

## CRYOLINE®SC. Super contact freezer.



**Concept** Achieving desirable food products is challenging as consumers increasingly demand safer and more appealing food choices. To fulfil these requirements, chilling and freezing is the preferred preservation method to increase shelf life and maintain food quality. However, there are several products that are either too delicate or do not maintain shape well when processed in traditional mechanical freezers.

The CRYOLINE®SC cryogenic freezer from BOC is designed to process delicate, sticky and hard to handle products in an efficient and hygienic way. It uses a disposable plastic film which acts as the conveyor belt travelling through the freezing tunnel over cryogenically refrigerated plates. These plates operate at  $-196^{\circ}\text{C}$ , rapidly and effectively freezing the contact surface of the product while the tunnel environment is cryogenically cooled by liquid nitrogen to reduce the entire product temperature. The consolidated features of this freezer technology deliver products free from belt marks and wrinkles which can be easily handled for further processing. Due to the nature of the belt, soft, wet or sticky products can be managed without product deformation or adhesion - even liquids can be frozen with ease. As the belt is disposable, the freezer can be quickly and efficiently cleaned at the end of production, ready for the next day's use and product changes do not require expensive delays.

**Model range** The CRYOLINE®SC cryogenic freezer comes in two standard widths of 750mm and 1,250mm with the basic model having a usable length of 6m. It is also modular with the possibility of adding 3m tunnel sections to boost capacity where required. Each freezer is based on the shell of the highly successful CRYOLINE®XL which offers great accessibility combined with tried and tested reliability. The required freezer size depends on the throughput of products, their temperature and bulk density. There is also a super contact mini freezer available which is sold under the name CRYOLINE®SM. The method of feeding the product into the freezer also has to be taken into account.

- Feature and benefits**
- Handles soft, sticky or marinated products with ease, reducing handling and spoilage
  - Leaves no belt marks due to the plastic film belt
  - Does not deform products, giving better appearance and quality
  - It is easy to clean as all parts are accessible, reducing cleaning time and improving hygiene
  - The gas control system makes optimum use of the liquid nitrogen, ensuring high efficiency
  - High capacity in a small space, making optimum use of the available space
  - Low capital investment required
  - Easy to operate, very low possibility of operator errors
  - Due to the single use film, different products can be processed without cleaning steps

**Operation** The CRYOLINE®SC is a contact freezer which removes the heat from the product by contact with the cold plates. The gas generated by the vaporisation of the liquid nitrogen is then exhausted to the atmosphere. As the temperature of the exhaust is controlled, the amount of cold extracted from the nitrogen can be optimised according to the production demands. High speed fans circulate the cold gas atmosphere inside the tunnel and help to freeze the upper surface of the product.

**Technical data** CRYOLINE®SC and CRYOLINE®SM

CRYOLINE® series	SC	SC	SC	SC	SC	SC	SM	
Model	750-6	750-9	750-12	1250-6	1250-9	120-12		
Number of modules		1	2		1	2		
Capacity, nominal (kg/h)	300	450	600	500	750	1,000		
Length (m)	8.44	11.44	14.44	8.44	11.44	14.44	4.49	
Width (m)	1.75	1.75	1.75	2.25	2.25	2.25	1.11	
Height, closed (m)	All models: 1.62-1.82 (closed) - 2.32-2.52 (open)							2
Net belt width (m)	0.75	0.75	0.75	1.25	1.25	1.25	0.55	
Product headroom (m)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Effective belt area (m <sup>2</sup> )	4.5	6.75	9.0	7.5	11.25	15.0	1.65	
Retention time (min)	1-30	1.5-45	2-60	1-30	1.5-45	2-60	1-30	
Power demand* (kW)	3.5	4.6	5.7	5.0	7.4	9.6	2.2	
Weight (kg)	2,200	2,950	3,700	2,600	3,500	4,400	890	
Noise level (dBA)	75	75	75	75	75	75		

\*Normal consumption with 3 x 380V, 50Hz supply

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