

# Ultra-Low Temperature Freezer Considerations: What To Look For In Your Next -86°C Freezer



REFERENCE  
BOOK

# From starting considerations to crucial factors, learn what matters most when selecting an ultra-low temperature freezer.



MDF-DU702VXC-PA



MDF-DU302VX-PA



MDF-DU502VH-PA



MDF-DU901VHA-PA

# Capacity & Location

When starting your search for a new or replacement ultra-low temperature freezer, the first consideration is almost always dependent on your facility's needs. The freezer size, or capacity, you choose depends on your available floor space and whether you need high capacity, moderate capacity, or lower capacity storage.

## STORAGE CAPACITY

From high volume products ideal for bulk storage to slim profile upright freezer models that maximize capacity in a small footprint, PHCbi brand products have the solution that fits your storage needs.

## LOCATION

Freezer location and available laboratory floor space often determine whether you need an upright or chest model ultra-low temperature freezer and how many models you can fit into the space. Some ULT freezers also have clearance requirements at the back and sides to allow proper ventilation. All PHCbi brand freezers can be installed without ventilation clearance requirements.



MDF-DU901VHA-PA



MDF-C8V1-PA



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# Performance & Reliability

The preservation of your research, biological samples or products cannot be compromised. That's why performance and reliability are the biggest tests of ultra-low temperature freezers. When comparing ultra-low temperature freezers, reputation and a history of field-proven reliability give you a high return on your investment.

PHCbi brand freezers are designed to maintain operational reliability throughout the freezer life cycle. Compressors and intermediate systems work together to assure reliability while optimizing energy efficiency.

High performance and a history of reliability ensure dependable preservation.



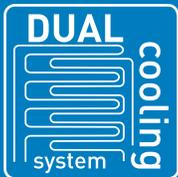
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**99%\***  
**UPTIME**

VIP® ECO Series ultra-low freezers have earned a worldwide reputation for *dependable performance in demanding environments* where critical materials are preserved for generations.



TwinGuard® Series ULTs offer even more protection for critical specimens. The two refrigeration systems work independently to hold ultra-low temperatures if one system experiences a service event.

# Temperature Uniformity & Recovery

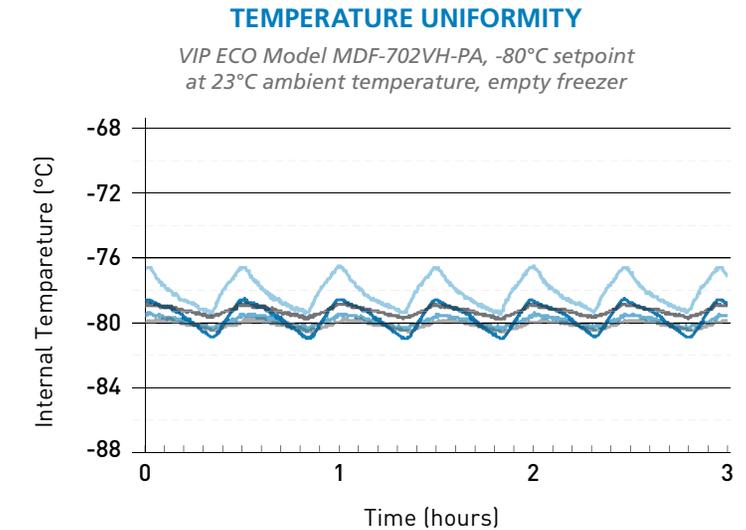
Freezers should also be able to maintain ultra-low temperatures despite high ambient conditions and maintain uniform temperatures throughout.

Temperature uniformity and stability are inherent to our freezer cabinet design. Upright models provide the most convenient access to stored materials.

VIP ECO freezers use a unique internal heat exchanger, which increases the performance envelope to provide uniformity and stability even in high ambient temperatures. VIP ECO upright freezers are constructed using the VIP Series cabinet design, which slows warm-up during power outages.

TwinGuard Series ultra-low temperature freezers achieve temperature stability during initial startup and maintain uniformity following routine door openings and throughout the steady state.

Chest freezers are a good choice for long-term storage that is accessed less frequently. Chest freezers naturally hold temperatures well following door openings and are available in small, space-saving designs or larger capacity models with dual redundant refrigeration systems for added security.



The *EZlatch inventory access and frost mitigation system* is ergonomically designed for easy one-handed operation, minimizing cold air loss and ensuring maximum energy efficiency. EZlatch is standard on VIP ECO and TwinGuard upright freezers.



# Energy Efficiency & Sustainability

The inclusion of life science products in ENERGY STAR® Certification provides easy access to trusted, independent performance and energy consumption measurements that allow one-to-one comparisons between manufacturers and products.

Our ULT freezers are purpose-built to merge efficiency and sustainability without compromising ultra-low temperature performance.

PHCbi brand VIP ECO ultra-low temperature freezers use natural refrigerants to minimize environmental impact and help you achieve facility sustainability goals.

Innovative PHCbi brand cabinet designs ensure exceptional insulation value in an optimized footprint.

## VIP® ECO

*The VIP ECO uses smart compressors, integrated electronics and natural refrigerants to lower operating costs without putting reliability and ultra-low temperature performance at risk.*

ENERGY STAR Certified VIP ECO models are available for 115V and 220V electrical services.



The PHCbi brand includes many products that are ENERGY STAR Certified and independently tested by a nationally recognized testing laboratory for performance and energy efficiency.

Visit [www.phchd.com/us/biomedical/energy-star](http://www.phchd.com/us/biomedical/energy-star) to see our full offerings and view results from third-party testing.



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# Service, Preventive Maintenance & Validation

We offer repair services using only OEM or manufacturer-recommended replacement components. Our service technicians are factory trained using the latest techniques for repairing, maintaining and validating equipment. We take pride in our products and assure they are manufactured to the highest possible standards.

You can help extend the life of your ultra-low temperature freezer by providing proper preventive maintenance. This should be scheduled either annually, semi-annually or quarterly. Preventive maintenance includes routine servicing by the ultra-low temperature freezer manufacturer and regular maintenance.

PHC Corporation of North America also offers a turnkey solution to validation using NIST/ISO calibrated instrumentation for validation and qualification in accordance with current GxP regulations (GMP, GLP, GCP), local standards and other regulations. Our team of experienced factory trained validation service professionals has earned a reputation for outstanding support for our customers.



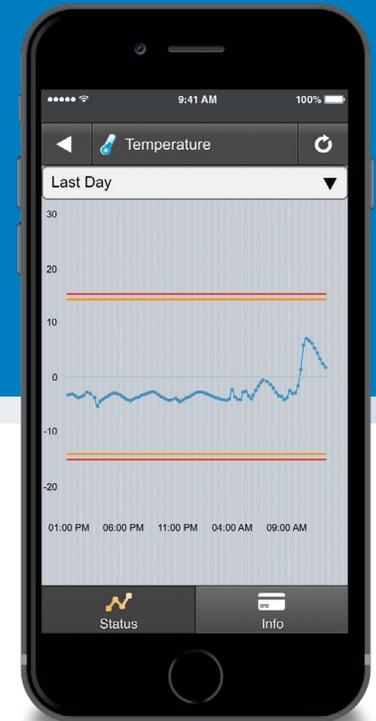
# Monitoring

Independent monitoring solutions eliminate the need for daily, manual data collection and free up valuable staff members, allowing them to focus on the tasks at hand. Using cloud-based 24/7 monitoring systems improves product safety by allowing continuous system function checks, regardless of lab staffing capacity changes or periods when the lab is not staffed.

Systems that support customizations for tracked data and alerts provide the highest level of flexibility to work with your unique application needs. Software-free monitoring capabilities provide real-time alerts directly to your smart devices, improving sample security and peace of mind.

*LabAlert® wireless monitoring system* lets you track and schedule maintenance and customize your alerts. LabAlert can be used across your laboratory and meets FDA 21 CFR Part 11 compliance for secure data recording.

 **LabAlert®**



# Summary

These considerations are the first areas to compare when purchasing a new ultra-low temperature freezer. Using them to shape your purchase decision helps ensure the safe, long-term preservation of your stored samples and the maximum return on your investment.

Storage **capacity and location** are directly determined by your specific application and current facility setup.

Of these considerations, **performance and reliability** and **temperature uniformity and recovery** are the most critical as they directly impact the safety of your products or research samples.

When looking for freezer models that provide **efficiency and sustainability**, without compromising performance, third-party testing, such as ENERGY STAR Certification, allows you to make one-to-one, unbiased comparisons.

Freezer life is extended by a combination of factory trained **service** technicians, routine **preventive maintenance**, and **validation** services that adhere to current GxP regulations

Cloud-based data **monitoring** capabilities improve product safety by giving you access to system function checks 24/7.

For more than 50 years, PHC Corporation of North America has earned a reputation for introducing new generation ultra-low temperature freezers with documented success. Each new model is better than the last— created and tested for reliability and performance.

## Choose wisely.



PHC Corporation of North America  
1300 Michael Drive, Suite A, Wood Dale, IL 60191  
Toll Free USA (800) 858-8442, Fax (630) 238-0074  
[www.phchd.com/us/biomedical](http://www.phchd.com/us/biomedical)

#### About PHC Corporation of North America

PHC Corporation of North America is a leader in laboratory equipment for biopharmaceutical, life sciences, academic, healthcare and government markets. The company is operated as a subsidiary of PHC Holdings Corporation, Tokyo, Japan, which is a global healthcare company involved in the three core businesses of Medical Devices, Healthcare IT and Life Sciences. Product lines under the new PHCbi brand include the space saving and energy efficient VIP® ECO, TwinGuard® and VIP Series ultra-low temperature freezers, cryogenic and biomedical freezers, pharmacy and high performance refrigerators, cell culture CO<sub>2</sub> and multigas incubators, programmable heated and refrigerated microbiological incubators and Drosophila/Plant Growth Chambers. For more information, please call PHC Corporation of North America at 800-858-8442, email [info@us.phchd.com](mailto:info@us.phchd.com) or visit <http://www.phchd.com/us/biomedical>.