

**oerli**<sup>®</sup>  
S W I T Z E R L A N D

**Faros**<sup>™</sup>

MAKING THE DIFFERENCE  
WITH LEADING INNOVATION

EYE SURGERY. SWISS MADE.





# MAKING THE DIFFERENCE WITH UNIQUE TECHNICAL SUPPORT

«Experiencing the Faros platform and the unique Oertli technical support enables me to achieve the best surgery outcome for my patients, enjoying the safety and the simple handling provided.»

**Dr. Pedro Moreira**

Trás-os-Montes e Alto Douro Hospital Center  
Vila Real, Portugal

# PERFECTION TO THE CORE

With its innovative developments and first-class quality, Oertli has set new standards in cataract surgery, vitrectomy and glaucoma surgery over and over again. Oertli surgical platforms, technologies and instruments enable surgeons and OR personnel to perform surgeries in a safer, easier and more efficient way – thus achieving better results for patients.

To ensure perfect processes and results, Oertli surgical platforms form a closed system together with their matching instruments. Every instrument is compatible with every Oertli surgical platform, provided the relevant function is available.

With its instruments, hand pieces, tips and auxiliary means, Oertli has consistently built on quality. Instruments are developed in Berneck, Switzerland, and perfected with the highest degree of precision to make surgeons fully rely on their tools.



Christoph Bosshard  
CEO

Thomas Bosshard  
Head of Marketing & Sales

# CONTENT

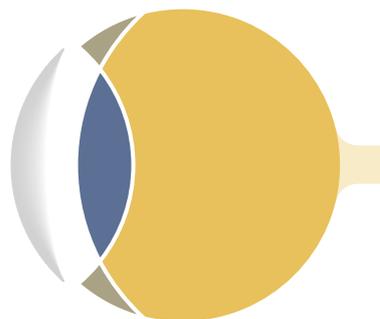
<b>Easy and safe operation</b>	10	When surgeries are performed, there is no time to struggle with complex menu structures and cumbersome operating procedures. That is why the Faros surgical platform has been geared to absolute user-friendliness.
<b>The high-performance pedal</b>	11	Using the Faros dual-linear pedal, surgeons can rely on a sensitive, multifunctional and high-performance control unit.
<b>Areas of application</b>	12	<b>Vitrectomy surgery</b> In vitrectomy, the Faros device ensures exceptional results thanks to its cleverly thought-out fluidics concept and its innovative instruments.
	16	<b>Glaucoma surgery</b> In the treatment of glaucoma, Oertli HFDS ab interno MIGS technology provides excellent long-term results.
	18	<b>Cataract surgery</b> Thanks to Oertli innovations such as easyPhaco or HF capsulotomy, cataract surgery is now performed more quickly, safely and calmly than ever before.
<b>Performance spectrum</b>	24	The Faros offers the highest degree of precision and impressive performance in cataract, glaucoma and vitrectomy surgery on the smallest footprint.

# FAROS™ – EFFICIENT AND HIGHLY EFFECTIVE

The Faros surgical platform enables eye surgery of the highest level while remaining easily operable and intuitively controllable at any time. The compact Faros is either available as a device for anterior segment surgery or as a combined system for anterior and posterior segment surgery. The unique SPEEPMODE makes both flow and vacuum easily controllable, which boasts unsurpassable fluidics as a result. The precise flow control of the peristaltic pump renders the surgeon's work easier and safer than before. The easyPhaco technology results in unprecedented chamber stability. The HF capsulotomy tip provides for an amazingly simple capsulorhexis. The innovative Continuous Flow Cutter ensures traction-free vitreous body removal while the cutting-edge LED technology provides for homogeneous illumination of the posterior segment. Moreover, the Faros also contains an integrated HFDS application for glaucoma surgery.

**Make the difference –  
with Faros by Oertli.**

Vitrectomy	●
Glaucoma	●
Cataract	●



# FAROS™ – ALL ADVANTAGES AT A GLANCE

Available as an anterior platform or as a combined anterior/posterior platform

Cutting-edge dual-pump system with flow and vacuum control

Unique SPEEPMoDe

Modern LED Technology

easyPhaco technology for safe and efficient emulsification

Continuous Flow Cutter for traction-free vitreous body removal

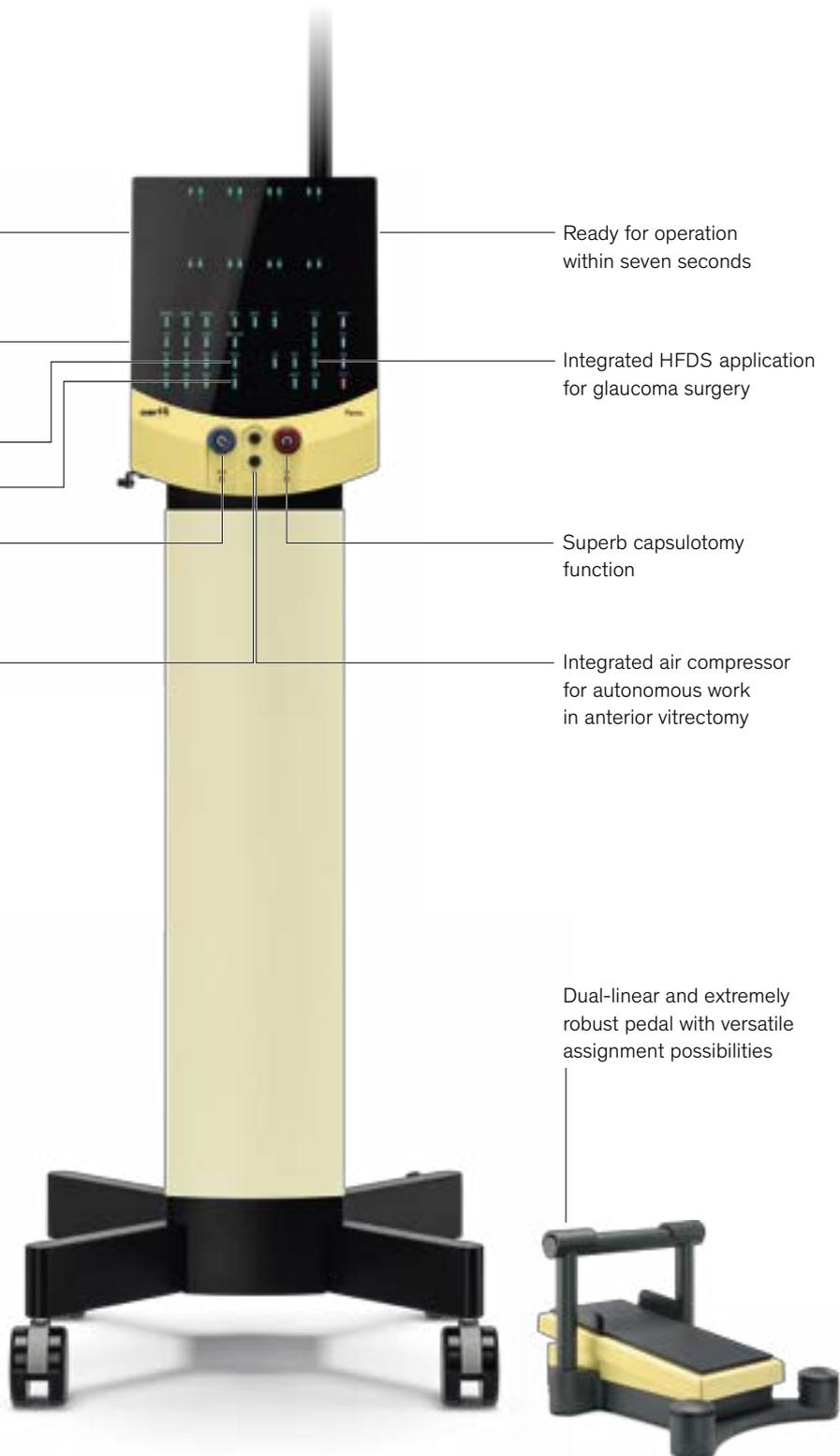
Ready for operation within seven seconds

Integrated HFDS application for glaucoma surgery

Superb capsulotomy function

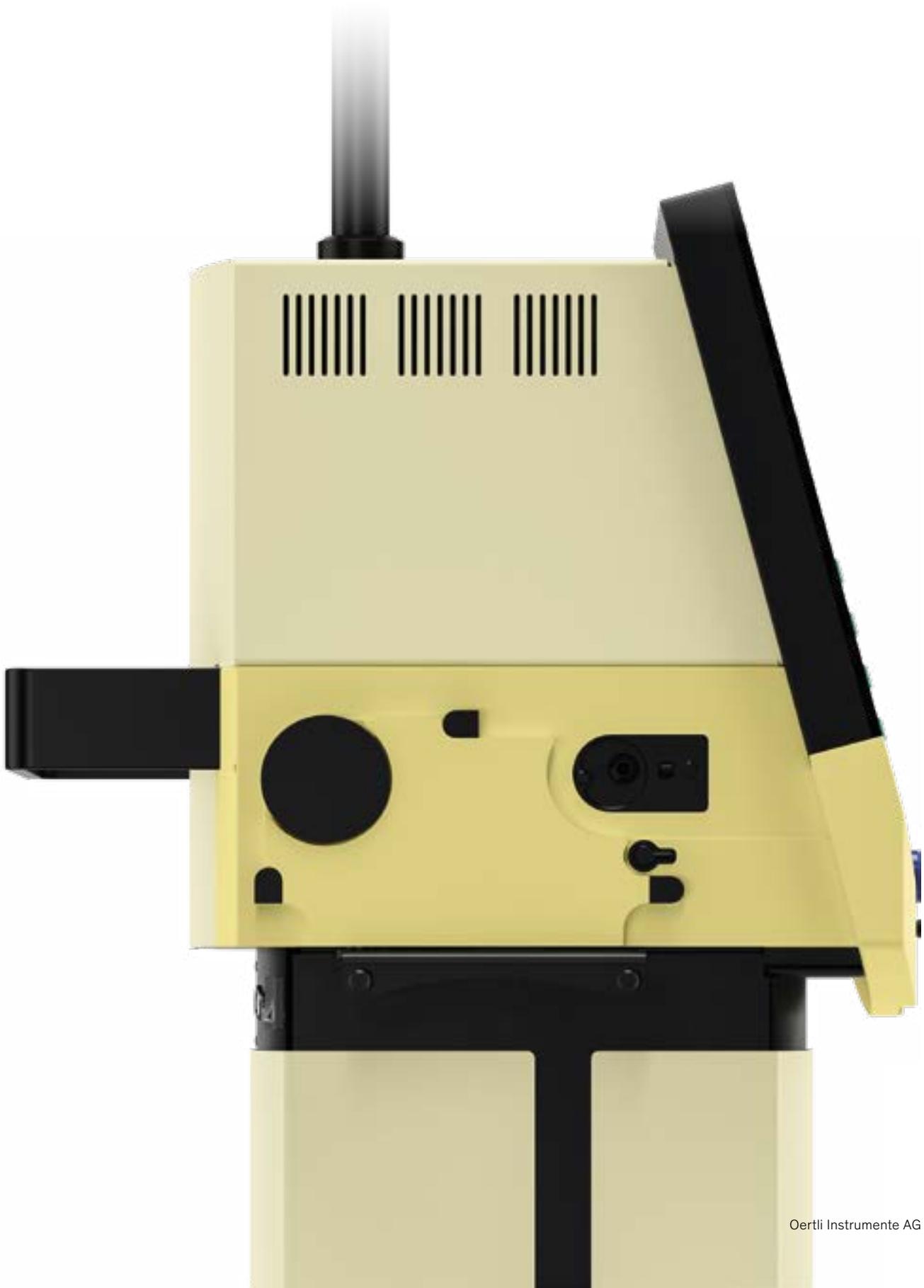
Integrated air compressor for autonomous work in anterior vitrectomy

Dual-linear and extremely robust pedal with versatile assignment possibilities



FAROS AT A GLANCE

# FLUIDICS AND DUAL-PUMP SYSTEM



The Faros by Oertli is an efficient and highly effective surgical platform for cataract, vitrectomy and glaucoma surgery. The device boasts precision, versatility, innovative technology, excellent user convenience and an incredibly compact design.

#### **Perfect control of fluidics**

Oertli has established itself as an innovative leader in using fluidics and physics in eye surgery. Surely, the impressive fluidics system is also one of the key elements in the Faros – responsible for the incredible high-performance of this platform. It uses the laws of physics in a superb way and is therefore not subject to complicated electronics and a sensory system prone to error.

The perfect flow control of the peristaltic principle enables the finest degree of control and absolute precision. The outstanding high-performance capacity of the pump provides for speed and suction power if required – by using easyPhaco in the anterior segment and by means of the Caliburn trocar system and the Continuous Flow Cutter in the posterior segment.

The unique SPEEPMoDe is based on a peristaltic pump system, but the roll can be turned in both directions. Both the flow (up to 60 ml/min) and the vacuum (up to 650 mmHg) can be precisely dosed by means of the SPEEPMoDe.

The pump wheel can be triggered instantaneously and offers very fine manipulation options both in the anterior and posterior segment. The surgeon can control the holding power (vacuum) very precisely via the pedal. The flow can be set as a constant value in the SPEEPMoDe and is actively regulated during surgery by the Faros system.

Thanks to an optimized suspension of the tubing, the Faros can be installed even more easily and speedily than before.



## OPERATION

# FAST, SAFE AND INTUITIVE

The Faros multifunctional surgical platform for cutting-edge eye surgery is an excellently developed highlight of surgical technology. Yet, complex technology does not have to go hand in hand with difficult operation. On the contrary: The Faros boasts a consistently clear overview and utmost user convenience. Everything is clearly and easily readable. Most connections are located at the front, the tubing suspension is simple and logical. This renders operation comfortable, understandable and safe for the surgeon and OR staff alike. Moreover, the surgical platform is ready for action incredibly quickly: After switching the system on, it is ready for operation within seven seconds. This speeds up preparation for surgery and results in a clearly enhanced performance and an efficiency that saves both time and costs.

### Connections

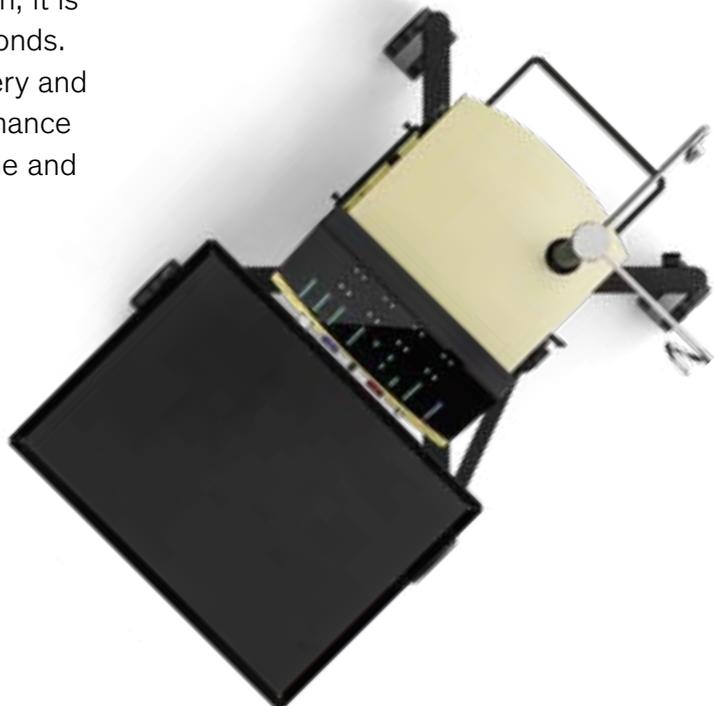
Most instrument connections are easily accessible from the front. This way, preparation for surgery is additionally facilitated and accelerated.

### Control panel

The light and clearly readable displays of the control field give precise information on operating values and settings. The logically arranged control buttons are always allocated the same functions that can be activated instantaneously by button pressure. The various functions are individually set for each surgeon and surgical technique in the ParaProg background menu. Programming is possible for up to 50 surgeons.

### Instrument table

The optional instrument table (28 × 30 cm) can be fixed at any desired position. If it is not used, the table can be folded sideways quickly and easily.



## PEDAL

# THE POWERFUL PEDAL

The dual-linear foot pedal is the versatile control unit of the Faros. Made of robust metal and processed with highest precision, the pedal absorbs the surgeon's commands instantaneously and with a great deal of sensitivity.

### **Dual-linear perfection**

In the Faros foot pedal, the dual-linear control becomes apparent in its most intelligent form. The pedal opens up new ways of keeping total control and perfect attunement to the surgeon's wishes and requirements. Many different functions, for example shifting of functions (change of pump, light, air) and adjustment of the bottle height, etc. can be allocated to the auxiliary buttons.

- Dual-linear pedal
- Waterproof and compact
- Individually programmable for up to 50 surgeons
- Four auxiliary buttons for versatile assignment possibilities
- Classic cable connection for reliable data transfer



VITRECTOMY SURGERY

# FAROS™ IN VITRECTOMY SURGERY



The compact Faros high-performance device sets new benchmarks in vitrectomy surgery in terms of functionality and quality. The Caliburn trocar systems create ideal access and ensure smooth cuts and excellent wound-tightness. The GoodLight LED technology boasts superb illumination. The pneumatic Continuous Flow Cutter enables continuous flow and ideal portioning of the vitreous body for removal. The innovative Membrane FEELceps enable strong and perfectly dosed holding power and absolute precision.

# CALIBURN™ GOODLIGHT LED™

## Caliburn™ trocar system

In vitrectomy, the Caliburn trocar system enables highly precise work with very sharp instruments. The lance-shaped knife of the Caliburn trocar system is characterised by an exceptional driving and cutting force. The razor-sharp Caliburn blade reduces the strength required for penetration to a minimum and results in optimum cutting geometry in the sclera. The slim tunnel incision ensures excellent postoperative wound-tightness and thus fast healing of the wound.

The trocar with its integrated lock membrane prevents the outflow of BSS, air and oil, which results in a constant IOP during the whole surgery. Thanks to its excellent holding power and optimum shaft length, the Caliburn boasts even more safety and more comfort. As all trocars have been built in the same way.

### Advantages of Caliburn™ trocar system

- Excellent postoperative wound-tightness
- New surface finish allowing for even smoother cuts
- Less resistance when inserting the trocar
- Integrated doubly slit sealing membrane
- Patented infusion tube with snap lock for better flexibility
- Reliably constant IOP during surgery

## GoodLight LED™

Illumination plays an important, not to be underestimated role in eye surgery. The choice of the right light source is paramount to achieve high-quality intra-ocular illumination while simultaneously avoiding phototoxic effects and damages to the eye. GoodLight LED absorbs wavelengths of below 435 nm, whereby considerably reducing the risk of photorhinitis. The Faros light range can be individually set and adjusted to the relevant requirements.

### Advantages of GoodLight LED™

- Cutting-edge LED GoodLight technology
- Extremely homogenous illumination and better contrast viewing
- More precise and more comfortable Comfort Connector to all light probes
- Integrated GoodLight technology for safe work
- Intensified light conductor at 25G



# TRUE FLOW CONTROL™ MEMBRANE FEELCEPS™

## Continuous Flow Cutter

With its fluidics concept that makes excellent use of physics and fluidics, Oertli has led flow and vacuum control to perfection. Thanks to True Flow Control, you can finely tune the flow with the dual-linear foot pedal in an incredibly subtle way – resulting in impressive precision and a high occlusion vacuum.

In vitreoretinal surgery, Oertli has already set standards with its dual-pneumatic drive that boasts great cutting force and traction-free high-speed cutting. Next, the Oertli Continuous Flow Cutter was a significant quantum leap. The continuous flow cutting concept allows for continuous flow without any fluctuation. While with a standard cutter, the flow is interrupted with every cut, the Continuous Flow Cutter ensures traction-free and precise flow as well as rapid aspiration and ideal portioning of the vitreous body for removal. The SPEEPMODE with new fluidics make flow and vacuum a dynamic yet directly controllable tool for unimaginably precise and efficient vitreoretinal surgery.

### Advantages of Continuous Flow Cutter

- Oertli's fluidic concept works with physics – additional software manipulations are no longer necessary
- The Continuous Flow Cutter for 100% continuous flow
- Perfect portioning in the vitreous body removal process
- Highest degree of efficiency in central vitrectomy
- Maximum precision and safety in the periphery
- Perfect precision in all manoeuvres

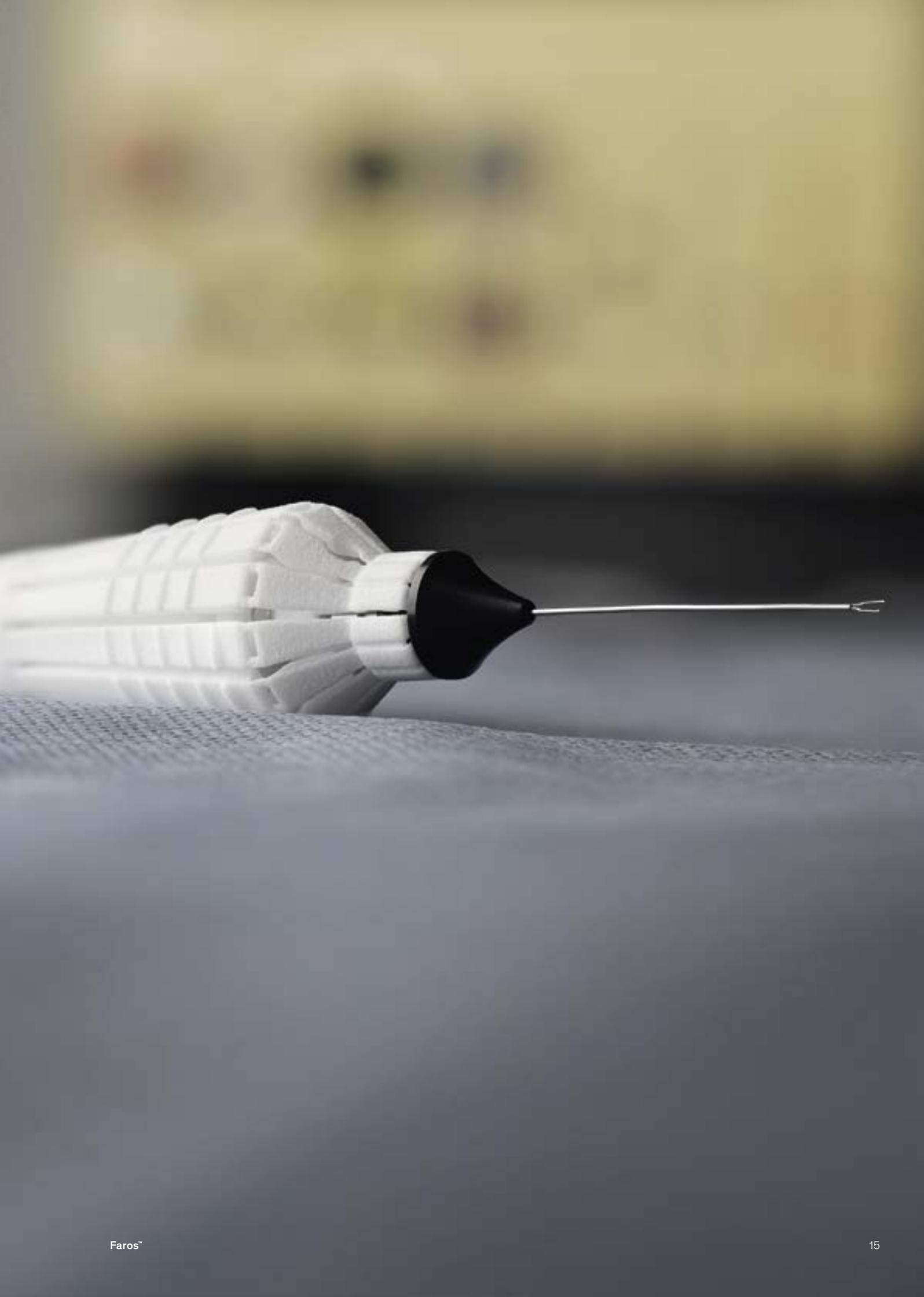
## Membrane FEELceps™

FEELceps stands for peeling with incredible precision and control. The FEELceps – derived from FEEL and forceps – do their name justice. Using the FEELceps, the surgeon can literally feel every manoeuvre directly at its fingertip – a well controllable instrument delivers better results for the surgeon and patients alike. The FEELceps only require little activation force and can be operated in a gentle and fatigue-free manner. At the same time, they ensure enormous holding power and are able to grip tissues strongly and reliably.

### Advantages of Membrane FEELceps™

- Very little strength required when using it
- Strong holding power of tissues
- No stripping of membrane thanks to smooth finish surface
- Short, exactly linear activation path
- Superb reactivity
- Precise 360° actuation of handgrip
- Ideal geometry of gripping surfaces







GLAUCOMA SURGERY

# FAROS™ IN GLAUCOMA SURGERY

In operative treatment of glaucoma, the Faros has created significant added value in micro-invasive glaucoma surgery (MIGS). High Frequency Deep Sclerotomy (HFDS) ensures excellent long-term results and has an extremely low complication rate, and short intervention time.

# HFDS™

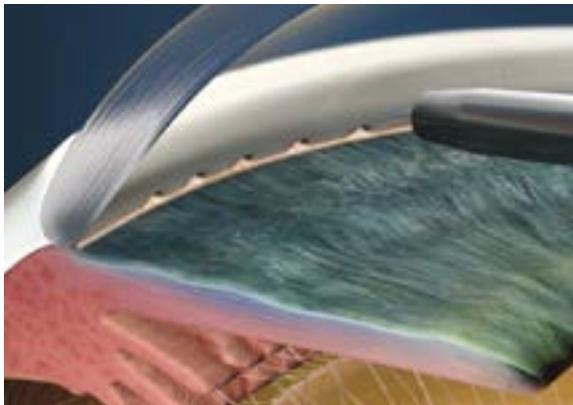
## High Frequency Deep Sclerotomy™

HFDS is short for *High Frequency Deep Sclerotomy*. In micro-invasive glaucoma surgery (MIGS) HFDS creates a direct access from the anterior chamber to the Schlemm's canal, and further to the sclera. This way, the outflow resistance of the trabecular meshwork is significantly reduced. The abee glaucoma tip is led through a paracenteses of 1.2 mm and places six small sclerotomy bags in the iridocorneal angle by means of high frequency diathermy output. This enables a better outflow of aqueous fluid.

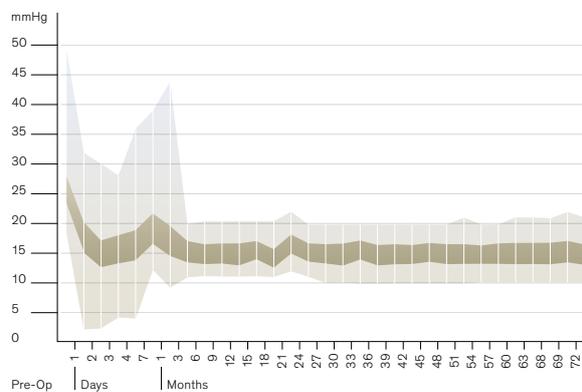
HFDS can be applied individually or in combination with cataract surgery. It is characterized by a very short intervention time. Bleb formation (filtration into the subconjunctival space) as well as fibroblast movement to the sclerotomy are effectively prevented. Neither will there be a corneal scar. Oertli's High Frequency Deep Sclerotomy ab interno boasts superb long-time results. An intervention with HFDS can be repeated if required.

### Advantages of HFDS

- Ideal in combination with cataract surgery or as individual application
- Very short intervention time
- Excellent long-term results
- No bleb-formation, no corneal scars
- Surgery can be repeated
- Very low complication rate



**Excellent long time results (72 months) after performed HFDS procedure\***



\*Bojan Pajic: Long-term Results of a Novel Minimally Invasive High Frequency Deep Sclerotomy Ab Interno Surgical Procedure for Glaucoma, European Ophthalmic Review, Volume 6, Issue 1, Spring 2012, ISSN 1756-1795

CATARACT SURGERY

# FAROS™ IN CATARACT SURGERY

The Faros makes cataract surgery incredibly fast, safe and calm. Phaco has become even more precise and efficient thanks to easyPhaco. Capsulorhexis has gained a very gentle and careful alternative with HF capsulotomy. And, in glaucoma and vitreoretinal surgery, the Faros offers decisive advantages and superb features.

# HF CAPSULOTOMY EASYPHACO®

## HF Capsulotomy

Since its launch in 1991, high-frequency capsulotomy has proven itself in hundred thousand of cases as the ideal method for opening lens capsules. By using high-frequency energy, the capsule bag can be melted very easily – totally without any of the usual tearing with forceps and needle. Gently sliding over tissues, and even under the iris using the capsulotomy tip and giving out diathermy power suffices. The capsule edge thus created meets the highest requirements – both intra-operatively and in the long run.

HF capsulotomy is particularly suited for indications such as no fundus reflex, hypermature cataract, traumatic cataract, intumescent cataract, and juvenile cataract. Even in the case of a narrow pupil, a rhexis that is out of control or rhexis phimosis, HF capsulotomy ensures the best results.

### Advantages of HF capsulotomy

- Particularly gentle alternative to capsulorhexis
- Melting of capsule bag without any tearing with forceps or needle
- Extremely fine and directly controllable dosing of HF energy
- Remarkably safe in difficult cases

## easyPhaco®

By making use of fluidics technology, easyPhaco enables immediate aspiration of the lens material and ensures perfect followability. The unique design of the tips ensure unsurpassed chamber stability, while at the same time, incredibly high holdability can be felt. Aspiration of fragments runs efficiently and without any repulsions. The focussed axial output of ultrasound energy ensures targeted emulsification directly into the lens fragment. And, because the Oertli phaco hand piece is equipped with six Piezo crystals, the transmission of power to the tip happens in a direct and gentle way with less heat development.

### Advantages of easyPhaco®

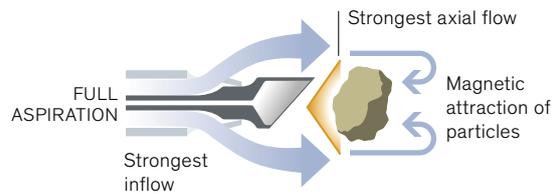
- Unsurpassed chamber stability
- Perfect followability thanks to precise flow control
- Focussed axial output of ultrasound energy
- Direct and gentle transmission of power to the tip
- Efficient fragment aspiration without repulsion
- Available from 1.6 mm up to 2.8 mm



# EASYPHACO® TECHNOLOGY

**No turbulence**

The high vacuum setting of easyPhaco and a wide infusion path create a strong, axially directed flow. The result: no turbulence, no floating fragments, magnetic attraction of material and perfect followability.



**No repulsion**

The high vacuum setting of easyPhaco and the optimised bevel of the easyPhaco tip lock fragments firmly to the tip mouth with magnetic holdability, strong enough to prevent repulsion.



**No laterally radiating energy**

US energy is applied axially and totally absorbed within the high vacuum locked core material. This way repulsions can be effectively prevented.



**Perfect emulsification**

High vacuum locking and optimised tip design provide superb coupling of US energy to the core material. Energy transfer to the core material is increased by a factor of 6. Hard and mature nuclei create no problems.



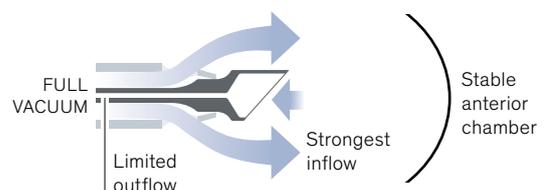
**Efficient fragment aspiration**

Finely emulsified nuclear particles are smoothly aspirated by high vacuum through the capillary aspiration channel. No risk of clogging.



**No surge**

Upon occlusion break, the capillary aspiration channel resists a sudden liquid flow while the wide infusion path provides constant IOP. The infusion capacity is 7 times higher than the aspiration volume. The AC remains almost unconditionally stable.



## Phako Modulation

Faros offers four different performance modulation types that can be used in combination with easyPhaco or any other phaco technique. The ideal fluidics-support with easyPhaco reduces ultrasound application to a minimum in any case. Even with the traditional linear control, very short phaco time duration is achieved.

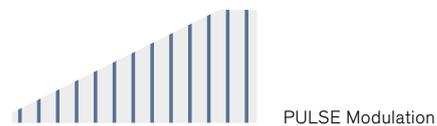
### Continuous Linear

The standard method is very efficient. The surgeons have to adjust the power output themselves. The phaco power output corresponds to the pedal deflection.



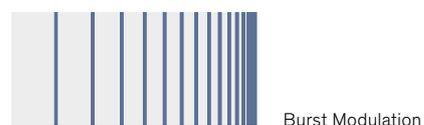
### PULSE Modulation

Reduces the ultrasound energy delivered. Pulse frequency (up to 40Hz) and cooling factor can be selected as desired and independently of the pedal setting. Pulse output corresponds to the pedal position.



### BURST Modulation

The BURST modulation reduces the emitted ultrasound energy. The duration and intensity of the bursts (packages of energy pulses) are freely selectable and independent to the pedal position. The pause between the bursts is controlled by the pedal. The more the pedal is pressed, the shorter the pauses become.



# IRRIGATION / ASPIRATION HF DIATHERMY

## I/A with Safety Design

Oertli I/A instruments make irrigation and aspiration even safer than before. The Quick Tips with Safety Design have an extended shaft length, to enable better sub-incisional access. The reduced aspiration opening creates better occlusion power, increases safety during aspiration and provides for optimum stability of the anterior chamber. The well-thought-out positioning of the aspiration opening prevents unintentional gripping of the capsule bag. Especially in combined application with SPEEPMODE, Quick Tips offer the highest degree of safety.

### **Advantages of I/A with Safety Design**

- Absolutely stable anterior chamber
- Easy sub-incisional accessibility
- Occlusion achieved quickly
- High safety standard during capsule cleaning
- Highly efficient in combination with SPEEPMODE
- Available from 1.6 mm up to 2.8 mm

## HF bipolar diathermy

The pioneering control systems of the surgical platforms by Oertli allow for extremely fine and directly controllable dosing of HF energy, optimally designed for proven applications in bipolar technology. Tips with their well-thought-out geometry and choice of material truly make diathermy to an instrument of precision. Even at low output, the high-frequency diathermy by Oertli creates an extraordinary effect. High-quality titanium hand pieces and innovative tips ensure both precision and safety.

### **Advantages of HF bipolar diathermy**

- A function for various applications. Oertli capsulotomy, HFDS, endo diathermy, macro diathermy, diathermy forceps
- Fine and directly controllable dosing of HF energy
- High-quality hand pieces of titanium
- Tips with well-thought-out geometry and high-quality materials
- High efficiency already at a low power output





# FAROS™ – PERFORMANCE SPECTRUM

## System

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### Fluidics system

- Peristaltic pump
- SPEEPMODE
- Gravity infusion, electric pole drive
- Tubing system with integrated closed pressure sensor
- Auto venting
- Limitable reflux
- Pre-op, self-testing and reset functions

### Operation

- Control panel with glass cover, indicator lights and silicon buttons
- Dual-linear multifunctional pedal
- Wireless remote control
- Individual programmable for 50 surgeons
- Audio signals

### Pedal

- Wired
- User-specific assignment
- Dual-linear or linear
- Reflux function

## Anterior segment

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### HF function

- Capsulotomy
- HFDS ab interno MIGS glaucoma surgery
- Conjunctiva coaptation
- Macro diathermy
- Endo diathermy

### Phaco function

- Three programme memories with DirectAccess
- Ultrasound phaco with auto tuning
- U/S phaco hand piece with six piezo crystals
- Linear, PULSE, BURST and CMP
- easyPhaco, CO-MICS and MICS technology
- Dual-linear phaco
- Phaco power override
- Occlusion mode

### I/A function

- Three programme memories with DirectAccess
- Vacuum override function
- Continuous irrigation

### Anterior vitrectomy

- Three programme memories with DirectAccess
- Dual pneumatic guillotine cutter
- Linear 30 up to 2400 cuts a minute
- Single cut
- Irrigation / Aspiration / Cut
- Irrigation / Cut / Aspiration
- Integrated compressor for autonomous work

## Posterior segment

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### **Endo illumination**

- Goodlight LED light source
- Anti-glare panorama illumination
- Filter-free exit

### **Vitreotomy**

- Three programme memories with DirectAccess
- Pneumatically driven Continuous Flow Cutter
- Linear or progressive, 30 up to 10,000 cuts a minute
- Single cut
- Endo phaco

### **Air**

- Electric pump
- Fluid / air exchange
- Constant pressure control with compensation reservoir
- Three programme memories with DirectAccess
- Alarm function

### **Visco**

- Injection
- Extraction
- Linear pedal control



# MAKING THE DIFFERENCE IN EYE SURGERY

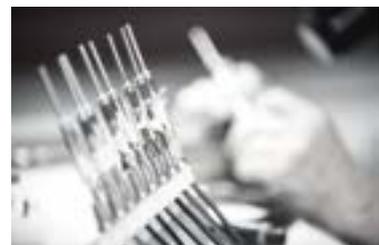
Oertli makes the difference. With its excellent surgical devices and instruments that make surgical interventions safer, easier and more efficient. With lasting innovations and new technology that have long-term impact on ophthalmology. With superb service and real added value for surgeons and OR personnel. And, in its consistent pursuit to accomplish the very best for customers, users and patients.

## Setting standards

The name Oertli stands for Swiss quality of the highest precision and reliability. We develop and produce our products exclusively in Switzerland, in the St.Gall Rhine Valley. Thanks to this, we can rely on excellently trained employees and a dynamic environment and have the quality and conditions of our products under our own control.

In the course of its company history, Oertli has developed numerous innovations that have had a sustainable impact on eye surgery. Such success, however, does not make us slow down – on the contrary. We spend every day refreshing our research spirit making sure our innovative thirst will have new challenges again and again.

Although we are present in the whole world and gear ourselves towards the international market, in our hearts, we will always remain an independent family business with a good backbone, strong roots, solid financing and active teamwork. Anyone who works for Oertli does so with great commitment and motivation. As everyone gives their best, we can position ourselves on the market with great confidence. On this basis, we make the difference – for eye surgery, for our customers, and for patients.





### **Distribution network**

Oertli commits itself to the Berneck location in Switzerland. It is here that ideas and innovations come to exist, and here that our devices and instruments are developed and manufactured. To ensure our products can be used in the whole world, we rely either on our own distribution companies or independent distribution partners, depending

on the relevant region. In every case, our ophthalmology customers throughout the world can count on competent and reliable contact persons. They offer excellent on-site service, can inform and advise you on our entire product range and have been perfectly trained for work with our products.

### **Information on trademark protection**

Oertli®, CataRhex3®, easyPhaco®, easyTip®, abee® as well as the Oertli logo are registered trademarks of Oertli Instrumente AG.

Faros™, OS4™, HFDS™, FEELceps™, DirectAccess™, SPEEPMoDe™, Caliburn™, CortexMoDe™, ParaProg™, True Flow Control™ and GoodLight LED™ are trademarks of Oertli Instrumente AG.

MAKING THE  
DIFFERENCE  
WITH EXTREME  
SAFETY



«We have been using CataRhex3, Faros and OS4. They are all wonderful machines giving us confidence that they will go through hardest of cataracts with extreme safety. They also make life easier while performing posterior segment surgeries. They are easy to maintain and the reliability factor is very high. What more can a surgeon ask for.»

**Dr. Khurram A. Mirza**  
Hameed Latif Hospital  
Lahore, Pakistan

# MAKING THE DIFFERENCE IN SWITZERLAND





As a Swiss family-owned company with a long tradition, we focus on what is important: quality, reliability, safety, innovation and the needs of our customers.

We make the difference – for you and your patients.

**EYE SURGERY. SWISS MADE.**

Surgical  
platforms



OS 4™



Faros™



CataRhex 3®

**oertli**®  
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Not available for sales in the US