

# MINIFAST

PILOT LYOPHILISERS



# MINIFAST

**The Minifast range of lyophilisers is the connection between a typical bench-top freeze dryer used in laboratories and the GMP production-scale units.**

Freeze-drying technology comes in all sizes and MINIFAST is perfectly suited for the needs occurring within a laboratory environment.

Designed according to the highest technical performance and quality standards, MINIFAST is an excellent support to R&D and laboratory applications.

The MINIFAST units are available in two versions: Minifast 04 and Minifast 10, with shelf areas of 0.4 m<sup>2</sup> and 1.1 m<sup>2</sup> respectively. The standard shelf inter-distance is 80 mm with larger spacing offered as an alternative configuration (120 mm on Minifast 04 and 160 mm on Minifast 10).

Fusion™ brazed product shelves, **produced in-house at IMA Life**, offer improved process control and optimal energy efficiency.

Ice condenser capacities range from 8 kg to 20 kg with minimum condenser temperatures of -85°C as standard.

## MINIFAST RANGE PROVIDES THE LINK BETWEEN LABORATORY DEVELOPMENT AND INDUSTRIAL SYSTEMS.

A wide range of standard options are available including:

- Through wall installation
- Stainless steel door
- 316L chamber and condenser
- Paperless recorder

E-Lyomaster SCADA system:

- Advanced functions (compared to standard user interface)
- Batch reporting system
- Compliance to 21 CFR part 11 with e-signature
- Consistent with the operating interface of the larger production-scale freeze dryer
- SECOMEA secure remote access\*
- Vial headspace pressure control prior to stoppering
- Capacitance manometer gauge for high-accuracy vacuum measurement
- Chamber pressure comparison for primary drying end point monitoring
- QUANTUM® multi-purpose mass spectrometer including primary & secondary drying end point monitoring
- VERISEQ® Ice fog generator to control ice nucleation
- Eutectic monitoring\*
- Sample thief

\*Exclusively on e-Lyomaster SCADA control system

The MINIFAST range is part of IMA Life's wide offering of lyophilisation equipment, including the high-end industrial Lyomax and Lyofast freeze dryers, fixed and flexible loading and unloading systems, and small batch production freeze dryers as the Lyofast Mini and the Minimax series.

## CONTROL SYSTEM

MINIFAST can be supplied with a fully automated control system based on PLC with touch-screen HMI, or e-Lyomaster SCADA PC as an option. Both control systems benefit from a user-friendly operating interface.

## COMPREHENSIVE DOCUMENTATION, SWIFT VALIDATION

IMA Life Freeze Drying Solutions' internal Quality Management system has, for many years, been accredited with ISO9001-2015. This system provides integrated, comprehensive documentation relating to the manufacture of all products, ensuring the user receives full details of the equipment. In order to assist in swift and painless equipment validation, IMA Life can also provide a standardised IQ and OQ documentation package.

## GLOBAL CONTINUITY

MINIFAST is one of IMA Life's many Freeze Drying Solutions.

Our extensive product portfolio backed by worldwide sales, service and technology centres, enables customers with global operations to leverage the benefits of continuity across their facilities.



Stainless steel door configuration



Standard configuration



# DATASHEET

		MINIFAST 04		MINIFAST 10	
Chamber	Material	304L			
	Internal finish	Mirror, < 0.4 µmRa			
	Door material	Clear plexiglass			
Condenser	Material	304L			
	Internal finish	Satin < 0.75 µmRa			
	Defrost	Hot water			
	Coil material	316L			
	Surface area	0.4 m²		1.1 m²	
	Capacity at 12.7 mm ice thickness	8 kg		20 kg	
Shelves	Material	316L			
	Finish	Satin, 0.4 ~ 0.6 µmRa			
	Shelf dimensions	315 x 455 x 18 mm		455 x 615 x 18 mm	
	Number of shelves per stack	3 + 1	2 + 1	4 + 1	2 + 1
	Inter distance / Alternative	80 mm	120 mm	80 mm	160 mm
	Total shelf area	0.4 m²	0.27 m²	1.1 m²	0.56 m²
	Total fences	3	2	8	4
	Vial qty 2R –(Ø16xH35) -per fence	567	567	567	567
	Lyo loading capacity 2R –(Ø16xH35)	1701	1134	4536	2268
	Shelf temperature uniformity	1.5°C ( -40/+40 °C)			
	Vial stoppering	Yes			
Refrigeration	Compressor type	Cascade, hermetic, reciprocating, air cooled			
	Quantity	2			
	Power	2 hp + 1 hp		4 hp + 2 hp	
	Shelf cooling time 20°C to -40°C	40 minutes (no load)			
	Shelf minimum temperature	-65°C (no load)			
	Shelf min. control temperature during drying	-50°C			
	Condenser cooling time +20°C to -40°C	30 minutes (no load)			
	Condenser minimum temperature	-85°C			
	Refrigerant	R23/R507			
Vacum System	Primary pump	1 x 2-stage, oil sealed, rotary			
	Pump capacity	12 m³/h		18 m³/h	
	Pumpdown to 0.1 mbar	30 min., clean dry system, condenser at -60°C			
Control & instrumentation	Control architecture	PLC + graphical interface			
	User interface	Siemens touch screen			
	PLC type	Siemens			
	Control mode	Manual and automatic			
	Process vacuum sensor	Pirani type			
	Product temperature probes	T thermocouples (1 per shelf)			
Utilities	Electrical	Single phase, various voltage & frequency supplies			
	Installed power (base machine)	5.6 kW		6.8 kW	
	Water for defrost	20-80°C supply, max 3 barg			
	Frame dimension	1430 x 920 x 1950 mm		1650 x 1120 x 2060 mm	
	Weight (Net)	930 Kg		1400 Kg	

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IMA S.p.A. reserves the right to make any changes to the described machine characteristics.



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