carilex®

CariChair

Anti-Decubitus Air Alternating Pressure Cushion System
Instructions for Use

About This Document

Congratulations and thank you for purchasing this high quality anti-decubitus system.
Please read these Instructions carefully before use and observe the safety instructions and requirements for the proper operation and maintenance of the device.

Device identification

Identification Details of the Device
These Instructions for Use are intended exclusively for devices with the following specification:
Device name: CariChair System
The serial number is shown on the label on the rear of the control unit and on the tag sewn on the cushion.

Validity of the documentation

Details of the Device Documentation
This manual describes the CariChair System. It is part of the device documentation. Do not pass this device to a third party without these Instructions for Use.

The end page of these Instructions for Use shows the current document edition.

Subject to change

The contents of the Instructions for Use can be changed by the manufacturer at any time without prior notice.

Translations

The English version of these Instructions for Use is authentic. In the event of any clarification, question or dispute as to the content of any translation of these Instructions for Use, the English version shall prevail.

Copyright

The resulting rights for reprinting, photomechanical, digital processing, or copying of the content, or any part thereof, are permitted only with prior written approval from Carilex Medical Inc.
This provision shall not affect the reproduction for internal use.

About This Document

Manufacturer
Carilex Medical, Inc.
No. 77, Keji 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan

EU Representative:
Emergo Europe B.V.
Westervoortsedijk 60, 6827 AT Arnhem, The Netherlands

If the user or/and patient occur any serious incident in relation to the device should be reported to Carilex and European Authorized Representative immediately.

Sales and service

For Support or Complaints
If you have any questions or concerns about the device or need accessories, please contact the distributor that delivered the device to you or your patients.

Table of Contents

1 Important Notes for Safe Use 5-12
- 1.1 Designation of the Groups of Individuals 5
- 1.2 Notes for the Users 6
  - 1.2.1 Instruction 6
  - 1.2.2 Handing Over the Device 6
  - 1.2.3 Maintenance and Installation 6
  - 1.2.4 Information and Test Obligation of the User 6
  - 1.2.5 Reporting of serious adverse events 6
- 1.3 Procedures for Accident Prevention 7
  - 1.3.1 Procedures for Handing Over the Device 7
  - 1.3.2 Qualification Requirements Hygiene Staff 7
  - 1.3.3 Availability of the Instructions for Use 7
  - 1.3.4 Home Healthcare Environment 7
- 1.4 Purpose of the Device 8
  - 1.4.1 Intended Purpose 8
  - 1.4.2 Attention 9
  - 1.4.3 EMC Compliance Statement 10
  - 1.4.4 Safety Caution Statement 10
- 1.5 Warranty 11
- 1.6 Safety Information and Symbols of These Instructions for Use 11
  - 1.6.1 Identification of Risks of Injury 11
  - 1.6.2 Identification of Material Damage 11
  - 1.6.3 Identification of Additional Information 11
  - 1.6.4 Additional Symbols to the Safety Information 12

2 Security Norms 13-14
- 2.1 Correct Use of the System 13
- 2.2 Advice 14

3 Delivery and Storage 15
- 3.1 Packaging 15
- 3.2 Delivery Control 15
- 3.3 Storage and Transport 15

4 Device and Functional Description 16-17
- 4.1 Device Description 16
- 4.2 Operation and Functional Test 17

Table of Contents

5 Features 18-21
- 5.1 Control Panel 18
- 5.2 Side Panel 20
- 5.3 Rear Panel 20
- 5.4 Cushion Diagram 21

6 System Installation, Operation 22-23
- 6.1 System Installation 22
- 6.2 Operation 23

7 Application 24
- 7.1 Preparing the Application 24
  - 7.1.1 Inflating the Cushion 24
  - 7.1.2 Patients Positioning 24

8 Cleaning and Disinfection 25-27
- 8.1 Cleaning 26
- 8.2 Disinfection 27

9 Care and Maintenance 28
- 9.1 Inspection 28
- 9.2 Maintenance 28

10 Troubleshooting 29

11 Technical Data 30-31

12 Safety Precautions for Li-Ion Battery Pack 32

13 EMC Declaration 33-34

1 Important Notes for Safe Use

Named groups of persons

1.1 Designation of the Groups of Individuals

The named groups of persons in these Instructions for Use are as follows.

Operators

An operator (surgical supplier, health insurance, clinic, etc.) is any legal person who owns and uses a CariChair System, or on whose behalf the device is used. The operator is responsible for providing a safe device and to instruct users properly on the operation and safe use of the device.

Users

Users are people who have been trained to:

- Operate the CariChair System
- Supervise patients using the device for therapy or care purposes.

Users are fully responsible for the safe and correct use of the device. A review of the functions must be carried out and the proper conditions of the device must be confirmed by the user before each use or transfer for use.

Professionals

These authorized persons are skilled personnel who may be employees of the operator and who:

- Have acquired their knowledge through professional training in the medical-technical field,
- Carry out their activity on the basis of professional work experience and instructions according to safety-related regulations.
- Are able to detect possible hazards during work.

In countries in which the pursuit of an activity in the medical-technical area is certified, classification of qualified personnel is subject to appropriate approvals.

Patients

Patients are persons in need of care and who use the CariChair System for therapy or care purposes.

Lay Operator

A lay operator is a person without relevant specialized training. The lay operator should contact the manufacturer or manufacturer's representative under following conditions :

- For assistance in setting up, using or maintaining the ME Equipment System; or
- To report unexpected operation or events.

1 Important Notes for Safe Use

1.2 Notes for the Users

Note that the CariChair System should only be used by persons who have been trained in the operation and the intended purpose of the device.

1.2.1 Instruction

Training on how to use the device must be carried out by qualified personnel. If the device is approved for use, then users must comply with the Instructions for Use.

1.2.2 Handing Over the Device

Device approval

The device may only be used, if the operator has released it for therapeutic or care use and if the hand over was carried out properly and under the supervision of authorized personnel.
After the hand over the users are fully responsible for the safe and dedicated use of the device.

1.2.3 Maintenance and Installation

The maintenance and/or repair of the equipment or parts must only be carried out by an authorized service agent.

1.2.4 Information and Test Obligation of the User

Obligation of the user

Read these Instructions for Use carefully before the first use of the device. This will allow you to experience all the benefits that the device offers and avoid possible personal injury and property damage.
A review of the functions must be carried out and the proper condition of the device must be confirmed by the user before each use or transfer for use by patients.
In case of specific issues that are not covered in enough detail in these Instructions for Use, please contact the distributor or operator for further guidance.

1.2.5 Reporting of serious adverse events

User should report the serious adverse events to Vigilance and post-market surveillance module at EUDAMED website https://health.ec.europa.eu/medical-devices-eudamed/overview_en and Carilex's contact window: eu@carilexmedical.com

1 Important Notes for Safe Use

1.3 Procedures for Accident Prevention

The CariChair System is made according to current, reliable, state of the art technology. However, hazards may arise if it is operated by untrained personnel or it is not operated as described in these Instructions for Use.

1.3.1 Procedures for Handing Over the Device

In order to comply with the regulations of accident prevention and to prevent accidental damage, the following procedural guidelines are to be followed when handing over the device:

- The initial start-up of the device, as well as the hand over to the user must be carried out by an authorized personnel assigned by the operator.
- After completion of the training, it must be documented that the user has understood the operation and use of the device for therapy or care purposes.

1.3.2 Qualification Requirements Hygiene Staff

Hygiene measures

The nature of hygiene measures is determined by the use environment of the device.

- If the device is used in clinical areas (e.g. hospitals, clinics, nursing homes, elderly homes, etc.) cleaning and disinfection must be carried out on the product or parts only by appropriately qualified personnel who are familiar with relevant hygiene regulations.
- When using the device in non-clinical areas, users or trained cleaning personnel may clean the device.

1.3.3 Availability of the Instructions for Use

Obligation to provide information

The Instructions for Use are an integral part of the device and must be stored in a place so that the safety instructions and other important information are accessible at any time and can reviewed by users.
Do not pass the device to a third party without these Instructions for Use. Using the edition version as a guide always ensures that the current and valid Instructions for Use document is supplied with the device.

1.3.4 Home Healthcare Environment

- This is any place a patient lives (either their own home or a nursing home) and other places where patients are present (e.g. being outdoors; in a wheelchair; traveling by any mode and whilst at work)
- Exclusions are: professional healthcare facilities where staff with medical training are continually on hand when patients are present (e.g. hospitals;doctors surgeries; dental surgeries)
- Since the Home Healthcare Environment includes a variety of environments, there is a chance that the medical equipment may be used in locations with unreliable electrical sources and poor electrical grounding.

1 Important Notes for Safe Use

1.4 Purpose of the Device

To ensure the safety of patients and users, the device must be used only for its intended purpose.

1.4.1 Intended Purpose

Intended purpose

Anti-decubitus Air Alternating Pressure Cushion System is designed for patients who endure pressure ulcer and potential patients who wish to reduce the likelihood of pressure ulcer. The device is intended to prevent and manage pressure ulcers by facilitating blood circulation and decreasing pressure of each tissue's contact area.

Intended users:

The intended user of this medical device is caregiver who has undergone user education and training and has read the instruction manual or a guardian who takes care of patients

Intended patient populations:

- Patients who endure of all categories of pressure ulcer and potential patients who wish to reduce the likelihood of pressure ulcer.
- Patient minimum weight: 30kg.
- Patient maximum weight: 150kg.

Use environment:

The support system can be used on Home Healthcare Environment and Professional Healthcare facility environment.

Indication:

The therapeutic support surface system is indicated for the prevention and/or management of all categories of pressure ulcer. The use of this system allows combined with the regular repositioning, monitoring, and nursing of the patient.

Contraindications:

Certain patient conditions are not suitable for using this type of device such as fracture of instable vertebrae and illness of instable vertebrae (include Spinal cord injury, Cervical traction).

WARNING

Active therapy (alternating) cushions may be unsuitable for patients with poor sitting posture or pelvic deformity.

1 Important Notes for Safe Use

⚠ WARNING

Always consult a physician or health professional before using this device. The use of this system is still required the regular repositioning, monitoring, and nursing of the patient. In accordance with the NPUAP/EPUAP directives, recommends that repositioning the patient every two hours. However, the determination of individualized repositioning schedule should be made based upon the patient's condition.

Limitations:

- If patients have other unstable fractures, or conditions which may be complicated by a soft or moving surface, advice should be sought from an appropriate clinician before use.
- Active therapy (alternating) cushions may be unsuitable for patients with poor sitting posture or pelvic deformity; advice from a seating specialist should be sought.
- While care of the patient when sitting. Seated patients are at increased risk of pressure ulcers particularly if they are immobile or have wounds over the seating area. For optimal outcome, provide a pressure redistributing seat cushion in a chair which promotes a good sitting posture and has a level base seat to support the cushion.

Type of Contact and Duration of contact:

Control unit: non-contact with patient's body.
Cushion: indirectly contact with whole body as long as the patient is sitting or lying on the cushion.
The system is suitable for continuous therapy.

Clinical benefit:

The device is intended to prevent and manage pressure ulcers by facilitating blood circulation and decreasing pressure of each tissue's contact area.

Attention

1.4.2 Attention

Always consult a physician or health professional before using the CariChair System. Any and all applications outside of the conditions specified above are regarded as unapproved. The user and the operator respectively are exclusively liable for any damage resulting from the unapproved use.

If existing wounds do not improve or the patient's condition changes the overall therapy regimen should be reviewed by the consult physicians.

- Strangulation by extra-long cables and hoses : To avoid entanglement, keep children clear of hoses.
- Choking caused by small parts being inhaled or swallowed : Identify any loose or detached small parts that may be an issue.
- Potential allergic reactions to accessible materials used in the equipment : Identify any rubber or latex that could be an issue.

1 Important Notes for Safe Use

- Contact Injuries : Check for any skin irritation due to prolonged contact with the equipment.
- Protection against strangulation or asphyxiation : Means shall be provided to control the risk of strangulation and asphyxiation of the patient and other to an acceptable level by routing wires or tubing, and using retention devices.
- To prevent the effects caused by pets, pests or children.
- To avoid the effects of degraded sensors or loosened electrodes, that can degrade performance or cause other problems.

EMC notices

1.4.3 EMC Compliance Statement

Use of accessories and/or cables other than those specified or provided by the manufacturer of the CariChair Pump Model SR321 may negatively affect EMC performance.

- Use of the SR321 adjacent to or stacked with other RF communications equipment (including antennas) should be avoided and to be used no closer than 30cm to any part of the SR321, including cables specified by the manufacturer because it could result in improper operation.
- Medical Equipment Immunity Performance Criteria Unacceptable Operating Conditions:
  a. Component failures or error of display numerical value.
  b. Change or failure in programmable parameters if any.
  c. Initiation of any unintended operation or false audible indicator.
  d. Cessation, change or interruption of any intended operating mode.
- All necessary instructions for maintaining Basic Safety and Essential Performance with regards to ElectroMagnetic Disturbances for the expected service life.

1.4.4 Safety Caution Statement

- A warning indicating that replacement by inadequately trained personnel could result in hazard.
- Do not expose the Home Healthcare System to the sunlight or the dusty environment.
- Keep the Home Healthcare System out of reach of children.
- Skin irritation due to prolonged exposure to cushion or other accessories.
- No modification of this system is allowed.
- For cleaning & disinfection processes of ME equipment being performed by a Lay Operator shall be investigated by the Usability Engineering Process.
- An identifying marking provide referring to instruction in IFU for battery pack intended to be changed only by service personnel using a tool for replacement.
- A warning indication that replacement of Li-Ion battery pack if incorrect, the replacement would result in an unacceptable risk.
- Burn wound with severe exudate with the high risk of infection.

carilex®

1 Important Notes for Safe Use

Warranty terms and conditions

1.5 Warranty

The supplier shall ensure the safety and correct functioning of the CariChair System only under the following conditions:

- The device is used for the intended purpose and maintained only in accordance with the information provided by these Instructions for Use.
- Only original spare parts or accessories approved by the Manufacturer are used.
- No structural changes are made to the device.
- Inspections and maintenance work are carried out by certified personnel according to specified time intervals.

1.6 Safety Information and Symbols of These Instructions for Use

The safety instructions in this Instructions for Use are marked with symbols and key words. Signal words like WARNING, CAUTION or ATTENTION designate the classification of the risk.

1.6.1 Identification of Risks of Injury

WARNING

Means a hazardous situation, which may lead to death or severe injury if it is not avoided.

CAUTION

Means a hazardous situation, which may lead to minor or severe injury if it is not avoided.

1.6.2 Identification of Material Damage

ATTENTION!

Describes a situation that could lead to property damage if it is not avoided.

1.6.3 Identification of Additional Information

NOTE!

Means application tips and useful information.

1 Important Notes for Safe Use

1.6.4 Additional Symbols to the Safety Information

Additional symbols to the safety information are those listed below

	Manufacturer		Country and date of manufacture
	Authorized Representative in the European Community		Unique Device Identifier
	Catalogue Number		Model Number
	Serial Number		Medical Device
	Follow Instructions for Use		Caution (ISO 7000-0434A)
	Declaration of Conformity to MDR 2017/745		Type BF Applied Part
	Double Insulated, Class II Equipment		Waste Electrical and Electronic Equipment (WEEE Logo)
IP22	Protected against ingress of solid foreign objects ≥12.5mm diameter. Protected from water spray less than 15 degrees from vertical.		Consult Instructions for Use
			Machine Wash Warm : Max. 70°C
	Do Not Bleach		Machine Wash Warm : Max. 71°C
	Do Not Dry Clean		Do Not Iron
	Do Not Wash		Tumble Dry Medium - Gentle Cycle
	Humidity Low and High Limits		Hang Dry
	This Way Up		Fragile, Handle with Care
	Use No Hooks		Keep Away from Rain
	Temperature limit		

2 Security Norms

2.1 Correct Use of the System

(1) In order to guarantee the correct operation, ensure that the system is perfectly assembled and securely fasten the cushion with the specific straps to the chair frame. Make sure that the straps do not interfere with the cushion movements.
(2) Hang the control unit to the chair by using the carry bag or specific hanger hooks and do not place any objects onto the control unit.
(3) A single layer chair linen separates the patient from cushion to avoid direct contact with the cushion cover sheet. Ensure that the chair linen fits properly and not too tight to prevent from hammocking.
(4) Do not use the system in presence of live flame or sources of heat. The control unit extracts the air from the environment and despite its filter system, smoke can damage the internal components.
(5) After each use the system must be disinfected and sanitized to prevent cross-infection.
(6) Ascertain that the patient's weight does not exceed the weight allowed on the chair and the maximum therapeutic capacity of the anti-decubitus system.
(7) Never use the product if the power cable, plug of the control unit or power supply housing is defective, if the control unit housing is damaged, or if it is not functioning properly. Contact an authorized service technician for examination and repair.

Lay Operator Briefing Information

The equipment and accompanying Operation Manual should be simple to understand and straightforward to use for the Lay Operator, according to IEC60601-1-11 regulation, a Lay Operator needs to have at least 8 years of education. The healthcare professional should brief the Lay Operator on the use of the equipment and any precautions to be taken, including:

- Precautions to be taken in the event of changes in the performance of the equipment.
- Precautions to be taken regarding the exposure of the equipment to reasonably foreseeable environmental conditions.(e.g. magnetic and electromagnetic fields, external electrical influences, electrostatic discharge, variations in pressure etc.)
- Information about medicinal substances that the equipment is designed for, including any that the equipment is NOT designed for.
- Information about medicinal substances or blood products incorporated into the equipment as an essential part.
- The accuracy of equipment with a measuring function.

2 Security Norms

2.2 Advice

(1) DO NOT open or dismantle the control unit if you are not a qualified technician. In case of problems, get in touch with the authorized assistance service.
(2) Safety in the presence of inflammable anesthetic gases: the system is not AP/APG protected.
(3) Use of the present system does not exclude repositioning and changes of posture of the patient wherever possible.
(4) Environmental conditions for operating the Medical Electrical system:
Temperature: 5°C to 40°C
Humidity: 15% to 90%
Atmospheric pressure: 700 hPa to 1060 hPa
(5) The plug is used for disconnecting the device. Do not position the control unit in the way which will be difficult to disconnect.
(6) No modification of this system is allowed.
(7) CAUTION:
AVOID ELECTRIC SHOCK, DO NOT OPEN AIR PUMP!
(8) Not using genuine accessories, parts and materials not described in the Operation Manual.

CAUTION

- Ensure no points, springs protruding from cushion which may pierce the air cells.
- DO NOT expose the CariChair System to the sunlight or the dusty environment.
- May experience potential allergic reactions to accessible material used in the CariChair System.
- Keep the CariChair System out of reach of children.
- Skin irritation due to prolonged exposure to mattress or other accessories.

3 Delivery and Storage

3.1 Packaging

CariChair System is supplied in sturdy cardboard packaging. All packaging materials are recyclable and can be separated.

3.2 Delivery Control

Check immediately after delivery of the device:

- The completeness of the delivery
- The delivery status of the device

CariChair System is delivered with the following components:

- Control unit
  Including: Control unit x 1
  Power adapter x 1
  Instruction for Use x 1
- Cushion
  Including: Cushion x 1
  Cover sheet x 1
- Optional accessory
  Including: Carry bag
  Hanger hooks

If the delivery is incomplete or the device and/or the packaging are damaged, in particular in the case of damage caused by moisture or water, you should promptly inform the carrier, as well as the supplier.

3.3 Storage and Transport

Recommended environmental conditions for storage and transport:

- Ambient temperature: -25°C to 70°C
- Relative humidity: 0% to 90%

⚠ ATTENTION

Storage of the cushion

- Always roll the cushion, do not fold or bend.
- Do not put or store with any sharp instruments or tool with sharp tips.

For long-term storage the control unit should be covered with a dust protector.

4 Device and Functional Description

4.1 Device Description

Principle of operation

The control unit generates air by compressor then the solenoid valve delivers the air into the cushion through air tube inside the control unit then pass through the air outlet.

The cushion will perform the operation status base on the selected operation mode by control panel. The air tube from cushion connects to the air outlet to receive the air from control unit then distribute the air to air cell by manifold.

Control unit

The control unit is used as the housing for the air source as well as control features:

- A control panel with buttons and lights to adjust the air system.
- A receptacle for an air filter on the rear panel.
- Two air outlets for quick coupling.
- A power adapter with a plug to connect the device into a wall socket.

Cushion

The cushion consists of multiple set of air cells which work in dynamic or static mode to relief and redistribute pressure.

carilex®

4 Device and Functional Description

4.2 Operation and Functional Test

To perform a functional test and at the initial start-up of the control unit take the following actions:

- Place the cushion on the chair. Both air hoses must be able to move easily without any kinks or pressure points.
- Push in the quick coupling of the cushion firmly into the air outlet of the control unit.
- To disconnect cushion from control unit, simply just press the buttons on the coupling and pull.
- For function test details, please refer to Chapter 5 Features, and make sure all functions work normally before use.

Turning on the control unit

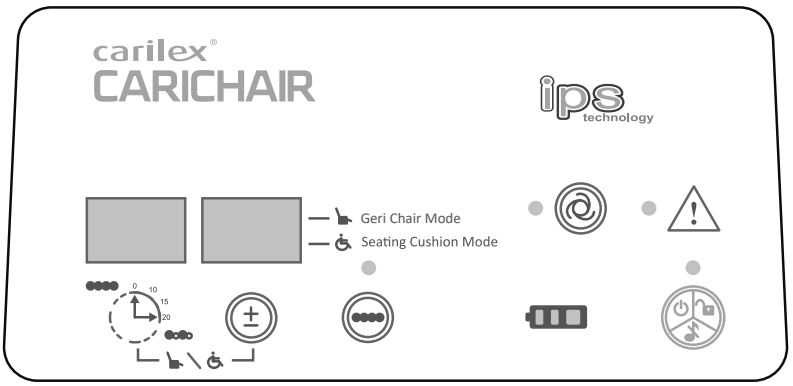
Electric shock!

Touching live parts can result in a death or serious injury by an electric shock. Check for damage of the power adapter of the control unit before connecting.

- Damaged components may not be used for connection!

5 Features

5.1 Control Panel



Power/Mute/Unlock

This button would work for three functions. For Power function, user could press for 3 seconds to power on or off the control unit. When the control unit power on, the green LED will light.

For Mute function, user may press this button to turn off the audible indicator. After mute, the audible indicator will not re-start again and only have visual LED to notify the caregivers until the problem is solved.

When there is no operation after 3 minutes, system will automatically lock the control panel. All buttons will be locked except Power/Mute/Unlock button which allows user to mute audible indicator. Simply press and hold this button for 3 seconds to release panel foil from locking.

ATTENTION:
Using incorrect settings can cause serious damage to the system.

Operating Modes

The CariChair System works with Geri Chair ( ) and Cushion ( ). Therefore, it is important that the user identifies and selects the correct setting on the control unit.

The system default is Geri Chair. Just press the comfort level button and the cycle time button at the same time for at least 3 seconds, the display will change from to indicating that the device has switched from Geri Chair mode to Cushion mode.

Comfort Level Setting

Press the button to adjust the comfort setting from 1 to 5 according to each individual. The comfort setting scale is indicative only. If the cushion feels too soft or too firm, please adjust the comfort setting to suit each patient's needs.

5 Features

Cycle Time for Dynamic Mode

Dynamic Mode is a therapy mode in which air cells continuously alternate in an A-B-A-B (odd and even number of air cell sets) pattern to relief pressure and increase blood flow of the patient tissue. Press the button to select cycle time and the number indicators correspond to the time for 1 complete cycle. Three cycle times for Dynamic Mode can be selected: 10, 15 and 20 minutes.

Static Mode

Static Mode is the therapy in which all air cells maintain constant pressure support and maximize patient's contact area to redistribute pressure. After pressing this button, the green LED will light up and the cycle time will display 0 to indicate Static Mode is in operation.

Indicator LED

This yellow LED is to indicate that the cushion has insufficient pressure. There will be both audible beeping and visual flashing LED indicate. User may press mute button to turn off the audible indicate. If mute manually, the audible indicate will not re-start again, to avoid acoustic pollution, and only have visual LED flashing to notify the caregivers until the problem is solved. If the control unit is in low pressure situation over 15 minutes, the control unit will automatically shut down.

Pressure monitoring LED (IPS)

CariChair System is features with an intelligent pressure sensing technology which could monitor the cushion's pressure 24 hours to achieve optimal pressure and to ensure maximum pressure relief. The yellow LED indicates that the system is monitoring the cushion's pressure.

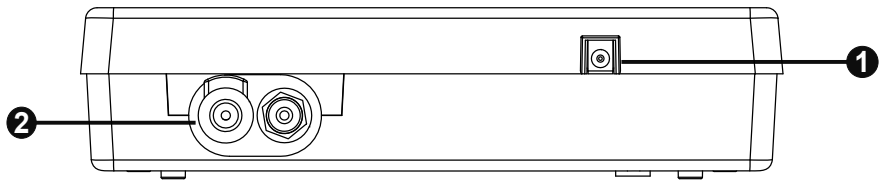
Battery indicator

The green LED bar indicates the battery level or charging status. If the control unit is low on power, the yellow LED will light up to indicate that the control unit needs to charge for 6.5 to 8 hours to battery full. The battery failure will be triggered when yellow LED is flashing with audible indicator for 5 times, and then the system will shut down automatically.

The battery is not user replaceable, please contact your local authorized distributor for assistance.

5 Features

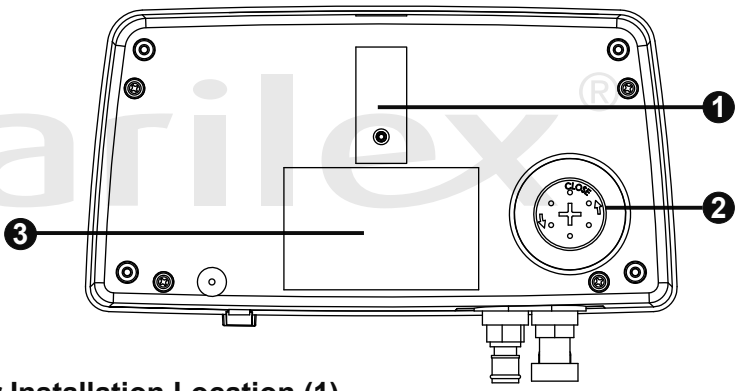
5.2 Side Panel



DC-In Jack (1)
Insert power adapter firmly into this DC-In Jack for charging.

Air Outlet (2)
Quick couplings enable a rapid and firm connection between the cushion and the control unit.

5.3 Rear Panel



Hanger Installation Location (1)
The user can install Carilex optional hangers to hook the control unit on almost any foot board.

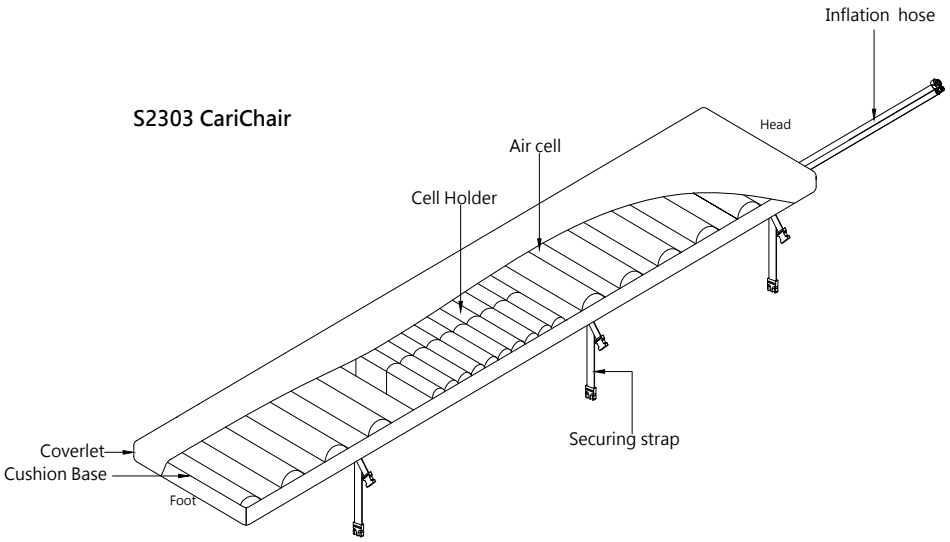
Air Filter and Filter Cap(2)
We recommend inspecting and cleaning this filter monthly or more often, depending on the environment the unit is being used. Failure to keep the filter clean will result in shorter life span of the unit and/or unit failure. When replacing, be sure to use Carilex standard filter to optimize the performance of the control unit.

Label (3)
This label includes all the information for medical device and safety requirements.

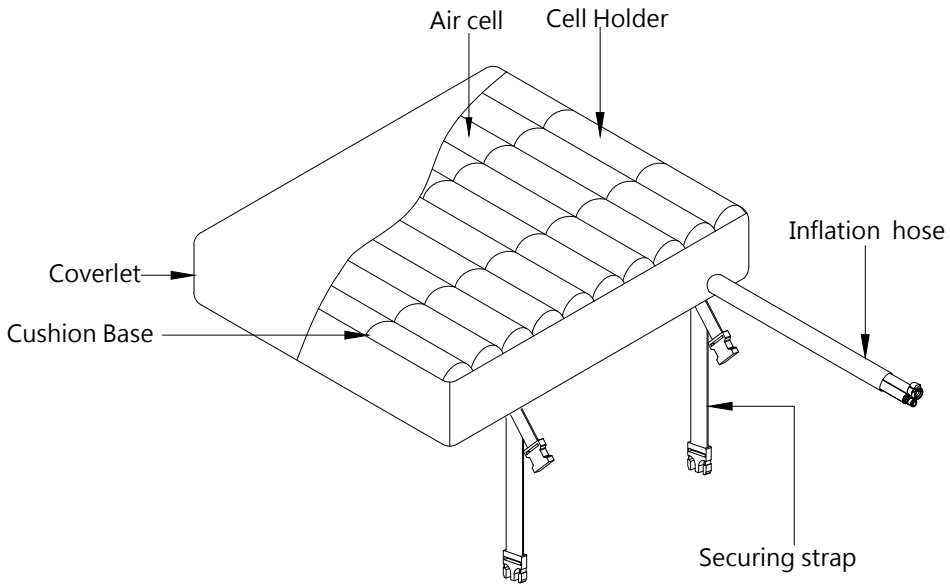
5 Features

5.4 Cushion Diagram

S2303 CariChair



S2303 MobiCare Plus



6 System Installation, Operation

6.1 System Installation

(1) Remove the existing item from the geriatric chair, recliner chair, or wheelchair.

(2) Installation mistake with cushion that will lead loss of functionality, to increase the risk associated with pressure ulcers. Please install the system properly.

(3) Place the cushion on the chair. Secure the cushion using the straps making sure the chair's functions and movements are not restricted before proceeding to the next step.

(4) CAUTION!

Insufficient distance between the top surface of the cushion and the top of the side rails that may increase the risk associated with fall. Do not install the cushion that exceeding the allowed height of the chair.

(5) Secure the control unit to the back of the chair using the carrying bag or with the help of the hooks.

(6) Push the quick coupling of the cushion firmly into the air outlet of the control unit.

(7) Insert the power adapter into a wall outlet. Ensure that the power adapter is not in the way of the operators and the movement of the wheelchair.

(8) Choose the correct setting according to type of cushion on the control panel. Refer to Section 5.1 to identify the correct cushion system.

(9) CAUTION!

Different cushion systems have different settings. Using the wrong setting may cause severe system failure and risk of harming patient.

(10) CAUTION!

Contact with damaged power cable that may increase the risk associated with an electric shock or burn. Please arrange power cable as well and then fix it, to avoid that the power cable being trapped between the moving parts of the chair and then leading a damage.

6 System Installation, Operation

6.2 Operation

(1) Turn the control unit on and allow for the cushion to fully inflate. Position the patient on the cushion. Select the appropriate comfort setting on the control panel. If the cushion seems too soft or too rigid, please adjust the comfort setting to conform to each patient's requirements. Please adjust the setting one click at a time, and allow time for the cushion to stabilize at each setting before adjusting again.

(2) Ensure to select the appropriate therapy mode and cycle time, according to the physician's decision.

(3) WARNING!

Do not leave a patient unattended on the cushion surface with the safety side rails in the down position. When leaving a patient, secure the safety side rails in the up position. Make sure the safety side rails are high enough to properly protect the patient when the cushion is fully inflated.

(4) WARNING!

Alignment of the chair, safety sides and the cushion should leave no gap wide enough to entrap a patient's head or body, or to allow egress to occur in a hazardous manner where entanglement with the mains power cable may result. Care should be exercised to prevent occurrence of gaps by compression or movement of the cushion. Choking or serious injury may occur.

(5) Always turn off the control unit by using the power button. Failure to do so may cause machine malfunction.

7 Application

Mandatory chair frame size

It is mandatory to select proper chair frame size for the CariChair System.
Do not operate the CariChair System without safe installing of the cushion onto the chair. Make sure that the fixing of the cushion does not impede the adjustment mechanism of the chair.

7.1 Preparing the Application

Fix the cushion

(1) Place cushion on the wheelchair.
(2) Fix the cushion with the straps onto the chair frame.
(3) Hang the control unit with carry bag or hanger hooks on to the chair and check that the fixing is stable.
(4) Connect the quick coupling of the cushion to the air outlet of the control unit. Make sure that the air hoses are routed without bending, kinks or pressure points.

7.1.1 Inflating the Cushion

In preparation for the patient, the air cells should be inflated in advance by the control unit.

7.1.2 Patients Positioning

Carry out the positioning of the patient in accordance with the local patient care guidance.

- The patient should be centered on the cushion, with equal distance from the left and right cushion's sides.

CAUTION

Pressure points on protective body areas!

During the application of the CariChair System, the skin of the patient must be regularly checked by medical and nursing staff and caregivers.

CAUTION

Loose power adapter may cause tripping and serious injury.

8 Cleaning and Disinfection

Contact with pollutant that may increase the risk associated with the infection. In order to prevent cross-contamination, the cleaning and disinfection of the entire the CariChair System must be carried out between uses with different patients, and the pollutant should be disposed according to the local or facility guidelines for handling infected or bio-hazardous materials.

WARNING

Electric shock!

Check electrical components

Water has a high electrical conductivity. Contact with liquid under voltage can lead to a fatal electric shock. For the cleaning and disinfection operations:

- Turn off the control unit.
- Unplug the power adapter from the power socket.

CAUTION

Health hazard!

The contact with contaminated cleaning fluids can cause infections. Disinfectants can contain harmful substances.

Please follow the Instructions for Use of the manufacturer of the disinfectant and the hygiene of the operator during the cleaning and disinfection. Wear personal protective equipment:

- Safety glasses.
- Protective gloves.
- Mouth and nose protection.

ATTENTION

Incompatible cleaning agents!

The components of the CariChair System are made of thermoplastic polymers. Solvents can spoil synthetic material and coating. Strong acids or alkalis can cause embrittlement.

Cleaning the control unit, the cushion (with air cells) and the cover sheet:

- Do not use hydrocarbon solvents, detergents containing alcohol or acids or alkalis.
- Do not use any abrasive cleaning materials.

Incompatible disinfectants

Cleaning the control unit, the cushion (with air cells) and the cover sheet:

- Only use disinfectants without chlorides, halides.
- Do not use disinfectants containing gasoline, paint thinner, alkaline, acid, alcohol, or aldehyde (e.g. ethanol, propanol) in order to avoid the embrittlement of thermoplastic materials.

8 Cleaning and Disinfection

8.1 Cleaning

When using the CariChair System in non-clinical areas the users or appropriately trained cleaning personnel can carry out the cleaning of the device.

⚠ WARNING

Remove the power adapter from the wall socket before cleaning of the control unit. Do not spray any cleaning liquid directly onto the control unit.

Cleaning of the control unit

Cleaning of the Surfaces of the Control Unit

(1) Turn off the control unit and unplug the power adapter from the socket.
(2) Wet a soft cloth with water, mix it with commercially available washing-up liquid.
(3) Wipe off dirt and dust accumulations.
(4) Then dry the surfaces with a clean soft cloth.

Cleaning of the cover sheet

Cleaning the Cover Sheet

The cover sheet can be easily removed by derailing the zipper. The cleaning of the cover sheet can be done by using any of the available disinfectants at their usual concentration. At the end, rinse disinfectant off thoroughly with water and leave to dry. Avoid detergents containing phenols or other corrosive substances. Ensure that the cushion and the cover sheet are dry before new use. The hygiene regulations of institution are to be followed in the institutional care environments.

(1) Wet a soft cloth moderately with water, mix it with commercially available washing-up liquid. Wipe off dirt.
(2) Wipe cleaned areas with soft dry cloth.
(3) If heavily soiled the cover sheet can be washed in the washing machine using commercially available detergent.
(4) Washing temperature please follow the instruction on the washing care label.
(5) Dry the cover sheet thoroughly after washing. Make sure that no moisture remains in folds or creases.
(6) Do not put the cover sheet in the dryer or near sources of heat.

8 Cleaning and Disinfection

If the cover sheet is soiled or loses its water-resistant properties, it must be replaced.
Any resulting damage of the cushion caused by a spoiled cover sheet will be not covered by the warranty.
Please follow the hygiene control regulations of your local authority.

WARNING

If the cushion cover sheet is not securely fixed onto the cushion, the air cells and cover sheet movement may be unstable and may cause risk of patient injury.

ATTENTION

Unpermitted after-treatment of the cover sheet!
As a follow-up treatment of the cover sheet:

- Do not bleach.
- Do not iron.
- Do not dry clean.

8.2 Disinfection

The operator must be notified about which measures apply to the CariChair System and the actual hygiene directives for disinfection. The disinfection of the CariChair System or parts of it can be performed only by trained personnel, who are familiar with the hygiene requirements of the institution.

Disinfection procedure

Disinfection Procedures

Please follow the procedure required by your local health authority.

CAUTION

For repair, please contact your local distributor.
Please follow the hygiene control regulations of your local authority.

9 Care and Maintenance

9.1 Inspection

The safe operating condition of the CariChair System has to be checked at each use by the operator or during use by the patients and at least once in a year in particular with regards to the following:

- Function of the keys of the control unit.
- Condition of the air hoses and quick coupling.
- Condition of the air cells.
- Condition of the cover sheet.

9.2 Maintenance

The air filter should be cleaned regularly. It should be checked often, and depending on the usage environment may require to be changed often.

(1) Power off the control unit and unplug the power adapter from the socket.
(2) Remove air filter from the rear panel by opening the air filter cap and clean or replace with a new filter.
(3) The expected service life to CariChair System and the parts or accessories shipped with the ME equipment is 2 years.
(4) To prevent an unacceptable risk, all information necessary for correct replacement of detachable or interchangeable parts should be available and replaced by qualified service personnel only.
(5) Following storage and/or transport of the device, please allow the device to sit idle at room temperature for at least 3 hours before powering on.

⚠ CAUTION

The condition of the cushion and control unit should be checked regularly. If damages and/or wears are found, such as broken quick coupling on the control unit, broken or deform air cells, or broken zipper, please contact your local authorized service center for repair or replacement of damaged items.

10 Troubleshooting

Problem	Control Procedure	Possible Solution
1.) The control unit is working but the cushion is not inflating.	1.1) Verify that air flows liberally across the tubes and the cushion manifold. Check if there are any cuts, blockage or breakages.	1.1) It may be necessary to move the tubes or the manifold if they are kinked or twisted. In case of cuts or rips, replace the air cells or air hoses.
	1.2) Verify that the quick coupling is correctly connected to the air outlets of control unit.	1.2) Firmly connect the quick coupling.
2.) The patient sinks into the cushion.	2.1) Check the comfort setting on the control unit.	2.1) Increase the patient's comfort setting until the correct support pressure is achieved.
	2.2) Check for any abnormal air loss from the cushion.	2.2) Replace the components that are abnormally losing air with an authentic replacement part.
	2.3) Check the air filter.	2.3) Clean or replace the air filter.
3.) The control unit cannot power on.	3.1) Verify that the power adapter is plug into the proper socket.	3.1) Insert the power adapter of control unit into an appropriate socket and turn the power on.
	3.2) Verify that the power adapter is properly connected to the control unit.	3.2) Insert the power adapter into the control unit and turn the power on.
	3.3) Verify that the power adapter is not damaged.	3.3) Replace with a functioning power adapter.
	3.4) Check for the battery level of the control unit by pressing Power/Mute/ Unlock for 3 seconds.	3.4) If show low battery with yellow LED, connect the power adapter to the control unit to charge for 8 hours.
	3.5) The control unit is not responding to the control procedures listed above.	3.5) Contact the authorized distributor for technical service.

If the troubleshooting procedures do not return the system to normal performance, stop using the system immediately and contact the authorized distributor for technical service.

11 Technical Data

The CariChair System is suitable for continuous operation.

Control unit

Model SR321
Dimensions(W x H x D).....24.5 x 15.5 x 6.1cm
Weight.....0.92Kg
Nominal Voltage .....9.1 Vdc
Power Consumption .....23W max. (with charging)
.....7W max. (without charging)
Applied Part .....Type BF
IP Code IP22
This system is not AP / APG protected.

Power adapter

Model .....1)GlobTek Type GTM91120-3010.5-1.4-T2 or
.....2)Eljintek Type GMPU30UI-2
DC power cable length 4m
AC power input .....1)100-240Vac 50-60Hz 1.5A or
.....2)100-240Vac 50-60Hz or 50/60Hz 1.0A-0.6A
Electrical Class .....Class II

Internal Li-Ion Battery Pack

Model .....59H-0186-506-G or 59H-0186-508-G
Rated Capacity .....5400mAh or 6600mAh
Nominal Voltage 7.2Vdc

EMC & Safety Certified Standard
Safety: IEC/EN 60601-1_v3.2
ANSI/AAMI ES60601-1:2005+A1:2012
EMC: IEC/EN 60601-1-2_v4.0
HomeCare: IEC/EN 60601-1-11_v2.1

Cushion

Min. Patient Weight 30Kg
Max. Patient Weight 150Kg
Material of Air Cells.....Nylon with TPU lamination

The CariChair System must be decontaminated before disposal.
Disposal of old electrical and electronic equipment - valid in the European Union: WEEE Directive 2012/19/EU.

This symbol on the product or on its packaging indicates that this product should not be treated as household waste. Instead, this product should be taken to the appropriate place of disposal for the recycling of electrical waste and electronic equipment.

11 Technical Data

Device Item	S2303 CariChair	
Article number	S2303-2010	S2303-2020
Cushion size& Cover sheet size	50x180cm	45x45cm
Cover sheet material	TDX: Polyester tricot with PU lamination	
Cover sheet MVTR	500g/24H/M^2	
Cover sheet Wash Condition	Cover sheet need to be water repellent- 3000mm/ H_2O after 1.5Hrs*40 wash	
Base material	100%PVC with Webnet base	
Air cell material	Nylon+PU	
Air cell height/number	2” / 23 cell 3.5” / 10 cell	3.5” / 10 cell
Protection unit	N/A	
CPR Time	N/A	
Max Weight Capacity	150kg	
Weight of Cushion Set	2kg±0.5	2kg±0.5

12 Safety Precautions for Li-Ion Battery Pack

The following represents a typical, but non-exhasutive, list of good advice to be provided to the end-user.

1. Do not short-circuit a cell or battery. Do not store cells or batteries haphazardly in a box or drawer where they may short-circuit each other or be short-circuited by conductive materials. Do not dismantle, open, or shred secondary cells or batteries.
2. Do not remove a cell or battery from its original packaging until required for use.
3. Do not subject cells or batteries to mechanical shock.
4. In the event of a cell leaking, do not allow the liquid to come into contact with the skin or eyes. If contact has been made, wash the affected area with copious amounts of water and seek medical advice.
5. Do not mix cells of different manufacture, capacity, size or type within this medical device.
6. Seek medical advice immediately if a cell or battery has been swallowed.
7. Keep cells and batteries clean and dry.
8. Wipe the cell or battery terminals with a clean dry cloth if they become dirty.
9. Secondary cells and batteries need to be charged before use.
10. After extended periods of storage, it may be necessary to charge and discharge the cells or batteries several times to obtain maximum performance.
11. The Li-Ion Battery Pack should be charged at temperature between 10ºC and 45ºC.
12. The Li-Ion Battery Pack should be discharged at temperature between 10ºC and 60ºC.
13. Do not use any charger other than that specifically provided for use with the equipment.
14. Do not use any cell or battery which is not designed for use with the equipment.
15. Battery usage by children should be supervised.
16. Always purchase the battery recommended by the device manufacturer for the equipment.
17. Do not leave a battery on prolonged charge when not in use.
18. Use only the cell or battery in the application for which it was intended.
19. When possible, remove the battery from the equipment when not in use.
20. Dispose of properly.

13 EMC Declaration

Declaration of Conformity

For EN 60601-1-2 (4th Ed.)

Company Name:	**Carilex Medical, Inc.**
Company Address:	**No. 77, Keji 1st Rd, Guishan District, Taoyuan City (33383), Taiwan, R.O.C.**
Product Name:	**Air Pump**
Model No.:	**SR321**
Report Number:	**ETC 21-04-RBO-025**
Power Supply:	**1) 100-240Vac 50-60Hz or 50/60Hz…External AC Adapter 2) 7.2Vdc……...Internal Li-Ion Battery Pack**

Recommended separation distances between portable and mobile RF communications equipment and the ME equipment

The Air Pump is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the Air Pump can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Air Pump as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter m		
	150 kHz to 80 MHz $d=\left[\frac{3,5}{V_1}\right]\sqrt{P}$	80 MHz to 800 MHz $d=\left[\frac{3,5}{E_1}\right]\sqrt{P}$	800 MHz to 2.5 GHz $d=\left[\frac{7}{E_1}\right]\sqrt{P}$
0.01	0.1	0.1	0.2
0.1	0.4	0.4	0.7
1	1.2	1.2	2.3
10	3.7	3.7	7.4
100	11.7	11.7	23.3

Declaration – electromagnetic emissions

The Air Pump is intended for use in the electromagnetic environment specified below. The customer or the user of the Air Pump should assure that it is used in such an environment.

Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	The Air Pump uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The Air Pump is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/ Flicker emissions IEC 61000-3-3	Complies	

13 EMC Declaration

Declaration – electromagnetic emissions and immunity – for EQUIPMENT and SYSTEMS that are use in the professional healthcare facility environment or in the home healthcare environment

The Air Pump declaration – electromagnetic immunity

The Air Pump system is intended for use in the electromagnetic environment specified below.
The customer or the user of the Air Pump system should assure that it is used in such an environment.

Immunity test	IEC 60601 test level		Compliance level		Electromagnetic environment - guidance
Conducted RF IEC 61000-4-6	3 Vrms ; 6 Vrms 150 kHz to 80 MHz		3 Vrms ; 6 Vrms 150 kHz to 80 MHz		Portable and mobile RF communications equipment should be used no closer to any part of the EQUIPMENT or SYSTEM including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Interference may occur in the vicinity of equipment marked with the following symbol.
Radiated RF IEC 61000-4-3	3 V/m ; 10V/m 80 MHz – 2.7 GHz 80%		10V/m 80 MHz – 2.7 GHz 80%		
Proximity fields from RF wireless Communications equipment IEC 61000-4-3	27 V/m	385 MHz	27 V/m	385 MHz	
	28 V/m	450 MHz	28 V/m	450 MHz	
	9 V/m	710 MHz	9 V/m	710 MHz	
		745 MHz		745 MHz	
		780 MHz		780 MHz	
	28 V/m	810 MHz	28 V/m	810 MHz	
		870 MHz		870 MHz	
		930 MHz		930 MHz	
	28 V/m	1720 MHz	28 V/m	1720 MHz	
		1845 MHz		1845 MHz	
		1970 MHz		1970 MHz	
	28 V/m	2450 MHz	28 V/m	2450 MHz	
	9 V/m	5240 MHz	9 V/m	5240 MHz	
		5500 MHz		5500 MHz	
		5785 MHz		5785 MHz	

Declaration – electromagnetic immunity

The Air Pump system is intended for use in the electromagnetic environment specified below.
The customer or the user of the Air Pump system should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±8 kV contact ±2 kV , ±4 kV , ±8 kV , ±15 kV air	±8 kV contact ±2 kV , ±4 kV , ±8 kV , ±15 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	±2 kV for power supply lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±0.5 kV ±1 kV differential mode ±2 kV common mode	±0.5 kV ±1 kV differential mode ±2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	0 % U_T ; 0 , 5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° 0 % U_T ; 1 cycle and 70 % U_T ; 25/30 cycle Single phase: at 0°	0 % U_T ; 0 , 5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° 0 % U_T ; 1 cycle and 70 % U_T ; 25/30 cycle Single phase: at 0°	Mains power quality should be that of a typical commercial or hospital environment. If the user of the EQUIPMENT or SYSTEM requires continued operation during power mains interruptions, it is recommended that the EQUIPMENT or SYSTEM be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	30 A/m	30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

carilex®

Document no.: 6EG-IS2303-PEN0115 ; Date of issue: 2025-08-19