



phasetwo®



**Designed for Purpose,
Built for Cold**

PRODUCT CATALOG

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ABOUT US

At phasetwo we ensure your samples stay cold throughout all critical processes, including transportation & storage. We have engineered and built a complete product portfolio of cryogenic shippers and freezers that have been “Designed for Purpose, Built for Cold”. We have taken advantage of designing and building from the ground up to produce the next generation of products.

phasetwo[®] offers a full spectrum of cold storage products that have been re-engineered with a user-centric focus, rather than legacy and outdated designs. Our next generation solutions serve the Life Science sectors including Cell and Gene Therapy, In Vitro Fertilization, and Animal Health.

High Capacity High Efficiency Freezers

phasetwo's HCHE series provides users the latest technology with capacities from 20,000 to 107,000 vials. Our freezers are equipped with the DLS3 Touch Screen Controller, providing automated dual-level sensing and user simplicity.

Features -

- Autofill controller with dual liquid level sensing
- Solenoid monitoring for overfill protection
- Gas bypass
- Store in vapor or liquid
- Full height turntable with uniquely marked sections
- Auto defog and quick chill
- LED light
- Adjustable height, stainless steel table-top
- Hinged and lockable Lid
- Independent stainless-steel steps for easy reach
- Two independent temperature probes
- Capable of remote cloud monitoring
- RS485 networking
- Ethernet and USB connections

- Optional Equipment

- Inventory Racks
 - Battery Back Up
- (Refer page # 16 & 17)



Model

	HCHE20	HCHE44	HCHE50	HCHE92	HCHE107
LN ₂ Capacity Vapor (L)	68.9	175.7	175.7	371.2	371.2
LN ₂ Capacity Liquid (L)	437.1	892.1	999.6	1802.4	2040.9
Outer Diameter in(mm)	34(863.6)	46.2(1173.5)	46.2(1173.5)	63.5(1612.9)	63.5(1612.9)
Overall Height in(mm)	55.7(1414.8)	56.8(1442.7)	61.8(1568.5)	55.8(1417.3)	60.7(1541.8)
Neck Opening in(mm)	12.7(322.6)	18(457.2)	18(458)	27.1(688.3)	27.1(688.3)
Carousel ID in(mm)	28.8(731.5)	41.1(1043.9)	41.1(1044)	59(1498.6)	59(1498.6)
Internal Height in(mm)	30(762)	30(762)	35(889)	30(762)	35(889)
Weight Empty lbs(kg)	638(289.4)	1075(487.6)	1147(520)	1835(832.3)	1975(895.8)
Weight Full lbs(kg)	1417(642.7)	2665(1208.7)	2928(1328)	5047(2289.2)	5612(2545.5)
Static Evaporation Rate (L/day)	5	7	7	13	13
Vapor Phase (days)	13.8	25.1	25.1	28.6	28.6
Standard Racks (100/81 Cell)/Levels 2 ml Vial Capacity	14/13 18,200	32/13 41,600	32/15 48,000	68/13 89,700	68/15 103,500
Vertical Racks (100/81 Cell)/Levels 2 ml Vial Capacity	40/5 20,000	80/5 40,000	80/6 48,000	185/5 92,500	185/6 111,000
Lift Over Height in(mm)	40 (1016)	43.8 (1113)	38.5 (978)	42.9 (1090)	37.8 (960)
Step Height in(mm)	12.9(327.7)	12.9(327.7)	11(279) 21.9(556.3)	12.9(327.7)	11(279) 21.9(556.3)

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High Capacity Freezers

phasetwo's High Capacity (HC) Series provides users the latest technology with capacities from 11,700 to 32,300 vials. Our freezers are equipped with an automated DLS3 control with dual level sensing and touch screen display, ensuring product viability and ease of use. Our premium multi-layer insulation and other materials along with the latest vacuum technology systems provides leading industry performance.

Features -

- Autofill controller with dual liquid level sensing
- Solenoid monitoring for overfill protection
- Gas bypass
- Auto defog and quick chill
- Hinged and lockable Lid
- Two independent temperature probes
- Capable of remote cloud monitoring
- RS485 networking
- Ethernet and USB connections

- Optional Equipment

- Inventory Racks
 - Battery Back Up
- (Refer page # 16 & 17)



Model	HC14	HC32
LN ₂ Capacity Vapor (L)	205	461
Outer Diameter in(mm)	25 (635)	36 (914)
Required Door Opening in(mm)	27.2 (791.1)	37.6 (955.7)
Overall Height in(mm)	44.4 (1128)	46.31 (1176)
Neck Opening in(mm)	23 (584)	34.25 (870)
Inner Usable Height in(mm)	29.0 (737)	29.0 (737)
Weight Empty lbs(kg)	255 (115.7)	410 (186)
Weight Full lbg(kg)	620 (281.3)	1231 (558.4)
Evaporation Rate (L/day)	6.5	10
Static Holding Time (days)	32	46

Model	HC14	HC32
5-2 Vertical Racks, AL, 100/81-cell boxes	13,500 (27 each)	32,000 (64 each)
13-2 Horizontal Racks, AL, 100/81- cell boxes	11,700 (9 each)	28,600 (22 each)
Combination System	14,200	31,800
5-2 Vertical Racks, AL, 100/81- cell boxes	5 each	10 each
13-2 Horizontal Racks, AL, 100/81- cell boxes	9 each	21 each

Cryogenic Rack Freezers

phasetwo's Cryogenic Rack Freezer (CRF) series provides users with the latest technology. Our uniquely designed freezers have a dedicated and fixed position for our optional Low Level & Temperature Alarm (LLTA). The LLTA continues to monitor the freezer's temperature and level while the product is removed or inserted, providing product security.

When the lid is removed, it is stored on the handle so the operator can use both hands to quickly access the product in the freezer. An Autofill system is available for the CRF6000.

Features -

- Autofill option available on the CRF6000 with Quick Chill & Auto Defog
- Durable aluminum material
- Numbered rack locations
- Place to store lid, faster access
- Ergonomic cast handles

- Optional Equipment

- Polycarb Boxes
- Low Level & Temperature Alarms
- Auto Fill System with battery backup

(Refer page # 16 & 17)

Model	CRF750	CRF3000	CRF4800	CRF6000	CRF6000 w/ DLS3 Controller
LN ₂ Capacity (L)	35	91	140	167	167
Outer Diameter (in/mm)	18.8 (477.5)	27 (685.5)	27 (685.8)	27 (685.8)	28.5 (723.9)
Overall Height (in/mm)	26.3 (668)	30.4 (772.2)	36.4 (924.6)	39.2 (995.7)	50.6 (1285.9)
Neck Opening (in/mm)	4.7 (119.4)	8.5 (215.9)	8.5 (215.9)	8.5 (215.9)	8.5 (215.9)
Weight Empty (lbs/kg)	39.5 (17.9)	80 (36.3)	90(40.8)	96.7(43.9)	108 (49)
Weight Full (lbs/kg)	101.9 (46.2)	242.2 (109.9)	339.5 (154)	394.3(178.9)	405.6 (184)
Evaporation Rate (L/ day)	0.27	0.76	1	1	2.5
Storage Capacity(2ml vials)	750	3000	4800	6000	6000
Number of Racks	6	6	6	6	6
Boxes Per Rack	5	5	8	10	10



Cryogenic Canister Freezers

phasetwo's Cryogenic Canister Freezer (CCF) series provides users with the latest technology in traditional sizes. Our uniquely designed freezers have a dedicated and fixed position for our optional Low Level & Temperature Alarm (LLTA). The LLTA continues to monitor the freezer's temperature and level while the product is removed or inserted, providing product security.

When the lid is removed, it is stored on the handle so the operator can use both hands to quickly access the product in the freezer.

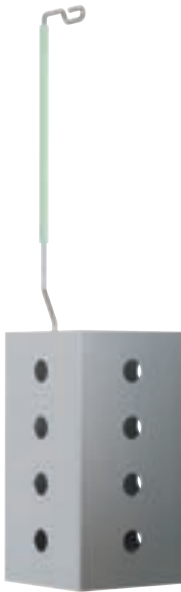
Features -

- Durable aluminum material
- Numbered rack locations
- Place to store lid, faster access
- Ergonomic cast handles

Optional Equipment -

- Low Level & Temperature Alarms
- Roller Bases

(Refer page # 16 & 17)



CCF90

Our unique square canister can store SUC-1's, visotubes, and gobelets.

Model	CCF35H	CCF35V	CCF90
LN ₂ Capacity (L)	35	35	91
Outer Diameter (in/mm)	18.8 (448)	18.8 (448)	27 (685.8)
Overall Height (in/mm)	26.3 (668)	26.3 (668)	31.4 (797.6)
Neck Opening (in/mm)	4.7 (119.4)	4.7 (119.4)	8.5 (215.9)
Weight Empty (lbs/kg)	39 (17.7)	38 (17.3)	80 (36.3)
Weight Full (lbs/kg)	101 (45.9)	100 (45.5)	242.2 (109.9)
Evaporation Rate (L/ day)	0.27	0.27	0.76
Static Holding Time	130 days	130 days	119 days
Number of Canisters/Racks	10	6	6
1.2 & 2ml Vial (6/cane)	1800	2016	4464
1/2cc Straws (10/cane)	3000	3360	7440

Vapor Shippers (Dry Shippers)

phasetwo's Vapor Shipper (VS) series provides users with the latest technology and enhanced product security. The system allows fast charging of the dry shippers. The dedicated shipping case provides a fully foamed inner for a secure location of the shipper.



The VS Series Shippers are **specifically designed** to meet critical **transportation** needs.

Features -

- Modern sleek design
- Industry leading hold times
- Durable aluminum material
- Meets ASTM Standards for Impact Testing

- Optional Equipment

Shipping Cases •

- Replacement Parts

Box Racks (100 Cell) •

Cassette Racks •

(Refer page # 16 & 17)

Model	VS2-1	CryoCourier	VS4-3	VS10-2
LN ₂ Capacity (L)	1.5	2.6	4.2	10
Outer Diameter (in/mm)	7.3 (185.4)	7.3 (185.4)	9.2 (233.7)	16 (406.4)
Overall Height (in/mm)	13.5 (342.9)	18.9 (480.1)	18.4 (467.4)	27.3 (693.4)
Neck Opening (in/mm)	1.4 (35.6)	1.4 (35.6)	2.8 (70.6)	8.5(215.9)
Canister Dimentions (in/mm)	1.2 x 5 (30.5 x 127)	1.2 x 11 (30.5 x 279)	2.64 x 11 (67 x 279)	N/A
Static Holding Time	10 days	14 days	20 days	14 days
Static Evaporation Rate	0.15 (L/day)	.15 (L/day)	0.21 (L/day)	0.7 (L/day)
Weight Full (lbs/kg)	9 (4.1)	13.4 (6.1)	20.4 (9.3)	56.6 (25.7)
Weight Empty (lbs/kg)	6.4 (2.9)	8.8 (4)	12.3 (5.6)	38.8 (17.6)
1.2 & 2ml Vials (6/cane)	N/A	18	102	500 (5 each 100-cell boxes)
1.2cc straws (10/cane)	88 (Single level bulk)	30	280	N/A
Blood Bags	N/A	N/A	N/A	12-250ml

Shipping Case

phasetwo's shipping cases provide enhanced product safety & security to our vapor series (VS) shippers. These dedicated shipping cases provides a fully foamed inner to secure the VS series shippers safely. The shipping case is manufactured from high impact-resistant material to protect from possible physical damage.

The unique design is easy to clean, ensuring security and convenience. Inter-lockable stacking optimizes storage and shipping efficiency while allowing authorized access to samples without hassle.

- Features

- Fully foamed inner
- Easily cleanable
- Spring loaded, flush-mount handles
- Easily stackable
- D-rings for tie down
- Customize option available for brand representation



Model	VS2-1/ CryoCourier	VS4-3	VS10-2
Outer Dimensions	15.25"x15.5"x22.25"	15.25"x15.5"x22.25"	29.43"x20.67"x22.45"
Inner Dimensions	7.25"x18.9"	9.25"x17.25"	16.25"x27.11"
Tie-Down Ring Capacity	400lbs	400lbs	400lbs
Tare Weight	11.5lbs	11.2lbs	23lbs

Dewar Series

phasetwo's D series provides users with the latest technology by introducing the new Liquid Withdrawal Device (LWD) suitable for the 25 to 50-liter models. The design provides a quick and easy quarter-turn secure attachment of the Liquid Withdrawal Device.

Features -

- *Designed for easy Liquid Withdrawal Device (LWD) installation and removal
- Premium materials provide industry leading LN₂ performance
- Ergonomic handle design

- Optional Equipment

- Roller Bases
 - Liquid Withdrawal Device
 - Dippers
 - Tipping Stand (D25)
- (Refer page # 16 & 17)

Model	D4	D5	D10	D25	D35	D50
LN ₂ Capacity (L)	4	5	10	25	35	50
Outer Diameter (in/mm)	7.3 (185.4) *without handle	9.2 (233.7)	11.4 (289.6)	14.5 (368.3)	18.8 (447.5)	18.8 (447.5)
Overall Height (in/mm)	18.9 (480.1)	15.3 (388.6)	23.8 (604.5)	25.4 (645.2)	25.9 (657.9)	31.9 (810.3)
Neck Opening (in/mm)	1.4 (35.6)	1.4 (35.6)	2.2 (55.9)	2.5 (63.5)	2.5 (63.5)	2.5 (63.5)
Weight Empty (lbs/kg)	6.8 (3.1)	7.5 (3.4)	13 (5.9)	24 (10.9)	33.8 (15.3)	43.4 (19.7)
Weight Full (lbs/kg)	13.9 (6.3)	16.4 (7.4)	30.8 (14)	68.6 (31.1)	96.1 (43.6)	132.5 (60.1)
Evaporation Rate (L/day)	0.4	0.4	0.21	0.23	0.23	0.41
Static Holding Time (days)	11	13	47	120	152	122



*LWD Compatible

Liquid Withdrawal Device

phasetwo's Liquid Withdrawal Device (LWD) is used to conveniently transfer liquid nitrogen from the D25, D35, and D50 dewars into smaller vessels and receptacles.

The LWD locks into the quick flange that is attached to the neck of the dewars, using a spring plunger locking the device in place. In a filled dewar, liquid nitrogen evaporation will maintain sufficient pressure to dispense liquid from the LWD.

Features -

- Unique quick connect for easy installation
- Fill without removal of device maintains pressure for immediate use
- Dual pressure relief valves



Long - Term Freezers

phasetwo's Long - Term Freezers (LT) series provides both the Animal Health and Human IVF markets the latest in high-quality, reliable long-term cryogenic storage solutions. When the lid is removed, it is stored on the handle so the operator can use both hands to quickly access the product in the freezer. The canister locating mechanism is situated at the bottom of the container; the canisters are secured in the indicated slot labeled on the index ring.

Features -

- One-piece lockable lid design
- Ergonomic cast handles
- Durable aluminum material
- Numbered canister locations
- Place to store lid, faster access

- Optional Equipment

- Roller Base

(Refer page # 16 & 17)



LT - Series Model	LT10	LT21
LN ₂ Capacity (L)	10	21
Outer Diameter (in/mm)	11.4 (289.6)	14.5 (368.3)
Overall Height (in/mm)	23.8 (604.5)	25.9 (657.9)
Neck Opening (in/mm)	2.2 (55.9)	2.2 (55.9)
Weight Empty (lbs/kg)	13.6 (6.2)	23.5 (10.7)
Weight Full (lbs/kg)	31.4 (14.2)	60.9 (27.6)
Canister Dimensions (in/mm)	1.65x11 (42x279)	1.65x11 (42x279)
Static Days	105	227
Normal Evaporation Rate	.14 (L/day)	.095 (L/day)

Low Level and Temperature Alarm

The Low Level and Temperature Alarm (LLTA) is designed to monitor both liquid level and operating temperature inside aluminum LN₂ freezers. Utilizing dual RTD probes and fully programmable to match individual end-user needs, the Low Level and Temperature Alarm features touch screen operation, audible & visual alarms, and a universal power supply with adapters for usage worldwide. Each alarm comes complete with mounting bracket, alarm module, and probes. Each alarm module can be used to monitor two freezers with the addition of a second set of probes.

Features -

- Monitors freezer temperature and level while product is removed or inserted
- Dedicated and fixed position for LLTA
- Universal power supply with adapters for international usage



Replacement Parts & Optional Equipment

1



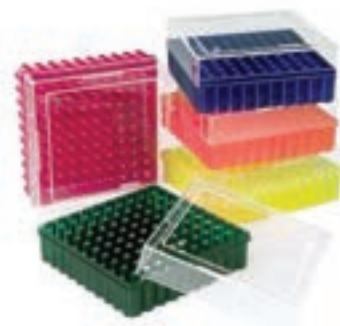
2



3



4



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6



7



8



9



10



11



12



13



1. Roller Bases | 2. Vacuum Jacketed and Standard Transfer Hoses
3. Cryogenic Gloves | 4. Cryogenic Boxes (Polycarb) | 5. Measuring Rods
6. Low Level & Temperature Alarm | 7. Dippers

8. Canisters | 9. Lid Assembly | 10. Inventory Racks | 11. Tipping Stand
12. Phase Separators | 13. Cryogenic Apron



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