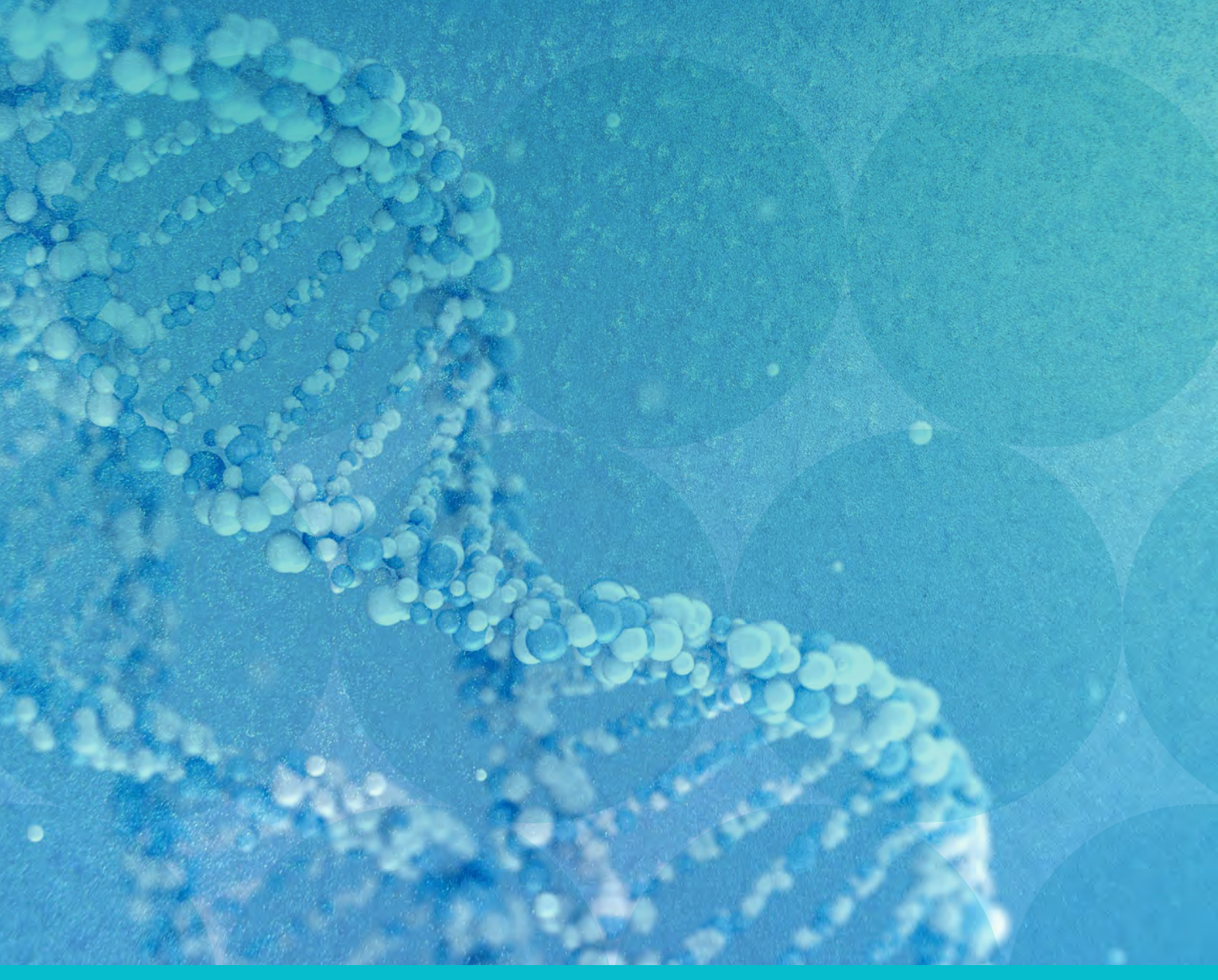


# Ultra-Low Temperature Solutions

Engineered for Life Sciences







Farrar Scientific, powered by Trane Technologies, is focused on meeting the rapidly growing demand for ultra-low temperature processes. Our best in-class operating systems are completely redefining ultra-cold storage for pharmaceutical, biotech, and biorepository applications.



# You need solutions.

Technological shifts have accelerated speed-to-market in the life sciences industry compared to a decade ago. COVID-19 vaccine roll-out reset the world's expectations for biopharmaceutical development and deployment. From lab to patient, product is expected to move faster through the supply chain.

Lessons were learned from COVID-19 vaccine production. In a world where technology exists for robust and reliable refrigeration methods, no patient's life should be put at risk due to drug product or substance process inefficiencies.

Large walk-in projects are time consuming and are capital intensive. Fortifying an existing structure can be equally challenging considering risks of product relocation. You need affordable, reliable, flexible, and scalable storage options that protect your product and process timeline.



From sample product to short- and long-term storage, our innovative, purpose-built freezer and freeze/thaw chambers are designed to help

- Protect product integrity
- Increase yield by reducing cryo-concentration
- Optimize space
- Improve sustainability through energy efficient solutions



A person wearing a white lab coat, a white face mask, and yellow gloves is working with a sample tray. The tray is filled with small vials containing yellow liquid. The person is holding the lid of the tray, which has some handwritten text on it. The background is a dark, textured surface, possibly a wall or a piece of equipment. The overall scene suggests a laboratory or a clinical setting.

## Engineered for your needs.

Farrar Scientific, a Trane Technologies brand, offers purpose-built ultra-low temperature solutions that are in stock and move-in ready.

# From control rate freeze/thaw to storage, we have you covered.



## Model 4000 Series

These state-of-the-art solutions for rapid freeze/thaw bioprocessing (+40°C to -80°C) greatly reduce conditioning time from days or weeks to hours. Our Controlled Rate Chambers (air- or water-cooled) enable fast, uniform bulk freeze/thaw of protein or products stored in a variety of containers no matter the size (bags or bottles). This includes single use system (SUS) and polycarbonate or polypropylene vessels.

### Control Rate Chamber Benefits

- Rapid, efficient, and more sustainable control rate freeze or thaw
- Wide range temperature capability (+40°C to -80°C)
- Universal container acceptance



## ULC – Ultra Low Chamber

### ULC-P – “Pallet” Ultra Low Chamber

Our ULC and ULC-P Chambers are the only wide-range, forced-air, low-temperature freezers on the market. With 190 cu.ft. / 5,380 liters of storage, these solutions only require 47 sq. ft. / 4.36 m<sup>2</sup> of space optimizing your footprint. At +/- 3.0°C, our units feature unmatched uniformity, offer fully redundant systems (control, refrigeration, air flow) and provide the fastest temperature recovery from door opening. Designed with energy balance in mind, the ULC and ULC-P are smarter storage solutions that offer dynamic refrigeration control and low energy consumption (0.33 kWh/cu.ft.).

**ISO Certified Qualifications:** IQ, OQ, PQ

# ADOPTED BY 30

OF THE WORLD'S LARGEST PHARMACEUTICAL COMPANIES.



# Where you need us. When you need us.

Our modern-day pharma and bioprocess operations support the manufacturing of drug substance (API) and drug product at multiple sites globally. This approach helps us to increase speed-to-market. We provide the faster, more robust freeze/thaw capabilities that are needed to help scale and provide reliable ultra-low storage.



Research  
Products & Process  
Development



Bulk Production  
Freeze  
Bulk Storage



Transport to Fill



Formulation/Final Fill  
Storage-Thaw-Storage



Transport to Market

## ULC Advantages Over Cold Wall Freezers

- 10X Faster Temperature Recovery after Door Opening
- Rapid, Efficient, and More Sustainable Product Cool-Down
- +/- 3.0°C Uniformity
- Integrated Redundancy
- Flexible Bulk Storage Capacity
- Universal Product Containers (All sizes—bags or bottles)



Product shown with cover option.



## End-to-End Cold Chain Solutions and Support



Trane Technologies brings the power and cold-chain manufacturing expertise of Trane®, Thermo King® mobile refrigeration and Farrar Scientific. Our infrastructure represents an end-to-end portfolio of cold chain capabilities, scalable solutions, and an unmatched fleet of trained service technicians that cover temperatures ranging from -80°C to +40°C. Throughout the life cycle of our ultra-low solutions, we are committed to providing quality support and service.







## Another layer of protection.

Protecting your valuable product and investment is critical. For custom large scale installations, we offer Conditional Predictive Monitoring for our solutions as well as competitor offerings. With cloud-based software and technical expertise, we're able to "predict" a system failure, analyze the data, pinpoint the problem, and recommend the fastest path to repair.



Analyze  
Temperature



Analyze  
Oil Pressure



Analyze  
Pressure



Analyze  
Air Flow



Upload Data  
to Cloud



Analyze and  
Review Alerts

## Ready when you are.

As part of Trane Technologies, Farrar Scientific's consultative approach and robust stock positioning can help you quickly navigate critical cold storage decisions to expedite your operations.

- Ready-made and available stock
- No capital project costs
- Extended warranties
- ISO Certified
- Long-term, expert service support

Visit [www.farrarscientific.com](http://www.farrarscientific.com) or contact us to learn more: [LSSinfo@tranetechnologies.com](mailto:LSSinfo@tranetechnologies.com)



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