

The future is now  
power, speed, results

**lumi** & Q



The first Nd:YAG Q-Switched laser  
for Physiotherapy and Rehabilitation

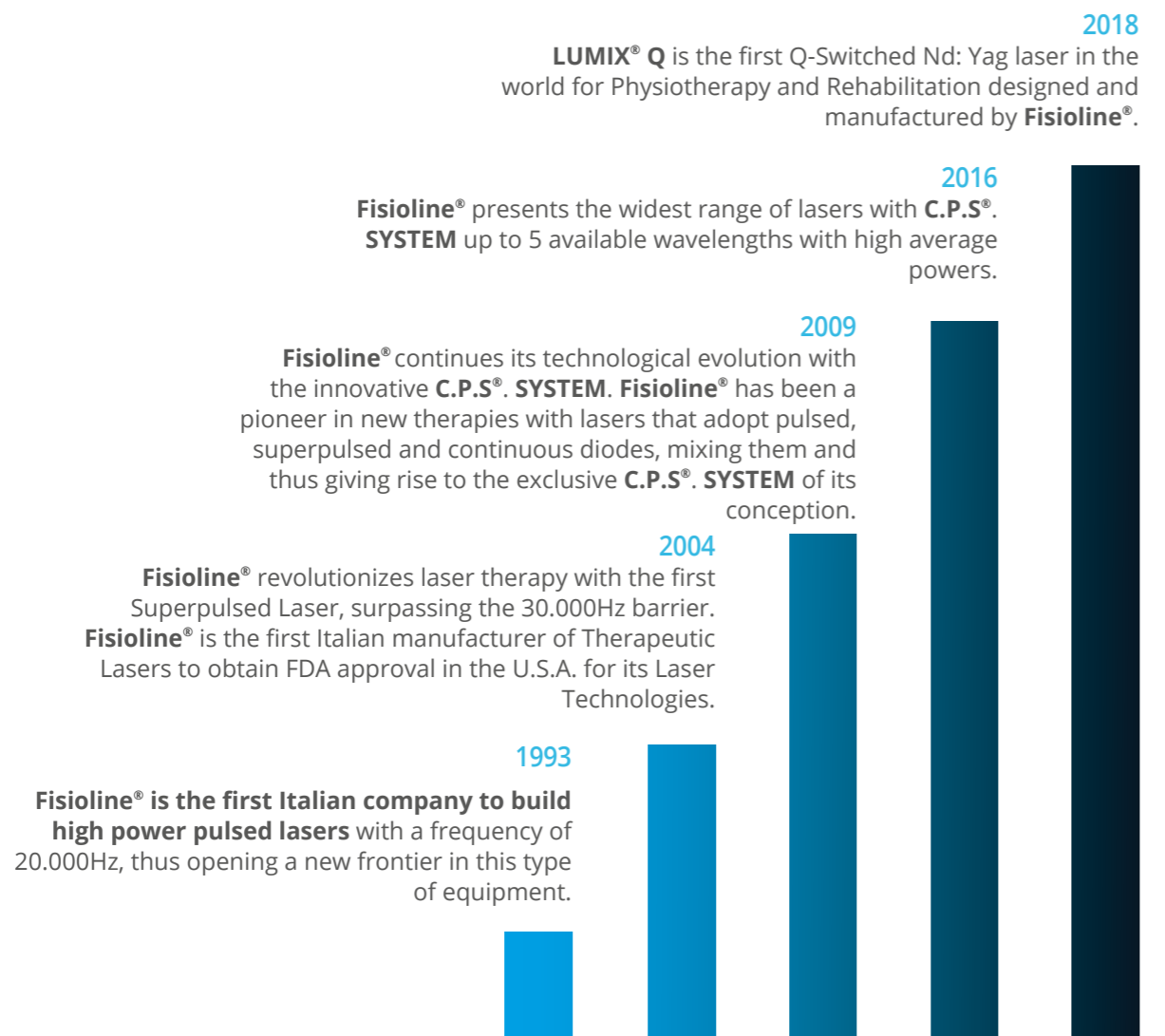




# We plan the future and we realize innovation

LUMIX® Q is the latest Fisioline® innovation derived from over 30 years of scientific research, design and production made in Italy at the forefront of the latest generation Laser technologies.  
A unique technology, extremely performing and effective in achieving therapeutic goals in short time.

For over 30 years we have been building the history of Laser Technologies



# Innovation now starts with

## lumix® Q

### The 1<sup>st</sup> Nd:YAG Q-Switched laser for Physiotherapy and Rehabilitation

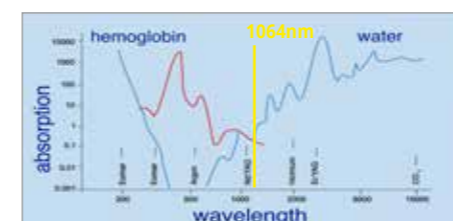


- ⋮ Power: 130kW = 130.000W
- ⋮ Average Power: 20W
- ⋮ Pulse: from 7ns up 35ns
- ⋮ Superpulsation: up to 100.000Hz

#### The most powerful Therapeutic Nd: Yag Laser: 130.000 Watts of power

The exclusive Nd:YAG Q-Switched System (1064nm) adopted by Fisioline® allows to combine peculiar characteristics such as the highest peak power ever achieved by a Laser in Physical Therapy (up to 130kW) and the high average power (up to at 20W), making LUMIX® Q a powerful, extremely performing and unique laser. The high peak power and the high average power that reaches allow for a large and adjustable volumetric involvement of the treated area with the administration of a **large amount of energy in depth**, ensuring a particularly **high tissue penetration**.

#### 1064nm: the ideal wavelength to activate deep cellular metabolic processes

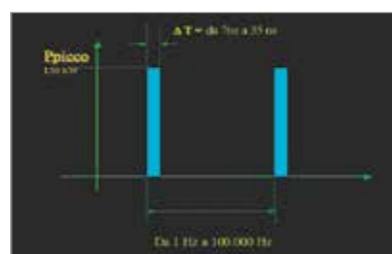


1064nm is the wavelength farthest from the point of maximum melanin absorption and therefore less sensitive to phototype complexion. The high directionality of this wavelength allows to reach the affected area with the correct dose of energy. A **rapid antalgic effect** with control of inflammatory processes and deep activation of the metabolic processes of cellular activities is obtained.

# Follow the light of innovation

## The nano-pulses of LUMIX® Q derive from Nanotechnology: from 7ns up to 35ns

The Q-switched Laser emits the light beam within the nanosecond range. The brevity and specificity of the light beam limits the heat emission to the surrounding tissues, concentrating efficacy only where needed. The nanoimpulses allow to supply large amounts of energy without elevated thermal cutaneous effects.



## The real Superpulsation

The laser emission can be **continuous, pulsed or superpulsed**, while the operating modes can be in **continuous, one shot or pulse train mode**. The use of high pulsation frequencies (**over 30 KHz: Superpulsation**) exploits a new physical phenomenon: the photomechanical effect, that is the transformation, at a molecular level, of the luminous EM energy into mechanical energy.

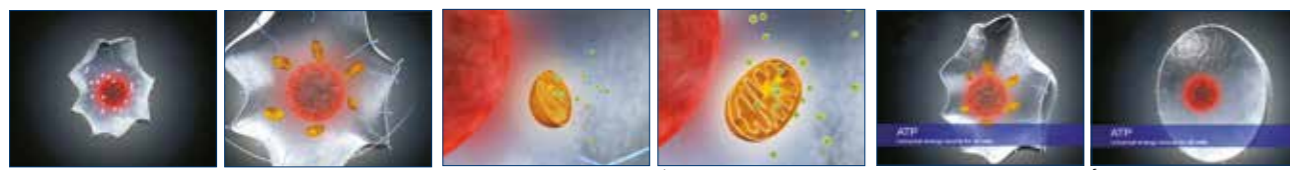
This can accentuate, at the same wavelength and power, the effects both on the conduction structures, that is on the muscle tissue (decontraction) and nervous (antalgia), and on the fibrose tissue (increase elasticity). The wide **frequency regulation** range (**from 1Hz to 100.000Hz**) makes **LUMIX® Q** the only truly Therapeutic Laser in the world with **Nd: Yag Q-Switched Superpulsed Technology**.

## Double photomechanical effect of LUMIX® Q on ATP

**LUMIX® Q** action increases ATP production, significantly increasing the cellular regenerative ability (Fig. a-b-c-d-e-f).

Further biostimulation effect benefits are:

- **increase protein synthesis:** new proteins replace damaged ones
- **increased immune system defence:** activation of macrophages and neutrophils, cells responsible for the body's defences
- **increase keratinocytes and blood vessel cells:** tissue healing extension
- **increase factors that regulate growth and cell proliferation:** this takes place in fibroblasts, cells that are the foundation of most body tissues
- **increase bone formation capacity:** upregulates osteoblastic activity and downregulates osteoclastic activity. In particular, it has been observed that it facilitates osseointegration of implants and speeds up tissue healing.



ATP (adenosine triphosphate is the main carrier molecule of cellular energy. It is produced in the mitochondrial membrane.

# Technology that stands out



## From today with LUMIX® Q you can give more to your patients:

- Reach depths of action never reached before
- Adjust the amount of energy per cm<sup>2</sup> (adjustable spot)
- Dose the thermal effect in an extremely precise manner
- Choose between 3 emission modes
- Have 3 operating modes in one device
- Reduce treatment time and number of sessions
- Obtain an immediate antalgic effect
- Therapeutic results at the highest levels



## LUMIX® Q brings innumerable advantages:



- Extremely fast learning curve thanks to the Wizard and the Lumix® Assistant
- Operative training available 24 hours a day by all operators thanks to the Audio-Video Application Tutorials present within LUMIX® Q
- Reduced treatment times, for fast therapies that can treat a greater number of patients
- Having an extracompact and transportable Nd: Yag technology

# Information for rapid, precise and customizable therapy

Rehabilitation, Physiotherapy, Traumatology and Sports Medicine



## BIOSTIMULATION

Bone regeneration, tissue regeneration, bedsores, ulcers (vascular ulcers of the malleolus, diabetic ulcers, etc.), sores, lesions, perilesional points, edema, post-distorting edema, bruising, chondropathies, biointegration of implanted materials.

## PAIN THERAPY

Neck, shoulder, and back pain, back injury, sciatica, and general radicular syndromes of inflammatory and biomechanical origin.  
Articular and periarticular pain (direct and indirect antalgic effect for anti-inflammatory action).  
Inflammatory and degenerative neuritis and neuropathies.  
Muscle contractures and myofascial trigger areas.



## POST-TRAUMATIC SPORTS MEDICINE

Post-traumatic edema, traumatic origin capsular and ligamentous inflammation, sprains and muscle strain, distortions, contusions.



## ANTI-INFLAMMATORY

Acute tendinitis and relapse phases of chronic tendinopathy.  
Degenerative origin capsular and ligamentous inflammation.  
Acute inflammatory arthritis characterised by alternating phases of spontaneous exacerbation and remission (excellent anti-edema effect), pain and phlogosis in degenerative chronic arthropathy (arthrosis, rheumatic, etc.), bursitis, plantar fasciitis.

## LOCALIZED ANTI-EDEMA

Reduction of localized edema in the paravertebral area or in the area surrounding herniated discs.

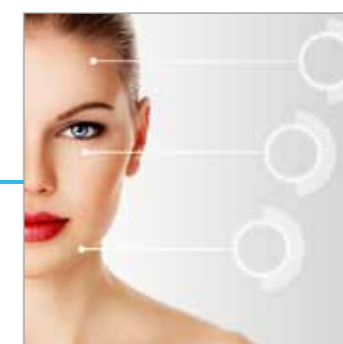


## REHABILITATION THERAPY

Post-surgery therapy, motor joint rehabilitation after removal of plaster casts or orthopedic surgery.

## AESTHETIC MEDICINE\* DERMATOLOGY\*

Photobiostimulation - Anti-aging action  
Dermatitis - Bullous dermatitis  
Acne - Cherry angioma - Ulcers  
Pairing with PRP



## PODOLOGY\*

Onychomycosis - Onychocryptosis - Warts

\* With optional terminals

# High Fisioline technology in a dynamic, compact and portable laser



Colour touch-screen display with simple, intuitive interface

Preset therapeutic protocols



Audio-video application tutorials



Compact trolley (optional)



Handpiece with focal regulation



Interchangeable Optics (optional)



USB port for software update



Device suitcase with wheels (optional)

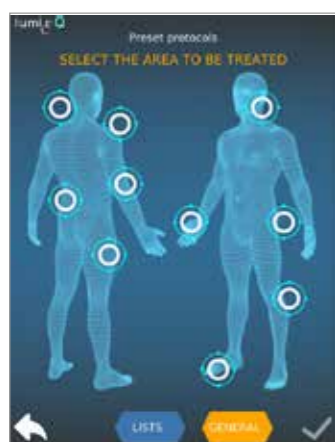


Laser safety goggles

# THE FUTURE is WIZARD

your PERSONAL TUTOR in every phase

# Lumix® ASSISTANT & ALL IN ONE SERVICE



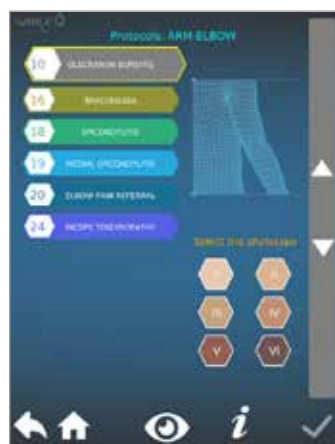
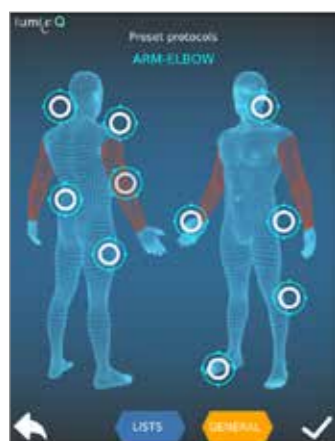
### Wizard and the Library of pathologies

A unique feature of **LUMIX® Q** is the Wizard, a step-by-step digital guide to use the device. Thanks to an intuitive software, the Wizard leads the Doctor and the Physiotherapist in selecting therapeutic preset protocols dedicated to the various pathologies both acute and chronic.

Each preset protocol can be composed of several phases.

Thanks to the Wizard the operator can select, modify and keep always under control the functions and the operative parameters.

**LUMIX® Q** provides the operator the option to create personalized programs designed for a patient and indicated for the specific pathologies and areas to be treated for focused, rapid and efficient treatments.



### PRESET PROTOCOLS



- TENDINITIS
- DISTORTION
- CONTRACTURE
- TENDINOPATHY

### RAPID RESEARCH WITH THE INNER FINDER



- 1 PATHOLOGY
- 2 AREA
- 3 N. PROGRAM

### SELECTION FREE PROTOCOL



- OPERATIVE MODE
- POWER
- FREQUENCY
- DURATION

### CREATION OF PERSONALIZED PROGRAMS



- SAVING DATA
- 100 FREE STORAGE LOCATIONS
- UP TO 4 PHASES

### An interactive technology

**LUMIX® Q** is an extremely versatile and intuitive laser, allows easy control of energy dosage administered to tissues through automatic modulation of the supplied parameters in relation to the zone to be treated and the chronicity or acuteness of the pathology.

The interface of **LUMIX® Q** displays the parameters on a large color Touch Screen 10.4" display to remotely read and give to the operator control of the correct device performance.

## Lumix® Assistant, your PERSONAL COACH

### Crash course on Laser Therapy

available in your technology

### Multimedia treatment videos

**FisioLine®** presents an important innovation: the matching of preset protocols to illustrating video tutorials, always available, updatable and usable directly from the device console of **LUMIX® Q**, showing in detail the steps to be followed by the operator and by the patient during the therapy.

**These training materials allow for rapid use even for operators with no particular experience in the use of LUMIX® Q.**

**TECHNICAL CHARACTERISTICS**

Technical classification	electromedical equipment Class I type BF
Commercial classification	laser device for therapy
Medical device class	IIb (Dir. 93/42/EEC, as amended by Directive 2007/47/EC)
Power supply voltage	100-240V single phase
Network frequency	50-60Hz
Laser source	Nd:YAG Class 4
Wavelength	1064nm
Operating modes	continuous, burst mode or pulse train
Peak Power	up to 130kW = 130.000W
Pulse duration	7±35ns
Average Power	up to 20W
Burst Mode	thermal effect control system: 10 - 100%
Frequency	1-100.000 Hz
Red laser guide light 650nm	real visualization of the area interested from the IR beam
Smart Interface	wide 10,4" TFT color touch screen display
Energy calculation	according to the preset parameters
Programmable electronic timer	1-99min with digital display
Acoustic and visual signal	end of treatment
Lit and acoustic activation	laser source activation
Handpiece with interchangeable optics	therapeutic terminal with focal regulation from 0.5 to 5 cm <sup>2</sup> (Ø from 8 to 25mm) standard
Handpiece identification	automatic
Handpiece connection	SMA connector
Optical sensor	laser emission test
Interlock connection	remote control of the laser emission
Memorized Programs	database for preset protocols
User's programs	customizable programs
Upgradable via USB port	USB for system/protocol/video upgrades
Weight	15Kg
Dimensions	370x440x220mm

**STANDARD ACCESSORIES**

Therapeutic handpiece with interchangeable optics
Therapeutic terminal with focal regulation from 0.5 to 5 cm <sup>2</sup> (Ø from 8 to 25mm)
Safety pedal
Emergency stop
N.2 Laser safety goggles

**REFERENCE STANDARDS**

General Standard CEI EN 60601-1
Particular Standard CEI EN 60601-2-22
Collateral Standard CEI EN 60601-1-6
EN 60601-1-2 (IEC 60601-1-2)

**OPTIONAL ACCESSORIES**

Fiber terminal
Terminal with focused optics
Lenholder Terminal
Conic spacer
Cylindric spacer
Trolley model "Compact"
Device suitcase with wheels
Wireless Pedal
Handpiece button

☑ Mark: device complying with Directive 93/42/EEC, modified by the Directive 2007/47/EC.



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