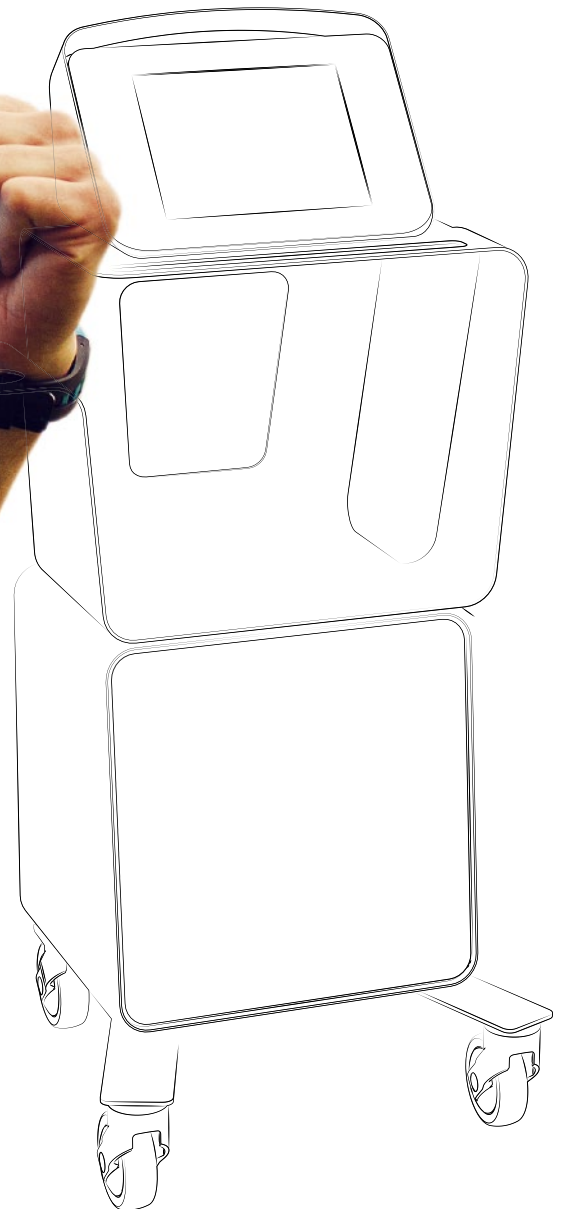


to feel better  
**qmd**  
medical device

# qmd<sup>®</sup> - qualified medical device

laser - cryo thermal - thermocamera  
cryo thermal PT - ultrasound cryo thermal





## qmd<sup>®</sup> - qualified medical device

The **qmd<sup>®</sup>** brand is a line of medical equipment, which are characterized by their simplicity of use, but at the same time with a high technology content, constructed with high level materials, and well designed. Depth studies of scientific literature convinced us that the greatest potential for development can be reached with different important ways: we started our development with thera-

peutic laser. We have seen further potential in the cryotherapy and thermotherapy. We broaden our therapeutic possibilities with the ultrasound cryothermal. Also, by studies, it is useful and efficient combined therapeutic subsidies with a thermal imager. From the synthesis of these considerations were born the **qmd<sup>®</sup>** products.

# characteristics of **qmd**<sup>®</sup>

The electro medical devices **qmd**<sup>®</sup> are characterized by:

- **versatility**, they allow to solve many different problems with a single device
- **specificity**, each program is designed to specifically confront the patient's problem, as a drug
- **ease of use**, the use of the software and the treatment delivery are intuitive
- **personalization**, they allow the user an individual application, however, guided by the software
- **rapid treatment**, just a few minutes to achieve the desired therapeutic goal
- **integration**, ability to integrate the different devices of the same **qmd**<sup>®</sup> line
- **originality**, in the design and therapeutic programming





# 1 qmd<sup>®</sup> laser

## laser therapy

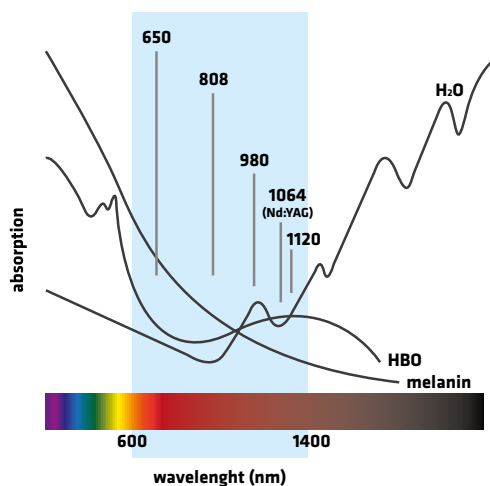
The laser is a source of electromagnetic bright radiation. The laser therapy is therefore based on the possibility of providing electromagnetic energy to tissues in the form of photons, with recognized therapeutic effects.

Laser devices are finding increased use in medicine rehabilitation thanks to the solidity of the scientific demonstrations about the biological and therapeutic effects of this form of energy. This has recently given a great impulse to the research for further technical developments, which were referred to the realization of high-power devices, which allow deeper penetration of energy and a

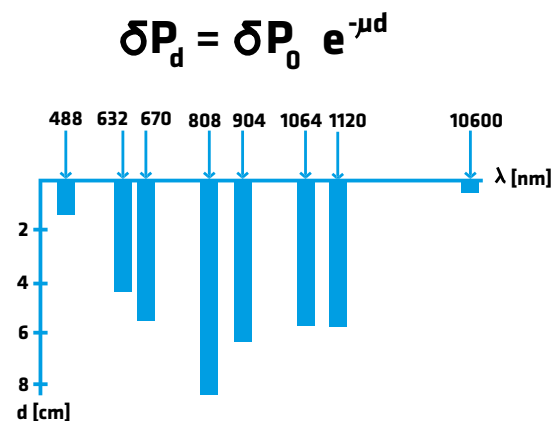
more rapid and more enduring effect on the pain, on inflammation and on stimulation of reparative processes.

Moreover, studies conducted in particular by the group of Prof. Karu have shown that within the therapeutic window (the wavelength band that allows the absorption of electromagnetic radiation by the tissues, or 600-1200nm), the stimulation with different wavelengths reaches and activates selectively different triggering receptors, consequently there are different biological effects.

## therapeutic window



## Beer-Lambert law



## qmd® laser devices

The **qmd®** laser device can provide light in all modes currently possible:

- continuous wave
- pulsed wave
- superpulsed wave
- and above a particular form, frequency scanning, called **qmd® harmonic pulsation**, an exclusivity of **qmd®**.

So the **qmd®** devices don't produce only, by a superpulsed mode, analgesic effects, but by being able to dispense in all modes, they produce the following effects:

- anti-inflammatory on articulation and muscles
- analgesic on nerve fibers
- bio-stimulating and regenerating of soft and connective tissues

- vasodilator on the microcirculation (thus improves peripheral circulation)
- anti-inflammatory and anti-edema (you get the resorption of inflammation mediators and of any collected liquid)

**Thanks to their versatility the qmd® devices, can be used in various pathologies, such as, for example:**

- rheumatoid arthritis
- chronic neck pain
- articulation pains (for example in the shoulder area, elbow, wrist)
- carpal tunnel syndrome
- back pain
- arthrosis
- but especially tendons and ligaments inflammation





All **qmd**® laser are equipped with the particular 1064nm wavelength, the most advanced models have additional wavelengths; also they differ between them for the transmitting power.

All models have a large color touch screen of 10.4", an intuitive and easy to use software, they dispense in continuous mode, pulsed mode, super pulsed mode and in the frequency scanning called **qmd**® **harmonic pulsation**, an exclusivity of **qmd**®.

# The lasers **qmd**<sup>®</sup> are available in the following models:

## **qmd**<sup>®</sup> eos basic

Therapeutic laser 1064nm, 8W, without trolley, easy portability, equipped with standard kit.

## **qmd**<sup>®</sup> eos

Therapeutic laser 1064nm, 8W, complete with trolley for easy movement, equipped with standard kit.

## **qmd**<sup>®</sup> eos plus

Therapeutic laser 1064nm 15W, with more power and faster and deeper treatments, equipped with trolley and standard kit.

## **qmd**<sup>®</sup> ares

2 wavelengths individually controllable allow more targeted treatments: lasertherapy 808+1064nm 18W, equipped with trolley and standard kit.

## **qmd**<sup>®</sup> helios

The top of the **qmd**<sup>®</sup> range: therapeutic laser 808 + 1064 + 1120nm 24W, complete with trolley and standard kit.

The three wavelengths are individually drivable. Thus, for example, in an analgesic treatment, a wavelength issues a superpulsed stimulus (most of the laser devices make only this!); the second

wavelength issues, simultaneously, a pulsed stimulus of the same frequency of the molecule / target mediator; and the third issues a scanning frequencies to hit simultaneously all mediators and molecules marginally involved. In this way we treat pain with a triple action simultaneously. Another peculiar feature of this device is the wavelength of 1120nm, which acts primarily on serotonin, on dopamine (pain neurotransmitter) and on P substance (muscles).

## **kit**

The unit is completed with the S and M spacers, the footswitch and two pairs of goggles. The device is equipped with USB ports to allow remote assistance and remote software updates without having to remove the device from your medical office.

## **optional**

Accessorized with: fixed arm comprehensive a L spacer and handpiece with manual stop button, **qmd**<sup>®</sup> cryo-thermal module.

## 2 qmd<sup>®</sup> cryo thermal



### **cryo therapy and thermo therapy**

With the qmd<sup>®</sup> cryo thermal device is possible to generate the cryo effect (hypothermia from +5° C to -15° C), the thermal effect (hyperthermia from +25° C to +45° C), the thermal shock (the temperature drops in a short time of at least 30° C) and contrast therapy<sup>®</sup> (application of hot and cold cycles alternating).

**the innovative device** qmd<sup>®</sup> cryo-thermal, thanks to its latest generation of technology, it doesn't need gas loading or draining of water condensate. Also taking advantage of direct contact with the skin, it is possible to provide different therapies.

### **cryo therapy**

The cryo therapy is a physical therapy performed by the cold and it is used in the treatment of recent trauma, after-effects of trauma, bursitis, arthrosynovitis, tendonitis and inflammatory arthroathy.

### **thermo therapy**

The thermo therapy instead is a physical therapy performed by the heat. The heat increases blood flow, helps the elimination of waste accumulated in the tissues, increases oxygenation, accelerates all the biochemical reactions of the organism and it has an analgesic and myorelaxing effect.

### **contrast therapy**

The contrast therapy is a physical therapy consisting in the application of hot and cold cycles and it is found to be an important indication in the treatment of edema, pain, muscle contractures, inflammation of the ligaments, aponeurosis and periostasis.

### **thermal shock**

The thermal shock consists of a lowering of a temperature of 30 °C over a period of time of 45 seconds and is used in the treatment of osteoarthritis, muscle problems, acute injuries and post-operative recovery.





**pathologies treatable with the thermal shock are:**

- rheumatoid arthritis and inflammatory diseases in general
- back pain
- osteoarthritis
- muscle problems
- acute injuries
- post-operative convalescence

Exploiting the effects of heat and cold it is possible to treat many other pathologies.

**modules**

The **qmd**® cryo-thermal device can be supplied as a module combined with a **qmd**® Laser device, or provided as an independent therapeutic instrument, complete with trolley, PC units, touch screen color display of 10.4" and an intuitive and easy to use user software. The device is equipped with USB ports to allow remote maintenance and software updates without having to remove the device from your medical office.



## 3 qmd® cryo thermal PT



qmd® enlarges the appliance family! After the success of the studio version, thanks to the innovations and the ease of use, we decided to satisfy even more the needs of our customers. We introduce the portable version of our cryo thermal: **qmd® cryo thermal PT.**

### design

qmd® cryo thermal PT does not betray the qmd® philosophy and always maintains its unmistakable design, which is distinguished by simple, essential and innovative lines.

new  
product



### therapeutic possibilities

Although in a portable version, the applicable therapies are not reduced:

- cryo therapy ❄️  
(-2 °C up to +10 °C)
- thermal therapy 🔥  
(+25 °C up to +42 °C)
- contrast therapy ❄️🔥❄️🔥  
(alternation of heat and cold)
- thermal shock ❄️🔥

### functionality

We have made a device with really small dimensions. It can be easily transportable even outside your studio and is able to satisfy your every expectation.

### pathologies treatable with the thermal shock are:

- rheumatoid arthritis and inflammatory diseases in general
- back pain
- osteoarthritis
- muscle problems
- acute injuries
- post-operative convalescence

Exploiting the effects of heat and cold it is possible to treat many other pathologies.

### technical data

- dimensions 22 x 34 x 21 h cm
- weight 6.4 kg
- 10.4" display
- water cooling system
- USB input to update your software
- ethernet input for remote control
- no condensation water, no gas and no jet of air

### modularity

We wanted to maintain modularity as one of the important features of our brand: qmd® cryo thermal PT can be combined with the qmd® ultrasound. You decide what will best meet your needs, in any case you will be satisfied.

## 4 qmd<sup>®</sup> ultrasound cryo thermal



Our qmd<sup>®</sup> cryo thermal PT combined with ultrasound. In pursuit of continuous development and improvement, we present an innovative device, complete with various functionalities, which combine to achieve even better therapeutic effects. Our **qmd<sup>®</sup> ultrasound cryo thermal** is therefore presented in a single system with the following treatment options:

- ultrasound therapy
- cryo + thermal therapy
- ultrasound + cryo + thermal

### **ultrasound**

Ultrasound therapy is a non-invasive therapeutic method, which uses energy from mechanical waves, which penetrate deeply through human soft tissues. The mechanical waves are absorbed by the tissues and transformed into thermal energy, at the same time making a micromassage. Ultrasound therapy is mainly designed for:

- muscle relaxation
- treatment of scar tissues
- repair of tissue damage
- resolution of inflammatory processes
- healing of fractures
- regeneration of peripheral nerves

### **cryo thermal**

We have made a device with really small dimensions. It can be easily transportable even outside your studio and is able to satisfy your every expectation:

- cryo therapy
- thermal therapy
- contrast therapy
- thermal shock

### **qmd<sup>®</sup> ultrasound cryo thermal**

Devices that use ultrasound coupled to cooling dermal (technique also called cryo-ultrasound-therapy) have shown great efficacy for the treatment of inflammatory and painful conditions. Combining thermotherapy with ultrasound, we have created an even more versatile device for your treatments.



The opportunity to limit the thermal effect with the cryo is evident in some conditions (immediate post-acuity, acute inflammation), while in others it could exalt the therapeutic effects (chronic inflammation, degeneration, muscle relaxation). For this reason we also propose the combination with thermotherapy.

#### **technical information**

- dimensions 22x34x21h cm
- weight 6.4 kg
- 10.4" display
- USB input to update your software
- ethernet input for remote control

ultrasound:

- emission mode: continuous and pulsed
- 1 and 3 Mhz supply

cryo thermal:

- water cooling system
- no condensation water, no gas and no jet of air



## 5 qmd<sup>®</sup> thermocamera 2.0

An instrument that should not ever miss in a physiotherapy and rehabilitation office. Infrared camera that allows easy location of the inflamed areas, in conjunction with **qmd<sup>®</sup>** devices allows a fast and effective treatment.

The instrument comes with its own protective carrying case, cable for connection to the USB port, and with a tablet unit control.

### **qmd<sup>®</sup> thermocamera 2.0:**

- easy location of acute inflammation
- easy location of chronic inflammation
- study inflammation before treatment
- study progress after treatment

### **data sheet:**

- thermal sensitivity: 0.04 K (NETD)
- optical resolution: 382x288 pixels
- frame rate: 80 Hz

### **qmd<sup>®</sup> thermocamera 2.0 software:**

- archive patient data
- archive screenshot of detection of temperatures in the affected areas
- save screenshot before and after treatment session
- compare progress of the same patient
- send or stamp document



# qmd<sup>®</sup> - qualified medical device

## ① clinical studies

qmd<sup>®</sup> has a large scientific bibliography of reference, available on our website <http://qmd-medicaldevice.com/studi/>

## ② qmd<sup>®</sup> respects the environment

All qmd<sup>®</sup> products are built of recyclable materials and respecting the environment. Thanks to the introduction of the automatic standby in the qmd<sup>®</sup> devices we can give our small contribution to energy saving and to an aware use of the resources.

## ③ certifications

The qmd<sup>®</sup> products are manufactured and supplied in accordance with provisions of law currently in force.



UNI EN ISO 9001:2015  
REG. H. 13707-A



UNI OEI EN ISO 13485:2016  
REG. H. 13707-M



# qmd<sup>®</sup> - qualified medical device

## laser devices

- **art. Q-0101 qmd<sup>®</sup> eos basic**  
therapeutic laser 1064nm, 8W, without trolley
- **art. Q-0102 qmd<sup>®</sup> eos**  
therapeutic laser 1064nm, 8W, complete with trolley
- **art. Q-0103 qmd<sup>®</sup> eos plus**  
therapeutic laser 1064nm, 15W, complete with trolley
- **art. Q-0104 qmd<sup>®</sup> ares**  
therapeutic laser 808+1064nm 18W, complete with trolley
- **art. Q-0105 qmd<sup>®</sup> helios**  
therapeutic laser 808 + 1064 + 1120nm 24W, complete with trolley

## devices qmd<sup>®</sup> cryo-thermal

- **art. Q-0201 qmd<sup>®</sup> cryo-thermal - only module**  
therapeutic system to produce the effect of heat, cold, and thermal shock
- **art. Q-0202 qmd<sup>®</sup> cryo-thermal - complete system**  
therapeutic system to produce the effect of heat, cold, and thermal shock, complete with trolley, PC units
- **art. Q-0203 qmd<sup>®</sup> cryo thermal PT**  
portable therapeutic system to produce the effect of heat, cold, thermal shock and contrast therapy

## combined devices

- **art. Q-0301 qmd<sup>®</sup> eos cryo-thermal**  
complete system of therapeutic laser 1064nm 8W and the module qmd<sup>®</sup> cryo-thermal
- **art. Q-0302 qmd<sup>®</sup> eos plus cryo-thermal**  
complete system of therapeutic laser 1064nm 15W and the module qmd<sup>®</sup> cryo-thermal
- **art. Q-0303 qmd<sup>®</sup> ares cryo-thermal**  
complete system of therapeutic laser 808+1064nm 18W and the module qmd<sup>®</sup> cryo-thermal
- **art. Q-0304 qmd<sup>®</sup> helios cryo-thermal**  
complete system of therapeutic laser 808+1064+1120nm da 24W and the module qmd<sup>®</sup> cryo-thermal
- **art. Q-0305 ultrasound cryo thermal**  
a portable therapeutic combination system of ultrasound, cryo and thermal

## optional

- **art. Q-7002 qmd<sup>®</sup> fixed arm** comprehensive of spacer L and hand piece with manual stop button
- **art. Q-7005 UPS** - uninterruptible power supply

## combinable equipment

- **art. Q-5003 qmd<sup>®</sup> thermocamera 2.0**  
infrared camera with tablet unit controll, that allows easy location of the inflamed areas

to feel better  
**qmd**  
medical device

delivered by

biomedical products  
**HAKOMED**  
**Italia**

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