

Clean and fully intact  
dental tubules after  
laser treatment.

The universe at your fingertips.



# LightWalker<sup>®</sup>

Hard and Soft Tissue  
Dental Lasers

- The latest technology dental laser systems
- Dentistry's two best wavelengths Er:YAG and Nd:YAG
- Scanner-ready
- Supreme clinical results
- Unmatched simplicity of use

**Fotona**  
choose perfection



# No Compromise - Dentistry's Two Best Laser Wavelengths

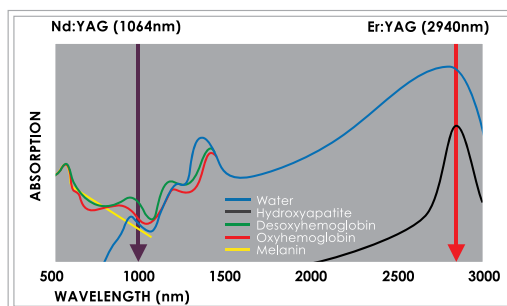
The LightWalker models AT and DT come standard with dentistry's two best laser wavelengths: Er:YAG and Nd:YAG for no-compromise dentistry with a touch of the control screen.

## Universal Laser System

It is a well-established fact that different dental procedures require different laser wavelengths. Wavelength is important because specific body tissues interact in different ways depending on the particular laser source. With the choice of two complementary wavelengths (in terms of their effect on tissues) LightWalker comes very close to being a "universal" laser. Practically all laser-assisted dental treatments can be performed with either the most highly absorbed Er:YAG laser wavelength or the most homogeneously absorbed Nd:YAG laser wavelength.

## TwinLight™ Treatment Concept

The combination of the two best wavelengths in one laser system enables practitioners to perform not only single-wavelength but also dual-wavelength (TwinLight™) treatments. Utilizing both wavelengths in a treatment makes optimum use of the unique laser-tissue interaction characteristics of each wavelength. For example, Nd:YAG laser energy is superior for coagulation and deep disinfection while Er:YAG is uniquely efficient at ablating hard and soft tissues. Combined, they can dramatically improve the outcome of laser assisted treatments, guaranteeing maximum safety and efficacy.



## Highest Power and Largest Pulse Duration Range

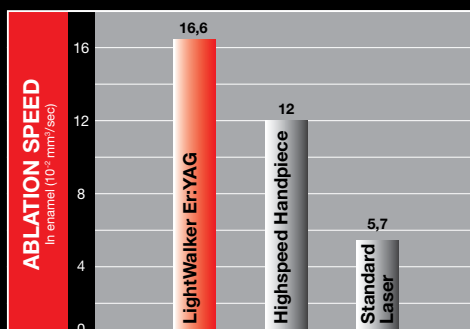
In LightWalker, both "gold standard" laser wavelengths are produced by solid crystal lasers that can outperform any diode or other dental laser in terms of peak power and the range of pulse durations.

### Fast efficient cutting with unmatched patient comfort

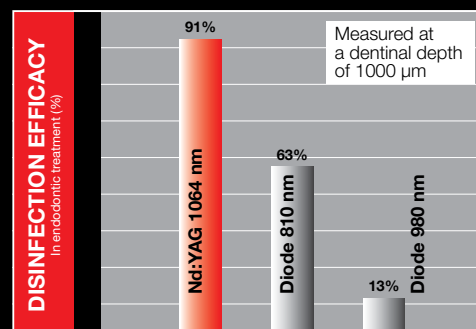
No other lasers cut as fast as LightWalker lasers for hard and soft tissues.

### Precise tissue surgery with simultaneous disinfection

The homogeneous absorption of the Nd:YAG laser in soft tissue results in precise tissue vaporization with simultaneous coagulation. Additionally, up to 1000× higher pulse power compared to other lasers provides superior disinfection.



Ablation speed: Er:YAG vs. high-speed drill and other lasers



Disinfection efficacy: Nd:YAG vs. other lasers

# Virtually Unlimited Applications

LightWalker lasers have the most comprehensive list of clinical applications of any dental laser in the world. With the availability of both tipped and tipless handpieces, your clinical options are endless. LightWalker offers the highest standard of dental treatment, and at the same time simplicity of use in:

- Endodontics
- Periodontics
- Soft Tissue Surgery
- Implantology
- Conservative dentistry
- Aesthetic treatments

## Presettings for over 40 Different Applications

The LightWalker touchscreen offers a simple menu of pre-programmed laser treatments. You pick the treatment and the laser automatically sets your optimum starting parameters. With easy-to-follow protocols and touch-of-a-button treatment settings, you'll be able to perform every dental procedure with confidence and high success rates, bringing in extra income to your practice along the way. You can even upgrade the AT model to perform aesthetic treatments such as wrinkle removal, hair removal, and skin rejuvenation (where permitted by local practice regulations).



The four main application groups



Comfort window for routine daily procedures



Advanced window to fine tune specific procedures

## Convenience in Use



### Easy-to-use touch screen

LightWalker has an easy-to-use color touch screen with an adjustable tilt and 80 customizable presettings which cover more than 40 different applications.

### Easy access spray/heated water reservoir

The integrated spray water container means that you don't have to rely on any water mains outlet, making your laser system uniquely mobile and hassle-free. The container is handily located at the back of the system for easy refilling access. Additionally, the water is heated to body temperature, avoiding cold sensitivity reactions during procedures.



### Patented weightless OPTOflex arm (available with LightWalker AT)

LightWalker's unique and patented OPTOflex Er:YAG articulated arm is perfectly balanced during use, making handpieces completely weightless in your hand. OPTOflex allows a full range of motion and a maximum degree of control as it makes maneuvering the handpiece much smoother, which improves treatment precision and ease.

### Wireless footswitch (optional)

LightWalker also has a wireless footswitch which avoids unnecessary tangling of electric cables on your practice floor.



# TwinLight™ Endodontic Treatment



The Fotona TwinLight™ Endodontic Treatment (TET) successfully addresses two major disadvantages of classical chemo-mechanical treatments procedures: the inability to clean and debride anatomically complex root canal systems and to deeply disinfect dentinal walls.

In the first step of the TwinLight treatment, the revolutionary Photon Induced Photacoustic Streaming (PIPS®) method is employed, which uses the power of the Er:YAG laser to create non-thermal photoacoustic shock waves within the cleaning and debriding solutions introduced in the canal. Following PIPS®, the canals and subcanals are left clean and the dentinal tubules are free of a smear layer. PIPS®, which



Following PIPS® endodontic laser treatment there is no smear layer around the opening of the lateral canal.

is available only with Fotona lasers, is equally effective for final water rinsing prior to obturation.

In the second step, the deeply penetrating Nd:YAG laser wavelength is utilized to decontaminate dentinal walls up to 1000 µm deep. In this step, the high peak-pulse power of the Nd:YAG laser plays an important role as it induces maximum temperature pulsing for eliminating bacteria.

\*PIPS is patent pending innovation developed by Fotona's partner MDATG, LLC.



In the first step, Er:YAG laser light cleans and debrides the canals and subcanals.



In the second step, the Nd:YAG laser deeply disinfects the dentinal walls.

## Top-Of-The-Line Easy-To-Use Handpieces

### Titanium Technology

LightWalker uses advanced titanium handpieces which provide ultimate durability for constant handling and frequent sterilization.

### Er:YAG

The tipped and tipless Er:YAG handpieces have an integrated air/water spray for additional patient comfort. The Er:YAG handpieces also have a quick disconnect system for greater convenience and easier sterilization.

### Nd:YAG

The Nd:YAG handpieces are now more convenient than ever. With LightWalker AT you have two constantly available handpieces with two different fiber diameters at your

disposal. What's more, LightWalker AT has an automatic handpiece detection system which knows exactly which handpiece you have selected and automatically sets the appropriate laser parameters.



# TwinLight™ Periodontal Treatment



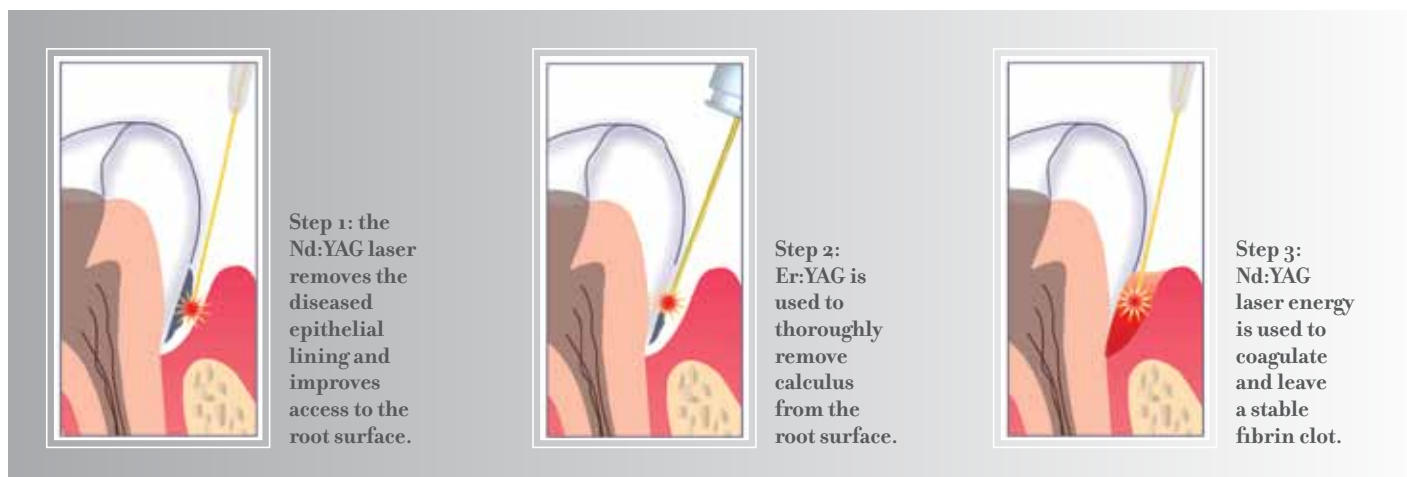
TwinLight™ Periodontal Treatment (TPT) is a minimally invasive periodontal disease therapy incorporating dentistry's two best laser wavelengths.

The Twinlight™ approach enables wavelength-optimized treatments for periodontal therapy (such as WPT™\*), which create the optimal condi-

tions for healing periodontal tissues by removing the diseased epithelial lining of the periodontal pocket, removing microbial biofilm and calculus from the root surface and sealing the pocket after treatment with a stable fibrin clot.

The TwinLight™ Periodontal Treatment approach gives general dentists the confidence to treat their patients' moderate-to-severe periodontal disease the laser way, without scalpels and sutures.

\*WPT is a therapy developed by Fotona's partner Lares Research.



## Scanner-Mode for Future Applications

LightWalker AT is the first dental laser system in the world that incorporates scanning laser technology. Fotona's forward-looking in-house R&D team has designed a system with innovative technological solutions to accommodate future dental needs.

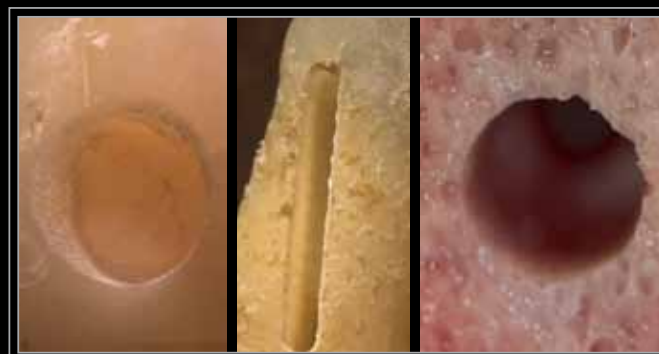
### Unmatched Precision

LightWalker AT is an Er:YAG scanner-ready system. The scanner will provide consistent and even ablation in hard and soft tissue over a 5×5 mm area. The speed and consistency of ablation with a scanner is virtually impossible to achieve by using any other tool.

### Walk into the Future with LightWalker

LightWalker technology will finally enable practitioners to utilize the most important feature of laser light, its weightlessness. Using a scanner, laser light can be swiftly and accurately moved across the surface of treated tissues.

The LightWalker's Er:YAG scanner will allow the practitioner to perform treatments involving otherwise unachievable patterns. This has the potential to revolutionize dental fields such as implantology, conservative dentistry and apicoectomy.



Samples of easily achievable scanning patterns in hard tissue drilling and cutting.

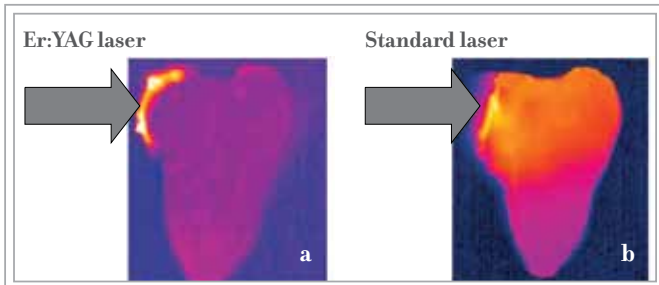
# TouchWhite™ Laser Assisted Tooth Whitening



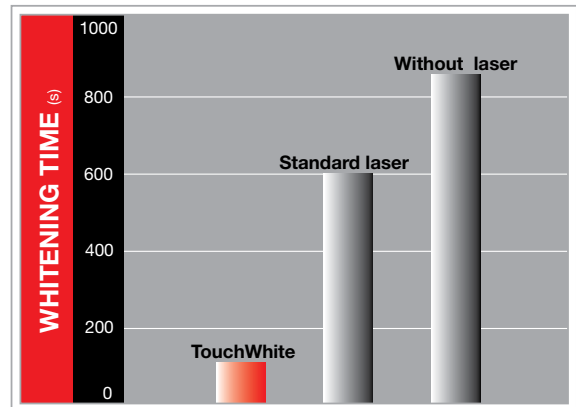
The TouchWhite™ patent pending tooth whitening makes use of the fact that the Er:YAG laser wavelength has an absorption peak in water which is the major component of aqueous bleaching

gels. This eliminates the need for any additional absorbing particles in the bleaching gels. More importantly, taking into account thermal burden considerations, the TouchWhite™ procedure represents the most effective and least invasive laser-assisted tooth whitening method possible. Due to its high absorption in bleaching gels, the Er:YAG laser beam is fully absorbed in the gel and does not

penetrate to the hard tissue or the pulp. All of the laser energy is thus effectively used for the heating of the gel. There is no direct heating of the dental tissue and the pulp, as is the case with other laser-assisted whitening methods. There is also no risk of accidentally damaging the hard dental tissue as the laser fluence of every laser pulse is set to be significantly below the ablation threshold for dental tissues. As a consequence, the procedure can be performed with a minimal undesirable thermal burden on the tooth, and the tooth whitening speed can be safely increased by 5 – 10 times.



With TouchWhite™ whitening only the gel is heated (a) while with standard laser whitening the entire tooth is heated (b).



TouchWhite™ Tooth Whitening substantially shortens the whitening process.

## LightWalker Range



System		AT	DT	ST-E
Er:YAG	Power	20 W	8 W	8 W
	Energy	1500 mJ	500 mJ	500 mJ
	Operational modes	MAX, QSP (up to 120 Hz), SSP (50 µs), MSP (100 µs), SP (300 µs), LP (600 µs), VLP (1000 µs)	SSP (50 µs), MSP (100 µs), SP (300 µs), LP (600 µs), VLP (1000 µs)	SSP (50 µs), MSP (100 µs), SP (300 µs), LP (600 µs), VLP (1000 µs)
	Optical delivery	OPTOflex	7-mirror arm	7-mirror arm
Nd:YAG	Power	15 W	8 W	
	Operational modes	MSP (100 µs), SP (180 µs), VLP (650 µs), 15 ms, 25 ms	MSP (100 µs), SP (180 µs), VLP (650 µs)	
	Optical delivery	Dual fiber system	Single fiber system	

AT models additionally include scanner-ready mode, automatic handpiece detection, quick-disconnect Er:YAG handpieces, advancable and disposable Nd:YAG fiber feed handpieces, and heated water spray for enhanced patient comfort.

For more information visit [www.lightwalkerlaser.com](http://www.lightwalkerlaser.com) or contact us directly at [info@lightwalkerlaser.com](mailto:info@lightwalkerlaser.com)

# Supreme Clinical Results

## Shorter and More Effective Treatments

With LightWalker, procedures are typically shorter, easier to perform and more effective. Laser treatments are by nature minimally invasive, and LightWalker takes this concept to a new level.

## Patient Comfort

Working with LightWalker is less stressful for the patient because pain and bleeding are minimal if any. LightWalker lasers are so gentle for cavity preparations and most soft-tissue procedures that patients rarely require any anaesthetic. Laser light allows you to work in a non-contact way and without drilling noise, which is far more comfortable

for patients, especially children. LightWalker also allows you to achieve simultaneous disinfection and prevention of cross-contamination.

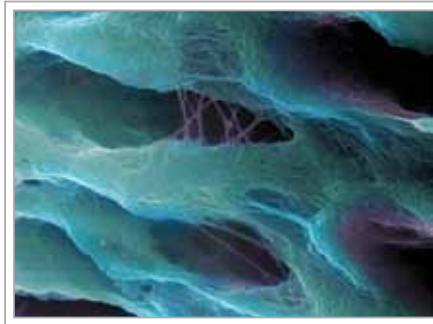
## Unmatched Flexibility

The Nd:YAG laser source is ideal for root canal disinfection, soft tissue crown lengthening and numerous other applications. And LightWalker's Er:YAG laser is compatible with a set of over 20 specialized fiber tips, expertly designed to offer an additional range of lucrative, high quality treatments in endodontics, periodontics and implant recovery, areas you may otherwise have to refer out to specialists.

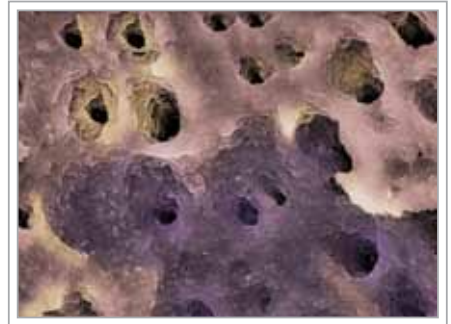
Courtesy of MDATG, LLC



Intact collagen fibres after laser treatment.



Preserved collagen fibrils of the intertubular dentin at the entrances to the dentinal tubules.



After endodontic laser treatment the dentinal tubules are disinfected and fully open.

## The Technology Behind the Best Dental Laser in the World

The development of LightWalker is based on Fotona's 45 years of experience in laser technology. The system has technologically superior laser elements that make it the highest performance, best made laser system in the world:



### Variable Square Pulse (VSP) Technology

Fotona's VSP technology sets the precision and safety of dental laser treatments on a higher level. Fotona's square-shaped laser pulses avoid standard laser technologies' slow rise and even longer fall in pulse power. VSP ensures ultimate patient comfort in all your treatments and unrivaled ease-of-use.

### Energy Feedback Control

The laser system incorporates a sophisticated double channel safety structure for energy regulation which contributes to procedure safety. The laser output energy is constantly regulated by a signal from two energy meters.

### Quantum Square Pulse (QSP)

By avoiding the hard tissue debris cloud the laser ablates more efficiently and with greater precision in Fotona's patent pending QSP mode because the laser beam is not affected by the debris. By being able to ablate more efficiently, the edges of individual craters are virtually straight, which provides higher levels of precision and preservation in hard tissue treatments.

### Tissue Effect Graphical Interface (TeGI)

The Tissue Effect Graphical Interface (TeGI) provides a graphical representation of the laser tissue effect, maximizing ease-of-use and shortening the learning curve.

# Fotona

choose perfection

## Global Leader for over 45 Years

Since 1964 Fotona has set industry standards of excellence in laser systems for medicine, communications, industry, and defense. Our laser systems are the result of over 45 years of experience and expertise in producing high-tech products for these respective fields. Consequently Fotona is a globally recognized leader and pioneer in the innovation, development and manufacture of laser systems.

## High Technology - Made in Europe

As one of the top manufacturers of medical laser systems, our commitment to state-of-the-art, in-house production sets us apart from the competition, which typically outsources the production process. Fotona's in-house manufacturing and stringent testing of all components, in compliance with applicable international standards, ensures that our systems are of the highest quality, reliability and durability. When you choose Fotona, you choose the highest performance, best-made laser systems in the world.

## Best Training and Support

To get the most out of your LightWalker system, our practitioner workshops, coorganized with the Laser and Health Academy, provide hands-on demonstrations of our lasers from international clinical experts. Fotona also works closely with AALZ (Aachen Dental Laser Center) in Germany. The AALZ, a leading international center for dental laser education, offers additional high level training to help you on your path to becoming a top laser specialist.

What's more, we continually create noticeable, practical marketing ideas and samples that you can use and apply to suit your personal business needs.

Fotona's educational partners



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# The Highest Performance, Best Made Laser Systems in the World.

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