Biosafety Cabinet Class II, Type A2
HUYAir Bio2

BlueAir Controller

Inflow: 0.00m/s
Downflow: N/A
Pressuare: N/A

SET
C & I

15m   FAN OFF   LIGHT   UV OFF

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All For Science

01
02
03

06   05   04
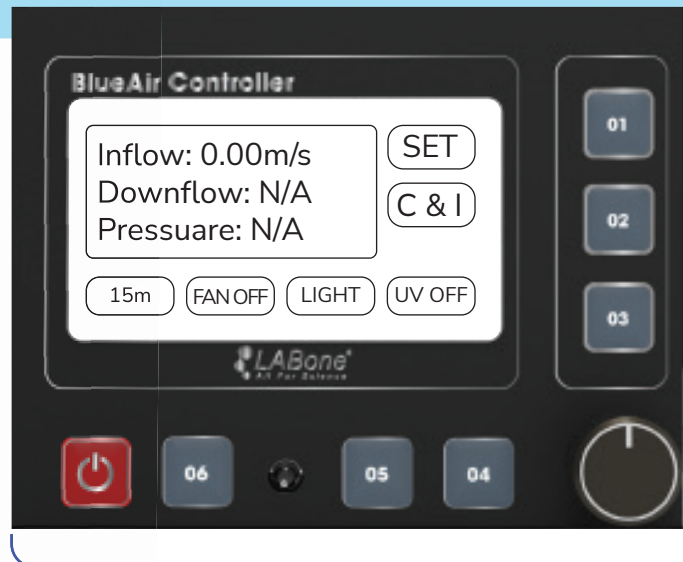
WARNING: ELECTRICAL SOURCE

The HUYAir Bio2 Class II Biological Safety Cabinet product line only operates efficiently and safely when used with the rated power source. Please ensure that the equipment is supplied with the appropriate voltage and frequency, which is 220V/50-60Hz, before use to ensure optimal performance and to avoid electrical-related risks.

CHEMICAL SPILL HANDLING INSTRUCTIONS

▶ If possible, stop the work process to prevent the spill from spreading or affecting other areas.
▶ Wear appropriate protective equipment and then inspect the spill or chemical leak location to ensure the safety of the handler and the surrounding environment.
▶ Remove shelves affected by the chemical spill and carefully clean the area to prevent contamination and ensure environmental safety.
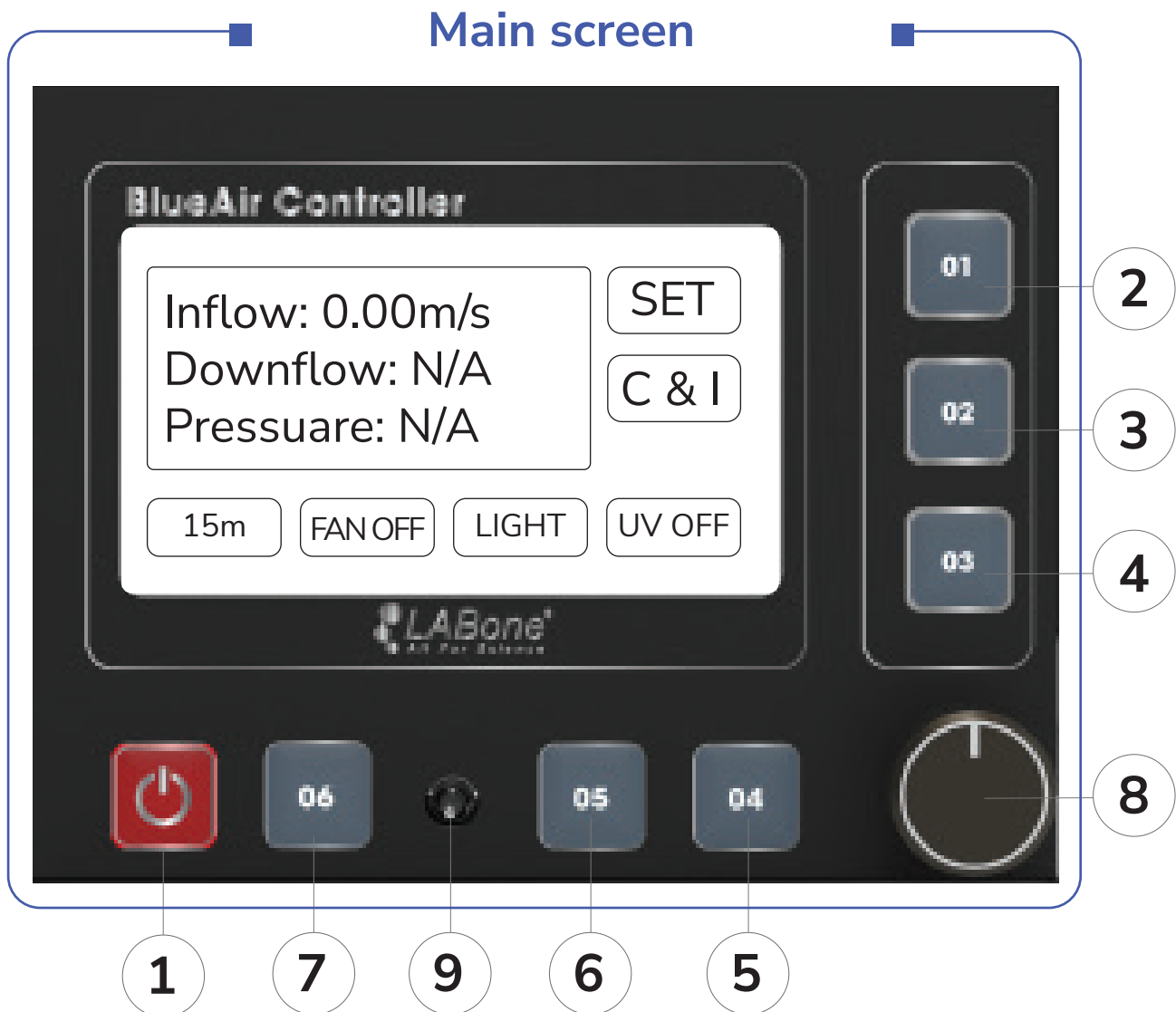
APPLICATION

▶ Class II biological safety cabinets protect the user, laboratory materials, and the environment. They are the most common type in biomedical and microbiological laboratories. Airflow from the room surrounding the user is drawn into the front air grills of the cabinet to protect the user.

▶ The downward airflow through the HEPA filter protects the materials inside the cabinet. The exhaust air, filtered through an exhaust HEPA filter, is decontaminated to protect the environment and can either recirculate back into the laboratory in Type A2 cabinets or be ducted out of the building in Type B2 cabinets. Class II biological safety cabinets are designed to handle agents that require biosafety levels 1-3.

▶ T The A2 type cabinets maintain a negative pressure environment inside the cabinet throughout operation to prevent contaminants from escaping the work area, ensuring the operator's safety.

REMARKS

▶ Avoid placing the cabinet where there is direct airflow (fans, air conditioners) blowing directly into the cabinet door.

▶ Do not place the cabinet too close to the wall, leaving at least a 10 cm gap.

▶ Use a power source of 220V/50-60 Hz.

▶ Do not plug too many devices simultaneously into the outlets inside the cabinet to prevent overload.

▶ Thoroughly wash hands with antibacterial soap. Wear gloves to protect hands.

▶ Gloves should extend beyond the wrist. Double gloving may be necessary for high-risk working environments.

▶ Fully open the door. Disinfect the working surface and the inner surface of the door with 70% alcohol or some other mild cleaning agents depending on the materials used in the cabinet. Do not use any disinfectants containing chlorine as they may corrode stainless steel surfaces.

▶ Arrange items to minimize movement of contaminated items over clean items.

▶ After all tools/equipment are arranged, adjust the door to its normal operating position and allow the fan to run for 5 minutes to clean the contaminated working area during the fan's downtime.

▶ Work slowly and with control inside the cabinet. Quick arm movements can disrupt the air barrier, allowing contaminants to escape from the cabinet.

▶ Place disruptive airflow equipment (if any) such as centrifuges, blenders, or sonicators facing the back of the cabinet. Cease other tasks while any of these devices are operating.

QUICK OPERATING GUIDE

Main screen

Inflow: 0.00m/s
Downflow: N/A
Pressuare: N/A

SET

C & I

15m   FAN OFF   LIGHT   UV OFF

BlueAir Controller

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Buttons: 01, 02, 03, 06, 05, 04

1. **Power Button**: Turns the power on/off
2. **Button 1**: Parameter adjustment button (SET).
3. **Button 2**: C&I button.
4. **Button 3**: Back button (BACK).
5. **Button 4**: UV light.
6. **Button 5**: Illumination light (LIGHT).
7. **Button 6**: Fan on/off.
8. **SELECT Button:** Increases or decreases device parameters, and when pressed, the adjusted parameters will be saved.
9. **Indicator Lights**: Indicate the device's status. When operating normally, the lights will be green, and when there's a warning or error, the lights will change color.

• When turned on, the device's status button on the screen lights up.

CÀI ĐẶT THÔNG SỐ

■ Startup Interface

Main screen
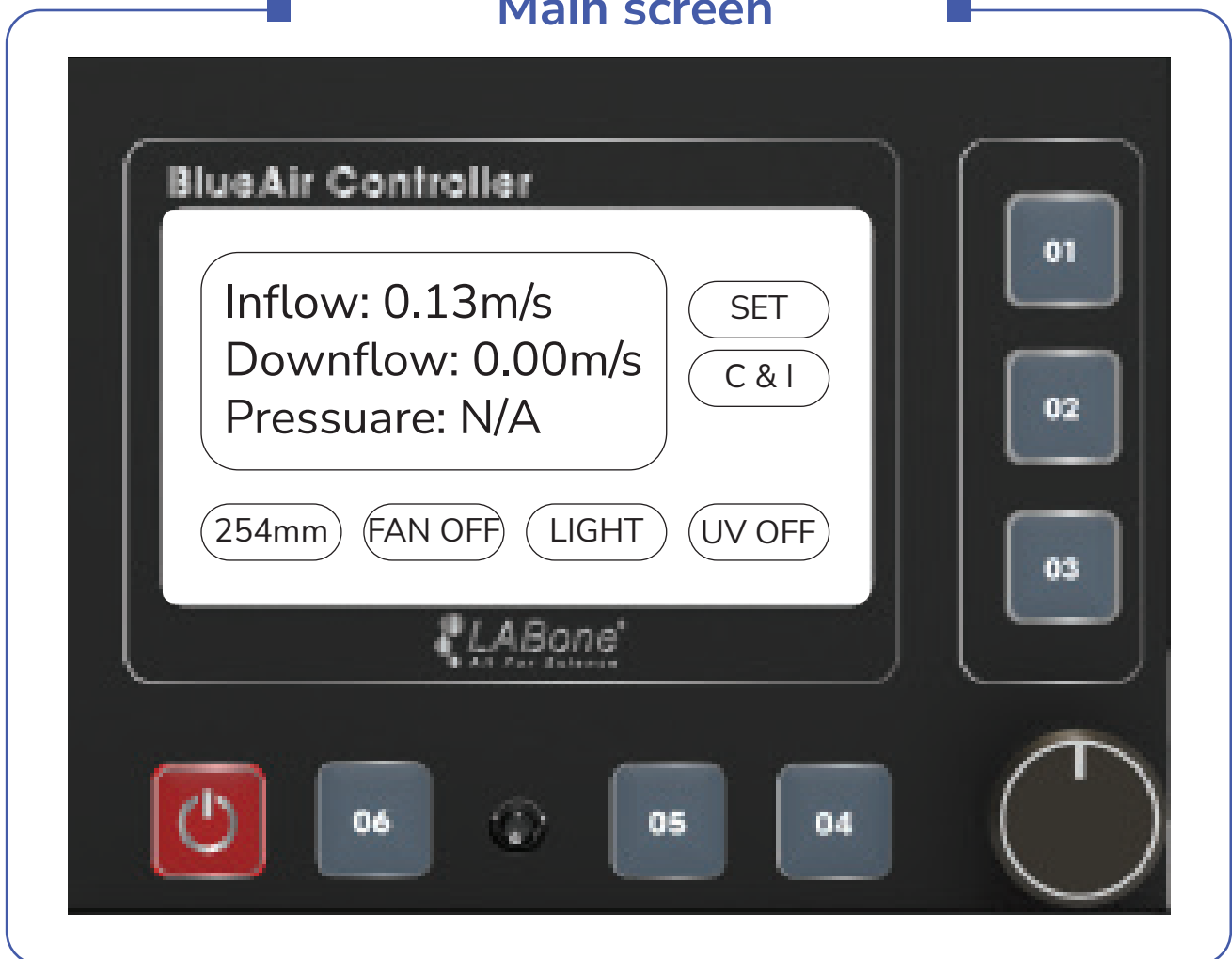
Parameters:

Inflow: Upper airflow velocity (sensor located at the top)

Downflow: Lower airflow velocity (sensor located at the bottom)

Pressuare: Pressure (not applicable)

■ DEVICE CONTROL

Press the corresponding button for the device position displayed on the screen:
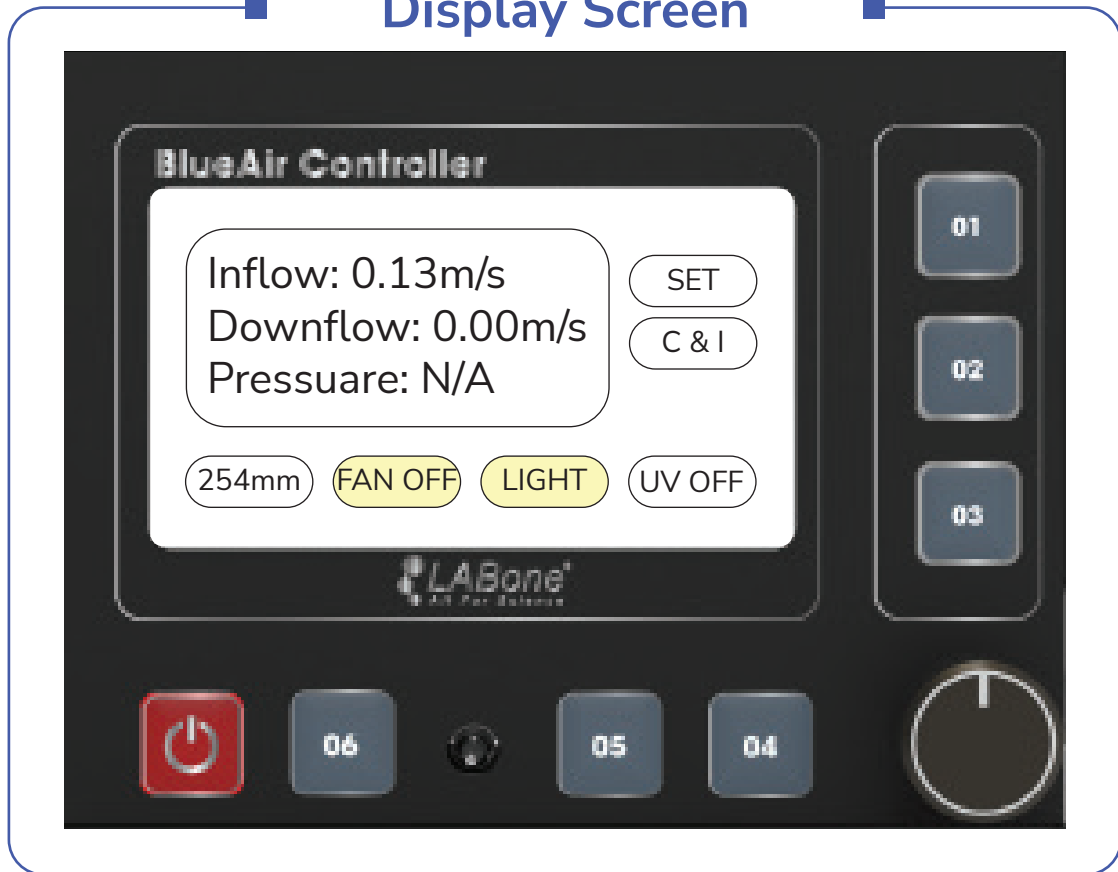
Button 6: Turn on/off the fan

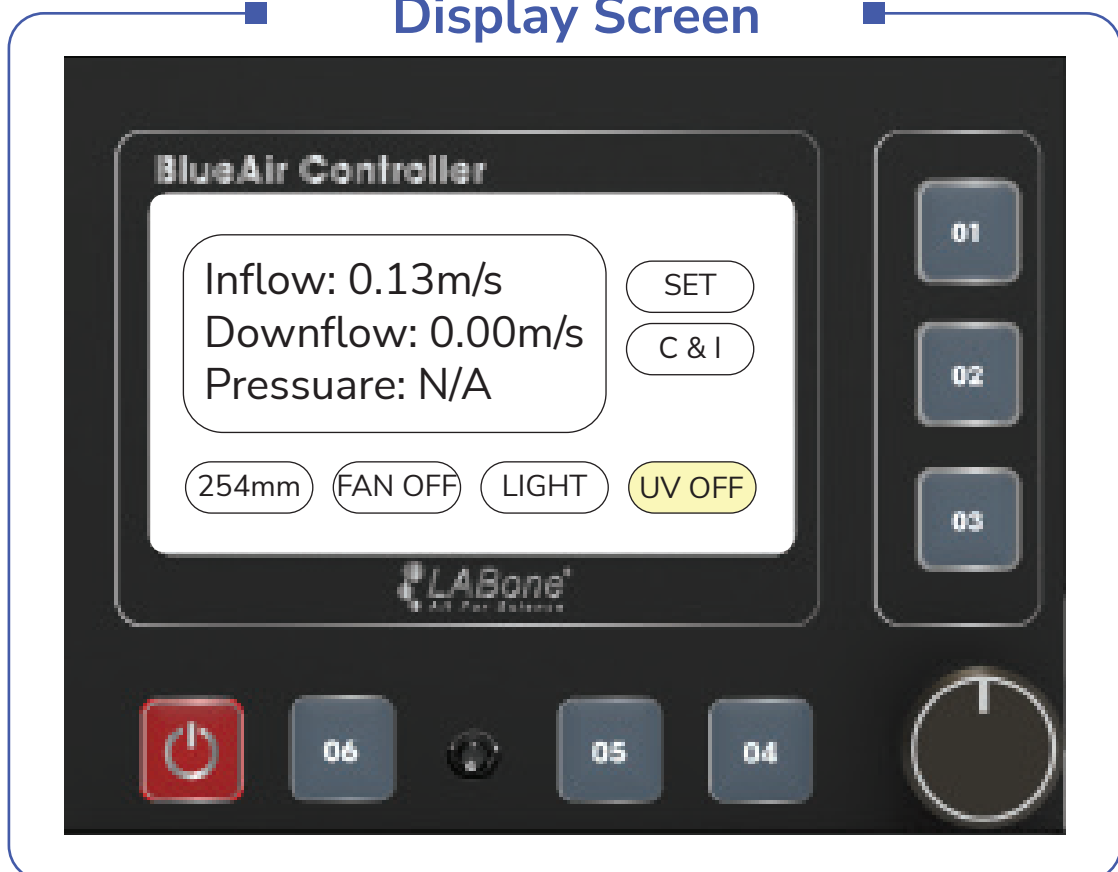**Button 5:** Turn on/off the illumination light

Button 4: Turn on/off the UV light

When turned on, the device's status button on the screen lights up as follows:

Display Screen

BlueAir Controller

Inflow: 0.13m/s
Downflow: 0.00m/s
Pressuare: N/A

SET

C & I

254mm   FAN OFF   LIGHT   UV OFF

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01

02

03

06   05   04

Display Screen

BlueAir Controller

Inflow: 0.13m/s
Downflow: 0.00m/s
Pressuare: N/A

SET

C & I

254mm   FAN OFF   LIGHT   UV OFF

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01

02

03

06   05   04

To activate the UV light, the door must be tightly closed. If the door is not closed, a notification will appear as shown in the image below. This notification will automatically disappear after 4 seconds.
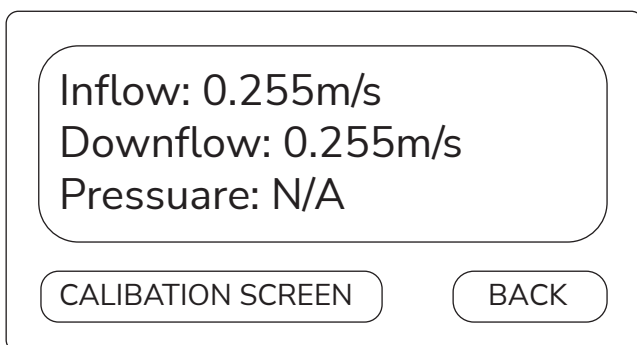
Display Screen

■ Press the C&I button to view information.

The display screen shows the cabinet name, hardware, and software version.
To access the calibration menu: Press and hold the Select button, then press the CAL button (Button 1).
To access the operating time information: Press the INF button (Button 2).
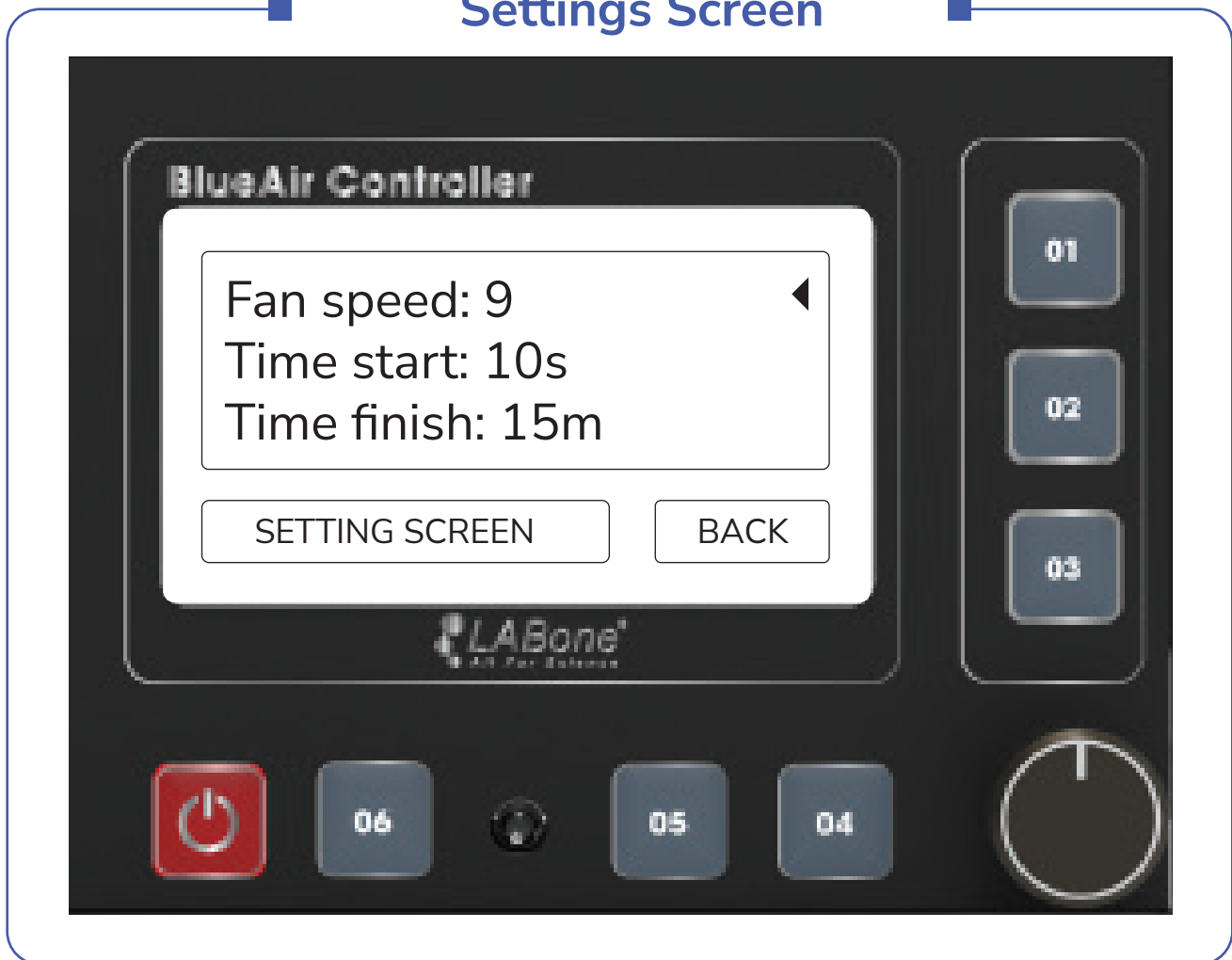To go back, press the BACK button (Button 3).

Inflow: 0.255m/s
Downflow: 0.255m/s
Pressuare: N/A

CALIBATION SCREEN   BACK

Calibration Interface for airflow parameters: To change the parameters, follow the same steps as adjusting other parameters in the previous section.

■ FAN PARAMETERS SETTINGS

Settings Screen

BlueAir Controller

Fan speed: 9
Time start: 10s
Time finish: 15m

SETTING SCREEN   BACK

01
02
03
06   05   04

Step 1: Press button 01 (SET) | displays the settings screen.

Step 2: Rotate the Select knob to select the FAN SPEED parameter to be changed.

Step 3: Press the Select button to enter parameter setup - Displays the parameter settings screen.
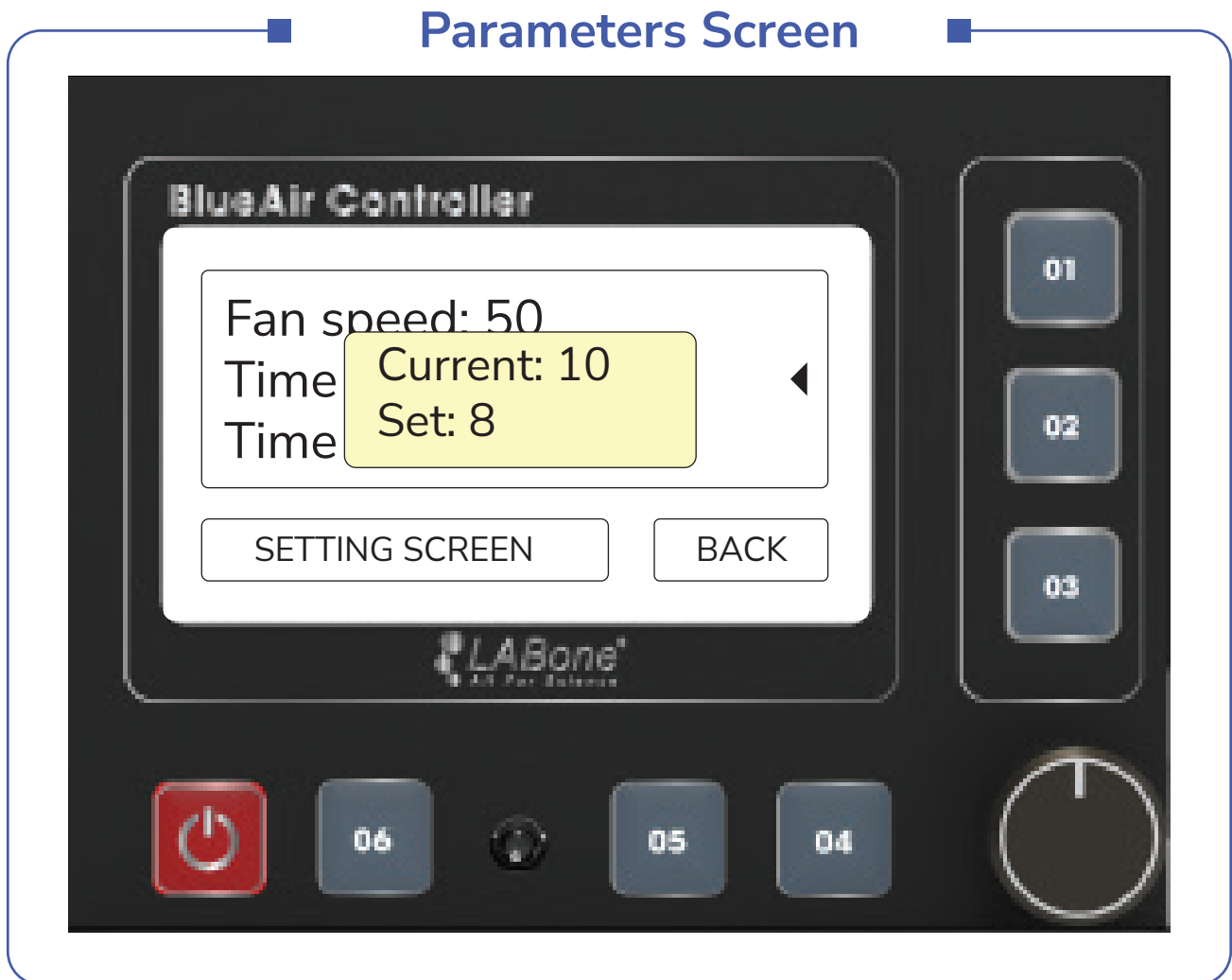
- **Current line: Current value.**
- **Set line: Value being adjusted.**

Step 4: Continue to rotate the Select knob to change the desired value.

Step 5: Press the Select button to save the value.

Step 6: To return to the main screen, press the BACK button (Button 3).

■ UV LIGHT PARAMETERS SETTINGS

Parameters Screen

Step 1: Press button 01 (SET)

TIME START: The time the UV light turns on after pressing the button is from 1s to 60s

TIME FINISH: The duration of UV light operation until it automatically turns off is from 1m to 240m

Step 2: Rotate the Select knob to select the parameter to be changed.

Step 3: Press the Select button to enter parameter setup - Parameters screen.
- **Current line: Current value.**
- **Set line: Value being adjusted.**

Step 4: Continue to rotate the Select knob to change the desired value.
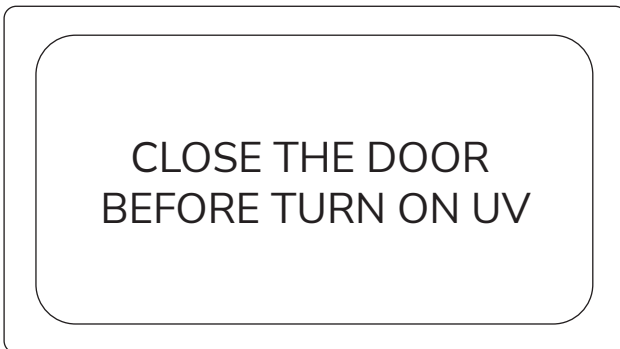
Step 5: Press the Select button to save the value.

Step 6: To return to the main screen, press the BACK button (Button 3).

• **NOTE**: The UV light only operates when the operation door is closed, and at that time, the illumination light and fan will turn off.

◼ ERROR NOTIFICATIONS

> CLOSE THE DOOR
> BEFORE TURN ON UV

Door not closed properly:

The screen will display a message, and the status indicator light will turn red.

Solution: Adjust the door to the correct position, and the error message on the screen will automatically disappear.

Door not closed properly:

When the airflow speed is lower than the required speed (due to dirty filters, weak motor, etc.), the status light will turn red, and the screen will display an error message as follows:

Solution: To increase the airflow speed, press the SET FAN SPEED button (Button 1), and the screen will display as shown. Rotate the Select knob to increase the airflow speed, then press the Select button to save. Once the airflow speed reaches the required level, the screen will automatically return to the main screen. Alternatively, press the TURN OFF FAN button (Button 6) to turn off the fan and return to the main screen.

Error: Unable to turn on UV light.

Due to the door not being completely closed, the UV light cannot be turned on. The status indicator light will turn red, and the screen will display an error message. After 4 seconds, the error message on the screen will automatically disappear.

Solution: To turn on the UV light, ensure the door is completely closed as shown in the image below and press the UV button (Button 4). The UV light will automatically turn off when the set time expires (the value set in the UV light operation time setting). Alternatively, press the UV button (Button 4) again to turn off the UV light.

◼ FAN MODE

Pressing the FAN button on the control interface will start the fan, running at the previously set speed level. Pressing the FAN button again will turn off the fan.

When the door is completely closed, the fan speed will automatically decrease to 30% efficiency to maintain the fan's lifespan.

◼ FLUORESCENT LIGHT ON/OFF MOD

The fluorescent light provides illumination for the working chamber, making it easier for the operator to perform tasks. The light will turn on when the FL button on the control interface is pressed. When no longer in use, press the FL button again to turn off the light.

■ UV LIGHT (ULTRAVATION) OPERATING MODE

UV light is used for disinfection before and after using the equipment. We should handle UV lights with care to avoid damage. Setting the operating time for the UV light is similar to setting the fan and has been explained in section IV.4. The UV light can be set to operate for a duration ranging from 0 to 999 minutes. Additionally, the function of tracking the operating time of the UV light will inform us when the UV lamp needs to be replaced.

To ensure operator safety, the device is set to only allow the UV light to operate when the working chamber is completely closed. This function prevents UV rays from escaping outside.

CLEANING AND MAINTENANCE

▶ Following recommendations, the cabinet should operate continuously to maintain cleanliness. Leak testing and airflow measurement should be performed at least once a year.
▶ Disinfect the surfaces of all tools/equipment with 70% Isopropyl Alcohol (IPA) before removing them from the cabinet. Avoid using 100% IPA as it evaporates quickly before sufficient contact time.
▶ It's advisable to keep the fan on during this cycle.
▶ Clean the working surface, inner and outer walls of the cabinet, and the drip tray with water and a mild antibacterial agent. Any cleaning agents containing chlorine bases may corrode the steel used in the cabinet. Therefore, if using such cleaners, ensure to remove residues using non-corrosive wipes and agents like Isopropyl Alcohol (IPA) 70%. Also, regular cleaning behind the door frame is necessary.
▶ Rinse off cleaning agents with water. Ensure there are no residues left.
▶ Wipe down the working surface, inner and outer walls, and the drip tray with 70% Isopropyl Alcohol (IPA) or any of the following cleaning agents:
  - 1N hydrochloric acid
  - 1N sodium hydroxide
  - 1% quaternary ammonium compound
  - 5% formaldehyde
  - 5,000 ppm hypochlorite
  - 2% iodophor
  - 5% phenol
  - 70% ethyl alcohol

Run the fan for 5 minutes to clean the air contaminated with bacteria from the working area.
Open the door -> UV light will not turn on -> close the door.

MAINTENANCE AND CARE

■ REGULAR MAINTENANCE CHECKS

The steps to be undertaken may include	MAINTENANCE EXECUTION ACCORDING TO SPECIFIC CATEGORIES					
	DAY	WEEK	MONTH	06 MONTH	01 YEAR	02 YEAR
Work Surface	x					
Cleaning the Exterior Surface of the Cabinet			x			
Checking the Functions of the Control Panel to Ensure Proper Operation			x			
Checking the Physical Structure of the Equipment to Ensure Integrity:				x		
To clean stainless steel surfaces				x		
Re-certification					x	
Replacing a UV lamp					x	
Replacing a fluorescent lamp						x

■ General inspection

▶ Check the seal of the glass door gasket.
▶ Verify the functions of the control panel and equipment control. Check electrical safety according to relevant standards.
▶ Inspect and tighten screws.
▶ Inspect the glass door latches.