



CRYOLINE® CWI. CRYOWAVE® impingement freezer.



Concept CRYOLINE® CWI is Linde's innovative high-capacity freezer solution that combines the benefits of CRYOWAVE® product agitation with impingement gas flows to give customers new-found levels of flexibility and productivity.

Linde's patented impingement technology combines cryogenic gases with high-velocity convective airflow to achieve rapid chilling and freezing of food products. This powerful and economical impingement technology has now been combined with the quality gains of CRYOWAVE controllable vibration systems for individually quick frozen (IQF) product. This dual-purpose solution supports high throughput rates. It is ideal for meats, seafood and IQF products such as shrimp, sliced/diced chicken, sausage, meatballs, pasta, pizza toppings, fruit and vegetables.

The combined CRYOWAVE impingement technologies provide users with the design flexibility to either increase production capacity or reduce freezer length relative to traditional IQF freezing system. This is possible due to the high heat transfer rate of CRYOLINE CWI.

Refrigerant CRYOLINE CWI technology employs liquid nitrogen as the cryogenic medium for an instant crust freeze that locks in natural flavour and moisture.

Operation The product enters CRYOLINE CWI on a vibrating, customised stainless steel belt. This vibratory action creates a wave-like motion along the length of the conveyor, spreading the product evenly and dislodging it from the surface of the belt and from surrounding products while it is sprayed with liquid nitrogen. As it moves through the freezer, the product is exposed to a high-velocity cryogenic gas flow. CRYOLINE CWI uses powerful motorised blower-wheels and impingement plates instead of traditional fan blades to increase the static pressure and the overall velocity of the airflow.

CRYOLINE CWI is controlled via the built-in multi-language touchscreen. The main menu displays the current product, motor speeds, safety status, machine messages, selected operational mode and the freezer temperature. It also gives the operator access to other screens and menus. In the event of a fault, detailed information on the source of the problem is displayed. Recipes can be stored in the system, allowing the user to call up the operational parameters of all product types in a matter of seconds.

Hygiene CRYOLINE CWI is designed for ease of use and low maintenance with minimal cleaning effort. CRYOLINE freezers feature sloping floors and centre trough drainage. All internal components are made of stainless steel or polyethylene. Modules are fully welded, ground and finished. The freezer top lifts vertically via an electric screw jack, providing full access to the tunnel for cleaning.

- Benefits**
- Dual-purpose design for both IQF and non-IQF foods
 - Increased product quality thanks to superior IQF performance (99.5%)
 - High production capacity
 - Cryogen savings with heat transfer rates two to three times those of traditional modular cryogenic freezers
 - Elimination of downtime associated with mechanical freezers
 - Reduced overhead and unit cost
 - Hygienic design – less water and time required for cleaning
 - Controllable belt vibration adjustable to suit product size and integrity
 - Belt washer at in-feed
 - Low maintenance

Technical data **CRYOLINE CWI**

	CWI 1000-5	CWI 1000-8	CWI 1000-11	CWI 1000-14
Overall length	5545 mm/18.2 ft	8545 mm/28 ft	11545 mm/37.9 ft	14545 mm/47.7 ft
Overall width	2220 mm/7.3 ft	2220 mm/7.3 ft	2220 mm/7.3 ft	2220 mm/7.3 ft
Overall height (closed)	2325 mm/7.6 ft	2325 mm/7.6 ft	2325 mm/7.6 ft	2325 mm/7.6 ft
Overall height (open)	3225 mm/10.6 ft	3225 mm/10.6 ft	3225 mm/10.6 ft	3225 mm/10.6 ft
In-feed height	925 ± 100 mm/ 36.4 ± 3.9 in	925 ± 100 mm/ 36.4 ± 3.9 in	925 ± 100 mm/ 36.4 ± 3.9 in	925 ± 100 mm/ 36.4 ± 3.9 in
Maximum product height (IQF products)	50 mm/2 in	50 mm/2 in	50 mm/2 in	50 mm/2 in
Maximum product height (standard tunnel)	100 mm/4 in	100 mm/4 in	100 mm/4 in	100 mm/4 in
Usable belt width	1060 mm/42 in	1060 mm/42 in	1060 mm/42 in	1060 mm/42 in
Voltage, 3 phase 3N/PE	360/500 32 A	360/500 49 A	360/500 63 A	360/500 82 A