

# Frozen in Time Ltd.

Manufacturers of Freeze Drying Machines  
and Vacuum Cold traps

## HS-1 & HSL-1 Freeze drier

The HS-1 freeze drier is a general-purpose, high-performance pilot unit featuring stainless steel shelves with internal circulating heat transfer fluid for heating and cooling, enabling it to meet even the most stringent demands of the pharmaceutical and biotechnology industries. The key features of this unit are its drying options using up to four shelves with a total area of 0.48 m<sup>2</sup> and a shelf spacing of 60 mm, and a hydraulic vial stoppering device. The HS -1 is also ideal for product development and small-scale production activities.

There are two control options available the first is the manual touch keypad with LCD vacuum, temperature displays and manually operated valves. This system does come with a RS232 computer application that can log data and control step changes giving it a simplified computer led programmed profile to follow.

The second is the fully automatic version where a touch screen Scada system takes full control of the whole freeze drier. Please see additional information.

Also available in a clean room version, where all accessible parts are behind in a separate room.

**UK Manufactured**

Technical Data	HS-1	HSL-1
<b>Ice condenser capacity</b>	15 kg	15 kg
<b>Ice condenser performance:</b>		
<b>Ice condenser temperature:</b>	-55 °C	-85 °C
<b>Defrost:</b>	Hot gas & electric	Hot gas & electric
<b>Shelf dimensions:</b>	30 x 40 cm	30 x 40cm
<b>Number of shelves:</b>	4 +1	4 +1
<b>Shelf area:</b>	0,48 m <sup>2</sup>	0,48 m <sup>2</sup>
<b>Shelf spacing:</b>	min. 6 cm	min. 6 cm
<b>Shelf temperature:</b>	-45 °C to +60 °C	-65 °C to +60 °C
<b>Shelf temperature accuracy:</b>	max. ±1 °C	max. ±1 °C
<b>Cooling systems:</b>	Air cooled	Air cooled
<b>Refrigeration:</b>	Single Stage	Cascade
<b>Isolation Valve:</b>	Ø10cm	Ø10cm
<b>Unit dimensions:</b>	189 x 70 x 90cm (H x W x D)	189 x 70 x 90cm (H x W x D)
<b>Refrigerant:</b>	R507	R507 & R23



### Part No's

HS-1	Manual	FIT/LYO/62/1 (Without shelf Stoppering)
HS-1	Manual	FIT/LYO/65/1
HSL-1	Manual	FIT/LYO/68/1
HSL-1	Automated	FIT/LYO/71/1



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**Pricing on any accessories shown can be found by keying the part number into the search box on our website.**

The specifications listed in this brochure are subject to change by the manufacturer and therefore cannot be guaranteed to be correct. If there are aspects of the specification that must be guaranteed, please provide these to our sales team so that details can be confirmed.

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Please contact us if this literature doesn't answer all your questions.