

**Product Name**

Gloreha Lite

**Designer**

Idrogenet

**Company Name**

Idrogenet

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**Italian Dealer**

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**Referring contact  
for possible exposition in April**

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## Description of innovation social values

- product category
- formal and functional features
- problems solved by innovation
  - user
  - field of application

**Gloreha Lite** is a medical device for neuromotor rehabilitation for patients with paresis or plegia of the hand after injuries to peripheral nervous system or central nervous system or the spinal cord (for example post stroke patients). While a comfortable and light glove mobilizes the fingers' joints, the patient can follow the exercise through a 3D animation on the screen. Hand movements are connected with video and audio effects that stimulate neurocognitive recovery. Gloreha allows various and longer therapies with a minimal overview by the therapists.

Gloreha is useful to increase the time of treatment for patients that need longer and specific therapy after stroke. Video and audio feedback are useful to stimulate the brain area damaged and to involve the patient in the therapy.

Gloreha is the only rehabilitation glove able to passively mobilize finger's joints, whilst also providing for: - a pre and simultaneous view on the monitor of a **3D simulation** of the exercise that allow the patient to follow and engage with the exercise and develop body awareness; - **audio and video effects** that stimulate multiple senses (sight, hearing, touch); - a variety of rehabilitation exercises; - the possibility of the patient following, cooperating with and finalizing the movements thanks to the **low impedance** of the device, the glove is comfortable and light and separated from the structure of the motors that generate the motion; - the ability to easily **grasp and release objects** (the glove is designed to leave the patient's palm completely free, this feature allows the patient to perform daily activity during the therapy).

Gloreha Lite allows the patient to continue the therapy started in the hospital with "Gloreha Professional".

## Description of technical features

- operations
- technology

Gloreha Lite is a device made of:

- A small chassis, where 5 electric actuators and an electronic board are placed.
- A brace and a glove, which are applied to the patient's hand and connected to the motors in such a way as to generate the movement of the fingers. The mobilization of the patient's hand is made possible by the 5 cables connected to the glove and which transmit mechanical power, like artificial tendons, to the fingers of the patient. The wires work in both direction (they pull and push). Five regulators of the length of the wires are available on the chassis in order to set the starting position of the glove and facilitate the extension of the fingers.
- A PC with original software that allows the creation of user records and the performance of the Gloreha therapy. It also provides multi-sensory effects to the user, showing the patient a virtual 3D simulation of the moving hand, enhancing the awareness of the mind body connection.

## Dimensions

Dimensions of Gloreha Lite: 60 x 24 x 15 cm

Weight of Gloreha Lite: 5 kg

Weight of Gloreha Brace: 45 g - Weight of Gloreha Glove: 35 g

## Materials

The main materials are: plastic for the device (chassis, lid, housings), steel for the wires, special elastic fabric for the gloves, neoprene for the brace, silicon for the thimbles.

## Certifications

Gloreha is CE marked according to the European Directive 93/42/EEC  
CFDA (China's certification for medical devices) is in progress.

## Benefits for environment

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## Benefits for human being

Clinical benefits for neurological patients: maintenance and improvement of the range of motion; prevention of adhesions, contractures, and any damages leading to immobilization; pain reduction; improvement of joint metabolism and of the lymphatic and blood circulation; maintenance of practical relations and perception of own body; proprioceptive stimulation. Possibility for the patient of executing the therapy of rehabilitation at home, without displacement to the hospital or rehabilitation center and with low supervision by caregivers.