DualGuard

-86°C Ultra Low Temperature Freezer

Reliable Storage for Your Most Critical Samples

Engineered for the secure storage of temperature-sensitive materials, the DualGuard ULT Freezer ensures maximum protection for:
Vaccines
Longitudinal study samples
Clinical trial specimens
Medical research samples
Valuable pharmaceutical products

Designed for precision and dependability, the DualGuard ULT Freezer safeguards what matters most in research, healthcare, and pharmaceutical applications.

861-720E   **861-720T**

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Safer by Design

DualGuard ULT freezers are engineered to deliver the highest level of protection for high-value, temperature-sensitive samples.

By utilizing two independent refrigeration systems, the DualGuard ensures fail-safe performance. In the rare event that one system fails, the other continues to maintain a consistent -80°C environment—safeguarding your critical biological and pharmaceutical materials without interruption.

Globally Trusted Components

Equipped with compressors and fans from internationally renowned brands, ensuring exceptional reliability and up to 20% longer lifespan.

Comprehensive Alarm System

Multifunctional Alarm : High / Low temperature, Sensor error, Power failure, High ambient temp., Door ajar, Door open alarm, low battery alarm.

Superior Temperature Uniformity

Maintains consistent internal temperatures to minimize sample degradation due to fluctuations, safeguarding sample integrity.

Rapid Temperature Pull-Down

Achieves -81°C in approximately 3 hours (at 25°C ambient), minimizing downtime and protecting samples more quickly.

Patented LBA Forming Technology

Innovative cabinet insulation using patented LBA forming agent results in higher density construction, improving space utilization by 10% and enhancing thermal efficiency.

# DualGuard

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861-720

1 **Multi-layer Silicone Sealing Structure**
Multi-layers silicone gaskets provide a tight seal between the inner doors and outer door, reducing heat exchange rate and retaining the inner temperature better when there is power failure.

2 **Multi-level Alarms**
Alarm functions include high, low temperature, sensor error, power failure, high ambient alarm, door open alarm.

3 **Ingenious Handle Design**
Ingenious handle design helps you easy to open and close door easier. Lockable handle safeguards your precious samples. Padlock can also be added for extra sample safety.
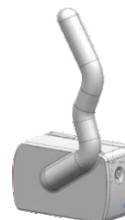
4 **Stainless Steel Cabinet**
5 inner compartments (4 shelves, 5 inner doors)
Abrasive and corrosion resistance, easy clean.

5 **VIP PLUS**
VIP PLUS vacuum insulation provides up to 30% more storage capacity than a conventionally insulated freezer.

6 **Heated Pressure Equalization Port**
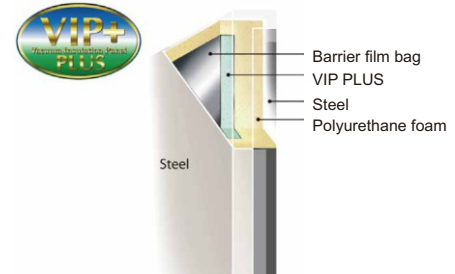It allows users to re-open the main door quickly when entering ,rust-proof, freeze-free.

7 **Filter Design**
Tool-free removable filter design, easy and quick to clean the filter.

Deep Freezers   -30°C ~ -86°C

Venchal Scientific

DualGuard Cooling System offers the high level security storage. Two independent systems, in the case of an unexpected failure of one cooling circuit, , the other can maintain the freezer' s temperature uniformly in the -80°C range.
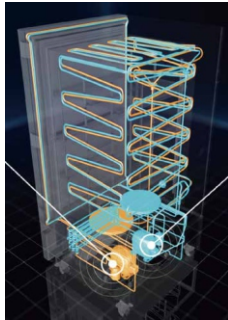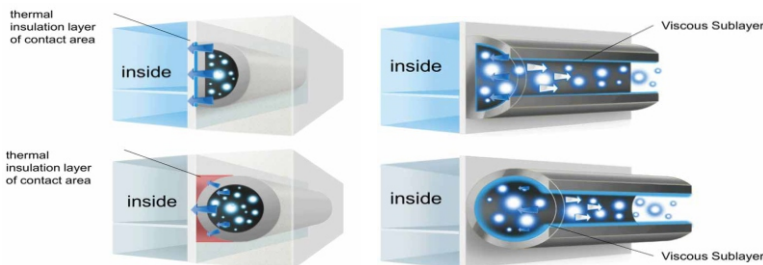

DualGuard Cooling system

The advanced VIP Plus vacuum insulation technology offers up to 30% more storage capacity compared to conventional insulation without expanding the freezer's external dimensions. Featuring a high-performance glass fiber core, VIP Plus delivers superior thermal efficiency, ensuring optimal protection of your valuable samples while maximizing internal space.
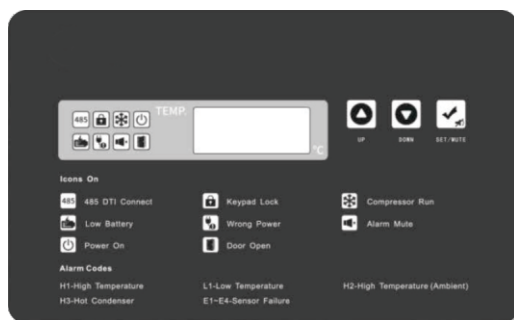

Barrier film bag
VIP PLUS
Steel
Polyurethane foam
Steel

VIP PLUS Design

Patented D-Shaped Evaporator

thermal insulation layer of contact area
inside
thermal insulation layer of contact area
inside
inside — Viscous Sublayer
inside — Viscous Sublayer

Enhanced Heat Exchange for Faster Performance
Our patented D-shaped evaporating tube design increases the heat exchange surface area by up to 15%, significantly improving cooling efficiency.
With greater contact between the tubing and internal surfaces, this innovation enables a faster temperature pull-down ensuring quicker stabilization and enhanced sample protection.

Icons On
- 485 DTI Connect
- Low Battery
- Power On
- Keypad Lock
- Wrong Power
- Door Open
- Compressor Run
- Alarm Mute

Alarm Codes
- H1-High Temperature
- H3-Hot Condenser
- L1-Low Temperature
- E1~E4-Sensor Failure
- H2-High Temperature (Ambient)

User-Friendly Interface with Advanced Monitoring
The DualGuard ULT Freezer is equipped with an integrated microprocessor controller and a clear LED display (optional LCD touchscreen available) to ensure precise control and an optimal user experience.A built-in USB port enables easy data logging and transfer, allowing users to conveniently monitor and manage temperature performance via PC.

Intelligent Control System

Before Improvement   After Improvement
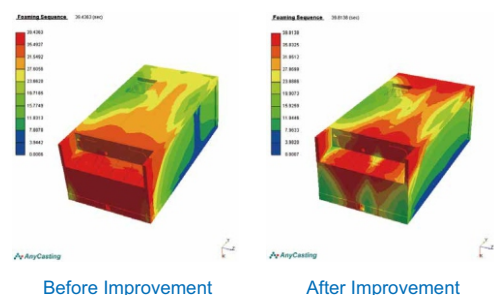
1) Enhanced Insulation for Greater Energy Savings
2) Optimized Foaming Layer Design
   A more intelligent foaming structure increases internal storage volume, resulting in higher space utilization without compromising performance.

LBA Forming Technology

Deep Freezers   -30°C ~ -86°C
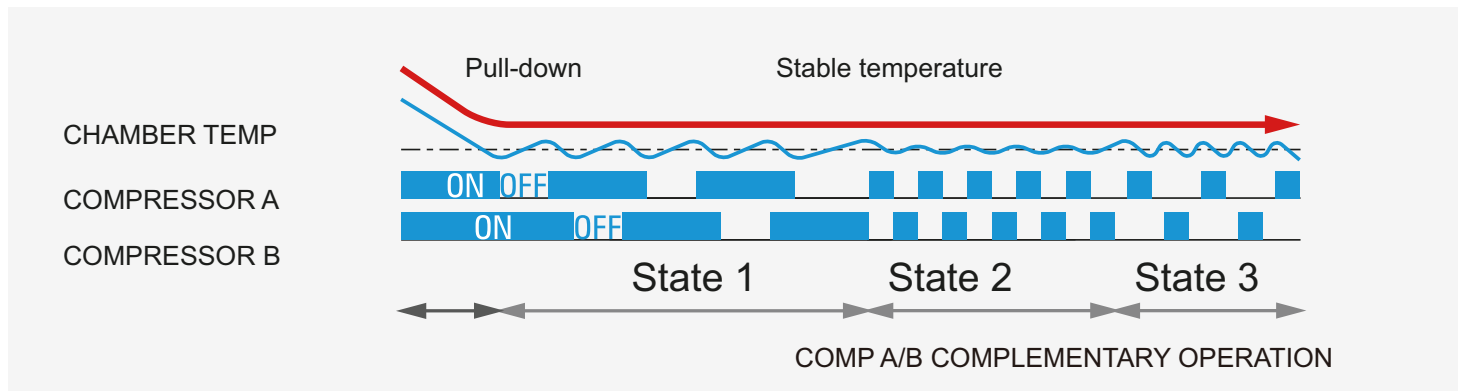
Active ECO Technology

Smart Efficiency Built into Every Unit Active ECO Technology is standard across all Venchal Scientific ULT freezers, enabling them to operate in ECO mode by default.

This advanced system continuously adapts to internal load and temperature changes, automatically adjusting compressor speed for optimal performance.
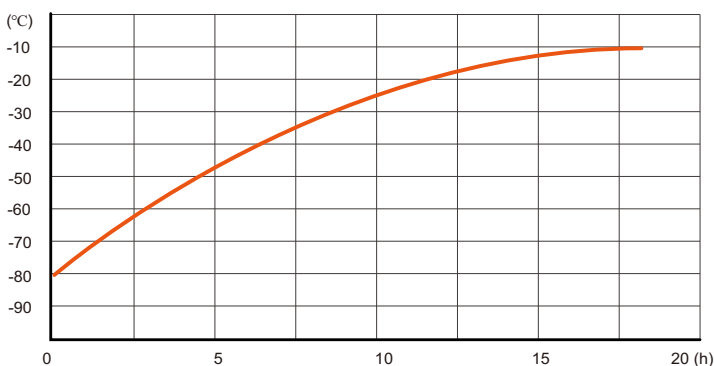
The result:

- Significantly reduced energy consumption
- Consistent interior temperature uniformity
- Quiet, efficient, and reliable operation

Experience the perfect balance of energy efficiency and temperature stability with Active ECO Technology.

CHAMBER TEMP

COMPRESSOR A

COMPRESSOR B

Pull-down   Stable temperature

ON OFF

ON   OFF

State 1   State 2   State 3

COMP A/B COMPLEMENTARY OPERATION

Temperature recover curve

(°C)
-10
-20
-30
-40
-50
-60
-70
-80
-90

0   5   10   15   20 (h)

Temperature cool down curve

(°C)
40
20
0
-20
-40
-60
-80

0   1   2   3   4   5 (h)
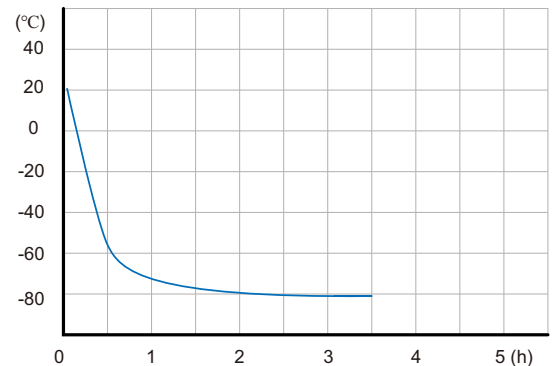
Deep Freezers   -30°C ~ -86°C

Item	Model No.	861-720E	861-720T
Product Image	Product Image		
Technical Data	Cabinet Type	Upright	Upright
	Climate Class	N	N
	Cooling Type	Direct cooling	Direct cooling
	Defrost	Manual	Manual
	Cooling System	Twin Cooling	Twin Cooling
	Refrigerant	HCFC, CFC Free	HCFC, CFC Free
	Total Storage Volume(L)	718	718
	2ml Cryo Tube Qty	50000	50000
	External Material	High quality coated steel	High quality coated steel
	Inner Material	Stainless steel	Stainless steel
Control	Controller	Microprocessor	Microprocessor
	Display	LED	Touch Screen
	Temperature Accuracy(°C)	0.1	0.1
	Temperature Range	-30°C~-86°C	-30°C~-86°C
Dimensions	Product Dimensions(mm)(wxdxh)	1030x995x1980	1030x995x1980
	Interior Dimensions(mm)(wxdxh)	740x720x1310	740x720x1310
Electrical Data	Power Supply	220~240V /50 HZ	220~240V /50 HZ
Functions	High Temperature Alarm	Y	Y
	Low Temperature Alarm	Y	Y
	Door Ajar	Y	Y
	Power Failure Alarm	Y	Y
	High condenser temperature alarm	Y	Y
	High ambient Temperature Alarm	Y	Y
	Low Battery	Y	Y
	Sensor Failure alarm	Y	Y
	USB Interface	Y	Y
	Door Heating	Y	Y
	Porthole	Y	Y
	Universal Wheel	Y	Y
	Caster	Y	Y