The Sample Storage Showdown

FREEZER FARM VS BiOS SYSTEM

RELIABILITY

Manual freezers don't protect against power outages, disasters, or system malfunctions. If an event occurs, your samples could be compromised. On the other hand, BiOS features a fully redundant mechanical refrigeration system plus an LN_2 backup system. Also, thanks to external refrigeration compartments, any necessary maintenance can be performed promptly without affecting stored samples.

SAMPLE INTEGRITY

The interior temperature of a -80°C upright manual freezer can rise as much as 8.1°C when the door is open for just 60 seconds.[1] That loss of cold air combined with possible frost buildup could be detrimental to your samples. With BiOS, temperature stability is guaranteed thanks to its patented -80°C tube picker area, which helps maintain consistent sample temperatures during picking.

SPACE EFFICIENCY

A single BiOS system can hold up to 2.22M tubes using Hamilton's High-Density racks with a footprint of just 57.47 m^2. To achieve that same amount of storage with medium upright freezers, you would require 99 freezers with a footprint of 258.2 m^2.[2]

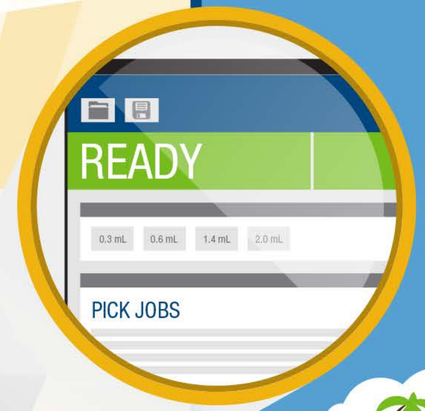
PROCESSING SPEED

7210 steps

If you're looking to reach your daily steps goal, then a manual freezer farm is the way to go. Retrieving all the samples on your picklist can be a daunting task with stops at multiple freezers. With BiOS, on the other hand, simply input the samples you need, and relax while the automated system goes to work. Go ahead, you've earned that cup of coffee.

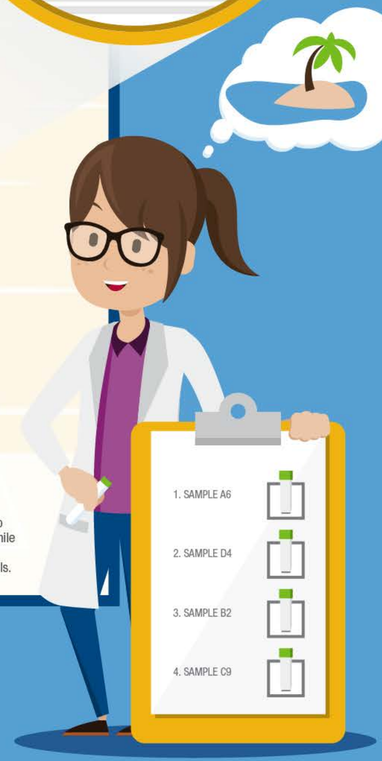
ENERGY CONSUMPTION

Every manual freezer needs an energy source, and this consumption adds up in a hurry. One upright freezer averages a total daily energy consumption of 6.88 kWh, whereas BiOS averages a total daily consumption of 283.68 kWh.[3] This means a freezer farm holding the same number of samples as BiOS would use nearly 2.5 times more energy every day!



SAMPLE SECURITY

As with any process involving humans, there's always a chance for mistakes. Thanks to the operational efficiency of BiOS, however, the chance of human error is eliminated while overall risk is mitigated. And with its powerful INSTINCT S software, BiOS seamlessly interfaces with your LIMS to provide access restrictions, sample tracking, and audit trails.



1. According to a study done by researchers at King's College in London.
2. BiOS XL4 total capacity using Hamilton HD racks equals 2,224,422 tubes. Manual freezer assumptions: 100 position, 51 mm cryobox used for storage; Capacities based on 65% full freezers; 1 extra backup freezer for every 10 manual freezers; Example uses PHCBi freezer (MDF-DU502VHA-PA). Note: BiOS offers flexible system options to store up to 22.3M 0.2 mL samples.
3. Assuming 99 manual freezers (MDF- DU502VHA-PA) to equal the storage of 1 BiOS XL4 using HD racks; Average total daily consumption is 681.12 kWh vs. 283.68 kWh.

HAMILTON