

Frozen in Time Ltd.

Manufacturers of Freeze Drying Machines
and Vacuum Cold traps

HS-4 & HSL-4 Freeze drier

The HS-4 freeze dryer 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 most stringent demands of the pharmaceutical and biotechnology industries. The key features of this unit are its drying options using up to six shelves with a total area of 3.6m² shelf spacing of 60 mm, and a hydraulic vial stoppering device. The HS-4 is also ideal for product development and small-scale production activities.

The HS-4 comes with fully automatic controls as standard. The 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-4	HSL-4
Ice condenser capacity	45 kg	45 kg
Ice condenser performance:		
Ice condenser temperature:	30 kg / 24 h	30 kg / 24 h
Defrost:	-55 °C	-85 °C
Shelf dimensions:	Hot gas	Hot gas & electric
Number of shelves:	75 × 80 cm	75 × 80cm
Shelf area:	6 +1	6 +1
Shelf spacing:	3.6 m ²	3.6 m ²
Shelf temperature:	min. 6cm	min. 6cm
Shelf temperature accuracy:	-45 °C to +60 °C	-65 °C to +60 °C
Cooling systems:	max. ±1 °C	max. ±1 °C
Refrigeration:	Air cooled or water	Air cooled or water
Isolation Valve:	Single stage	Cascade
Unit dimensions:	Ø25cm	Ø25cm
Refrigerant:	206 × 200 × 126cm (H × W × D)	190 × 120 × 250cm (H × W × D)
	R449A	R449A & R23

Part No's

HS-4 Automated FIT/LYO/89/1
HSL-4 Automated FIT/LYO/92/1



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