

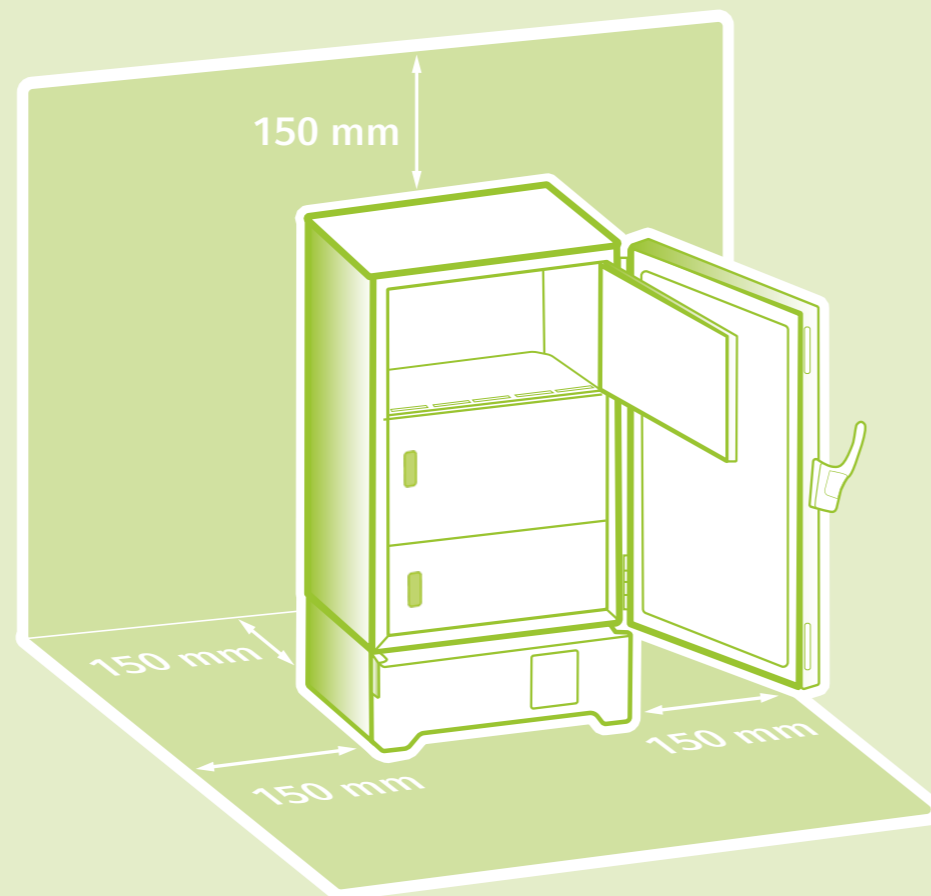
# Save Energy with Your Eppendorf ULT Freezers

When it comes to the sustainability of ULT freezers, energy consumption has always been the primary concern, followed by the environmental impact of the refrigerants used. Since these freezers must maintain ultra-low temperatures 24/7, a lack of energy efficiency can have a big impact on the amount of energy consumed and on your electricity bill.

## Installation

The way of installing a freezer has an impact on power consumption:

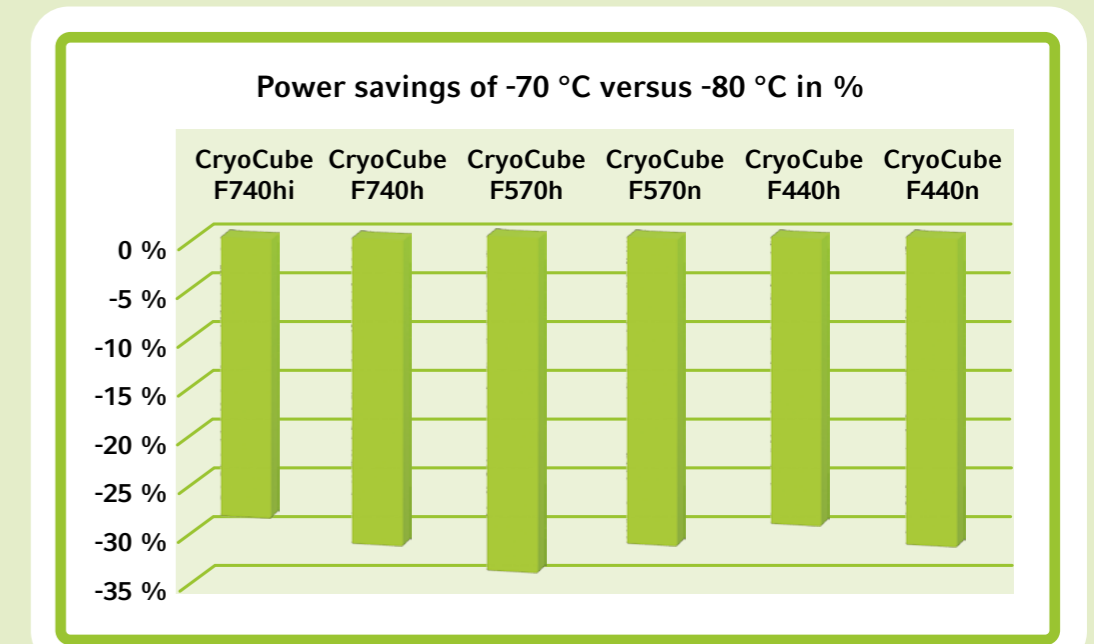
- > Check instructions in the freezer operating manual
- > 150 mm/6 inch in from the back wall and at least 150 mm/6 inch in from lateral objects result in better air movement around the instrument and finally in lower energy consumption
- > Keep the top of freezer free of packaging material or supply boxes of consumables to optimize air movement
- > Check the room temperature at the freezer location, +20 °C is recommended



## -70 °C instead of -80 °C: -30% Energy Savings

Discussions about changing the freezer set point from -80 °C to -70 °C to save energy have recently begun.

- > On average, 30% energy savings with CryoCube® models. Up to now, there has been no clear indication if the change would or would not harm samples. Most samples should not be impacted
- > The less you open your freezer, the less impact can be expected



Average energy savings when changing the set point of -80 °C to -70 °C. On average: ca. 30% savings. The data are based on Eppendorf-external tests with three empty units (230 V) of each type in parallel and 20 °C room temperature.

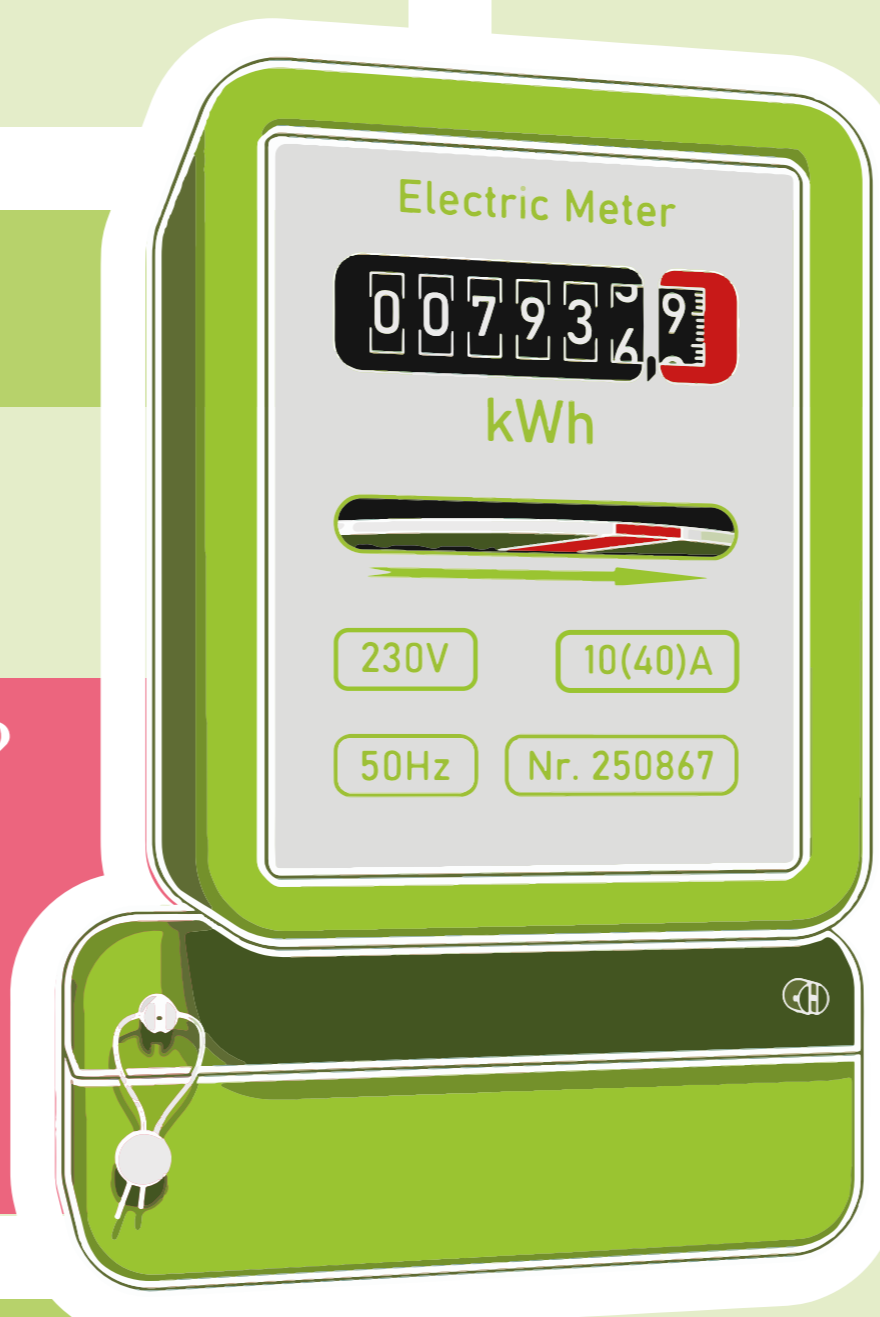
## Training

Although a ULT freezer may appear like a simple device, care should be taken to ensure its long and proper usage.

### Do You Know All About Your Freezer?

All users should be trained:

- > How to properly open and close the door
- > How to store samples systematically
- > How to perform regular maintenance tasks



## Back-up Freezer



What should you do if your freezer fails?

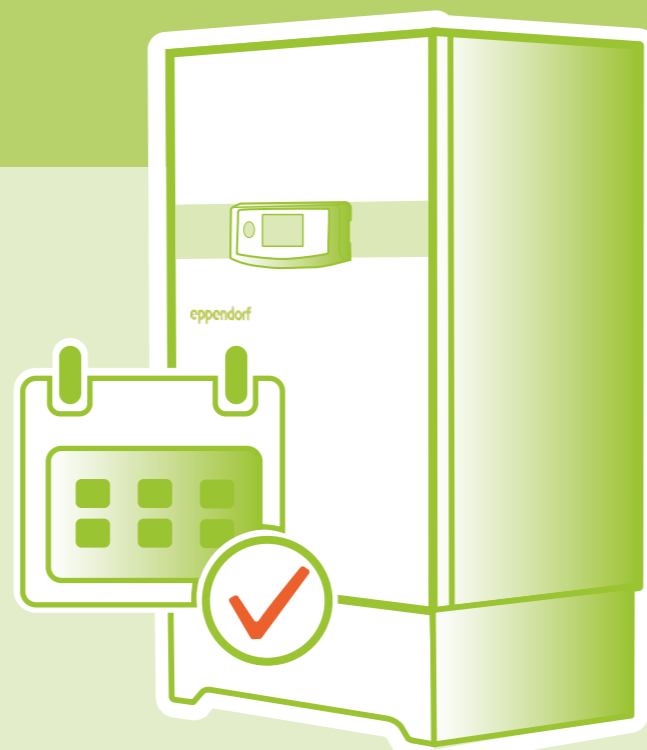
- > Empty back-up freezers are running 24/7. They serve as a safe harbor for samples evacuated from a non-functional freezer
- > Eppendorf CryoCube® freezer can pull down to -80 °C within ca. 4 hours – no need to keep them constantly running as back-up freezers. This saves energy

## Freezer-Sample Day

Define one day per year where the freezer content is checked for samples which are:

- > Not needed anymore
- > Expired
- > Unknown

Removal and disposal of these vials can provide additional freezer space.



## Sample Management



Space equals energy equals costs – get the maximum of storage out of your freezer:

- > Effective sample management is critical for maximizing cold storage space. Avoid free-style bag systems or non-standardized tube racks of different sizes and formats
- > Use standardized freezer boxes and metal freezer racks for systematic and efficient storage
- > Software provides information about the exact storage location of a sample within the freezer prior to opening the freezer door. Less and shorter sample search requires less energy for temperature recovery

Benefit from a dedicated sample management software, access your eLabNext 30-day-free-trial: [www.elabnext.com/eppendorf](http://www.elabnext.com/eppendorf)



## Maintenance and Service



ULT freezers run 24/7 for many years. A few regular maintenance tasks will extend the lifetime of the freezer and improve energy consumption:

- > Clean the air filter on a regular basis
- > Manual cleaning of snow/frost/ice within compartments once a week
- > Keep door gaskets ice-free to avoid loss of cold air
- > Manually defrost freezer once a year and combine it with basic cleaning of the freezer

Learn more from our freezer maintenance poster: [www.eppendorf.com/epservices-freezer-poster](http://www.eppendorf.com/epservices-freezer-poster)

