability, efficiency, and ease of use can make all the difference in daily operations. AMARU freeze-dryers are designed for businesses that need professional-grade performance, compliance, and scalability - without compromises.

While many freeze-dryers may seem similar at first glance, key differences in build quality, freezing performance, energy efficiency, and ease of operation can impact your results. Not all freeze-dryers are built for commercial success.

FEATURE	AMARU Freeze-dryers	Other Freeze-dryers
Certified for Commercial Use	✔ Meets EU Machinery Directive, compliant with 2027 regulations	✗ Often lacks professional certification
Scalability & Space Efficiency	✔ Modular & stackable (Double Versions) for higher capacity	✗ Not designed for easy expansion
True Freezing Performance	✔ Reaches -40°C, ensuring consistent sublimation	✗ Often struggles to maintain freezing, leading to meltback
Faster Production Cycles	✔ 30-minute defrost time for quick turnaround	✗ Can take 4+ hours to defrost
Efficient Power Consumption	✔ 33.5 kWh per 30-hour cycle, lowering operating costs	✗ Higher power usage over time
Shelf System Flexibility	✔ Removable, easy to clean, switch between 5 & 7 shelves	✗ Fixed shelves, difficult to clean
ISO Valve Protection	✔ Prevents ice burn & oil backflow in power outages	✗ Often missing, increasing contamination risks
Vacuum Pump Integration	✔ Built-in, can be placed separately for noise control	✗ External pump taking up additional space
Customizable Drying Programs	✔ 37 programmable recipe slots	✗ Limited programming flexibility or no program memory
Easy Operation	✔ Set freezing time, drying time, press Start, and go	✗ Requires more manual adjustments
Localized Menu & Screen Lock	✔ Available in multiple languages, prevents unauthorized changes	✗ Often lacks multilingual support & security

WHAT MAKES AMARU THE RIGHT INVESTMENT?

- Higher Efficiency – More output, less downtime, reducing labor costs.
- Consistent Results, Every Batch – Advanced consistent freezing and drying.
- Built for Long-Term Use – quality components ensure reparability for 10+ years.
- Compact & Space-Saving – Keep a small footprint (1.5 m²) while scaling up.
- Lower Operating Costs – Energy-efficient design reduces electricity consumption.
- Easy to Use, Minimal Training – Simply set, start and AMARU will handle the process.

WHO USES AMARU? REAL-WORLD APPLICATIONS

From farm producers to gourmet chefs, AMARU freeze-dryers are trusted across a wide range of industries. Whether you're preserving seasonal harvests, crafting premium ingredients, or scaling up your product range, AMARU offers the performance, precision, and reliability to help you thrive.

The table below highlights just some of the sectors where freeze-drying brings measurable benefits - and where AMARU stands out as the preferred solution.

Industry / Sector		How AMARU Helps
	Farmers & Food Producers	Preserve seasonal harvests like fruits, herbs, or vegetables for year-round sales without added preservatives.
	Health Food & Nutraceuticals	Ideal for superfoods, powders, and supplements . Retains maximum nutrients and bioavailability with gentle, low-temp drying.
	Pet Food & Meat Processors	Freeze-dry raw meat, jerky, or pet treats for extended shelf life and safety. Trusted for both nutrition and hygiene.
	Handmade & Specialty Foods	Create premium ingredients for chocolates, snacks, and pastries. Retains color, texture, and flavor for gourmet appeal.
	Dairy & Alternative Milks	Dry yogurt, cheese, or plant-based milks into shelf-stable formats. Perfect for snack pouches or powdered products.
	Beverage Industry	Turn fruit, herb, or tea infusions into light powders for instant mixes. Preserve flavor, aroma, and nutrients.
	Herbalists & Botanical Extracts	Gently dry medicinal herbs, teas, and essential oils while preserving potency, color, and aroma.
	Outdoor & Emergency Foods	Produce lightweight, long-lasting meals for preppers, campers, or rescue operations. Reliable and nutrient-dense.
	Fine Dining & Molecular Cuisine	Enable chefs to create innovative textures, intense flavors , and precision plating with freeze-dried ingredients.
	Muesli & Cereal Manufacturers	Keep crisp texture and natural sweetness in dried fruits. No need for artificial sweeteners or preservatives.

Whatever your vision, AMARU helps turn fresh ideas into premium shelf-stable products - with ease, efficiency, and confidence.

ENHANCE YOUR AMARU WITH SMART ACCESSORIES

AMARU freeze-dryers are designed to adapt to different business needs, industries, and workflows. Whether you need better ergonomics, improve working conditions, or superior hygiene, our range of accessories ensures you get the most out of your freeze-drying setup.

STAINLESS STEEL – BUILT FOR HORECA

For restaurants, catering businesses, and food manufacturers, maintaining strict hygiene standards is essential. The AMARU Stainless Steel Version ensures food safety compliance, durability, and ease of cleaning, making it ideal for high-demand commercial environments. Both standard and double units can be delivered in Stainless Steel.

- ✓ **Resistant to Corrosion & Contamination** – Keeps your workspace clean and bacteria-free.
- ✓ **Easy to Clean & Maintain** – Smooth surfaces prevent residue buildup, ensuring effortless sanitation.
- ✓ **Built for Long-Term Use** – More durable than standard finishes, designed for intensive, daily use.



HIGH BASE STAND

Long hours in a food production setting can take a toll on workers. The High Base Stand raises your AMARU freeze-dryer to an optimal height, reducing strain when loading, unloading, and cleaning trays.

- ✓ **Better Ergonomics** – No more bending over – high base stand makes loading and unloading much easier.
- ✓ **Extra Storage Space** – Utilize the under-unit space for storing trays, tools, or freeze-dried products.
- ✓ **Easy Mobility** – Allows easier movement of the unit in busy work environments.
- ✓ **Ideal for Small Workspaces** – Makes the most of your available floor space while improving workflow efficiency.



DEHEATER – HEAT MANAGEMENT

The Deheater extracts and redirects excess heat from the AMARU freeze-dryer, keeping the surrounding environment cooler and improving drying efficiency. This not only prevents overheating but also extends the machine's lifespan and reduces energy waste.

- ✓ **Prevents Overheating** – Keeps room temperature below 25°C, ensuring optimal working conditions.
- ✓ **Extends Equipment Lifespan** – Reduces thermal stress on internal components, improving longevity.
- ✓ **Improves Workplace Comfort** – Keeps kitchens and production areas cooler.
- ✓ **Energy Reutilization** – Redirects waste heat (up to 1.5 kW / 5000 BTU) for use in adjacent rooms, greenhouses, or storage areas - a smart way to reduce heating costs.
- ✓ **Simple Installation** – Attaches magnetically to the AMARU unit without modifications and operates at low energy consumption (12V).

Perfect for businesses that run AMARU units in compact spaces, warm environments, or high-output production settings.



VIKTOR – OZONE GENERATOR

Maintaining a clean and contamination-free freeze-drying environment is crucial for product safety. The Viktor Ozone Generator provides chemical-free sanitization, eliminating bacteria, mold, and odors with the power of ozone (O₃).

- ✓ **Eliminates Bacteria & Odors** – Destroys harmful microorganisms and prevents cross-contamination.
- ✓ **Chemical-Free Disinfection** – Uses ozone instead of harsh cleaning agents, leaving no residues.
- ✓ **Multi-Purpose Use** – Can sanitize not only the freeze-dryer chamber but also storage rooms, kitchens, and transport containers.
- ✓ **User-Friendly Operation** – Simply activate after a cycle to maintain a clean workspace and equipment.



CUSTOMER TESTIMONIALS

Freeze-drying is more than just preservation - it's a business transformation tool. Across different industries, AMARU is helping entrepreneurs scale production, enhance product quality, and create entirely new offerings. Here's how three businesses have leveraged AMARU to take their products to the next level.

LYOPOTRAVINY



Luboš and Lenka Bláhovi founded **Lyopotraviny s.r.o.** to offer high-quality, locally sourced freeze-dried foods. Starting small, they quickly realized that **demand for nutrient-rich, additive-free products** was growing. By investing in AMARU freeze-dryers, they scaled from **two machines to a five-unit production line**, processing everything from **fruits and vegetables to unique Czech cheeses**.

"With AMARU, we control the entire process - from fresh produce to premium freeze-dried products that retain their full flavor and nutrients." – Luboš Bláha, Lyopotraviny



.PEPPER..FIELD



Recognized as one of the world's finest spices, **Kampot pepper** is prized by chefs worldwide. The founders of .pepper..field wanted to bring its rich flavors to a broader audience while supporting small farmers in Cambodia. With AMARU freeze-dryers, **they developed an innovative freeze-dried green Kampot pepper**, maintaining the spice's signature aroma and intensity while extending shelf life.

"Freeze-drying allows us to share the authentic taste of Kampot pepper with the world - without compromising its delicate flavors." – David Pavel .pepper..field

ZACH'S PESTO & CHILLI



As a chef, Lukáš Zach was always experimenting with ways to preserve and intensify the flavors of fresh herbs and chilies. When he discovered freeze-drying, he realized it could **elevate his pestos, sauces, and spice blends** to an entirely new level. With AMARU, he now freeze-dries rare chili varieties, herbs, and even fermented ingredients, delivering flavors that are more **potent, long-lasting, and vibrant**.

"Freeze-drying lets us capture flavors at their peak and keep them as intense and fresh as the day they were harvested." – Lukáš Zach, Pesto & Chilli



READY TO TAKE YOUR BUSINESS TO THE NEXT LEVEL

Choosing the right freeze-dryer is an **investment in quality, efficiency, and long-term success**. AMARU is designed to help **businesses like yours** scale production, reduce waste, and create high-quality freeze-dried products with ease.

Now is the time to take the next step. **Let's find the right AMARU for you!**

HOW TO GET STARTED

- ✓ **Request a Quote** – Get personalized pricing and recommendations based on your needs.
- ✓ **Schedule a Consultation** – Talk to our experts about your production goals.
- ✓ **Visit Our Website** – Learn more about AMARU freeze-dryers and accessories.
- ✓ **Follow Us** – Stay updated on new features, customer stories, and freeze-drying insights.

Phone: +34 64 74 64 088

Email: jan.panek@lyotrade.cz

Website: www.lyotrade.cz/en

Headquarters:

Lyotrade Freeze Dryers s.r.o.

Šlikova 20

169 00 PRAHA 6



WHY BUSINESSES LOVE AMARU FROM LYOTRADE

- ✓ **Scalable & Modular** – Start small, expand easily with stackable Double Versions, doubling capacity without increasing floor space.
- ✓ **Energy-Efficient & Cost-Effective** – Low power consumption (33.5 kWh/30h cycle) reduces operating costs while maintaining performance.
- ✓ **Fast Defrost & Quick Turnaround** – 30-minute defrost time vs. 4+ hours in many other freeze-dryers, allowing for faster production cycles.
- ✓ **Consistent, High-Quality Freeze-Drying** – True freezing at -40°C, ISO valve protection, and automatic slow air intake for perfect results every batch.
- ✓ **Reliable & Built to Last** – Designed for 24/7 use, with industrial-grade components and 10+ years of repairability.
- ✓ **Chemical-Free Sanitization** – Viktor Ozone Generator eliminates bacteria and odors, ensuring a clean and contamination-free environment.
- ✓ **Easy to Use, Minimal Training Required** – Touchscreen interface, automatic freeze-drying algorithm, programmable recipes, and a screen lock feature for secure operation.

Invest in AMARU – a freeze-dryer that grows with your business, reduces costs, and ensures premium quality in every batch!