HIGH-POWER LASER

CRYSTAL YAG & BIPOWER LUX



EME® ITALY physio

eme-srl.com

CRYSTAL YAG & BIPOWER LUX

Innovation for Rehabilitation and Well-being

Our high-power physiotherapy laser devices represent the new frontier in pain management and muscle recovery. Thanks to targeted and safe energy, they promote rapid, natural healing, free from significant side effects.

THERAPEUTIC INDICATIONS

- **Muscle pathologies** (lesions, strains, muscle dysfunctions)
- **Tendonopathies and bursitis**
- **Joint pain** (knees, shoulders, hips)
- **Low back pain** (Lumbago) **and neck pain** (Cervicalgia)
- **Post-trauma and post-surgical recovery**

KEY ADVANTAGES

- Immediate pain reduction: Rapid and effective analgesic stimulation.
- Anti-inflammatory action: Promotes the reabsorption of inflammation.
- Accelerated functional recovery: Reduces healing times compared to traditional therapies.
- Penetration depth: High power to reach deep tissues.
- Safe and non-invasive treatment: No risks for the patient.

DEVICE FEATURES

- Laser power up to 18 Watt, adjustable according to the treatment.
- Continuous and pulsed modes with variable frequencies.
- Simple and intuitive touchscreen interface.
- Pre-set programs for various musculoskeletal disorders.
- Ergonomic and portable design.

4 AVAILABLE MODELS:

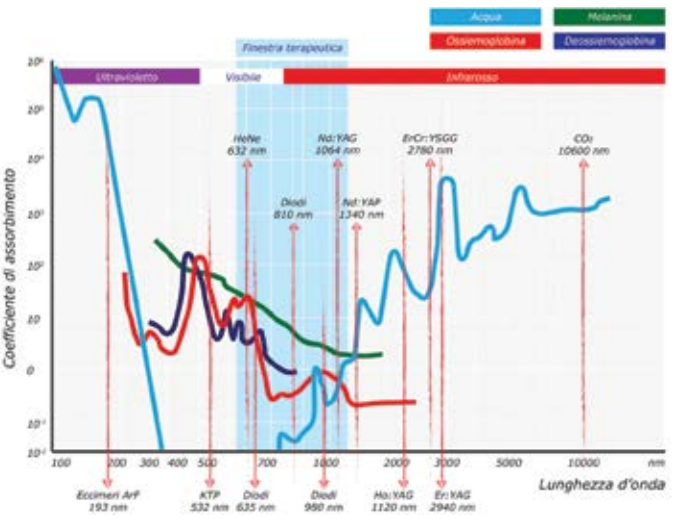
- **CRYSTAL YAG** – 1064 nm wavelength - 18 Watt power
- **CRYSTAL YAG SP** – 1064 nm wavelength - 9 Watt power.
- **BIPOWER LUX** – 2 wavelengths: 808 and 980 nm - 14 Watt power.
- **BIPOWER LUX SP** – 2 wavelengths: 808 and 980 nm - 9 Watt power.

The main differences between the *808 nm*, *980 nm*, and *1064 nm* wavelengths in physiotherapy lasers stem from the different tissue absorption and the associated therapeutic effects:

- **808 nm** This wavelength penetrates deep into the tissue (up to 3-5 cm or even further under certain conditions). It is primarily absorbed by cytochromes in the cells, stimulating ATP production and activating cellular biostimulation. It, therefore, has anti-inflammatory and tissue regeneration effects.
- **980 nm**: This wavelength is strongly absorbed by the water contained within the tissues, causing a localized increase in temperature. This results in a thermal effect useful for increasing metabolism, relaxing collagen fibers, and providing pain relief through an analgesic effect. The penetration is more superficial compared to 808 nm (approximately 2-3 cm).
- **1064 nm**: It exhibits relatively low absorption in melanin but higher absorption in water compared to 808 nm. It generates a photomechanical wave with a strong analgesic effect. It features lower scattering, meaning the beam is more focused and penetrates deeply up to 10 cm with less dispersion.

It is highly effective in treating intense pain and deep-seated injuries.

In summary, 808 nm is mostly used for deep biostimulation and cellular recovery, 980 nm for a more superficial thermal and analgesic effect, while 1064 nm is employed for deep penetration and strong pain relief with a targeted photomechanical action.



INCLUDED ACCESSORIES

HANDPIECE WITH SPACER



10 mm



15 mm



20 mm



25 mm



INTERLOCK



FOOTSWITCH



2 LASER SAFETY GLASSES



OPTIONAL ACCESSORY

TROLLEY




Pathologies
Hematomas (under healing)
Hematomas (recent)
Rossi
Bianca
Italian manufacturer


of physiotherapy equipment since 1983
CRYSTAL YAG
v1.0.3
Firmware version: 1.1
MADE IN ITALY

PRODUCT		
01	CRYSTAL YAG	HL 2063
02	CRYSTAL YAG SP	HL 2065

TECHNICAL FEATURES		
Machine power supply 230		230 Vac, 50-60 Hz, ±10%
Machine power supply 115*		115 Vac, 50-60 Hz, ±10%*
Maximum power consumption from the mains		115 VA
Double delayed-action (T) mains protection fuse:	230 Vac	1 A-T
	115 Vac	2 A-T
Interlock/Safety Key socket (normally closed contacts)		3-pin DIN socket
Backlit LCD display, for viewing and controlling the operating parameters		10.1" color Touch Screen
Laser handpiece configuration		Laser emission transmission via optical fiber (320 µm)
		Defocused
		Fixed connection to the machine
Source type		Diode
Source emission wavelength		1064nm
Nominal power		20 W
Burst emission type		(1-100) burst pulses
		(10 2000) msec pause between burst pulses
Maximum output power	CRYSTAL YAG	18 W max ±20%
	CRYSTAL YAG SP	9W ± 20%.
Machine laser output power	CRYSTAL YAG	0.2W - 18W
	CRYSTAL YAG SP	0.1W - 9W
Programmable pulse frequency		(10 – 1000) Hz
Laser risk classification according to standard EN 60825-1		4
Source Numerical Aperture (NA)		0.22
Divergence		25.4°
Nominal Ocular Hazard Distance (NOHD) (direct beam)		2.61 m
MPE Limit (Maximum Permissible Exposure Limit)		50 W/m^2
Accessible emission		34.2 kW/ m^2
Optical Density (OD)		2.8 (0.1 m distance)
Adjustable pulsed (Duty Cycle)		(10-100) %
Adjustable pulsed (Frequency)		5-20Hz
Programmable treatment time		(1÷30) minutes
Treatment activation control		By protected footswitch
Output		CONTINUOUS and PULSED
Output channels		1
Spot diameter on the patient's treated skin		**Position 01 (in contact):** 10mm
		Position 02: 15mm
		Position 03: 20mm
		Position 04: 25mm
Spot area on the patient's treated skin		**Position 01 (in contact):** 0.78cm^2
		Position 02: 1.76cm^2
		Position 03: 3.14cm^2
		Position 04: 4.90cm^2
Classification according to directive 93/42/EEC		II B
Insulation class / applied parts according to standard EN 60601-1		I / BF
Degree of protection against ingress of liquids according to EN 60601-1		IPX0
Therapeutic suggestions storable in the internal memory		200
Patient records storable in the internal memory		200
Container type		Desktop
External dimensions (Width x Depth x Height)		41x35x19 cm
Main unit weight		7.5 Kg
Operating Conditions	ambient temperature	(+10 : +35)°C
	relative humidity	(10 : 80) % Non-condensing
Storage/Transport Conditions	ambient temperature	(-40 : +70)°C
	relative humidity	(10 : 100) % Non-condensing
	atmospheric pressure	(500 : 1060) hPa

PRODUCT		
01	BIPOWER LUX	HL 2062
02	BIPOWER LUX SP	HL 2064

TECHNICAL FEATURES			
Machine power supply 230			230 Vac, 50-60 Hz, ±10%
Machine power supply 115*			115 Vac, 50-60 Hz, ±10%
Maximum power consumption from the mains			115 VA
Double fuse protection on the delayed type (T) network:		230 Vac	1 A-T - 5 x 20 mm
		115 Vac	2 A-T - 5 x 20 mm
Interlock socket/Safety key (normally closed contacts)			3-contact DIN connector
Backlit LCD display for viewing and control of operating parameters			10.1" color Touch Screen
Source type			Diode system
Laser handpiece configuration			Laser emission transmission via optical fiber
			Defocused
			Fixed connection to the machine
Source emission wavelength			808nm
			980nm
Laser power delivered by the sources		808nm	7 W max.
		980nm	9 W max.
Nominal power			16 W
Maximum output power	BIPOWER LUX		14 W max ±20%
	BIPOWER LUX SP		9W ± 20%.
Machine laser output power	BIPOWER LUX		0.4W - 14W
	BIPOWER LUX SP		0.4W - 9W
Programmable pulse frequency			(25 - 1000) Hz
Adjustable pulsed (Frequency)			5-20Hz
Laser risk classification according to standard EN 60825-1			4
Source Numerical Aperture (NA)		808nm	0.22
		980nm	0.22
Divergence			25.4°
MPE			16.4 W/m^2
Optical Density (OD)			32 (0,1 m distance)
DNRO (direct beam)			2.986 m
Adjustable pulsed (Duty Cycle)			(10-100) %
Programmable treatment time			(1÷30) minutes
Treatment activation control			By Footswitch
Output			CONTINUOUS and PULSED
Output channels			1
Spot diameter on the patient's treated skin			**Position 01** (**in contact**): 10mm
			Position 02: 15 mm
			Position 03: 20 mm
			Position 04: 25 mm
Spot area on the patient's treated skin			**Position 01** (**in contact**): 0.78 cm^2
			Position 02: 1.76 cm^2
			Position 03: 3.14 cm^2
			Position 04: 4.90 cm^2
Classification according to directive 93/42/EEC			II B
Insulation class / applied parts according to standard EN 60601-1			I / BF
Degree of protection against ingress of liquids according to standard EN 60601-1			IPX0
Therapeutic suggestions storable in the internal memory			200
Internal memory storable patient records			200
Container type			Tabletop
External dimensions (Width x Depth x Height)			41x35x19 cm
Machine body weight			7.5 Kg
Conditions of use	ambient temperature		(+10 : +35)°C
	relative humidity		(10 : 80) % Non-condensing
Storage/Transport conditions	ambient temperature		(-40 : +70)°C
	relative humidity		(10 : 100) % Non-condensing
	atmospheric pressure		(500 : 1060) hPa

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