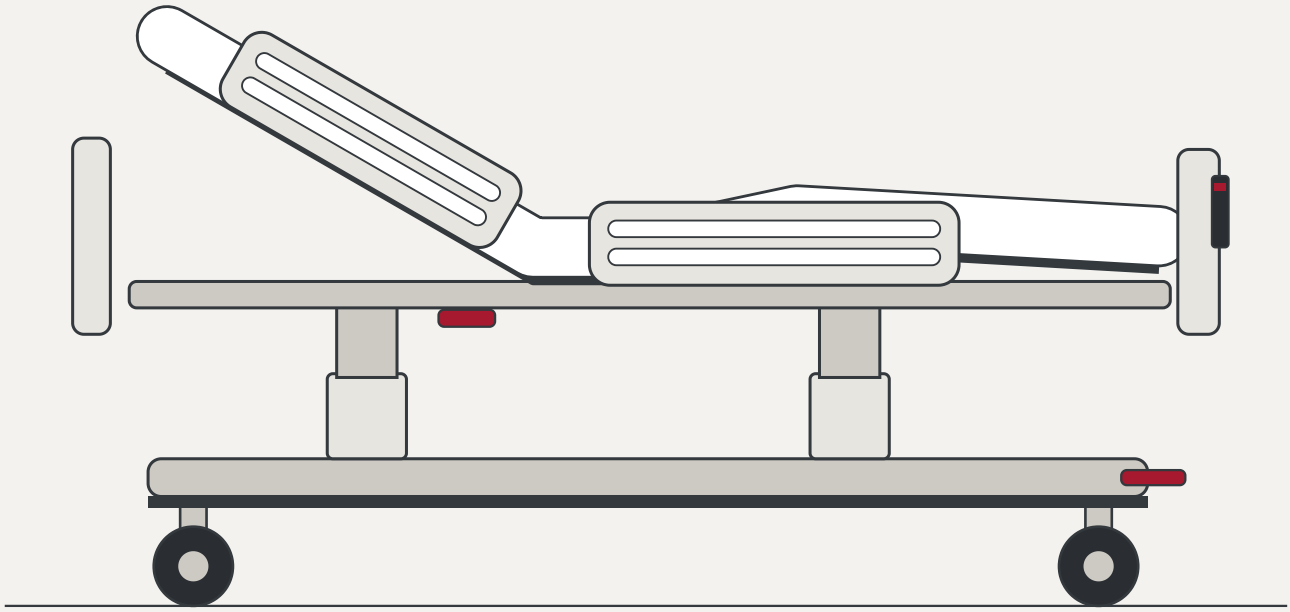
VAN ROON



INSTRUCTIONS FOR USE

# VR-7 XW

bariatric intensive-care bed

VRM-IFU-0741-EN-GB · Revision C · 19 May 2025

English · United Kingdom and Ireland

ABOUT THIS EDITION

## Manufacturer

Van Roon Medische Techniek B.V.
Leiden, the Netherlands

## UK Responsible Person, importer and distributor in the United Kingdom and Ireland

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## Revision history

| Revision | Date | Changes |
|---|---|---|
| A | 21 October 2024 | First edition. |
| B | 13 January 2025 | Drive assist added (section 7.14). |
| C | 19 May 2025 | Battery charge profile (section 7.15). |

These instructions apply to VR-7 XW beds with package version 2025.1 or later. The package version is shown under Settings › About this bed. If your bed runs an earlier package, some screens may differ.

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# 1 About these instructions

Read these instructions before using the VR-7 XW, and keep them with the bed or where the staff who use it can find them. They are for nurses, healthcare assistants, porters and other staff who use, move and clean the bed, and for the engineers who look after it day to day.

Service and repair work beyond what is described here must only be done by Van Roon engineers or by engineers who hold a current Level 2 certificate for the VR-7 XW.

## Safety notices in these instructions

**WARNING**
A hazard that could result in death or serious injury if not avoided.

**CAUTION**
A hazard that could result in minor injury, or damage to the bed or other property, if not avoided.

**NOTE**
Information that helps you use the bed correctly.

Names of controls are printed in **bold**. Messages on the footboard panel are printed in CAPITALS.

# 2 Intended use

## Intended purpose

The VR-7 XW is a powered hospital bed intended to support and position adult patients in intensive-care units and other critical-care areas, and to move them within the hospital. It is intended to be used with a mattress that meets the requirements in section 12.

## Patients

Adults with a height of 146 cm or more, a weight of 40 kg or more and a body mass index of 17 or more, up to a patient weight of 270 kg. The VR-7 XW is intended in particular for patients whose weight or size makes a standard bed unsuitable.

## Users

Healthcare professionals trained in the use of the bed. Patients may use the patient handset and the side rail controls on the patient side if a healthcare professional has decided that it is safe for them to do so.

## Environment

Application environments 1 (intensive and critical care), 2 (acute care) and 3 (long-term care in a medical area) as defined in IEC 60601-2-52. The bed is not intended for use in the home, in vehicles or outdoors.

## Contraindications

None known. Patients who do not meet the criteria above, including children, may only be cared for in the bed after a documented clinical risk assessment, with the side rail gaps assessed for the individual patient.

## Expected service life

Ten years from first use, if the bed is maintained as described in section 10.

# 3 Safety information

## General

**WARNING**
Do not exceed the safe working load of 320 kg (patient, mattress and accessories). The safe working load includes the patient, the mattress and every accessory fitted to the bed.

**WARNING**
Before moving any part of the bed, check that no person, limb, equipment or bedding can be trapped by the movement, including under the platform and between the platform and the base frame.

**WARNING**
Leave the bed at its lowest height, with the brakes applied, whenever the patient is unattended, unless a clinical reason requires otherwise.

**WARNING**
Use the lockout functions to prevent a patient from operating functions that could harm them, particularly if the patient is confused, sedated or a child.

**WARNING**
Do not modify the bed. Use only accessories and spare parts supplied by Van Roon.

## Side rails and entrapment

**WARNING**
Side rails are not a restraint. Assess each patient's risk of falling and of entrapment before deciding to use the side rails, and record the decision.

**WARNING**
Side rails are designed for the mattresses listed in section 12. A thicker mattress reduces the effective height of the rails above the mattress; a thinner or softer mattress can increase the gaps between the rail and the mattress. Check the rail height above the compressed mattress is at least 220 mm.

**WARNING**
After raising a side rail, check by hand that it is locked by pulling it gently towards you.

## Electrical

**WARNING**
Connect the bed only to an earthed mains socket. Do not use extension leads or multi-way adaptors.

**WARNING**
Route the mains lead so that it cannot be crushed by the bed or run over by the castors. Unplug the bed and stow the lead on its hook before moving the bed.

**CAUTION**
Do not use the bed if the mains lead, plug, handsets or their cables are damaged.

## Emergency functions

**WARNING**
Make sure every member of staff who may care for a patient in the bed knows where the red CPR release handles are and how to use them. Check them at the start of every shift.

**WARNING**
In a cardiac arrest, the mechanical CPR release works without power. Do not wait for the electric CPR function if it does not respond at once.

## Oxygen and other gases

**WARNING**
Do not use the bed in an oxygen tent or in an oxygen-enriched atmosphere. Keep oxygen cylinders in the holder (VR7-0430) and away from the controller housing.

## Moving the bed

**CAUTION**
Push the bed from the head or foot end, not from the side rails, the IV poles or the monitor support.

**CAUTION**
Do not move the bed across slopes steeper than 6°, or over steps or thresholds higher than 20 mm.

**WARNING**
Moving a VR-7 XW with a patient needs at least two staff, or one with the drive assist.

## Battery

**CAUTION**
Use only Van Roon battery packs. After fitting a battery pack of a different kind from the one removed, set the battery charge profile as described in section 7.15.

# 4 Description

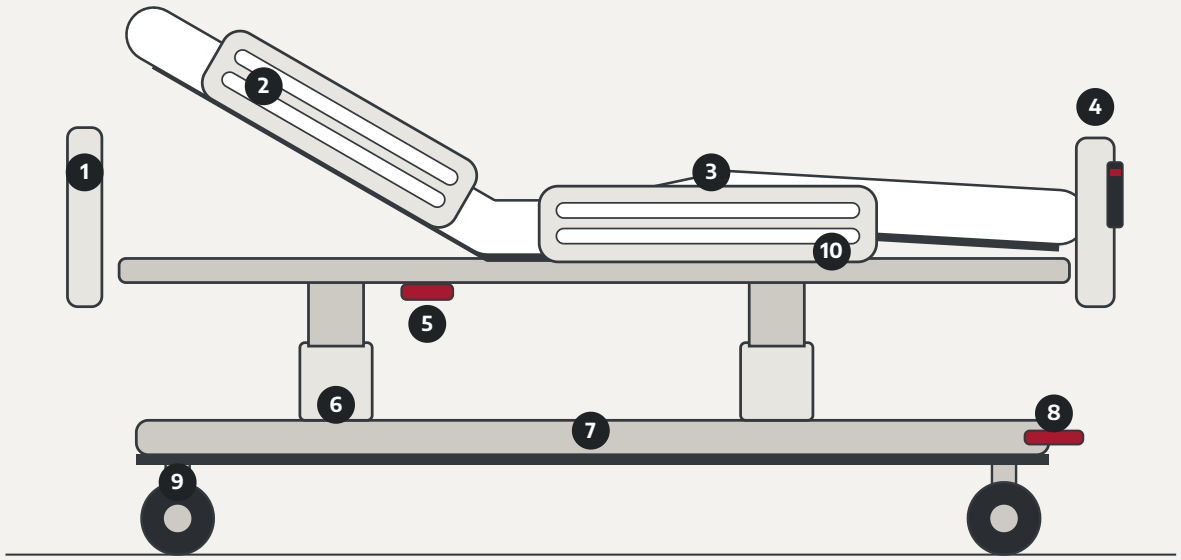



Figure 1. VR-7 XW, side view

1. Head board (removable)
2. Head-end side rail, moves with the backrest
3. Foot-end side rail
4. Foot board with the footboard panel
5. CPR release handle (red), both sides
6. Lifting columns
7. Base frame and controller housing
8. Brake and steering pedal, four corners
9. Castors
10. Mattress platform, four sections

## Labels on the bed

The rating label is on the base frame at the foot end, under the foot board. It gives the model, serial number, year of manufacture, electrical rating, safe working load and maximum patient weight. The serial number begins with the model and year: for example, XA24 is a VR-7 XW made in 2024.

| Symbol | Meaning |
|---|---|
| ! | Caution: read the instructions for use |
| MD | Medical device |
| SN | Serial number |
| REF | Catalogue number |
| UDI | Unique device identifier |
| IPX4 | Protected against splashing water |
| SWL | Safe working load, 320 kg (patient, mattress and accessories) |

| Symbol | Meaning |
|---|---|
| kg max | Maximum patient weight, 270 kg |
| B | Type B applied part |
| AE | Adult patients only (see section 2) |
| WEEE | Do not dispose of with household waste (see section 14) |
| CPR | CPR release handle (red) |

# 5 Before first use

New beds are delivered, assembled and tested by Van Roon. Before the bed is used for the first time:

1. Check that the bed has been entered on the hospital's asset register with its serial number.
2. Fit the mattress and check that it is retained by the mattress retainers at the head and foot.
3. Connect the bed to the mains and check that the footboard panel shows the battery charging. Charge the battery for at least eight hours before using the bed on battery.
4. Check every function described in section 7, including the CPR release on both sides.
5. Zero the scale with the mattress and any accessories fitted, then set the language and units under Settings.
6. Make sure the staff who will use the bed have been trained.

> **NOTE**
> Clinical training is given by Van Roon's clinical education team when beds are delivered. A quick reference card for nursing staff is available.

# 6 Controls

## Footboard panel

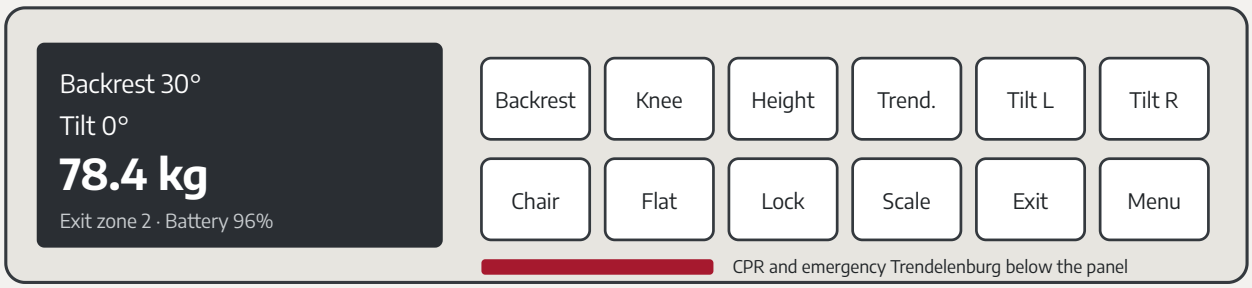



Figure 2. The footboard panel

The footboard panel is the main control of the bed. Press **Lock** to unlock it; it locks itself again after 60 seconds without use. The display shows the backrest angle, lateral tilt, the patient's weight, the patient-exit detection zone and the state of the battery.

The buttons for CPR and emergency Trendelenburg are below the panel, behind a hinged red cover. They work whether the panel is locked or not.

## Side rail controls

Each head-end side rail has controls on its outer face, for staff, and on its inner face, for the patient. The outer controls include emergency Trendelenburg. The inner controls can be locked from the footboard panel.

## Handsets

The nurse handset hangs on the foot board or a side rail and gives all movements. The patient handset gives backrest, knee and height, and can be locked function by function.

## Lockouts

From the footboard panel, choose **Lock** › **Functions** to lock individual movements on the patient controls. Locked functions show a padlock on the panel. Lockouts do not affect the emergency functions.

# 7 Using the bed

## 7.1 Brakes and steering

Press the pedal at any corner down fully to apply the brakes on all castors. Lift it to the middle position to release them; lift it fully to set steering, which locks the castor at the foot end on the patient's right in line with the bed. A red indicator on the base frame shows when the brakes are off, and the footboard panel shows CHECK BRAKE if the bed is left unbraked with the mains connected.

## 7.2 Height

The platform moves between 450 to 850 mm measured without a mattress. Work at a height that suits the task, and leave the bed at its lowest position when the patient is unattended.

## 7.3 Backrest

The backrest moves from 0 to 70°. Its angle is shown on the footboard panel and on an indicator on each head-end side rail. A short tone sounds as the backrest passes 30° in either direction.

## 7.4 Knee and leg sections

The knee section rises with the backrest (auto-contour) to limit the patient sliding down the bed. It can also be moved on its own.

## 7.5 Trendelenburg and reverse Trendelenburg

The platform tilts up to 14° head down or head up. Hold the button until the tilt you need is reached.

## 7.6 Lateral tilt



The platform tilts up to 20° to either side. Tilt stops at 12° unless both side rails on the low side are raised and locked. To tilt beyond 12°, raise the rails and press the tilt button again.

**WARNING**

Before tilting, make sure lines, tubes and drains are long enough and secured, and that the patient is positioned centrally.

## 7.7 Chair position



Press and hold **Chair**. The backrest rises, the knee section rises and the leg section lowers, and the platform tilts head up. Release the button to stop. Press **Flat** to return to a flat platform.

## 7.8 CPR



**Mechanical CPR release.** Pull either red handle at the side of the backrest. The backrest lowers to flat in under twelve seconds without power. Guide it down with your other hand.

**Electric CPR.** Lift the red cover below the footboard panel and press **CPR**. The backrest goes flat, the platform levels from any tilt and lowers to a working height.

**WARNING**
Keep hands and objects clear of the space below the backrest while it lowers.

### 7.9 Emergency Trendelenburg

Lift the red cover below the footboard panel, or use the button on the outer face of either head-end side rail, and hold **Emergency Trendelenburg**. The platform tilts to 14° head down for as long as the button is held.

### 7.10 Side rails

To raise a rail, lift it by its top edge until it locks. To lower it, hold the top edge, pull the release lever under the rail towards you and guide the rail down. Each rail can be lowered independently.

### 7.11 Platform width

The platform can be set to 1,000 mm or 900 mm. To narrow it, remove the width extension cushions, pull the release knob on each width extension and fold the extension under the platform until it clicks. Patient-exit detection adjusts itself to the width.

### 7.12 Weighing

With the patient lying still and nothing touching the bed, press **Scale**. The weight is shown after about five seconds and stored with the date and time. The last 30 weighings are shown under **Scale** › **Trend**.

To add or remove an accessory without changing the weight shown, press **Scale** › **Tare** before and after the change.

**WARNING**
If the weight will be used to calculate a drug dose, check that the scale was zeroed with the bed empty and that nothing is resting on or against the bed.

### 7.13 Patient-exit detection

Choose a zone: zone 1 alarms when the patient moves towards the edge of the bed, zone 2 when the patient sits up on the edge, and zone 3 when weight leaves the bed. The alarm sounds at the bed and, if the bed is connected, on the ward's nurse call system.

**NOTE**
Patient-exit detection is an aid. It does not replace observation of patients at risk of falling.

### 7.14 Moving the bed and drive assist

Unplug the bed and hang the mains lead on its hook. Release the brakes and set steering. The bed keeps all its functions on battery, so it can be positioned for transfer at the destination. With drive assist fitted, hold the enabling switch on the handle at the head end and push the handle gently in the direction of travel; the speed is limited to 4 km/h.

### 7.15 Battery and charge profile

The battery charges whenever the bed is connected to the mains. A full charge takes about eight hours. The footboard panel shows BATTERY LOW when about 20% of the charge remains.

The bed must be told which kind of battery pack is fitted. After fitting a pack of a different kind from the one removed, choose Settings › Battery › Charge profile, enter the service code and choose **Lithium-ion** or **Lead-acid**. Check that the battery is shown charging, then zero the scale with the bed empty.

**CAUTION**
If a lithium-ion pack is used with the lead-acid profile, the scale can read high while the bed is charging.

# 8 Accessories

| Part number | Accessory | Notes |
|---|---|---|
| **VRX-0410** | IV pole, two-stage, heavy duty | Maximum load 15 kg |
| **VRX-0422** | Monitor support, head end | For monitors up to 9 kg |
| **VRX-0446** | Patient helper, 350 kg | Fits the head-end sockets |
| **VRX-0472** | Drive assist | Factory-fitted or retro-fit kit |
| **VR7-0480** | Remote diagnostics module | As VR-7 |
| **VR7-0502** | Nurse call cable, 2 m | State the hospital's connector type when ordering |
| **VRX-0530** | Width extension cushions, pair | For use with the platform at 1,000 mm |
| **VR7-0590** | Battery pack, 24 V lithium-ion | Fitted as standard |

**CAUTION**

Accessories count towards the safe working load. Fit IV poles and supports only in the sockets intended for them.

# 9 Cleaning and disinfection

Clean the bed between patients and whenever it is visibly soiled. The full method, and the list of agents tested by the manufacturer, is in VRM-DG-0005-UK, Cleaning and decontamination of VR-series beds and surfaces.

1. Disconnect the bed from the mains.
2. Remove the mattress and clean it separately.
3. Wipe the bed from the top down with a cloth moistened with detergent or an approved disinfectant. Do not spray liquid onto the bed.
4. Keep liquid out of the footboard panel, the handset connectors and the controller housing.
5. Dry all surfaces before reconnecting the bed.

> **CAUTION**
> Do not use phenolic disinfectants, solvents, abrasive pads, steam, pressure washers or automated bed washers.

# 10 Care and maintenance

## Daily checks

- The mains lead, plug and handset cables are undamaged.
- The battery indicator shows charging when the bed is connected.
- The side rails lock when raised.
- The brakes hold the bed.
- The red CPR handles are in place and not obstructed.

## Planned maintenance

The VR-7 XW needs planned maintenance every 12 months, including an electrical safety test, a check of every function, a load test of the side rails, a calibration check of the scale and a test of the battery. The footboard panel shows SERVICE DUE when the date set at the last visit has passed.

## Service

Report faults to the Van Roon service desk on 0808 157 0614 (from Ireland +44 113 496 0391), giving the serial number. Do not attempt repairs that are not described in these instructions.

# 11 Troubleshooting

| Message or symptom | Possible cause | What to do |
|---|---|---|
| Nothing works | Battery flat and mains disconnected | Connect to the mains. Use the mechanical CPR release if needed. |
| CHECK BRAKE | Brakes released with the mains connected | Apply the brakes. |
| BATTERY LOW | About 20% charge left | Connect the bed to the mains. |
| BATTERY FAULT | Pack faulty or not detected | Use the bed on mains only and call the service desk. |
| MOVEMENT STOPPED | Obstruction detected under the platform | Remove the obstruction, then move in the opposite direction. |
| TILT LIMITED | Low-side rails not raised | Raise and lock both rails on the low side. |
| OVERLOAD | Load above the safe working load | Remove accessories or equipment from the bed. |
| FUNCTION LOCKED | Lockout set from the footboard panel | Unlock under Lock › Functions. |
| SCALE NOT ZEROED | No zero since the last power-up or tare change | Zero the scale with the bed empty. |
| Weight seems wrong | Something touching the bed; tare not set; charge profile | See sections 7.12 and 7.15. |
| EXIT ALARM | Patient-exit detection triggered | Attend the patient. Press Exit to silence. |
| SERVICE DUE | Planned maintenance date passed | Book planned maintenance. |
| SURFACE ALARM | VR-A4 pump alarm | See the VR-A4 instructions for use. |
| CONTROLLER FAULT and a code | Internal fault | Note the code, take the bed out of use if movements are affected, and call the service desk. |

# 12 Technical data

## Dimensions

| | |
|---|---|
| **Overall length** | 2,260 mm (2,460 mm with the length extension) |
| **Overall width** | 1,160 mm with the platform at 1,000 mm; 1,060 mm with the platform at 900 mm |
| **Mattress platform** | 2,000 × 1,000 mm or 2,000 × 900 mm |
| **Platform height (without mattress)** | 450 to 850 mm |
| **Under-bed clearance** | 140 mm |
| **Weight of bed** | 238 kg without mattress and accessories |

## Positions

| | |
|---|---|
| **Backrest** | 0 to 70° |
| **Thigh section** | 0 to 30° |
| **Leg section** | 0 to −24° |
| **Trendelenburg and reverse Trendelenburg** | 14° each way |
| **Lateral tilt** | ±20°, stopped at 12° unless the low-side rails are raised |
| **One-touch positions** | Flat, cardiac chair, CPR, emergency Trendelenburg |

## Loads

| | |
|---|---|
| **Safe working load** | 320 kg (patient, mattress and accessories) |
| **Maximum patient weight** | 270 kg |
| **Side rail** | Split side rails, four sections, with width extension pieces |

## Weighing and patient-exit detection

| | |
|---|---|
| **Scale** | Integrated, four load cells; resolution 0.1 kg; accuracy ±0.6 kg from 20 to 320 kg |
| **Patient-exit detection** | Three zones; nurse call relay |

## Electrical

| | |
|---|---|
| **Supply** | 230 V AC, 50 Hz; maximum consumption 520 VA |
| **Protection** | Class I; type B applied part; IPX4 |
| **Battery** | 24 V lithium-ion pack |
| **Nurse call** | Interface for the hospital's nurse call system; connector to order |

## Mobility

| | |
|---|---|
| **Castors** | 150 mm twin-wheel, central braking and steering |
| **Drive assist** | Optional powered fifth wheel, 0 to 4 km/h, from a handle at the head end |

## Regulatory and service

| | |
|---|---|
| **Classification** | Medical device, Class I; CE and UKCA marked |

| | |
|---|---|
| **Standards** | IEC 60601-1, IEC 60601-1-2, IEC 60601-2-52 |
| **Expected service life** | 10 years |
| **Planned maintenance** | Every 12 months |
| **Manufacturer** | Van Roon Medische Techniek B.V., Leiden, the Netherlands |

## Environment

| | |
|---|---|
| **Operation** | +10 to +40 °C; 30 to 75% relative humidity; 700 to 1,060 hPa |
| **Storage and transport** | −10 to +50 °C; 20 to 90% relative humidity; 500 to 1,060 hPa |
| **Actuator duty cycle** | Intermittent: 2 minutes on, 18 minutes off |
| **Noise** | Below 55 dB(A) in movement |

## Mattresses

Use mattresses 2,000 mm long, 900 or 1,000 mm wide, 140 to 220 mm deep, such as the Van Roon VR-A4 or VR-F1. With any other mattress, check the side rail height and gaps as described in section 3.

# 13 Electromagnetic compatibility

The VR-7 XW needs special precautions regarding electromagnetic compatibility and must be installed and used according to the information in this section.

## Electromagnetic emissions

| Emissions test | Compliance | Guidance |
|---|---|---|
| RF emissions, CISPR 11 | Group 1 | The bed uses RF energy only for its internal function. Its RF emissions are very low and are not likely to cause interference in nearby electronic equipment. |
| RF emissions, CISPR 11 | Class A | Suitable for use in hospitals. It may not offer adequate protection to radio-frequency communication services in a residential environment. |
| Harmonic emissions, IEC 61000-3-2 | Class A | Suitable for connection to the public low-voltage supply in buildings used for healthcare. |
| Voltage fluctuations and flicker, IEC 61000-3-3 | Complies | |

## Electromagnetic immunity

| Immunity test | Test level | Compliance level |
|---|---|---|
| Electrostatic discharge, IEC 61000-4-2 | ±8 kV contact; ±2, ±4, ±8, ±15 kV air | As test level |
| Electrical fast transients, IEC 61000-4-4 | ±2 kV power lines; ±1 kV signal lines, 100 kHz | As test level |
| Surge, IEC 61000-4-5 | ±0.5, ±1 kV line to line; ±0.5, ±1, ±2 kV line to earth | As test level |
| Voltage dips, IEC 61000-4-11 | 0% $U_T$ for 0.5 cycle at 0°, 45°, 90°, 135°, 180°, 225°, 270°, 315°; 0% $U_T$ for 1 cycle; 70% $U_T$ for 25 cycles | As test level. The bed continues on battery during dips. |
| Voltage interruptions, IEC 61000-4-11 | 0% $U_T$ for 250 cycles | As test level |
| Power frequency magnetic field, IEC 61000-4-8 | 30 A/m, 50 Hz | As test level |
| Conducted RF, IEC 61000-4-6 | 3 V, 0.15 to 80 MHz; 6 V in ISM and amateur bands | As test level |
| Radiated RF, IEC 61000-4-3 | 3 V/m, 80 MHz to 2.7 GHz, 80% AM at 1 kHz | As test level |
| Proximity fields from RF wireless equipment, IEC 61000-4-3 | 9 to 28 V/m at the frequencies listed in the standard | As test level |

**WARNING**

Portable RF communications equipment, including antennas and mobile phones, should be used no closer than 30 cm to any part of the bed, including cables. Otherwise its performance could be degraded.

**WARNING**

Do not use the bed next to or stacked with other equipment. If this cannot be avoided, observe both to check that they work normally.

# 14 Disposal

At the end of its life the bed must be disposed of as waste electrical and electronic equipment. Van Roon Medical UK takes back old beds when it delivers new ones and can collect beds on their own; contact the service desk. Remove the battery pack and dispose of it separately. Clean and disinfect the bed before it is collected.

# 15 Contact

**United Kingdom and Ireland**
Van Roon Medical UK Ltd
Unit 3, Tarnfield Way
Morley
Leeds
LS27 0YT
Service desk 0808 157 0614 · From Ireland +44 113 496 0391
service@vanroon.uk · vanroon.uk

**Manufacturer**
Van Roon Medische Techniek B.V.
Leiden, the Netherlands

Report any serious incident involving the bed to Van Roon Medical UK and to your national reporting system.

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Technical documentation for this bed, including the service manual, parts lists and wiring diagrams, is available to Van Roon-trained engineers on the service portal at vanroon.uk/service/portal/.

Specifications may change without notice. VR-7 XW is a trade mark of Van Roon Medische Techniek B.V.