



before

after

Applications:

CO₂ laser is the answer to medicine's continuing search for surgical alternatives that are minimally invasive and less traumatic to the patient. Features, clinical performance and a wide range of accessories make the CO₂ laser versatile and affordable tool for outpatient clinic and private offices. The CTL-1401 meets clinical needs in these new environments in a multitude of applications in dermatology and aesthetic surgery, ENT and dentistry, gynaecology and proctology and many other specialities.

- gingivectomy and gingivoplasty, frenectomy and frenoplasty, leucoplakia, cyst and cancer changes removal, benign and malignant tumors, preparation of tissue for implants and prosthesis, operculectomy, incisional and excisional biopsies, aphthous ulcer, vestibuloplasty.

- polyps, nodules, cordal lesions, cordectomy, arytenoidectomy, stenosis and webs, carcinoma in-situ, papillomas, adenomas, tonsillectomy, turbinectomy, myringotomy, stapedectomy, glossectomy.

- cervical intraepithelial neoplasia (CIN), vaginal intraepithelial neoplasia (VAIN), vulval intraepithelial neoplasia (VIN), cervical and vaginal dysplasia, cervical polyps, carcinoma in-situ, condyloma acuminata, vaginal adenosis, vulval lesions, leucoplakia of the vulva, vagina and cervix, myomas, vaporisation of cysts.

- rectal polyp, hemorrhoidectomy, anal fissure, carcinoma of rectum, villous adenoma.

- ingrowing toe nails, plantar warts.

- burns and decubitus ulcers, condyloma acuminata, periungual warts, epidermal nevus, face coccus, lymphangioma, neurofibroma, nodule amyloidosis, sebaceous cystomas, epithelioma, hidradenoma, sebaceous adenoma, capillary nevus, senile hemangioma, vascular coccus, hypertrophic scar, acne keloid, melanoma.

- dermabrasion for post acne scars and superficial wrinkles, hair transplantation, excision of basal cell carcinoma, vaporisation of rhinophyma, tattoo removal, blepharoplasty, lipectomies.

- Laser type:
carbon dioxide (CO₂), sealed-off, RF or DC excited

- Wavelength:
10600nm, far infrared radiation, highly absorbed by water and biological tissues

- Mode structure: TEM₀₀

- Radiation power on tissue:
from 1W to 10W, regulated in steps of 0.1W (DC)
from 1W to 20W, regulated in steps of 0.1W (DC)
from 1W to 30W, regulated in steps of 0.1W (DC)
from 1W to 15W, regulated in steps of 0.1W (RF)
from 1W to 25W, regulated in steps of 0.1W (RF)

- Operation mode:
continuous wave (c.w.), single and repeat pulse

- Pulse duration:
from 0.1s to 9.9s in steps of 0.1s with inter-pulse interval from 0.1s to 9.9s in steps of 0.1s

- Laser controller:
built-in microprocessor, regulated and displayed power, operation mode and pulse duration

- Aiming beam:
lighting of operation field by red beam diode laser (650nm, 5mW)

- Shooting control:
foot switch

- Delivery system:
6- or 7-mirror spring-balanced articulated arm (depending on power)

- Spot size:
from 0.1mm to 0.3mm for fixed focus handpieces
from 0.4mm to 3mm for variable focus handpiece for respective focal distances

- Standard accessories:
- fixed focus handpiece with focal length 125mm with one straight tip, one 90° and one 120° angled mirror tips
- laser safety glasses

- Optional accessories:
- fixed focus handpieces with focal length 50mm or 200mm, variable focus handpieces
- wall arm with metal support for convenient laser storage and increase of movement freedom
- micromanipulator adaptable to a wide variety of microscopes
- computer patterns generating scanner with at least 5 different shapes programmed, size and scanning speed regulated easily from scanner's handpiece
- smoke evacuator

- Cooling system: integrated, air forced or water

- Power supply: single phase, (220-230)V, 50Hz

- Dimensions:
The CTL-1401 is available in different designs:
470 x 300 x 180mm (WxDxH) for 10W or 15W
235 x 400 x 850mm (WxDxH) for 20W
235 x 400 x 1080mm (WxDxH) for 25W or 30W

- Weight: (13-25)kg

Our clients have already recognised advantages of our production based on high quality, reasonable prices and permanent innovations. Now you can join them!!!



The most gentle among well-known lasers for effective non-contact and bloodless cutting, vaporisation and coagulation of soft tissue. It offers distinct advantages for outpatient clinics, ambulatory care centres and private medical practices. It is clinically versatile tool serving the diverse needs of multiple specialities. It can be successfully applied whenever precision, hemostasis, patient's comfort and reputation of consultation room are appreciated.

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Basic usage features

It is truly portable, very light, extremely robust and can be hand-carried without difficulty. A truly multi-disciplinary system, very affordable, cost-effective for the wide range of surgical applications, designed with small outpatients' clinics and private consultation rooms in mind.

The CO₂ laser beam is the only laser beam which is entirely absorbed by the water. It seals off blood vessels, lymph vessels and nerve endings as the laser incises providing clear, dry view of the operative field. Working with a clear field reduces the time required for many procedures. Visualisation is further improved since colourless safety lenses are best-suited for eye protection against radiation of 10600nm wavelength.

The operations with CO₂ laser reduce blood loss to enhance infection control. The laser radiation can heat the surface of tissue to temperatures that can kill bacteria allowing sterilisation of the surgical site and minimising post operative infection.

The post surgical course is less painful and hemorrhage-free. The CTL-1401 works without traumatizing surrounding or underlying tissue, so patients have minimal swelling and edema, and report an absence of pain in most cases.

The small spot size and minimal absorption depth allows CO₂ laser to provide an exceptional level of precision. With proper selection of power and delivery mode it is possible to remove a single layer of cells. The laser can quickly and accurately cut, vaporise and coagulate tissue, allowing the user precise control to achieve desired results.

With scanner handpiece you can attain a new standard of quality in the treatment of large-area skin defects with the CTL-1401 laser. Not only is the therapy accelerated, the ablation is more even. Computer pattern generator provides unparalleled ease of use, exceptional mobility and fast, efficient transitions during procedures. Medical professionals can resurface skin in a highly controlled manner with greater confidence and reliability, ensuring consistent and reproducible ablations. When using the scanner with proper laser energy settings, the risk of thermal damage is minimised, resulting in faster healing and greater patient satisfaction.

The CTL-1401 is easy to use and its constant performance and power output are controlled and maintained unchanged in time by the sophisticated electronics the system is equipped with. With the help of the computer control the various operating modes can be adjusted easily and quickly (continuous wave mode, single and repeat pulse mode, superpulse mode).

Simple, safe operation due to well-illuminated indicators and built-in microprocessor control provide easy choice of desired parameters adjusted by easy-care membrane keypad.

It is electrically very safe, does not contain any higher voltage than 24V. The laser tube has been sealed using the modern hard sealing technique. The typical life time of RF excited tube is over 20000 hours. It means for a doctor no maintenance and further investment for many years.

Special lightweight 6-mirror and 7-mirror articulated arm, enable performing high accurate surgical treatments without fatigue for the surgeon. Due to this fact the laser can be used easily both in the free-hand and endoscopic surgery.

The laser can be adapted through a micromanipulator to most of surgical microscopes and colposcopes. Used in conjunction with an operating microscope the CO₂ laser provides precise ablation of minimal treatment influence on the surrounding tissue. The possibility of focusing and defocusing in the range from 200 to 400mm enables treatment of much wider group of diseases in gynecology and ENT.

Laser accessories

The CO₂ laser system Model CTL-1401 is supported by the wide selection of specially designed **accessories for free-hand surgery**. Its lightweight articulated arm offers superior maneuverability of the sterilizable handpieces. It features a unique weightless spring-balanced 6- or 7-mirror arm. Not balanced 5-mirror articulated arm is additionally supported by special wall arm to even increase freedom of movement. Fixed focus handpieces of different focal length (50, 127, 200mm) or variable focal handpieces providing convenient defocusing and easy spot size selection (from 0.4mm to 3mm) are completely rotatable after treading into arm. Handpieces are available with either straight tips indicating the exact focal point or backstop tips for safety and tissue manipulation or angled mirror tips (90° and 120°) enabling access to confined areas. Handpieces are also equipped with air flow port providing a clean barrier protecting optics from contamination.

The laser pattern generating scanner is a unique new treatment modality providing precisely-controlled, homogenous, char-free ablation. Computer controlled mirrors rapidly displace a focused beam over a trajectory which uniformly covers a tissue area of size that varies from 2 x 2mm² up to 30 x 30mm². A surgeon also chooses the scanning speed and the pattern most appropriate to the type of procedure to be performed. The red aiming beam indicates the outlines of a pattern chosen directly from the scanner's handpiece. The typical shapes are: square, rectangular, triangle, hexagon and circle.



CO₂ laser microsurgery requires precisely controlled operation with no damage to surrounding tissue. Advanced **micromanipulators** enable to couple the laser articulated arm to a variety of stereomicroscopes and colposcopes. The focal distance of the micromanipulator can be adjusted within working distances of 200mm to 400mm. The zoom optics provide the surgeon with a wide range of spot sizes which can be regulated continuously and the diameter may reach the value of minimum 0.4mm and maximum 7.0mm. The parallax-free construction of the micromanipulator guarantees that aiming beam is perfectly coaxial with the joystick-controlled CO₂ laser beam and both beams coincide with the optical axis of the microscope. Being on the same focal plane of a proprietary parabolic mirror the aiming beam and CO₂ beam are always the same diameter.

Working with laser is entirely safe, as long as you apply adequate antilaser eyewear for your sight. If you want to secure sufficient eye protection, take advantage of our professional **safety glasses** Model CTL-2133 specially designed to protect against CO₂ laser radiation. Such colourless eyewear offers ideal balance between effective attenuation of harmful radiation (protection level as high as L10) and, at the same time, allow maximum luminous transmittance (as high as 90%) of light for the wearer to see clearly. Two types of ergonomic frames are available. The spectacles with adjustable temples for a comfortable matching to any face and goggles to be worn over a prescription glasses.

Azuryt 2 Laser, 15W, CO₂ laser with handpiece a set for free-hand surgery



Handpieces and tips Series CTL-2360



Azuryt 2 Laser, 15W, CO₂ laser with colposcope a set for gynaecology



Scanner Model CTL-2381



Azuryt 4 Laser, 25W, CO₂ laser with scanner a set for aesthetic medicine



Micromanipulator Model CTL-2391



Protective glasses Model CTL-2133

