

# Commodity Description

Item No.	Category	Model	Unit	Quantity
	Laboratory Refrigerator	BBR-1000		

## A. Features

### 1. Defrosting System

By using the patented technology, it is possible to keep the internal temperature of the refrigerator constant at all times, by preventing frost on the evaporator coil caused by frequent opening and closing of the refrigerator door.

### 2. Forced Circulation System

Cooled air is forced to circulate for maintaining inside temperature uniformly.

### 3. Control System

1) Microprocessor Controller can set the refrigerator temperature in 0.1 °C unit.

2) The range of operation and stop of the compressor can be set in units of 0.1 °C so that the temperature inside of the refrigerator can be precisely controlled.

3) The display temperature can be trusted because there is a calibration function to adjust the temperature showed on the display and the deviation measured by the calibrated thermometer.

4) Controller lock function allows no other person than the user can change the refrigerator settings.

### 4. Pin less Condenser Application

By applying a pin less condenser, there is no clogging caused by dust. Therefore it is easy to manage the refrigerator and condenser filter is no need. Also, the Full bending type instead of U-band welding type makes strong durability.

### 5. Alarm System

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In order to respond promptly, in case of emergency alarm rings with display and sound on display. Alarm rings when the temperature hits its upper and lower limit, Door open, Power failure, Compressor error, Condenser error, and temperature sensor error occurs.

### 6. Emergency Call System

In case of abnormality in the refrigerator, Emergency call system can notify the error to the user through the telephone number registered, thereby securing blood and medicine in storage by responding immediately.

### 7. Temperature Recording and Output System

The temperature recorder can be set at intervals of 1 to 60 minutes.

The contents of the alarm can be recorded so that the state of the refrigerator can be tracked and managed.

In addition, it can store temperature and various event records for 13 years in its own memory, and it can check the stored contents through the display. Copying or moving data to USB is available.

### 8. Backup Battery System

The power backup battery enables the control system to generate an alarm when the power to the refrigerator cannot be turned on, to alert the user and to take urgent action. In addition, the automatic charging method is applied to extend the life of the backup battery, thus reducing the maintenance cost.

### 9. Controller

#### 1) LCD Microprocessor Type

Temperature can be set in 0.1°C unit and microprocessor controls the temperature in real-time. If the temperature goes over or below

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the range of set temperature, the warning lamp and alarm sound rings simultaneously.

## 2) Tablet Type

Not only the 8 inch large screen makes the visibility good, but also with touch screen display, the user can easily control the refrigerator.

Also, it shows the information of the refrigerator by displaying present temperature, set temperature, deviation temperature, present time and date, the machine room temperature, the state of compressor operation, the backup battery charge amount, etc., so that the user can easily and quickly check the state of the refrigerator.

## B. Specification

### 1. General Information

- 1) Temperature range: 2 °C ~ 8 °C (2 °C ~ 25 °C available)
- 2) Set temperature: 4 °C (default)
- 3) Temperature accuracy: 4 °C ± 0.2 °C (penetration condition)
- 4) Temperature distribution: 4 °C ± 0.1 °C (penetration condition)
- 5) Capacity: 680 liters
- 6) Compressor: 1/3HP
- 7) Condenser type: Finless condenser
- 8) Material: Internal Stainless Steel / External Galvanized Steel Plate
- 9) Door: Triple glass door with Low-e glass(defrosting film), aluminum frame, lock function
- 10) Wheels : Height adjustment and lock function available (4 wheels)
- 11) Light : LED Lamp
- 12) Shelf: 6, Shelf Wire Coated Shelf or Stainless Shelf

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13) Insulation material: Polyurethane

14) Internal size: 630×1500×735 (W × H × D) Unit: mm

External size: 760×2015×920 (W × H × D) Unit: mm

15) Weight: 297Kg

16) Power source: Rated 220V 60Hz single phase

17) Backup Battery: 12V 7AH

18) Power Consumption: 750VA

## 2. Controller

\* LCD Type

1) Display: LCD

2) Temperature control: It can be set within the range of 0.1℃

3) Temperature display: Displayed in digital number

4) Temperature history saving: 500Hours

5) Temperature storage and control function using 232 or 485

Communication

6) Alarm function: Alarm Types - Temperature upper limit,

Temperature lower limit, Door open, Power failure, Compressor abnormality, Condenser abnormality, Temperature sensor abnormality.

\*Tablet Type

1) Display: 8 inch touch screen

2) Temperature control: It can be set within the range of 0.1℃

3) Temperature display: Displayed in digital number, graph display available

4) Temperature history saving: more than 13 years

5) Moving, copying and saving data to USB is available

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6) Alarm function: Alarm Types - Temperature upper limit, Temperature lower limit, Door open, Power failure, Compressor abnormality, Condenser abnormality, Temperature sensor abnormality.

7) Backup battery: 12V 7AH control system active during power failure

8) Temperature recorder: Included on Tablet

9) Emergency Call Function: Included on Tablet

### **C. Configuration**

- 1) Main unit
- 2) Tablet / LCD controller
- 3) User manual
- 4) Temperature recorder

### **D. Warranty & Certification**

1. One year warranty (Adjustable)
2. Medical device item license, GMP, FDA, CE, WHO PQ