

# DEEP FREEZER

JABA SERIES

## [ JABA ] Series

New JABA series of Cryo-Pride is equipped with cutting edge COSCOM (Combination Of Single Compressor Operation Mode) technology by two independent compressor mechanisms.

Combination of VIP(Vacuum Insulation Panel) and insulation by high pressure injection enable maximum insulation as well as lowest energy consumption for keeping your valuable samples with maximum safety. Auto Cascade system with COSCOM technology protects your samples from any risk other than blackout. With low noise and all time monitoring "Blackbox" service, our JABA series shall be successful companion of your comfortable research.



## Main Features

JABA SERIES

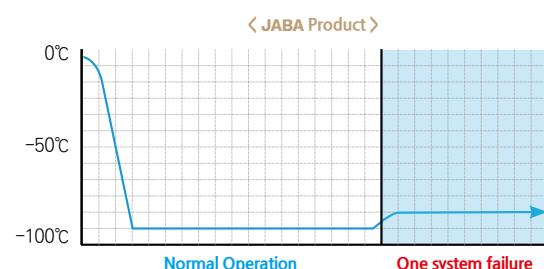
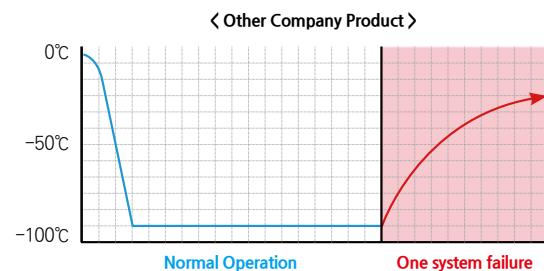
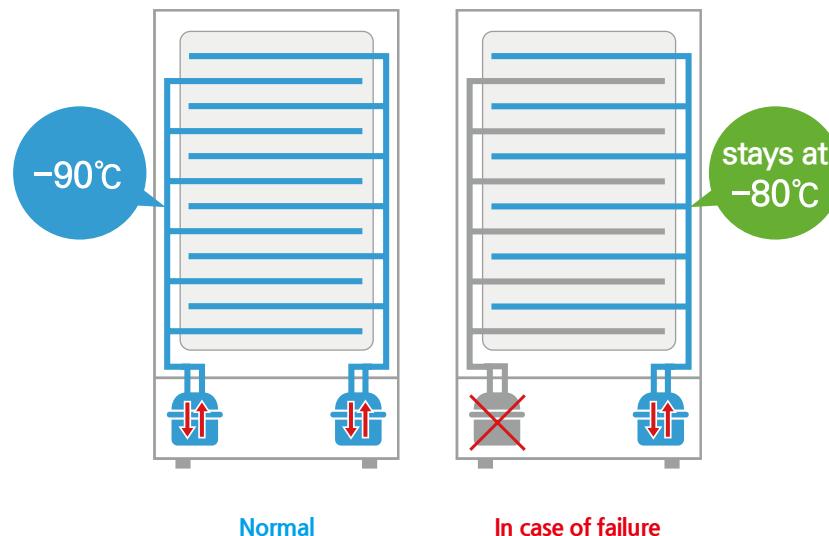
No worries, No hassles in any emergency-

## 1. INDEPENDENT COOLING SYSTEM

### ◆ COSCOM System

Two independent cooling mechanisms. (TWIN CORE)

- a) Two separate Evapor system, which maintains  $-80^{\circ}\text{C}$  in case of failure of any compressor.
- b) Two separate Condenser Fan for each compressor.



## 2. 24/7 real time monitoring **BLACK BOX** service

GLOBAL REAL TIME CARE SERVICE



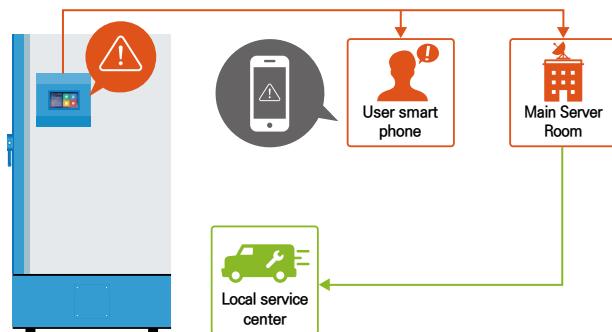
### ◆ Remote monitoring by Internet of things technology

Manufacturer's central monitoring server gives 24/7 real time monitoring by IoT technology. In case of any event, server gives notices to user and designated service team.



### ◆ Central server monitoring data

1. **Temperature:** Chamber temperature of the freezer
2. **Trend information:** Temperature variation for last 24 hours
3. **Alarm event:** Compressor over temperature, compressor over current, system overheat, temperature sensor failure, power off, low voltage, cold alarm, warm alarm and door open alarm.



### ◆ Prompt and proactive action

User can find any events by application of smart phone.  
Diagnosis and corrective action are noticed.

\*App. OS: Android 2.3 (Gingerbread) or above, IOS 9.2 or above

Any event alarm goes to user' smart phone and to main server. Main server shall review history data of the unit and prompt diagnosis is executed. Service action is instructed proactively!

### < Conventional service protocol >

| Step | Processing details                 |
|------|------------------------------------|
| 1    | Checking symptoms                  |
| 2    | Service request                    |
| 3    | Engineer field visit and diagnosis |
| 4    | Service parts request              |
| 5    | Engineer visit for repair          |
| 6    | System reactivated                 |

**Complication, time consumption**

### < New JABA service protocol >

| Step | Processing details                          |
|------|---|
| 1    | Event happens, service instruction provided |
| 2    |   |
| 3    |   |
| 4    |   |
| 5    |   |
| 6    | Completion of service                       |

**No hassle, Non-Stop service!**

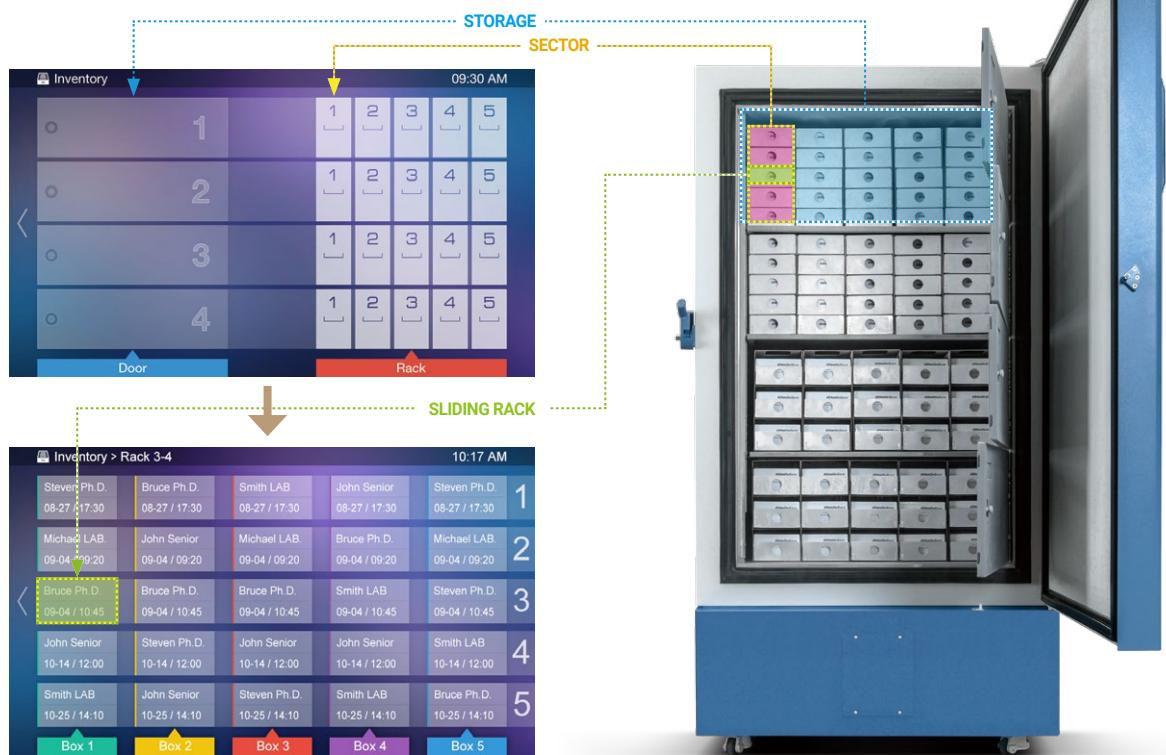
No need for searching your samples!

# 1. INVENTORY MANAGING SYSTEM



## ◆ Inventory system

- Digital memo function for sample storage location.
- Energy saving with minimized door open time.

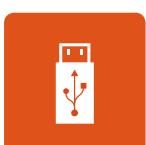


# 4. data review by touch and scroll- TREND DATA

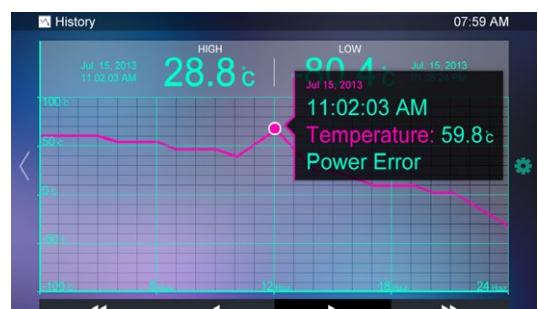


## ◆ Graph

- Review on the screen over 43,000 hours past trend.
- USB download of data is available.



SAVE



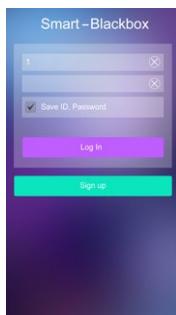
## 5. monitoring in your hand- MOBILE CONTROL

### ◆ Mobile remote control

Monitoring and control by mobile application is available with your computer, Lap top, smart phone or tablet PC.

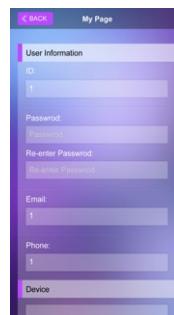


## CONTROL SYSTEM MOBILE APPLICATION



### \* Log in

Mobile App account open and log in.



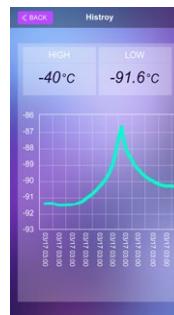
### \* My page

Registration of user unit. Service authorization.



### \* Main

Setup, My page, Temperature graph, Event menu. Real time monitoring page.



### \* History

Present data and trend data for last 43,000 hours on screen.

| MESSAGE            | TIME                |
|--------------------|---------------------|
| Battery Open Error | 2014.03.14 14:30:27 |

### \* Event

Alarm events display and review.

| PRE.TEMP    | SETTING |
|-------------|---------|
| -91.5°C     |         |
| TARGET Temp | -91.5°C |
| WARM Alarm  | -40°C   |
| COLD Alarm  | -99°C   |

### \* Setting

Parameter setup, password setup and authorization control.

Better protection and lower energy consumption!

## 1. POWERFUL INSULATION



### \*Improved insulation

Combination of VIP and PU provides better insulation that enables fast recovery of chamber temperature.



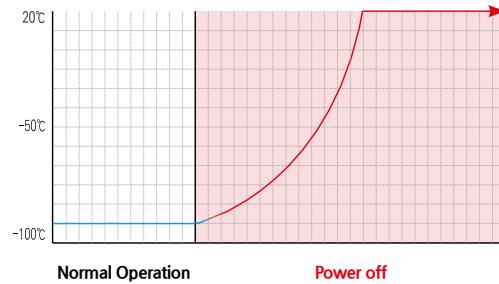
#### Temperature change before and after door open/close

##### < Other Company Product >



#### Temperature variation during power off

##### < Other Company Product >

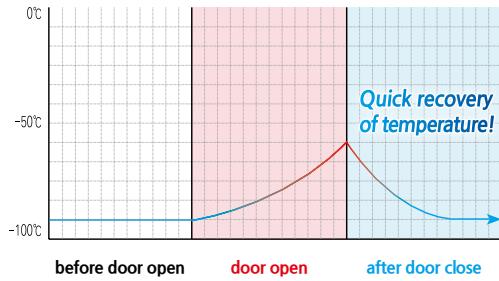


130mm

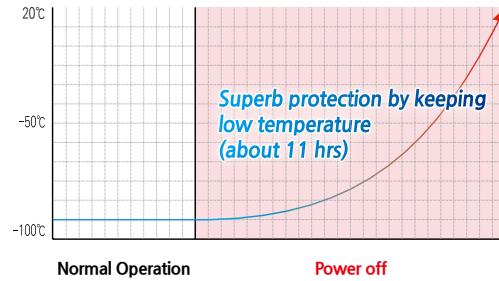


< Other Company Product >

##### < JABA Series >



##### < JABA Series >



< JABA >

Don't get bothered by loud noise anymore

## 1. LOW NOISE STRUCTURE



### \*Designed for low noise

Comfortable work environment is provided.  
Noise level is as low as home refrigerator.

Low noise below 55.1dB(A)



< TUV NORD Performance Certificate >

# DEEP FREEZER

GUDERO PLUS SERIES

## [ GUDERO PLUS ] Series

Gudero Series was introduced in 1988 and has been upgraded since then. New Gudero Plus Series is equipped with COSCOM technology for double safety and robust quality. Easy user interface is beneficial for long term depository by simplified control parameters with only 3 buttons.



## Main Features

GUDERO PLUS SERIES



Independent cooling mechanisms

### 1. DOUBLE SAFETY

#### \*COSCOM system

Even with failure of one compressor, temperature is still maintained at -80°C.

Easy Control by 3 Buttons

### 2. SIMPLIFIED CONTROL SYSTEM

#### \*Micro process control system

Gudero Plus is optimal for long term bio-depository with easy user interface and simplified performance.

No worries about overheat or dust accumulation!

### 3. PIN-LESS CONDENSATION SYSTEM

#### \*Pin-less

No need for cleaning, no need for filter replacement. Compressor overheat is prevented.

# DEEP FREEZER

GUDERO CHEST SERIES

## [ GUDERO CHEST ] Series

Gudero Chest Series is optimal for long term storage of large size samples at the range of -90°C~ -120°C.

-10°C~ -120°C Gudero Chest lineup is with reliable cascade refrigeration technology. With accumulated know-how, micro process control system provides easy and hassle free long term bio-depository solution.



## Main Features

GUDERO CHEST SERIES

Light and handy

### 1. POLYETHYLENE INNER DOOR

Light and handy inner doors make your research more comfortable.



Self-diagnosis function, smart & easy maintenance

### 2. SELF-DIAGNOSIS FUNCTION

Temperature and voltage parameters are monitored and alarm is generated at any emergency situation.

Temperature check by one glance

### 3. MONITORING SYSTEM

RS-232 and 485 communication port allows real time monitoring by personal computer.

# DEEP FREEZER

POCKET SERIES

## [ POCKET ] Series

New compact Pocket series is suitable for your private sample storage. VIP and simple economic design allow you to enjoy comfortable and convenient storage with energy efficiency.

Easy stacking is possible with optional choice of moving wheels. Service port for back up device is available.



## Main Features

POCKET SERIES

Convenient access

### 1. COMPACT DESIGN

Table top or under counter storage is possible even with small space. Fast and easy access is privilege of Pocket series.



If you need more storage?

### 2. 2<sup>nd</sup> STACKING

Easy build up without need of more space.

# DETAIL & FEATURES

## DEEP FREEZER



### Smart Monitoring Application

24/7 monitoring available on your smart phone. Proactive notice from command room in case of alarm event.



### Finger Print Door Lock

Enhanced security: by finger print registration or by card key.



### Inner door for each shelf

HDPE inner doors minimize cold air loss.



### Powerful insulation

High pressure injected POLY URETHANE with 130mm thickness keeps temperature less than 3°C between chamber inside and outer wall.



### Control panel

- 1) TFT LCD 7" Touch Screen
- 2) Smart Microprocessor control



### Sliding Rack

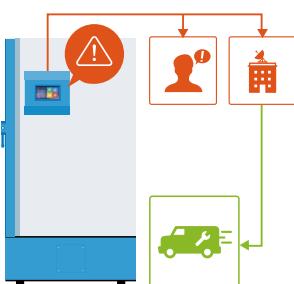
Convenient storage by separated racks with sliding mode.



### Anti-explosion door lock

Auto relief system(open & close) works in case of high pressure formed inside of chamber. Key set is provided for locking function.

### Black Box

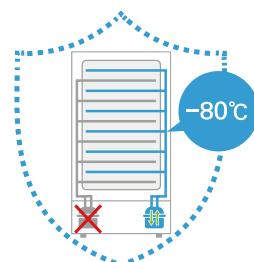


Manufacturer's central monitoring server gives 24/7 real time monitoring by IoT technology. In case of any event, server gives notices to user and designated service team.

### CENTRAL SERVER MONITORING DATA

1. **Temperature:** chamber temperature of the freezer.
2. **Trend information:** temperature variation for last 24 hours.
3. **Alarm event:** compressor over temperature, compressor over current, system overheat, temperature sensor failure, power off, low voltage, cold alarm, warm alarm and door open alarm.

### Coscom system (Combination of single compressor operation mode)



Even with failure of one compressor, temperature is still maintained at -80°C. Fast pull down to -90°C and energy efficient ECO mode.

# SPECIFICATIONS

## DEEP FREEZER SERIES

### JABA Series

| Series                     | DF8510  | DF8514              | DF8517              | DF8520              | DF8524              | DF8530              |
|----------------------------|---|---------------------|---------------------|---------------------|---------------------|---------------------|
| Capacity                   | 276 liters  | 369 liters          | 484 liters          | 605 liters          | 730 liters          | 832 liters          |
| Ext. Dimensions (WxDxH mm) | 920 x 805 x 1660                                      | 920 x 805 x 1980    | 920 x 955 x 1980    | 1070 x 955 x 1980   | 1227 x 957 x 1980   | 1227 x 985 x 1980   |
| Int. Dimensions (WxDxH mm) | 600 x 480 x 970                                       | 600 x 480 x 1290    | 600 x 630 x 1290    | 750 x 630 x 1290    | 890 x 635 x 1290    | 890 x 725 x 1290    |
| Temperature Range (°C)     | -60°C ~ -86°C   |                     |                     |                     |                     |                     |
| Insulation                 | 130 mm Non CFC, foamed in place polyurethane with VIP |                     |                     |                     |                     |                     |
| Electrical                 | 110V, 220V 60Hz, 230V 50Hz                            |                     |                     |                     |                     |                     |
| Certification              | ISO9001 / ISO14001 / ISO13485 / CE / KGMP / ETL       |                     |                     |                     |                     |                     |
| Weight (kg)                | 256   | 279                 | 307                 | 340                 | 378                 | 410                 |
| Refrigeration              | 2 x 1.25 HP   |                     |                     |                     |                     |                     |
| 2" Cryo Boxes              | 15 boxes x 12 racks                                   | 15 boxes x 16 racks | 20 boxes x 16 racks | 20 boxes x 20 racks | 20 boxes x 24 racks | 25 boxes x 24 racks |
| 3" Cryo Boxes              | 9 boxes x 12 racks                                    | 9 boxes x 16 racks  | 12 boxes x 16 racks | 12 boxes x 20 racks | 12 boxes x 24 racks | 15 boxes x 24 racks |
| 2" Boxes/Freezer           | 180 boxes   | 240 boxes           | 320 boxes           | 400 boxes           | 480 boxes           | 600 boxes           |

\*Voltage range: 110V(100-120), 220V(208-230), 230V(220-240)

### GUDERO Series

| Series                     | DF3510  | DF3514              | DF3517              | DF3520              | DF3524              | DF3530              |
|----------------------------|---|---------------------|---------------------|---------------------|---------------------|---------------------|
| Capacity                   | 276 liters  | 369 liters          | 484 liters          | 605 liters          | 730 liters          | 832 liters          |
| Ext. Dimensions (WxDxH mm) | 920 x 805 x 1660                                      | 920 x 805 x 1980    | 920 x 955 x 1980    | 1070 x 955 x 1980   | 1070 x 1065 x 1980  | 1350 x 955 x 1980   |
| Int. Dimensions (WxDxH mm) | 600 x 480 x 970                                       | 600 x 480 x 1290    | 600 x 630 x 1290    | 750 x 630 x 1290    | 750 x 755 x 1290    | 1030 x 630 x 1290   |
| Temperature Range (°C)     | -10°C ~ -35°C (-40°C option )                         |                     |                     |                     |                     |                     |
| Insulation                 | 130 mm Non CFC, foamed in place polyurethane with VIP |                     |                     |                     |                     |                     |
| Electrical                 | 110V, 220V 60Hz, 230V 50Hz                            |                     |                     |                     |                     |                     |
| Certification              | ISO9001 / ISO14001 / ISO13485 / CE / KGMP             |                     |                     |                     |                     |                     |
| Weight (kg)                | 212   | 233                 | 260                 | 291                 | 326                 | 360                 |
| Refrigeration              | 1 x 1.25HP  |                     |                     |                     |                     |                     |
| 2" Cryo Boxes              | 15 boxes x 12 racks                                   | 15 boxes x 16 racks | 20 boxes x 16 racks | 20 boxes x 20 racks | 20 boxes x 24 racks | 25 boxes x 24 racks |
| 3" Cryo Boxes              | 9 boxes x 12 racks                                    | 9 boxes x 16 racks  | 12 boxes x 16 racks | 12 boxes x 20 racks | 12 boxes x 24 racks | 15 boxes x 24 racks |
| 2" Boxes/Freezer           | 180 boxes   | 240 boxes           | 320 boxes           | 400 boxes           | 480 boxes           | 600 boxes           |

### GUDERO PLUS-UPRIGHT Series

| Series                     | DF8510  | DF8514              | DF8517              | DF8520              | DF8524              | DF8530              |
|----------------------------|---|---------------------|---------------------|---------------------|---------------------|---------------------|
| Capacity                   | 276 liters  | 369 liters          | 484 liters          | 605 liters          | 730 liters          | 832 liters          |
| Ext. Dimensions (WxDxH mm) | 920 x 805 x 1660                                      | 920 x 805 x 1980    | 920 x 955 x 1980    | 1070 x 955 x 1980   | 1227 x 957 x 1980   | 1227 x 985 x 1980   |
| Int. Dimensions (WxDxH mm) | 600 x 480 x 970                                       | 600 x 480 x 1290    | 600 x 630 x 1290    | 750 x 630 x 1290    | 890 x 635 x 1290    | 890 x 725 x 1290    |
| Temperature Range (°C)     | -60°C ~ -86°C   |                     |                     |                     |                     |                     |
| Insulation                 | 130 mm Non CFC, foamed in place polyurethane with VIP |                     |                     |                     |                     |                     |
| Electrical                 | 110V, 220V 60Hz, 230V 50Hz                            |                     |                     |                     |                     |                     |
| Certification              | ISO9001 / ISO14001 / ISO13485 / CE / KGMP / ETL       |                     |                     |                     |                     |                     |
| Weight (kg)                | 240   | 262                 | 289                 | 320                 | 355                 | 390                 |
| Refrigeration              | 2 x 1.25HP (1 x 1.25HP)                               |                     |                     |                     |                     |                     |
| 2" Cryo Boxes              | 15 boxes x 12 racks                                   | 15 boxes x 16 racks | 20 boxes x 16 racks | 20 boxes x 20 racks | 20 boxes x 24 racks | 25 boxes x 24 racks |
| 3" Cryo Boxes              | 9 boxes x 12 racks                                    | 9 boxes x 16 racks  | 12 boxes x 16 racks | 12 boxes x 20 racks | 12 boxes x 24 racks | 15 boxes x 24 racks |
| 2" Boxes/Freezer           | 180 boxes   | 240 boxes           | 320 boxes           | 400 boxes           | 480 boxes           | 600 boxes           |

### GUDERO-CHEST Series

| Series                     | DF4510                               | DF4517  | DF9010                                    | DF9017              | DF12010             |
|----------------------------|--------------------------------------|---|---|---------------------|---------------------|
| Capacity                   | 295 liters                           | 295 liters  | 295 liters                                | 492 liters          | 295 liters          |
| Ext. Dimensions (WxDxH mm) | 1590 x 790 x 1030                    | 2180 x 790 x 1030                                     | 1590 x 790 x 1030                         | 2180 x 790 x 1030   | 1590 x 790 x 1030   |
| Int. Dimensions (WxDxH mm) | 870 x 500 x 670                      | 1470 x 500 x 670                                      | 870 x 500 x 670                           | 1470 x 500 x 670    | 870 x 500 x 670     |
| Temperature Range (°C)     | -10°C ~ -45°C                        |   | -40°C ~ -90°C                             |                     | -80°C ~ -120°C      |
| Insulation                 |                                      | 130 mm Non CFC, foamed in place polyurethane with VIP |   |                     |                     |
| Electrical                 |                                      | 110V , 220V 60Hz , 230V 50Hz                          |   |                     |                     |
| Certification              | ISO9001 / ISO 14001 / ISO 13485 / CE |   | ISO9001 / ISO14001 / ISO13485 / CE / KGMP |                     |                     |
| Weight (kg)                | 207                                  | 257   | 236                                       | 286                 | 280                 |
| Refrigeration              | 1 x 1.25HP                           |   | 2 x 1.25HP                                |                     | 2 x 1.5HP           |
| 2" Cryo Boxes              | 12 boxes x 18 racks                  | 12 boxes x 30 racks                                   | 12 boxes x 18 racks                       | 12 boxes x 30 racks | 12 boxes x 18 racks |
| 3" Cryo Boxes              | 8 boxes x 18 racks                   | 8 boxes x 30 racks                                    | 8 boxes x 18 racks                        | 8 boxes x 30 racks  | 8 boxes x 18 racks  |
| 2" Boxes/Freezer           | 216 boxes                            | 360 boxes   | 216 boxes                                 | 360 boxes           | 216 boxes           |

### POCKET Series

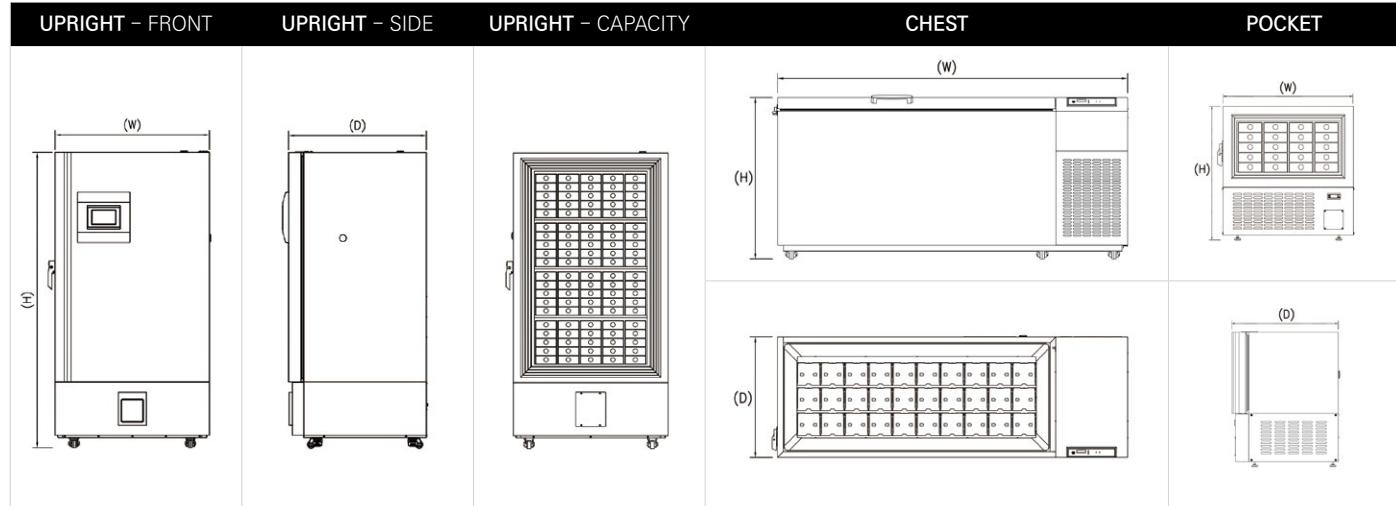
| Series                     | DF8502                             | DF8503           |
|----------------------------|------------------------------------|------------------|
| Capacity                   | 40 liters                          | 80 liters        |
| Ext. Dimensions (WxDxH mm) | 470 x 620 x 780                    | 770 x 620 x 780  |
| Int. Dimensions (WxDxH mm) | 300 x 440 x 300                    | 600 x 440 x 300  |
| Temperature Range (°C)     | -60°C ~ -75°C                      |                  |
| Insulation                 | High Density polyurethane with VIP |                  |
| Electrical                 | 110V, 220V 60Hz, 230V 50Hz         |                  |
| Certification              | ISO9001 / 14001 / 13485 / CE / ETL |                  |
| Weight (kg)                | 79                                 | 99               |
| Refrigeration              | 3/8 HP                             | 5/8 HP           |
| 2" Cryo Boxes              | 15 box x 2 racks                   | 15 box x 4 racks |
| 3" Cryo Boxes              | 9 box x 2 racks                    | 9 box x 4 racks  |
| 2" Boxes/Freezer           | 30 boxes                           | 60 boxes         |

### QUICK FREEZER

| Series                     | QDF4517   |
|----------------------------|---|
| Capacity                   | 484 liters  |
| Ext. Dimensions (WxDxH mm) | 920 x 955 x 1980                                      |
| Int. Dimensions (WxDxH mm) | 600 x 630 x 1290                                      |
| Temperature Range (°C)     | -10°C ~ -40°C   |
| Insulation                 | 130 mm Non CFC, foamed in place polyurethane with VIP |
| Electrical                 | 380V, 3Ph, 60Hz                                       |
| Certification              | ISO9001 / 14001 / 13485 / KGMP                        |
| Weight (kg)                | 307   |
| Refrigeration              | 5 HP  |
| Drawers/Freezer            | total 11 Drawers                                      |

\*Voltage range: 220/380V, 3Ph, 50/60Hz

### DIMENSIONS & STORAGE CAPACITY Preview



# CONFIGURATION

for FREEZER SYSTEM



Sliding Rack



Storage Box & Divider



Chest Tower Rack



Fingerprint & Card key  
Security System



CO<sub>2</sub> Backup system



Anti-explosion  
Safety Door Lock



Blackbox Terminal



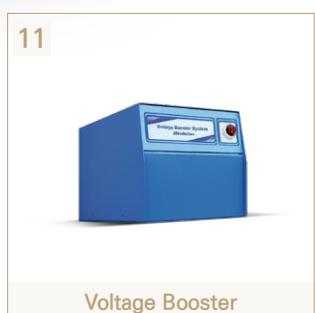
Dialing System



Chart Recorder



Safety Glove



Voltage Booster

# ACCESSORIES

for FREEZER SYSTEM



## Storage Box & Divider

| Series NO. | Boxes Supplied              |
|------------|-----------------------------|
| FB0060     | 2" Fiberboard               |
| FB0061     | 3" Fiberboard               |
| PP0060     | 2" Plastic, 81 cell divider |
| PP0061     | 3" Plastic, 49 cell divider |
| DV0049     | 16mm 49 cell                |
| DV0064     | 14mm 64 cell                |
| DV0081     | 13mm 81 cell                |
| DV0100     | 12mm 100 cell               |



## CO<sub>2</sub> / LN<sub>2</sub> Back-up & CO<sub>2</sub> Bombe

| Series NO. | Description   |
|------------|---|
| LC0070     | CO <sub>2</sub> back-up system with battery and temperature display   |
| LN0070     | LN <sub>2</sub> back-up system for protection of samples from emergency situation (black out, temperature drop) |
| CO2000     | Carbonic Acid gas tank 20KG/CAN: Siphon included, Unit: 20KG/CAN  |



## Black Box Terminal Unit

| Series NO. | Description  |
|------------|--|
| BBD1000    | Internet based real time monitoring (24/7). Proactive service for any emergency. |



## Chart Recorder

| Series NO. | Description  |
|------------|--|
| CH0067     | Temperature recorder. 24/7 day circular chart recorder |



## Safety Glove

| Series NO. | Description                |
|------------|----------------------------|
| GL0005     | Protection from frost bite |

## Rack Series

| Item NO. | Boxes Size | Quantity | Purpose                                |
|----------|------------|----------|--|
| CR0060   | 2"         | 12       | for Chest Freezer                      |
| CR0061   | 3"         | 8        |  |
| SR0062   | 2"         | 15       | Upright Freezer xx02, xx03, xx10, xx14 |
| SR0063   | 3"         | 9        |  |
| SR0064   | 2"         | 20       | Upright Freezer xx17, xx20, xx24       |
| SR0065   | 3"         | 12       |  |
| SR0066   | 2"         | 25       |  |
| SR0067   | 3"         | 15       | Upright Freezer xx30                   |

4



## Security Finger Print & Card Access Control System

| Series NO. | Description  |
|------------|--|
| SCA0002    | Enhanced security by finger-print and access card key to improve D.A.S function. |

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## Safety Door Lock Device

| Series NO. | Description   |
|------------|---|
| SD4989     | Auto relief system(open & close) works in case of high pressure (above 0.0008kg/cm <sup>2</sup> ) formed inside of chamber. Key set is provided for locking function. |

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## Dialing System

| Series NO. | Description   |
|------------|---|
| DS0119     | Wireless sensor based emergency protection by giving alarms up to 5 points telephone numbers or messages. |

11



## Voltage Booster

| Series NO. | Description  |
|------------|--|
| VB0081     | Boosting voltage under low voltage environment (AC15V) |

12



## AVR Device

| Series NO.         | Description  |
|--------------------|--|
| AVR0003<br>AVR0005 | Regulating voltage supply under unstable voltage environment |