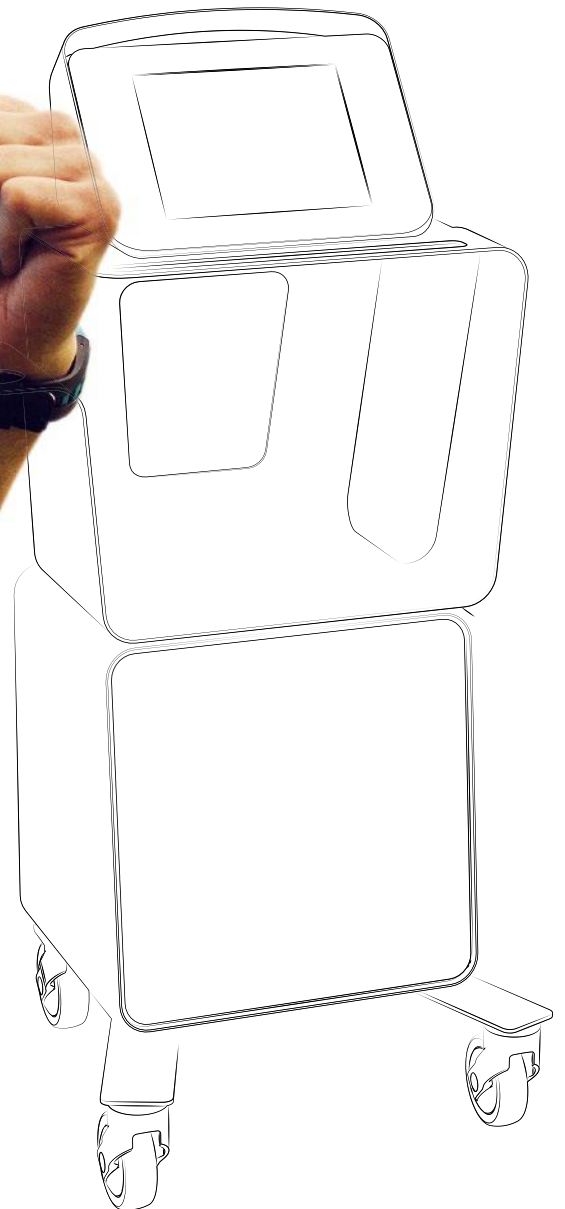




qmd[®] - qualified medical device

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





qmd[®] - qualified medical device

The **qmd[®]** brand represents a line of **medical and aesthetic devices** that stand out for their high technological content, valuable materials and sophisticated design, but which at the same time are characterized by their simplicity of use. In-depth studies of the scientific literature convinced us, initially, that the greatest development potential could be obtained in **therapeutic lasers**. We saw further potential in the **cryo- and thermotherapy**, among the most widespread therapies in central-

northern Europe. The next step was the development of a **portable cryo-thermal** combined with an innovative **ultrasound**. Furthermore, the studies have shown that it is useful and effective to use an **infrared camera** as therapeutic tool. Reading and studying the bibliography led to the development of **qmd[®] Sélene**, a cryo-thermal for the aesthetic sector, with particular focus on the reduction of adipose tissue. From the synthesis of these considerations the **qmd[®]** products were born.

characteristics of **qmd**®

The electro medical devices **qmd**® are characterized by:

- **versatility**, they allow to solve many different problems with a single device
- **specificity**, each program is designed to specifically address the patient's problem, like 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**® line
- **originality**, in the design and therapeutic programming





1 qmd[®] laser

laser therapy

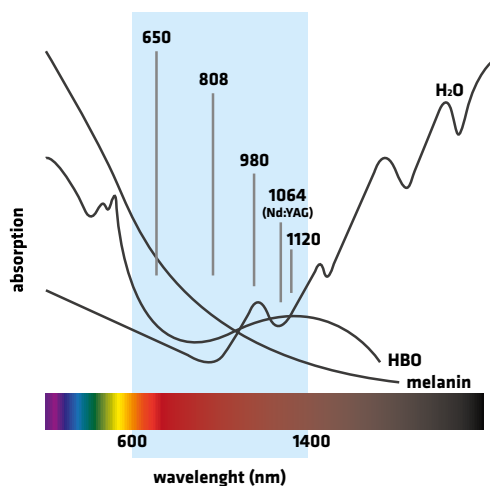
The laser is a source of electromagnetic bright radiation. Thus, the laser therapy is based on the possibility of providing electromagnetic energy to tissues in the form of photons, with recognized therapeutic effects.

Laser devices are finding increased use in rehabilitation medicine 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

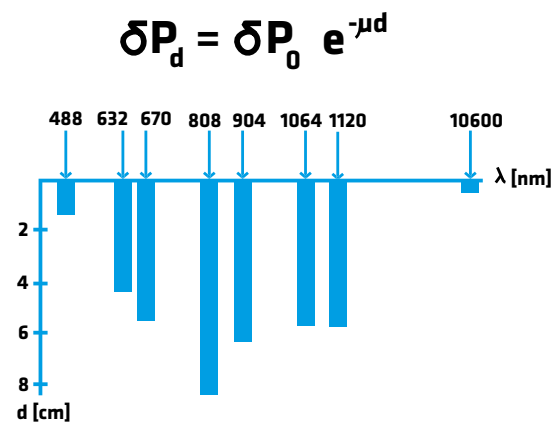
more rapid and more enduring effect on the pain, on inflammation and on stimulation of reparative processes.

In particular, studies conducted 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, we obtain 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 a particular form, the frequency scanning, called **qmd® harmonic** pulsation, an exclusivity of **qmd®**

So the **qmd®** devices don't produce only analgesic effects by a superpulsed mode, 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 on soft and connective tissues

- vasodilator on the microcirculation (thus, improves peripheral circulation)
- anti-inflammatory and anti-edemigulous (you achieve an immediate resorption of inflammation mediators and of any liquid accumulation)

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

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





Whereas all **qmd**® laser are equipped with the particular 1064nm wavelength, the most advanced models have additional wavelengths. Moreover, they also differ regarding the transmitting power.

All models have a large color touch screen of 10.1" and 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**[®] are available in the following models:

qmd[®] eos basic

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

qmd[®] eos

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

qmd[®] eos plus

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

qmd[®] ares

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

qmd[®] helios

The top of the **qmd**[®] 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 of the frequencies to hit at the same time all mediators and molecules marginally involved.

In this way, we are able to treat pain with triple simultaneous actions. Another special feature of this device is the wavelength 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 accessories

- **qmd**[®] fixed arm including spacer L and handpiece with manual stop button;
- **qmd**[®] cryo-thermal module;
- **qmd**[®] laser bag for easy and safe movement of your pc unit from your **qmd**[®] device.

2 qmd[®] cryo-thermal



cryo therapy and thermo therapy

With the qmd[®] cryo-thermal device it is possible to generate the cryo effect (hypothermia from -15° C to +15° C), the thermal effect (hyperthermia from +30° C to +45° C), the thermal shock (the temperature drops in a short time by 30° C) and contrast therapy[®] (application of alternating hot and cold cycles).

the innovative device qmd[®] cryo-thermal, thanks to its latest generation of technology, does not need gas loading or draining of condensation water. Also, by 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 is used in the treatment of recent trauma, after-effects of trauma, bursitis, arthrosynovitis, tendonitis and inflammatory arthropathy.

thermo therapy

The thermo therapy instead is a physical therapy performed by the heat. The heat increases blood flow, provides 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 lowering the temperature of 30 °C over a time period 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 and PC unit.

3 HPC therapy

high performance combination

An in-depth study of the scientific bibliography and years of experience has enabled our researchers to develop the **HPC therapy**, called **“high performance combination”**, which arouses particularly good effects on inflamed tissues. HPC therapy consists of the combination of laser, cryo, and thermotherapy.

In the acute phase, an initial reduction of the edema improves the effect of the laser. The application of cryo at the end increases further the analgesic and inflammatory effect. The chronic phase, instead, requires an increase in microcirculation, and therefore at the end a thermal application.



4 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 introduced 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 characterized by simple, essential and innovative lines.



therapeutic possibilities

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

- cryo therapy ❄️
(-2 °C up to +15 °C)
- thermo-therapy 🔥
(+30 °C up to +42 °C)
- contrast therapy® ❄️🔥❄️🔥
(alternation of heat and cold)
- thermal shock ❄️🔥

functionality

We made a device with really small dimensions. It can be easily transported, even outside your studio, and is able to meet any expectation.

pathologies treatable with the cryo-thermal PT 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 7.5 kg
- 10.1" 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® ultra-sound**. You decide what will best meet your needs, in any case you will be satisfied.

5 qmd[®] ultrasound-cryo-thermal



Our qmd[®] cryo-thermal PT combined with ultrasound. In pursuit of continuous development and improvement, we present an innovative and complete device. To achieve even better therapeutic effects, we combine various functionalities. Our **qmd[®] ultrasound-cryo-thermal** represents 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 made a device with really small dimensions. It can be easily transported, even outside your studio, and is able to meet any expectation:

- cryo therapy (-2 °C up to +15 °C)
- thermo-therapy (+30 °C up to +42 °C)
- contrast therapy[®] (alternation of heat and cold)
- thermal shock

qmd[®] ultrasound-cryo-thermal

Devices that use ultrasound coupled to cryo-therapy (technique also called cryo-ultrasound-therapy) have shown great efficacy for the treatment of inflammatory and painful conditions. Combining also the thermotherapy with ultrasound, we 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-acute, acute inflammation), while in others it could exalt the therapeutic effects by delivering further heat (chronic inflammation, degeneration, muscle relaxation). For this reason, we also propose the combination with thermotherapy.

technical information

- dimensions 22x34x21h cm
- weight 7.5 kg
- 10.1" display
- USB input to update your software
- ethernet input for remote control

ultrasound:

- emission mode: continuous, pulsed
- frequency: 1 and 3 Mhz

cryo-thermal:

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



6 qmd® thermocamera 2.0

An instrument that should never be missing in a physiotherapy and rehabilitation studio. A highly sophisticated infrared camera allows an easy localization of the inflamed areas and, in combination with a **qmd®** laser, provides a faster and more 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® 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® thermocamera 2.0 software:

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



qmd[®] - qualified medical device

① clinical studies

Hako-Med Italia and its **qmd[®]** team support scientific research. We have been collaborating with Universities and Research Institutes for quite some time and there are several scientific studies in place, which will be soon published.

② qmd[®] respects the environment

All **qmd[®]** products are made of recyclable materials and are respecting the environment. Thanks to the introduction of the automatic standby in the **qmd[®]** devices we can give our small contribution to energy saving and to a conscious use of the resources.

③ certifications

The **qmd[®]** 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[®] - qualified medical device

laser devices

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

devices qmd[®] cryo-thermal

- **art. Q-0201 qmd[®] cryo-thermal – only module**
therapeutic system to produce the effect of heat, cold, thermal shock and contrast therapy[®]
- **art. Q-0202 qmd[®] cryo-thermal – complete system**
therapeutic system to produce the effect of heat, cold, thermal shock and contrast therapy[®] complete with trolley, PC unit
- **art. Q-0203 qmd[®] cryo-thermal PT**
portable therapeutic system to produce the effect of heat, cold, thermal shock and contrast therapy[®]

combined devices

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

accessories

- **art. Q-7002 qmd[®] fixed arm** comprehensive of spacer L and hand piece with manual stop button
- **art. Q-7003 qmd[®] laser bag** for easy and safe movement of your pc unit from your qmd[®] device

combinable equipment

- **art. Q-5003 qmd[®] thermocamera 2.0**
infrared camera with tablet unit control, that enables easy location of the inflamed areas

to feel better
qmd
medical device

delivered by

biomedical products
HAKOMED
Italia

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