

Maximise the energy efficiency of your ULT freezer for lower running costs and greater sustainability

Ultra-low temperature (ULT) freezers are used across a wide range of scientific disciplines for the medium to long term storage of biological samples, drugs, enzymes and chemicals. Cryopreservation between -40 °C and -86 °C preserves important specimens over indefinite periods of time without degradation, making them a vital part of a research and clinical laboratory. Unfortunately, ULT freezers operating between -70 °C and -80 °C consume around 16-22 KWh of electricity per day, making them extremely energy intensive and costly to run. In reality, the typical electricity usage of ULT freezers is frequently even higher than this, with older units operating in very warm ambient conditions being the worst offenders. This high consumption also raises environmental concerns, motivating labs to look for ways to make their freezers more energy efficient and support their institution's sustainability goals.

Adopting greener technology

A quick and highly effective way for labs to reduce their electricity consumption – and therefore their utilities bills and environmental impact – is simply to upgrade to newer, more energy-efficient ULT freezers. For example, frequency conversion ULT compressor technology enables a 900 litre ULT freezer to use less than 10 KWh of electricity each day, which is 50 percent less than many older models of the same size. These energy-efficient frequency conversion models can offer significant savings over the lifetime of a freezer, and provide a more eco-friendly alternative for environmentally focused institutions.

When making purchasing decisions, look for ULT freezers with built-in energy saving features that can help to reduce electricity usage and running costs, including vacuum insulated panels, multi-layered door seals, hydrocarbon refrigerants and microprocessor controllers. The long term financial savings resulting from lower energy consumption will soon outweigh the higher initial investment associated with these newer, greener models, enabling labs of all sizes to support the industry-wide shift towards net zero.



The TwinCool ULT freezer range with frequency conversion compressor technology from Haier Biomedical features two independent refrigeration systems, which operate on demand depending on ambient conditions, to ensure samples are fully protected even under challenging conditions or in the unlikely event of a compressor failure. The frequency conversion compressors have adaptive control, following user patterns and adjusting the refrigeration system, substantially reducing energy without compromising performance. The TwinCool also features an innovative cabinet design and hydrocarbon refrigerants, giving this entire range impressive energy consumption figures, excellent uniformity ($\pm 3^{\circ}\text{C}$) and extended temperature holdover times during power failure.

Haier Biomedical: your sustainable supplier

Comprehensive cold chain solutions

We are a leading provider of laboratory and medical equipment, with a mission to enable better lives globally. We provide innovative, robust and sustainable products and services to the life science sector, and are proud to be the sole manufacturer offering a complete range of cold chain products covering all temperature ranges, from -196 to +4 °C. Moreover, our products are supported by a comprehensive wireless monitoring system that ensures compliance with healthcare regulations.

Leaders in sustainability

We are proud pioneers of corporate sustainability and green innovation, integrating intelligent design, environmental protection and sustainable development into all our manufacturing workflows. To this end, we strive to source materials from sustainable suppliers, and ensure production processes have a low carbon footprint by, for example, increasing our reliance on renewable energy sources such as solar power.

Cutting-edge designs

Haier Biomedical's ULT freezer portfolio features state-of-the-art advancements in refrigeration technology that greatly reduce energy consumption. For instance, hydrocarbon refrigerants save up to 50 percent of a unit's energy consumption, significantly reducing running costs. They also achieve near-zero global warming potential – and zero ozone depletion potential – vastly improving refrigeration efficiency and drastically reducing carbon emissions. Additionally, our patented frequency conversion compressor uses proprietary Adaptive Technology, setting it apart from industry-standard single speed compressors, which simply cycle on and off. This means that the compressor can quickly adapt to conditions inside and outside of the freezer, by adjusting its running speed for optimal cooling performance. The drive runs at a lower speed when conditions are normal, conserving energy while effectively protecting samples.

Contact us to discuss how our ULT freezers could support you on your journey to a more sustainable and cost effective laboratory.

T: +44 (0)1932 780 070

E: sales@haierbiomedical.co.uk

View our ULT freezer portfolio here:



Haier Biomedical UK Ltd, Ocean House, 121 Harris Way, Sunbury,
Surrey, TW16 7EL, United Kingdom.
T: +44 (0)1932 780 070 W: www.haierbiomedical.co.uk
E: sales@haierbiomedical.co.uk
Company Registration Number: 07694265