



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 transport & storage. We have engineered and built a complete product portfolio of Cryogenic Shippers and Freezers that have been DESIGNED FOR PURPOSE and BUILT FOR COLD. We aren't hindered by legacy operation or legacy engineering concepts in our products or our production. We have taken advantage of designing and building from the ground up to generate 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a full spectrum of cold storage products that have been re-engineered with a user-centric focus, rather than legacy and outdated designs.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 Biotech, Cell and Gene Therapy, and more.

High Capacity High Efficiency Freezers

phasetwo's HCHE series provides customers the latest technology with capacities from 20,000 to 107,000 vials. Our freezers are equipped with an automated control with the dual-level sensing and touch screen display, ensuring product viability and ease of use.

Features -

- Automated control with Dual Liquid Level Sensing for product security
- Solenoid monitoring for overflow protection
- Gas Bypass
- Store in Vapor or Liquid
- Full height turntable with uniquely marked sections
- Auto defog
- 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

- Accessories

- Inventory Control Systems
 - Battery Back Up
- (Refer page # 14 & 15)



Model	HCHE20	HCHE44	HCHE50	HCHE92	HCHE107
LN2 Capacity Vapor (L)	67	162	162	362	362
LN2 Capacity Liquid (L)	435	820	935	1793	2022
Outer Diameter in(mm)	34(864)	46.2(1173)	46.2(1173)	63.5(1613)	63.5(1613)
Overall Height in(mm)	58.8(1494)	62.4(1585)	67.2(1707)	61.6(1565)	66.4(1687)
Neck Opening in(mm)	12.8(325)	18(457)	18(457)	27.1(688)	27.1(688)
Carousel ID in(mm)	29.5(749)	41.1(1044)	41.1(1044)	59(1499)	59(1499)
Internal Height in(mm)	30(762)	30(762)	34.8(884)	30(762)	34.8(871)
Weight Empty lbs(kg)	630(286)	910(414)	930(422)	1782(808)	1820(826)
Weight Full lbs(kg)	1405(637)	2371(1075)	2596(1177)	4977(2258)	5405(2452)
Static Evaporation Rate (L/day)	6.5	8	8	16	16
Static Holding Time (days)	10	20	20	22	22
Capacity (2ml Vials)	20200	43600	50400	92300	106500
Standard Racks (100/82 Cell)/Levels 2 ml Vial Capacity	14/13 18,200	32/13 41,600	32/15 48,000	69/31 89,700	69/15 103,500
Vertical Racks (100/81 Cell)/Levels 2 ml Vial Capacity	40/5 20,000	88/5 44,000	88/6 52,800	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)	13(330)	13(330)	11(279) 22(559)	13(330)	11(279) 22(559)

Cryogenic Rack Freezers

phasetwo's Cryogenic Rack Freezer series provides customers with the latest technology with larger capacities to follow shortly. This design provides a dedicated and fixed position for the 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 will be available for the larger models.

Features -

- Autofill option available on the CRF6000
- Durable aluminum material
- Numbered canister locations
- Place to store lid, faster access
- Ergonomic cast handles

- Accessories

- Polycarb Boxes
- Low Level & Temperature Alarms
- Auto Fill Systems
- Roller Bases

(Refer page # 14 & 15)

Model	CRF750	CRF3000	CRF4800	CRF6000
LN2 Capacity (L)	35	91	140	175
Outer Diameter (in/mm)	18.8 (448)	26.5 (673)	26.5 (673)	26.5 (673)
Overall Height (in/mm)	26.3 (668)	27.9 (759)	33.9 (912)	37.9 (963)
Neck Opening (in/mm)	4.7 (119)	8.5 (216)	8.5 (216)	8.5 (216)
Weight Empty (lbs/kg)	39 (17.7)	70 (31.8)	90(40.8)	121(54.9)
Weight Full (lbs/kg)	101 (45.9)	214(97.2)	312(141.7)	410(186)
Storage Capacity(2ml vials)	750	3000	4800	6000
Number of Racks	6	6	6	6
Boxes Per Rack	5	5	8	10



Cryogenic Canister Freezers

phasetwo's Cryogenic Canister Freezer series provides customers with the latest technology in traditional sizes. The design provides a dedicated and fixed position for the 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 -

- Place to store lid, faster access
- Durable aluminum material
- Location for temperature monitor & Low level alarm position
- Premium insulation
- Ergonomic cast handles

- Accessories

- Center Canister
- Low Level & Temperature Alarms
- Roller Bases

(Refer page # 14 & 15)

Model	CCF35H	CCF35V
LN2 Capacity (L)	35	35
Outer Diameter (in/mm)	18.8 (448)	18.8 (448)
Overall Height (in/mm)	26.3 (668)	26.3 (668)
Neck Opening (in/mm)	4.7 (119)	4.7 (119)
Weight Empty (lbs/kg)	39 (17.7)	38 (17.3)
Weight Full (lbs/kg)	101 (45.9)	100 (45.5)
Evaporation Rate	0.27 (L/day)	0.27 (L/day)
Static Holding Time	130 days	130 days
Number of Canisters/Racks	10	6
1.2 & 2ml Vial (6/cane)	1020	1260
1/2cc Straws (10/cane)	2800	3000

Vapor Shippers (Dry Shippers)

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

Features -

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

- Accessories

- Shipping Cases
- Box Racks (100 Cell)
- Cassette Racks

(Refer page # 14 & 15)

Model	VS2-1	VS4-3	VS10-2
LN2 Capacity (L)	1.5	4.36	10
Outer Diameter (in/mm)	7.25 (184)	9.2 (234)	14.5 (386.3)
Overall Height (in/mm)	13.5 (343)	18.38 (467)	23.5 (597)
Neck Opening (in/mm)	1.4 (36)	2.78 (71)	8.5 (216)
Canister Dimentions (in/mm)	1.25 x 5 (31.75 x 127)	2.64 x 11 (67.05 x 279)	N/A
Static Holding Time	10 days	22 days	14 days
Static Evaporation Rate	0.15 (L/day)	0.2	0.7
Weight Full (lbs/kg)	9 (4.1)	20.88 (9.47)	48.7(22.1)
Weight Empty (lbs/kg)	6.4 (2.9)	13.2 (6)	32.6 (14.8)
1.2 & 2ml Vials (6/cane)	N/A	102	N/A
1.2cc straws (10/cane)	88	280	N/A



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

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 ISTA 3A compliant case is manufactured from high impact-resistant material to protect from possible physical damage.

The unique shape design has safety badges, and is easily cleanable. Designed for tamper evidence tags or locks for enhanced security. The inter-lockable stacking feature allows containers to be stored or shipped to save valuable space. The shipping case allows authorized members to access samples without any hassle.

Features -

- ISTA 3A compliant
- Fully foamed inner
- Easily cleanable
- Spring loaded, flush-mount handles
- Molded safety features
- Easily stackable
- D-rings for tie down

Model	VS4-3
Outer Dimensions	22"x17.18"x18.96"
Inner Dimensions	9.25"x16.125"4
Tie-Down Ring Capacity	400lbs
Tare Weight	15.3lbs



Dewar Series

phasetwo's D series provides customers with the latest technology in traditional sizes accommodating 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 installation, and removal
- Premium materials provide industry leading LN2 performance
- Ergonomic handle design

- Accessories

- Roller Bases
- Liquid Withdrawal Device
- Dippers
- Tipping Stand

(Refer page # 14 & 15)

Model	D5	D10	D25	D35	D50
LN2 Capacity (L)	5	10	25	35	50
Outer Diameter (in/mm)	9.2 (234)	11.4 (290)	14.5 (368)	18.8 (448)	18.8 (448)
Overall Height (in/mm)	15.34 (390)	23.8 (603)	25.9 (657)	26.1 (663)	32.6 (828)
Neck Opening (in/mm)	1.40 (36)	2.19 (56)	2.5 (64)	2.5 (64)	2.5 (64)
Weight Empty (lbs/kg)	6.6 (3.0)	15.0 (6.80)	25 (11.3)	35 (15.9)	39 (17.7)
Weight Full (lbs/kg)	15.5 (7.0)	32.8 (14.9)	64.6 (29.3)	97.4 (44.3)	128 (58.2)
Evaporation Rate (l/day)	0.4	0.21	0.23	0.23	0.41
Static Holding Time (days)	13	47	120	152	122



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 assemble/disassemble flange that is attached to the neck of these dewars; the spring plunger attached to the flange locks the device onto the dewar. In a filled dewar, liquid nitrogen evaporation will maintain sufficient pressure to dispense liquid from the LWD.

Features -

- Unique Quick Connect
- Easy Install
- Fill without removal of device maintains pressure for immediate use
- Dual pressure relief valves



Long - Term Freezers

phasetwo's LT21 provides farm tanks and life science applications with the latest technology. 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. With the canister locating mechanism in the bottom of the unit, there are several location slots on the neck ring.

Features -

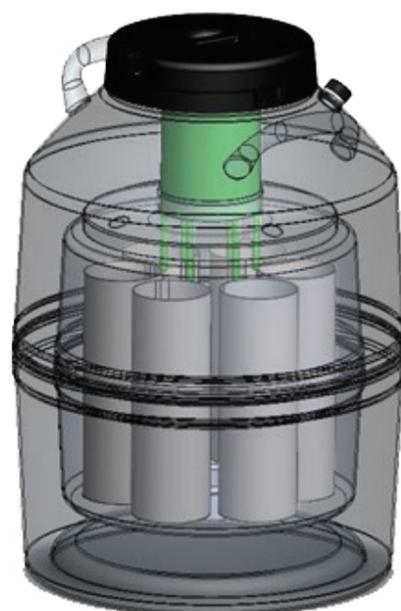
- New one-piece lockable lid design
- Ergonomic cast handles
- Durable aluminum material
- Numbered canister locations
- Place to store lid, faster access

- Accessories

- Roller Base

(Refer page # 14 & 15)

LT - Series Model	LT21
LN2 Capacity (L)	21.6
Outer Diameter (in/mm)	14.5 (368)
Overall Height (in/mm)	25.9 (658)
Neck Opening (in/mm)	2.19 (55.6)
Weight Empty (lbs/kg)	26.2 (11.9)
Weight Full (lbs/kg)	63.4 (28.8)
Canister Dimensions (in/mm)	1.65x11 (41.9x279)
Static Days	227
Normal Evaporation Rate	.095 (L/day)

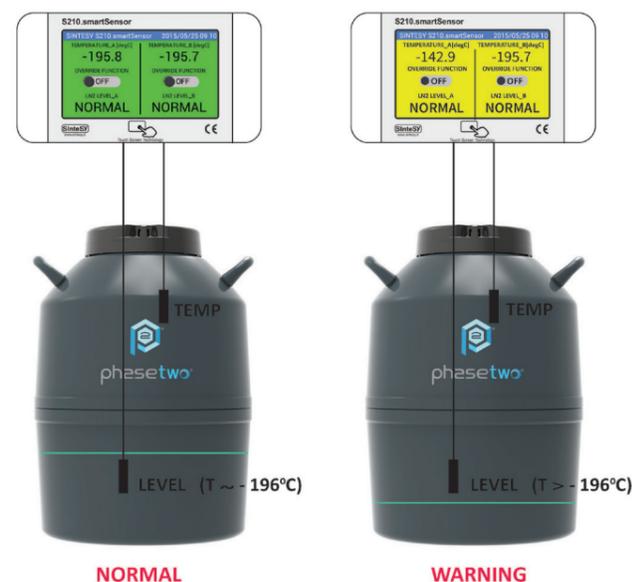


Low Level and Temperature Alarm

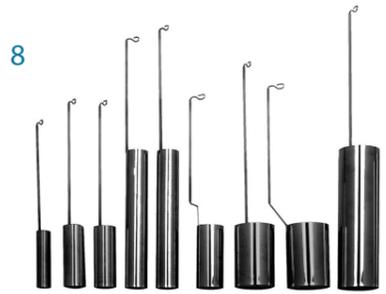
phasetwo's Low Level and Temperature Alarm (LLTA) is designed to monitor both liquid level and operating temperature inside aluminum LN2 freezers. Utilizing dual RTD probes and fully programmable to match individual end-user needs, the Low Level and Temperature Alarm features touch screen operation, audible & visual alarms, and a universal power supply and adapters for usage worldwide. Each alarm comes complete with mounting bracket, alarm module, and probes, and 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
- Operates on standard 110/120V, 60Hz service for domestic service
- Dedicated and fixed position for LLTA
- Universal power supply with adapters for international usage



Accessories



1. Roller Bases | 2. Vacuum Jacketed 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. Racks | 11. Tipping Stand
12. Phase Separators | 13. Cryogenic Apron



phasetwo®

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