

## Technical Data Armeo® Spring

**Device description:** ArmeoSpring is an instrumented arm orthosis with a spring mechanism for adjustable Arm Weight Support in a large 3D workspace that can be used as real time input device to the associated therapy software Armeocontrol. The purpose of ArmeoSpring is to support functional therapy for patients who have lost the function of or have restricted function in their upper extremities caused by cerebral, neurogenic, spinal, muscular or bone-related disorders

**Key Features:**

- Arm orthosis with integrated weight compensation mechanism
- 3D position detection of arm segments and grip strength sensing
- Augmented Performance Feedback with functional exercises and entertaining games for patient motivation
- Assessment Tools to record patient performance

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**Mobility:**

- System mounted on a mobile platform for easy transfer of ArmeoSpring
- Casters' diameter: 10 cm
- Device's dimensions: 81 cm (l) x 75 cm (w) x 85-125 cm (h)
- Weight: max. 82 kg

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**Room requirements:**

- Space: 3 x 3 x 2 m (l x w x h)
- Temperature: 10 °C - 30 °C
- Humidity: 30 % - 75 % relative air humidity

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**Electronic connection:**

- Mains connection through isolating transformer (included in scope of delivery) with variable input and invariable output (accepts 230V / 50Hz or 120V / 60Hz)
- USB interface to orthosis
- SELV-powered orthosis

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**Display:**

- 24 inch flat screen monitor with integrated speakers

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**Adaptability to patient:**

- Electric lifting column for comfortable height adjustment (range: 400 mm)
- Continuous adaptation to subject's dimensions
  - forearm lengths (elbow to handgrip): 290 - 390 mm
  - upper arm lengths (shoulder to elbow): 220 - 310 mm
- Continuous adaptation of weight compensation force to subject's needs. Example values in horizontal position and middle length settings are:
  - forearm weight compensation: 0.7 kg - 2.4 kg
  - upper arm weight compensation: 0.5 kg - 3.8 kg
- System platform compatible with commonly used wheelchairs
- Interface ready to mount different hand modules available in the future

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**Instrumented DOF:**

- Total of 7 angle sensors and 1 pressure sensor
- Instrumented physiological movements: shoulder abduction, shoulder flexion, horizontal shoulder abduction, shoulder rotation, elbow flexion, forearm pronation, wrist flexion, hand grasp
- Resolution of the angle sensors < 0.2°

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- Armeocontrol Software:**
- User database with an individual account for every patient (allows for managing individual therapy schedule, storing patient settings, logging activity and results)
  - Parameters individually adjustable to the patient's needs and abilities:
    - Exercise workspace
    - Difficulty level of every exercise
  - > 20 motivating games and exercises
  - Assessment Tools for relevant parameters of the patient's performance (coordination, reaction time)
  - Documentation of the patient's performance:
    - Easily understandable summary of the patient's progress
    - Detailed, Excel readable exercise report
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All information is subject to change without notice

## Registration of Armeo® Spring

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**European Union:** Medical device according directive 93/42/EEC



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**USA:** FDA market clearance



medical device is conform to the requirements of the UL-Standards (IEC 60601-1)

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**Canada:** Health Canada market clearance



medical device is conform to the requirements of the Canadian standards

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## Manufacturer of Armeo® Spring

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