



**Ultralow Freezer**

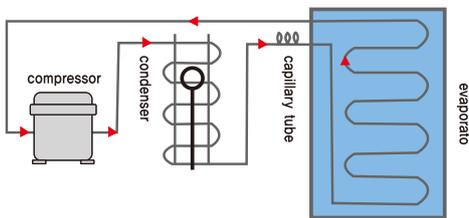
At Kold Systems, we built cold storage devices to protect your precious samples, products or materials safe and cold. Our Vollen series ultralow freezer are designed for laboratory, medical professionals' usage. They all feature high performance insulation to maintain temperature and stability. Various alarms and door lock system to protect your items safely.

## Vollen series

### Features

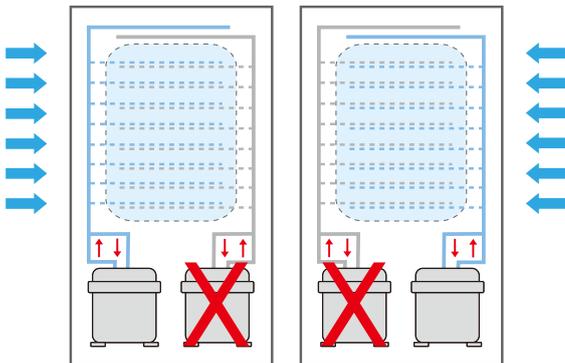
#### Dual compressor system

Two identical high performance independent compressor system allow ultralow temperature down to  $-90^{\circ}\text{C}$ , and can maintain  $-70^{\circ}\text{C}$  individually. In case of one of them fails, the other one can still maintain  $-70^{\circ}\text{C}$ .



#### Dual compressor system

Independent refrigeration system maintain at least  $-70^{\circ}\text{C}$  in the event of a compressor failure



#### Inner door

The inner door with individual handle for opening to minimize chamber exposure to warm ambient air



#### Pressure release port

Release the negative pressure built up after the opening/closing of the door, enhance fast door re-open.



#### Interior door handle

The interior door with a separate handle can seal the interior perfectly during the closing of the door to maintain high insulation.



#### Chart recorder (option)

Chart recorder or datalogger can be installed as option

Each unit comes with access port that allow easy validation and any temperature logging accessories to be setup with the unit. Intuitive controller ensures easy operation. Vollen series provide all you need with a simple and robust design.

## Interior gasket of triple structure

The door gasket of triple structure can seal the door tightly

## 120mm thick insulation

The main body is made from with 120mm thick polyurethane, providing best insulation

## USB data port

The USB data port provide temperature data logging for export

## Door fan

Circulate the moisture at the door periodically to prevent condensation



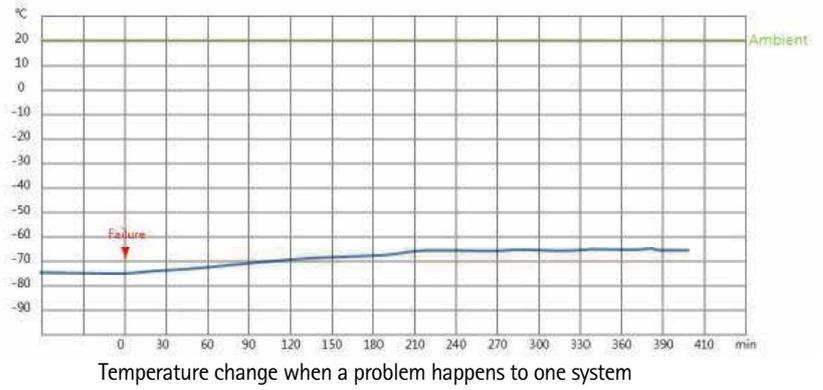
## Door handle

The robust door handle allow one hand opening lock



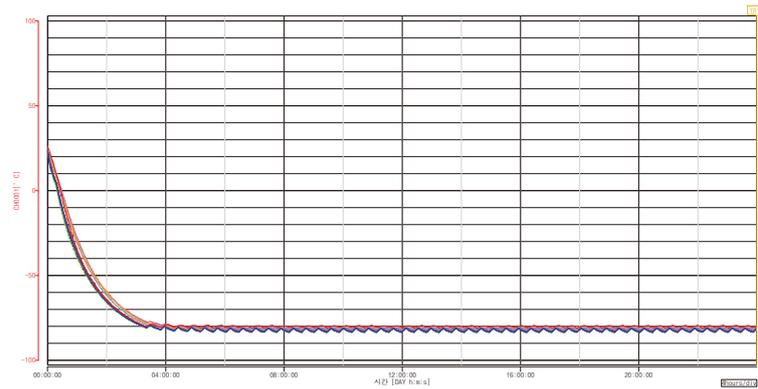
# Fail safe features

The independent cooling system of dual compressor that can provide back up in case of one of the compressor fails.

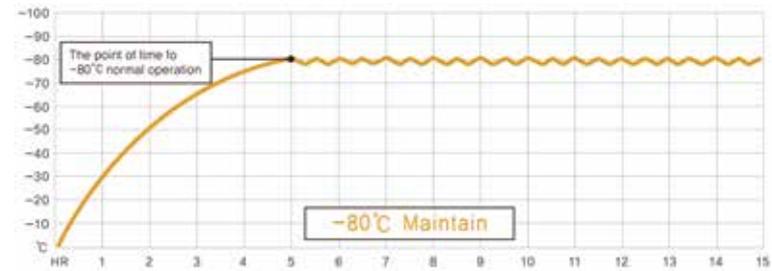


# High cooling performance

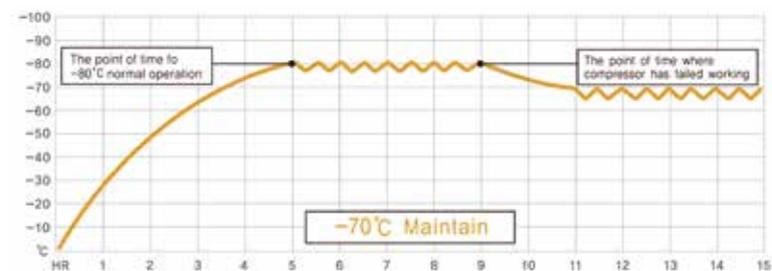
The dual compressors have a high cooling performance to reach set temperature within 4 hours



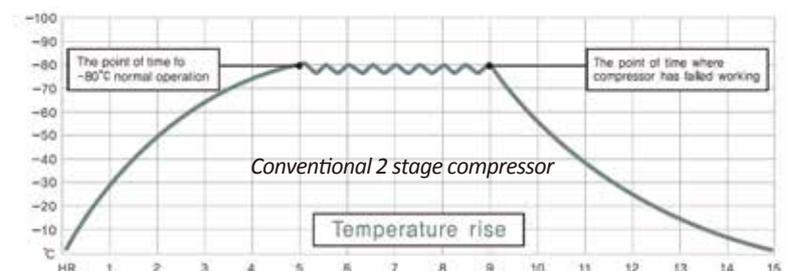
Stable temperature performance at -80°C



The dual compressors can still operate individually and reach -70°C when one fails

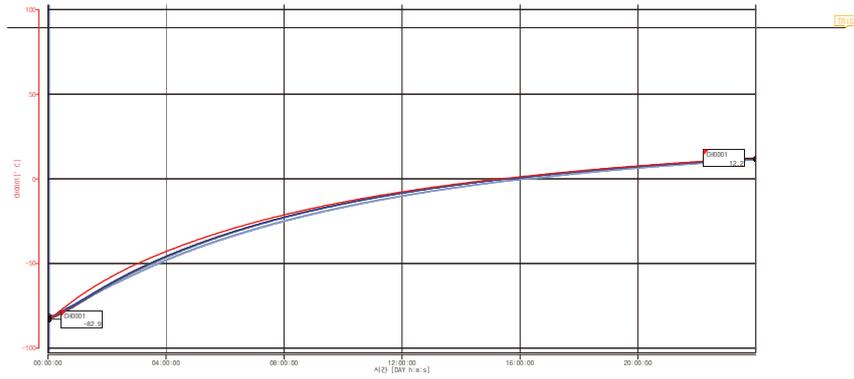


The conventional 2 stage compressors system will fail when one of the compressor fail



# Robust Insulation

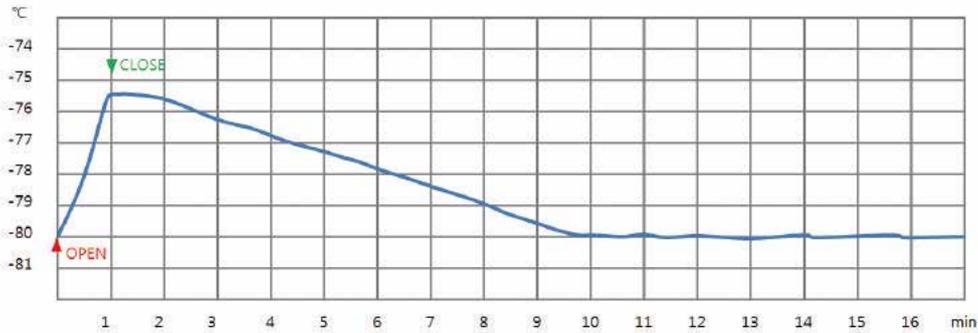
It takes 240 minutes for the system to reach at  $-50^{\circ}\text{C}$  from  $-80^{\circ}\text{C}$  when there is a power outage.



Temperature change when a power outage happens during operation

# Fast temperature recovery

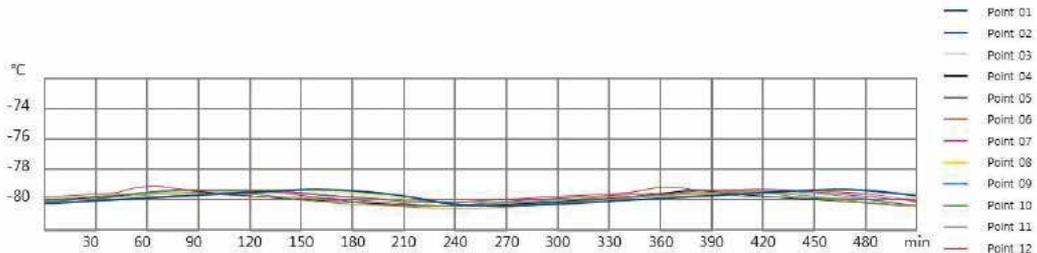
The system can recover the set temperature within few minutes after door opening



Temperature change after door opened for 1 minute

# Temperature uniformity

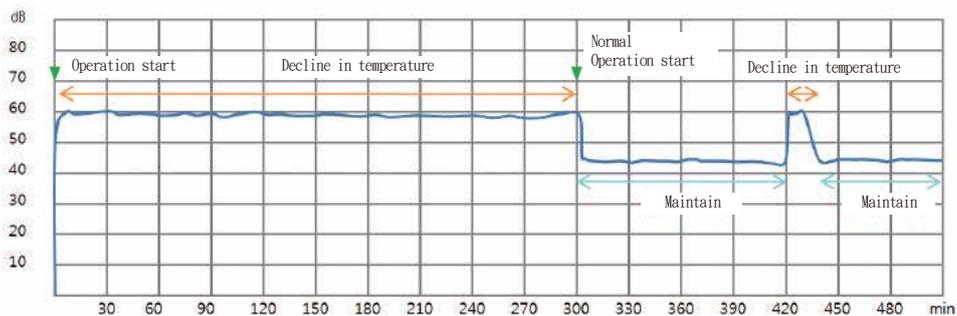
High temperature uniformity ensure each sample are stored in best condition



Temperature distribution by 12 positions in the refrigerator

# Quiet Operation

Low noise level provide a quiet operation and low disturbance to laboratory environment



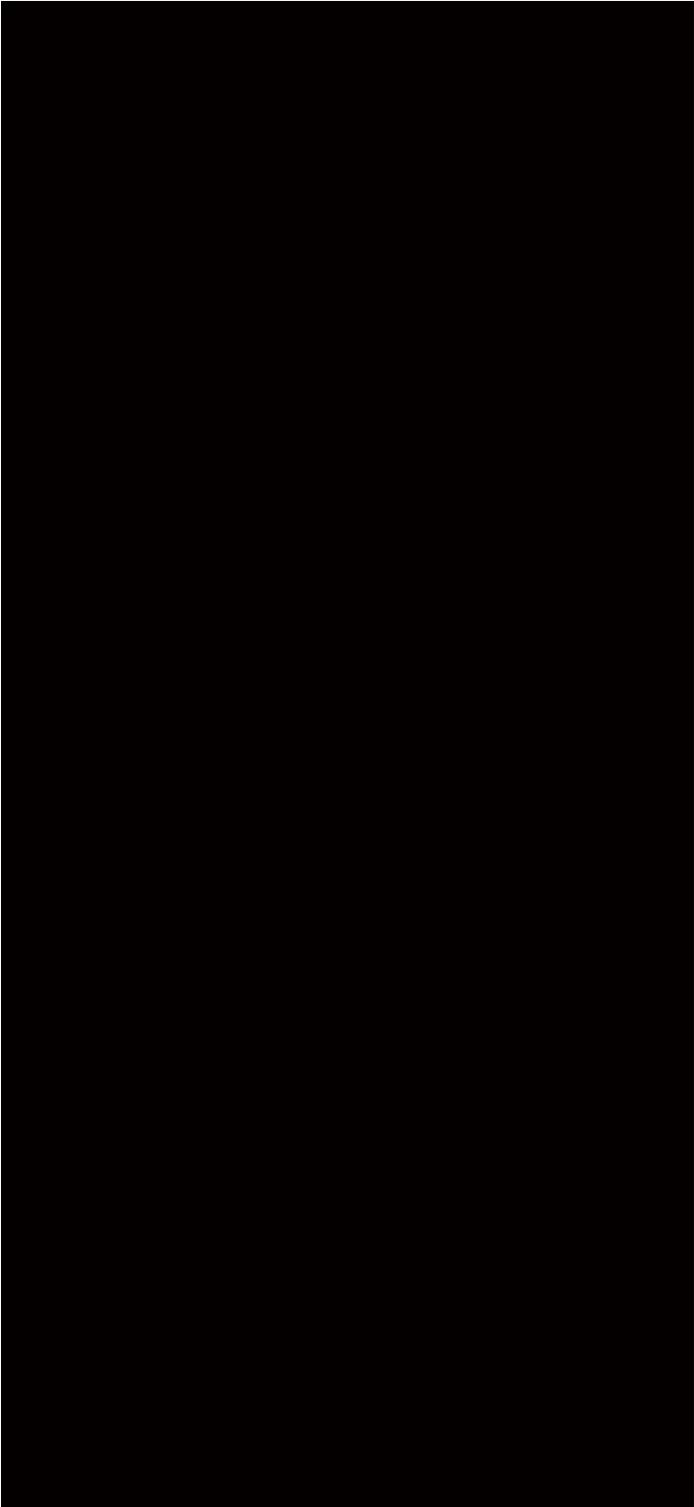
Noise level during operation

# Vollen series



## Specification

Model	KS-35ULT	KS-370ULT	KS-530ULT	KS-700ULT	KS-740ULT	KS-880ULT	KS-1020ULT
Capacity	36L	376L	534L	702L	741L	883L	1025L
Material	Exterior: Painted Steel Insulation: ABS + Polyurethane Interior: Stainless Steel						
Operating Temperature	-60 to -80°C						
Defrost	Manual						
Cooling System	Single Compressor	Dual compressor					
Temperature Sensor	PT100						
Refrigerant	HFC (CFC Free)						
Shelves	1	2					
External Dimension (H x W x D) (mm)	685 x 460 x 620	1990 x 670 x 910	1990 x 850 x 910	1990 x 1030 x 910	1990 x 970 x 990	1990 x 1100 x 990	1990 x 1250 x 990
Internal Dimension (H x W x D) (mm)	300 x 340 x 355	1370 x 430 x 640	1370 x 610 x 640	1370 x 790 x 650	1410 x 730 x 720	1410 x 870 x 720	1410 x 1010 x 720
Alarm	high temperature alarm and temperature display						
Compressor	Hermetic Type						
Accessories	Access port						
Power Consumption	528W	1650W	1650W	1980W	2290W	2330W	2380W
Electrical	220V, 50Hz, 2.4A	220V, 50Hz, 7.5A	220V, 50Hz, 7.5A	220V, 50Hz, 9.0A	220V, 50Hz, 10.4A	220V, 50Hz, 10.6A	220V, 50Hz, 10.8A



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