



Clean and fully intact
dental tubules after
laser treatment.

The universe at your fingertips.



LightWalker[®]

Hard and Soft Tissue
Dental Lasers

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

Fotona
choose perfection



No Compromise - Dentistry's Two Optimal Laser Wavelengths

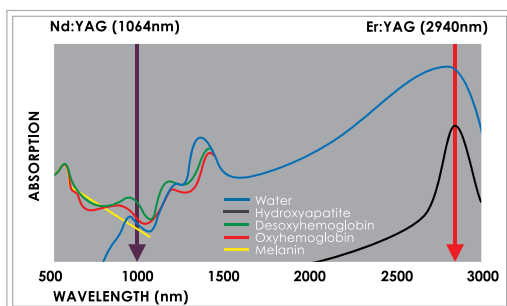
The LightWalker models AT and DT come standard with dentistry's two most effective laser wavelengths: Er:YAG and Nd:YAG for no-compromise dentistry with a touch of the control screen.

Universal Laser System

It is a well-established fact that different dental procedures require different laser wavelengths. Wavelength is important because specific body tissues react 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 greatly expand the range of treatment possibilities and dramatically improve the outcome of laser-assisted treatments.



Highest Power and Largest Range of Pulse Modes

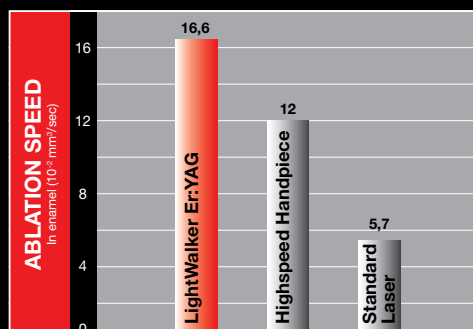
In LightWalker, both "gold standard" laser wavelengths are produced by solid crystal lasers that can outperform any diode or other dental laser in terms of peak power and the range of pulse durations.

Fast efficient cutting with unmatched patient comfort

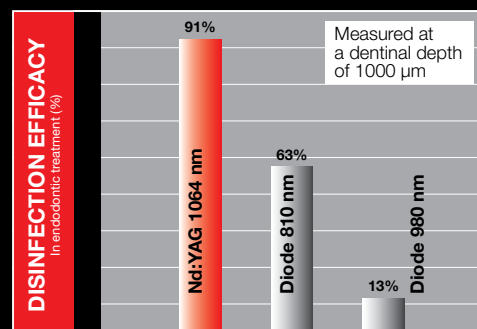
No other lasers cut as fast as LightWalker's Er:YAG laser for hard and soft tissues.

Precise tissue surgery with simultaneous disinfection

The homogeneous absorption of the Nd:YAG laser in soft tissue results in controlled 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 are designed for ultimate versatility, with one of the most comprehensive lists of clinical applications available on any dental laser. With 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:

- Conservative dentistry,
- Endodontics,
- Periodontics,
- Soft-tissue surgery,
- Implantology,
- Aesthetic treatments.

Presettings for over 40 Different Applications

The LightWalker touchscreen offers a simple menu of pre-programmed laser treatments. You select 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 skin treatments (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)

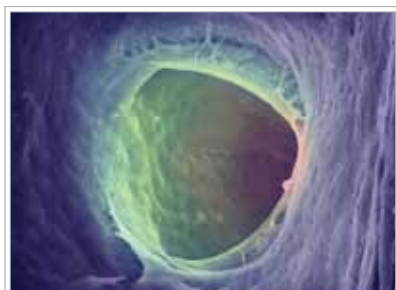
LightWalker also has a wireless footswitch which avoids unnecessary tangling of electric cables on your practice floor.

TwinLight® Endodontic Treatment



The Fotona TwinLight® Endodontic Treatment 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, a revolutionary photoacoustic streaming 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 this treatment, the canals and subcanals are left clean and the dentinal tubules are free of a smear layer.



Following endodontic laser treatments with photoacoustic streaming, there is no smear layer around the opening of the lateral canal.

This powerful photon-induced photoacoustic streaming method, which 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.



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

Both tipped and tip-less 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



SOFT TISSUE-PERIO: Procedure Open		
1	Nd:YAG PERIO EPITHELIUM	300
2	Er:YAG PERIO CALCULUS	W14
3	Nd:YAG PERIO CLOT CREATION	300
4	Er:YAG FLAP SURGERY	W14
5	Er:YAG GINGIVECTOMY	W14

Previous Back Next

TwinLight® Periodontal Treatment 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 conditions for healing periodontal tissues by removing

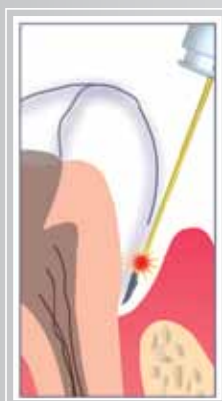
the diseased epithelial lining of the periodontal pocket, removing microbial biofilm and calculus from the root surface and sealing the pocket after treatment with a stable fibrin clot.

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.



Step 1: the Nd:YAG laser removes the diseased epithelial lining and improves access to the root surface.



Step 2: Er:YAG is used to thoroughly remove calculus from the root surface.



Step 3: Nd:YAG laser energy is used to coagulate and leave a stable fibrin clot.

The First Digitally Controlled Dental Laser Handpiece

LightWalker AT is the first dental laser system in the world that works with a digitally controlled dental handpiece. Fotona's revolutionary X-Runner™ technology increases the precision of dental laser treatments by helping to swiftly and accurately guide the laser beam across the treatment area according to perfectly shaped, predefined patterns.

Unmatched Precision

X-Runner replaces multiple dental tools and makes treatments more precise, simple and easy. It provides precise, consistent and even ablation in hard or soft tissue over a 6×6 mm surface. With X-Runner, the shape and size of the treatment area are selected in advance, allowing practitioners to perform treatments with a level of speed and consistency that is virtually impossible to achieve with any other tool.

Walk into the Future with LightWalker

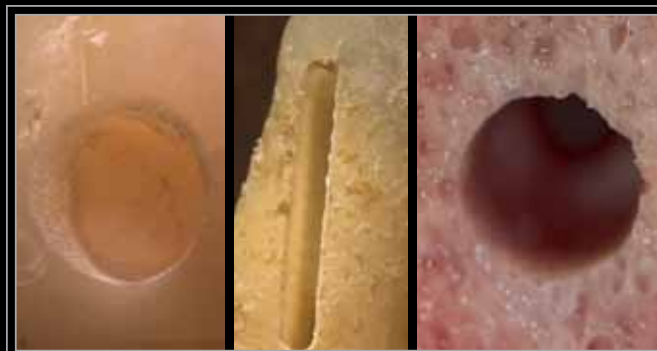
LightWalker technology is enabling practitioners to utilize the most important feature of laser light – its weightlessness. The new X-Runner digitally controlled dental handpiece is a major advance in laser dentistry that will greatly impact fields such as surgery, conservative dentistry and implantology.



X-Runner



After precise and fast ablation with X-Runner



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

TouchWhite® Laser Assisted Tooth Whitening

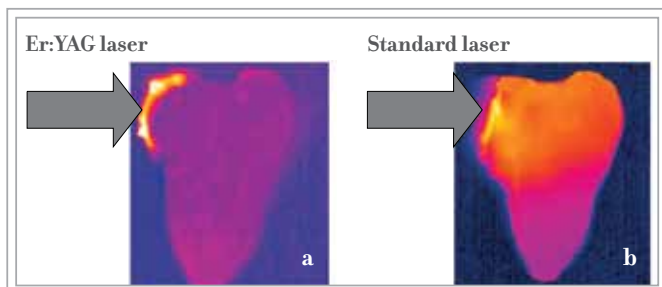


The TouchWhite® patented tooth whitening makes use of the fact that the Er:YAG laser wavelength has an absorption peak in water which is the major component of aqueous bleaching gels. This eliminates the need for any additional absorbing particles in the bleaching gels. More importantly, taking into account thermal burden considerations, the TouchWhite procedure represents the most effective and least invasive laser-assisted tooth whitening method possible.

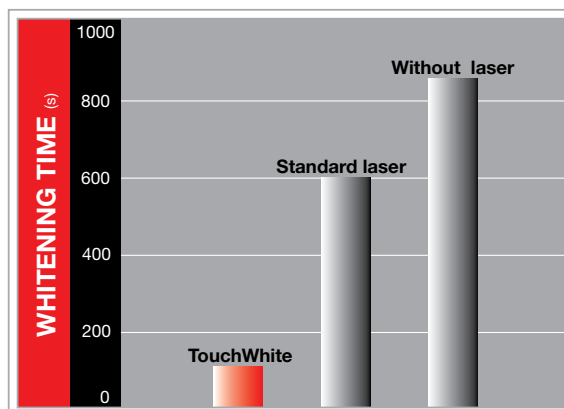
Due to its high absorption in bleaching gels, the Er:YAG laser beam is fully absorbed in the gel and does not pen-

etrate 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	Basic 8 W	Standard 10 W	Advanced 18 W	Basic 8 W	Standard 10 W	Advanced 18 W
	Integrated spray	✓		✓	✓		✓	✓
	Energy	1500 mJ	500 mJ	500 mJ	900 mJ	500 mJ	500 mJ	900 mJ
	Operational modes	MAX, QSP (up to 120 Hz) SSP, MSP, SP, LP, VLP, SMOOTH	SSP, MSP, SP, LP, VLP			SSP, MSP, SP, LP, VLP		
	Optical delivery	OPTOflex	7-mirror arm			7-mirror arm		
Nd:YAG	Power	15 W	8 W	8 W	15 W			
	Operational modes	MSP, SP, VLP 15 ms, 25 ms	MSP, SP, VLP					
	Optical delivery	Dual fiber system	Single fiber system					

AT models additionally offer: Fotona's new digitally-controlled handpiece mode, automatic handpiece detection, quick-disconnect Er:YAG handpieces, advanceable and disposable Nd:YAG fiber-feed handpieces, heated water spray for enhanced patient comfort, and optional green pilot beam.

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

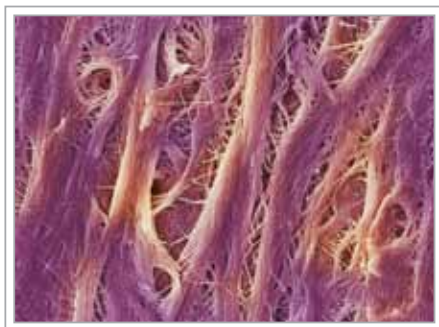
Working with LightWalker is less stressful for the patient because pain and bleeding are minimal if any. LightWalker lasers are so gentle for cavity preparations and most soft-tissue procedures that patients rarely require any anesthetic. Laser light allows you to work in a non-contact way and without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

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

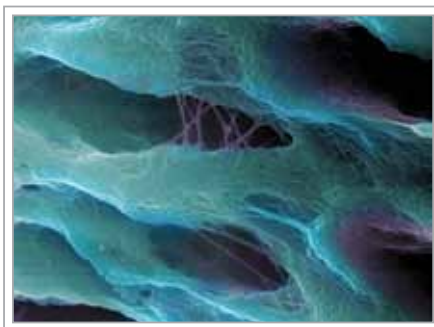
Unmatched Flexibility

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 advanced options in conservative dentistry plus 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 MDTAG, 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 an Award-Winning Dental Laser

The development of LightWalker is based on Fotona's 50 years of experience in laser technology. The system has technologically advanced laser elements that are engineered for ultimate performance in the world of dentistry:



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.

LightWalker International Recognition



Pride institute - **Best of Class
Technology Award 2011**

Dentistry Today - Top 100
Products 2011

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Global Leader for 50 Years

Since 1964 Fotona has set industry standards of excellence in producing high-tech laser systems for medicine, communications, industry, and defense. 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. 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.

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 other leading educational authorities in the field of laser dentistry to offer additional high level training opportunities to help you on your path to becoming a top laser specialist.

Committed to engineering:

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

In-House Technology



Since 1964



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Fotona is certified to: ISO 9001:2008, EN ISO 13485:2003, MDD 93/42/EEC, ANNEX II.3, ISO 13485:2003 (CMD/CAS), GMP according to FDA regulations

