



Power Pro Elite Mattress System

User Manual



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IMPORTANT SAFEGUARDS

READ ALL INSTRUCTIONS BEFORE OPERATING THIS DEVICE



NOTE, CAUTION AND WARNING STATEMENTS:

NOTE – Indicate some tips.

CAUTION – Indicate correct operating or maintenance procedures in order to prevent damage to or destruction of the equipment or other property.

WARNING – Call attention to a potential danger that requires correct procedures or practices in order to prevent personal injury.



WARNING– To reduce the risk of electrocution:

1. Patients are not allowed to operate the product. Always unplug this product immediately while it's not in use.
2. Do not disassemble the Pump to avoid electrocution.
3. Do not place or store product where it can fall or be pulled into a tub or sink.
4. Do not place in or drop into water or other liquid. Do not use while bathing.
5. Do not reach for a product that has fallen into water. Unplug immediately.










WARNING–To reduce the risk of burns, electrocution, fire or injury to person:

1. The system must be operated with the mattress connected to the Pump. Please do not power-off or unplug the Pump while in use.
2. Always use the same voltage as stated on the label. Do not use other power cords on the Pump. Avoid children and pets acquire the plastic packing to prevent suffocation hazards.
3. Equipment is not suitable to use in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide.
4. Keep away from sharp objects.
5. Close supervision is necessary when this product is used by, on, or near children or people with disabilities.
6. Use this product only for its intended use as described in this manual. Do not use attachments not recommended by the manufacturer.
7. Never operate this product if the Pump has a damaged power cord or plug, if the Pump is not working properly, if the Pump has been dropped or damaged, or the Pump has been dropped into water. Return the product to a service center or to the distributor for examination and repair.
8. Keep the power cord away from heated surfaces.
9. Never block the air openings of this product or place the product on a soft surface, such as a bed or couch, where the openings may be blocked. Keep the air opening free of lint, hair, and other similar particles.
10. Never drop or insert any object into any air opening or hose tube.
11. Avoid dropping or putting any heavy object on the Pump.

12. Place the power cord and hose tube at patient's foot area to avoid strangling of patient's neck.
13. Avoid electromagnetic interference by not have strong electro-magnetic or RF generated equipment nearby patient's environment.
14. The Pump will have minor heat generated in operation, please do not direct contact the surface continuously for more than 1 minute.
15. When the mains supply is lost or had temporarily failed, the Pump will stop and the power failure alarm will alarm up to 20 minutes. This is normal and the product will return to normal operation once the mains supply is resumed.
16. Connect this product to a properly grounded outlet only. See Grounding Instruction.
17. Avoid the risk of electrocution by grounding the ground pin with grounding power outlet.

Product Symbol Description

SYMBOLS	DESCRIPTION
I	POWER ON
O	POWER OFF
	ATTENTION
	“BF” SYMBOL, INDICATE THIS PRODUCT IS ACCORDING TO THE DEGREE OF PROTECTION AGAINST ELECTRIC SHOCK FOR TYPE BF EQUIPMENT, APPLIED PART:MATTRESS
	CAUTION, READ THE INSTRUTION BEFORE USE
	AWAY FROM THE FLAME
IP21	WATER AND DUST PROTECTION CLASSIFICAITON
	FUSE SPECIFICATION
	DISPOSAL OF ELECTRICAL & ELECTRONIC EQUIPMENT (WEEE): THIS PRODUCT SHOULD BE HANDED OVER TO AN APPLICABLE COLLECTION POINT FOR THE RECYCLING OF ELECTRICAL AND ELECTRONIC EQUIPMENT.
	UL CERTIFICATION LOGO (COMPLIACE WITH IEC60601-1) WITH RESPECT TO ELECTRICAL SHOCK, FIRE AND MECHANICAL HAZARDS ONLY IN ACCORDANCE WITH IEC60601-1.
CB	CB CERTIFICATION LOGO
CE	CE CERTIFICATION LOGO

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1. INTRODUCTION

This manual provides the information required for the initial set up and for the normal operation of the **Power Pro Elite™ Mattress System**. Before operating the **Power Pro Elite™ Mattress System**, be sure the operator had read and understood in detail the content of this manual.

2. INTENDED USE

The **Power Pro Elite™ Mattress System** is intended to help and reduce the incidence of pressure ulcers while optimizing patient's comfort. The **Power Pro Elite Mattress System** may be used in a variety of settings including, but not limited to individual home care setting and long-term care of whom suffering from pressure ulcer, or pain management as prescribed by physician.



NOTE: Equipment is not suitable for use in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide.

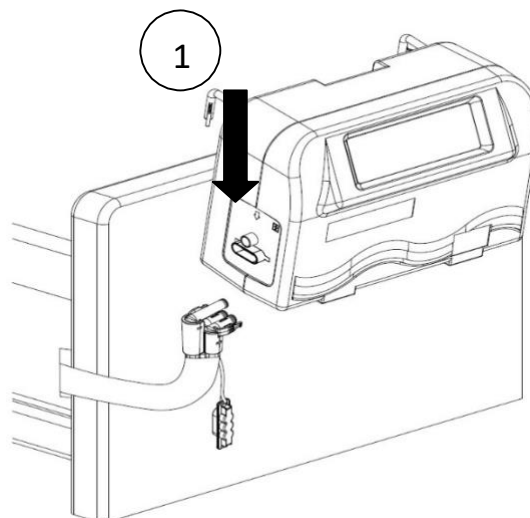
3. PRODUCT DESCRIPTION

The **Power Pro Elite™ Mattress System** is an alternating mattress replacement system used in the prevention and relief for patients with, or vulnerable to, pressure ulcers. The **Power Pro Elite™ Mattress System** offers patients a comfortable and relaxing support surface by using the established principles of alternating therapy, which can both prevent skin breakdown and enhance healing.

The Control Unit of the **Power Pro Elite™ Mattress System** is a Pump featuring a digital pressure adjustment function, mode selections, and audiovisual alarms.

4. PRODUCT INSTALLATION GUIDE

1. Position the Pump by its elastic hanger brackets over footboard of the bed. The elastic hanger brackets will self-adjust onto the footboard tightly.



Connect 3 hose connector to colored side panel. Then connect solo hose to upper port.

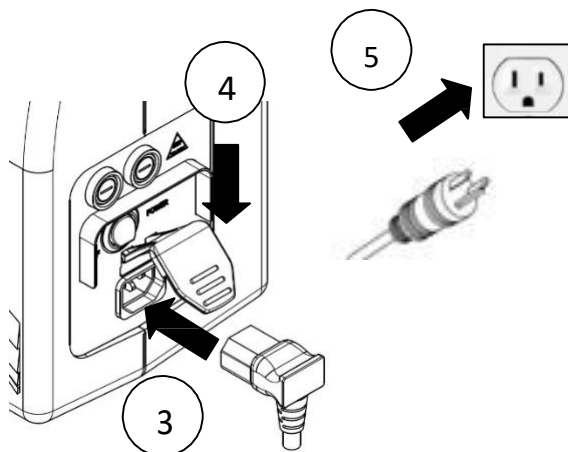


2. Connect the power cord to the Pump. The power switch should remain off.
3. Press the red power cord protector downward to secure the power cord.
4. Plug the power cord into the electrical outlet.

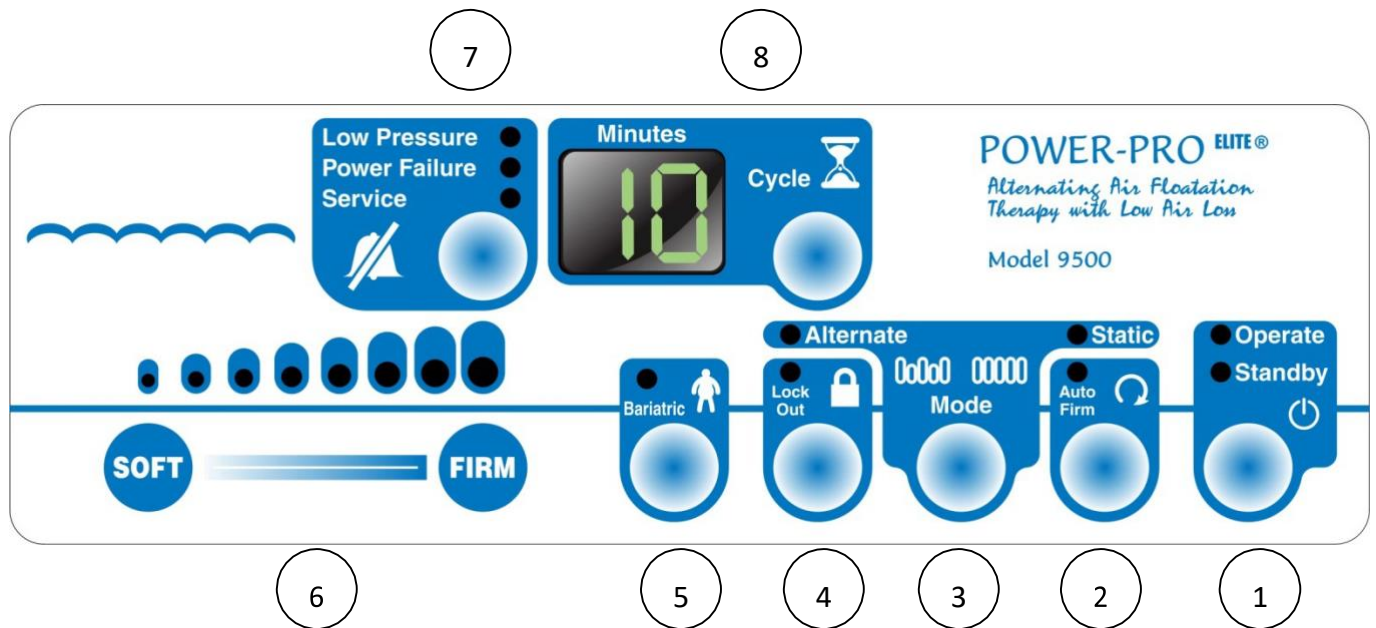
⚠ NOTE: Check and ensure the Pump unit is suitable for the local power voltage.

⚠ CAUTION: The Pump can only be applied to the mattress recommended by the manufacturer. Do not use the Pump for any other purpose.

⚠ WARNING: Do not place the Pump unit in area where power cord can come off easily.



5. PANEL DISPLAY AND OPERATION GUIDE



5.1 PANEL DISPLAY

- ① Operate or Standby
- ② Auto Firm
- ③ Function Mode Selection (Alternate/Static)
- ④ Panel Lock-Out
- ⑤ Bariatric Switch Button
- ⑥ Comfort Control (Soft and Firm)
- ⑦ Alarm Mute and Alarm Indicator
 - Low Pressure Alarm Indicator
 - Power Failure Alarm Indicator
 - Service (Malfunction) Alarm Indicator
- ⑧ Alternate Cycle Time or Warning Code Display

5.1.1 Operate or Standby

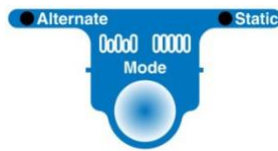


Press this button to start operating or go into standby.

5.1.2 Auto-Firm



The Pump will go into the inflation mode (LED lights flashing) every time the operate mode is triggered. This insures the mattress to be able to reach its maximum operating pressure. Once the max pressure level is reached, the pump will automatically switch into the previous selected mode and comfort level. User can also use this function as full mattress inflation during patient sit-up or ingress/egress for better support.



5.1.3 Function Mode Switch

- Alternate—the air cells of the mattress will be proportionally deflated to reduce the surface pressure. The alternating cycle will continue at the selected cycle time until another mode is selected.
- Static—the mattress maintains at 70% of the selected pressure in alternate mode.



5.1.4 Panel Lock-Out

Press the Lock-Out button to lock the panel. Should the panel remain untouched for 30 seconds, the Lock-Out feature will lock the panel to prevent accident from changing setting without notice. To unlock, hold Lock-Out button down until light goes away.



5.1.5 Bariatric

This feature enhances the output of the Pump for heavier patient support. Refer to **Table 1 Weight and Comfort Level Reference** for weight and comfort level recommendation.



5.1.6 Comfort Level

Comfort level controls the air pressure output level. Press Firm button and the output pressure will increase and higher pressure output will support heavier weight patient, for decreasing air pressure, vice versa. Check to see if the suitable pressure is selected by sliding one hand between a deflated air cell and the patient's buttocks areas and there should be minimum contact. Always leave at least 1 inch space between a deflated air cell and patient's buttocks areas to prevent "bottoming-out".






5.1.7 Alarm Mute


Press the alarm mute button to suspend temporarily alarms. Should the situation not resolved and fault conditions continue, the alarm will resume notifying the patient and caregiver.


5.2 OPERATION GUIDE

5.2.1 General Operation:


 **NOTE:**  The power switch is located on the side of the Pump.



- Press  to turn on the unit, all LED indicators on the control panel will light up accompanied with a beep for 2 seconds (check for indicator failure if any), and the indicator of Standby on the control panel will light up. If the Pump was previously shut off in operate mode then the Pump will enter operate mode directly.


P.S. To test the battery, press  to turn off the power and the power failure alarm should be triggered. Refer to **5.2.2 Audiovisual Alarm** if the alarm is not triggered.



- Press the Operate button  and the system will begin to inflate and the "Auto-Firm" indicator will be flashing.

! The mattress should be fully inflated within 20 minutes, and automatically enter the previous operating mode, otherwise the low pressure alarm with warning code "L.P" will be triggered.

 **Note:** Do not proceed to other settings before inflation is completed.

- After initial inflation is completed. Press Auto-Firm button  for moving the patient onto the mattress. The mattress will turn into a steady condition in around 5 minutes. Move the patient onto the mattress and press Auto-Firm button  again to cancel Auto-Firm mode and select the appropriate mode.
- According to the weight of the patient, adjust the pressure setting to the most suitable level without "bottoming-out". User can determine an appropriate pressure by adjusting the Comfort Level. Please consult with your physician for a proper setting.

 **Warning:** the Pump unit should always be operating to prevent bedsores occurring.

- In operate mode, press operate/standby button  for the system to enter standby mode. The system should be in standby mode before shut down. Switch the power switch  to off and the warning code "S.d" will appear on the display to shut off the system.

 **Note:** For reminding purpose, power failure alarm will be triggered if the





power is switched off in operating mode (refer to **5.2.2 Audiovisual Alarm**). Press power switch  to restart the system, or press Alarm Mute  to turn off the system (refer **5.2.3 Alarm Mute**).

Table 1 Weight and Comfort Level Reference


MATTRESS	LIGHT 1	LIGHT 2	LIGHT 3	LIGHT 4	LIGHT 5	LIGHT 6	LIGHT 7	LIGHT 8
36" MATTRESS	90 - 120	115 - 145	120 - 175	145 - 200	175 - 230	200 - 265	230 - 300	265 - 330
36" BARIATRIC ON	300 - 375	330 - 420	375 - 465	420 - 505	465 - 550	505 - 600	550 - 660	600 - 705
MATTRESS	LIGHT 1	LIGHT 2	LIGHT 3	LIGHT 4	LIGHT 5	LIGHT 6	LIGHT 7	LIGHT 8
42" MATTRESS	105 - 135	125 - 165	145 - 200	175 - 230	205 - 265	240 - 305	265 - 345	305 - 380
42" BARIATRIC ON	345 - 420	380 - 480	420 - 520	480 - 555	520 - 600	555 - 650	600 - 725	680 - 800
MATTRESS	LIGHT 1	LIGHT 2	LIGHT 3	LIGHT 4	LIGHT 5	LIGHT 6	LIGHT 7	LIGHT 8
48" MATTRESS	115 - 145	145 - 185	175 - 230	215 - 270	245 - 315	290 - 365	325 - 415	375 - 460
48" BARIATRIC ON	420 - 515	480 - 570	535 - 615	580 - 670	625 - 720	680 - 790	740 - 900	880 - 1000

5.2.2 Audiovisual Alarm

- Power Failure—When electrical shortage occurred or power cord is unplugged without turning off the Pump or  is pressed (intentionally or unintentionally), the "Power Failure" indicator will light up along with buzzer and will last 20 minutes.

 **NOTE:** When the Pump has not been used for more than 3 months, the Pump may need 6 hours or more of operating time for the alarms to function properly.

- Low Pressure—When an abnormal low pressure occurred in body section for 5 seconds after the pressure is below the abnormal pressure threshold, the "Low Pressure" indicator will flash and beep. Should the situation not be resolved and fault conditions continue, the alarm will resume.
- Service (Malfunction) —When fault conditions occur, the "Service" indicator will light up along with buzzer.

 **Note:** Refer to **Table 2 for Warning Code Reference Table** if error code appears on the display or refer to **9. TROUBLESHOOTING**.














5.2.3 Alarm Mute

- When alarms are triggered, both LED light and buzzer will turn on to warn the patient and caregiver. By pressing the button, it will temporarily mute the buzzer so the caregiver may check for possible causes. Should the situation not be resolved and fault conditions continue, the alarm will resume. Refer to **9**.

TROUBLESHOOTING for diagnosis.

- During “power failure”, pressing “alarm mute” will cease all buzzers and indicators and turn off the system.
- During “low pressure alarm” if the pressure resumes back to normal then the low pressure alarm will stop.
- When more than one alarm is triggered, the alarm will be performed according to priority level. Refer to **Table 2 Warning Code Reference Table** for priority level.

Table 2 Warning Code Reference

PRIORITY HIHG ↓ LOW	WARNING CODE	INDICATOR LED	AUDIBLE OUTPUT MODE	CONDITION OF OUTPUT	WARNING DESCRIPTION	REMARKS
0	N/A	N/A	ONCE	Not in System Shutdown	Key Tone	Key Tone from Functional Button
1		Power Failure	ONCE	POWER-OFF	System Shutdown	Shutdown
2		ALL LED	ONCE	OPERATE OR STANDBY	Power-On	All Indicators Light On
3	N/A	N/A	ONCE	OPERATE OR STANDBY	State/Mode Switching	No Display
4		Auto Firm	ONCE	OPERATE	Mattress Inflation Completion	Inflation Ended
5		Auto Firm	ONCE	OPERATE	Auto-Firm Completion	Auto-Firm Ended
6	N/A	Power Failure	REPEAT (Cycle 4 sec.)	POWER-OFF	Power Failure Alarm	No Display
7		Low Pressure	REPEAT (Cycle 4 sec.)	OPERATE OR STANDBY	Power-On Inflation Failure Alarm	Inflate Failure
8		Low Pressure	REPEAT (Cycle 4 sec.)	OPERATE OR STANDBY	Auto-Firm Failure Alarm	Auto-Firm Failure
9		Low Pressure	REPEAT (Cycle 4 sec.)	OPERATE OR STANDBY	Low Pressure Overtime Alarm	Low Pressure
10		Service	REPEAT (Cycle 4.5 sec.)	OPERATE OR STANDBY	High Pressure Overtime Alarm	High Pressure
11		Service	REPEAT (Cycle 4.5 sec.)	OPERATE OR STANDBY	High Ambient Temperature Alarm	High Temperature
12		Service	REPEAT (Cycle 4.5 sec.)	OPERATE OR STANDBY	Air Valve 1 Positioning Failure Alarm	Air Valve 1 failure
13		Service	REPEAT (Cycle 15 sec.)	OPERATE OR STANDBY	Battery Low Alarm	Battery would need to be replaced
14		NONE	NONE	FACTORY CALIBRATION MODE	Calibration Not Completed	Calibration Unfinished
15		NONE	NONE	FACTORY CALIBRATION MODE	Calibration Completed	Calibration Completed

6. CLEANING

Wipe the Pump unit with a damp cloth pre-soaked with a mild detergent, and keep the Pump unit away from dust. If other detergent is used, choose one that will have no chemical effects on the surface of the plastics case of the Pump unit.

DISINFECTING THE COVER

If the cover is heavily soiled or has been exposed to bodily fluids such as blood, it will require a more thorough cleaning procedure.

Use single use wipes with a 0.1% chlorine solution (1,000ppm) and cold water to wipe the cover. Rinse thoroughly with clean water and damp dry the mattress using single use wipes. Ensure the cover is completely dried before refitting to the mattress.



CAUTION: Do not immerse or soak the Pump unit.

Do not use phenolic-based product for cleaning.

After cleaning, dry the mattress without direct exposure of sunlight.

Frequent or prolonged exposure to higher concentration disinfectant solutions may prematurely age the fabric cover of mattresses. Cover surfaces should be protected during use and rinsed and dried thoroughly after disinfectant.

LAUNDERING

- Before laundering, mattress cover should be completely removed.
- Mattress covers can be laundered as following:
- Prewash 140°F +15 minutes
- Main wash 140°F+15 minutes
- This should be followed by a cold rinse and extraction.

DRYING

Mattress covers should be hung from a line or bar and drip dried in a clean indoor environment. Covers must be completely dried before refitting to the mattress.

Mattress covers can be tumble dried on a low heat setting for 90 minutes.

Drying temperature must not exceed 104°F. Exceeding the temperature can cause significant damage to the mattress cover.

7. STORAGE

- To quickly vacuum air out from mattress for storage, rotate the CPR valve to OPEN position and disconnect the hose connector to release the air.
- The power cord could be wrapped around the Pump bumper or disconnected for storage.

8. MAINTENANCE

General

- Check main power cord and plug if there are abrasions or excessive wears.

Fuse replacement


- Disconnect the plug from mains power when a blown fuse is suspected.
- Remove the cover of the fuse holder by means of a small screwdriver.
- Insert a new fuse of the correct rating in, and replace the cover of the fuse holder back. The fuse rating should comply with the requested specification.

Air Filter Replacement

After checking **9. TROUBLESHOOTING**, if the air filter needs to be replaced:

- Replace the air filter located at the back of the Pump.
- The filter is reusable and can be washed gently with a mild detergent and water. Dry the filter before use.
- Check and replace air filter regularly if environment is dirty.


9. TROUBLESHOOTING

PROBLEM	SOLUTION
The Pump is showing no indications of working	<ul style="list-style-type: none"> Check if the plug is connected to the mains supply. Check if the power switch is switched to ON position (press ). Check if there is any blown fuse.
Power failure alarm failed	<ul style="list-style-type: none"> If the Pump is in operation but failed to trigger the power failure alarm during power off. Charge the Pump for 6 hours or more of operating time and if the power failure still not works then please contact the dealer or agent for further investigation.
The low pressure light is constantly flashing and the alarm is sounded	<ul style="list-style-type: none"> Check if the connection between air tubes to Pump unit is tightly secured. Check if all coupling connections along mattress are secured. If the mains supply is normal but there is no sound of the Pump, please remove the connector from the Pump to check if there's air comes out. If not, please turn off the machine and contact the dealer or agent for further investigation. If all of above steps have been checked. Press "Alarm Mute" for system to be verified again.
The Pump is on but the mattress is not alternated	<ul style="list-style-type: none"> Ensure the mattress inflation is completed. Check the Pump control panel the indicator of "Alternate" should be lighted on, if not, switch it to "Alternate." Check if "Service" alarm indicator is on with buzzer, if yes, contact the dealer or agent for further investigation.
Service (Malfunction) Alarm is on	<ul style="list-style-type: none"> Press "alarm mute" for system to be verified again. If the alarm is still on, please contact dealer or agent.
The Pump is operating noisily	<ul style="list-style-type: none"> Make sure the Pump is resting against a solid surface. If the noise is getting louder, contact the dealer or agent for further investigation.
Patient is bottoming out (without alarm triggered)	<ul style="list-style-type: none"> Pressure setting might be inadequate for the patient, adjust comfort level to FIRM (refer to Table 1 Weight and Comfort Level Reference Table) and wait for a few minutes for better comfort. Follow the procedures "The low pressure light is constantly flashing and the alarm is sounded" for inspection.

If the above information does not solve the problem, please contact your local dealer or agent for further support.

10. TECHNICAL DATA

10.1 Product Specification

Pump Unit	
Model	SD223
Dimension (cm)	40(L)x 17.5(W)x 27.5(H)
Weight (kg)	6.5
Alternate Cycle Time (minutes)	5—30
Auto Firm Time (minutes)	20
Pump output flow range (LPM)	1800
Pressure Range (mmHg)	20—50 (±5)
Power	AC120V 60Hz
Current	4.8 A _{MAX} (@132V~)
Fuse Rating	T5A 250VAC
Classification	Class I (MOOP)
Classification	Type BF  (MOPP)
Warranty	1 year
Environment Condition	
Operation Environment	5°C—35°C 15%RH ~ 93%RH(No Condensation)
Storage Environment	-25°C—70°C ≦ 93%RH(No Condensation)
Environment Pressure	70 kPa—101.3 kPa
Environment Level	≦ 3000m