



## CONCENTRATORS

*For your sample concentration*

**LabTech**

POWERED BY GYROZEN

## Freeze Dryer and Cooling Trap

# HyperCOOL™

HyperCOOL is a lab scale freeze dryer using the lyophilization phenomena. HyperCOOL is designed for safety, robustness and convenience for the successful freeze drying and cold trapping. It is suitable for drying of aqueous products, various solvents and products with a low freezing point.

HyperCOOL with stylish, modern and unique design will help you enjoy your daily laboratory work to the fullest.

### Features

- Provide wide solvent coverage by dropping temperature down to  $-110^{\circ}\text{C}$
- HyperCOOL by itself, when equipped with manifolds or chambers, becomes a versatile freeze dryer
- The compatible vacuum rotary vane pump generates vacuum down inside the chamber
- Automatic De-Vac and De-Ice functions installed
- Magnet embedded front cover of the condenser for very convenient cleaning
- Extended applications for concentrating wider range or larger volume of solvents

### Applications

- Pharmaceutical study and production
- Research and production of vaccine and antidote
- Drying and preservation of plants, food and etc.
- Archaeological study



## Freeze Drying

The freeze drying, also known as lyophilization is dehydration technique through sublimation process, the shift from the solid directly into the gas without liquid phase. The materials must be frozen completely to remain as solid state during sublimation process. Additionally, applying vacuum enables lower the pressure below triple point, which can avoid the liquid phase. The freeze drying technique is used in various applications in food industry, pharmaceutical and biotechnology field and other industrial areas. HyperCOOL system allows complete removal of residual moisture.

### Freezing Point Depression

$$\Delta T = iK_f m$$

$\Delta T$  = Decrease in solution freezing point

$K_f$  = Freezing point depression constant for the solvent

$m$  = Molality

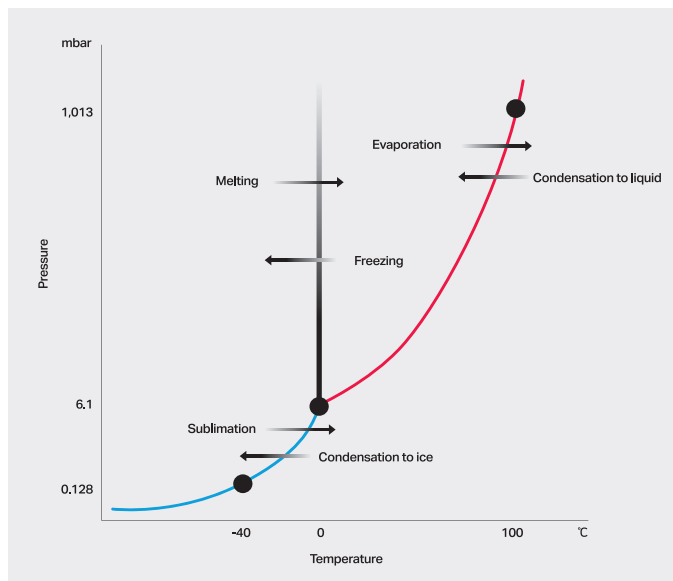


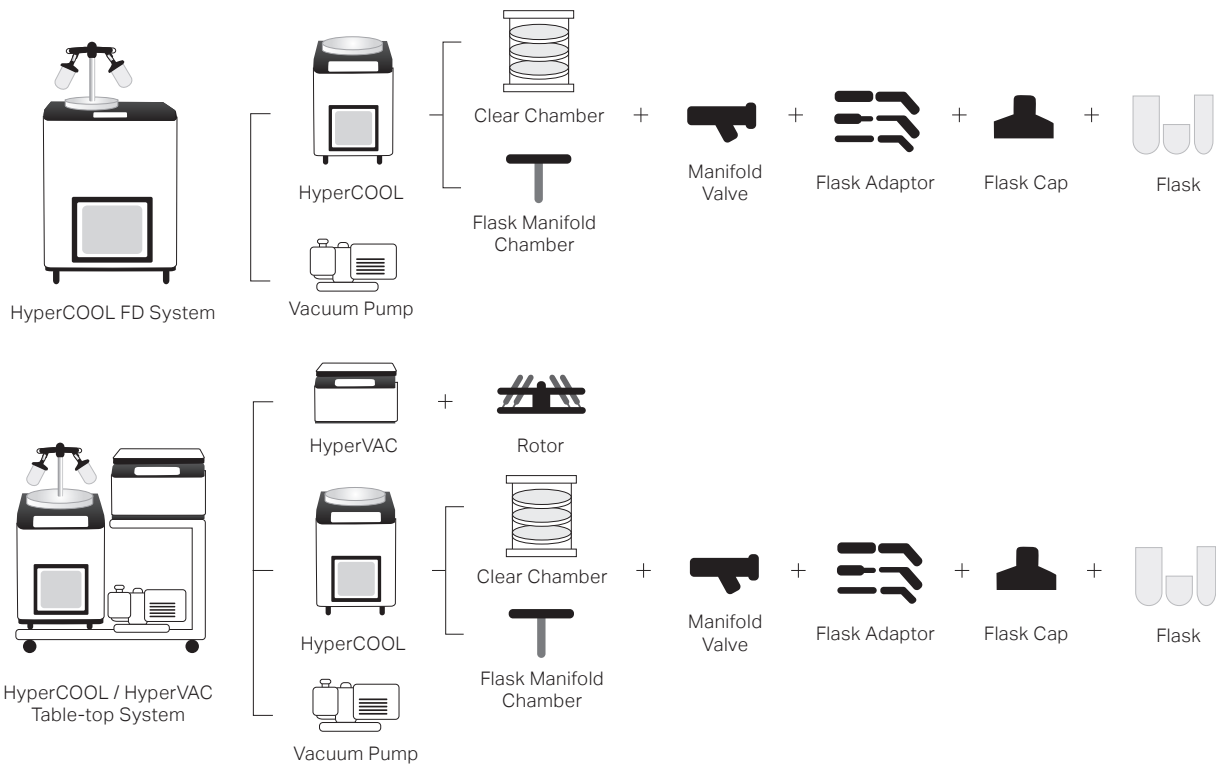
Figure 2. Typical Phase Diagram of Water

### Technical Specifications

	HyperCOOL HC3055	HyperCOOL HC3110	HyperCOOL HC8080
Ultimate Chamber Temp (at RT) (°C)	-55	-110	-80
Chamber Volume (L)	4		25
Trap (Chamber) Size (Ø x L)	165 x 202		305 x 355
ICE Condensing Capacity (kg)	3		8
Digital Readout	Temperature, Time		Time, Program, Temperature, Vacuum Pressure
Function	KEYLOCK, DEFROST, VACUUM, TIME		COOLING, VACUUM
Power Requirement (Resting, VA)	642	819	1,500
Dimension (W x D x H, mm)	400 x 660 x 570		710 x 610 x 960
Weight (kg)	58	72	195
Power supply	230 V, 50 Hz (AC 220-230 V, 50/60 Hz; 110 V optional)		
Cat. No.	Hyper-HC3055	Hyper-HC3110	Hyper-HC8080








## System Diagram of HyperCOOL



## Cover Plates for HyperCOOL

<p><b>HHC-CPP</b></p> <p>HC3055, HC3110 Trap Plate for Connection Vacuum Hose to Vacuum Concentrator</p> 	<p><b>HHC-CPB</b></p> <p>HC3055, HC3110 Acrylic Base for Manifold or Chamber</p> 	<p><b>HHC-CPM</b></p> <p>HC3055, HC3110 Acrylic Base for HHC-MFB-8V</p> 	<p><b>HHC-CPP(8)</b></p> <p>HC8080 Trap Plate for Connection Vacuum Hose to Vacuum Concentrator</p> 	<p><b>HHC-CPB(8)</b></p> <p>HC8080 Acrylic Base for Manifold or Chamber</p> 	<p><b>HHC-CPM(8)</b></p> <p>HC8080 Acrylic Base for HHC-MFB-8V</p> 
--	--	---	---	--	--





## Manifolds for HyperCOOL

<p><b>HHC-MFB-4V</b></p> <p>Incl. 4 rubber valves on a stainless steel bar, 30 cm</p> 	<p><b>HHC-MFB-6V</b></p> <p>Incl. 6 rubber valves on a stainless steel bar, 30 cm</p> 	<p><b>HHC-MFE-4V for extension</b></p> <p>Incl. 4 rubber valves on a stainless steel bar, 20 cm</p> 	<p><b>HHC-MFE-6V for extension</b></p> <p>Incl. 6 rubber valves on a stainless steel bar, 20 cm</p> 	<p><b>HHC-MFB-8V</b></p> <p>Incl. 8 rubber valves on a stainless steel bar, 30 cm</p> 
---	---	---	---	--

## FD Glass Flasks

<b>FD2009</b>	Freeze Drying Glass Flask 40 mL, Ø45 mm
<b>FD2010</b>	Freeze Drying Glass Flask 80 mL, Ø45 mm
<b>FD2011</b>	Freeze Drying Glass Flask 120 mL, Ø45 mm
<b>FD2012</b>	Freeze Drying Glass Flask 150 mL, Ø45 mm
<b>FD2013</b>	Freeze Drying Glass Flask 300 mL, Ø45 mm
<b>FD2013-1</b>	Freeze Drying Glass Flask 300 mL, Ø70 mm
<b>FD2014</b>	Freeze Drying Glass Flask 600 mL, Ø70 mm
<b>FD2015</b>	Freeze Drying Glass Flask 900 mL, Ø70 mm
<b>FD2016</b>	Freeze Drying Glass Flask 1,200 mL, Ø70 mm
<b>FD2017</b>	Freeze Drying Glass Flask 2,000 mL, Ø70 mm

## Chambers and Racks for HyperCOOL

<p><b>HHC-CH30P</b></p> <p>Acrylic Chamber Trunk and Plain Top, ø30 cm, height 40 cm</p> 	<p><b>HHC-CH30-4V</b></p> <p>Acrylic Chamber Trunk and Top with 4 rubber valves, ø30 cm, height 40 cm</p> 	<p><b>HHC-CR25</b></p> <p>Stainless Steel Rack with 3 sets of shelves and trays, ø25cm (Trays can be inserted up to 5)</p> 	<p><b>HHC-CR-TS</b></p> <p>A Set of a Tray and a Shelf</p> 	<p><b>HHC-CH30-8V</b></p> <p>Acrylic Chamber Trunk and Top with 8 Rubber Valves, ø30 cm, height 40 cm</p> 
--	---	--	--	--

# LabTech

WWW.LABTECHSRL.COM

## LabTech, your reliable laboratory solution provider.

LabTech is a leading manufacturing company with skill and passion devoted to provide advanced laboratory solutions to the analytical community. We are located in Sorisole, northern Italy, with facilities in USA and China. Incorporated with global branches, LabTech is organized into R&D, production, marketing & sales and customer support. Major LabTech products include organic/inorganic sample preparation systems, laboratory cooling/heating/temperature control equipments, analytical instruments, gas generators and laboratory centrifuges. With knowledgeable scientists and experienced engineers, our R&D team has developed and released a series of new lab equipments and instruments dedicated to the modern analytical laboratories. With all of these accomplishments and our endless research and development efforts, we are proud to be your professional partner.

MANUFACTURER

**GYROZEN**

**GYROZEN Co., Ltd.**

30-12 Gyeryong-ro 141beon-gil, Yuseong-gu,  
Daejeon, 34187, Rep. of KOREA  
Tel : +82-2-3452-7736 / info@gyrozen.com

SALES

**LabTech**

**LabTech Srl**

Via Fatebenefratelli, 1/5 - 24010 Sorisole (BG) - Italy  
Tel : +39 035 576614 - Fax : +39 035 4729414  
www.labtechsrl.com - email: marketing@labtechsrl.com