Cryovita
FROILABO

CRYOVITA IS THE COMPREHENSIVE RANGE OF CRYOGENIC SYSTEMS FROM FROILABO.

PIONEERS OF TEMPERATURE CONTROLLED EQUIPMENT.

PREMIUM QUALITY

CRYOGENIC STORAGE & TRANSPORT EQUIPMENT

Stainless Steel Vessel

High-Capacity Cryogenic Freezers

Vapour Phase Inventory Racking Systems

- Polaris
- Origin
- Voyager

Aluminium Vessel

Inventory Racking System

- Darwin

Canister, Straw or Vial Storage

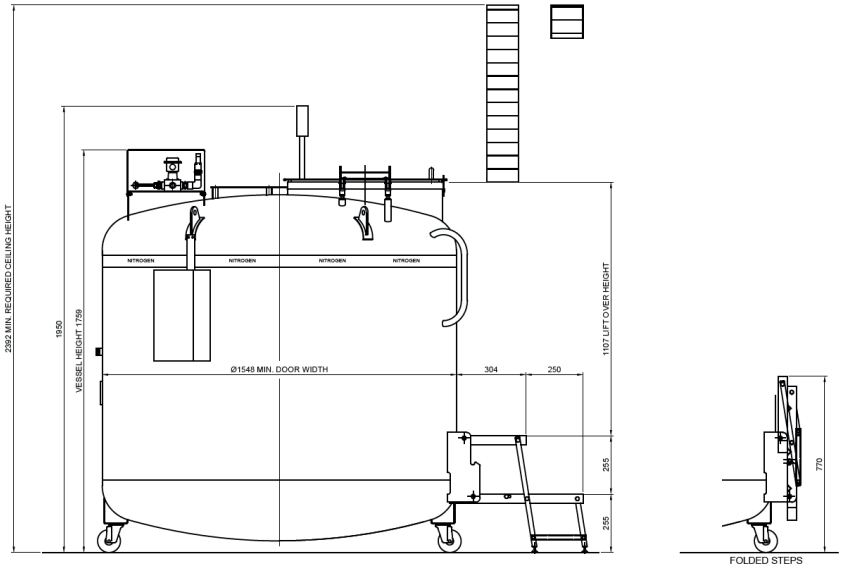
- Arctic XT
- Antarctica HC

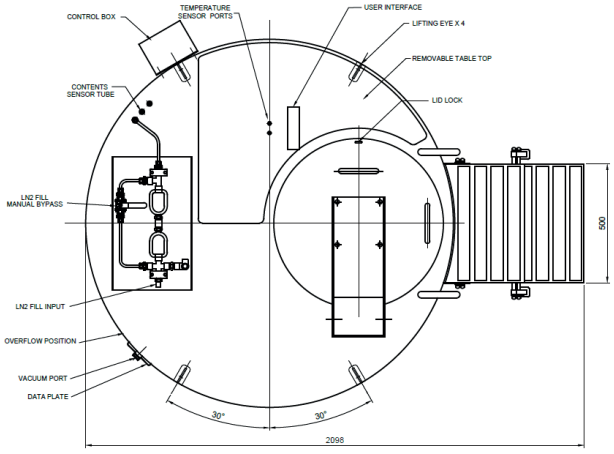
LN_2 Transfer

- Dewars

Transport Vessels

- Vapour Shippers





Stainless Steel Equipment

POLARIS

Unlike traditional cryogenic storage where samples are immersed in liquid nitrogen or vapour storage systems where samples are housed above the liquid reservoir. The Polaris series is a truly dry system.

ORIGIN

The Origin cryostorage systems are the state-of-the-art engineering designed cryogenic freezers with five storage sizes.

VOYAGER

Voyager cryogenic storage systems ensure reliable and efficient storage.

Featuring with the electronic controller that monitor and manage liquid nitrogen level, temperature and a full array of alarms, the Voyager provides an easy-to-use sample storage and retrieval for many types of cryogenic storage applications.

Aluminium Equipment

DARWIN

The Darwin series, designed for Liquid- or Vapour-stage Vial Storage in Convenient Box-type Racks.

ARCTIC XT

The XT series, designed for or long-term storage at cryogenic temperatures and for Extended Time Cryogenic Small Freezers.

ANTARCTICA HC

The HC series, designed for or long-term storage at cryogenic temperatures and for High Capacity Cryogenic Small Freezers

LN_2 DEWARS

The Storage Dewars series, designed for safe storage and dispensing of liquid nitrogen.

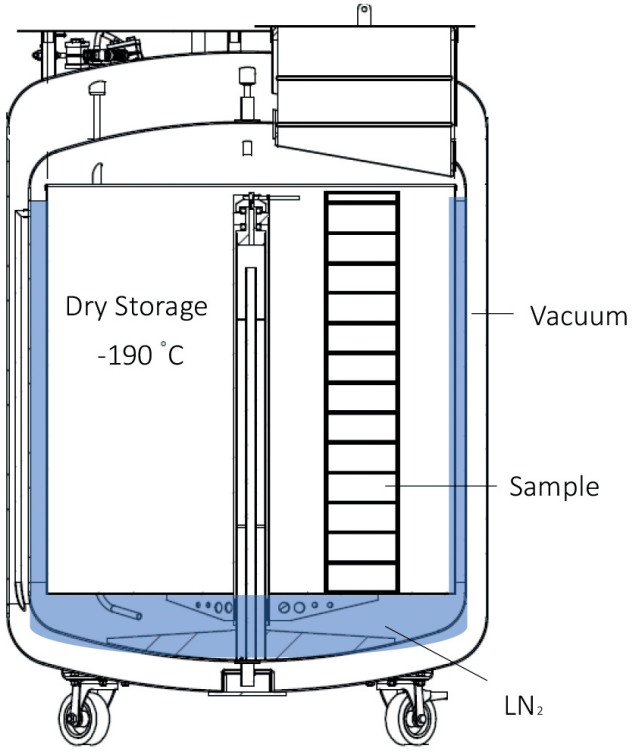
VAPOUR SHIPPERS

The shipping vessels are designed for the safe transport of biological samples in a vapour phase.

Polaris

Polaris: Features and Benefits

- Dry working chamber - virtually no risk of cross-contamination or exploding vials
- Lower sample storage temperature than conventional units
- Full volume of chamber can be utilised for racking. No loss of storage space under the lower plate as seen in vapour phase vessels
- Full logging of temperature/alarms
- Built in high level safety and sample protection

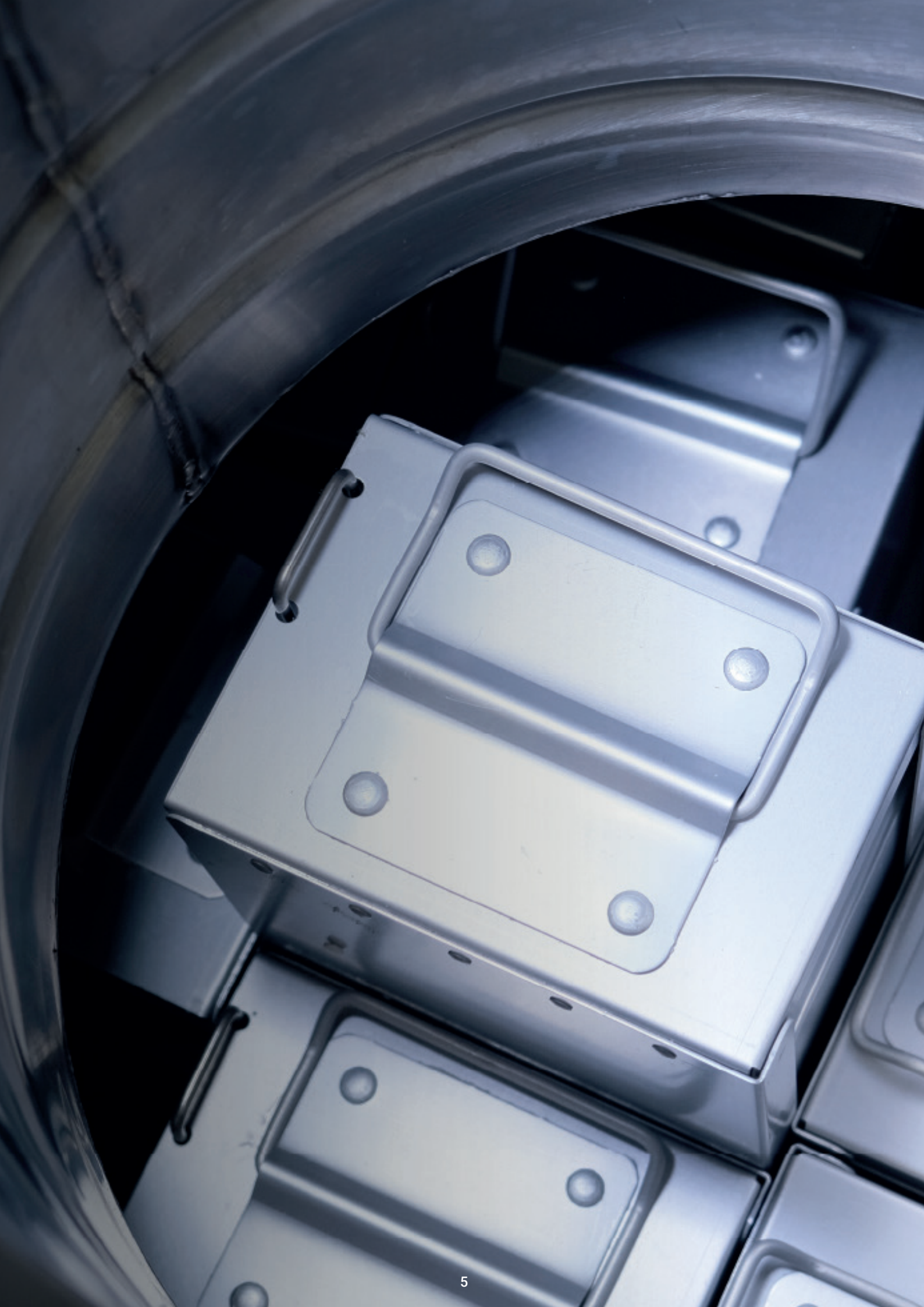


Principles of Dry Storage

- More uniform temperature profile from base to lid.
- Liquid envelops the chamber including sides
- Physical separation of samples from LN_2
- Lid can be left open for access for several hours
- Dry storage offers -190 °C with all vessels

Polaris Sensors

- Temperature Sensor – PT1000 Class A (measuring range -200 °C to +200 °C) (calibration point -196 °C)
- Level Sensors (Cryogenics Proprietary Sensors responsive to LN_2 vs gaseous phase) – Low Alarm/ High Alarm
- Continuous Level Capacitance Probe (CryoGauge 242 – battery powered – 2 yrs. – standard AA cell. Accuracy +/- 5mm. Pressure test 40 bar
- Gas Vent Sensor (QLA100GV probe – capacitance probe. Pressure tested to 10 bar)
- Available port for 3rd party temp sensor (8mm ID)



The latest evolution of electronic auto-fill level controller

Integration Feature

Automatic Polaris filling system with integrated temperature and level control for precise management of storage chamber conditions.

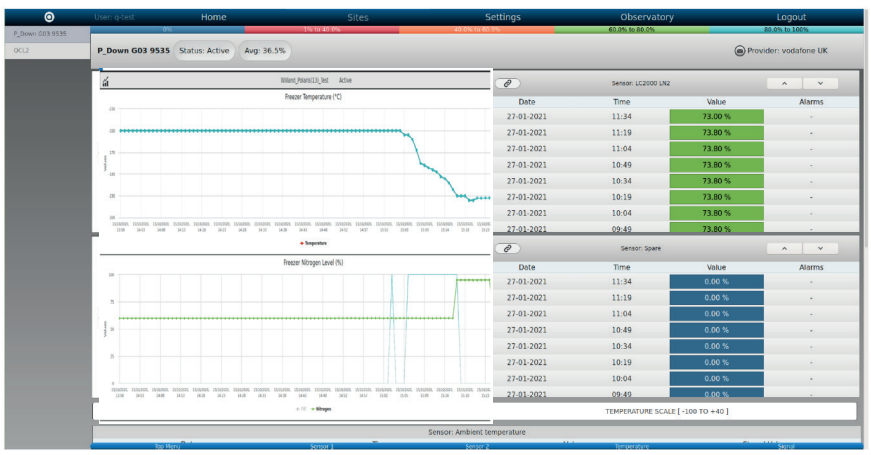
SPECIFICATION	OPTIONAL SPECIFICATION

• Large clear colour display, simple operator functions
• Dual independent processors to validate data and minimise the potential errors in autofill function
• Data output:
  • 3 USB serial ports, 1 Ethernet port, 3 dry contact signals (temp/level/ global alert)
  • Data output string ASCII and MODBUS protocol
  • Graphical output
• Password protection (CFR 21 Part 11 (Annex 11))- fill and defog
• Level with capacitance probe
• Unique user settings (Password controlled)
• Data log (3 months)
	• Battery Backup - 2 weeks
	• Lid Contact
	• Gas Vent fitted to vessel
	• Cloud Based Software

Benefit

User can define the temperature parameters for samples on a vessel-by-vessel basis guaranteeing that the samples will be kept at their required temperature

Optional Remote Monitoring

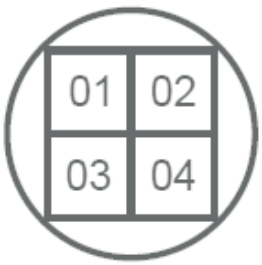


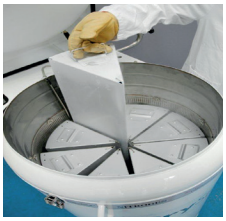
- Connects to the Client's Internet
- No additional hardware required
- Monitors up to 126 freezers simultaneously
- Compatible with Polaris or other brand freezers
- Live and historical readings of critical information

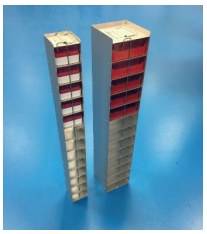
TECHNICAL SPECIFICATIONS

POLARIS	8	13	23	42	50	94
EXTERNAL WIDTH (MIN DOOR WIDTH) (Ø, mm)	540	761	937	1175	1175	1548
EXTERNAL DEPTH (INC STEPS) (mm)	715	1216	TBC	1728	1728	2098
EXTERNAL HEIGHT (TO TABLE TOP) (mm)	1215	1334	1395	1439	1549	1597
MIN RQD CEILING HEIGHT (TO CLEAR TOWER) (mm)	2040	2109	2170	2214	2324	2392
NECK INTERNAL DIAMETER (Ø, mm)	-	260	335	448	448	650
USABLE INTERNAL DIAMETER (Ø, mm)	415	620	787	1029	1029	1400
USABLE INTERNAL HEIGHT (mm)	765	790	790	790	900	900
WEIGHT (SHIPPING / EMPTY) (kg)	94	233	377	496	516	855
WEIGHT (FULL - MAX) - INCLUDING ICS & SAMPLES (kg)	159	280	447	620	652	<1900
LN2 CAPACITY (litres)	30	55	86	159	168	314
NER (IDEAL CONDITIONS) (litres / day)	3	5	7	10	11	15
MAX HOLD TIME (days)	10	11	12	15.9	15.2	21
LN2 INLET CONNECTION ON VESSEL	1/2" BSPT	1/2" BSPT MALE + 60° CONE	1/2" BSPT MALE + 60° CONE	1/2" BSPT MALE + 60° CONE	1/2" BSPT MALE + 60° CONE	1/2" BSPT
LN2 SUPPLY PRESSURE	1.5≥0.5 BAR (22≥7 PSI)	1.5≥0.5 BAR (22≥7 PSI)	1.5≥0.5 BAR (22≥7 PSI)	1.5≥0.5 BAR (22≥7 PSI)	1.5≥0.5 BAR (22≥7 PSI)	1.5≥0.5 BAR (22≥7 PSI)
DEFAULT PRESSURE RELIEF VALVE SETTING	4.5 BAR / 66 PSI	4.5 BAR / 66 PSI	4.5 BAR / 66 PSI	4.5 BAR / 66 PSI	4.5 BAR / 66 PSI	4.5 BAR / 66 PSI
SAMPLES (2ML CRYOVIALS)	5,200	12,350	23,400	44,200	51,000	94,500
ROWS PER TOWER	13	13	13	13	13 + 2	15 (13 + 2)
NUMBER OF 10 X10 TOWER	4	8	17	32	32	60
NUMBER OF 5 X 5 TOWER	0	6	4	8	8	12
POWER REQUIREMENT	24V DC 1 AMP	24V DC 1 AMP	24V DC 1 AMP	24V DC 1 AMP	24V DC 1 AMP	24V DC 1 AMP
BATTERY BACK UP CAPACITY (days)	<3	<3	<3	<3	<3	<3
SOLENOID VALVE 1 (FAIL CLOSED)	3/8" BSP 24V DC	1/4" BSP 24V DC	1/4" BSP 24V DC	1/4" BSP 24V DC	1/4" BSP 24V DC	1/2" BSP 24V DC
SOLENOID VALVE 2 (FAIL CLOSED)	3/8" BSP 24V DC	1/4" BSP 24V DC	1/4" BSP 24V DC	1/4" BSP 24V DC	1/4" BSP 24V DC	1/2" BSP 24V DC
MANUAL FILL BYPASS	3/8" BSP BALL VALVE	3/8" BSP BALL VALVE	3/8" BSP BALL VALVE	3/8" BSP BALL VALVE	3/8" BSP BALL VALVE	3/8" BSP BALL VALVE
LEVEL PROBE	DISCRETE SENSORS	4 DISCRETE SENSORS	3 DISCRETE SENSORS	3 DISCRETE SENSORS	3 DISCRETE SENSORS	3 DISCRETE SENSORS
TEMPERATURE SENSOR	PT1000	PT1000	PT1000	PT1000	PT1000	PT1000

POLARIS 8







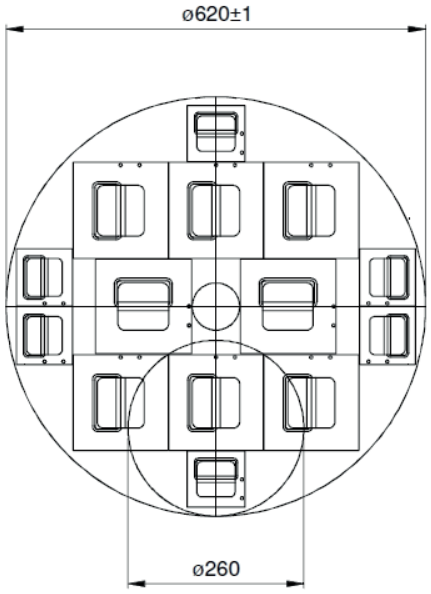
STANDARD ICS CONFIGURATION

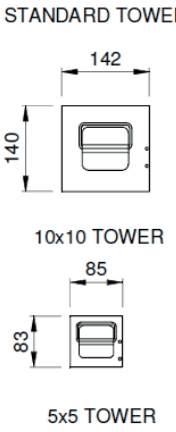
"PIE" OR "WEDGE" SHAPED TOWERS

OR

4 OF 10X10 TOWERS

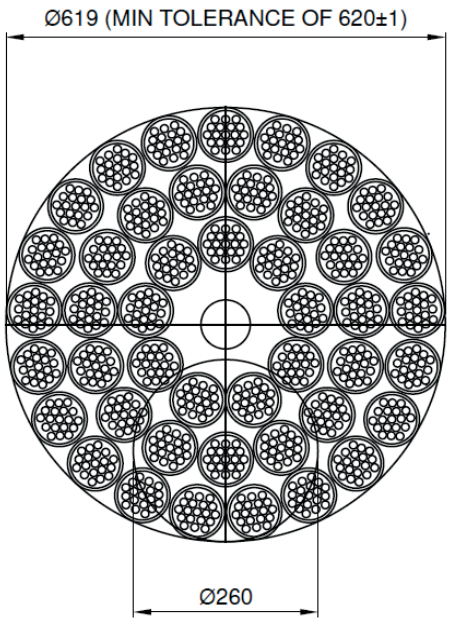
POLARIS 13

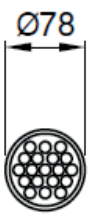




CAROUSEL ID = 620 ± 1 MM
NECK ID = 260 MM
10 x 10 TOWER = 140 x 142 MM
TO SUIT 10 x 10 BOX = 133 x 133 x 56 MM
5 x 5 TOWER = 83 x 85 MM
TO SUIT 5 x 5 BOX = 76 x 76 x 56 MM
MIN 1MM GAP BETWEEN TOWERS / WALLS
USABLE INTERNAL HEIGHT = 790 MM
TOWER HEIGHT (INC HANDLE) = 755 MM

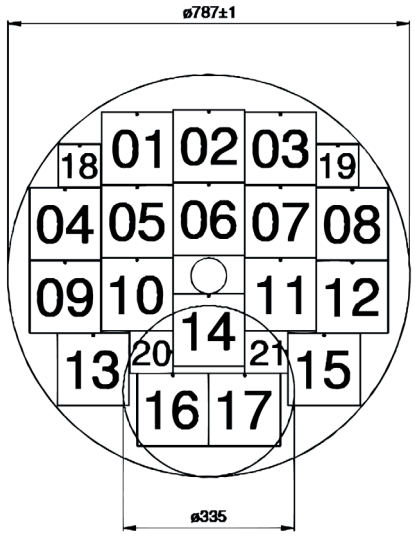
	13 ROW
8 OF 10 x 10 TOWER	= 10,400
6 OF 5 x 5 TOWER	= 1,950
TOTAL 2ML VIAL CAPACITY	= 12,350



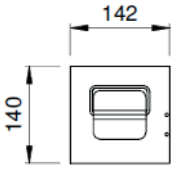


CAROUSEL ID = 620 ± 1 MM
NECK ID = 260 MM
USABLE INTERNAL HEIGHT = 790 MM
45 ALUMINIUM CANISTER TUBES Ø70ID
UP TO 5 CBS GOBELETS IN CANISTERS PER TUBE, INC LIFTERS

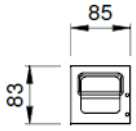
POLARIS 23



STANDARD TOWERS



10x10 TOWER

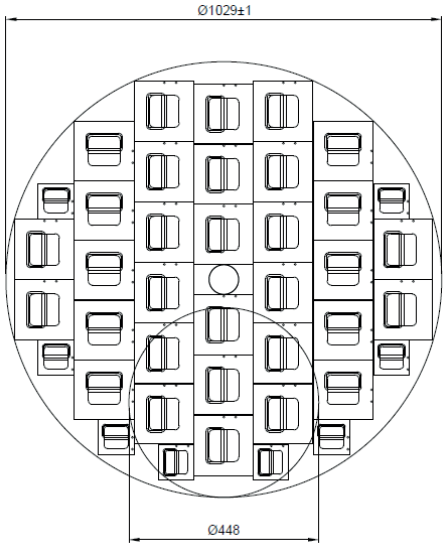


5x5 TOWER

CAROUSEL ID = 787 ± 1 MM
NECK ID = 355 MM
10 x 10 TOWER = 140 x 142 MM
TO SUIT 10 x 10 BOX = 133 x 133 x 56 MM
5 x 5 TOWER = 83 x 85 MM
TO SUIT 5 x 5 BOX = 76 x 76 x 56 MM
MIN 0.5MM GAP BETWEEN TOWERS / WALLS
USABLE INTERNAL HEIGHT = 790 MM
TOWER HEIGHT (INC HANDLE) = 755 MM

	13 ROW
17 OF 10 x 10 TOWER	= 22,100
4 OF 5 x 5 TOWER	= 1,300
TOTAL 2ML VIAL CAPACITY	= 23,400

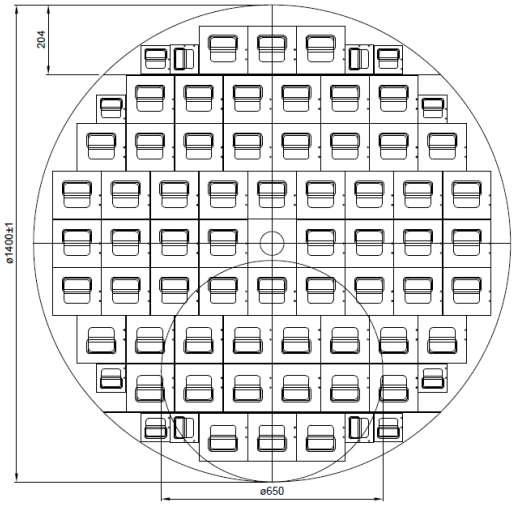
POLARIS 42/50



CAROUSEL ID = 1029 ± 1 MM
NECK ID = 488 MM
10 x 10 TOWER = 140 x 142 MM
TO SUIT 10 x 10 BOX = 133 x 133 x 56 MM
5 x 5 TOWER = 83 x 85 MM
TO SUIT 5 x 5 BOX = 76 x 76 x 56 MM
MIN 0.5MM GAP BETWEEN TOWERS / WALLS

	POLARIS 42	POLARIS 50
USABLE INTERNAL HEIGHT = 790 MM	= 794MM	= 900MM
TOWER HEIGHT (INC HANDLE) = 755 MM	= 755MM	= 900MM
	13 ROW	13 + 2 ROW
32 OF 10 x 10 TOWER	= 41,600	= 48,000
8 OF 5 x 5 TOWER	= 2,600	= 3,000
TOTAL 2ML VIAL CAPACITY	= 44,200	= 51,000

POLARIS 94

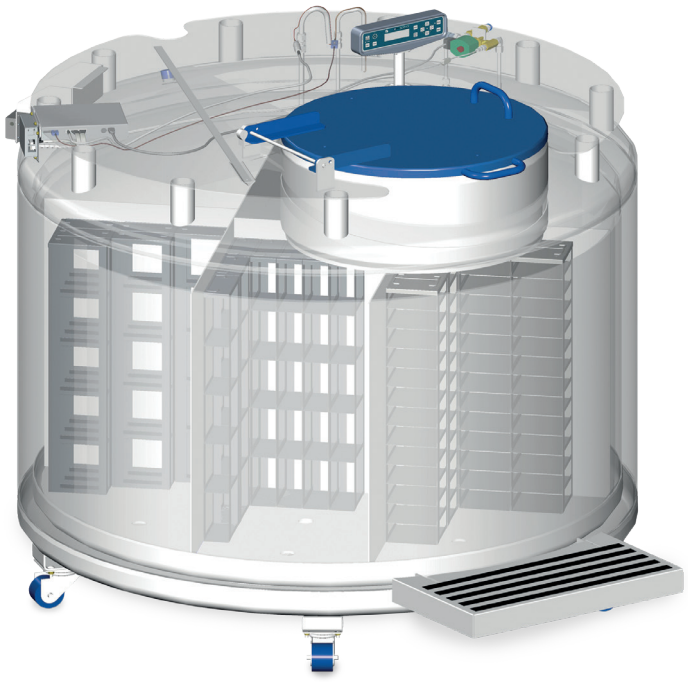


CAROUSEL ID = 1400 ± 1 MM
NECK ID = 650 MM
DIVIDER THICKNESS = 1 MM
10 x 10 TOWER = 140 x 142 MM
TO SUIT 10 x 10 BOX = 133 x 133 x 56 MM
5 x 5 TOWER = 83 x 85 MM
TO SUIT 5 x 5 BOX = 76 x 76 x 56 MM
MIN 1MM GAP BETWEEN TOWERS / WALLS

	13 ROW	13 + 2 ROW
60 OF 10 x 10 TOWER	= 78,000	= 90,000
12 OF 5 x 5 TOWER	= 3,900	= 4,500
TOTAL 2ML VIAL CAPACITY	= 81,900	= 94,500
TOWER HEIGHT (INC HANDLE)	= 755MM	= 900MM

Origin

- This state-of-the-art Cryogenic System can be use in either liquid or vapour phase.
- FROILABO Cryovita Origin Cryostorage Systems are designed for applications where extremely low temperature storage of biological products is required. They are also appropriate for industrial or other applications where liquid nitrogen temperature and high capacity are needed.
- The Origin freezer is designed for, but not limited to, the laboratory environment. Each model is supplied with locking casters to enable limited mobility for cleaning and positioning purposes.
- Each standard model is equipped with a FROILABO Cryovita approved electronic liquid level controller that will monitor and control the supply of liquid nitrogen to the unit. Make sure to read the operating and safety instructions provided before using your Origin unit. The addition of liquid nitrogen supply and inventory control racks for systematic retrieval of stored product completes the total Origin Cryostorage System.



TECHNICAL SPECIFICATIONS

ORIGIN	20K	38K	40K	80K	94K
External Operating Height (mm) (Top of Step to Lid opening)	1067	1118	1067	1067	1016
Step Height (mm)	275	287.5	275/407.5	275/425	275/550
Height (mm)	1346	1422	1346	1346	1575
Usable Height - Internal (mm)	762	762	762	762	897
Outside Diameter (mm)	864	1067	1143	1511	1511
Internal Working Diameter (mm)	750	965	1029	1397	1397
Neck Opening (mm)	330	457	457	622	622
Capacity (Litres) Total LN_2 Capacity (Liquid Storage) Total LN_2 Capacity (Vapour Storage)	 371 36	 623 73	 698 80	 1269 137	 1595 300
Weight – Empty (kg)	295	422	417	703	771
Maximum Gross Weight (kg)	595	925	981	1729	2060
NER (IDEAL CONDITIONS) (litres / day)	8	-	9	15	15

INVENTORY CONTROL SYSTEM SPECIFICATIONS					
No. 100/81 Cell Racks No. Shelves/Rack	14 13	26 13	30 13	58 13	60 15
No. 25 Cell Racks No. Shelves/Rack	4 13	12 13	8 13	12 13	8 15
Vial Capacity, 2 ml	19500	37700	41600	79300	93000
Bag 25 ml (7 Level Rack)	1624	2688	3108	5999	6856
Bag 50 ml (7 Level Rack)	924	1582	1876	3381	3864
Bag 250 ml (5 Level Rack)	500	900	990	1920	2304
Bag 500 ml (5 Level Rack)	420	690	830	1610	1932

CS SERIES CONTROL SYSTEM

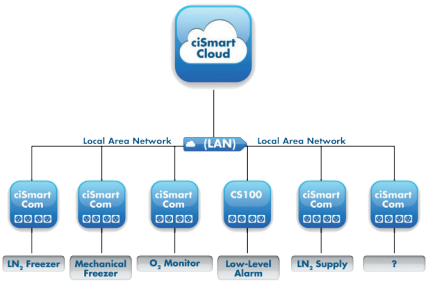
Intuitive LN_2 Control Technology

Control, monitor and secure your system with the CS Series Control.

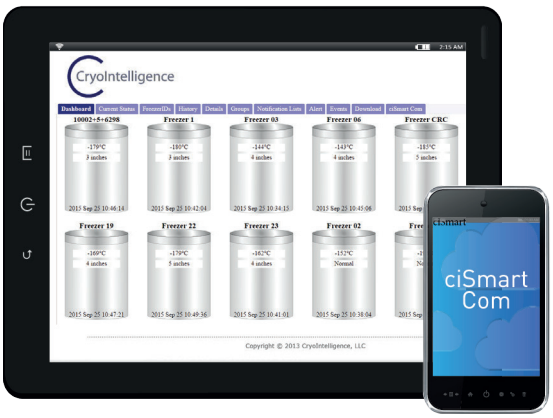
- Fully enclosed and protected battery back-up (optional) provides up to 72 hours of fully operational capability including automatic LN_2 filling.
- Solidly constructed enclosure with recessed display mount provides increased protection of electronics. The adjustable mounting post allows easier viewing and operation.
- Communication centre 12V DC power, optional 12-volt battery back-up, remote alarm and three (3) communication channels are easily identified and accessible.
- Secured protective battery cover

ciSmart™ COM DATA MANAGEMENT

ciSmart Com is designed for freezer management and advanced reporting. It enhances the feature set of cryogenic controllers and seamlessly communicates with the ciSmart™ Cloud platform for powerful data features.

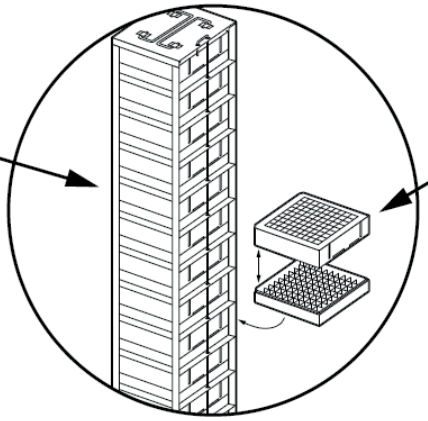


- Collects and analyzes multiple operational parameters
- Automatic data collection
- Data graphing
- Alarm notifications
- Advanced reporting
- Control log download
- Firmware update capability
- Local and global access
- Scalable
- Plug and play



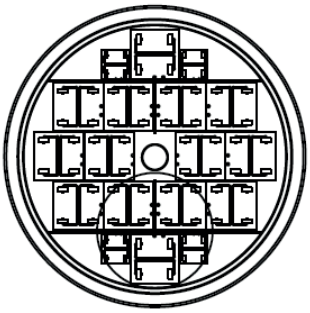
ORIGIN

Typical Rack with Box Design

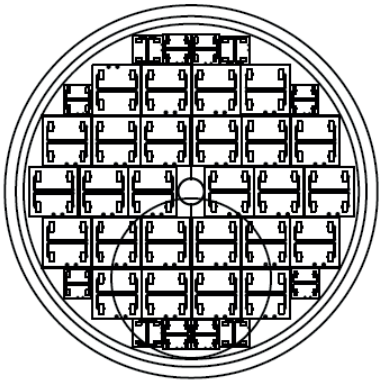


- 100 Vials Polycarbonate
- 100 Vials Aluminium Boxes
- 81Vials Cardboard or Stainless Steel Boxes

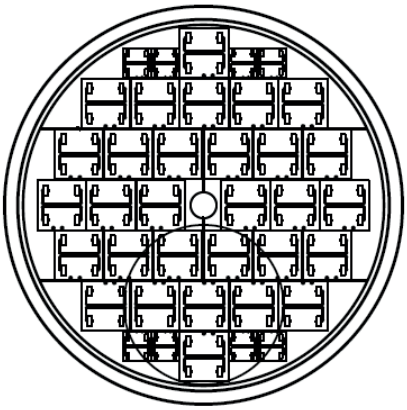
Origin 20K



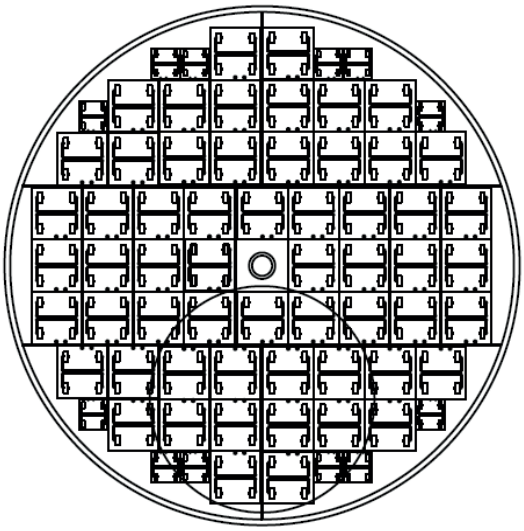
Origin 38K



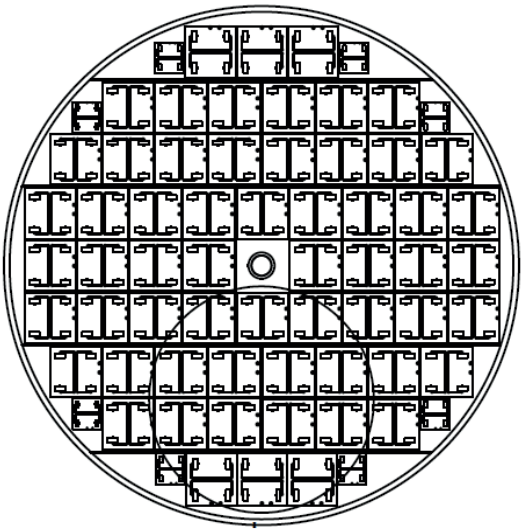
Origin 40K



Origin 80K



Origin 94K



2ml vial storage - Please contact us regarding other box type

Voyager

The 10K, 24K and 38K refrigerators are designed for, but not limited to, the laboratory environment. The 10K and 24K feature square, modular cabinets that facilitate grouping several units together in the cryostorage area. The 38K features a cylindrical stainless steel cryochamber. All of the models will accommodate inventory control systems or provide unobstructed storage area for larger product. All models are supplied with casters to enable limited mobility for cleaning purposes.

VOYAGER FREEZERS OFFER RELIABLE LIQUID NITROGEN STORAGE WITH CONTROLLABLE TEMPERATURE.

- Vapour or liquid storage
- Intuitive touch control
- Stainless Steel vacuum vessel
- Modular design
- Durable powder coated cabinet
- Caster mounted
- Superior vacuum performance

SPECIFICATIONS

Configurations:	Designed exclusively for the CryoStorage Systems (10K, 24K and 38K)
Power Supply:	24VAC, 40 VA - Standard 16.5 VAC, 40 VA with Battery Backup Option
Sensor Assembly:	4-Thermistor Assembly - Optional 8-Thermistor Assembly - Optional Freeze-Guard Assembly – Standard
Thermocouples:	Operates with none, 1 or 2 Type T Thermocouples (1 piece standard)
Solenoid Valve:	24 VAC cryogenic solenoid valve -Standard
Control Type:	Liquid Level Control or Liquid Level Control with Temperature Control
Security:	Keyless entry via 4-digit password Power On/Off Password Menu access Password

Alarms:	Activates audible and visual alarm Description of the alarm condition display on the front panel Activates remote alarm after user defined delay
Diagnostics:	Circuit diagnostics at start-up Sensor diagnostics from front panel Thermocouple diagnostics from front panel Manual Test for audible, visual and remote alarms
Temp. Calibration:	Automated calibration by using the panel
Communications:	RS-232 Serial Port for 2-way communication capable
Logging Capacity:	System Log (4096 events) Alarm Log (4096 events) Temperature Log (32,768 events)
Battery:	CR2032 coin cell battery is used to back up time/date

TECHNICAL SPECIFICATIONS

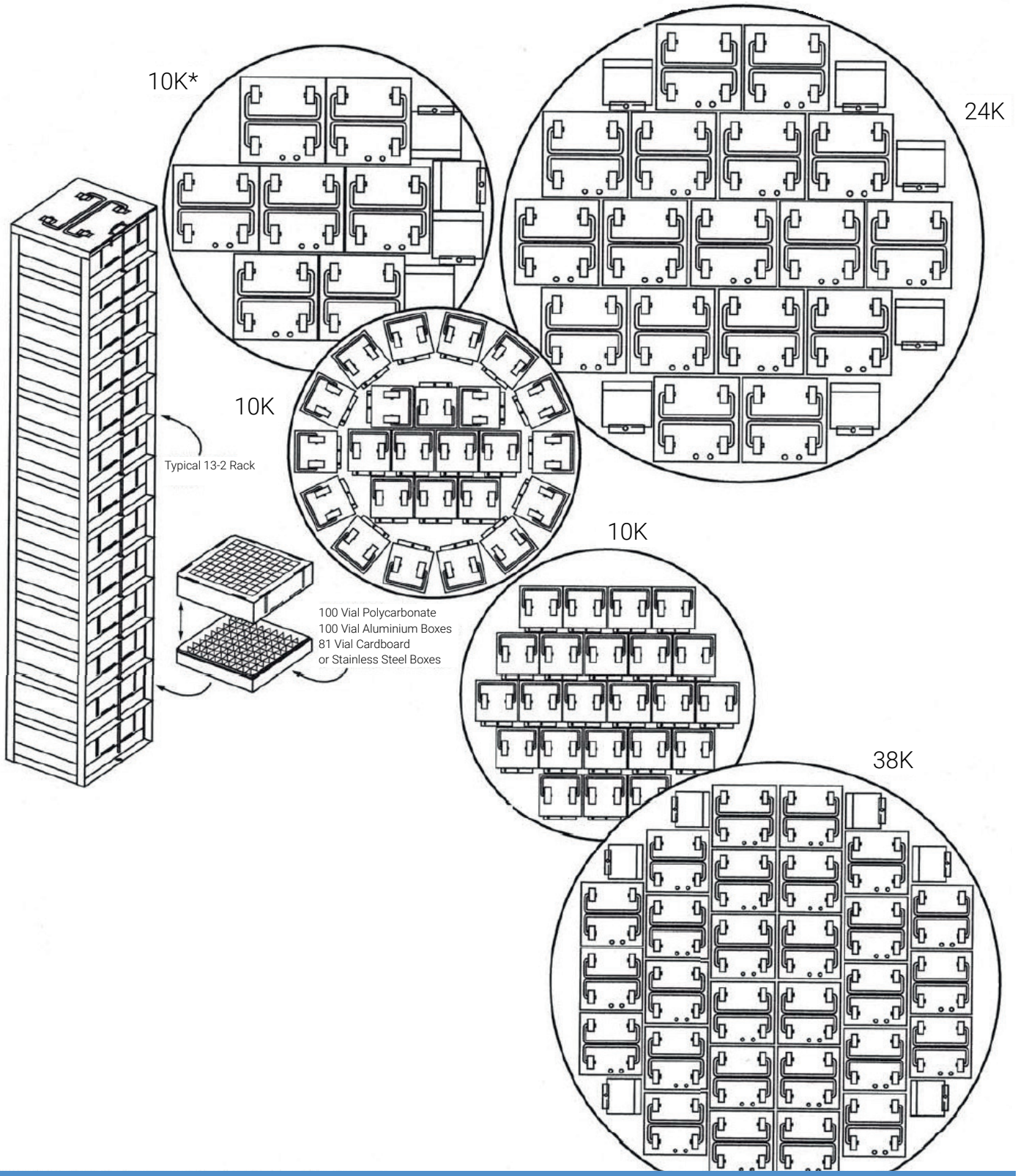
VOYAGER	3K	10K	24K	38K
*Static Holding Time – Days	19	33	52	73
**Working Time – Days	12	20	32	46
*Evapouration Rate – Litres/days	2.5	5.0	7.0	8.0
LN_2 Capacity - Litres	48	165	365	590
Weight – Empty (kg)	19.1	111	184	256
Weight – Full (kg)	56.7	243	474	733
Neck Diameter (mm)	356	533	787	991
Overall Height (mm)	754	111.8	111.8	1245
Overall Dimensions / Diameter (mm)	391	587 x 775	864 x 965	1067
Usable Height - Internal (mm)	488	737	737	737
Internal Diameter (mm)	356	533	787	991
Plastic Vials, 2 ml	3024	10400	24050	38350
Number of 100/81 Cell Racks	N/A	7	17	28
Number of 25 Cell Racks	N/A	4	6	6
Number of Shelves	N/A	13	13	13
Box shape Size (mm) Vials per box	Triangle 171x175 56		Square 127x127 100	Square 76x76 25
0.50cc straws, 10 per goblet, 2-13mm goblets per cane, two tier turn-table inventory control system	N/A	44000	59400	114000
Roller Base	366742	N/A	N/A	N/A
CS100 Controller	N/A	372540	372541	N/A
CS200 Controller	N/A	367901	367914	368086

Notes

* Evapouration rate and static holding time are nominal. Actual rate may be affected by the nature of the contents, atmospheric conditions, container history, and manufacturing tolerances.

** Work time is an arbitrary, reference-only value to estimate container performance under the actual operating conditions.

VOYAGER



2ml vial storage in boxes - Contact us for other box types

Part Number	Racks 13 x 2 x 100 Rack23K-8C35	Racks 13 x 2 x 25 R10K-9C44	BOXES-100 N-374187-98 (case of 24)	BOXES-25 N374180 (case of 36)	VIAL CAPACITY Max. allowable
10K*	7	4	91	52	10400*
24K*	17	6	221	78	24050
38K	28	6	364	78	38350

*Without Temperature Gradient Suppressor

Darwin

The Darwin series, designed for Liquid or Vapour Vial Storage in Convenient Box-type Racks.

It was created primarily for laboratories that utilise rack storage for large quantities of vials. The Darwin series contains four models: LS750, LS3000, LS4800 and LS6000.

- Convenient Storage Systems – rack index location ring and internal location fixture, computer compatible box storage for simple inventory management
- In vapour-phase storage, temperature at the top of racks is -190°C
- High strength aluminum body and magneformed necktube design
- Superior vacuum performance with super insulation provides maximum holding times
- Security – Accessory low-level alarm and CS100 controller are available with remote connection capability
- Lockable lids

TECHNICAL SPECIFICATIONS

DARWIN	LS750	LS3000	LS4800	LS6000
LN_2 Capacity – Litres	35	81	130	165
Static Holding Time – Days	130	106	153	194
Evapouration Rate – Litres/Days	0.27	0.76	0.85	0.84
Necktube Diameter (mm)	119	216	216	216
Outside Diameter (mm)	478	683	683	683
Height (mm)	681	732	982	991
Weight – Empty (kg)	17.69	31.75	40.82	54.88
Weight – Full (kg)	45.95	97.16	141.7	186
Number of Racks	6	6	6	6
Number of Shelves / Rack	5	5	8	10
2ml Vial Capacity	750	3000	4800	6000

Arctic XT & Antarctica HC

The Arctic XT and Antarctica HC series, designed for long-term storage at cryogenic temperatures.

- The Arctic XT Series is intended for extended hold times and the Antarctica HC series is designed for high capacity storage
- Rugged ribbed high-strength aluminum body, magneformed necktube design, and durable paint
- Versatile storage system
- Superior vacuum performance with super insulation for maximum holding times
- Lockable lid

TECHNICAL SPECIFICATIONS

XT SERIES	3XTL	8XTL	10XT	20XT	34XT
LN_2 Capacity – Litres	3	8	10	20.7	34
Hold Time – Days	27	80	100	230	340
Evapouration Rate – Litres/days	0.11	0.1	0.1	0.09	0.1
Necktube Diameter (mm)	51	51	51	51	51
Outside Diameter (mm)	193	396	290	396	478
Height (mm)	437	483	605	655	668
Weight – Empty (kg)	3.27	8.89	7.48	11.79	15.76
Weight – Full (kg)	5.67	15.33	15.56	28.49	43.23
Number of Canisters	6	6	6	6	6
.5 cc Straws on Canes	N/A	N/A	540	540	540
.5 cc Straws – Bulk (1 Level)	750	750	750	750	750
Number of 1.2 & 2.0 ml Vials	N/A	N/A	150	150	150

TECHNICAL SPECIFICATIONS

HC SERIES	12HCL	20HC	34HC	35HC	35VHC	38HC	38VHC	38WD
LN_2 Capacity – Litres	12	20	34	35	35	38	38	38
Hold Time – Days	60	87	200	130	130	120 (Liquid)	120	120 (Liquid) 38 (Vapour)
Working Time Days	-	-	-	-	-	75 (Liquid)	-	75 (Liquid) 24 (Vapour)
Vapour Capacity (Liters) Absorbed	-	-	-	-	-	-	-	12
Evapouration Rate – Litres/days	0.2	0.23	0.17	0.27	0.27	0.31	0.31	0.31
Necktube Diameter (mm)	91	91	91	119	119	127	127	127
Outside Diameter (mm)	396	396	478	478	478	478	478	-
Height (mm)	483	616	668	681	681	681	681	681
Weight – Empty (kg)	9.8	12	35.38	16.05	17.19	17.33	17.33	17.92
Weight – Full (kg)	19.5	28.12	43.5	45.95	45.45	48.04	47.49	48.63
Number of Canisters	6	6	6	10	6	10	6	10
Canister Dimensions (mm)	70 x 279	70 x 279	70 x 279	67 x 279	94 x 279	70 x 279	105 x 279	70 x 279
1.2ml & 2.0 ml vials (5/cane)	-	570	570	850	1050	950	1260	950
1.2ml & 2.0 ml vials (6/cane)	-	684	684	1020	1260	1140	1512	1140
.5 cc Straws (10/cane)	2940	1920	1920	2800	3300	3200	4500	3200
.5 cc Straws– Bulk (2 Levels)	-	4800	4800	7300	9600	8000	-	8000
.25 cc Straws (28/cane)	6060	5376	5376	7280	9240	8960	12600	8960
.25 cc Straws– Bulk (2 Levels)	-	10740	10740	16400	21564	17,200	-	17,200

LN_2 Dewars

The LN_2 Dewars series, designed for safe storage and dispensing of liquid nitrogen.

It is available in 4 – 50 Litre LN_2 capacity (7 Vessel styles).

- Rugged ribbed high-strength aluminium body, magneformed necktube design, and more durable paint
- Snap-on cap and necktube assures a tight closure
- Advanced insulation materials assure high thermal efficiency

TECHNICAL SPECIFICATIONS

LN_2 STORAGE DEWAR	4LD	5LD	10LD	25LD	CLAS-SIC 25	35LD	50D
LN_2 Capacity – Litres	4	5	10	25	25	35	50
Static Holding Time – Days	10	6	45	109	119	152	122
Evapouration Rate – Litres/days	0.40	0.77	0.22	0.23	0.21	0.23	0.41
Necktube Diameter (mm)	30	142	50.8	63	51	64	63.5
Outside Diameter (mm)	193	193	290	396	394	478	478
Height (mm)	432	445	597	655	582	668	823
Weight – Empty (kg)	3	3.13	6.58	10.52	8.62	15.92	17.55
Weight – Full (kg)	6.2	7.167	14.65	30.71	28.8	44.18	57.92

Vapour Shippers

The shipping vessels are designed for the safe transport of biological samples in a vapour phase.

Featuring CX/CXR and 4D models.

- Advanced Concept Adsorbent enables faster charging
- Complies with IATA regulations for open cryogenic receptacles
- Rugged construction and superior vacuum performance with super insulation for maximum holding times
- Lockable lid
- Made in USA

TECHNICAL SPECIFICATIONS

VAPOUR SHIPPER	CX100	CXR100	CXR500	4D	4DX
LN_2 Capacity – Litres	4.1	3.7	6.4	4.1	4.1
Static Holding Time – Days	18	16	11	27	24
Evapouration Rate – Litres/days	0.2	0.23	0.64	0.17	0.17
Necktube Diameter (mm)	70	91	216	51	71
Outside Diameter (mm)	222	234	394	222	222
Height (mm)	470	493	683	470	470
Weight – Empty (kg)	5.31	5.31	13.61	5.31	5.31
Weight – Full (kg)	8.62	8.26	18.82	8.62	8.62
No. of 1.2 ml & 2.0 ml vials (5/cane)	85	85	500	40	85
No. of 1.2 ml & 2.0 ml vials (6/cane)	102	102	500	48	402
Number of .25 cc Straws (28/cane)	784	784	1736	448	784
No. of .25 cc Straws, Bulk (2 levels) in Goblets	1640	1640	7160	952	1640
Number of 1/2 straws (10/cane)	280	280	1240	160	280
No. of .5 cc Straws, Bulk (2 levels) in Goblets	800	800	3200	460	800
Number of Canisters	1	1	N/A	1	1

Accessories & Options

Cryogenic Storage & Transportation Vessels

SUPPLY CONTAINERS

DIPPERS

RACK

LN_2 WITHDRAWAL DEVICE

NECK PLUG

TRANSFER HOSE

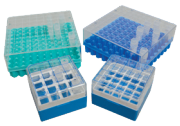
PHASE SEPARATOR

ROLLER BASE

CANISTER

MEASURING STICK

LOW LEVEL ALARM



CRYOBOX

Oxygen Monitoring One2One

Key Features

- No charging necessary. Two years sensor and battery pack ensuring constant monitoring.
- Two independent alarm levels: Alarm and Critical Alarm.
- Loud audible alarm at 85dBA.
- Large, clear LCD display remote alarm unit provides a digital readout of oxygen concentration at all times.
- Easy installation to a flat surface at an appropriate sensing point by mounting on the wall and immediate plug-and-play operation with easy fitting connectors.
- Confidence flash on oxygen monitor to ensure maximum user visibility.
- User replaceable sensor and battery packs.
- Simple self-calibration mode for optimum performance.

Personal Oxygen Monitor GasPod O2 (3 years sensor/battery)

Key Features

- Confidence heartbeat & service indication on LCD display with large clear indication for maximum user visibility.
- Simple automated push button calibration in fresh air.
- Different audible, visual and vibration indications for two primary warning alarms and two critical alarm settings.
- Rugged, highly visible enclosure and durable clip to allow user to attach the GasPod securely to garments.
- Loud audible alarm.
- Charging not required. Three years sensor/battery pack which cannot be switched off, protecting the user at all times.
- Live readings with no sample interval for rapid alarm response times.
- Oxygen concentration reading suppressed in alarm condition to avoid user interpretation of safe levels (continuous reading available upon request).

FROILABO PRODUCT RANGE

PRODUCT RANGE

1. Ovens
2. Incubators
3. Ultra Low Temperature Freezers
4. Climatic Chambers
5. Fast Blast Freezers (CRP)
6. Thermal Air Conditioner (Dragon)
7. Stainless Steel High Capacity LN_2 Vessels
8. Aluminium Inventory System
9. Aluminium Dewar and Shipper

Temperature Control Solutions Protecting the Sample, the User and the Environment. Froilabo's temperature control solutions range from -190°C to +250°C with accuracies and homogeneities rarely achieved on the market. Our world class range of Laboratory Freezers, Climatic Chambers and Air Generators can be used on a wide range of applications. Offering complete peace of mind, our accredited products are backed with outstanding customer service and support. Browse our range and find an energy efficient systems that will keep emissions low, saving costs and supporting the environment.

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