

MULTIPULSE PRO FAMILY

BORN TO SIMPLIFY



JENA SÚRGICAL
LASER AT YOUR SIDE

CO₂ LASER SURGERY

POWER, AUTOMATION & MICROMETRICAL PRECISION FOR MICROSURGICAL EXCELLENCE

JenaSurgical introduces the **MultiPulse PRO Family**. It consists out of two CO₂ laser platforms, the **MultiPulse PRO** and the **MultiPulse PRO DUO**. They reach up to 60 W maximum power in continuous mode.

It is scientifically known that the 10,600 nm wavelength is mostly absorbed by water; this characteristic makes it particularly suitable for soft tissue surgery. Therefore, CO₂ laser surgery as with the **MultiPulse PRO Family** is recognized as being minimally invasive and highly effective, as proven by numerous scientific articles regarding surgery and microsurgery with this

type of laser in various disciplines.

The use with the scanning unit is indicated for layer-by-layer char-free ablation, enhancing the safety of the treatment with more uniform, accurate and controllable impact such as ablative and fractional skin resurfacing. Therefore, the **MultiPulse PRO Family** is designed to be used for ENT microsurgery, gynaecological surgery, i.e. colposcopy and laparoscopy as well as general surgery. It supports the surgeon daily and contributes to the success of surgery, with significant positive effects on the postoperative recovery time and the patient's quality of life.

Suitable for all photoablation treatments, the family facilitates the work of a surgeon thanks to the synergy of the following technologies: the Smart Pulse with PSD® (Pulse Shape Design) Technology, the EasySpot Hybrid Micromanipulator and the HiScan Surgical, that allows the operator to choose the most suitable scanning setting for microsurgical procedures. The scanner features ESLA technology (Electronic Scanned Laser Ablation) for complete control of the density, type and scanning speed, ablation depth and coagulation percentage when cutting. The U-Pulse technology is the ideal pulse for ENT laser microsurgery, i.e. it offers the highest peak power with the shortest pulse duration in order to minimize the thermal effect on the tissue. And with the **MultiPulse PRO DUO**, the surgeon gets to experience the revolutionary Hollow Guide Fiber, a waveguide that allows easy delivery of laser energy to the target tissue and that is the ideal choice for hard to reach areas.

The **MultiPulse PRO Family** enables surgery with intuitive technology and revolutionary equipment. A professional expertise combined

with scanner assisted robotized systems can improve performance for all photoablative treatments.

FEATURES

WEIGHT-BALANCED
articulated
mirror arm

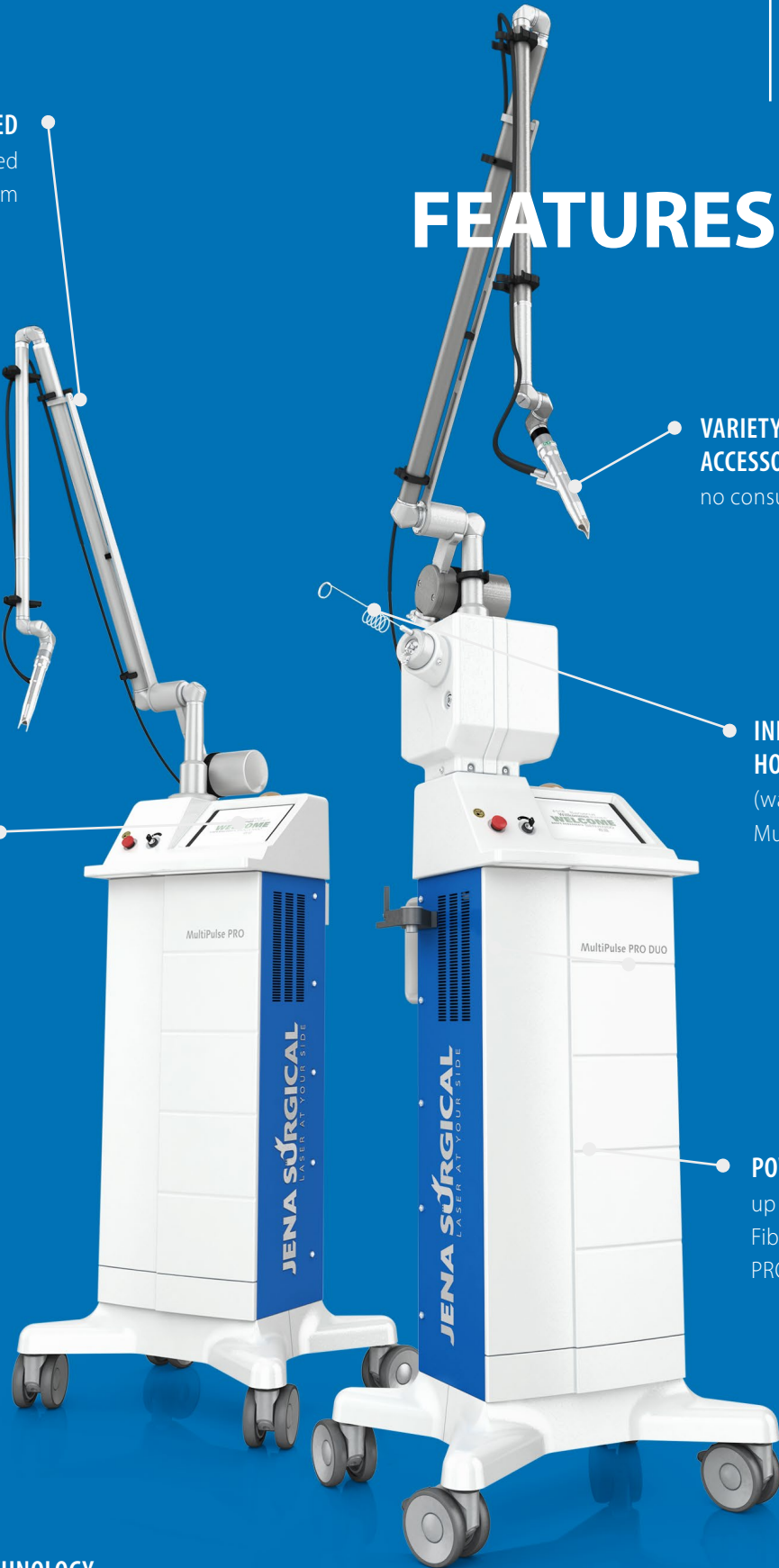
**VARIETY OF
ACCESSORIES**
no consumables

**INNOVATIVE
HOLLOW FIBER**
(wave guide) for
MultiPulse PRO DUO

**INTUITIVE
USER INTERFACE**
numerous treatment
modes

POWER
up to 60 W (Hollow
Fiber for MultiPulse
PRO DUO up to 40 W)

PSD® TECHNOLOGY
for optimal
pulse



FLEXIBLE TECHNOLOGY

WAVEGUIDE – THE HOLLOW FIBER

JenaSurgical introduces the Hollow Fiber, a waveguide for the most flexible CO₂ laser surgeries within the **MultiPulse PRO Family**. The **MultiPulse PRO DUO** offers real innovation with its revolutionary Hollow Fiber, it opens up completely new treatment possibilities such as minimally invasive ENT procedures, which call for maximum precision and flexibility in technologies.

- Reaches difficult areas
- Allows for easy laser energy delivers
- 500 µm core diameter
- Single-use
- 40 watts input power
- 2 m length

The Hollow Fiber can be used with handpieces of different shapes, depending on the surgeon's needs. The suitable, flexible lightguide handpieces are intended for procedures in ENT, gynecology and general surgery.

Hollow
Fiber



RIGID AND MALLEABLE HANDPIECES

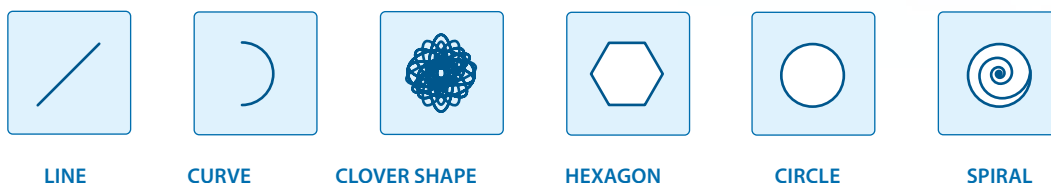


ADVANTAGES FOR THE SURGEON

The **MultiPulse PRO Family** simplifies microsurgery for safer and comfortable treatments and methods, operating with different scanning shapes, modes and protocols. A practical and intuitive touchscreen simplifies the setting of the correct parameters based on required applications. 25 protocols dedicated to **ENT Microsurgery** and **Gynaecology** guide the surgeon in their daily work.

SCANNING SHAPES FULLY CUSTOMIZED

Providing the surgeon with cutting or ablation patterns, i.e. line, curve, circle, spiral, hexagon or clover shape of variable length and controlled depth.

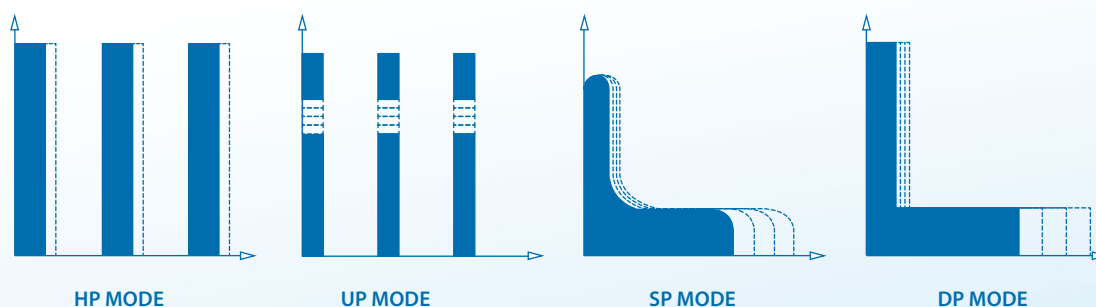


SPECIFIC PROTOCOLS AVAILABLE

A practical and intuitive touchscreen simplifies the setting of the correct parameters based on required applications. 25 protocols dedicated to **ENT Microsurgery** and **Gynecology** guide the surgeons in their daily work. Additionally, the surgeon obtains the possibility to control the ablation depth, scanning speed & coagulation percentage.

DPulse mode - The operator can directly act on the cutting depth and the percentage of coagulation.

Power mode - The operator can directly act on the emission power and dwell time of the laser beam on a scanning point.



ACCESSORIES

HANDPIECES, OPTICS AND TIPS

A **wide range of handpieces** is available for the **MultiPulse PRO Family**, with different spot sizes and high performance in specific fields of application. Additionally, different scanning units enable treatments that are tailored to the individual patient.

OPTICS



FOCUS 1.5"
Ø 0.125 mm*



FOCUS 2"
Ø 0.155 mm*



FOCUS 4"
Ø 0.267 mm*



FOCUS 7"
Ø 0.489 mm*



FOCUS ∞
Ø 1.5 mm*
Ø 2 mm**

* Spot size @ 63% of output power ** Spot size @ 83% of output power

SPACER & HANDPIECE



HANDPIECE BODY
standard

LONG SPACER
for 1.5" and 2"



SHORT SPACER
for 4", 7" and collimated (∞)



STRAIGHT TIP
with backstop



STRAIGHT TIP
standard



120° TIP
without Handpiece



TIP



90° TIP
with handpiece 5"
(spot size Ø 0.325 mm)

ACCESSORIES

The **MultiPulse PRO Family** can be equipped with two different **scanning units** that can be connected to the articulated arm to provide high performance in specific fields.

HISCAN SURGICAL

HISCAN SURGICAL

The **HiScan Surgical** scanner is used for surgical applications. Simple and intuitive functions guarantee speed of action and perfect compatibility with the majority of colposcopes and microscopes.

Scanning Shapes | Point, line, circular curves, spiral, clover, hexagon, filled circle

Emission Mode | Continuous Wave (CW) – Ultimate Pulse (UP)

Scanning Area | 6.3 mm x 6.3 mm (max. @ 400 mm)

Scanning Modes | Power mode, DPulse mode

Application Fields | ENT, Gynecology

Ablation Depth | 200 – 2,000 μm

Dwell Time | 0.1 – 45 ms



ENDOSCAN



The **EndoScan** scanner system is for ENT, laparoscopic gynecological surgery and general surgery.

Contin. Wave (CW) - Ultimate Pulse (UP)		Emission Modes
ENT, Gynecology, General Surgery		Application Fields
Cut mode (Point), circle, clover		Scanning Shapes
(max. @ 400 mm) 6.3 mm x 6.3 mm		Scanning Area
0.1 – 1 ms with circle		Dwell Time

EASYSLOT HYBRID MICROMANIPULATOR

The **MultiPulse PRO Family** can be equipped with the **EasySpot Hybrid Micromanipulator**, which reduces the laser beam spot to microscopic dimensions, making it a suitable tool for operating on narrow surgical fields.

It is an innovative micromanipulator for microsurgery, combining holographic lenses and mirrors in a unique way - hybrid technology and laser optics at the highest level.

Operative Field | Min 20 x 18 mm - Max 55 x 40 mm (@ 400 mm EFL)

Spot Size | Min 140 μm (200 mm EFL) - Max 250 μm (400 mm EFL)

Optical Technology | Focal Length: from 200 mm to 400 mm

Application Fields | ENT, Gynecology



ENDOSCAN

EASYSLOT HYBRID

APPLICATIONS AND CLINICAL CASES

The CO₂ laser (wavelength of 10,600 nm) is the laser of choice in most medical fields, thanks to its optical property of being absorbed mainly by water. It has excellent tissue cutting properties with very little lateral tissue damage (approximately 50 µm, with ultrapulsed systems and scanners).

In surgical practice, the **MultiPulse PRO Family** can be used with handpieces of different focal lengths and spots, intended for: Incision, excision, ablation, vaporization and coagulation of soft tissue.

ENT

The use of lasers in **ENT** surgery is common practice today. Thanks to the evolution of laser sources, the surgical otolaryngology approach has been revolutionized by the ability to perform minimally invasive, highly precise surgery, suitable for a wide

range of treatments for diseases of ear/nose/throat.

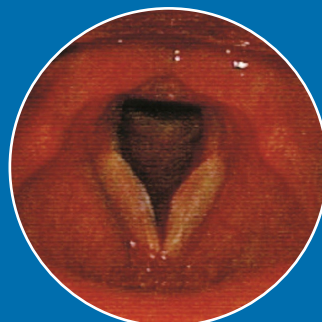
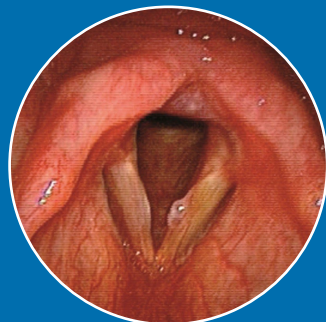
CO₂ lasers are mostly used in **ENT**, particularly appreciated for the high degree of precision in cutting combined with an **excellent coagulation** effect.

INDICATIONS - LARYNGEAL SURGERY - EXCISION, DESTRUCTION OR TREATMENT OF

- Benign neoformations (Nodules, Polyps, Reinke's Oedema, Cysts)
- Recurrent laryngeal papillomatosis
- Malignant neoplasias
- Leukoplachia
- Granulomas
- Laryngomalacia
- Sacciform cysts and laryngoceles
- Laryngeal stenosis
- Laryngeal paralysis in adduction (bilateral paralysis of the vocal chords)

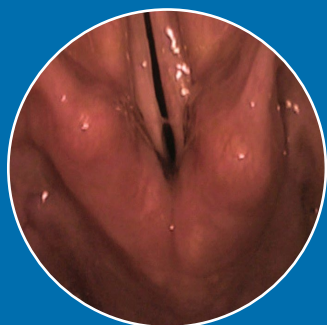
POLYP OF THE LEFT VOCAL FOLD (3 months follow-up)

[Courtesy of Prof. Stefano Dallari, M.D., Director of the ENT Operating Unit Hospital of Fermo, Italy]

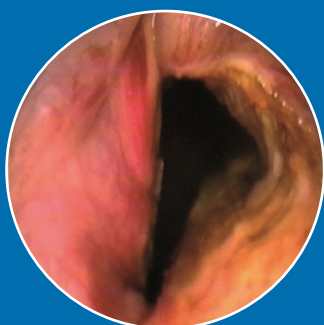


POSTERIOR CORDOTOMY (6 months follow-up)

[Courtesy of Guillermo Campos, M.D., Director - Instituto de Laringología,
Consultant – Department of Surgery, Fundación Santa Fé University Hospital, Bogotá DC, Colombia]



Bilateral vocal fold palsy



(After total thyroidectomy)



6 months follow-up

ORAL CAVITY AND ORAL PHARINX - EXCISION AND/OR VAPORISATION OF

- Phlogistic-degenerative lesions (chronic aspecific ulcers refractory to traditional medical treatment, lichen)
- Benign neoplasias (Papillomas, angiomas, cysts, polyps, myoblastomas, neuromas, adenomas, epulides, pyogenic granulomas, gengival hyperplasia)
- Pre-neoplastic lesions (Leukoplachia and erythroplasia)
- Small malignant neoplasias (Squamous cell carcinomas)
- Laser uvulopalatoplasty (LEUP) for chronic roncopathy and obstructive nocturnal apnoea syndrome (OSAS)
- Tonsillectomy - Tonsillotomy

NOSE AND PARANASAL SINUSES

- Treatment of rhinophyma, cheloids and hypertrophics scars
- Operation of lower turbinectomy, laser-assisted outpatient septoplasty (moderate deviations)
- Treatment of nasal polyposis, synechiaie, choanal atresia (neonates)

EAR SURGERY

- Stapedotomies
- Myringotomies

APPLICATIONS AND CLINICAL CASES

GYNECOLOGY

The CO₂ laser is successfully used in gynecological laser surgery, e.g. for the treatment of many female genital tract diseases with applications in colposcopy, laparoscopy and hysteroscopy, obtaining many advantages against more traditional techniques or open surgery.

COLPOSCOPY

- Cervical, vaginal, vulvar and anal acuminate condylomas
- Cysts and abscesses of Bartolin's glands
- Cysts of the mucosa
- Various degrees CIN up to invasive or initial-stage carcinomas (IA1)
- Fornix and cupola pathologies (VAIN, vaginal endometriosis, condylomatosis)
- Bowen's disease
- Queyrat's erythroplasia
- Bowenoid papulosis
- Leukoplakia (vulvar dystrophy)
- Perivulvar and perianal fistulas
- Precancerous endoanal lesions
- Dysplasia of lower genital tract
- Polyps
- VIN

LAPAROSCOPY

- Pelvic Adesiolysis
- Vaporisation of endometriosis
- Terminal Salpingostomy (hole into Fallopian tube)
- Removal of utero-sacral ligaments
- Vaporisation of small fibromas
- Removal of Myomas
- Linear Salpingectomy for tubaric pregnancy (Fallopian tube removal)

HYSTEROSCOPY

- Scar tissues, polyps or small fibroid tumors
- Uterin Septums

CERVIX, VULVA AND VAGINA

(Dysplasia or abnormal cells with ablation or cone biopsy / Venereal warts)

[Courtesy of J. Klatt and D. Rauch, Frauenarztpraxis – Lucerne, Switzerland]



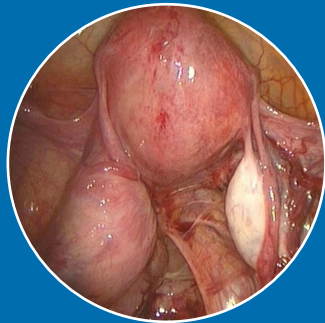
Colposcopy view
before Conization



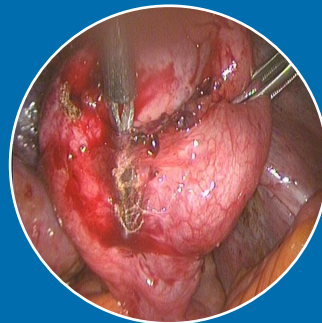
Colposcopy
view after

ENDOMETRIUM DISEASE

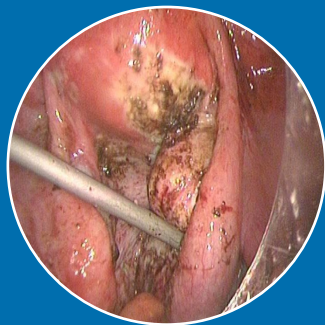
[Courtesy of M. Rosati, M.D. Director of the Operating Unit of Gynecology
and Obstetrics Spirito Santo Hospital – Pescara, Italy]



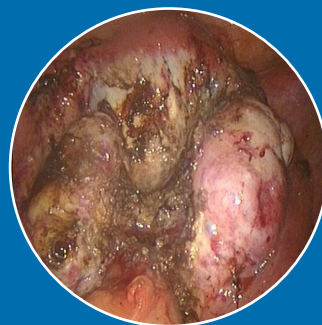
Before the treatment



During the treatment



During the treatment



After the treatment

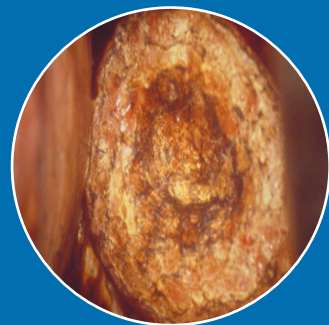
APPLICATIONS AND CLINICAL CASES

CERVICAL LASER VAPORISATION STEP BY STEP (2 months follow-up)

[Courtesy of Prof. C. Penna, M.D. and M. G. Fallani, M.D. – Department of Gynecology and Obstetrics Colposcopy and Laser Therapy Office - Careggi University Hospital, Florence – Italy]



Delimitation of area to be vaporised



Operation completed



2 months follow-up

GENERAL SURGERY

CO₂ lasers are first and foremost surgical instruments used for cutting tissue or ablation and reducing blood loss, by virtue of the heat reaction they release.

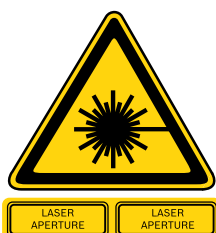
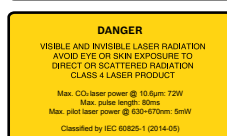
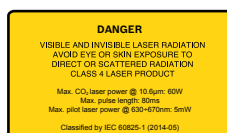
This type of laser is used to remove superficial layers of skin, without penetrating deeper while the surgeon is able to monitor the penetration depth constantly during surgery.

MultiPulse PRO DUO

TECHNICAL SPECIFICATIONS

MultiPulse PRO Family	
Laser Source	CO ₂ RF-PSD
Wavelength	10,600 nm
Emission Mode	Continuous Wave (CW) – Ultimate Pulse (UP) – Smart Pulse (SP) – DPulse (DP) – High Pulse (HP)
Power	0.1 – 60 W
Emission Time	0.01 – 0.9 s
Delay Emission Time	0.1 s – 5 s
Beam Delivery	Articulated arm with 7 mirrors and counterweight Hollow Fiber*: max. 40 W, 2 m length, 500 µm core diameter, 56±10 mrad output
Aiming Beam	Laser Diode @ 635 nm - 4 mW
Control Panel	LCD color touch screen
Accessories	Handpieces: 1.5", 2", 4", 5", 7", 8" Other: Scanners and Micromanipulators Hollow Fiber (only for MultiPulse PRO DUO)
Electrical Requirements	100-230 V~ 50/60 Hz 1,200 VA (max)
Dimensions and Weight	154 (H) x 54 (D) x 42 (W) cm ³ , 68 kg 174 (H) x 59 (D) x 66 (W)cm ³ , 75 kg
MultiPulse PRO	
MultiPulse PRO DUO	

*only for MultiPulse PRO DUO



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ALWAYS THE LATEST
PRODUCT INFORMATION



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Asclepion Laser Technologies GmbH
Brüsseler Str. 10
07747 Jena | Germany

www.jenasurgical.com