

An abstract graphic composed of several light blue hexagonal shapes arranged in a cluster on the left and another smaller cluster on the right. In the center, there is a circular element resembling a lens or a camera aperture, with a vertical line passing through its center. The background is a light blue gradient with horizontal lines.

The future has a name

kaltis[®]

kaltis®



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Kaltis® laboratory equipment is renowned for its quality construction and long-term reliability.

Kaltis® freezers provide reliable, dependable performance under all laboratory conditions. Our ultra low temperature freezers have a long history record of proven performance.

Kaltis® low and ultra low freezers are designed for the long-term storage of biological materials, blood components and pharmaceuticals, covering a wide range of applications.

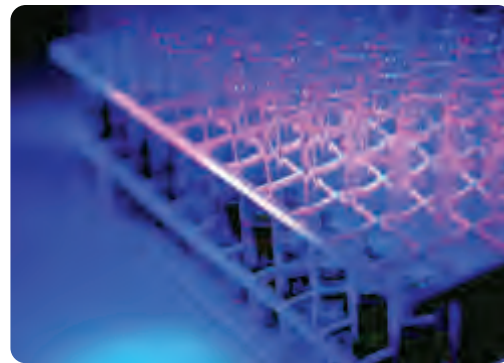
Kaltis® freezers utilize the latest refrigeration technology and have been developed to increase reliability, stability, dependability and to reduce energy consumption.



Kaltis® freezers comply with CE & UL safety and performance standards.



Kaltis® freezer quality, stability, reliability and low maintenance, offers you peace of mind that your samples are correctly stored, day after day, year in and year out.



Typical Applications	Low -10°C~-40°C	Ultra Low -50°C~-86°C	Cryogenic -140°C~-150°C
Bacteria	S	S	L
Blood components		S	L
Bone marrow		S	L
Clinical samples	S	S/L	L
Fungi (yeasts/spores/molds)	S	S/L	L
Insect cell culture		S	L
Mammalian cell culture		S	L
Materials testing storage	G	G	G
Molecular biology enzymes/kits	S		
Nucleic acids (DNA/RNA)	S/L	L	
Plant cell culture		S	L
Plasma	G		
Proteins	G		
Red cell storage		G/L	
Sperm, fertilized ova		S	L
Tissue		S	L
Viruses	S/L	G/L	

S: Short Term G: General Storage L: Long Term

Performance Data

Please contact us for model specific performance specifications, such as temperature pull down, warm-up insulation, power consumption and noise levels.



Kaltis® Support

Kaltis® can help you to select a freezer for your specific requirements.

**Environment friendly,
CFC/HCFC-Free refrigerants,
insulation and packaging.**

We only use CFC/HCFC-Free refrigerants and insulation.
Our packaging materials are recyclable.

OUR PRODUCTS

Kaltis® freezers are optimised field tested refrigeration systems, which include the following features:

- # Refrigerants and compressors are available globally.
- # Extensively tested in elevated temperature and humidity environments, and unstable power supply conditions.
- # CFC / HCFC - Free, ozone-friendly refrigerants.
- # Low start-up current requirement and low energy consumption
- # Low noise levels (below 55 dBA)



Optimised Refrigeration Technology

High Cascade

High Cascade Compressor

- Specialized compressor.
- Low noise and vibration levels.
- Minimum clearance, maximum displacement with same horsepower; Maximum refrigeration efficiency with minimum heat dissipation.
- Low energy consumption.

High Cascade Refrigerant

- For low temperature applications.

High Cascade Lubrication

- Ensures maximum miscibility with refrigerant and chemical stability.

High Cascade Condenser

- Large Heat exchange area, ensuring system stability when operating in extreme conditions.

Fan

- A large fan guarantees efficient air circulation.

High Cascade Filter Dryer

- Keeps the system clean, ensuring uninterrupted refrigerant flow, preventing pipe blockages.

Cascade Heat Exchange

- Proprietary design. Removes heat from the storage chamber.

High Cascade Capillary Tubing

- Approaches 100% efficiency, allowing even, uninterrupted liquid refrigerant flow.

High Cascade Evaporator

- Large heat exchange area ensures an efficient high cascade system.

High Cascade Super Heater and Accumulator

- Improves high cascade refrigeration efficiency, preventing liquid refrigerant from entering the compressor.

Low Cascade

Low Cascade Compressor

- High compression rate, self-lubricating system.
- Low noise and vibration levels.
- Optimum efficiency to horsepower ratio.
- Low energy consumption.

Low Cascade Refrigerant

- Selected for energy-savings and extended freezer life.

Low Cascade Lubrication

- Proprietary POE lubrication provides optimum refrigerant miscibility and chemical stability.

Low Cascade Filter Dryer

- Design prevents pipe blockage, ensuring uninterrupted refrigerant flow.

Low Cascade Oil Separator

- Custom designed for our cascade system.
- Separation efficiency greater than 99.99%.
- Optimised evaporator heat exchange efficiency extends compressor life.

Low Cascade Capillary Tubing

- Ensures even refrigerant flow, resulting in controlled pressure and temperature reduction.

Low Cascade Evaporator

- Wide radius coils and down fee design facilitates refrigerant flow. High conductivity material increases heat transfer out of the storage chamber.

Designed and Optimised for Ultra Low Temperature Applications.

Our cabinets are designed to meet the challenges of ultra low temperature applications, while ensuring long term durability.

- # Low maintenance.
- # Low "K" factor, CFC/HCFC-free insulation.
- # Heated door seal and lid gaskets form multi-point seals, minimizing frost build-up, especially around access areas.
- # Upright and chest cabinets utilize a down feed evaporator coil which completely surrounds the inner chamber. The coil ensures uninterrupted refrigerant flow resulting in optimal cooling efficiency.



Advance Cabinet Design

Outer Door

Can be opened/closed with one hand. A Pull & Push™ cam mechanism latch ensures that the door closes tightly every time. Optional lockable latch.

Outer Door Gasket

Three layer gasket for effective sealing.

Microprocessor Controller

Eye level, door mounted for clear visual access to freezer data and programming.

Low profile

Only 196cm (77.2") high.

Access Ports

Backup system and temperature recorder access.

Remote Alarm Contacts

Monitors changes in chamber temperature and power supply.

Heavy Duty Castors

Facilitates moving and positioning.

Leveling Feet

Freezer level can be adjusted with the front leveling feet.

Quiet Condenser Fans

Low noise and low maintenance.

Air Cooled Condenser

Pipe & fin heater exchange with large transfer areas.

Cascade Refrigeration System

Industrial hermetic compressor and high efficiency lubricants.

CFC/HCFC-free Refrigerants

HFC series, environmentally friendly refrigerants.

Low Noise

Low compressor and fan noise levels ensure silent running.

Surge Suppressor

Surge protection, protecting circuits and compressor from voltage spikes.

Automatic Voltage Regulator

Electronic voltage regulator, expanding voltage range. Maintains optimum compressor voltage under all conditions. Extends compressor life.

Alarm and Monitoring System Backup Battery

72 hours. Power failure alarm and monitoring function.

Solid State Relay (SSR)

No moving parts in the compressor drive circuit. Extended microprocessor controller life.

Backup System Battery (Supplied with the optional backup system)

Provides power to the backup system.

Recorder (Optional)

Inkless, circular, 6" (15.2cm), 7-day chart recorder or digital recorder.

Cabinet Insulation

CFC/HCFC-free closed cell urethane insulation for thermal protection and structural strength.

Down Feed Evaporator

Ensures efficient, unhindered refrigerant flow.

Sealer

Increases the heat exchange area and assists with heat removal from the chamber.

Door Frame Defrost

Hot gas halo prevents frost build-up.

Inner Door

Four insulated inner doors. Optional 5th door is available.

Inner Door Hinges

Each interior door is independently hinged.

Cabinet Interior

Stainless steel interior and adjustable, stainless steel shelves.

Shelf Brackets

Movable supports for height adjustment.

Rounded Corners

No hard to reach places. Easy to clean.

Control Probe

Center mounted on the rear wall for accurate temperature control.

Sample Racks

Optional stainless steel racks. Maximize space utilization.

· **Intelligent Self-diagnosis**

System controller monitors and displays the operating parameters and, if necessary, makes adjustments.

· **Digital Display**

Easy to read, multifunction LCM digital display.

· **Audible & Visual Alarms**

Automatically activated by an alarm event.

· **Automatic Restart Delay**

Auto restart delay ensures on line quality after power failure, decreases power loading, and protects the compressors.

· **Voltage Heavy Load Monitor**

Monitors voltage. Automatically activated to decrease compressor load, extending compressor life.

· **Auto Restart**

Automatic system restart and reset after a power failure.

· **Security**

User settable password protection.

· **Amperage Monitor**

Monitors current, in real-time.

· **Real Time Clock**

Built-in clock: confirms alarm time and highest temperature.

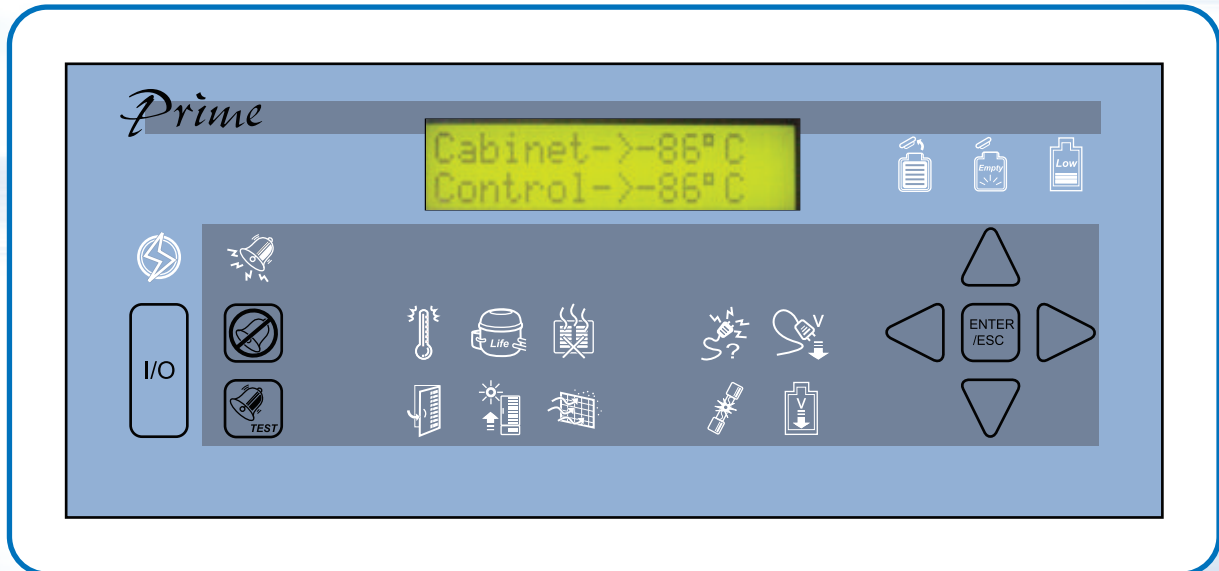
· **Event Recorder**

Records alarm, temperature & time.

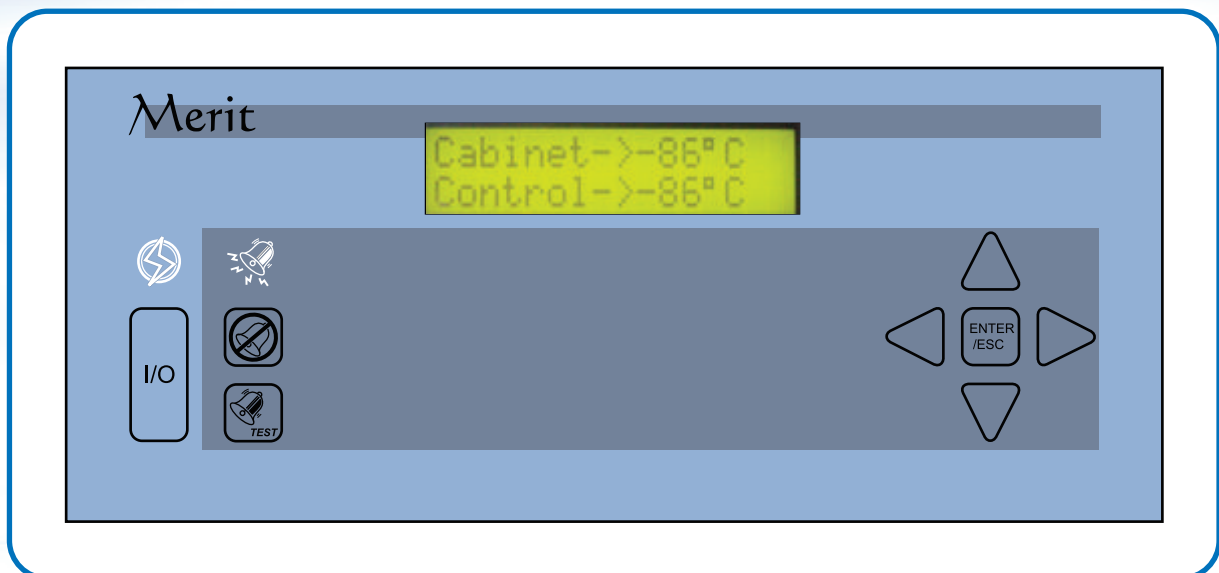
Minerva™ Microprocessor Controllers

Feature	Prime series		Merit series		
	Button	Audio	Visual	Audio	Visual
Temperature monitoring		●	●	●	●
Alarm function		●	●	●	●
I/O indicator			●		●
I/O key	●				
Alarm mute	●				
Alarm test	●				
Door open		●	●	●	
Ambient temperature monitoring		●	●	●	
Filter condition			●		
Circuit breaker		●	●	●	
Battery alarm		●	●	●	
Function keys	●				
LN ₂ /LCO ₂ Backup system		●	●		
Voltage monitoring			●		
Power failure		●	●	●	
Condenser control			●		
Compressor control		●	●	●	
Password protection	●				

Minerva™ Microprocessor Controllers



Minerva™ microprocessor controllers combine system control, electronic, alarm and monitoring functions, providing the highest level of storage and refrigeration protection. Minerva™ constantly monitors ambient conditions and the refrigeration system in real time, ensuring optimum temperature control with the minimum power consumption.



Operating Temperature (-86°C Models)

- Range: -60°C to -86°C

Refrigeration System

- The air cooled refrigeration system has been designed to maintain the set temperature in elevated ambient temperature environments.
- Dual cascade refrigeration system, with two, 1hp, air-cooled compressors.
- CFC/HCFC-free refrigerants.
- Extra large condenser with two aerodynamic axial fans provides increased air flow and heat expulsion.
- Down flow evaporator for efficient refrigerant flow, oil return, and longer compressor life.
- Washable condenser filter keeps fins dust-free, maintaining optimal cooling efficiency.
- Kaltis compressor warranties are the longest in the market, ensuring long term peace of mind.

Control System

- Key pad, multi-functional display, microprocessor control system.
- Password protected security system for power, temperature & alarm settings. Independent operating temperatures and high/low limit alarm.
- Factory set for quick setup and system start. Temperature adjustments in of 1°C increments.

Electrical System

- Automatic voltage compensation for voltage fluctuations.
- Incoming line voltage monitoring and digital display.
- Built-in surge suppressor flattens incoming voltage spikes.
- Solid state relay. No moving parts in compressor drive circuit.
- Circuit breaker. Protects compressor and power supply circuits.
- Built-in automatic delay restart. Ensures on line quality, decreasing power load and protecting the compressor.

Alarm System

- Intelligent self-diagnostic system controller monitors system parameters and displays alarm status in real time.
- Audible & visual alarms alert you to:
 - Temperature changes
 - Power failure
 - Low backup battery voltage
 - Door open
- Automatic, continuous backup battery charge provides full system function during power failure.
- Remote alarm contacts for advanced protection.
- Automatic temperature fluctuation recognition and logging.
- Touch pad alarm test function to test the alarm system without opening the freezer door.

Monitoring System

- Climate indicator displays environmental temperature
- Clean filter indicator monitors condenser filter, ensuring optimum cooling performance.
- Voltage compensation indicator. Automatically monitors and adjusts incoming voltage, compensating for voltage spikes.
- Low battery indicator. Flashing light shows when battery needs replacement.
- Surge suppressor indicator monitors circuit breaker.
- Compressor protection monitors and automatically adjusts freezer conditions, extending compressor life.
- Computer interface through an RS232 or an RS485 data port (end user choice). Allows monitoring of all freezer functions (requires optional software).
- Real time clock.
- Alarm history: Records alarm time and highest temperature.

Cabinet Construction

- Closed cell, CFC/HCFC-free urethane insulation.
- Heavy-gauge steel cabinet with high-impact powder coated exterior finish.
- Stainless steel interior.
- Rounded interior corners for easy cleaning.
- Access port (25.4mm) diameter, with cap.
- Dual wheel, heavy-duty swivel castors.

Upright Cabinet Construction

- Low profile design.
- Eye-level, door mounted controls.
- Four, insulated inner doors with independent door hinges. An optional 5th door is available.
- Three, adjustable stainless-steel shelves, creating four interior compartments.
- High-density, CFC/HCFC-free door insulation.
- Pull 'N'Push™ door latch & handle, patented cam mechanism. For added security, a padlock can be fitted.

Chest Cabinet Construction

- Low profile design for easier access to samples.
- Heavy-duty counter balanced lid with integrated keyed lid lock for security.
- Double seal lid gaskets to minimize frost build-up.
- Independent sub-lids provide additional internal temperature protection.

Inventory System and Accessories

- Includes racks, boxes and dividers. These may be ordered separately, or as full-load sample inventory system.
- See accessories section for information for optional alarm systems, temperature recorders, LN₂ / LCO₂ backup systems, inventory components and associated products.
- RS232 or RS485 communication ports, optional software.

-86°C Prime & Merit Series Ultra Low Temperature Freezers

	Model No.	Power Requirements			Dimensions (cm/inch) W x D x H		Capacity		Weight	
		Volts	Frequency Hz	Amps	Interior	Exterior	L	ft ³	Kg	Lb
UPRIGHT	GV039P/M	100~115	60	15	60 x 50 x 129 23.6 x 19.6 x 50.7	85 x 76 x 196 33.4 x 29.9 x 77.1	390	13.7	290	639
	AV039P/M	220~240	50	7.5						
	DV039P/M	208~230	60	7.5						
	GV050P/M	100~115	60	15	60 x 64.5 x 129 23.6 x 19.6 x 50.7	85 x 91 x 196 33.4 x 35.8 x 77.1	499	17.6	320	705
	AV050P/M	220~240	50	7.5						
	DV050P/M	208~230	60	7.5						
	GV061P/M	100~115	60	15	88 x 64.8 x 129 29.1 x 25.3 x 50.7	99 x 91 x 196 38.9 x 35.8 x 77.1	616	21.7	350	771
	AV061P/M	220~240	50	7.5						
	DV061P/M	208~230	60	7.5						
	GV073P/M	100~115	60	15	88 x 61 x 129 34.6 x 24.1 x 50.7	113 x 88 x 196 44.4 x 34.6 x 77.1	732	25.8	380	838
	AV073P/M	220~240	50	7.5						
	DV073P/M	208~230	60	7.5						
CHEST	GH022P/M	100~115	60	15	61 x 50 x 72 24 x 19.7 x 28.3	126 x 75 x 102.5 49.6 x 29.5 x 40.1	220	7.8	210	462
	AH022P/M	220~240	50	7.5						
	DH022P/M	208~230	60	7.5						
	GH032P/M	100~115	60	15	90 x 50 x 72 35.4 x 19.7 x 28.3	155 x 75 x 102.5 61 x 29.5 x 40.1	320	11.3	245	539
	AH032P/M	220~240	50	7.5						
	DH032P/M	208~230	60	7.5						
	GH043P/M	100~115	60	15	118.5 x 50 x 72 46.7 x 19.7 x 28.3	183.5 x 75 x 102.5 72.2 x 29.5 x 40.1	430	15.2	280	616
	AH043P/M	220~240	50	7.5						
	DH043P/M	208~230	60	7.5						
	GH053P/M	100~115	60	15	148 x 50 x 72 58.3 x 19.7 x 28.3	213 x 75 x 102.5 83.9 x 29.5 x 40.1	530	18.7	315	693
	AH053P/M	220~240	50	7.5						
	DH053P/M	208~230	60	7.5						

*P: Prime, M: Merit Width allowance for handles & hinges: Upright freezers: 80mm, Chest freezers: 110mm

Operating Temperature (-40°C Models)

- Range: -20°C to -40°C

Refrigeration System

- The air cooled refrigeration system has been designed to maintain the set temperature in elevated ambient temperature environments.
- Single stage refrigeration system, with one, 1hp, air-cooled compressor.
- CFC/HCFC-free refrigerants.
- Extra large condenser with one aerodynamic axial fan provides increased air flow and heat expulsion.
- Down flow evaporator for efficient refrigerant flow, oil return, and longer compressor life.
- Washable condenser filter keeps fins dust-free, maintaining optimal cooling efficiency.

Control System

- Key pad, multi-functional display, microprocessor control system.
- Password protected security system for power, temperature & alarm settings. Independent operating temperatures and high/low limit alarm.
- Factory set for quick setup and system start. Temperature adjustments in 1°C increments.

Electrical System

- Automatic voltage compensation for voltage fluctuations.
- Incoming line voltage monitoring and digital display.
- Built-in surge suppressor flattens incoming voltage spikes.
- Solid state relay. No moving parts in compressor drive circuit.
- Circuit breaker. Protects compressor and power supply circuits.
- Built-in automatic delay restart. Ensures on line quality, decreasing power load and protecting the compressor.

Alarm System

- Intelligent self-diagnostic system controller monitors system parameters and displays alarm status in real time.
- Audible & visual alarm s alert you to:
Temperature changes
Power failure
Low backup battery voltage
Door open
- Automatic, continuous backup battery charge provides full system function during power failure.
- Remote alarm contacts for advanced protection.
- Automatic temperature fluctuation recognition and logging.
- Touch pad alarm test function to test the alarm system without opening the freezer door.

Monitoring System

- Climate indicator displays environmental temperature
- Clean filter indicator monitors condenser filter, ensuring optimum cooling performance.
- Voltage compensation indicator. Automatically monitors and adjusts incoming voltage, compensating for voltage spikes.
- Low battery indicator. Flashing light shows when battery needs replacement.
- Surge suppressor indicator monitors circuit breaker.
- Compressor protection monitors and automatically adjusts freezer conditions, extending compressor life.
- Computer interface through an RS232 or an RS485 data port (end user choice). Allows monitoring of all freezer functions (requires optional software).
- Real time clock.
- Alarm history: Records alarm time and highest temperature.

Cabinet Construction

- Closed cell, CFC/HCFC-free urethane insulation.
- Heavy-gauge steel cabinet with high-impact powder coated exterior finish.
- Stainless steel interior.
- Rounded interior corners for easy cleaning.
- Access port (25.4mm) diameter, with cap.
- Dual wheel, heavy-duty swivel castors.

Upright Cabinet Construction

- Low profile design.
- Eye-level, door mounted controls.
- Four, insulated inner doors with independent door hinges. An optional 5th door is available.
- Three, adjustable stainless-steel shelves, creating four interior compartments.
- High-density, CFC/HCFC-free door insulation.
- Pull 'N' Push™ door latch & handle, patented cam mechanism. Close door by pushing handle forward. Open the door by pulling handle backwards. For added security, a padlock can be fitted.

Chest Cabinet Construction

- Low profile design for easier access to samples.
- Heavy-duty counter balanced lid with integrated keyed lid lock for security.
- Double seal lid gaskets to minimize frost build-up.
- Independent sub-lids provide additional internal temperature protection.

Inventory System and Accessories

- Includes racks, boxes and dividers. These may be ordered separately, or as full-load sample inventory system.
- See accessories section for information for optional alarm systems, temperature recorders, LN₂/LCO₂ backup systems, inventory components and associated products.
- RS232 or RS485 communication ports, optional software.

-40°C Prime & Merit Series Ultra Low Temperature Freezers

	Model No.	Power Requirements			Dimensions (cm/inch) W x D x H		Capacity		Weight	
		Volts	Frequency Hz	Amps	Interior	Exterior	L	ft ³	Kg	Lb
UPRIGHT	GA039P/M	100~115	60	15	60 x 50 x 129 23.6 x 19.6 x 50.7	85 x 76 x 196 33.4 x 29.9 x 77.1	390	13.7	270	594
	AA039P/M	220~240	50	7.5						
	DA039P/M	208~230	60	7.5						
	GA050P/M	100~115	60	15	60 x 64.5 x 129 23.6 x 19.6 x 50.7	85 x 91 x 196 33.4 x 35.8 x 77.1	499	17.6	300	660
	AA050P/M	220~240	50	7.5						
	DA050P/M	208~230	60	7.5						
	GA061P/M	100~115	60	15	88 x 64.8 x 129 29.1 x 25.3 x 50.7	99 x 91 x 196 38.9 x 35.8 x 77.1	616	21.7	330	726
	AA061P/M	220~240	50	7.5						
	DA061P/M	208~230	60	7.5						
	GA073P/M	100~115	60	15	88 x 61 x 129 34.6 x 25.3 x 50.7	113 x 88 x 196 44.4 x 34.6 x 77.1	732	25.8	360	792
	AA073P/M	220~240	50	7.5						
	DA073P/M	208~230	60	7.5						
CHEST	GB022P/M	100~115	60	15	61 x 50 x 72 24 x 19.7 x 28.3	126 x 75 x 102.5 49.6 x 29.5 x 40.1	220	7.8	190	418
	AB022P/M	220~240	50	7.5						
	DB022P/M	208~230	60	7.5						
	GB032P/M	100~115	60	15	90 x 50 x 72 35.4 x 19.7 x 28.3	155 x 75 x 102.5 61 x 29.5 x 40.1	320	11.3	225	495
	AB032P/M	220~240	50	7.5						
	DB032P/M	208~230	60	7.5						
	GB043P/M	100~115	60	15	118.5 x 50 x 72 46.7 x 19.7 x 28.3	183.5 x 75 x 102.5 72.2 x 29.5 x 40.1	430	15.2	260	572
	AB043P/M	220~240	50	7.5						
	DB043P/M	208~230	60	7.5						
	GB053P/M	100~115	60	15	148 x 50 x 72 58.3 x 19.7 x 28.3	213 x 75 x 102.5 83.9 x 29.5 x 40.1	530	18.7	295	649
	AB053P/M	220~240	50	7.5						
	DB053P/M	208~230	60	7.5						

*P: Prime, M: Merit Width allowance for handles & hinges: Upright freezers: 80mm, Chest freezers: 110mm



Environmentally Friendly, Hydrocarbon Freezers. Good for the Environment – Good for your Lab

Hydrocarbons are non toxic, non ozone depleting gases. Our range of HC-freezers have been designed to meet your environmental requirements. This freezer range is available in chest and upright models, and has the identical features of our Prime and Merit series.

As well as eliminating environmentally harmful refrigerants, these freezers offer up to 10% reduction in power consumption. The hydrocarbon content of our new freezers is less than a tablespoon full and the freezers have been designed to meet EC regulations and ACRID guidelines for the use of hydrocarbon refrigerants.

-86°C Ultra Low HC Freezers

-40°C Ultra Low HC Freezers

	Model No.	Volts	Capacity		Model No.	Volts	Capacity	
			L	ft ³			L	ft ³
UPRIGHT	HC-GV039P/M	100~115	390	13.7	HC-GA039P/M	100~115	390	13.7
	HC-AV039P/M	220~240			HC-AA039P/M	220~240		
	HC-DV039P/M	208~230			HC-DA039P/M	208~230		
	HC-GV050P/M	100~115	499	17.6	HC-GA050P/M	100~115	499	17.6
	HC-AV050P/M	220~240			HC-AA050P/M	220~240		
	HC-DV050P/M	208~230			HC-DA050P/M	208~230		
	HC-GV061P/M	100~115	616	21.7	HC-GA061P/M	100~115	616	21.7
	HC-AV061P/M	220~240			HC-AA061P/M	220~240		
	HC-DV061P/M	208~230			HC-DA061P/M	208~230		
	HC-GV073P/M	100~115	732	25.8	HC-GA073P/M	100~115	732	25.8
	HC-AV073P/M	220~240			HC-AA073P/M	220~240		
	HC-DV073P/M	208~230			HC-DA073P/M	208~230		
CHEST	HC-GH022P/M	100~115	220	7.8	HC-GB022P/M	100~115	220	7.8
	HC-AH022P/M	220~240			HC-AB022P/M	220~240		
	HC-DV022P/M	208~230			HC-DB022P/M	208~230		
	HC-GV032P/M	100~115	320	11.3	HC-GB032P/M	100~115	320	11.3
	HC-AV032P/M	220~240			HC-AB032P/M	220~240		
	HC-DV032P/M	208~230			HC-DB032P/M	208~230		
	HC-GV043P/M	100~115	430	15.2	HC-GB043P/M	100~115	430	15.2
	HC-AV043P/M	220~240			HC-AB043P/M	220~240		
	HC-DV043P/M	208~230			HC-DB043P/M	208~230		
	HC-GV053P/M	100~115	530	18.7	HC-GB053P/M	100~115	530	18.7
	HC-AV053P/M	220~240			HC-AB053P/M	220~240		
	HC-DV053P/M	208~230			HC-DB053P/M	208~230		

*P: Prime, M: Merit Width allowance for handles & hinges: Upright freezers: 80mm, Chest freezers: 110mm

A range of freezers designed to operate at elevated environmental temperatures with exceptional internal temperature stability.

HE freezers are available in -80°C ultra low and -40°C low temperature models, only in the Prime series. These carry a five year compressor warranty, as well as all the other standard specifications for this series.

These freezers have been designed to operate in elevated temperature environments. Our proprietary expansion valve technology ensures that the compressor temperature is kept constant, resulting in the compressors operating smoothly at elevated environmental temperatures. This minimizes internal temperature fluctuations, guaranteeing stability, keeping your samples safe.

-80°C Ultra Low HE Freezers

-40°C Ultra Low HE Freezers

	Model No.	Volts	Capacity		Model No.	Volts	Capacity	
			L	ft ³			L	ft ³
UPRIGHT	HE-GV039P	100~115	390	13.7	HE-GA039P	100~115	390	13.7
	HE-AV039P	220~240			HE-AA039P	220~240		
	HE-DV039P	208~230			HE-DA039P	208~230		
	HE-GV050P	100~115	499	17.6	HE-GA050P	100~115	499	17.6
	HE-AV050P	220~240			HE-AA050P	220~240		
	HE-DV050P	208~230			HE-DA050P	208~230		
CHEST	HE-GH022P	100~115	220	7.8	HE-GB022P	100~115	220	7.8
	HE-AH022P	220~240			HE-AB022P	220~240		
	HE-DV022P	208~230			HE-DB022P	208~230		
	HE-GV032P	100~115	320	11.3	HE-GB032P	100~115	320	11.3
	HE-AV032P	220~240			HE-AB032P	220~240		
	HE-DV032P	208~230			HE-DB032P	208~230		
	HE-GV043P	100~115	430	15.2	HE-GB043P	100~115	430	15.2
	HE-AV043P	220~240			HE-AB043P	220~240		
	HE-DV043P	208~230			HE-DB043P	208~230		
	HE-GV053P	100~115	530	18.7	HE-GB053P	100~115	530	18.7
	HE-AV053P	220~240			HE-AB053P	220~240		
	HE-DV053P	208~230			HE-DB053P	208~230		

*P: Prime, M: Merit Width allowance for handles & hinges: Upright freezers: 80mm, Chest freezers: 110mm

Kaltis® Double Door Freezers

Our range of double door upright freezers offers the same standard performance features as the single door models, but with the added convenience of two doors, opening to a single internal chamber. This facilitates access to specific areas with minimum temperature loss from opening a single door, minimizing internal temperature fluctuation, ensuring internal temperature stability at all times.

Both doors feature our patented Pull 'n' Push™ door handle assembly and hot gas halo for minimal frost build up.

Kaltis® -86°C Double Door Freezers

Model No.	Power Requirements		Capacity	
	Volts	Frequency (Hz)	L	ft ³
DD-GV061P	100~115	60	616	21.7
DD-AV061P	220~240	50		
DD-DV061P	208~230	60		
DD-GV073P	100~115	60	732	25.8
DD-AV073P	220~240	50		
DD-DV073P	208~230	60		

*Interior/exterior dimensions identical to standard freezer range.





Accessories

Kaltis® supplies a full range of accessories for all requirements. Some accessories are factory installed.

Validation Testing Program

Kaltis® validation testing services, prior to shipping, can fast track in-house Installation Qualification (IQ), Operation Qualification (OQ), and Performance Qualification (PQ) programs on delivery. Kaltis® factory validation services include documentation and performance reports, compressor and sub-system component specifications, microprocessor flow diagrams, software specifications and more. Validation must be requested when ordering; for details contact Kaltis®, or your nearest distributor.

Temperature Recorders

Chart Recorder

A 6" (15.2cm) inkless circular chart, 7-day temperature recorder utilizing pressure sensitive chart paper; 1 box of 50 charts included.

Electrical Temperature Data Logger

An electrical temperature data logger offers two channels for temperature recording; One for the ambient temperature and one for the unit. A USB communication cable is included for data logging to your PC.

Remote Phone Alarm (RPA)

- Multiple freezers can be connected. High/low alarm and power failure events are communicated by telephone.
- Built-in backup battery: Can dial a phone number on power failure.
- Set by normal key pad phone: Can dial up to 5 numbers.

Backup System

- Factory fitted backup systems for the Prime and Merit series. Can also be retro fitted.
- Liquid flow is shut off automatically when the freezer door or lid is opened.
- All parameters are fed back to, and monitored by the controller.
- System activation set point is 5°C lower than the high temperature setting.

Temperature Probes

Additional temperature sensors can be fitted to the alarm system. These are factory installed and must be specified with the order. An additional temperature display is required for each temperature probe to monitor the internal cabinet temperature.

Export Packaging

Reinforced, solid wood crating. Includes all certifications.

Communication Ports

A choice of ports

Note: Only 1 communication port can be fitted. Port type needs to be specified with order.

RS232

Allows the remote monitoring and control of a single freezer through a DAQ Gateway at a maximum distance of 10m.

RS485

Allow the remote monitoring and control up to 99 freezers. Maximum distance: 1000m.

Monitoring Software

For remote monitoring, control, and data logging of freezer operation data, including













- Display of freezer temperature, time and event history.
- Numeric and graphic temperature display.
- Setting of operating parameters.
- Data export (.txt file).
- Adjustment of data log time.

Kaltis® inventory system is designed for flexibility, storage, easy sample retrieval & accurate inventory management. Kaltis® racks, boxes, and dividers maximize the usage of freezer space and facilitate inventory management. The inventory system election chart details the most common racks grouped according to cabinet type and capacity.

Standard fiberboard and injection-molded boxes are available. Racks, boxes and dividers can be ordered separately.

Inventory System

Inventory System: Storage Racks

Upright							
No.	Capacity	390 L / 13.7 ft ³	No.	499 L / 17.6 ft ³	616 L / 21.7 ft ³	732 L / 25.8 ft ³	
Four Inner Doors							
U1	2" 5x3	 16 Racks 240 Boxes	U3	2" 5x4	 16 Racks 320 Boxes	 20 Racks 400 Boxes	 24 Racks 480 Boxes
	U2	3" 3x3		 16 Racks 144 Boxes	U4	3" 3x4	 16 Racks 192 Boxes
Five Inner Doors							
U5	2" 4x3	 20 Racks 240 Boxes	U7	2" 4x4	 20 Racks 320 Boxes	 25 Racks 400 Boxes	 30 Racks 480 Boxes
	U6	3" 3x3		 20 Racks 180 Boxes	U8	3" 3x4	 20 Racks 240 Boxes

Inventory System: Ordering Information

	Rack Model No.		Freezer Capacity		Sample Access: Box Height			
			Liters	ft ³	Side		Drawer	
4 Inner Doors	U1	R253S/D	390	13.7	2.54 cm	2"	2.54 cm	2"
	U2	R333S/D	390	13.7	7.62 cm	3"	7.62 cm	3"
	U3	R254S/D	499 / 616 / 732	17.6 / 21.7 / 25.8	2.54 cm	2"	2.54 cm	2"
	U4	R334S/D	499 / 616 / 732	17.6 / 21.7 / 25.8	7.62 cm	3"	7.62 cm	3"
5 Inner Doors	U5	R243S/D	390	13.7	2.54 cm	2"	2.54 cm	2"
	U6	R333S/D	390	13.7	7.62 cm	3"	7.62 cm	3"
	U7	R244S/D	499 / 616 / 732	17.6 / 21.7 / 25.8	2.54 cm	2"	2.54 cm	2"
	U8	R334S/D	499 / 616 / 732	17.6 / 21.7 / 25.8	7.62 cm	3"	7.62 cm	3"

*S: Side Access D: Drawer Access



Storage Boxes

All boxes are 13.5cm² (5.31sq.)
Boxes and dividers are sold separately: 2.5cm (2") or 7.62cm(3") high.
Dividers:
7x7 cells
8x8 cells
9x9 cells
10x10 cells

Injection-molded Boxes

2"high, 81 or 100 cells



Upright Freezer Shelves

Reinforced, stainless steel shelves for heavy loads. Shelves rest on removable mounting brackets in 2.54cm(1"), vertical increments. Each shelf includes 5 clips for left, rear and center support.

Inventory System

Inventory System: Storage Racks

Chest					
No.	Capacity	220L / 7.8ft ³	320L / 11.3ft ³	430L / 15.2ft ³	530L / 18.7ft ³
C1	2" 12x1	12 Racks 144 Boxes	18 Racks 216 Boxes	24 Racks 288 Boxes	30 Racks 360 Boxes
C2	2" 6x1	24 Racks 144 Boxes	36 Racks 216 Boxes	48 Racks 288 Boxes	60 Racks 360 Boxes
C3	3" 8x1	12 Racks 96 Boxes	18 Racks 144 Boxes	24 Racks 192 Boxes	30 Racks 240 Boxes
C4	3" 4x1	24 Racks 96 Boxes	36 Racks 144 Boxes	48 Racks 192 Boxes	60 Racks 240 Boxes

Inventory System: Ordering Information

Rack Model No.		Freezer Capacity		Sample Access: Box Height	
		Liters	ft ³	Side	
C1	R2121S	220/320/430/530	7.8/11.3/15.2/18.7	2.54 cm	2"
C2	R261S				
C3	R381S				
C4	R341S				

*S: Side Access

Our products are tested in the most demanding environments, guaranteeing peace of mind that your samples are safely stored.

Comparative Chart

· Refrigeration System

Stable, field tested, refrigeration system users industry-grade compressors, high efficiency oil separators, down feed evaporators, accumulators, super heaters and intensive condensers.

· Microprocessor Control

The controllers are specially designed for our freezers and provide integrated alarm, monitoring, and control functions, guaranteeing protection to the refrigeration system and to your samples.

· Power Supply

All our products feature an electronic voltage regulator, circuit breakers, and automatic start relays. This guarantees power quality, resulting in freezer operating stability.

· Alarm system

Prime and Merit series have both visual (alarm code) and audio alarm. Alarm status is clearly displayed. Prime series also feature a visual (icon) display.

· Monitoring System

Internal and external parameters are monitored in real time. Alarm history is also displayed.

· Cabinet Structure

Ergonomically designed, robust cabinet, with eye level control panel. Stainless steel interior cabinet.



Comparative Chart					
	Prime		Merit		Benefit
Operating Temperature	-86°C	-40°C	-86°C	-40°C	
Refrigeration System					
Single Refrigeration System		⊙		⊙	High Efficiency
Cascade System	⊙		⊙		Stable, reliable
Industrial-Grade Compressors	⊙	⊙	⊙	⊙	High Efficiency, Energy Saving
CFC/HCFC-Free Refrigerant	⊙	⊙	⊙	⊙	Environmentally friendly
High Cascade Refrigerant	⊙	⊙	⊙	⊙	HFC series
Low Cascade Refrigerant	⊙		⊙		HFC series
Down feed Evaporator	⊙	⊙	⊙	⊙	Smooth refrigerant flow
Washable condenser filter	⊙	⊙	⊙	⊙	Ensures optimum cooling
Enhanced Condenser	⊙	⊙	⊙	⊙	Optimum Cooling
Controller					
Microprocessor	⊙	⊙	⊙	⊙	Accurate control
Password Protection	⊙	⊙	⊙	⊙	Start-up and setting security
Independent high / low alarm	⊙	⊙	⊙	⊙	Simple to set
Power Supply					
Circuit Breaker	⊙	⊙	⊙	⊙	Protects Power Supply Circuit
Automatic Voltage Regulator	⊙	⊙	⊙	⊙	Provides Stable Voltage
Surge Protection	⊙	⊙	⊙	⊙	Protects control system
Digital Voltage Monitoring	⊙	⊙			Monitors post-regulator voltage
Digital Current Monitoring	⊙	⊙			Monitors current in real time
Solid State Relay	⊙	⊙	⊙	⊙	Extends controller life
Automatic restart delay	⊙	⊙	⊙	⊙	Ensures power quality
Alarm System					
Intelligent Self-Diagnostics	⊙	⊙	⊙	⊙	Automatically confirms alarm event
Icon Display	⊙	⊙			Visual Display
Alarm Codes	⊙	⊙	⊙	⊙	Directly displays alarm status
Audio Alarm	⊙	⊙	⊙	⊙	Temperature or power failure
Alarm backup battery	⊙	⊙	⊙	⊙	For monitoring of alarm system
Alarm Test	⊙	⊙	⊙	⊙	Test alarm function
RS232/RS485 communication port	⊙	⊙	⊙	⊙	Software for PC, data logging, specified with order.
Remote alarm contact	⊙	⊙	⊙	⊙	Additional protection of alarm contact
Monitoring System					
Chamber temperature	⊙	⊙	⊙	⊙	Independent high/low alarm
Door Open	⊙	⊙	⊙	⊙	Sounds when door is open/closed
Compressor Protection	⊙	⊙			Self adjusting, extending compressor life
High Ambient Temperature	⊙	⊙			High ambient temperature conditions
Low Condensation	⊙	⊙	⊙	⊙	Auto dial alarm (optional)
Filter Condition	⊙	⊙			Advises when filter requires replacement
Power failure	⊙	⊙	⊙	⊙	Alarm sounds on power failure
Voltage Fluctuations / supply Monitor	⊙	⊙			Monitors post-regulator voltage fluctuations
Circuit Breaker	⊙	⊙			Circuit Protection
Cabinets (All Models)					
Urethane insulation	⊙	⊙	⊙	⊙	Low K value (Thermal conductivity rate)
RS485 Communications Port	⊙	⊙	⊙	⊙	On Line Monitoring
Internal Rounded corners	⊙	⊙	⊙	⊙	Easy to clean.
General Insulation	⊙	⊙	⊙	⊙	Reduces noise levels
Heavy duty castors/ Leveling Feet	⊙	⊙	⊙	⊙	Facilitates moving and leveling
Upright Models					
Eye Level Controller	⊙	⊙	⊙	⊙	User friendly, easy to read
Low Profile Design	⊙	⊙	⊙	⊙	Only 196 cm(77.2") high
Three adjustable shelves and four or five inner doors	⊙	⊙	⊙	⊙	Maximizes internal space
Pull 'N' Push latch and handle Independent, insulated inner doors	⊙	⊙	⊙	⊙	Easy to use
Optional lockable door handle	⊙	⊙	⊙	⊙	For increased sample security
Chest Models					
Low Profile Design	⊙	⊙	⊙	⊙	Easy access to inventory
Counter-balanced hinges	⊙	⊙	⊙	⊙	Easy to open
Insulated interior-lids	⊙	⊙	⊙	⊙	Greater sample protection

*Specifications subject to change without notice

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