

# K.LASER®

## THE FIRST BLUE LASER IN VETERINARY MEDICINE



# K-LASER LEADER IN Veterinary Medicine



## K-LASER IN THE WORLD

**Eltech K-Laser** company designs, manufactures and markets high quality professional laser equipment all over the world, ensuring the best reliability with a special long-term **K-Laser** warranty.

Leader in the veterinary field, **K-Laser** expresses **Made in Italy** at its best with its extremely qualified staff, which every day cooperates with competent professionals and renowned teaching hospitals, investing its resources in Research and Development in order to deliver the most cutting-edge products on the global market.



## FAST, INTUITIVE AND VERSATILE K-LASER TREATMENTS

In modern Veterinary Medicine, the use of the device **K-Laser Blue VETERINARY** has proved to be highly effective for surgery, dermatology and for the therapy of wounds, ulcers and mucositis.

With its proven characteristics, **K-Laser Blue VETERINARY** also offers an ideal solution in post-surgical rehabilitation and in rehabilitative therapy treatments.



# K-LASER BLUE VETERINARY

## Advanced technology



**K-Laser** intuitive software is quick and accurate and easily guides the physician in all the treatments available.

The parameters that determine each stage of the treatment, such as wavelength, energy, time, power and frequency, are automatically managed in an accurate and meticulous way, despite leaving the operator free to easily create new personalised protocols.



# THE FIRST BLUE LASER IN THE WORLD In Veterinary Medicine



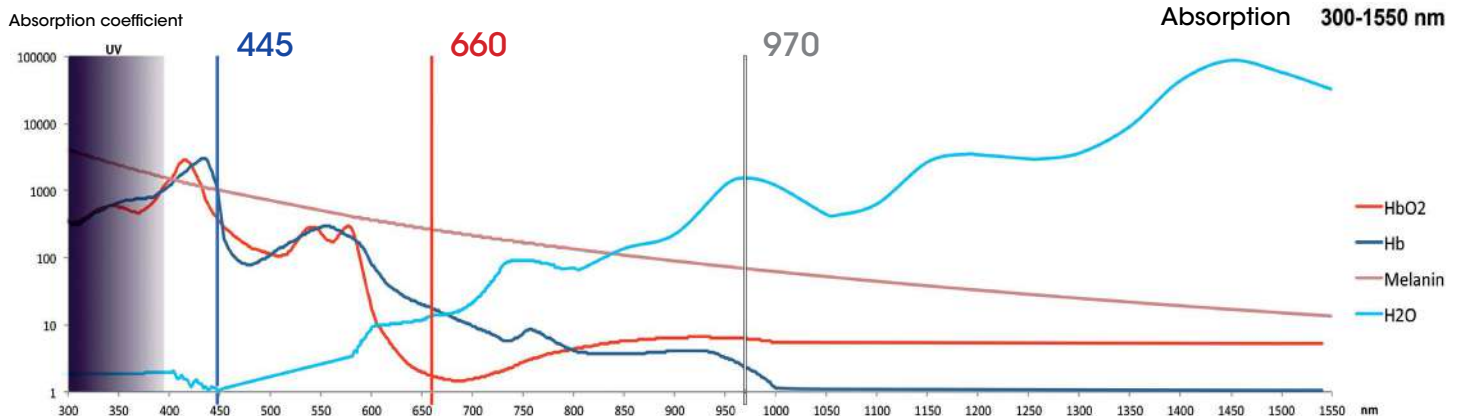
## THE FIRST VETERINARY BLUE LASER IN THE WORLD WITH 3 WAVELENGTHS FOR SURGERY, DERMATOLOGICAL THERAPY AND STOMATOLOGY

**K-Laser Blue VETERINARY** is a three-wavelength device that mainly exploits the **445 nm** one. Unlike all other infra-red lasers, K-Laser is not based on water absorption but rather on the absorption of melanin and haemoglobin. This feature allows obtaining many advantages in the surgical field. Thanks to its higher energy coefficient, compared to infra-red laser, it has increased antiseptic and biostimulating properties.

The **445 nm** wavelength is combined with **660 nm** and **970 nm** ones since they support superficial and deep tissue biostimulation.

**ADVANTAGES:** no maintenance, low cost of consumption material and maximum safety. All surgical components can be sterilised.

### K-Laser Blue VETERINARY: 445 nm - 660 nm - 970 nm



**445 nm** > The 445 nm wavelength interacts with the molecules at systemic level and is absorbed by both haemoglobin and melanin much better than with an infra-red laser. The blue wavelength is also effective on numerous bacterial strains, thus exploiting its antiseptic properties and achieving excellent results in tissues incision, both for surgical and vascular purposes. It is also useful in treating diabetic ulcers and bedsores.

**660 nm** > The 660 nm wavelength can transfer an optimal dosage of energy to the tissue. This energy is thus stored at cellular level with subsequent increase in both bacterial proliferation and metabolism. Thus, it allows obtaining remarkable results in the healing of wounds, diabetic and vascular ulcers.

**970 nm** > The 970 nm wavelength is absorbed by the water contained in our body: most of such energy is turned into heat. The deep layers of tissues thus become localised heat points able to generate temperature gradients at cellular level and to stimulate the local microcirculation thanks to the oxygen supply provided by this wavelength.



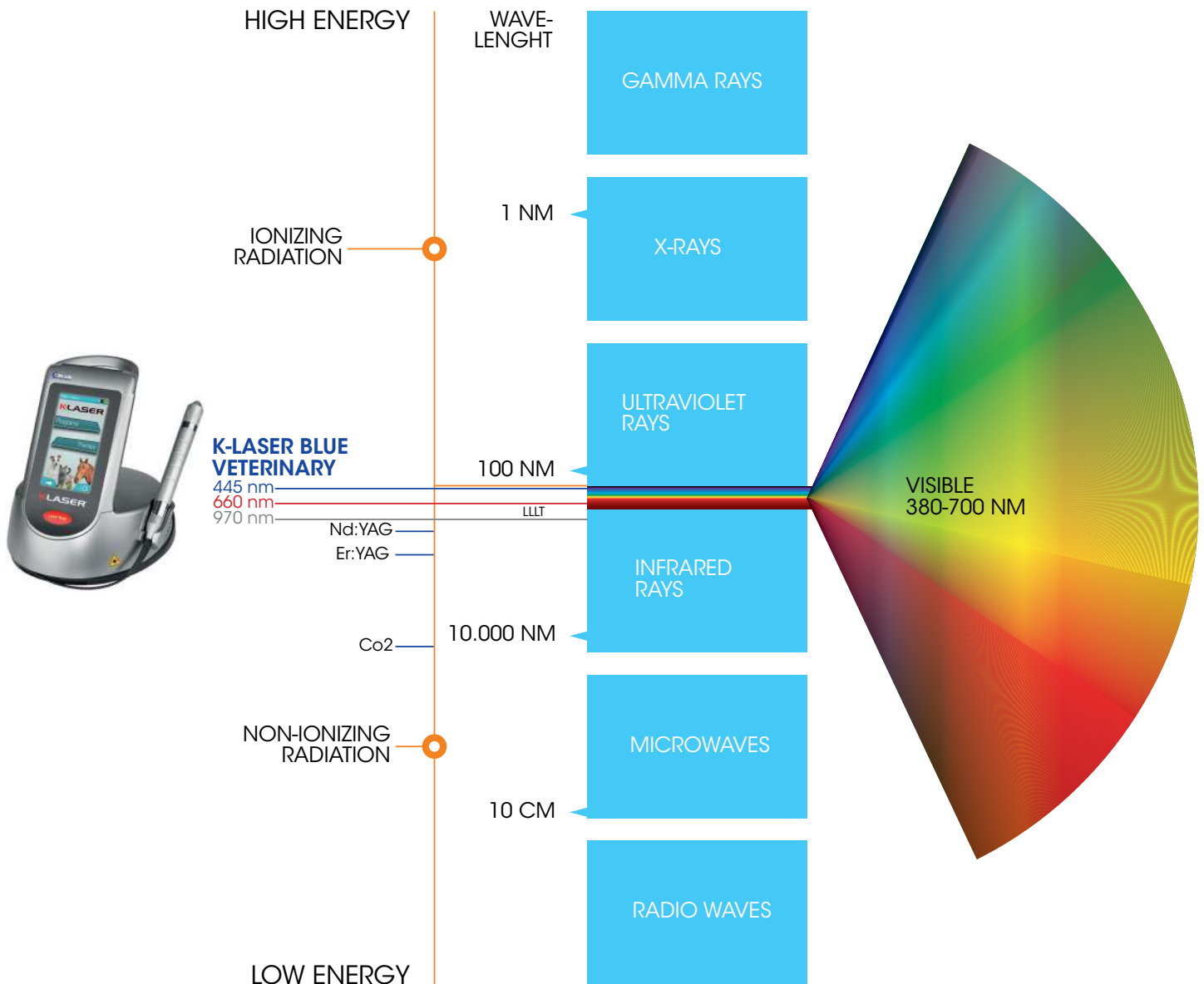
# K-LASER BLUE VETERINARY

## New source of energy



Within the electromagnetic spectrum and among the non-ionising radiations, the blue wavelength is the most powerful in terms of energy: this translates into several benefits for the treated tissues.

### THE ELECTROMAGNETIC SPECTRUM



# FIELDS OF APPLICATION

## Surgery, Dermatological Therapy & Veterinary Stomatology



**K-Laser Blue VETERINARY** is characterised by an interface that allows choosing from several treatments, thus ensuring unprecedented accuracy of incisions in the surgical field.

**K-Laser** intuitive software operates following more dynamic stages.

Therefore, it allows modulating the parameters of the selected program, such as wavelength, frequency, energy and power. Using only one device, this feature guarantees a wide range of highly efficient medical applications, through tissue repair and a reinforced immune system.

Dentistry
Periodontitis
Gingivitis
Gingivitis post dental extraction
Tooth abscess
Polymerization
Stomatitis
Ulcers
Root germ reduction

Dermathological Surgery
Nevus
Pendunculated neoformation
Lick granuloma
Warts
Papilloma
Condyloma
Fibroma
Stenotic nares(brachycephalic syndrome)
Onychomycosis
Biopsy
Contact surgery



Oral Surgery
Epulis
Gingival neoformations
Lip
Tongue
Tonsillectomy
Gingivectomy
Brachycephalic syndrome
Oral biopsy

Dermatology Therapy
Acute wound
Chronic wound
Small wound
Infected wounds
Wounds with large loss of tissue
Pododermatitis
Hot spot
Lick granuloma
Impetigo
Indolent skin ulcer
Deep mycosis
Eosinophilic granuloma complex
Otitis externa
Otitis media
Dermatophytosis
Lesion detector

# EFFECTIVENESS in Veterinary Medicine



In the therapeutic field, **K-Laser Blue VETERINARY** uses several pulse frequencies through dynamic stages in order to produce a combination of: analgesia, reduction in inflammation, biostimulation and antiseptis.

In surgery, the three wavelengths can be combined, thus increasing the effectiveness of surgical incisions as well as haemostatic, biostimulating and antiseptic effects.

The "Blue" 445 nm wavelength can also be combined with the infra-red 970 nm one, thus making for a better ablative effect (**DISB**) or increased biostimulating properties (**ISB**).

These two modalities are K-Laser patents and make for a unique and exclusive surgical performance.

**BLUE  
LASER**

**INFRARED  
LASER**

**RED  
LASER**

## **BLUE LASER**

Surgery

Dermatology

Decontamination

## **INFRARED LASER**

Additional surgery

Biostimulation

## **RED LASER**

Biostimulation

# K-LASER BLUE VETERINARY

## Excellence and maximum Performance in Surgery



**K-Laser Blue VETERINARY**, compared to surgical devices that use infra-red wavelengths, uses the blue light, thus ensuring high-level surgical performance, thanks to the reduction of thermal damage and to its peculiar interaction with haemoglobin. Thanks to these features, it guarantees increased cutting effectiveness, much higher than the one obtained with infra-red lasers, and the complete absence of water absorption help drastically reduce the overheating of the surrounding tissues.

**K-Laser Blue VETERINARY** guarantees ideal visibility of the operative area thanks to immediate haemostasis. In contact surgery, the use of special sterilisable fibres prevent possible cross-infections while guaranteeing a clean and bloodless operative area.

### Removal of cutaneous neoplasia





# K-LASER BLUE VETERINARY

## Wide-ranging treatments



### Non-contact and sterilisable handpieces for dermatological surgery



Dermathological Surgery
Nevus
Pendunculated neoformation
Lick granuloma
Warts
Papilloma
Condyloma
Fibroma
Stenotic nares(brachycephalic syndrome)
Onychomycosis
Biopsy
Contact surgery

### Sterilisable handpieces for contact oral surgery



Oral Surgery
Epulis
Gingival neoformations
Lip
Tongue
Tonsillectomy
Gingivectomy
Brachycephalic syndrome
Oral biopsy



# K-LASER BLUE VETERINARY

## Biological Effects



### anti-inflammatory

**K-Laser** produces an anti-oedema effect: in fact, it both promotes vasodilation and activates the lymphatic drainage system (draining the oedematous areas). Thus, swelling caused by traumas and/or inflammation is reduced.

#### Bibliography:

- **Pryor B** et al. Therapeutic laser in veterinary medicine. *Vet Clin North Am Small Anim Pract.* 2015 Jan;45(1):45-56. doi: 10.1016/j.cvsm.2014.09.003. Review.
- **Perego R** et al. Low-level laser therapy: Case-control study in dogs with sterile pyogranulomatous pododermatitis. *Vet World.* 2016 Aug;9(8):882-7. doi: 10.14202/vetworld.2016.882-887. Epub 2016 Aug 22.

### analgesic

**K-Laser** positively affects pain receptors: it increases pain threshold while reducing the transmission of pain stimuli to the brain.

Pain is also reduced thanks to the anti-inflammatory and anti-oedema effect.

#### Bibliography:

- **Mota FC** et al. Low-power laser therapy for repairing acute and chronic-phase bone lesions. *Res Vet Sci.* 2013 Feb;94(1):105-10. doi: 10.1016/j.rvsc.2012.07.009. Epub 2012 Jul 31.
- **Gagnon D** et al. An in vitro method to test the safety and efficacy of low-level laser therapy (LLLT) in the healing of a canine skin model. *BMC Vet Res.* 2016 Apr 8;12:73. doi: 10.1186/s12917-016-0689-5.

### improvement of wounds of soft tissues

**K-Laser** allows wounds and ulcers to heal faster thanks to tissue biostimulation and consequent better wound healing.

#### Bibliography:

- **Bennaim M** et al. Preliminary evaluation of the effects of photobiomodulation therapy and physical rehabilitation on early postoperative recovery of dogs undergoing hemilaminectomy for treatment of thoracolumbar intervertebral disk disease. *Am J Vet Res.* 2017 Feb;78(2):195-206. doi: 10.2460/ajvr.78.2.195.
- **Kurach LM** et al. The Effect of Low-Level Laser Therapy on the Healing of Open Wounds in Dogs. *Vet Surg.* 2015 Nov;44(8):988-96. doi: 10.1111/vsu.12407. Epub 2015 Oct 8.

#### Skin lesion side dog



Before



After

# K-LASER BLUE VETERINARY

## Biological Effects



### improved vascular activity

**K-Laser** significantly increases the formation of new capillaries, thus accelerating the healing process of damaged tissues, **quickly healing wounds and reducing the damaged area.** In addition, benefits include increased angiogenesis, which causes vessels to dilate temporarily with the augmentation of the blood vessels diameter. The increased supply of blood in the damaged area facilitates the healing process and reduces pain.

#### Bibliography:

- **Olivieri L** et al. Efficacy of low-level laser therapy on hair regrowth in dogs with noninflammatory alopecia: a pilot study. *Vet Dermatol.* 2015 Feb;26(1):35-9, e11. doi: 10.1111/vde.12170. Epub 2014 Sep 16.
- **Rogatko CP** et al. Preoperative low level laser therapy in dogs undergoing tibial plateau levelling osteotomy: A blinded, prospective, randomized clinical trial. *Vet Comp Orthop Traumatol.* 2017 Jan 16;30(1):46-53. doi: 10.3415/VCOT-15-12-0198. Epub 2016 Dec 9.

### Dog perineal lesion



Before



After

### Cat paw lesion



Before



After



Before



After



# Effectiveness of the reinforced immune-mediated response



**K-Laser dermatological therapy** increases the immune-mediated response in case of disease processes. Through a series of biochemical and cellular processes, this allows the organism to properly defend itself.

Several analysis carried out at the **ICGEB (International Centre for Genetic Engineering and Biotechnology, Trieste, Italy)**, have proved that this therapy can reinforce the immune-mediate response and can promote vascular normalisation [**Ottaviani et al. Laser Therapy Inhibits Tumor Growth in Mice by Promoting Immune Surveillance and Vessel Normalization. EBioMedicine. 2016 Jul 25. pii: S2352-3964(16)30340-1. doi: 10.1016/j.ebiom.2016.07.028**].





# K-LASER BLUE VETERINARY On Demand



## CONTRIBUTE TO THE OPENING OF A SPECIALIZED K-LASER CENTRE!

Thanks to a sophisticated technology, **K-Laser** created **K-Laser ON DEMAND** via Wi-Fi.  
**K-Laser Blue VETERINARY** has become a device available to anyone!



# K-LASER BLUE VETERINARY Accessories



Revolutionary innovation for advanced surgery and laser therapy



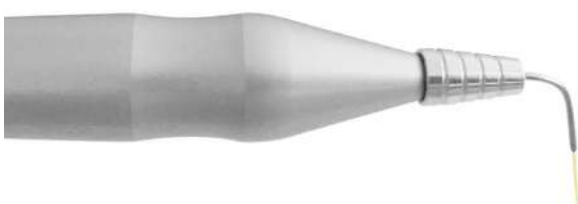
Hand-piece for non contact surgery



Set of non-contact surgical spacers



Optic fibre 200µm **(optional)**  
Optic fibre 320µm  
Sterilizable



Hand-piece for contact surgery



Sterilizable tip

# K-LASER BLUE VETERINARY Accessories



Optic hand-piece for therapy



ORL optic for therapy



K-Laser case  
**(optional)**



Wi-Fi Pedal  
Portable



Fixed Wi-Fi pedal  
**(optional)**



Set of goggles for Vet



Protective goggles for both  
the operator and  
the patient



Trolley with carrier for Tips  
**(optional)**



K-Laser Blue VETERINARY  
trolley with smoke extractor  
**(optional)**



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