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**RIKTA<sup>®</sup>**

**LOW LEVEL LASER THERAPY DEVICES**

DESIGN & MANUFACTURE OF MEDICAL LASERS

# What is RIKTA<sup>®</sup> family devices?

Laser therapy generates a photochemical response in damages tissue by a process called photobiomodulation. This process stimulates healing on a cellular level by enabling cells to more rapidly produce energy (ATP).

- Treatment and prevention of several diseases:
  - diseases of the musculoskeletal system;*
  - bronchopulmonary diseases;*
  - cardiovascular diseases;*
  - diseases of the nervous system;*
  - diseases of the digestive system;*
  - urogenital diseases;*
  - dental diseases;*
  - dermatological diseases;*
  - diseases of childhood.*
- Rehabilitation after diseases and injuries.
- Sport medicine — powering athletic performance and optimizing recovery after competitions.
- Cosmetic procedures — effective skin rejuvenation and skin treatment.
- Veterinary medicine — treatment of various diseases and injuries.

**Effectiveness, quality, reliability and continuous improvement —  
formula of a long-term success of our technology.**



# Sources of RIKTA's therapeutic effect



**Super pulsed laser**, wavelength — *905 nm*



**Pulsed infrared LEDs**, wavelength — *875 nm*



**Pulsed red LEDs**, wavelength — *640 nm*



**Pulsed blue LEDs** (in several models), wavelength — *470 nm*



**Static magnetic field**, strength — *35 mTl*



**Transcutaneous electroneurostimulation, TENS** (in several models) — amplitude of the output voltage on the metal electrodes *from 0 to 400 V*, pulse frequency *60–120 Hz*



**Electrical Muscle Stimulation, myostimulation** — amplitude of the output voltage *from 0 to 400 V*, adjustable pulse frequency *50–200 Hz*

The unique feature of RIKTA® family devices — synergistic synchronization of different light sources (super pulsed laser; IR, red and blue LEDs) with the reinforcing effect of magnetic field and TENS. RIKTA's developers provided the optimal parameters of the therapeutic factors for the highest therapeutic effect.

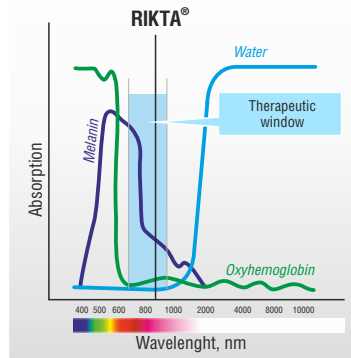


## Types of therapeutic effects of LLLT devices RIKTA®

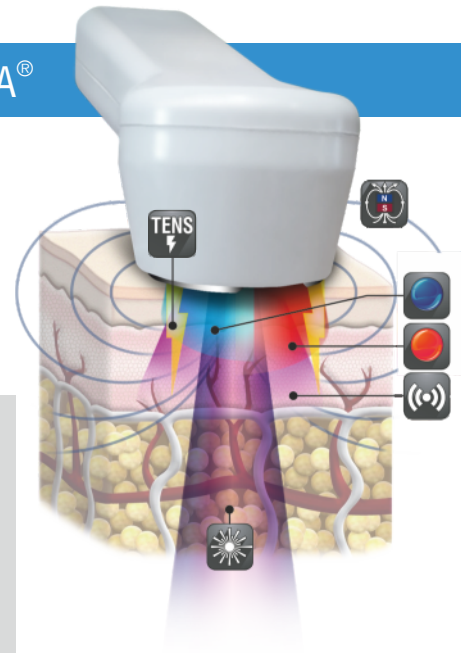


### Super pulsed infrared laser (905 nm)

Biological tissues are optically transparent in this wavelength range. Thus super pulsed laser radiation penetrates deeply (up to 13 sm) into tissues and exerts a powerful stimulating effect on blood circulation, cell membrane metabolism, activates neurohumoral factors, immuno-competent systems, regulates the hormonal system.



RIKTA® devices belong to the **1M class** of laser safety according to IEC 60825-1, which is the class of **complete safety in usage**. 1M class lasers RIKTA® can be used without special training, in contrast to 3B and 4 classes high-intensity lasers. It's safe even for home use.



### Pulsed infrared LEDs (875 nm)

The penetration of this radiation into the tissues is shallower than that of the laser but provides a broader spectrum of coverage, so it operates at various reflex zones, providing a powerful harmonizing effect on the tonus of the central nervous system.



### **Pulsed red LEDs (640 nm)**

Red light penetrates tissues at lesser depths than infrared radiation. Nevertheless, it has a beneficial effect by reducing the intensity of inflammatory processes, especially in the areas of loose connective tissue, for example, in the areas of joints; it increases the activity of psycho-emotional sphere.



### **Pulsed blue LEDs (470 nm)**

Blue light has an inhibiting effect on certain body functions, reduces the blood pressure, calms down the heart rate, regulates the rhythm of breathing, lessens the muscle tension. Blue light is a strong antiseptic and has anti-carcinogenic effect. Blue light is used in treatment of inflammatory processes, spasms and pain of all kinds.



### **Static magnetic field**

Static magnetic field keeps ionized molecules of tissue in a dissociated state, enhancing the body's potential to absorb laser energy.



### **Transcutaneous electroneurostimulation (TENS)**

Transcutaneous electroneurostimulation is the use of electric current pulses as a non-invasive nerve stimulation for therapeutic purposes (mostly intended to reduce acute or chronic pain).



### **Electrical muscle stimulation (EMS)**

Electrical muscle stimulation (EMS) or electromyostimulation, is the elicitation of muscle contraction using electric impulses. EMS — method is applied to improve skeletal muscle function.

## Clinical effects of RIKTA<sup>®</sup> laser therapy

- Stimulation and improvement of microcirculation
- Acceleration of recovering from injuries, wounds, burns, ulcers etc.
- Analgesic effect
- Anti-inflammatory effect
- Anti-edematous action
- Normalization of the central nervous system and peripheral nervous system
- Activation of the endocrine system
- Harmonization of hypophyseal portal system
- Improved immunity
- Activation of the adaptive feature of the organism
- Enhancement of the blood composition and functions
- Relaxing anti-spastic effect
- Normalization of metabolism and hormonal status
- Improvement of tone hemodynamics and nutrition of the skin

## Advantages of RIKTA<sup>®</sup> laser therapy

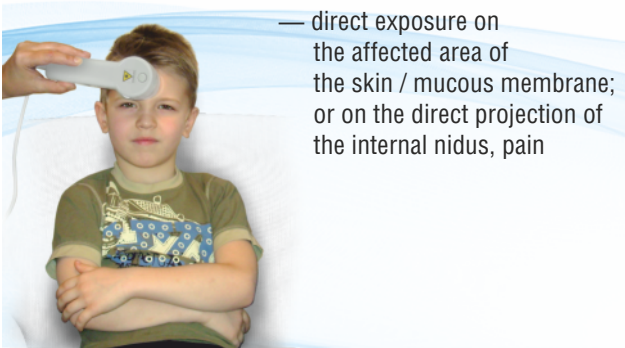
- Applicable for more than 200 diseases
- Highly effective: both preventive and rehabilitation effect
- Compatible with drug therapy
- Non-invasive and painless
- Portable and simple: both inpatient and outpatient use
- Safe: absence of complications, habituation effect adverse reactions
- Convenient in various ages



# Methods of RIKTA<sup>®</sup> laser therapy

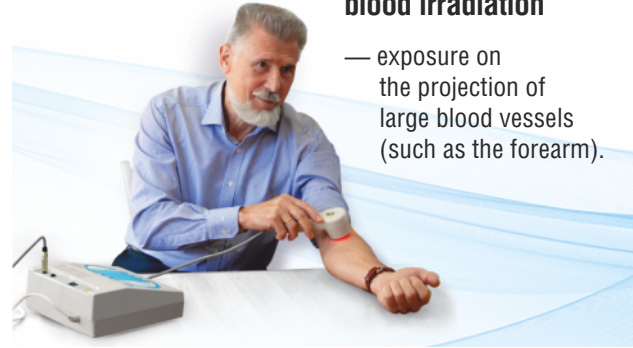
## Local exposure

- direct exposure on the affected area of the skin / mucous membrane; or on the direct projection of the internal nidus, pain



## Transcutaneous laser blood irradiation

- exposure on the projection of large blood vessels (such as the forearm).



## Photophoresis with medication

- simultaneous use of RIKTA<sup>®</sup> laser therapy and medication (gel, cream, oil)



## RIKTA<sup>®</sup>-puncture

- exposure on acupuncture points (biologically active points — BAP) using a puncture nozzle



# Applications of RIKTA<sup>®</sup> family devices

<b>Cardiology</b>	angina, hypertension, cardiovascular diseases
<b>Otorhinolaryngology</b>	tonsillitis, inflammatory of larynx, nose, ears, post-operating healing of larynx and nose
<b>Gastroenterology</b>	stomach and duodenum ulcers, gastritis, gastroduadenitis
<b>Dermatology</b>	psoriasis, dermatitis, eczemas, abscess, herpes, acnes
<b>Pulmonology</b>	inflammatory processes of airways, bronchitis, bronchial asthma
<b>Gynecology</b>	mastitis, inflammation of nipples or ovarian, cervical sores, erosions
<b>Proctology &amp; urology</b>	prostatitis, proctitis, hemorrhoids, urinary diseases
<b>Neurology</b>	diseases of peripheral nervous system, radiculitis, osteochondrosis, neuralgia, liumbago, pain of sciatic nerve
<b>Arthrology</b>	diseases of joints, muscles, spine, growth of heel bone (exostoses), bursitis, halucsis, coxitis, arthrosis, arthritis
<b>Dentistry/odontology</b>	paradontitis, gingivitis, stomatitis, pulpitis, dental traumas and diseases
<b>Traumatology</b>	bone fractures, wounds, injuries, burns, scalds, bedsores, sprains, post-operative scars
<b>Varicose</b>	enlargement of veins, trophic ulcers (poor micro-circulation of limbs)
<b>Sport &amp; military medicine</b>	muscles, tendons and ligaments sprains, pain of a spine and joints, dislocations, traumas, wounds, scrapes and scratches



## Cosmetology

wrinkles, decreased skin turgor, sagging skin, swelling, acne, herpes, keloids, hair loss, stretch marks, cellulite

## Veterinary









wounds, fractures, bruises, arthritis, arthrosis, bronchitis, pneumonia, gastritis, gastric ulcer, pancreatitis, cholecystitis, mastitis, dysmenorrhea, eczema, allergic dermatitis

Clinical efficacy of the RIKTA® family devices is confirmed annually by reviews of medical institutions, hospitals and clinics, private practitioner, individual users.



Desktop models of RIKTA® family devices consist of **Control Unit** and one or more **Emitters** connected to this unit.  
 Each desktop model of RIKTA® family devices provides setting of laser power level depending on age and condition of the patient.

**EMITTERS for desktop models of RIKTA® family devices :**

<p><b>T1</b> <b>T2</b></p>	  <p>Static magnetic field                  Pulsed red LEDs (640 nm)                  Pulsed infrared LEDs (875 nm)                  Super pulsed laser (905 nm)</p>	<p><b>Base emitters.</b></p> <p>Laser radiation pulse power, max. . . . . <math>16^{+2}_{-4}</math> W (T1)  <math>20^{+4}_{-6}</math> W (T2)</p> <p>Emitter's aperture . . . . . <math>4 \text{ cm}^2</math></p>
<p><b>T1E</b> <b>T2E</b></p>	  <p>Static magnetic field                  Pulsed red LEDs (640 nm)                  Pulsed infrared LEDs (875 nm)                  Super pulsed laser (905 nm)</p>	<p><b>Emitters T1E and T2E combine transcutaneous electro-neurostimulation (TENS) and laser in a single probe.</b></p> <p>Laser radiation pulse power, max. . . . . <math>16^{+2}_{-4}</math> W (T1)  <math>20^{+4}_{-6}</math> W (T2)</p> <p>Emitter's aperture . . . . . <math>4 \text{ cm}^2</math></p>
<p><b>Douche 1</b> <b>Douche 1(50)</b></p>	  <p>Static magnetic field                  Pulsed red LEDs (640 nm)                  Pulsed infrared LEDs (875 nm)                  Super pulsed laser (905 nm)</p>	<p><b>Emitter DOUCHE 1 — ideal for treatment of spine, large muscle groups and lower back.</b></p> <p>Laser radiation pulse power, max. . . . . <math>30 \pm 5</math> W (Douche 1)  <math>50 \pm 7</math> W (Douche 1(50))</p> <p>Emitter's aperture . . . . . <math>20 \text{ cm}^2</math></p>
<p><b>Douche 2</b></p>	  <p>Static magnetic field                  Pulsed red LEDs (640 nm)                  Pulsed infrared LEDs (875 nm)                  Super pulsed laser (905 nm)</p>	<p><b>Emitter DOUCHE 2 (Laser Comb) designed specially for treating hair diseases, alopecia.</b></p> <p>Laser radiation pulse power, max. . . . . <math>10^{+4}_{-2}</math> W                  Emitter's aperture . . . . . <math>20 \text{ cm}^2</math></p>

# RIKTA<sup>®</sup>-04/4



Therapy parameters (laser radiation power, etc) . . . . according to connected emitters (see page 10)

Setting of parameters:

- Frequency (5 Hz, 50 Hz, 1000 Hz, Variable — 0...250 Hz),
- Exposition time (1, 2, 5, 10 minutes),
- Laser & IR power level (0, 25, 50, 100%)

- Installed programs . . . . . —
- Ability creating patient programs . . . . . —
- Ports for Emitters . . . . . 2
- Power supply . . . . . 90 – 230 VAC

## Included



Suitable emitters (by the customers order)

T1-04 T2-04	
T1E-04 T2E-04	
Douche 1-04 Douche 1(50)-04	
Douche 2-04	

Description — see page 10

This device can be customized and OEM for you.  
You can use your own trademark.

# RIKTA® - 03/2



Therapy parameters (laser radiation power, etc) . . . . according to connected emitters (see page 10)

Setting of parameters:

- Frequency (5 Hz, 50 Hz, 1000 Hz, 3000 Hz, Variable),
- Exposition time (1, 2, 3, 5, 10 minutes),
- Laser & IR power level (0, 25, 50, 75, 100%)

- Installed programs . . . . . 15
- Ability creating patient programs . . . . . yes
- Ports for Emitters . . . . . 3
- Power supply . . . . . 90–230 VAC

## Included



Suitable emitters (by the customers order)

<b>T1-03</b> <b>T2-03</b>	
<b>T1E-03</b> <b>T2E-03</b>	
<b>Douche 1-03</b> <b>Douche 1(50)-03</b>	
<b>Douche 2-03</b>	

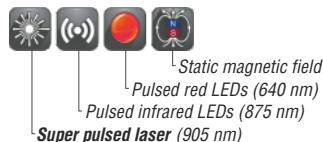
Description — see page 10

This device can be customized and OEM for you.  
You can use your own trademark.

# RIKTA® – ESMIL® (1A)



Therapy sources:



Laser radiation pulse power . . . . .  $16_{-4}^{+2}$  W

Radiation aperture . . . . . 4 cm<sup>2</sup>

Setting of parameters:

Frequency (5 Hz, 50 Hz, 1000 Hz, Variable — 0...250 Hz),  
 Exposition time (1, 2, 5 minutes)

Power supply . . . . . built-in battery (1800 mA•h)

## Description

Due to its portability and built-in battery, RIKTA-ESMIL (1A) is a full-featured laser therapy device easy to use in the field conditions as well as in clinics, hospitals, health care centers.

This device can be customized and OEM for you.  
 You can use your own trademark.

# RIKTA® – ESMIL® (2A)

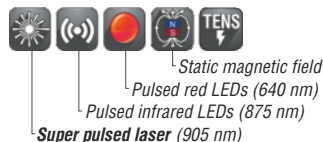


## Modification



This device can be customized and OEM for you.  
You can use your own trademark.

Therapy sources:



Laser radiation pulse power . . . . .  $16_{-4}^{+2}$  W

Radiation aperture . . . . . 4 cm<sup>2</sup>

TENS:

- Adjustable amplitude of output voltage pulses on metallic electrodes . . . . . 0...400 V
- Pulse burst frequency . . . . . from 60 to 120 Hz

Setting of parameters:

- Frequency (5 Hz, 50 Hz, 1000 Hz, Variable — 0...250 Hz),
- Exposition time (1, 2, 5 minutes),
- TENS — voltage level on metallic electrodes (based on personal sensations of a patient)

Power supply . . . . . built-in battery (1800 mA•h)

## Description

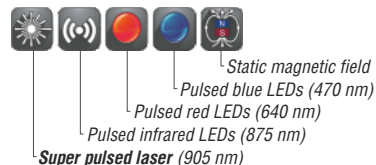
The combination of LLLT and TENS-therapy in the RIKTA-ESMIL (2A) device allows not only eliminating of acute and chronic pain but helps the organism to defeat the disease which provokes the pain.

Due to its portability and built-in battery, RIKTA-ESMIL (2A) is a full-featured laser therapy device easy to use in the field conditions as well as in clinics, hospitals, health care centers.

# RIKTACHARM®



Therapy sources:



Laser radiation pulse power .....  $16^{+2}_{-4}$  W  
 Radiation aperture..... 4 cm<sup>2</sup>

Setting of parameters:

- Program (5 built-in programs),
- Exposition time (1, 2, 4 minutes),
- Red LEDs (On / Off),
- Blue LEDs (On / Off)

Power supply ..... built-in battery (1800 mA•h)

## Description

Can be used both independently and with active cosmetology product to increase its efficacy for human rejuvenation and rehabilitation. Combining safety and ease of use this device can become a part of your daily beauty routine or professional cosmetology practice.

Includes special pre-installed beauty programs to provide cosmetology effect using unique mechanisms of RIKTACHARM product line.

Detailed methodological brochure is provided along with the device.

This device can be customized and OEM for you.  
 You can use your own trademark.

# RIKTA® -VET

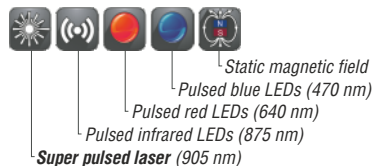


## Modification



This device can be customized and OEM for you.  
You can use your own trademark.

Therapy sources:



Laser radiation pulse power . . . . .  $16^{+2}_{-4}$  W  
 Radiation aperture . . . . . 4 cm<sup>2</sup>

Setting of parameters:

Frequency (4 Hz, 64 Hz, 512 Hz, 4096 Hz, Variable),  
 Exposition time (2, 5, 10 minutes),  
 Red LEDs (On / Off),  
 Blue LEDs (On / Off)

Power supply . . . . . built-in battery (1800 mA•h)

## Description

The RIKTA® -VET uses combination of super pulsing laser, infrared, red and blue radiances to deliver powerful pain relief and healing to animals.

The blue LED light accelerates wound repair and reduces bacteria in wounds, providing your pet with a safe, fast and drug-free recovery.





# RIKTA® - 03/2 Upgrade

*(tentative name)*



## Description

Up-to-date model (new body and PCB) for low-level-laser-therapy, electrotherapy, LED-therapy, infrared-therapy. You can connect to the control unit up to 4 emitters and they will work separately (you can treat 4 areas in one time or 4 patients in one time). Control unit has 4-strings display with a smart "window"-interface. Control unit also has a holder for emitters for simple usage and storing.

This device can be customized and OEM for you.  
You can use your own trademark.

Therapy parameters (laser radiation power, etc) . . . . according to connected emitters (see page 10)

Setting of parameters:

- Frequency (5 Hz, 50 Hz, 150 Hz, 1000 Hz, 3000 Hz, 5000 Hz, Variable — 1...5000 Hz),
- Exposition time (1, 2, 3, 5, 10, 20 minutes),
- Laser & IR power level (0, 25, 50, 75, 100%)




- Installed programs . . . . . 20
- Ability creating patient programs . . . . . yes
- Ports for Emitters . . . . . 4 (working separately)
- Holder for emitters . . . . . yes
- Power supply . . . . . 90–230 VAC

## Included

Control Unit



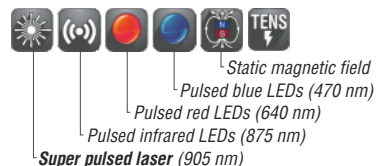
Suitable emitters (by the customers order)

<b>T1-03u</b> <b>T2-03u</b>	
<b>T1E-03u</b> <b>T2E-03u</b>	
<b>Douche 1-03u</b> <b>Douche 1(50)-03u</b>	

Description — see page 10

**RIKTA<sup>®</sup> – ESMIL<sup>®</sup> (3A)***(tentative name)*

Therapy sources:



Laser radiation pulse power . . . . . up to 70 W

Radiation aperture . . . . . 4 cm<sup>2</sup>

TENS:

Adjustable amplitude of output voltage

pulses on metallic electrodes . . . . . 0...400 V

Pulse burst frequency . . . . . from 60 to 120 Hz

Setting of parameters:

Frequency (0.5 – 5000 Hz),

Exposition time (1 – 20 minutes),

TENS — voltage level on metallic electrodes  
(based on personal sensations of a patient)

Power supply . . . . . built-in battery (3600 mA•h)

**Description**

The device has software with methodological recommendations displayed on the color screen. Software is upgradable by miniUSB-port.

The device comes with a dock-station for charging and storing.

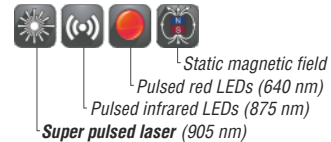
This device can be customized and OEM for you.  
You can use your own trademark.

# RIKTA<sup>®</sup> Laser Shower 500

(tentative name)



Therapy sources:



Laser radiation pulse power . . . . .	up to 70 W
Avarange source laser power, W . . . . .	500 mW
Operation mode . . . . .	Super pulsed
Pulse duration . . . . .	10 ms – 3 s
Repetition rate, Hz. . . . .	10 – 100 000
Pilot beam . . . . .	red diode laser of ~650 nm, power < 5 mW
Radiation aperture . . . . .	20 cm <sup>2</sup>
Color display . . . . .	yes
Dock-station for charging . . . . .	yes
Power supply . . . . .	built-in battery (3600 mA·h, up to 4 hours)

## Features

- Display of the chosen settings (operation mode, dose, therapy time)
- Large beam area of 20 cm
- Laser average power can be set at between 1 mW and 500mW
- Freq can be set at between 1 Hz and 100 000 Hz
- Color display
- Pre-installed treatments protocols
- Upgradable software

*Pre-production sample of 3b class laser with a high average power and a very big dose of energy for each centimeter of irradiation.*

This device can be customized and OEM for you.  
You can use your own trademark.

# RIKTA®-OLYMP

(tentative name)



This device can be customized and OEM for you.  
You can use your own trademark.

Therapy sources:



Laser radiation pulse power . . . . . 40 W

Radiation aperture . . . . . 4 cm<sup>2</sup>

TENS:

Adjustable amplitude of output voltage  
pulses on metallic electrodes . . . . . 0...400 V

Pulse burst frequency . . . . . from 60 to 120 Hz

Setting parameters:

Program from the 7 program modules  
(training process, preparatory period,  
recovery during and after competition,  
injuries treatment etc.)

Power supply . . . . . built-in battery (3600 mA•h)

## Description

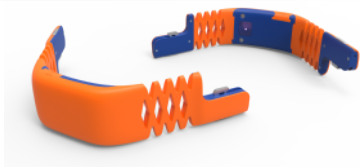
RIKTA®- OLYMP (sport model) is used for laser therapy, TENS-therapy and myostimulation when preparing athletes for the start and for their treatment. Laser therapy makes it possible to carry out the doping-free stimulation of the athlete's body both during the preparatory period, and during the maximum loads of the competitive cycle, providing recovery from competitions and injuries.

# RIKTA<sup>®</sup> wrist laser

(tentative name)



## Modification



This device can be customized and OEM for you.  
You can use your own trademark.

Therapy sources:



*Super pulsed laser (905 nm)*

Laser radiation pulse power . . . . . up to 70 W  
Radiation aperture . . . . . up to 4 cm<sup>2</sup>

Setting of parameters:

Pre-installed prophylactic programs depending  
on the age of the patient and his body mass index (BMI).

Power supply . . . . . built-in battery (300 mA-h)

## Description

Transcutaneous laser blood irradiation allows:

- homeostasis normalization;
  - the growth of microcirculation, oxygen saturation;
  - immunity strengthening;
  - can be used to treat for different diseases;
- etc.

Primary process in LLLT is an absorption of the photon by matter that launches the chain of photophysical and photochemical processes brings to the integral healing effect and to respond in the organism.



The nozzles are designed for functional enhancement of the therapeutic devices by means of delivery of the light flux radiated power directly into patient's cavitory organs.

**Light-guide nozzles are used jointly with every models of RIKTA® family devices.**

## KON-1



**The universal set.**

- 1 — nozzle for treatment in gynecology and proctology,
- 2 — nozzle for treatment in otorhinolaryngology and dentistry,
- 3 — nozzle for RIKTA®-puncture,
- 4 — nozzle for cosmetology procedures and photophoresis.

## KON-3



**Set's designed for dentistry.**

- S — nozzle for treatment in parodontium zone,
- L — nozzle for treatment in a zone of one tooth and its surrounding area,
- K — nozzle for or external use in a zone of teeth projection.

## KON-G



**Set's designed for gynecology.**

- 1G — nozzle for treatment of cervical erosion,
- 2G — nozzle for treatment of vagina lesion (vulvovaginitis, vaginospasm etc.),
- 3G — nozzle for treatment of vagina lesion in condition of hymen integrity (basing on results of preliminary gynecological examination),
- 4G — nozzle for treatment of diseases of external genital organs (bartholinitis etc.),
- 5G — treatment of diseases of mammary glands (lesions in a papilla area).

## Nozzle for hair loss treating



## Laser-vacuum nozzle

for laser-vacuum massage





RIKTA is specializing in the design and manufacture of medical lasers.

Our products cover some disciplines of therapy, beauty, sport, veterinary medicine, surgery and diagnostics. We have a strong emphasis on research and development, production, service and training.

Our decisions and actions always work for all stakeholders:

Customers & patients

Suppliers

Employees and their families

Shareholders

Our community and the rest of humankind

Professional, honest and fair in all our dealings

**We are looking forward to mutually beneficial cooperation!**

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