

WHY YOU SHOULD CHOOSE A ULT UNDERCOUNTER FREEZER?

Whitepaper for July 2020 | ARCTIKO

A survey published by TECHNOLOGY NETWORKS, "Ultra-Low freezer survey results: Needs, Problems & purchasing considerations", touches upon the subject of what types of ULT Freezers are available in the market and what are the user criteria and need from their ULT freezer.



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▶ THE TYPE OF ULTRA-LOW TEMPERATURE FREEZERS RESEARCHERS HAS ACCESS TO

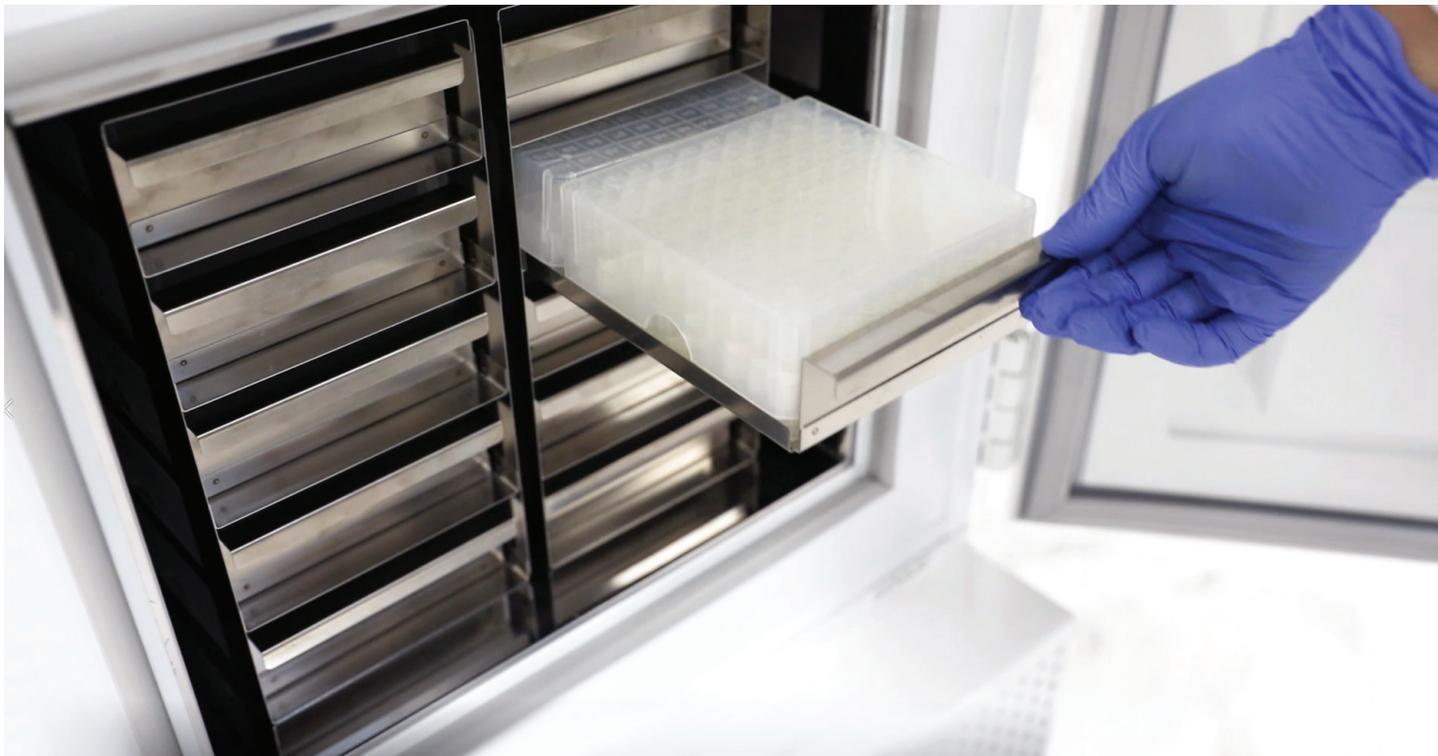
The survey shows that only 9.1% of the responders who participated in the survey have access to a Benchtop / Undercounter freezer.

This might be due to lack of availability for Benchtop/Undercounter ULT freezers in the market or the lack of knowledge that the product is available to them.

There are only a few manufactures in the market who are offering Benchtop/Undercounter freezers and the sizes and capacities offered are limited.

Available to the market are capacities from:

- ▶ 0.3 cu ft (7 Liters)
- ▶ 1.9 cu ft (55 Liters)
- ▶ 3.3 cu ft (94 Liters)



▶ THE MAIN STORAGE NEEDS OF THE RESPONDENT'S LABORATORIES

▶ 14.6% of the responders answered that their main storage need was to have their samples at their workstation and 84.6% of the responders answered that they needed to access their samples regularly.

A benchtop/undercounter ULT would help resolve these needs and add a new dimension to any laboratory, as the samples can now be near the workstation and give access to them regularly, during the work day.

With a Benchtop/Undercounter ULT freezer it would be possible to work uninterrupted with their samples during the day, without having to go back and forth to a remote storage area.

▶ THE **5** BIGGEST PROBLEMS WITH THE RESPONDENT'S CURRENT SETUP

The five biggest problems with the respondent's current setup:

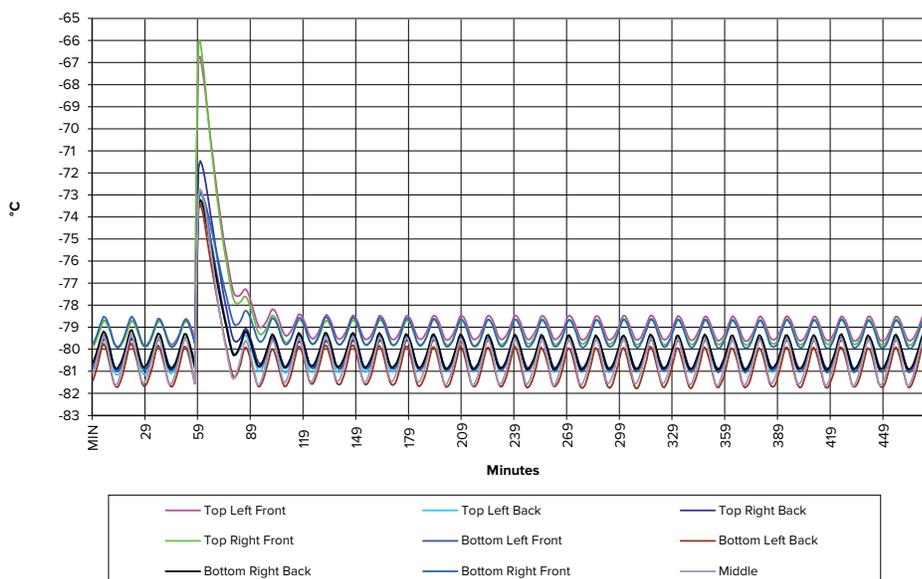
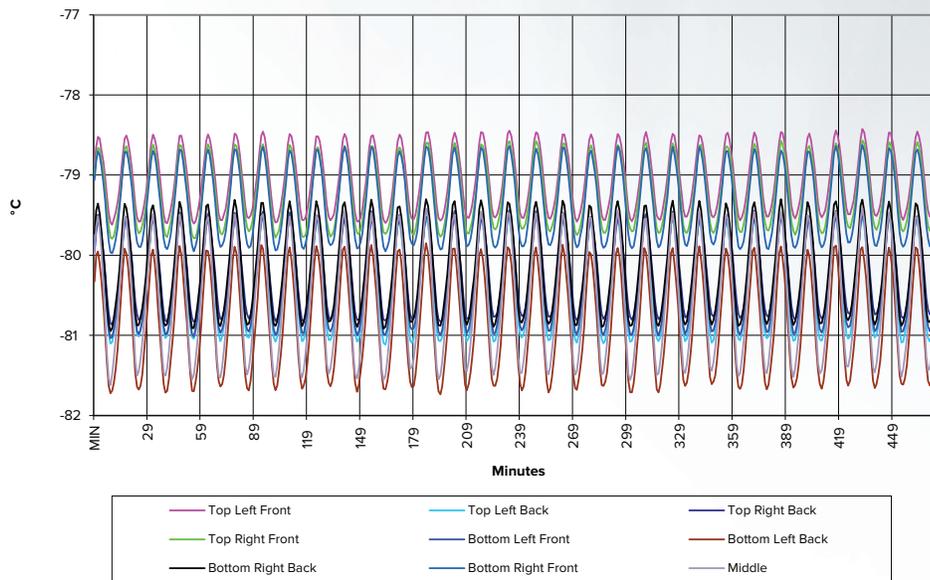
- ▶ Lack of storage capacity
- ▶ Temperature variation
- ▶ Unreliable backup system
- ▶ Temperature stability
- ▶ High Energy consumption

▶ TEMPERATURE VARIATION AND STABILITY IN BENCHTOP/UNDERCOUNTER ULT FREEZERS

▶ Most benchtop/undercounter ULT freezer has a unique designed cooling system, designed exactly to give a great cooling performance for the smaller storage compartment in these freezers.

In some of the Benchtop/undercounter ULT freezers available to the market, you will see as little as $\pm 2^{\circ}\text{C}$ temperature variation and stability.

The following tests are made on a 1.9 cubic feet Benchtop/Undercounter ULT freezer in an ambient temperature of $+25^{\circ}\text{C}$.



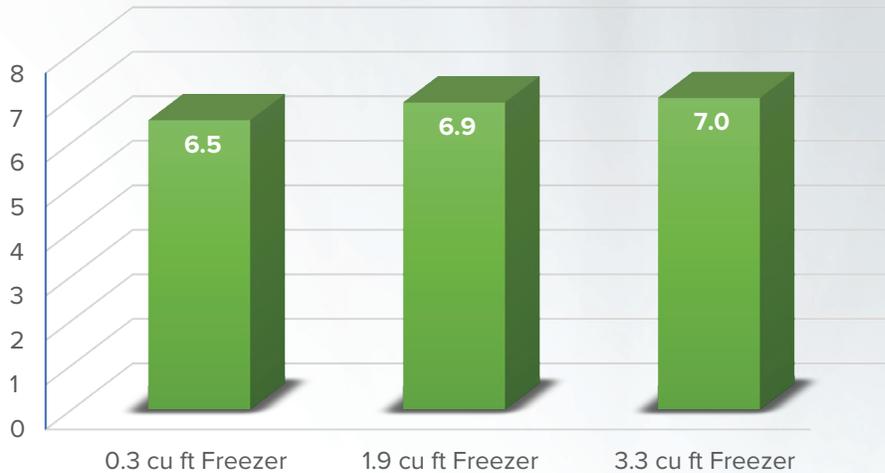
Even with door openings a Benchtop/Undercounter ULT freezer will show great performance.

The temperature will naturally rise during a door opening, however you will see it go down quickly again to the set temperature, without affecting the viability of samples.

Below graph shows a 1 minute door opening and the recovery time on a 1.9 cubic feet Benchtop/Undercounter ULT freezer.

▶ ENERGY CONSUMPTION ON BENCHTOP /UNDERCOUNTER ULT FREEZER

▶ Due to the small foot print and smaller cooling systems/compressors on Benchtop/ Undercounter ULT freezers, they have a remarkable low energy consumption compared to the larger Upright ULT freezers available to the market.



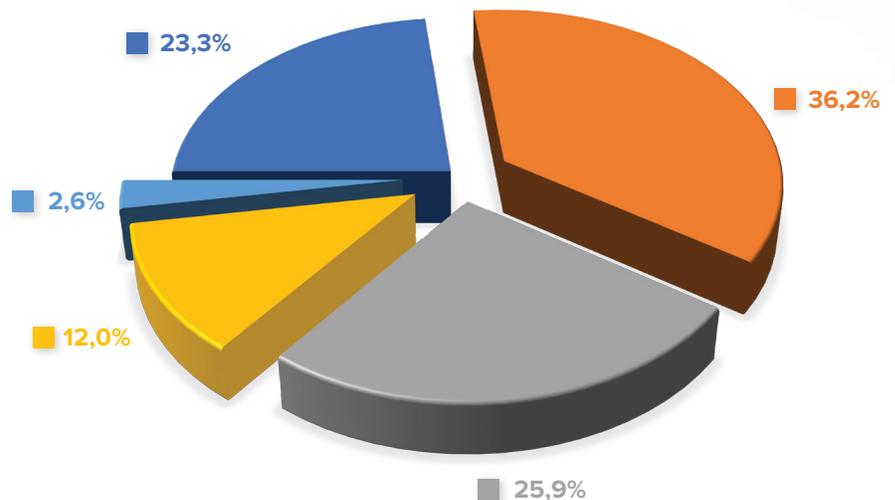
ENERGY CONSUMPTION ON BENCHTOP / UNDERCOUNTER ULT FREEZERS

▶ WHEN ASKED HOW IMPORTANT PERSONALIZED ACCESS AND SAMPLE SECURITY IS, RESEARCHERS RESPONDED:

▶ The answers here are quite interesting considering **23.3%** responded it is critical to have personalized access and sample security and **36.2%** responded it is important, but not required and **25.9%** responded it might become important in the future.

So, **85.4%** consider personalized access and sample security to be somewhat important for them in their daily work.

This is another benefit of a Benchtop/Undercounter ULT freezer, as these can be a personal freezer or be shared between only a few researchers.



- Critical / 23.3%
- Important, but not required / 36.2%
- Not important now but we may need in the future / 25.9%
- Not important - will never be used / 12.0%
- No opinion / 2.6%

► CONSIDERATIONS WHEN PURCHASING A NEW ULT FREEZER

► When asked about considerations when purchasing a new ULT freezer, both temperature stability/variabtion in cabinet temperature and size (footprint) came in the top three.

Due to the small footprint of a benchtop/undercounter ULT freezers they will fit perfect in almost any laboratory.

As explained earlier in this paper, most of the freezers available to the market do also have a high performing cooling system, specific designed to give a great temperature stability and variability.

► BENEFITS BY HAVING A BENCHTOP/UNDERCOUNTER ULT FREEZER

- Personal ULT freezer, with a key lock to secure the viability of samples
- Great temperature stability and variability
- Small foot print, makes them fit into almost any laboratory
- Low energy consumption

There are no concerns to store samples in a Benchtop/Undercounter ULT freezer as these are designed for the purpose and will maintain the viability of samples.

Use your time to focus on what really matters — your research and samples, and not about the laboratory equipment.



For availability on Benchtop / Undercounter ULT freezers go to following sites:



arctiko.com | <https://www.arctiko.com/products/86-c-ultra-low-temperature-freezers>



arctiko-int.com | <https://www.arctiko-int.com/products/86-c-ult-upright-freezers>

Reference <https://www.technologynetworks.com/immunology/product-surveys/ultra-low-freezer-survey-results-needs-problems-purchasing-considerations-289235>

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07/2020

