

Frozen in Time Ltd.

Manufacturers of Freeze Driers
and Vacuum Cold Traps

HS Series Freeze Drying Machine (2010 Specifications)

The HS-3 freeze driers have shelves that are temperature controlled from -50°C to +60°C using circulating heat transfer fluid. It has a fully automated programmable PLC control system with on screen graph and data printing. The drying chamber has 6 mobile temperature probes that can be inserted into samples and 6 shelf probes. The -80°C versions have a cascade refrigeration system on the condenser chamber.

The shelves are easily adjusted to accommodate all sizes of vials.



HS-3 Lab Freeze Drier Specifications

	HS-3	HSL-3
Overall Dimensions W x D x H cm	150 x 100 x 210	150 x 100 x 210
Specimen Chamber Diameter x Length cm	83 x 70	83 x 70
Specimen and Condenser Chamber Construction	Polished 316L Stainless Steel	Polished 316L Stainless Steel
Shelf Area m² and Levels	1.95 – 6+1	1.95 – 6+1
Shelf Size W x D – Shelf Clearance cm	50 x 65 - 6	50 x 65 - 6
Condenser Chamber Temperature	-55 °C	-80 °C
Shelf Temperature Range °C	-40 to +60 °C	-50 to +60 °C
Stopping Device	Hydraulic	Hydraulic
Mobile Temperature Probes	6	6
Condenser chamber Defrost	Electric	Electric
Chamber Doors	Clear Acrylic	Clear Acrylic
Condenser Ice Capacity	35 litre (20litres / 24hour)	35 litre (20litres / 24hour)
Refrigerant	R-507	R-507 – R-23
Vacuum Pump	Ulvac GLD 201	Ulvac GLD 201
Refrigeration	Single Stage Condenser Single Stage Shelf Control	Two Stage Cascade Condenser Single Stage Shelf Control
Isolation Valve	Ø 20cm	Ø 20cm
Power Requirements	1ph 240v or 3ph 415v	1ph 240v or 3ph 415v
Warranty - Parts and Labour	12 months	12 months

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HS Series Freeze Drying Machine (2010 Specifications)

The HS- Series machines have shelves that are temperature controlled from -40°C to +50°C using circulating heat transfer fluid. The controls are on a keypad with LED's to show active functions and LCD temperature and vacuum displays. The drying chamber has 4 mobile temperature probes that can be inserted into samples and read on the control panel. Each chamber has its own dedicated refrigeration system. The -85°C versions have a cascade refrigeration system on the condenser chamber. The Freeze driers are equipped with a manual isolation valve for pressure rise tests and manual bleed valve for vacuum control.

Extras:

Fully automated programmable PLC control system with on screen data display and printing facility.



HS- Lab Freeze Drier Specifications

	HS-1	HSL-1	HS-2	HSL-2
Overall Dimensions W x D x H cm	70 x 80 x 200	95 x 80 x 200	95 x 90 x 210	115 x 90 x 210
Specimen Chamber Diameter x Length cm	50 x 50	50 x 50	60 x 60	60 x 60
Tray Area m² and Levels	0.4 – 3+1	0.4 – 3+1	0.9 – 4+1	0.9 – 4+1
Condenser Chamber Temperature	-55 °C	-85 °C	-55 °C	-85 °C
Specimen Chamber Temperature Range °C	-40 to +50 °C	-55 to +50 °C	-40 to +50 °C	-55 to +50 °C
Condenser chamber Defrost	Hot Gas	Hot Gas	Hot Gas	Hot Gas
Chamber Doors	Clear Acrylic	Clear Acrylic	Clear Acrylic	Clear Acrylic
Condenser Ice Capacity	15litre	15litre	15litre	15litre
Refrigerant	R-507	R-507& R-23	R-507	R-507& R-23
Vacuum Pump	Ulvac GLD 201	Ulvac GLD 201	Ulvac GLD 201	Ulvac GLD 201
Refrigeration Hp	2 x 1.0hp	2 x 1.0hp-1x 1.25hp	2 x 1.25hp	2 x 1.25hp-1x 1.25hp
Isolation Valve Ø cm	Butterfly 10	Butterfly 10	Butterfly 10	Butterfly 10
Power Requirements	1ph 240v	1ph 240v	1ph 240v	1ph 240v
Warranty - Parts and Labour	12 months	12 months	12 months	12 months