SmartXIDE² TRIO

The only
THREE IN ONE
Laser Platform for Multidisciplinary Surgery

DEKA
Innate Ability

SmartXIDE² TRIO

Unique, TRIO

The accuracy of scanner-assisted CO_2 laser and the flexibility of CO_2 and diode lasers

CO_2 Laser

Articulated Arm

CO_2 Laser

Hollow Fibre

Diode Laser Module

Fibre

Sealed RF excited CO_2 Laser Source and PSD® Technology

The SmartXide² Trio RF-excited CO_2 Laser source offers high power and speed of action. The newest PSD® (Pulse Shape Design) technology, utilizing both of these features, generates variable peak pulses with different structure, duration and power to adapt to the various clinical conditions. This makes the SmartXide Trio CO_2 laser systems extremely versatile for the various surgical applications, especially for ENT surgery. U-PULSE ("Ultrapulsed" - Fig. B) and "Real CW" pulses are the most commonly used in this kind of surgery.

U-Pulse is the perfect pulse for ENT microsurgery because a massive energy is supplied in microseconds, ensuring a perfect ablation without tissue carbonisation.

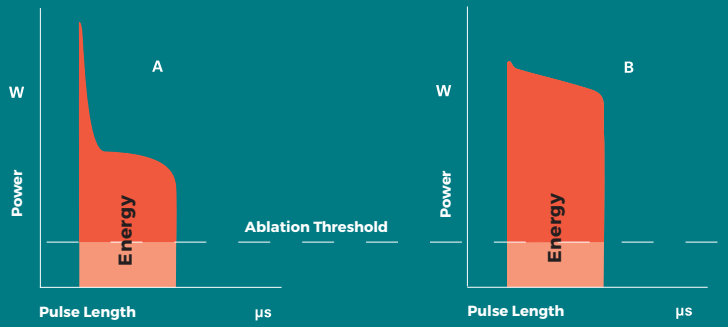
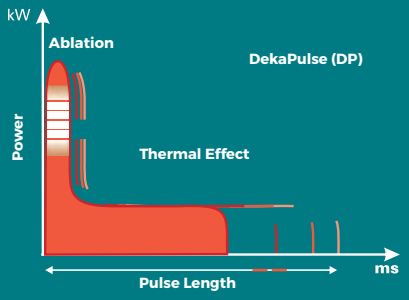


Fig. A: Single-pulse continuous-supply excited laser CO_2 (Superpulse emission).
Fig. B: Single-pulse radiofrequency excited laser CO_2 (Ultrapulse emission). Radiofrequency-excited CO_2 laser sources produce greater energy above the ablation threshold (red colour) compared to continuous-supply excited CO_2 lasers, and at comparable pulse length.

The "Real CW" emission modality has no acoustic effect and is therefore suitable for the "ONE SHOT" stapedotomy technique.



The D-Pulse or DEKA-Pulse is specific for the treatment of the vaginal mucosa (MonaLisa Touch®) and ensures maximum effectiveness with the penetration depth control and the control of the thermal effect.

SmartXide² TRIO — DEKA Innate Ability

Multidisciplinary Know-how and technological innovation

The SmartXide² Trio system combines scientific knowledge and technological innovation. The multidisciplinarity and multifunctionality of SmartXide² Trio of DEKA represent a real novelty in the world of laser platforms by combining CO_2 lasers and 980 nm diode in one system. SmartXide² Trio becomes a very complete equipment with accessories for the following:

- ENT
- Gynecology
- Monnalisa Touch
- RF Touch
- Neurosurgery
- General surgery
- Wound Healing
- Dermatology, plastic surgery and aesthetic medicine

SmartXIDE² TRIO

CO_2 Laser Hollow Fibre

To get to the most difficult-to-reach areas.

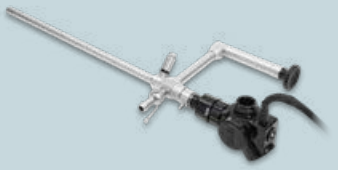
Diode Laser

An additional wavelength to expand the range of available procedures.

CO_2 Laser Articulated Arm

connectable with:

- Electronic scanning systems, for extremely precise, safe and reproducible surgical and microsurgical treatments
- High Precision micromanipulators
- Dedicated handpieces with various focal lengths and integrated smoke suction channel
- Scanner and Handpieces for Wound healing treatments
- Surgical Laparoscopic scanners V^2LR Scanner for MonaLisa Touch treatment



HiScan Surgical Take it Easy

The microswitch located at the head of the joystick allows users to control the Scanning functions without ever distracting the look through the microscope.

4 controlled functions by the exclusive microswitch of the joystick:

- Scanning shapes **rotation** (step by step and fast).
- **Size** adjustment of the figures.
- **Scan-ON/Scan-OFF**.
- **Centering** of the laser beam.

Hi Scan surgical Scanning System

Max Scan Area	6,3 mm x 6,3 mm @ 400 mm EFL
Dwell time	From 100 µs to 45 ms
Depth of scanning	From 0,2 to 2 mm
Scan Mode	Power Mode and Depth Mode
Scanning Figures	Line, Circle archs up to complete circle, Filled circle, Filled hexagon (Normal and interlaced scanning), Double interpolated ellipse, Spirals for high accuracy holes
Emission modes	CW - UP

EasySpot Micromanipulator and **HiScan Surgical** Scanner: gold standard in colposcopic surgery

SmartXide^2 TRIO with its dedicated accessories allows users to safely and efficiently treat the main pathologies of the female lower genital tract.
Colposcopic laser scanner assisted surgery offers the greatest features of minimally invasiveness wether compared to other techniques.
Depth priority controlled ablations guarantee maximum safety, reproducibility and ease of use.
These latest generation accessories allow the operator to use both the excisional and the ablative scanning methods.
The minimum thermal damage to healthy tissues and the reduced use of anesthetics and vasoconstrictors, represent a great advantage for the surgeon with a plus rapid and safe post-operative course.
Thanks to DEKA's exclusive holographic technology, Easyspot, produces micro spots and the largest scan figures on the market.

EasySpot micromanipulator

Optical technology	Holographic lens
Spot diameter	Min 140 µm - Max 4.5 mm
Working range @ 400 mm EFL	Min 20x18 mm - Max 55x40 mm
Joystick-adjustable functions	Rotation and size of scan figures, Scan On / Scan Off, fine centering.

It can be used with all surgical microscopes.

EasySpot Hybrid Micromanipulator and **HiScan Surgical** Scanner: excellence in **ENT** and **Neurosurgery**

EasySpot Hybrid offers exclusive technical advantages in ENT microscopic surgery ensuring total control even in the districts which require extreme precision and maximum accuracy. Thanks to hybrid technology (holographic lens and high mirrors reflectance) exclusive to DEKA, Easyspot Hybrid in synergy with HiScan Surgical makes the most complex operative acts as the scanner assisted One-Shot laser stapedotomy, TLM (Transoral Laryngeal Microsurgery) and Neurosurgery simple and refined. Cut and ablation are performed with the utmost precision and the least thermal damage ensuring the hemostasis necessary for a clean surgical act.

EasySpot Hybrid micromanipulator

Optical Technology	Holographic lenses and mirrors (Hybrid)
Spot diameter	Min 140 µm - Max 4.5 mm
Field of work @ 400 mm EFL	Min 20x18 mm - Max 55x40 mm
Adjustable functions by joystick	Rotation and size of the figures of scan, Scan On / Scan Off, fine centering.

It can be used with all surgical microscopes.

Endoscan

Miniaturised scanning system used with both long focal handpieces and laparoscopic couplers for open, endoscopic and laparoscopic surgery, such as oropharyngeal surgery, ulcers debridement, endometriosis treatment.
The multi-function key enables precise centering with the accessories and the ability to either activate or de-activate the scanner (Scan-ON/Scan-OFF function).

Endoscan scanning system

Scan Maximum size	5 mm @ 300 mm EFL, 6.3 mm @ 400 mm
Dwell time	From 100 to 1000 µs
Scanning system	Cut (point), circle, ball of yarn
Emission modes	CW - UP

Handpieces

A wide range of handpieces, with different focal lengths (1.5“, 2”, 4“, 5“, 7”, 8“ and collimated), tips straight, with and without backstop and angled mirrors can be used with SmartXide² TRIO.
All the handpieces transmit an air flow through a dedicated channel. This avoids the deposition of dust or particles on the lenses. All the handpieces are equipped with a smoke extraction channel.
The handpieces with focal lengths of 4“, 5”, 7“, 8“ can also be used with scanning systems.
A special 2“ handpiece (“SLIM CUT“) suitable for cutting precision freehand it is also available.

Cutting handpiece **“CUT SLIM”**

HIScan V²LR (*Vulvo-Vaginal Laser Reshaping*): for Vulvo-Vaginal Health

CO_2 laser acts directly on the vaginal mucosa stimulating its tissue and collagen regeneration. The results on the walls of the vagina are immediate, by improving either tone, trophism and elasticity. *MonaLisa Touch*® is recognized as the most popular and diffused laser procedure for treating vulvovaginal problems.
Offering a unique solution to all of those patients suffering from post menopausal symptoms, without the typical adverse effects typical of pharmaceutical drugs.

Dedicated probes for a special procedure

HiScan V²LR " scanning system to deliver CO_2 fractional laser energy over the vaginal mucosa. A wide range of autoclavable probes is available. Simply by changing each probe, HiScan V²LR scanner can be easily adapted to all the patients.

HiScan V²LR Scanner System

Max Scanning Area	Square 8 x 8 mm (for single-angle and vulvar probes)
Dwell Time & DOT Spacing	Dwell Time: from 100 to 2,000 µs. DOT Spacing: from 0 to 2,000 µm
SmartStack Level	From 1 to 5
Scanning Methods	Normal, Interlaced, SmartTrack
Emission Modes	SP - DP - HP
Accessories	Vaginal Probes: 360° full-angle; 90° single-angle (optional). Vulvar Probe.


(autoclavable 360°)


(Single-use 360°)


(23mm)


(16mm)

RF Touch: RadioFrequency for Vaginal treatments

The new single-use radiofrequency handpiece RF Touch.

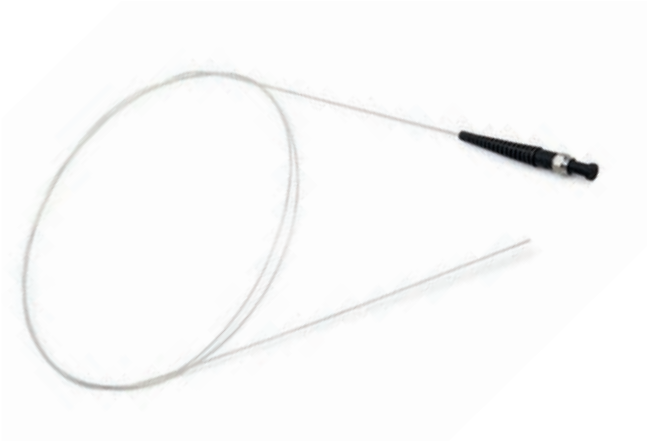
DEKA has introduced the new disposable RF handpiece, with a bipolar radio frequency source. This handpiece is directly connected with the laser device and offers synergistic treatment with the procedure MonaLisa Touch® for the intimate health of patients. Radiofrequency penetrates deeply into the vaginal mucosa (when perfectly hydrated) and generates some heat in the connective tissue, stimulating its tone and promoting neocollagenogenesys.

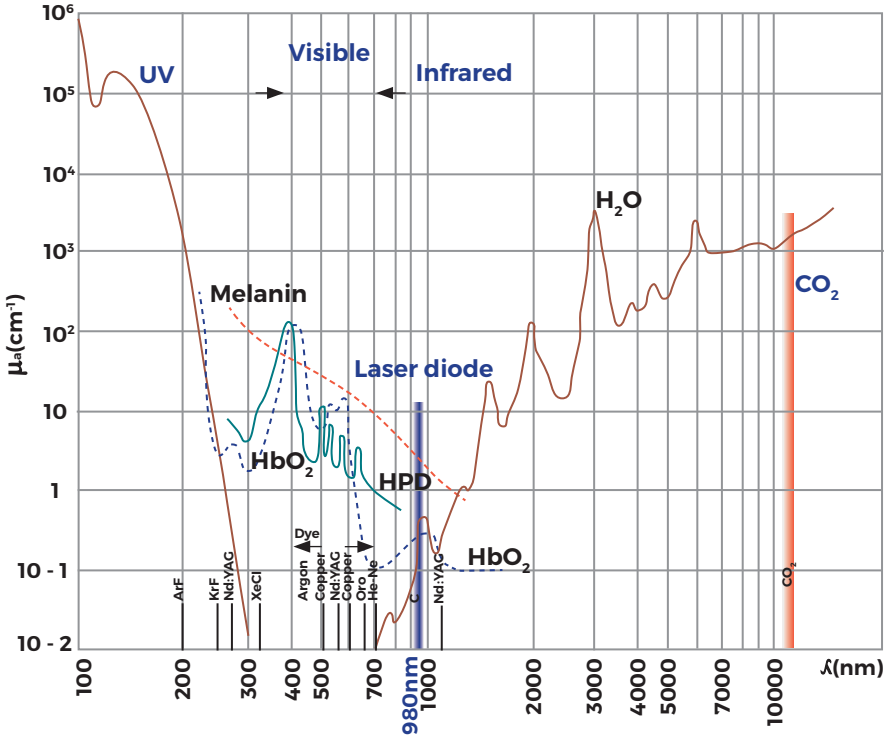
RF Touch Single-Use Handpiece

Source	Radiofrequency
Maximum output voltage	70 Vrms
Maximum output current	1A
Working frequency	500 kHz
Power	From 1 W to 50 W, step 1 W
RF Ton time	From 25 s to 30 min, step 5 s
Treatment activation	Controlled by footswitch

Flexible Delivery

SmartXide² TRIO offers the possibility of working also on areas that are normally difficult to access to thanks to its "flexible delivery accessories" for both the CO_2 and 980 nm diode lasers.
The hollow fibre CO_2 laser cutting precision and the greater coagulative properties of diode laser are available today in a single platform that meets all surgical needs.

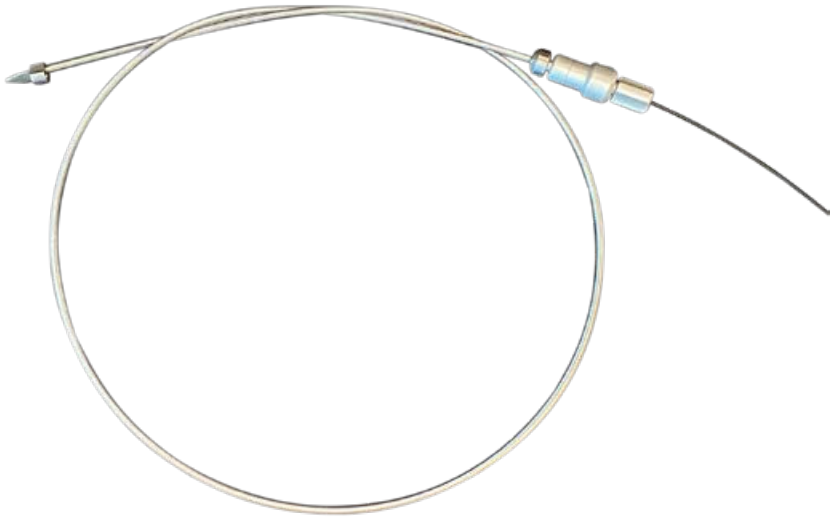




Graph of the absorption coefficients of the various wavelengths.

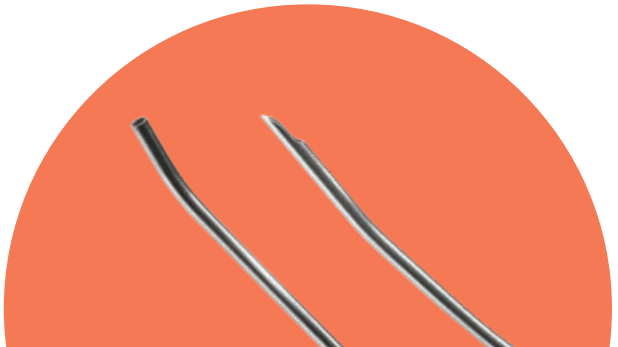
Hollow Fiber CO_2

CO_2 hollow fibre can be used with handpieces of various shapes and lengths, and with either spatula or flat tips, and malleable.
whatever the surgeon's preferences/needs, for open Endoscopic, Laparoscopic and Robotic Surgery.



CO_2 hollow fibre

Length	200 cm
Diameter	500 µm (internal) - 1 mm (external)
Power	40 W (Max)
Emission modes	CW - SP - DP - HP - UP
Accessories	Handpieces of various shapes and, lengths, hard and soft
Insufflation air	Can be used with filtered internal system air and with hospital air.



High Power Diode Laser 980 nm

The diode laser and fibre delivery system allows the surgeon to operate easily, even in the hardest conditions

The use of diode lasers is well known in various fields of surgery. 980 nm wavelength has features that allow to exploit the optimal combination between either cut and coagulative powers.
Moreover, the flexibility of fibre optics allows users to easily reach internal areas such as the middle ear ("ONE SHOT" stapedotomy) and the nose (turbinates).
The diode laser system can also be integrated into the SmartXide² TRIO at anytime, as part of an optional upgrade to the system.
A broad selection of fibre core diameters is available, from 200 µm to 600 µm single-use or up to 10 times reusable (to reduce cost).

Integrated Diode Laser

Wavelength	980 nm
Power CW	50 W
Emission Modes	CW and PW
Exposure modes Continuous	single pulse, repeated burst or burst
Emission time in PW (Ton)	From 5 to 2000 ms
Delay of the emission time in PW (Toff)	From 5 to 2000 ms
PW burst impulses	From 2 to 50
Delay between bursts	From 0.5 to 5 seconds
Transmission system	Optical fiber 200 µm, 300 µm, 400 µm, 500 µm and 600 µm disposable or resterilizable up to 10 times, with chips, SMA 905 connector.

ENT Typical configurations

- HiScan Surgical + EasySpot Hybrid
- Endoscan + Handpieces
- Slim Cut Handpiece
- Flexible CO_2 Laser Hollow fiber
- 980 nm Diode Laser

GYN Typical configurations

- HiScan Surgical + EasySpot
- Laparoscopy coupler + Endoscan
- Slim Cut Handpiece
- Flexible CO_2 Laser Hollow fiber
- V^2LR Hi-Scan (MonaLisa Touch)

For the complete list of available accessories, contact your Deka dealer

ENT

GYN

NEUROLOGY

SmartXIDE² TRIO

System Configuration

Models*	C60 e C60H	C80 e C80H
Type of laser	CO_2 RF - PSD®	
Wavelength	10.6 µm	
Laser emission mode	TEM_{00}	
Emission modes	CW - SP - DP - HP - UP	
CW power	From 0.5 to 60 W	
SP power	From 0.1 to 15 W	
DP power	From 0.2 to 15 W	
HP power	From 0.1 to 15 W	
UP power	From 0.5 to 60 W	
Exposure time	From 0.01 to 0.9 seconds	
Delay time	From 0.1 to 5 seconds	
Transmission system	7-mirror articulated arm with counterweight or flexible hollow fibre	
Guide light	High Quality Diode laser @ 635 nm - 4 mW Intensity can be regulated, from 2% to 100%, Diode function OFF during emission (DOWL).	
User database	About 150 pre-set, protocols, updatable with USB / unlimited saving of user parameters / possibility of saving customisable protocols.	
Control panel	10,4" LCD colour touchscreen	
Accessories*	Flexible hollow fibre for CO_2 laser High Power Diode laser @ 980 nm - Max. power 50 W. HiScan Surgical scan system. EasySpot Hybrid micromanipulator. Endoscan scanning system. Broad range of surgical handpieces.	
Power supply	From 100 to 120 Vac - 50/60 Hz From 220 to 230 Vac - 50 Hz / 1600 VA	
Size and weight	cm 162 (A) x 59 (L) x 56 (P) - 95 Kg for C60 e C80 cm 192 (A) x 59 (L) x 56 (P) - 100 Kg for C60H e C80H	
*Optional		

ENT

Left vocal cord polyp

3 months Follow-up

Squamous cell carcinoma (T3)

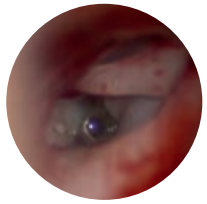
6 months Follow-up

Squamous cell carcinoma (T1a)

12 months Follow-up

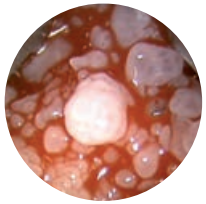
"ONE SHOT" stapedotomy with CO_2 laser

*Courtesy of **Stefano Dallari, M.D.***
Director of the Department of ENT Surgery,
Ospedale di Fermo (Hospital of Fermo, Italy)



"ONE SHOT" stapedotomy with diode laser

*Courtesy of **Arturo Mario Poletti, M.D.***
Consultant - Department of ENT Surgery,
American Hospital Dubai (UAE)



Recurrent respiratory papillomatosis

After removal of the papilloma (obvious glottic stenosis)

11 months Follow-up (after 4 procedures)

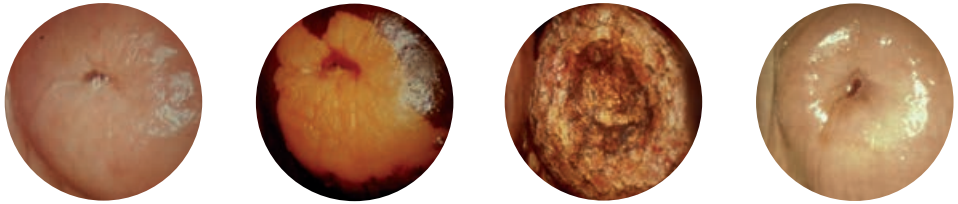
Bilateral paralysis of the vocal cords (after total thyroidectomy)

Posterior cordotomy

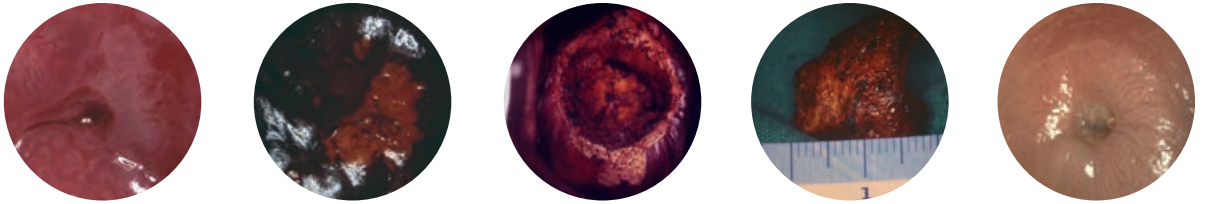
6 months Follow-up

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

GYN



Vaporization for LSIL



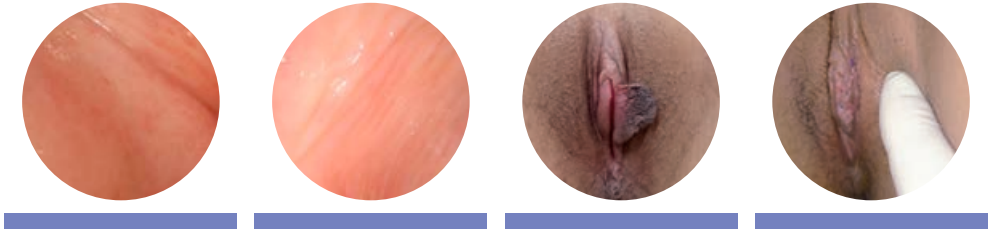
Conization for HSIL

Courtesy of: ***Prof. C. Penna M.D.***, ***M. G. Fallani M.D.***,
Department of Gynaecology and Obstetrics Colposcopy and Laser Therapy Office - Careggi University Hospital, Florence - Italy.

Treatment of Endometriosis

Courtesy of: ***Maurizio Rosati M.D.,***
Director of the Operating Unit of Gynaecology and Obstetrics Spirito Santo Hospital, Pescara - Italy.

V²LR



MonaLisa Touch treatment atrophic epithelium

Courtesy of: ***M.G. Fallani M.D.***; ***A. Pieralli M.D.***; ***Prof. S. Guaschino M.D.***; ***Prof. C. Penna M.D.***,
Careggi University Hospital. Florence, Italiy

Laser labioplasty for hypertrophy of the labia minora

Courtesy of: ***P. González Isaza M.D.***,
Pereira, Colombia

The Experience of Professionals

"The DEKA CO_2 laser, with progressive scanning technology, makes surgery on delicate tissues, like vocal cords, easier and safer. This is a wonderful tool for selective reconstruction procedures of the airways, with a series of significant advantages that go from ablation depth control, to reduced thermal damage, to lower dependence on the imprecise movements of the surgeon's hand."

Guillermo Campos M.D.
Director - Institute of Laryngology Consultant - Department of Surgery, Fundación Santa Fé University Hospital, Bogotá DC, Colombia

"Thanks to the precision and replicability that only scan-assisted CO_2 laser microsurgery can offer, the new HiScan Surgical scan system, along with the Easyspot Hybrid micromanipulator, has significantly simplified the performance of delicate and complex surgical procedures such as transoral larynx surgery and laser stapedotomy."

Stefano Dallari M.D.
Director of the ENT Surgery Unit Ospedale di Fermo, Italy

"I've been using diode laser for stapedotomies since the end of the 1990s. It's very easy to use, safe and makes the surgical procedure faster. I started with 940 nm and switched to 980 nm, which I prefer. The main characteristic of 980 nm is that it's partially absorbed by water, therefore the perilymph, although not its main target, acts as a backstop and therefore does not produce any heating of the inner ear. The main characteristic of the "One Shot" stapedotomy is the supply of highly concentrated energy on the bone in a brief exposure time, thus preventing temperature increase of surrounding tissues.
Since 2007, with this technique, I have performed hundreds of procedures and most patients have a long follow-up with good results. The "One Shot" diode laser technique significantly simplifies the surgical procedure, especially when compared to traditional techniques such as the use of manual perforation and microdrill which are not selective and precise on the delicate structures of the inner ear."

Arturo Mario Poletti M.D.
Consultant - Department of ENT Surgery, American Hospital Dubai (UAE)

"The use of the CO_2 laser coupled to the micromanipulator with microspot and scanner, combines speed, ease of use and minimally invasiveness. Checking the depth of ablation and damage thermal increase safety and efficacy in full treatments respect for patients. CO_2 laser systems with scanner technology are the gold standard in outpatient surgery low genital tract."

Prof. Carlo Penna M.D.
Department of Gynecology and Obstetrics, Colposcopy Unit and Laser Therapy, Careggi Hospital, Florence, Italy

"SmartXide^2 CO_2 laser twavelength is ideal to treat extremely delicately and precisely all the soft tissues. It doesn't requiring contact, it allows to intervene even in areas typically difficult to reach with other methods used in video laparoscopy. In advanced DEKA systems, use of the Ultrapulsed high energy mode per pulse, added to the movement of the beam by the scanner, guarantees safety and minimally invasive, in particular on pathologies that are difficult to solve such as endometriosis or in general infertility therapy. For these reasons the Smartxide^2 laser system is an indispensable tool for the laparoscopist gynecologist."

Maurizio Rosati M.D.
Equipe di UOC, Ginecologia e Ostetricia, Ospedale Spirito Santo, Pescara, Italia

The Experience of Professionals

"MonaLisa Touch® is a revolutionary method. Really surprising that such a simple and outpatient procedure minimally invasive can treat several problems so effectively in the vulvovaginal area. The success we have achieved with this therapy far exceeded our expectations: almost all women experienced significant improvement."

Mickey Karram M.D.
Pelvic medicine and reconstructive feminine surgery Fellowship program Director , The Christ Hospital, Cincinnati, OH - USA

"MonaLisa Touch® is undoubtedly the procedure with the greatest evidence in the medical literature, demonstrating how much it is safe and effective. The other lasers have not yet produced similar evidence, and every single laser is different from the others, therefore we cannot say that all CO_2 lasers achieve the same effects with the same security."

Prof. Stefano Salvatore M.D.
Head of the Gynecology Department,
San Raffaele e Vita Salute Hospital, Milan, Italy

"I started using the laser in the most difficult cases of foot chronic diabetic ulcers, usually infected and unresponsive to treatments. The system SmartXide² has proven to be really useful both for either the preparation of the wound bed and for its deep decontamination, promoting the tissue repair process with quite often surprising results. In many patients in fact, I have found an important reduction in healing times also with a better aesthetic result. Thanks to the scanning system EndoScan performs the treatment extremely precisely and homogeneous, with perfect control of fibrin vaporization of the ulcer bed, even in complex situations that I could not treat adequately with scalpel. The potential of this tool is not still fully expressed. New studies we are working on for injuries with exposed bone they make us very optimistic for others future, with SmartXide² which will become the turning point treatment for diabetic foot."

Matteo Monami M.D.
Director of the Diabetic Foot Unit, SOD Diabetology
University Hospital of Careggi, Florence, Italy

"I have been using DEKA's CO_2 laser to treat skin ulcers and wounds for years and I consider myself a pioneer in this field. Chronic lesions have a huge impact on public health and devastating on daily life of patients. The problem is transversal to many medical disciplines. The patients I receive in my surgery office do indeed have lesions with different etiology (vascular, decubitus, traumatic, surgical, iatrogenic, etc.) that do not respond to the usual treatments, which have continued for years, or potentially difficult to heal by site, comorbidity or depth. They therefore require advanced and innovative care. With the SmartXide² laser all the conditions for proper tissue repair through the debridement and ulcer needling are properly created. Patients are very satisfied both for the positive results appreciable already after a few sessions, and for one significant reduction of pain during and after treatment."

Carlo Mirabella M.D.
La Fratta Hospital of Cortona (Arezzo) formerly SOD Cell Therapies and Transfusion Medicine Hospital, University of Careggi, Florence, Italy

SmartXIDE2 TRIO

DEKA Innate Ability

www.dekalaser.com

INNATE ABILITY

This brochure is not intended for US market.

ATTENTION - Visible and invisible laser radiation.
Avoid exposing eyes and skin to direct or diffuse radiation.
Class 4 laser appliance

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CE 0123

DEKA Innate Ability

DEKA, a spin-off of the El.En. Group, is a leader in the design and production of light laser systems for medical applications. DEKA markets its appliances in over 80 countries through a network of distributors in international markets and with direct branches in France, Japan and the USA. DEKA produces laser devices in compliance with Directive 93/42/CEE specifications and in compliance with the ISO 9001 and ISO 13485 quality system.

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