StarWalker® MaQX

Ultra Performance Q-Switched Laser System



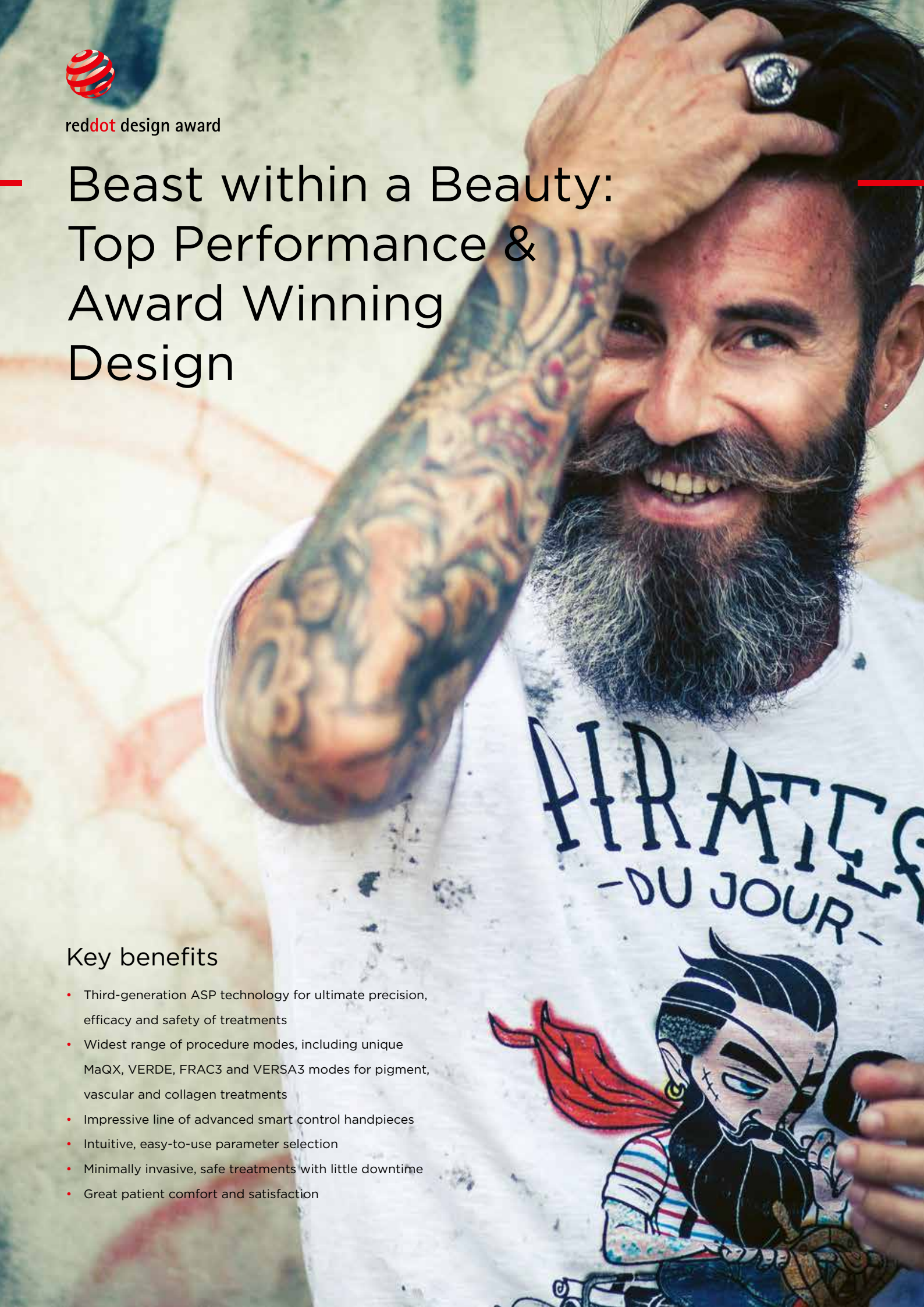
ASP POWERED

New Revolutionary
Adaptive Structured Pulse
Technology

Fotona
choose perfection

reddot design award

Beast within a Beauty: Top Performance & Award Winning Design



Key benefits

- Third-generation ASP technology for ultimate precision, efficacy and safety of treatments
- Widest range of procedure modes, including unique MaQX, VERDE, FRAC3 and VERSA3 modes for pigment, vascular and collagen treatments
- Impressive line of advanced smart control handpieces
- Intuitive, easy-to-use parameter selection
- Minimally invasive, safe treatments with little downtime
- Great patient comfort and satisfaction



StarWalker® MaQX

Functionality
StarWalker's third-generation technology provides highest power and treatment capability in the most advanced and the most compact design.



OPTOflex® arm with patented vacuum cell technology for distortion-free beam delivery to the treatment site

14 laser modalities and 4 laser wavelengths for the widest range of treatments

Pulse modalities from nanoseconds to microseconds, milliseconds and seconds for optimal effect on the tissue site

Intuitive and intelligent graphical user interface

Instant access to preprogrammed procedures via a large display

Wireless footswitch for freedom and convenience in system control

Top-hat beam profile for uniform treatments with predictable results

Quick-release mechanism for fast exchange of handpieces

Compact handpieces with automatic real-time handpiece type and spotsize detection

Fotona proprietary ASP (Adaptive Structured Pulse) technology enabling laser pulse shapes to be adapted to the bio-photonic dynamics of a particular treatment

Dual monitor EFC energy control to ensure the precision of laser output

Ultra performance laser system with an exceptionally small footprint

Performance at your fingertips with an interactive touch screen

Widest Range of Clinical Applications

	1064 nm Nd:YAG	532 nm KTP	585 nm dye	650 nm dye
Pigments, Tattoo FracTAT	MaQX-1 MaQX-2, MaQX-5, MaQX-10	MaQX-1	QX	QX
Melasma, Pigmented Lesions	MaQX-1, MaQX-2, MaQX-5, MaQX-10	-	QX	QX
Acne scars, Active acne	MaQX-1, MaQX-2, MaQX-5, MaQX-10, VERSA3	-	-	-
Skin toning, Skin Whitening	MaQX-1, MaQX-2, MaQX-5, MaQX-10	MaQX-1, MaQX-2, MaQX-5, MaQX-10	QX	-
Photodamaged skin	FRAC3	-	-	-
Wrinkles, Pores, Skin rejuvenation	VERSA3	-	-	-
Vascular lesions, Veins, Haemangiomas	VERSA3	VERDE	QX	-
Hair removal	VERSA3, MaQX-10, FRAC3	-	-	-
Warts	VERSA3	-	-	-
Onychomycosis	VERSA3, MaQX-10	-	-	-



The Interactive Touch Screen Guides Users Through All Treatments

Key benefits

- Easy to use, intuitive interface puts an entire range of applications at your finger tips
- Responsive parameter control
- User-friendly application wizards for recommended parameters
- Fully customizable memory storage for pre-set treatments
- Procedure log keeps track of all procedures for quick recall of past treatment parameters by calendar date
- Control Panel tracks all procedure statistics during treatments

Two Models

- StarWalker® MaQX is the most advanced and highest performance StarWalker model.
- StarWalker® QX is Fotona's standard high performance Q-Switched StarWalker model.

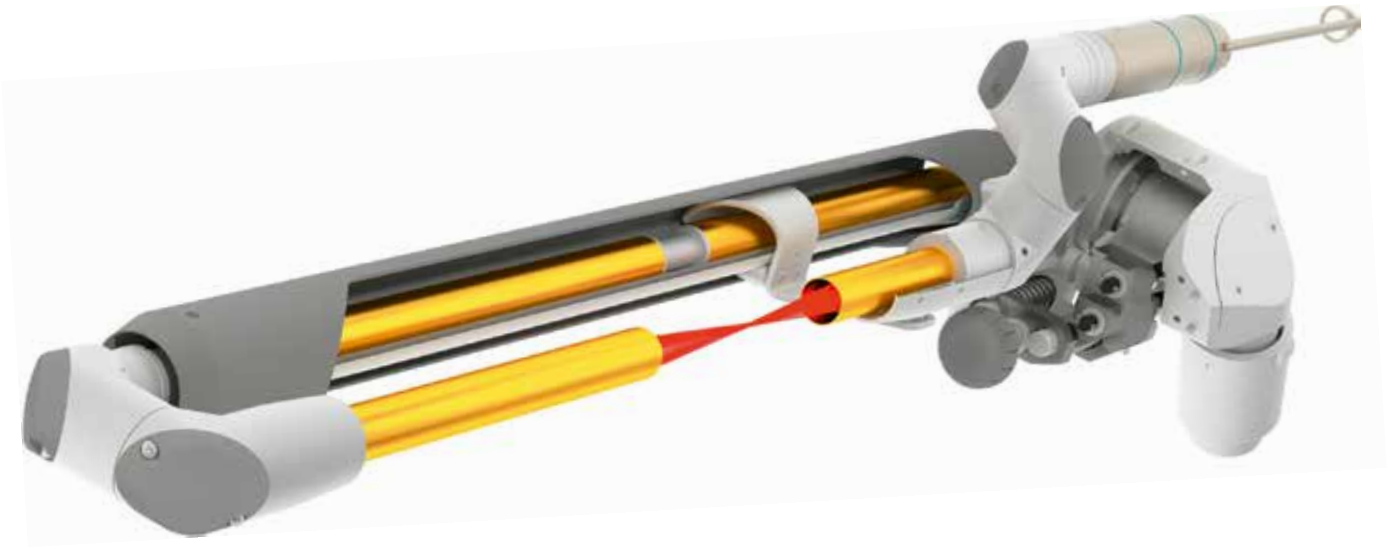
	StarWalker® MaQX	StarWalker® QX
1064 nm	MaQX-1, MaQX-2, MaQX-5, MaQX-10, Turbo FRAC3 VERSA3	MaQX-1, MaQX-2, FRAC3 Turbo
532 nm	MaQX-1, MaQX-2, MaQX-5, MaQX-10, Turbo VERDE	MaQX-1, MaQX-2, Turbo
585 nm	QX	QX
650 nm	QX	QX



Ease of use
StarWalker's new advanced touch screen user interface features intuitive navigation and exceptional flexibility.

OPTOflex® Vacuum Cell Technology

Innovation at Work



Reliability
StarWalker is built on Fotona's foundation of over 50 years of experience, with quality and reliability being one of the pillars of company's commitment and reputation.

Patented solutions for a homogenous beam profile

Homogeneity of a laser beam profile ensures safety during treatment since laser energy is evenly distributed across the treated area. Epidermal damage is minimized and the risks of bleeding, tissue splatter and transient textural changes in the skin are decreased. Achieving homogeneous beam profiles has been a great challenge for the laser industry due to the nonlinearity of Q-switched lasers.

Fotona's StarWalker advanced Q-switched laser technology relies on groundbreaking solutions such as patented OPTOflex® and Vacuum Cell Technologies to produce almost perfectly homogeneous beam profiles.

The OPTOflex® articulated arm is specifically designed to efficiently transmit the laser beam without losing energy or changing the beam's original properties. The shape and magnitude of the aiming beam enhances visibility, allowing for easier, faster treatments and greater precision. OPTOflex® is light, compact and folds back to decrease system height.

With laser quality benefits unlike any other beam delivery system, OPTOflex® is definitive of the next generation in laser delivery systems for high-power lasers.

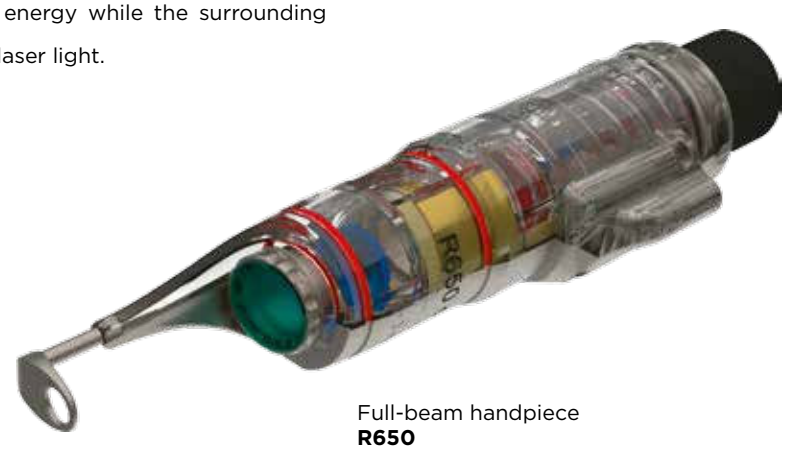
Full-beam and fractional handpieces

The StarWalker's full beam and fractional handpiece technology enables physicians to provide advanced solutions for a broad range of treatments.

Fractional handpieces harness the powerful photomechanical effect of the StarWalker into tightly focused arrays. These arrays contain concentrations of energy while the surrounding area remains unaffected by the laser light.



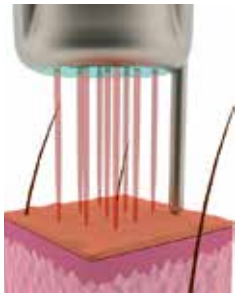
Fractional handpiece
FS20A



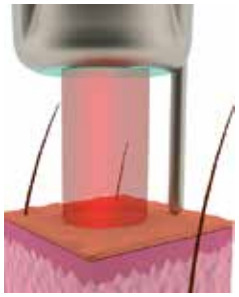
Full-beam handpiece
R650

Longer System Lifetime: Almost 100% flashlamp pulse utilization

Most standard Q-switched laser systems can only achieve stable output during laser beam operation by ensuring that their flashlamps are pulsed internally at a constantly high repetition rate, even when the operator selects a single-pulse or low repetition rate mode. As a result the laser system and especially the flashlamp, one of the most important components, can burn out prematurely due to overuse. This is not the case with the StarWalker's patented Vacuum Cell & OPTOflex technology, where the laser flashlamp is activated only when actual laser output is required. A much lower burden on the laser system is imposed, resulting in a longer flashlamp lifetime and lower costs of laser system maintenance.

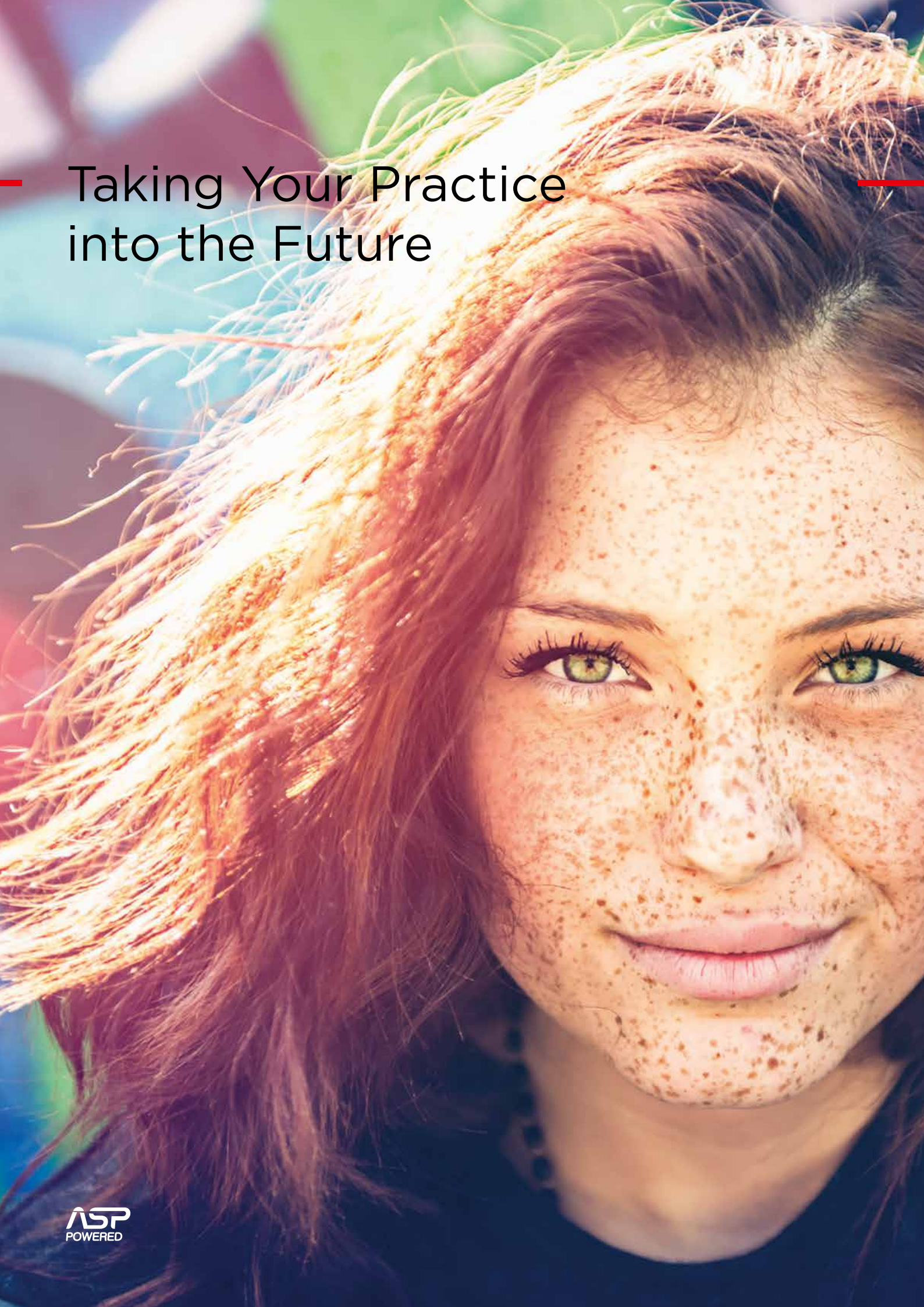


Fractional beam



Full-beam

Taking Your Practice into the Future



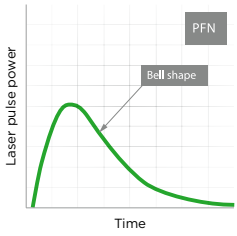
ASP POWERED



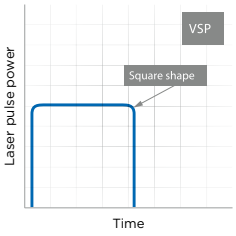
New Revolutionary
Adaptive Structured Pulse
Technology

Third Generation ASP Technology

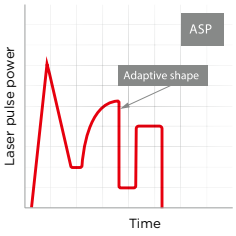
StarWalker® and its groundbreaking ASP (Adaptive Structured Pulse) technology represent a cosmic shift forward for the medical and aesthetic laser industry. This third-generation technology combines the unsurpassed range of pulse duration modes of Fotona's VSP (Variable Square Pulse) technology with the revolutionary capability of ASP technology to adapt the temporal structure of laser pulses to the bio-photonic dynamics of laser-tissue interaction.



Standard PFN Technology



Fotona VSP Technology



Third Generation Fotona ASP Technology

Modulated Acoustics Q-Switched (MaQX) Laser System

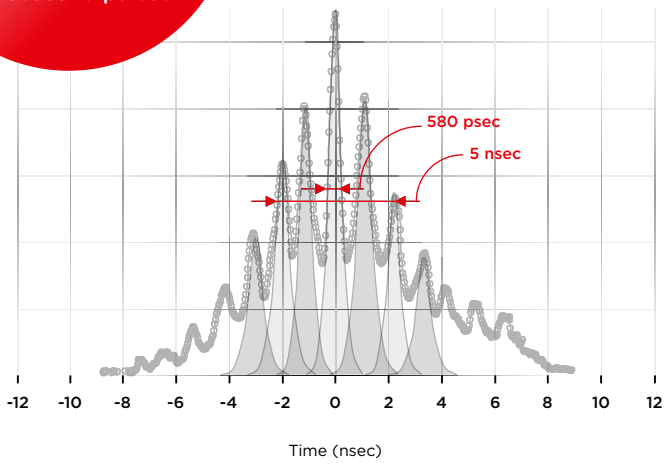
Fotona's StarWalker laser system features the entire range of super-short pulse technologies in a single, high-performance solution. StarWalker's patented MaQX pulse modalities produce powerful bursts of laser energy that photo-acoustically break apart skin pigmentations into smaller, more easily eliminated particles.

Fotona Q-Switched Pulse Power

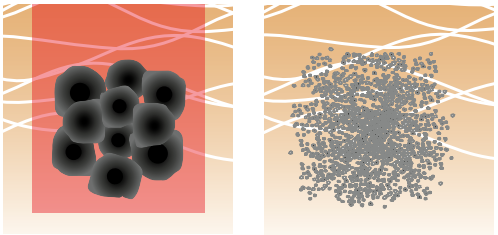
StarWalker's unique TMD (Transverse Mode Discrimination) laser oscillator technology combined with the ASP pulse control delivers very short (5 nsec) Q-switched pulses consisting of a high energy train of ultra-short bursts of energy in trillionths of a second, enabling photomechanical impact to shatter tiny skin targets without injury to the surrounding skin. StarWalker's technology thus combines the high energy capabilities of nanosecond lasers with the ultrashort pulse peak powers of traditional picosecond lasers.

Best of Both Worlds

Picosecond pulse power with the high energy of nanosecond pulses



A typical measured local temporal intensity of the StarWalker's 1064 nm MaQX pulse. The 1064 nm MaQX pulse consists of high peak power picosecond micro pulses within an overall nanosecond high energy macropulse.

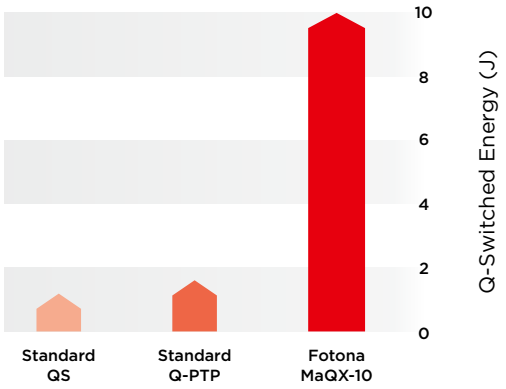


When absorbed in skin pigments, extremely short energy bursts of picosecond structured MaQX pulses generate photoacoustic shockwaves that disintegrate irradiated pigment particles into tiny particles that are then easily eliminated by the body.

Fotona MaQX – Unmatched Q-Switched Pulse Energy

Based on revolutionary ASP technology, StarWalker is capable of delivering up to an unprecedented 10 J of Q-switched energy in one giant structured MaQX pulse.

The unique MaQX high energy capability of StarWalker enables the generation of a higher energy photoacoustic effect at the treatment site, leading to more effective and faster treatments. Additionally, with high MaQX energies, larger spotsizes can be used resulting in more homogeneous treatments of even deeper lying skin pigments, and therefore with reduced risk of unwanted side effects.



Ultimate safety with Q-Switched treatments

Patient safety and comfort with ultra-performance MaQX mode treatments are further enhanced by the StarWalker's unique capability that allows the user to select the softness level (MaQX-1, MaQX-2, MaQX-5 or MaQX-10) of the treatment. When a higher softness level is selected, the StarWalker's ASP technology ensures that the generated acoustic energy is released at an acceptable acoustic power, resulting in a "softer" and less invasive effect on the tissue.

MaQX Technology

Ultra high Q-switched energy for ultimate speed and precision



MaQX mode softness level setting

MaQX mode energy setting

MaQX mode spotsize setting

Speed and precision
StarWalker's MaQX capabilities allow the operator to perform treatments with unprecedented efficacy and precision, and with increased safety enabled by the operator-adjustable "softness" level of the treatment.

Empowered by ASP Technology

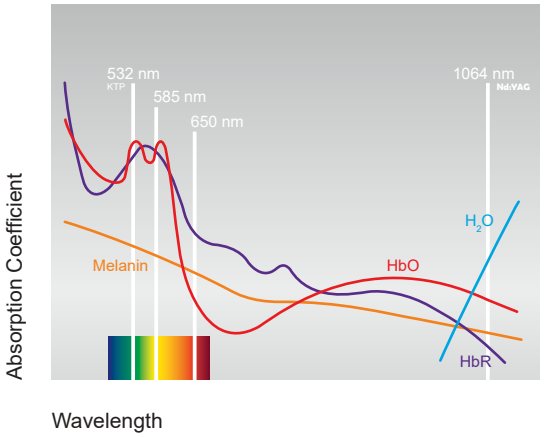
Fourteen Laser Modalities

StarWalker features an extraordinary 14 laser modalities operating at 4 complementary laser wavelengths. Based on the ASP technology, StarWalker modes are tailored to the requirements of specific treatments, a feature that has not been possible with earlier technologies.

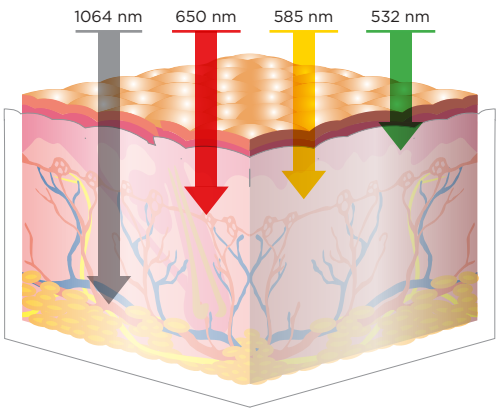
Wavelength	Pulse width		
	nanoseconds	microseconds	milliseconds
1064 nm	MaQX-1, MaQX-2, MaQX-5, MaQX-10, Turbo	FRAC3	VERSA3
532 nm	MaQX-1, MaQX-2, MaQX-5, MaQX-10, Turbo	-	VERDE
585 nm	QX	-	-
650 nm	QX	-	-

Four Laser Wavelengths

StarWalker delivers four laser wavelengths to cover the complete absorption spectrum of melanin, oxyhemoglobin and water.



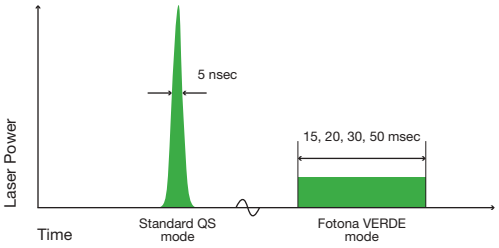
StarWalker's wavelengths are located at appropriate skin absorption peaks and minimums.



Four wavelengths to treat structures at different skin depths.

VERDE 532 nm mode for Treating Vascular Lesions

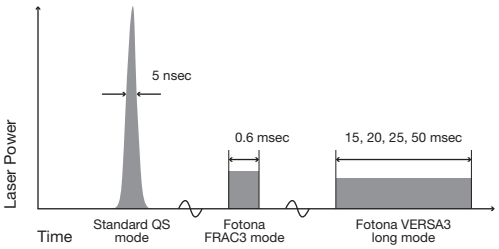
The 532 nm wavelength is located at one of the oxyhemoglobin absorption peaks, which makes it an ideal candidate for treating vascular lesions. Based on the revolutionary ASP technology, StarWalker features a unique green long-pulse VERDE pulse mode that has been designed specifically to treat vascular lesions. The StarWalker's VERDE mode provides a range of long-pulse durations (15, 20, 30, and 50 ms), adapted to correspond to the TRT of superficial red vessels.



StarWalker's unique VERDE mode delivers 532 nm energy in long millisecond pulses designed for treating superficial vascular lesions.

FRAC3 and VERSA3 1064 nm modes

StarWalker features a FRAC3 pulse mode which utilizes the short submillisecond pulse duration and high peak power density at 1064 nm to produce a self-induced three-dimensional fractional pattern in the epidermis and dermis, with damage islands that are predominantly located at the sites of targeted skin imperfections. Key applications of the FRAC3 mode include skin rejuvenation and removal of thin hair.



Standard Q-switched laser systems cannot deliver Nd:YAG laser pulses in the 'long-pulse' duration regime.

StarWalker also delivers 1064 nm VERSA3 mode pulses with a range of durations (15, 20, 25, and 50 ms), which are clinically well proven for a broad range of treatments, such as hair removal, wrinkle reduction, treatment of warts or treatment of onychomycosis. In addition, the StarWalker's ASP technology modulates the pulse to create a "FRAC3 type" microsecond structure superimposed on the milliseconds long VERSA pulse, thus combining the beneficial effects of the "long" 1064 nm pulse with the self-induced fractional capability of the FRAC3 modality.



Photon emission energy converter of the StarWalker's TMD (Transverse Mode Discrimination) laser oscillator

Versatility
StarWalker's range of laser sources and wavelengths enables a wide range of treatments, from tattoo removal and pigmented and vascular lesion removal to skin rejuvenation, acne treatments, hair removal and more.

Expanded Treatment Range

Epidermal and dermal pigmented lesions

StarWalker's MaQX and QX modes are ideal tools for effectively treating a wide variety of epidermal and dermal pigmented lesions on all skin types.

Melanin absorption is highest at 532 nm, and then decreases towards longer StarWalker wavelengths. On the other hand, the dermal penetration depth is greatest at 1064 nm. Therefore, the 532 nm is useful for removing epidermal pigmentation such as freckles, and the 1064 nm is suitable for removing pigments deeper in the dermis.



Courtesy of AB Goodall

TwinToning: combined 1064 nm and 532 nm MaQX skin toning



Courtesy of DMT

AngelWhite: 1064 nm MaQX skin whitening



Courtesy of KW Book

Melasma with MaQX 1064 nm



Courtesy of J. Kozarev

Age spots with MaQX 1064 nm



Courtesy of S. Saracoglu

Nevus of Ota with MaQX 1064 nm



Courtesy of KW Book

Removal of freckles with MaQX 1064 nm mode

Versatility
StarWalker's twelve laser modes provide the user with treatment options otherwise not available with Q-switched laser systems.

Enhanced Vascular Treatments

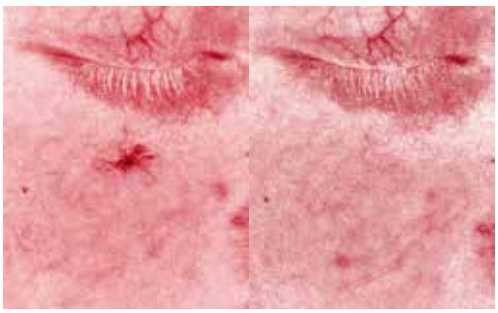


Courtesy of Fotona

Spider vein before and after

Vascular treatments

The 532 nm wavelength is located at one of the oxyhemoglobin peaks, which makes the Star-Walker VERDE mode an ideal candidate for superficial vascular treatments, while 1064 nm is used for treating deeper and larger vessels.



Courtesy of Fotona

Spider vein before and after



Courtesy of U. Ahcan

Treatment of port-wine stain with VERDE mode

Acne treatments



Courtesy of D. Kalíterna

Fractional 1064 nm MaQX treatment of active acne

Facial redness



Courtesy of D. Kalíterna

Fractional 1064 nm MaQX treatment of facial redness

Hair removal



Courtesy of DMT

Hair removal with VERSA3 1064 nm mode

Facial pores



Courtesy of Fotona

Treatment of pores with MaQX 1064 nm

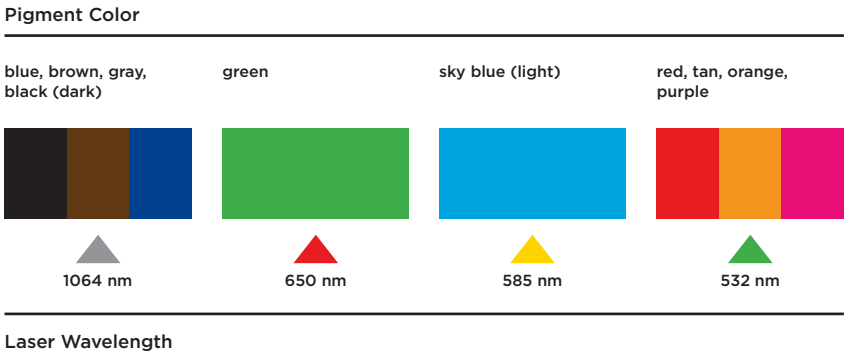
Advanced Tattoo Removal

Multi-color laser for multicolor tattoos

FracTat™

Combined fractional ablative and Q-switched photoacoustic tattoo removal procedure

The Fotona StarWalker ASP ultra-short pulse technology combines 4 different wavelengths in an advanced, high-powered solution for tattoo removal.



Generally, the greater the absorption of laser light in the tattoo pigment granules at a certain wavelength, the greater the energy available to break up these tattoo pigment granules.



Courtesy of Fotona

Color tattoo before and after



Courtesy of Dr. J. Kozarev

Color tattoo before and after



Courtesy of Dr. U. Ahcan

Color tattoo removed after five treatments



Courtesy of L. Marini

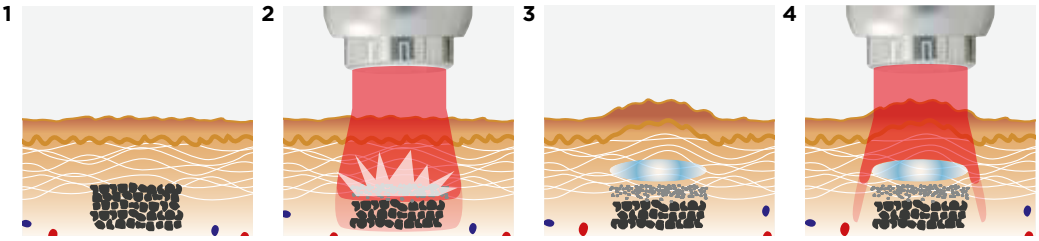
Cosmetic tattoo (permanent make-up) removal

Advantages of FracTat:

When a Q-switched laser pulse strikes the tattoo pigment it generates gas and steam within the skin. This causes an optical shielding or "frosting" effect that prevents any subsequent laser pulse from effectively reaching the deeper-lying pigments. Furthermore, gas bubbles which are formed around the pigment particles can damage the surrounding tissue.

- Enhanced generation of photoacoustic shockwaves
- Reduced frosting and pressure on surrounding tissue
- Multiple MaQX irradiations can be made during a single session
- Direct pigment removal via ablation and healing of fractionated skin
- Enhanced generation of photoacoustic shockwaves

Standard Treatment



Before the treatment

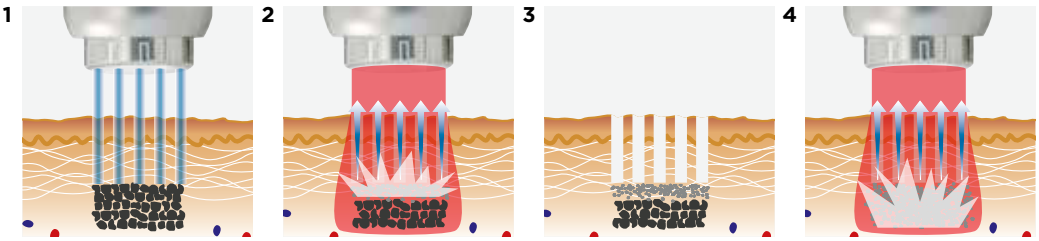
First treatment with a Q-switched pulse

Gas bubbles following the Q-switched treatment

Subsequent Q-switched pulses are blocked from reaching deeper lying pigments

When the Fotona patented FracTat™ procedure is performed, micro holes are first drilled into the skin using a fractional ablative laser handpiece. The fractional micro holes act as pressure relief ducts through which the gasses can escape without building up excessive pressure.

FracTat™ treatment



Micro holes are drilled with an ablative fractional laser

First treatment with a MaQX pulse

Reduced frosting effect

Subsequent MaQX pulses are not blocked from reaching deeper lying pigments



Before

Following FracTat treatment



After

Courtesy of L. Marini, Italy

Reliability
StarWalker's MaQX peak energy, four colors and proprietary FracTat™ procedure make StarWalker an industry leading tattoo removal laser system.

Excellence in Your Hands

A focus on applications with an impressive line of advanced easy-to-use handpieces

Full-beam and Fractional beam Titanium handpieces



handpiece	wavelength	spotsize	spot shape
R28	1064 / 532 nm	2 - 8 mm	circle
R29	1064 / 532 nm	1.5, 2, 3, 10, 12.5, 20 mm	circle
R58	532 nm	1.5 - 6 mm	circle
R585	585 nm	2, 3, 4 mm	circle
R650	650 nm	2, 3, 4 mm	circle
FS20	1064 nm	9x9 mm	fractional, 25 pixels
FS20A	1064 nm	9x9 mm	fractional, 81 pixels
FS20B	1064 nm	5x5 mm	fractional, 25 pixels
FS20C	1064 nm	7x7 mm	fractional, 49 pixels
FS50	532 nm	9x9 mm	fractional, 25 pixels
FS50B	532 nm	5x5 mm	fractional, 25 pixels

Key benefits

- Quick-release mechanism for attaching handpieces to the OPTOflex articulated arm
- FracTat technology offers a wide range of ablative and nonablative fractional treatments with different wavelengths and matrix patterns
- Automatic Detection: on-the-fly detection of type of HP, spot-size and spacer. HPs retain their compact size even with the automatic detection feature
- Unified handpiece design with built-in CPU for optimal safety and performance
- Titanium construction



Perfection
When you choose Fotona, you choose a company committed to designing, manufacturing and delivering the highest performance, best made laser systems in the world.

Fotona
choose perfection

Committed to Engineering

The Highest Performance, Best Made Laser Systems in the World

since 1964

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Founded in 1964, only four years after the invention of the very first laser, Fotona is one of the most experienced developers of high-technology laser systems. Fotona today is a world-leading medical laser company recognized for its innovative, award-winning laser systems for applications in aesthetics & dermatology, dentistry, surgery and gynecology. Based in the US and EU, with corporate headquarters in Dallas, Texas, and Ljubljana, Slovenia, Fotona's business philosophy is to continuously choose perfection to ensure the maximum performance and efficacy of its medical devices.

www.fotona.com

CE 0123

ISO 9001:2008, EN ISO 13485:2003, MDD 93/42 EEC Annex II excluding (4), ISO 13485:2003 (CMDCAS).







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