

## Hako-Med Italia

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

## Q – 0102 qmd<sup>®</sup> eos



to feel better - qmd medical device

partita Iva · VAT number: IT02250860216

banca d'appoggio · bank: Cassa Rurale di Salorno · filiale - branch office Egna

IBAN: IT 11 K 08220 58371 0000304002504 · SWIFT-BIC: RZSBIT21331

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### General specifications of the laser qmd®

Power supply	100 – 240 V~ , 50/60 Hz
Max absorption	180 W
Type of laser	Diodes
Interlock with connector	
Footswitch medical certified IEC 60601 in compliance with UL	
Command button certified CE	
Color display touch screen 10.4"	
Delivery system with triple voluntary command	
Dimensions (l x w x h)	342 x 200 x 207 mm
Type of service	Continuously

### Technical specifications of qmd® eos

Nominal power	until 8 W
Spot diameter with the S spacer	22 mm
Spot diameter with the M spacer	40 mm
Spot diameter with the L spacer	109 mm
Wavelength	1064 nm
Beam divergence	about 43°
Energy density with the S spacer	2,10 W/cm <sup>2</sup>
Energy density with the M spacer	0,64 W/cm <sup>2</sup>
Energy density with the L spacer	0,09 W/cm <sup>2</sup>
operating mode: continuous – pulsed – superpulsed - qmd® harmonic pulsation	

### Medical Devices Directive

The laser **qmd® eos** is in compliance with the standard 93/42/EEC and it is marked with the number “CE 0476”

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## qmd<sup>®</sup> - summary instructions for use

### LASER

#### Wavelengths

- 1064nm: already has an analgesic effect, very versatile and can be associated with 808nm in the case of inflammation as a "distractor", to resolve the problem with excessive concentration of water molecules;
- 808nm: already has a biostimulatory effect in itself, it is also good with an excessive concentration of water molecules;
- 1120nm: already has an analgesic, anti-inflammatory and myorelaxing effect.

#### Dispensing mode

- superpulsed: analgesic effect;
- continous: biostimulatory and myorelaxing;
- pulsed: selective modulation of the activity of chemical mediators or cellular processes of our interest through the use of specific frequencies to obtain certain effects (analgesic by gate control, muscle relaxant by contraction and relaxation phases, vasomotor by vasodilation and vasoconstriction phases);
- harmonic pulsation: a pulsed scan of the whole area of frequencies of our interest.

#### Preset programs

- for effects: we generally recommend when we know what effect we want to achieve at that time;
- by district: we recommend when the desired effects are different, the most complex situation (eg treatment of a joint);
- open mode: choice of mode and free wavelength for expert users.

### CRYO THERMAL

#### cryo

- recommended temperature 0 ° C (maximum 5 minutes, because then the reversible effect occurs);
- recommend cold for vasoconstriction, anti-inflammatory in the acute phase and analgesia.

#### thermal

- recommended temperature 40 ° C;
- We recommend the heat for vasodilatation, myorelaxing, anti-inflammatory in the chronic phase, and always when we need more oxygenation and nourishment.

#### thermal-shock

- it is not a therapeutic effect, but simply an anesthetic effect;
- to be advised before a painful treatment (frozen shoulder, connective tissue massage, shock waves, etc.).

#### contrast therapy

- heat / cold alteration - like Kneipp-therapy;
- important is with what we end (acute phase: with cold; chronic phase: with warm; myorelaxing: with heat; pain: with cold; but the duration depends on joint or muscle pain).

## **LASER INTERACTION WITH CRYO-THERMAL**

### **In case of an acute inflammation**

- An excessive concentration of water molecules prevents a good therapeutic result, so we recommend:
  - start with contrast therapy (anti-inflammatory),
  - then laser (anti-inflammatory),
  - finish with 3 minutes of cryo with joint problems, with muscle problems only 1 minute.

### **In the case of a chronic inflammation**

- Since the cold is contra-indicated, we recommend:
  - start directly with laser,
  - only then apply the "contrast therapy - anti-inflammatory effect - chronic", because it finishes with warm (=vasodilatation).

### **In case of edema**

- An excessive concentration of water molecules prevents a good therapeutic result, so we recommend:
  - start with 1 minute of cryo,
  - then laser (antiedemigenous),
  - and finish with contrast therapy (antiedemigenous).

### **In general, we use/recommend cryo for**

- To lower the local temperature after a laser session,
- to promote penetration of the laser beam itself.
- In the single session you can give more Joules in the tissue without creating overheating problems, so you can make more distant sessions, helping patients who have problems to come more frequently.

### **Thermal even before the laser?**

- Never! Apply thermal always only after a laser application.

## **TREATMENT CYCLES - GENERAL INDICATIONS**

### **Acute inflammations**

- we recommend 10 sessions every day

### **Degeneration or chronic inflammation**

- 2-3 weekly treatments are recommended for several weeks

### **Muscle contractions (without trauma)**

- the first week we recommend daily treatments, then every other day

### **Traumatic outcomes**

- 1st phase (edema) daily treatments are recommended
- 2nd phase we recommend 2 to 3 treatments per week