to feel better
qmd
medical device

qmd®- qualified medical device

laser - cryo thermal - thermocamera

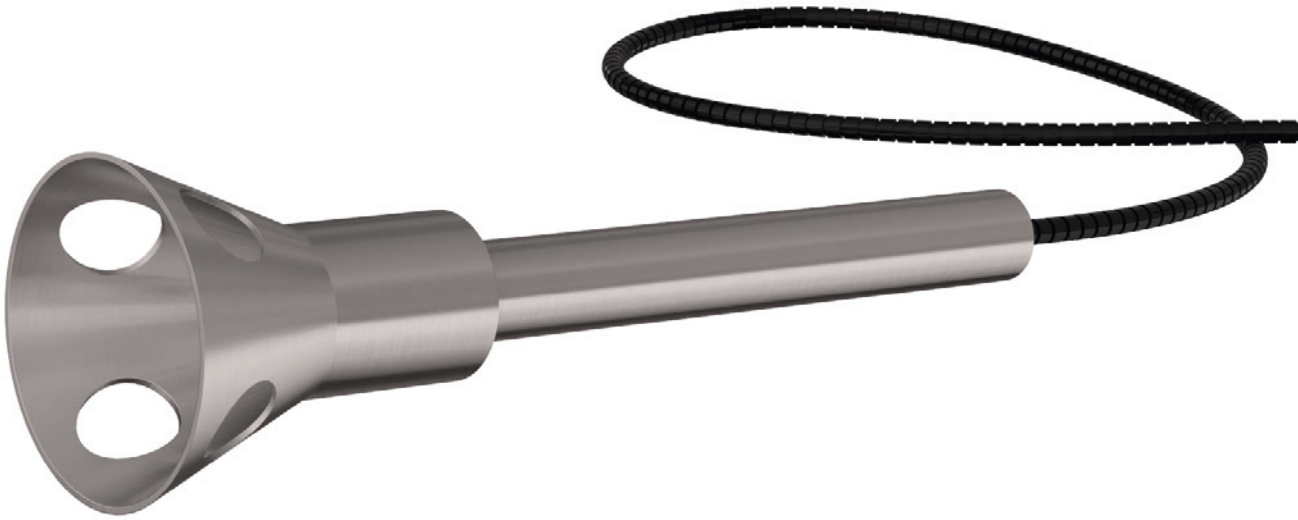
qmd® - qualified medical device

The **qmd®** 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 in the therapeutic laser. We have seen further potential in the cryotherapy and thermotherapy, treatments among most common in central and northern Europe. 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®** products.

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 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®** line
- **originality,** in the design and therapeutic programming



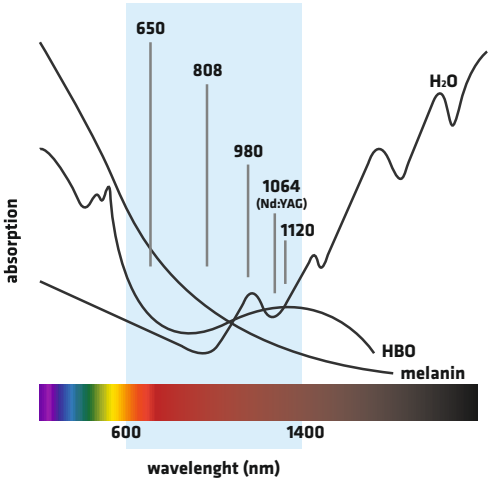
❶ qmd® laser

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.

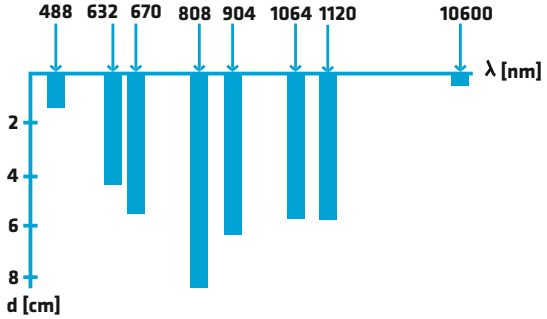
Moreover, studies conducted in particular by the group of Prof. Karu have shown that within the therapeutic window (the wavelength band that allows the absorption of electromagnetic radiation by the tissues, or 600-1200nm), the stimulation with different wavelengths reaches and activates selectively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

therapeutic window



Beer-Lambert law

$$\delta P_d = \delta P_0 \; e^{-\mu d}$$



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®** 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 deeper 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 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 of L spacer and handpiece with manual stop button, **qmd®** cryo-thermal module, **qmd®** thermocamera.

❷ **qmd®** cryo thermal

With the **qmd®** 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) and the thermal shock (the temperature drops in a short time of at least 30° C).

Cryotherapy is a physical therapy performed by the cold and it is used in the treatment of:

- recent trauma: the vasoconstriction induced by the cold prevents the edema expansion;
- after-effects of trauma: the cold reduces the perception of pain, the muscle reflex contraction and the post-traumatic edema;
- bursitis, arthrosynovitis, tendonitis: the cold exerts an anti-inflammatory and analgesic effect;
- inflammatory arthropathy: the cold exerts an anti-inflammatory action useful in rheumatic diseases with an inflammatory imprint.

The thermotherapy instead is a physical therapy performed by the heat. The heat increases blood flow, promotes 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.

The **thermotherapy** is used in the treatment of:

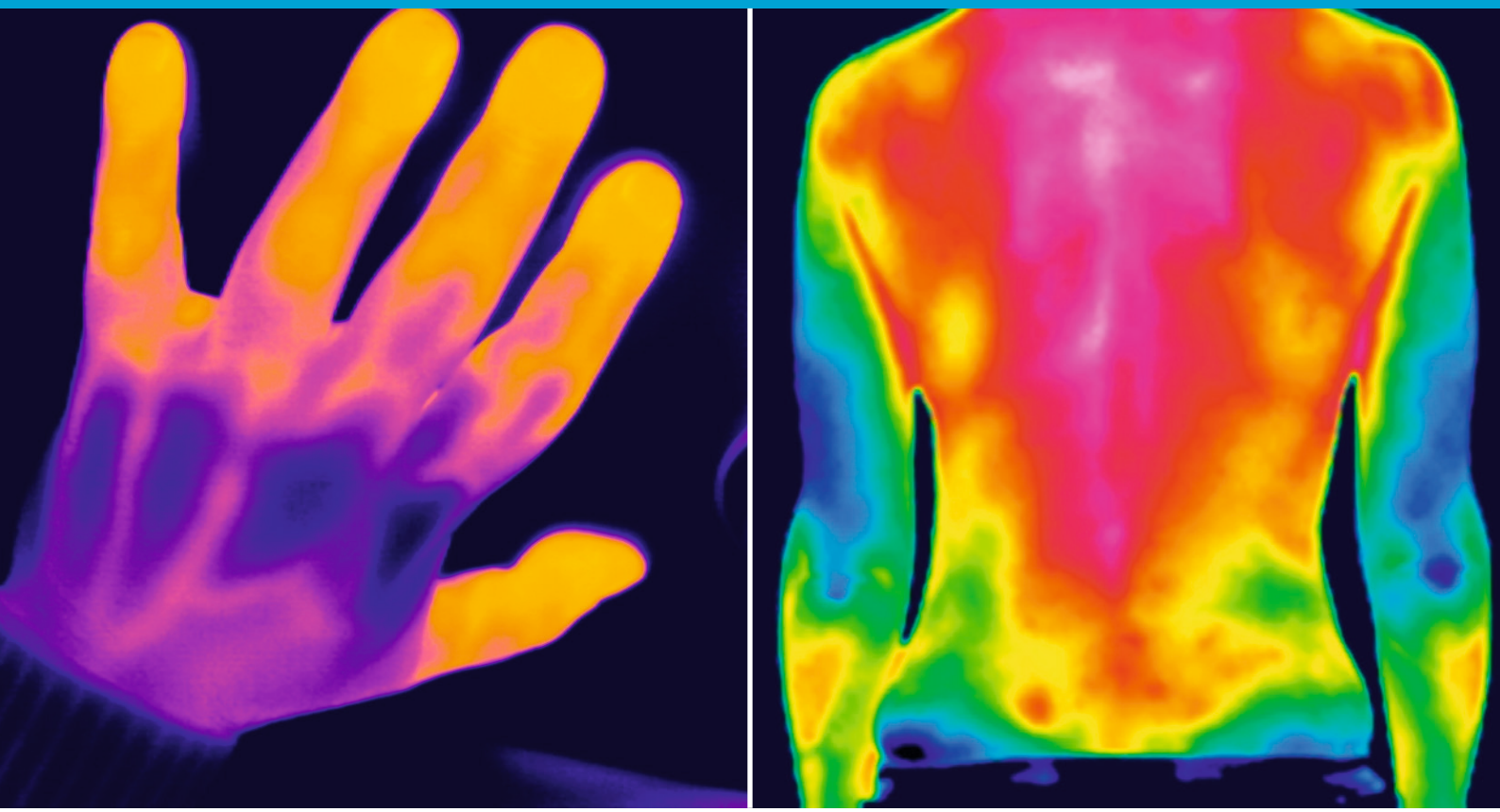
- bruises, sprains, bursitis, muscle strains and tears;
- vertebral syndromes with muscle contractures;
- spasms due to muscle fatigue because it favors the elimination of lactic acid accumulated in the muscle;
- preparation exercise for the phase of muscle warming;
- prepare for performing physiotherapy exercises.

Pathologies treatable with the thermal shock are:

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

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.

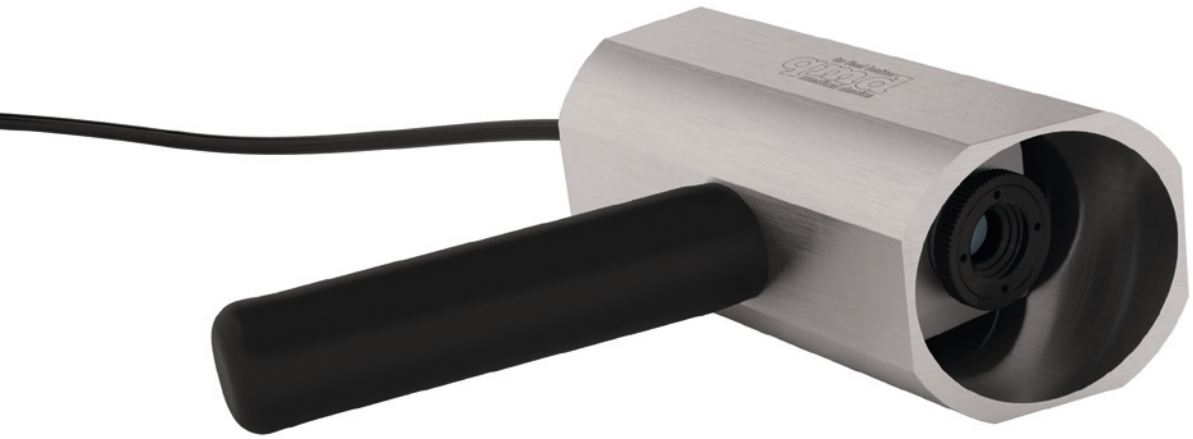


❸ **qmd®** thermocamera

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 the laser **qmd®** allows a fast and effective treatment.

The instrument has a very good thermal sensitivity (NETD) of 0.08 K and an optical resolution of 160x120 pixels. The sampling rate of 120 images per second (120 Hz) allows real-time images.

The instrument comes with its own protective carrying case, cable for connection to the USB port.



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❶ clinical studies

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

❷ certifications

The **qmd®** products are manufactured and supplied in accordance with provisions of law currently in force.

❸ qmd® respects the environment

All **qmd®** products are built of recyclable materials and 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 an aware use of the resources.

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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 + 1120 nm24W, complete with trolley

The supply of qmd® lasers includes:

- trolley
  (with the exception of the model **qmd®** eos basic)
- goggles
- spacer S
- spacer M
- footswitch

devices qmd® cryo-thermal

- **art. Q-0201 qmd® cryo-thermal – only module**
  therapeutic system to produce the effect of heat, cold, and thermal shock.
- **art. Q-0202 qmd® cryo-thermal – complete system**
  therapeutic system to produce the effect of heat, cold, and thermal shock, complete with trolley, PC units

combined devices laser-cryo-thermal

- **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

combinable equipment

- **art. Q-5001 qmd® thermocamera**
  infrared camera that allows easy location of the inflamed areas.

optional

- fixed arm comprehensive of spacer L and hand piece with manual stop button.

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