

# MCO 25plus and MCO 50plus

All essential Parameters constantly in Focus

Otorhinolaryngology

KLS

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- Gynaecology
- Dermatology
- Aesthetic surgery
- General surgery
- Proctology

### MCO 25 plus and MCO 50 plus All essential Parameters constantly in Focus

The CO<sub>2</sub> laser is the classic medical laser. It has been used in numerous surgical fields with great success for many years. With the new CO<sub>2</sub> lasers MCO 25plus and MCO 50plus, KLS Martin offers state-of-the-art, cutting-edge laser technology. Whether you consider its uncomplicated operating philosophy, its excellent optical properties or the comprehensive, innovative range of accessories – the MCO 25/50plus gives you lots of reasons to decide in favor of a KLS Martin CO<sub>2</sub> laser.

#### 13 good reasons that make a truly convincing case:

- Quick Tip panel for easy and time-saving parameter selection
- Easy-moving beam delivery system with excellent beam characteristics
- Flexible hollow waveguide for an easy and versatile application
- Safe locking of the articulated (mirror-joint) arm in two different positions
- Versatile, user-oriented operating modes such as ultra-short single pulses, superpulse mode and cycle mode
- Reliable beam guidance with minimal spot sizes and high power densities
- Five program storage locations for saving user-defined parameter sets

- Integrated, programmable "Soft Scan plus R" scanner for multi-disciplinary use in conjunction with different handpieces and micromanipulators
- Special LineScan function for robotic vocal cord surgery
- Micro scan patterns for laser-assisted stapedial surgery
- Micromanipulator Micro Point 2 with minimal spot size of 0.11 mm and highest power densities
- Possibility to select and turn scan patterns directly via the Micro Point micromanipulator
- Comprehensive range of accessories for numerous medical fields (ENT, gynaecology, dermatology, etc.)

### **FlexWave** Versatile application by flexible handling



The flexible CO<sub>2</sub> laser applicator KLS Martin FlexWave incorporates latest technology to achieve highest reliability, performance and transmission.

With the divergent beam profile, speed and depth of tissue vaporization are easily controlled by changing the distance from fiber tip to tissue.

Ease of use is ensured by the coupling adapter and guide arm.

Full flexibility also in accessories: The FlexPen with various attachable tips allows the surgeon to reach any surgical site.

For further information on the KLS Martin FlexPen fiber holder please refer to the separate brochure.

### Applications

OtorhinolaryngologyGynaecologyNeurosurgery

16W

KLS martin MC025 Plus

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## Take your Seat in the Cockpit



#### **Quick-Tip-Panel**

Straightforward operating interface, uncomplicated operating philosophy - properties that any user appreciates. The Quick-Tip panel guarantees easy and fast parameter selection. Only the parameters relevant to the operating mode used are automatically displayed at a time - the essentials in focus!



Five program storage locations, enabling you to save your own sets of parameters





Pulse train







Superpulse mode





Versatile, user-oriented operating

modes. Utmost precision with minimal thermal stress







Single pulse

Cycle mode

Superpulse

As little as possible, as much as necessary

The digital scanner system SoftScan plus R comes as an integrated part of the laser unit. It offers controlled, reproducible tissue ablation for use in numerous surgical fields – gentle, tissue-sparing laser application for the benefit of the patient.

# Integrated, multidisciplinary scanner "SoftScan plus R"

for controlled, superficial tissue vaporization in general and aesthetic surgery. Different handpieces and micromanipulators are available for easy handling. The tissue ablation rate can be controlled via different scanning speeds.





Tissue ablation effect

# Micro Point 2 and Mini Point Unbeatable Variability

The Micro Point 2 and Mini Point micromanipulators enable you to use the system with all commonly available operating microscopes. Together with the  $CO_2$  laser systems, they constitute the "power pack" for microsurgery – offering extremely high power densities with minimal spot sizes.



76-400-00-04 "Mini Point" micromanipulator for gynaecology, proctology Adapters available for connecting operating microscopes and colposcopes from different manufacturers (see page 14)





Mirror construction Micro Point 2/2 R

76-402-00-04

"Micro Point 2" micromanipulator for ENT, Adapters available for connecting operating microscopes and colposcopes from different manufacturers (see page 14)

# Micro Point 2 S Precision at the highest Level

MCO 25plus and MCO 50plus with scanner system SoftScan plus R and micromanipulator Micro Point 2 S - the highly sophisticated laser system for robotic microsurgery in laryngeal surgery.



76-422-00-04 Micromanipulator "Micro Point 2 S" including Micro Switch for selecting and rotating scan patterns

### Cordectomy with LineScan function



(With kind support from the Istituto Europeo di Oncologia, Milan, Italy. F. Chiesa, M. Ansarin / ENT)

### **MCO** plus skinFrac – No compromise in Aesthetics and Surgery



#### The 2 in 1 solution for aesthetics

No compromises anymore with the availability of full aesthetic and surgical capabilities in one  $CO_2$  laser unit. In terms of beam quality and thermal tissue effect, the  $CO_2$  lasers of the MCOplus series by KLS Martin have set highest standards in recent years.

Especially the unique superpulse function with minimal pulse activation times of 0.3 ms and maximum output powers of 250 W (MCO 25plus) or 500 W (MCO 50plus) have changed the way of performing surgery due to the possibility of setting a "cold laser cut" with minimized thermal damage to surrounding tissue.

With the new skinFrac function the MCOplus lasers can be equipped with full aesthetic capabilities for state-of-the-art fractional treatments.

#### Fractionated vs. ablative scanning

While the classic ablative scan vaporizes large and defined tissue surfaces, fractionated scanning allows punctuated vaporization of microscopically small tissue surfaces. As a result, fractionated scanning is less traumatic to the skin and the healing process is being accelerated.

Additionally the stimulation of production of new collagen in the dermis can be performed by applying finest energy columns which penetrate into the dermis and spare the largest part of the skin surface.

#### Wide choice of indications

The skinFrac option allows working in five different work modes for optimized cosmetic results.

In softFrac mode, dots of a diameter of 0.8 mm are being ablated on a defined surface. Patients where skin resurfacing is being performed benefit from decreased trauma to the skin compared with the classic ablative technique. Also healing times are significantly reduced compared to the classic method.

The powerFrac mode allows the penetration of the skin into the dermis by finest energy columns with a diameter of just 0.15 mm. The result is the stimulation of production of new collagen. Especially for deeply situated conditions such as acne scars the patient benefits from a less traumatic treatment and faster healing times than with the classic ablative technique.

Additionally the system provides all classical CO<sub>2</sub> laser modes such as the "cold cut" in superpulse mode, ablative scan focussed and defocussed application for surgical cutting and coagulation.



Up to 0.2 mm (MCO 25plus) Up to 0.3 mm (MCO 50plus)



0.8 mm Max. figure size 10 x 10 mm



76-501-08-04 Handpiece softFrac



Up to 2 mm (MCO 25plus, 50plus



).15 mm Max. figure size 5 x 5 mm



76-502-01-04 Handpiece powerFrac

### The skinFrac option offers:

- Wide range of cosmetic and surgical indications
- Intuitive user interface
- Adjustable setting of penetration depth and spot density
- Reduced healing times compared to ablative scanning
- Five work modes for cosmetic and surgical treatments including "cold cut" in superpulse
- Excellent haemostasis in continuous wave mode
- High return-on-investment by upgradability of existing MCOplus lasers

### Order information

For MCOplus lasers production date 2013 and younger:

76-501-08-04 Handpiece softFrac 76-502-01-04 Handpiece powerFrac

Upgrade for existing MCOplus lasers until and including production date 2012 with scanner:

76-500-49-04 skinFrac upgrade



76-100-05-04 Focusing handpiece, 50 mm, complete (for dermatology and aesthetic surgery)



76-100-10-04\* Focusing handpiece, 127 mm, complete (standard handpiece)



76-100-15-04 Focusing handpiece, 200 mm, complete (for ENT/pharyngeal surgery)



76-500-50-04\*\* Scanner handpiece, 127 mm, complete (for dermatology and aesthetic surgery)



76-500-60-04 Scanner handpiece, 200 mm, complete (for dermatology and aesthetic surgery)



76-500-31-04\*\* "SoftScan plus R" scanner box (w/o handpiece)



76-501-08-04 Handpiece softFrac



76-100-06-04



76-100-11-04



76-100-16-04



76-500-51-04



76-500-61-04



76-500-41-04 Mini Point connector



76-500-42-04\*\*\* Micro Point connector



76-502-01-04 Handpiece powerFrac

- included in Laser package
- included in Laser with Scanner package
- \*\*\* included in Micro Point

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76-100-20-04 Backstop for 127-mm focusing handpiece (for ENT/pharyngeal surgery)



76-100-25-04 Backstop for 200-mm focusing handpiece (for ENT/pharyngeal surgery)



76-200-15-04 Adapter for angled working parts for 200-mm focusing handpiece



76-200-05-04 90° angled working part, for 127-mm focusing handpiece and 200-mm focusing handpiece (in conjunction with adapter 76-200-15-04)



76-200-10-04 120° angled working part, for 127-mm focusing handpiece and 200-mm focusing handpiece (in conjunction with adapter 76-200-15-04)

76-600-00-04 Special optics set for nasal operations, consisting of:



76-600-01-04 ENT optics

76-600-04-04 120° attachment for ENT optics



76-600-03-04 90-degree attachment for ENT optics



1000

76-600-02-04 0-degree attachment for ENT optics

76-600-05-04 Brush for ENT attachments

# Ordering and technical Data Laser Units and Accessories

### **Ordering Data**

consisting of basic unit (25 W), articulated (mirror-joint) arm,   177-025-01-04     with pilote module ENT   77-025-01-04     With integrated scanner, articulated (mirror-joint) arm,   127-rmm standard focusing handpiece, 127-rmm scanner     focusing handpiece, power cord, foot switch   77-025-11-04     with integrated scanner, articulated (mirror-joint) arm,   127-rmm standard focusing handpiece, power cord, foot switch   77-025-11-04     With integrated scanner, articulated (mirror-joint) arm,   127-rmm standard focusing handpiece, power cord, foot switch   77-050-01-04     With pilote module ENT   77-050-01-04   With integrated scanner, articulated (mirror-joint) arm,   127-rmm standard focusing handpiece, 127-rmm scanner     focusing handpiece, power cord, foot switch   77-050-11-04   With integrated scanner, articulated (mirror-joint) arm,     127-rmm standard focusing handpiece, 127-rmm scanner   focusing handpiece, power cord, foot switch   77-050-11-04     With late module ENT   77-050-11-04   With pilote module ENT   76-100-05-04     Tip, detachable, for 50-rmm focusing handpiece   76-100-05-04   76-100-05-04     Tip, detachable, for 50-rmm focusing handpiece   76-100-10-04   76-100-10-04     Focusing handpiece, 200 mm (complete, incl. detachable tip)   76-100-16-	KLS Martin CO <sub>2</sub> Laser MCO 25plus					
127-mm standard focusing handpiece, power cord, foot switch   77-025-01-04     with pilote module ENT   77-025-01-21     KLS Martin C0, Laser MC0 25plus	consisting of basic unit (25 W), articulated (mirror-joint) arm,					
with pilote module ENT   77-025-01-21     KLS Martin CO, Laser MCO 25plus	127-mm standard focusing handpiece, power cord, foot switch	77-025-01-04				
KLS Martin CQ, Laser MCO 25plus     with integrated scanner, articulated (mirror-joint) arm,     127-mm standard focusing handpiece, 127-mm scanner     focusing handpiece, power cord, foot switch   77-025-11-04     with pilote module ENT   77-025-11-04     Consisting of basic unit (50 W), articulated (mirror-joint) arm,   127-mm standard focusing handpiece, power cord, foot switch   77-050-01-04     Vith pilote module ENT   77-050-01-04   77-050-01-04     KLS Martin CQ, Laser MCO 50plus   77-050-01-04     With integrated scanner, articulated (mirror-joint) arm,   127-mm standard focusing handpiece, 127-mm scanner     focusing handpiece, power cord, foot switch   77-050-01-04     with pilote module ENT   77-050-01-04     All laser units are available with or without scanner.   77-050-01-04     Focusing handpiece, 50 mm (complete, incl. detachable tip)   76-100-05-04     Tip, detachable, for 50-mm focusing handpiece   76-100-06-04     Focusing handpiece, 220 mm (complete, incl. detachable tip)   76-100-16-04     Focusing handpiece, 207 mm focusing handpiece   76-100-16-04     Focusing handpiece, 200 mm focusing handpiece   76-100-16-04     Backstop for 127-mm focusing handpiece   76-100-26-04	with pilote module ENT	77-025-01-21				
with integrated scanner, articulated (mirror-joint) arm,   127-mm standard focusing handpiece, 127-mm scanner     focusing handpiece, power cord, foot switch   77-025-11-04     with pilote module ENT   77-025-11-04     KLS Martin CO, Laser MCO 50plus   77-050-01-04     consisting of basic unit (50 W), articulated (mirror-joint) arm,   127-mm standard focusing handpiece, power cord, foot switch   77-050-01-04     With pilote module ENT   77-050-01-04   With pilote module ENT   77-050-01-04     KLS Martin CO, Laser MCO 50plus   Vith integrated scanner, articulated (mirror-joint) arm,   127-nm standard focusing handpiece, 127-mm scanner     focusing handpiece, power cord, foot switch   77-050-11-04   With pilote module ENT   77-050-11-04     All laser units are available with or without scanner.   76-100-05-04   76-100-05-04     Focusing handpiece, 50 mm (complete, incl. detachable tip)   76-100-05-04   76-100-16-04     Tip, detachable, for 127-mm focusing handpiece   76-100-16-04   76-100-16-04     Focusing handpiece, 200 mm (complete, incl. detachable tip)   76-100-16-04   76-100-16-04     Tip, detachable, for 127-mm focusing handpiece   76-100-16-04   76-100-16-04     Focusing handpiece, 200 mm (complete, incl. detachable tip)<	KLS Martin CO <sub>2</sub> Laser MCO 25plus					
127-mm standard focusing handpiece, 127-mm scanner   focusing handpiece, power cord, foot switch 77-025-11-04   with pilote module ENT 77-025-11-21   KLS Martin CO, Laser MCO 50plus 77-050-01-04   consisting of basic unit (50 W), articulated (mirror-joint) arm, 77-050-01-21   KLS Martin CO, Laser MCO 50plus 77-050-01-21   KLS Martin CO, Laser MCO 50plus 77-050-01-21   With integrated scanner, articulated (mirror-joint) arm, 77-050-11-04   127-mm standard focusing handpiece, 127-mm scanner 77-050-11-04   with integrated scanner, articulated (mirror-joint) arm, 77-050-11-21   All laser units are available with or without scanner. 77-050-11-21   Mill be module ENT 77-050-11-21   All laser units are available with or without scanner. 76-100-05-04   Tip, detachable, for 50-mm focusing handpiece 76-100-16-04   Tip, detachable, for 127-mm focusing handpiece 76-100-10-04   Focusing handpiece, 200 mm (complete, incl. detachable tip) 76-100-16-04   Tip, detachable, for 127-mm focusing handpiece 76-100-16-04   Seckstop for 127-mm focusing handpiece 76-100-16-04   120° angled working part for 127-mm focusing handpiece 76-200-16-04 <t< td=""><td>with integrated scanner, articulated (mirror-joint) arm,</td><td></td></t<>	with integrated scanner, articulated (mirror-joint) arm,					
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KLS Martin CO, Laser MCO 50plus   consisting of basic unit (50 W), articulated (mirror-joint) arm,   127-mm standard focusing handpiece, power cord, foot switch 77-050-01-04   with pilote module ENT 77-050-01-02   KLS Martin CO, Laser MCO 50plus 77-050-11-04   with integrated scanner, articulated (mirror-joint) arm, 77-050-11-04   127-mm standard focusing handpiece, 127-mm scanner 77-050-11-04   with pilote module ENT 77-050-11-04   All laser units are available with or without scanner. 76-100-05-04   Focusing handpiece, 50 mm (complete, incl. detachable tip) 76-100-05-04   Tip, detachable, for 50-mm focusing handpiece 76-100-05-04   Focusing handpiece, 127 mm focusing handpiece 76-100-05-04   Focusing handpiece, 200 mm (complete, incl. detachable tip) 76-100-05-04   Tip, detachable, for 200-mm focusing handpiece 76-100-10-04   Focusing handpiece, 200 mm (complete, incl. detachable tip) 76-100-10-04   Backstop for 200-mm focusing handpiece 76-100-25-04   90° angled working part for 127-mm focusing handpiece 76-200-05-04   120° angled working part for 127-mm focusing handpiece 76-200-15-04   90° angled working part for 127-mm focusing handpiece 76-200-10-04	with pilote module ENT	77-025-11-21				
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All laser units are available with or without scanner.General accessoriesFocusing handpiece, 50 mm (complete, incl. detachable tip)76-100-05-04Tip, detachable, for 50-mm focusing handpiece76-100-10-04Focusing handpiece, 127 mm (complete, incl. detachable tip)76-100-11-04Tip, detachable, for 127-mm focusing handpiece76-100-15-04Focusing handpiece, 200 mm (complete, incl. detachable tip)76-100-15-04Tip, detachable, for 200-mm focusing handpiece76-100-20-04Backstop for 200-mm focusing handpiece76-100-25-0490° angled working part for 127-mm focusing handpiece76-200-10-04Adapter for angled working part for 127-mm focusing handpiece76-200-10-04Adapter for angled working part for 127-mm focusing handpiece76-200-10-04Adapter for angled working parts for 200-mm focusing handpiece76-200-15-04Oug angled working part for 127-mm focusing handpiece76-301-00-04Adapter for angled working parts for 200-mm focusing handpiece76-301-00-04Oug alser protective goggles79-100-57-04Optics, f = 400 mm, laparoscopic connector Karl Storz/Olympus76-301-00-04Connector Karl Storz complete (w/o optics)76-301-00-04Connector Karl Storz complete (w/o optics)76-303-00-04Consisting of:76-600-01-04- optics76-600-01-04- optics76-600-01-04- optics76-600-01-04- optics76-600-02-04- opticgee attachment for optics76-600-02-04- 00-degree attachment for optics76-600-03-04 <td>with pilote module ENT</td> <td>77-050-11-21</td>	with pilote module ENT	77-050-11-21				
General accessories     Focusing handpiece, 50 mm (complete, incl. detachable tip)   76-100-05-04     Tip, detachable, for 50-mm focusing handpiece   76-100-06-04     Focusing handpiece, 127 mm (complete, incl. detachable tip)   76-100-10-04     Tip, detachable, for 127-mm focusing handpiece   76-100-15-04     Focusing handpiece, 200 mm (complete, incl. detachable tip)   76-100-15-04     Tip, detachable, for 200-mm focusing handpiece   76-100-26-04     Backstop for 127-mm focusing handpiece   76-100-26-04     Backstop for 200-mm focusing handpiece   76-100-25-04     90° angled working part for 127-mm focusing handpiece   76-200-05-04     120° angled working part for 127-mm focusing handpiece   76-200-15-04     Adapter for angled working parts for 200-mm focusing handpiece   76-200-15-04     Op' angled working part for 127-mm focusing handpiece   76-200-15-04     Outcs, f = 400 mm, laparoscopic connector Karl Storz/Olympus   76-301-00-04     Connector Olympus complete (w/o optics)   76-301-00-04     Connector Karl Storz complete (w/o optics)   76-302-00-04     V   V   V     Special optics set for nasal operations,   76-600-01-04     consisting of:	All laser units are available with or without scanner.					
General accessories     Focusing handpiece, 50 mm (complete, incl. detachable tip)   76-100-05-04     Tip, detachable, for 50-mm focusing handpiece   76-100-10-04     Focusing handpiece, 127 mm (complete, incl. detachable tip)   76-100-11-04     Focusing handpiece, 200 mm (complete, incl. detachable tip)   76-100-15-04     Tip, detachable, for 200-mm focusing handpiece   76-100-16-04     Backstop for 127-mm focusing handpiece   76-100-20-04     Backstop for 200-mm focusing handpiece   76-100-25-04     90° angled working part for 127-mm focusing handpiece   76-200-05-04     120° angled working part for 127-mm focusing handpiece   76-200-16-04     Adapter for angled working parts for 200-mm focusing handpiece   76-200-16-04     Co_2 laser protective goggles   79-100-57-04     Co_2 laser protective goggles   79-100-57-04     Concetor Olympus complete (w/o optics)   76-301-00-04     Connector Olympus complete (w/o optics)   76-302-00-04     Connector Nam, laparoscopic connector Karl Storz/Olympus   76-303-00-04     Connector Karl Storz complete (w/o optics)   76-303-00-04     Connector Karl Storz complete (w/o optics)   76-600-01-04     Connector Set for nasal operations,						
Focusing handpiece, 50 mm (complete, incl. detachable tip)   76-100-05-04     Tip, detachable, for 50-mm focusing handpiece   76-100-06-04     Focusing handpiece, 127 mm (complete, incl. detachable tip)   76-100-10-04     Tip, detachable, for 127-mm focusing handpiece   76-100-15-04     Focusing handpiece, 200 mm (complete, incl. detachable tip)   76-100-15-04     Tip, detachable, for 200-mm focusing handpiece   76-100-26-04     Backstop for 127-mm focusing handpiece   76-100-25-04     Backstop for 200-mm focusing handpiece   76-100-25-04     90° angled working part for 127-mm focusing handpiece   76-200-05-04     120° angled working part for 127-mm focusing handpiece   76-200-10-04     Adapter for angled working parts for 200-mm focusing handpiece   76-200-10-04     C02 laser protective goggles   79-100-57-04     C02 laser protective goggles   79-100-57-04     C02 laser protective goggles   76-301-00-04     Connector Olympus complete (w/o optics)   76-301-00-04     Connector Varpus complete (w/o optics)   76-303-00-04     Connector Karl Storz complete (w/o optics)   76-303-00-04     Consisting of:	General accessories					
Tip, detachable, for 50-mm focusing handpiece   76-100-06-04     Focusing handpiece, 127 mm (complete, incl. detachable tip)   76-100-10-04     Tip, detachable, for 127-mm focusing handpiece   76-100-15-04     Focusing handpiece, 200 mm (complete, incl. detachable tip)   76-100-15-04     Tip, detachable, for 200-mm focusing handpiece   76-100-20-04     Backstop for 127-mm focusing handpiece   76-100-25-04     90° angled working part for 127-mm focusing handpiece   76-200-05-04     120° angled working part for 127-mm focusing handpiece   76-200-10-04     Adapter for angled working parts for 200-mm focusing handpiece   76-200-10-04     CO <sub>2</sub> laser protective goggles   79-100-57-04     CO <sub>2</sub> laser protective goggles   79-100-57-04     CO <sub>2</sub> laser protective goggles   76-301-00-04     Connector Olympus complete (w/o optics)   76-301-00-04     Connector Varpus complete (w/o optics)   76-303-00-04     Connector Karl Storz complete (w/o optics)   76-303-00-04     Consisting of:	Focusing handpiece, 50 mm (complete, incl. detachable tip)	76-100-05-04				
Focusing handpiece, 127 mm (complete, incl. detachable tip)   76-100-11-04     Tip, detachable, for 127-mm focusing handpiece   76-100-11-04     Focusing handpiece, 200 mm (complete, incl. detachable tip)   76-100-15-04     Tip, detachable, for 200-mm focusing handpiece   76-100-20-04     Backstop for 127-mm focusing handpiece   76-100-25-04     90° angled working part for 127-mm focusing handpiece   76-200-05-04     120° angled working part for 127-mm focusing handpiece   76-200-10-04     Adapter for angled working parts for 200-mm focusing handpiece   76-200-15-04     Oo2 angled working part for 127-mm focusing handpiece   76-200-15-04     Adapter for angled working parts for 200-mm focusing handpiece   76-200-15-04     Oo2 asser protective goggles   79-100-57-04     CO2 laser protective goggles   79-100-57-04     CO2 laser protective goggles   70-100-04     Connector Olympus complete (w/o optics)   76-301-00-04     Connector Varpus complete (w/o optics)   76-303-00-04     Connector Karl Storz complete (w/o optics)   76-303-00-04     Consisting of:	Tip, detachable, for 50-mm focusing handpiece	76-100-06-04				
Tip, detachable, for 127-mm focusing handpiece   76-100-11-04     Focusing handpiece, 200 mm (complete, incl. detachable tip)   76-100-15-04     Tip, detachable, for 200-mm focusing handpiece   76-100-20-04     Backstop for 127-mm focusing handpiece   76-100-25-04     90° angled working part for 127-mm focusing handpiece   76-200-05-04     120° angled working part for 127-mm focusing handpiece   76-200-10-04     Adapter for angled working part for 127-mm focusing handpiece   76-200-10-04     Adapter for angled working parts for 200-mm focusing handpiece   76-200-15-04     Oo2 alser protective goggles   79-100-57-04     V   V   V     Qottes, f = 400 mm, laparoscopic connector Karl Storz/Olympus   76-301-00-04     Connector Olympus complete (w/o optics)   76-303-00-04     Connector Karl Storz complete (w/o optics)   76-303-00-04     Consisting of:   V     Special accessories   76-600-01-04     O-degree attachment for optics   76-600-02-04     - 0-degree attachment for optics   76-600-02-04     - 90-degree attachment for optics   76-600-03-04     - 120-degree attachment for optics   76-600-03-04     -	Focusing handpiece, 127 mm (complete, incl. detachable tip)	76-100-10-04				
Focusing handpiece, 200 mm (complete, incl. detachable tip)   76-100-15-04     Tip, detachable, for 200-mm focusing handpiece   76-100-20-04     Backstop for 127-mm focusing handpiece   76-100-25-04     90° angled working part for 127-mm focusing handpiece   76-200-05-04     120° angled working part for 127-mm focusing handpiece   76-200-10-04     Adapter for angled working part for 127-mm focusing handpiece   76-200-15-04     Adapter for angled working parts for 200-mm focusing handpiece   76-200-15-04     CO <sub>2</sub> laser protective goggles   79-100-57-04     V   V   V     Optics, f = 400 mm, laparoscopic connector Karl Storz/Olympus   76-301-00-04     Connector Olympus complete (w/o optics)   76-303-00-04     Connector Karl Storz complete (w/o optics)   76-303-00-04     Consisting of:   V     - optics   76-600-01-04     - optics   76-600-02-04     - 0-degree attachment for optics   76-600-03-04     - 120-degree attachment for optics	Tip, detachable, for 127-mm focusing handpiece	76-100-11-04				
Tip, detachable, for 200-mm focusing handpiece   76-100-16-04     Backstop for 127-mm focusing handpiece   76-100-20-04     Backstop for 200-mm focusing handpiece   76-100-25-04     90° angled working part for 127-mm focusing handpiece   76-200-05-04     120° angled working part for 127-mm focusing handpiece   76-200-10-04     Adapter for angled working parts for 200-mm focusing handpiece   76-200-15-04     O2 laser protective goggles   79-100-57-04 <b>Accessories for laparoscopy</b> 76-200-15-04     Connector Olympus complete (w/o optics)   76-301-00-04     Connector Karl Storz complete (w/o optics)   76-302-00-04 <b>Special accessories</b> 76-303-00-04     Consisting of:   76-600-02-04     - optics est for nasal operations,   76-600-01-04     - o-degree attachment for optics   76-600-02-04     - 90-degree attachment for optics   76-600-02-04     - 120-degree attachment for optics   76-600-03-04     - 120-degree attachment for optics   76-600-04-04	Focusing handpiece, 200 mm (complete, incl. detachable tip)	76-100-15-04				
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Connector Karl Storz complete (w/o optics)76-303-00-04Special accessoriesSpecial optics set for nasal operations, consisting of:76-600-00-04- optics- 76-600-01-04- 0-degree attachment for optics- 76-600-02-04- 90-degree attachment for optics- 76-600-03-04- 120-degree attachment for optics- 76-600-04-04- brush for attachments- 76-600-05-04	Connector Olympus complete (w/o optics)	76-302-00-04				
Special accessoriesSpecial optics set for nasal operations,76-600-00-04consisting of: optics 0-degree attachment for optics 90-degree attachment for optics 90-degree attachment for optics 120-degree attachment for optics 76-600-04-04 brush for attachments-	Connector Karl Storz complete (w/o optics)	76-303-00-04				
Special accessoriesSpecial optics set for nasal operations,76-600-00-04consisting of: optics- 76-600-01-04- 0-degree attachment for optics- 76-600-02-04- 90-degree attachment for optics- 76-600-03-04- 120-degree attachment for optics- 76-600-04-04- brush for attachments- 76-600-05-04						
Special optics set for nasal operations,76-600-00-04consisting of: optics 0-degree attachment for optics 90-degree attachment for optics 120-degree attachment for optics 76-600-04-04- brush for attachments 76-600-05-04	Special accessories					
consisting of:     - optics   - 76-600-01-04     - 0-degree attachment for optics   - 76-600-02-04     - 90-degree attachment for optics   - 76-600-03-04     - 120-degree attachment for optics   - 76-600-04-04     - brush for attachments   - 76-600-05-04	Special optics set for nasal operations,	76-600-00-04				
- optics   - 76-600-01-04     - 0-degree attachment for optics   - 76-600-02-04     - 90-degree attachment for optics   - 76-600-03-04     - 120-degree attachment for optics   - 76-600-04-04     - brush for attachments   - 76-600-05-04	consisting of:					
- 0-degree attachment for optics - 76-600-02-04   - 90-degree attachment for optics - 76-600-03-04   - 120-degree attachment for optics - 76-600-04-04   - brush for attachments - 76-600-05-04	- optics	- 76-600-01-04				
- 90-degree attachment for optics - 76-600-03-04   - 120-degree attachment for optics - 76-600-04-04   - brush for attachments - 76-600-05-04	- 0-degree attachment for optics	- 76-600-02-04				
- 120-degree attachment for optics- 76-600-04-04- brush for attachments- 76-600-05-04	- 90-degree attachment for optics	- 76-600-03-04				
- brush for attachments - 76-600-05-04	- 120-degree attachment for optics	- 76-600-04-04				
	- brush for attachments	- 76-600-05-04				

#### FlexWave

FlexWave hollow core, flexible fiber for CO <sub>2</sub> laser	76-800-00-04
Coupling adapter for MCOplus series	76-810-00-04
CO <sub>2</sub> laser includes guide arm for bare fiber	
Micromanipulators	
"Mini Point" (gynaecology, proctology)	76-400-00-04
"Micro Point 2" (ENT)*	76-402-00-04
"Micro Point 2 S", incl. Micro Switch (ENT)*	76-422-00-04
* ZEISS adapter inclusive	
Adapters for Mini Point	70 400 10 04
Adapter, Zeiss system	76-400-10-04
Adapter, Möller-Wedel system	76-400-12-04
Adapter, Leica system	76-400-13-04
Adapter, Zeiss OPMI FC 1	/6-400-14-04
Adapter, Möller-Wedel VM 500	/6-400-15-04
Adapter, Leica M 841	76-400-16-04
Adapter, Olympus OCS-500	76-400-17-04
Adapter, Zeiss 150 FC	76-400-18-04
(other adapters available on request)	
Adapters for Micro Point 2 and Micro Point 2 S	
Adapter Leica M 650/651/655 systems	
(other adapters available on request)	76-401-01-04
Adapter Leica M 680	76-401-02-04
Adapter, Möller-Wedel VM 900	76-401-03-04
Adapter Leica M 841 complete	76-401-16-04
Adapter, Olympus OCS-500	76-401-17-04
Adapter, Opmi Drape, complete	76-401-18-04
Adapter, Opmi 6. complete	76-401-19-04
Adapter, Leica M 520, complete	76-401-20-04
(other adapters available on request)	, 0 101 20 01
Adapters for Mini Point, Micro Point 2 and Micro Point 2 S	
Adapter, Kaps system 42/52/62	76-401-11-04
Scanner	
"SoftScan plus R" scanner retrofit kit or MCO 25plus	76-500-01-04
"SoftScan plus R" scanner retrofit kit for MCO 50plus	76-500-02-04
The retrofit kits (complete) include:	
- scanner head, complete	- 76-500-31-04
- scanner connecting cable	- 76-500-40-04
- scanner handpiece, 127 mm (complete, incl. tip)	- 76-500-50-04
- scanner handpiece, 200 mm (complete, incl. tip)	- 76-500-60-04
- incl. all technical components	
Adapter for connecting "SoftScan plus R" to "Mini Point"	76-500-41-04
Adapter for connecting "SoftScan plus R" to "Micro Point"	76-500-42-04
Tip for 127-mm handpiece	76-500-51-04
Tip for 200-mm handpiece	76-500-61-04

#### **Technical Data**

	MCO 25plus	MCO 50plus
Type of laser	MCO 25plus	MCO 50plus
Wavelength	10.6 um, infrared	10.6 µm, infrared
Laser power (applied to tissue)	2-25 W	2-50 W
CO <sub>2</sub> laser tube	sealed off, DC-excited	sealed off, DC-excited
2		
Operating modes:		
- continuous-wave (CW)	2–25 W	2-50 W
- superpulse	0.3 ms; 11 W, average, max. power	0.3 ms; 16 W, average, max. power
- single pulse	5 ms – 10 s output power: 10–25 W	10 ms – 10 s, output power: 10–50 W
- pulse train	minimum pulse length: 5 ms	minimum pulse length: 8 ms
	average output power: < 0.1 – 25 W	average output power: < 0.1 – 50 W
- cyclically repeated pulses	cycle length: - permanent	cycle length: - permanent
	- 10 ms – 10 s	- 10 ms – 10 s
Pilot laser light	Diode laser, continuously adjustable	Diode laser, continuously adjustable
	635 nm, ≤ 5 mW, light-red	635 nm, ≤ 5 mW, light-red
Laser beam delivery	Articulated spring arm with 7 joints/mirrors,	Articulated spring arm with 7 joints/mirrors,
	arm length = 1,300 mm, handpiece exchangeable	arm length = 1,300 mm,
Focus diameter	0.08 mm with a focal distance of 50 mm (spot size)	0.08 mm with a focal distance of 50 mm (spot size)
	0.20 mm with the standard focal distance of 127 mm	0.20 mm with the standard focal distance of 127 mm
	0.32 mm with a focal distance of 200 mm	0.32 mm with a focal distance of 200 mm
Operator/control panel	Bluemode LCD (liquid crystal display)	Bluemode LCD (liquid crystal display)
	with illuminated buttons featuring symbols,	with illuminated buttons featuring symbols,
	keypad sealed, with integrated scanner functions	keypad sealed, with integrated scanner functions
Program memory	5 freely assignable memory locations	5 freely assignable memory locations
	(can be used for scanner as well)	(can be used for scanner as well)
Cooling	internal	internal
Power requirements	230 V / 4 A, 50 / 60 Hz	230 V / 4 A, 50 / 60 Hz
Protection class	I	
Type (of applied part)	В	В
Laser class	4	4
Dimensions	290 x 450 x 1,950 mm	290 x 450 x 2,170 mm
Height with articulated	1,180 mm	1,630 mm
arm folded down:		
Weight	57 kg	62 kg

#### **Optional Accessories**

FlexWave	
Length	2 m
Inner diameter	500 μm
Outer diameter	1040 μm
Laser spot size at fiber output	300 µm
Input laser power at 10,600 nm	Up to 50 W
Transmission of red aiming beam	Yes
Reprocessing	Single use

#### Mini Point micromanipulator

Zoom range continuously adjustable between 200 and 400 mm							
Focal length	200 mm	250 mm	300 mm	350 mm	400 mm		
Spot diameter	0.36 mm	0.47 mm	0.56 mm	0.65 mm	0.76 mm		
Power density (with 25 W)	24.5 kW/cm <sup>2</sup>	14.5 kW/cm <sup>2</sup>	10.2 kW/cm <sup>2</sup>	7.5 kW/cm <sup>2</sup>	5.5 kW/cm <sup>2</sup>		
Micro Point 2 / Micro Point 2 S micromanipulator							
Zeem range continuously adjustable between 225 and 500 mm							

Zoom range continuously adjustable between 225 and 500 mm							
Focal length	225 mm	250 mm	300 mm	350 mm	400 mm	450 mm	500 mm
Spot diameter	0.110 mm	0.120 mm	0.130 mm	0.135 mm	0.140 mm	0.145 mm	0.150 mm
Power density (with 25 W)	263 kW/cm <sup>2</sup>	221 kW/cm <sup>2</sup>	188 kW/cm <sup>2</sup>	175 kW/cm <sup>2</sup>	163 kW/cm <sup>2</sup>	151 kW/cm <sup>2</sup>	141 kW/cm <sup>2</sup>

#### SoftScan plus R scanner

6 different scan patterns in different sizes and positions for tissue vaporization

3 different line patterns with variable length for robotic tissue resection

Electronically rotatable micro scan patterns ranging from 0.4 mm to 2.0 mm, especially for otology

Rotation via micromanipulator Micro Point

Operating/control functions integrated into the laser unit's display screen

Irradiation time per treatment spot (depending on selected parameters) 0.15–1.2 ms

Scan pattern representation with pilot laser during treatment pauses as well

Energy densities with 127-mm handpiece: MCO 25plus: max. 24 J/cm<sup>2</sup>

MCO 50plus: max. 48 J/cm<sup>2</sup>

#### **KLS Martin Group**

KLS Martin Australia Pty Ltd. Sydney · Australia Tel. +61 2 9439 5316 australia@klsmartin.com

Martin Italia S.r.l. Milan · Italy Tel. +39 039 605 67 31 italia@klsmartin.com

Gebrüder Martin GmbH & Co. KG Moscow · Russia Tel. +7 499 792-76-19 russia@klsmartin.com

KLS Martin do Brasil Ltda. São Paulo · Brazil Tel. +55 11 3554 2299 brazil@klsmartin.com

Nippon Martin K.K. Tokyo · Japan Tel. +81 3 3814 1431 nippon@klsmartin.com

Gebrüder Martin GmbH & Co. KG Dubai · United Arab Emirates Tel. +971 4 454 16 55 middleeast@klsmartin.com

KLS Martin Medical (Shanghai) International Trading Co. Ltd. Shanghai · China Tel. +86 21 5820 6251 china@klsmartin.com

KLS Martin SE Asia Sdn. Bhd. Penang · Malaysia Tel. +604 505 7838 malaysia@klsmartin.com

KLS Martin UK Ltd. London · United Kingdom Tel. +44 1189 000 570 uk@klsmartin.com

KLS Martin India Pvt Ltd. Chennai · India Tel. +91 44 66 442 300 india@klsmartin.com

Martin Nederland/Marned B.V. Huizen · The Netherlands Tel. +31 35 523 45 38 nederland@klsmartin.com

KLS Martin LP Jacksonville · Florida, USA Tel. +1 904 641 77 46 usa@klsmartin.com

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Gebrüder Martin GmbH & Co. KG A company of the KLS Martin Group KLS Martin Platz  $1\cdot 78532$  Tuttlingen  $\cdot$  Germany P.O. Box 60 · 78501 Tuttlingen · Germany Tel. +49 7461 706-0 · Fax +49 7461 706-193 info@klsmartin.com · www.klsmartin.com