

# Operation Manual



**BLAR-102**

## Laboratory Refrigerator

Thank you for Choosing Biolab products. Please read the "Operating Instructions" and "Warranty" before operating this unit to assure proper operation.

Thank you for buying a Biolab Laboratory refrigerator!

For your personal safety and better performance of this unit, please read this Operation Manual thoroughly and save it properly for future reference.

Failure to read, understand and follow the instructions in this manual may result in damage to the unit, injury to operating personnel and poor equipment performance.

The material in this manual is for information purposes only. The contents and the product it describes are subject to change without notice. Biolab company makes no representations or warranties with respect to this manual.



## Safety Notice

- Please read this manual carefully when use our machine at the first time.
- The one who operate Laboratory refrigerator should be trained and authorized
- The maintenance of equipment should be made by Biolab or their agent
- If happen the questions which not mentioned in the manual, please contact Biolab or agent, and ask the right way to solve.
- The better to use the Biolab fittings, if the customers use other's spare parts, Biolab will be not responsible for the bad effect. But the customers can apply for Biolab
- Should be check-up and maintenance to the refrigerator at regular intervals
- The medical refrigerator have fixed 1 roll print paper, if you need more please buy the same type.

**Always use the proper protective equipment (clothing, gloves, goggles etc.), Avoid hurt from low temperature.**

**Always follow good hygiene practices.**

**Each individual is responsible for his or her own safety.**

**If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid a hazard.**

**This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.**

**Young children should be supervised to ensure that they do not play with the appliance. The appliance must be positioned so that the plug is accessible.**

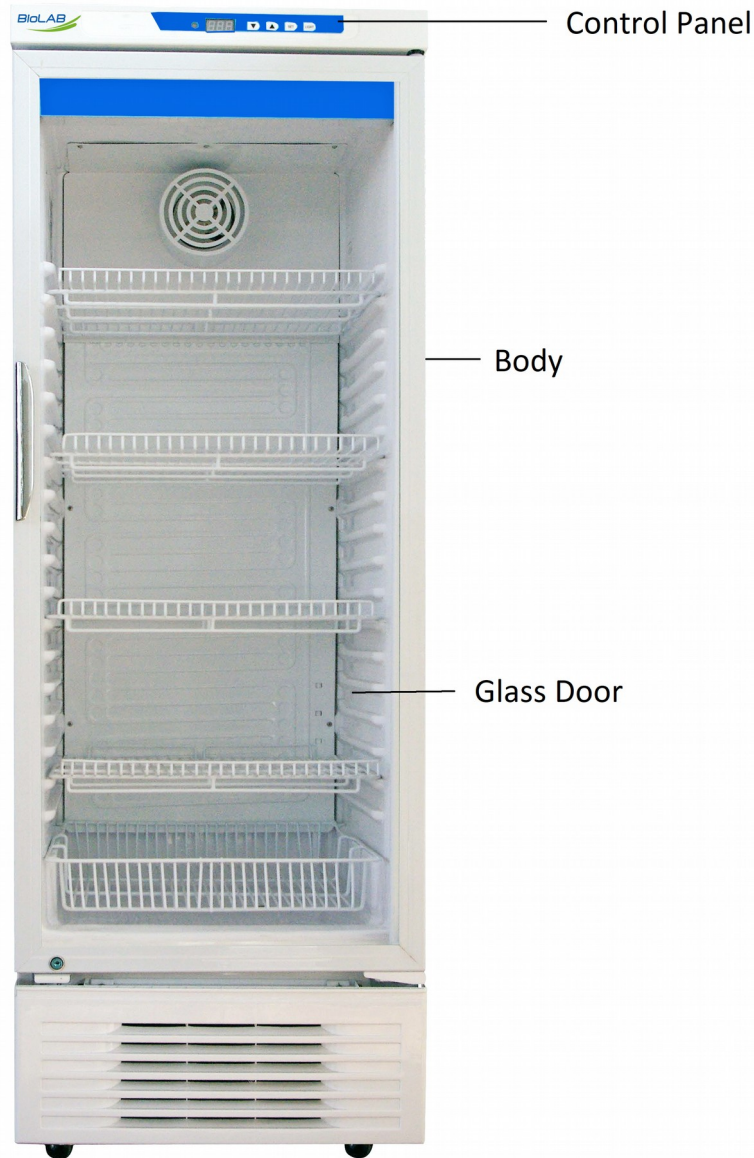
**When the lamp damaged, Please call the after-service engineer.**

**Please accord to local regulations regarding disposal of the appliance for its flammable refrigerant and blowing gas. Before you scrap the appliance, please take off the doors to prevent children trapped.**

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# 01 Schematic Picture and Description



This series of refrigerator is designed to store materials under low temperature condition for hospital, epidemic station, blood bank, research institute, university, biological pharmaceutical industry and gene engineering, etc. The internal temperature in cabinet can be easily adjusted through keys in control panel. All operations are convenient and reliable.

## 02 Pre Installation

1. How to transport: Pick up the unit from the bottom of tank and a slant plane within 45° is acceptable. All transportation should be carefully.
2. Remove all wrappers.
3. Inspect accessories and documents according to package list.
4. Clean the unit thoroughly before any operation.

Installing location: Do not position the unit in direct sunlight or near heating diffusers, radiators, or other sources of heat. The ambient temperature should not exceed 32°C. A minimum 20cm space on the sides, rear and top should be provided for better air circulation and heat discharge. Location where is too cold and place with high humidity or can be easily splashed by water are forbidden.

**The freezer working condition:**

**The environment temperature: 18°C ~ 32°C**

**The relative humidity: ≤80%**

**No strong shake and causticity gas around.**

**No sunshine and other cold/hot power effect.**

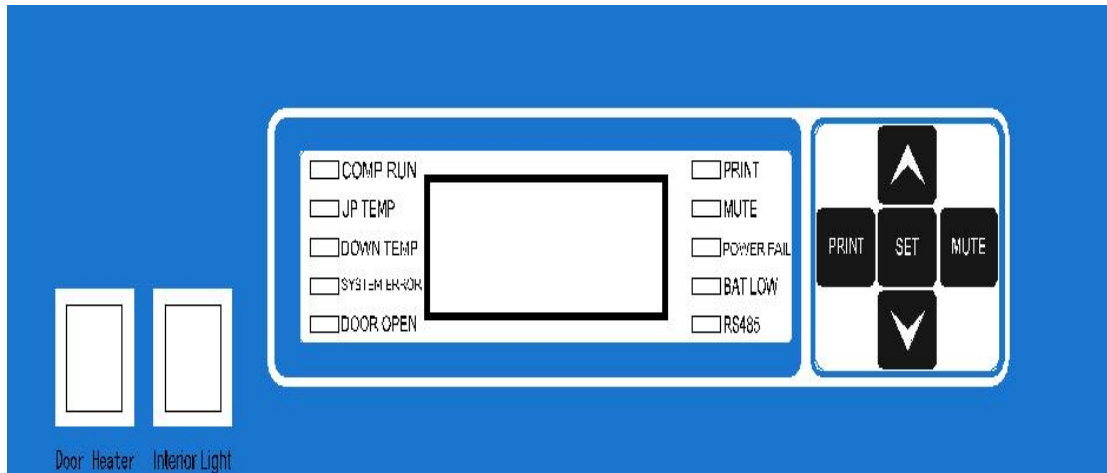


### **Safety Introduction**

1. Power supply: This freezer is designed operating under 220~240VAC, 50HZ power supply.
2. Must provide one single exclusive plug receptacle with credible grounding to unit. Don't lengthen the line randomly. If you need, please use 2.5mm<sup>2</sup> copper line, you should keep 4mm<sup>2</sup> line to connect the electrical outlet.
3. Inflammable and explosive materials, as well as high corrosive acid and alkali must be strictly prohibited in cabinet.
4. Keep the key properly avoiding the children take it to open the back door which may result in unexpected injury.
5. For liquid temperature measurement, the bottles are filled with a 250 ml solution of 10 parts water and 1 part glycerol. The probes must extend at least 80mm into the solution and the bottle cap must fit tightly to minimize evaporation.
6. Keep the lamp off in use for saving energy sources and stabilization temperature in cabinet.

# 03 Operation Direction

## 3.1 Function Display for Introduction Panel



1. 4. with unit °C under normal running condition and display different hint string under set condition: (Refer follows for details)
2. Comp RUN: when compressor running, will light.
3. UP TEMP: for up room sensor temperature
4. DOWN TEMP: for down room sensor temperature
5. SYSTEM ALARM: when system abnormal, will alarm
6. DOOR OPEN: when door open more than one minute, will alarm  
\*PRINT, When have printer, will work normally.
7. Mute: when alarm, please press "MUTE", will keep alarm sound as mute.
8. Power failure: when power cut, will alarm.
9. BAT LOW: when printer battery low, will alarm
10. RS485: for remote alarm.
11. "▲", "▼": Function adjustment pads
12. "SET": Press this key to set the function adjustment parameter;

### 3.2 First Use

1. Connect the power supply and switch the on-off on the back of freezer working status;
2. Set temperature: the default temperature is set as 4°C in factory. Please don't set any other temperature value.
3. "LTL": When the actual temperature is lower 2°C than the low temperature limit (LTL) setting, The code is LO
4. "HTL": When the actual temperature is higher 7°C than the low temperature limit (LTL) setting, The code is HI. (During the initial start-up, a "HTL" alarm is normal operation. After the temperature is stabilized and the "HTL" alarm stops you can put goods in your freezer);
5. upper Probe: show the upper cabinet temperature.
6. Lower probe: show the lower cabinet temperature.
7. Interior light
8. Sensor failure: Any sensor temperature  $\leq$  or  $\geq 50^{\circ}\text{C}$ , Show E1, SYSTEM ERROR will light.
9. When the rechargeable battery existences, when the power source supply disruption, the screen still lightened, showed the real-time cabinet temperature, recorded the number of door opening, LTL and HTL alarm. But the ventilator, the lamp and the refrigeration system does not work. (If the freezer has not been used for long time, the battery does not have electric quantity, it is normal that the window have no display. When freezer power source puts through, electrification completes automatically.)



**please close the power switch on the back of the box when the power cut for a long time (longer than three hours), otherwise the electric quantity loses and affects the battery service life!**

### 3.3 Function Setting

1. Time set: Press SET, Will show time set. N07 mean year 2007, then press "▲" or "▼" 1 time to add or down the time(range from 01-99), SET confirmed and then show Y01, mean month 01, range from 01 - 12, Analogy like date R01, range from 01 ~ 29, S01 mean time 01, range from 01 - 12, F01 mean minute, range from 00 ~ 60, After Confirmed please do not touch again.
2. Auto print:



Press the "Print" key, the system switches to auto print mode. Now AUTO displays in the LCD window and the print indicator lamp changes into normally bright. Under this mode press the print key of printer to automatically print recorded data. All data are printed per 5 miniatures with a format as "Year, Month, Day, Time, temperature. When the print finishes, the buzzer buzzes for 5 seconds, then the system exits the print mode. To cancel print midway, press "Print" again.

### 3. Manual print

Press "Print" twice within 3 seconds, the system switches to manual print mode. Now the display window shows "----1" and the print indicator lights. Then press the print key of printer to print the current recorded data. Press "▲" once to print the data of previous day and the display window shows "----2". Similarly, the recorded data of others days can be printed manually. All data are printed at an interval of 5 miniatures in a format as "Year, Moth, Day, Time, Temperature". When the print completes, the buzzer buzzes for 5 seconds, then the system exits the print mode. To cancel print midway, press "Print" again.

### 4. Set work temperature:

Press the "Set" key one time, will come to temperature set status. The Numeral tube display the current temperature (Normally is 5.0C), Use "▼","▲" to adjust(Range from 0 to 10C, for this type refrigerator, please not set the temperature below 2.0C). Then press the "SET" to make the data be effective, the Numeral tube will show "High alarm set" status, Use "▼","▲" to adjust(Normally is 5.0C, range from 2-5C), confirmed by press"Set". Now will display" low alarm set" status, the same method and temperature range. The next step is time set.



**Please don't place the goods to wall up the fan wind hole,Or else will effect the chamber temperature.**


## 04 Defrost and Maintenance

1. There will be some frost on the surfaces of chamber for a long time running which may decrease the performance of freezer. If the thickness of frost is more than 10mm, some defrost operations are recommended.
2. Cut off the power, Open the door, and move the goods to shade.
3. Use shovel to clean the surface frost.
4. To quicken the process of defrost, You can put the 50°C water container in the freezer.
5. Note: Any electric heater, metal tool or edge tool CAN NOT be used during defrost operation.
6. Then to clean the water with dry cloth, Block the drain lid.
7. Connect the power supply after defrost is completed to run your freezer.
8. To put the goods in the freezer after finish all steps.
9. Can not put the heavy goods in the freezer, prevent to press the body.
10. Should clean the freezer at regular times.(for safe, please draw the power pin at first)
11. Use the soft and warm cloth to clean the freezer surface and inner chamber.
12. If its too dirty then please use the scour to wipe, then clean with soft cloth.
13. Once the freezer running, The best continuous to use.

 **DO NOT sprinkle water on the faces of cabinets, which may decrease insulating property of electric parts and rust metal parts.**

**DO NOT use hot water, corrosive cleanser and organic solvent!**

 **Note: Prohibit the children to playing games around the freezer.**

 **Environment Temperature: -40°C~+55°C, Relative humidity: 10%~90%.**

## 05 Service After Sale

Some unexpected failures may arise during running period. Please pay attention to running status of your ULT freezer. If any exceptional case arises, please check and solve it according to the following introductions. If the problem is not solved well, please contact our service center for details.

Problem	Possible Cause
ULT freezer does not operate	<ul style="list-style-type: none"> <li>● Power outage has occurred.</li> <li>● The plug is bad or not securely plugged-in.</li> <li>● Fuse is blown.</li> <li>● Voltage is too low or too high.</li> </ul>
Compressor does not operate	<ul style="list-style-type: none"> <li>● Power in control panel is off.</li> <li>● Temperature setting is wrong.</li> </ul>
Temperature is higher than setting	<ul style="list-style-type: none"> <li>● Frost in inner wall is too thick</li> <li>● The door is not closed properly or is opened too frequently.</li> <li>● Overfull materials are put.</li> <li>● Ambient temperature is too high.</li> </ul>
Too great noise	<ul style="list-style-type: none"> <li>● Freezer is not leveled well.</li> <li>● Freezer leans upon the wall.</li> </ul>

- Below are normal operation:
  1. There are some light clashes when the compressor starts up and stops.
  2. During rainy and watery season some frost may accumulate on the surfaces of cabinets. Please clean it with dry rag.
  3. Long times power cut, and have not close the general power switch, Will cause the accumulator lose electricity, and work abnormally when power on. Now you need close the general power, and turn on after 1minute.

**Notice:** Before call the service engineer, Please clean and disinfect the freezer.

Condition: Can not shake heavily, strike, prevent to drenching.

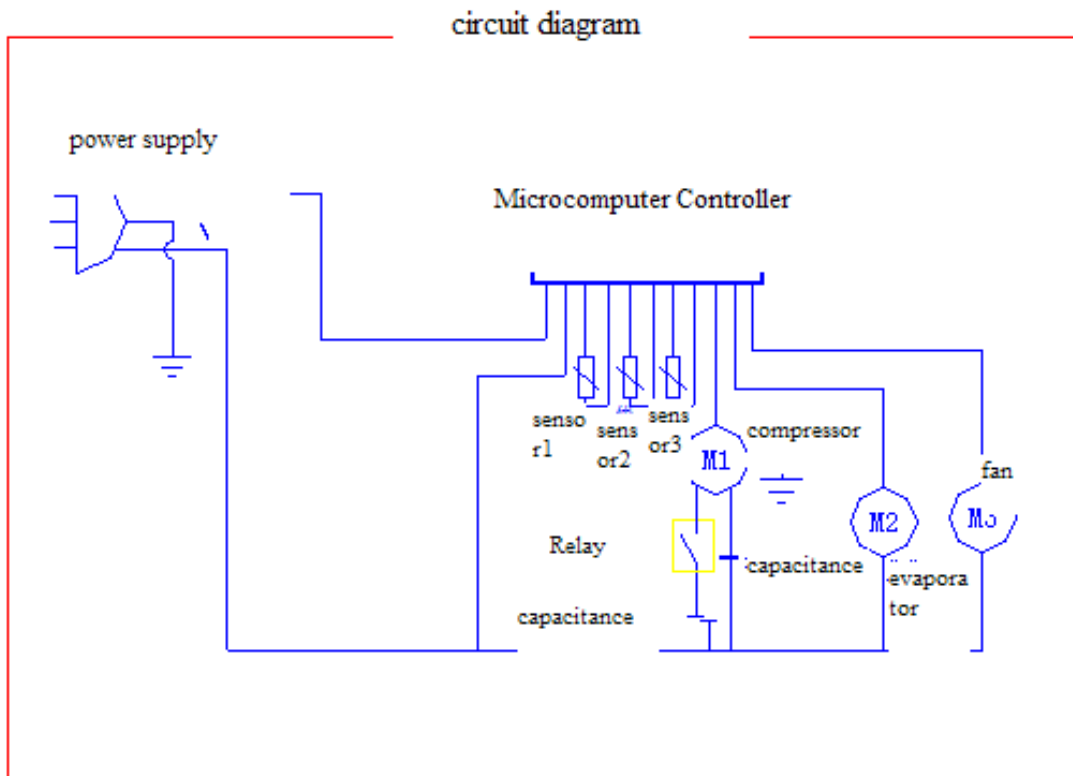
Storing environment temperature: -40°C ~ +55°C, Relative humidity: 10% ~ 90%.

## 06 Specifications

Model	BLAR-102	Safety Type	I Class B type
Climate Type	N	Input Power (W)	350
Internal Temp.	2~8°C	Refrigerant	R134a
Capacity (L)	300L	Exterior Dimensions (L×W×H) (mm)	675x45x1850
Rated Voltage (V~)	220	Rated Power (Hz)	50

### Package List:

Name	Operation Manual	Key
Amount	1	2

**Circuit Diagram:**

**All technical parameters and circuit diagram in nameplate are final ones for your units.**



**BIOLAB SCIENTIFIC LTD.**

3660 Midland Avenue, Suite 300, Toronto, Ontario M1V 0B8 Canada

Email: [contact@biolabscientific.com](mailto:contact@biolabscientific.com) Tel: +1 707 533 1445

Website: [www.biolabscientific.com](http://www.biolabscientific.com)