

## The Brightwater Freeze Concentrator

### Description

- The Brightwater Freeze Concentrator decreases nutrient loading to onsite wastewater management systems and reduces toilet waste hauling costs. This is accomplished by separating high-strength wastewater into two streams: liquid fertilizer and water.
- Block freeze concentration is a purely physical process in which a wastewater stream, (e.g., urine) is partially frozen, creating a mixture of pure ice crystals and concentrated liquid.
- The concentrated liquid is completely drained from the reactor, after which the ice crystals are melted, separating the feedstock into high-strength (concentrate) and low-strength (melted ice) streams.
- The concentrated liquid contains 90% of the dissolved nutrients, and collected nutrients can be used as a sustainable fertilizer.
- The low-nutrient strength melted ice can be lightly treated for non-potable reuse or discharged to the existing wastewater treatment system. Block freeze concentration does not require chemical pretreatment, which reduces resource consumption and maintenance requirements.
- The Brightwater Freeze Concentrator is completely automated and only requires periodic servicing.
- Monitoring can be conducted through an integrated hardware and control box, or remotely through a web interface where internet access is available.
- The Brightwater Freeze Concentrator is designed to be used indoors with secondary containment.

Person Equivalents Served per day*	69
Daily Wastewater Treatment Capacity*	95L
Fertilizer Product Volume*	7,2 L per day
Concentration Factor**	6X
Water Weight Removed per Year	28895 kg
Mass Hauling Reduction Factor	83%
Footprint (Width x Depth)*	1,5 m x 1,3 m (1,9 m <sup>2</sup> )
System Height	1,3 m
Power Consumption	40 Wh per L treated
Maximum Power Draw	1000 W
Necessary Power Connections	230V AC, @ 50-60 Hz
Operating Ambient Conditions	4-30°C < 90% Relative Humidity
Ventilation Requirements	40mm vent pipe to outdoors, if machinery room is not actively ventilated

\* The Brightwater Freeze Concentrator is scalable. The values stated in this table can be scaled up or down to meet customer specifications.

\*\* The achievable concentration factor can also be adjusted to meet customer specifications.



The Brightwater Freeze Concentrator shown above is designed to separate high-strength wastewater into two streams: liquid fertilizer and water.

### Ordering Information:

- Each unit is built to order — please contact us for our current lead time.
- A deposit will be required to initiate an order and to secure a spot in our production queue.
- Contact [kim@brightwatertools.com](mailto:kim@brightwatertools.com) to initiate an order, or for any further inquiries including current pricing and lead time.



355 Old Ferry Road  
Brattleboro, VT 05301  
USA

+1 802.255.4708  
[info@brightwatertools.com](mailto:info@brightwatertools.com)  
[www.brightwatertools.com](http://www.brightwatertools.com)