

Continuous Crystallization

CRA225 Crystallizer

Creates new opportunities on small-scale

The CRA225 unit is an aerator, continuous ice-cream freezer, and crystallizer in one. The texture of your final product is dependent on three factors: the degree of crystallization, the level of aeration and the mechanical force/shear during processing. The system can be executed with an air injection unit, a mixing head, pinworker, scraped surface heat exchangers (SSHEs) and resting tube, ensuring maximum flexibility for your application lab.

When using the CRA225 for crystallization of oil and fats, the quality of product is based on consistency, structure, plasticity and hardness. Meeting these specific conditions is directly dependent on the recipe and the process equipment. As the recipes and processes are unique for each product, it is important to have the most flexibility possible from your crystallizer.

The hygienic design of the system ensures easy cleaning and a minimum risk of contamination during processing.



Features & Benefits

- Easy control by colour touch screen
- Maximum flexibility in configurations
- System pressures up to 12 bar
- Hygienic design
- Highest level of automation
- Easy dismantling of the SSHE



Applications

- Whipped Cream
- Mousse
- Ice Cream
- Margarines

Working Principle

The product is introduced into the balance tank. From here, a product pump continuously feeds the mix into the system. By injecting air in the inlet the product is aerated with a maximum overrun of 100%. From there, the product is entering the crystallizers, which are scraped surface heat exchangers, chilled with a glycol mixture from an external cooling unit. The intensity of cooling on each crystallizer can be set by a manual flow control valve in the glycol line. The resting tube gives additional crystallization time to the product.

An air operated back pressure valve makes sure the product is under the right pressure. After the back pressure valve the product can be collected.

The system includes an integrated CIP (Clean-In-Place) pump for efficient cleaning.



Optional Accessories

- Mixer in the feed hopper
- Controlled aeration with nitrogen
- Heating for CIP-purposes
- Heat tracing & re-melting
- Additional barrel(s) and pin worker(s)
- Flow meter (mass or electro-magnetic)
- Upgrade in automation

Specifications

Product code	CRA225
Process flow rates	10-30L/hr
CIP flow rate	160L/hr
System pressures	25bar(g) [170/360/725psi(g)]
Additional CIP pump (optional)	Up to 800L/hr
Refrigeration system (external)	-25°C [-13°F]
Max. particle size	4mm
Max. rotating speed	1450 rpm
Diameter scraped surface	65mm
Dead volume per barrel	810mL
Pin Worker Rotation Speed	1200 rpm
Continuous Aeration	Flow controlled
Overrun	Up to 200%
Materials product side	SS316
Blades	Peek (standard)
Weights & Dimensions	
Weight	500kg [1102lbs]
L x W x H	1640 x 1150 x 1650mm [64.5 x 45.3 x 65"]
Required utilities	
Electrical supply	400V/ 3ph/ 50Hz - 220V/ 3ph/ 60Hz
Compressed air	Max. 6bar [87psi]
Water	4bar [58psi]
Drains	Required



MPV231EF Emulsifier & CRA225 Crystallizer

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Lab & Pilot Equipment

