

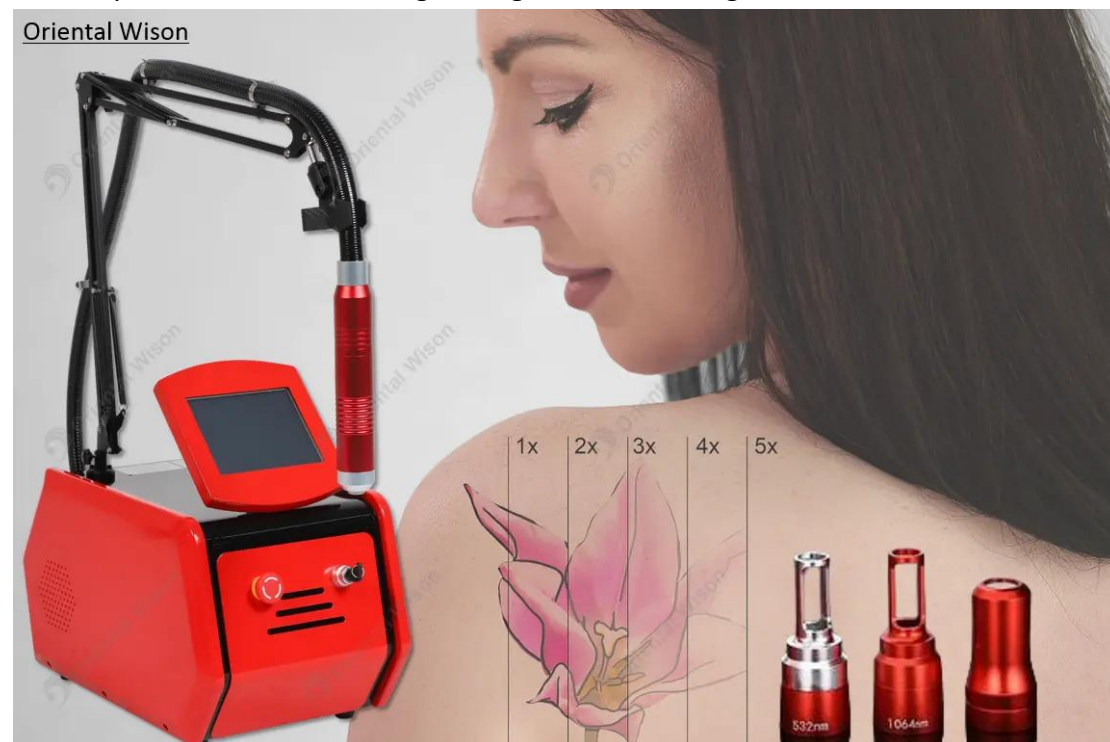
Portable Q Switch ND YAG Laser:

Technical Overview for Clinical Practice

The Portable Q Switch ND YAG Laser represents a practical solution for medical professionals seeking effective treatment options for pigmented lesions and unwanted tattoos. This device combines established technology with modern portability, making it suitable for various clinical settings.

Core Technology and Operating Principles

The Portable Q Switch ND YAG Laser utilizes the principle of selective photothermolysis. This concept ensures that laser energy targets specific chromophores while minimizing damage to surrounding tissues.



Q-Switched Mechanism

The Q-switching technique generates short, high-energy pulses. This mechanism allows the device to deliver intense bursts of energy in nanoseconds. The rapid delivery creates a strong thermal effect that fragments targeted particles effectively.

Dual Wavelength System

The system incorporates two distinct wavelengths to address different treatment depths and pigment colors.

- 1064nm Wavelength: Penetrates deeply into the dermis. This setting treats darker pigments, including black, blue, and green tattoo inks. It also addresses deeper dermal pigmentation such as nevus of Ota.
- 532nm Wavelength: Targets superficial epidermal layers. This wavelength is absorbed by red, orange, and yellow pigments. It effectively treats freckles, sunspots, and other superficial hyperpigmentation.
- 1320nm Wavelength: Heat dermal water, triggers neocollagenesis without surface wounds, Stimulates collagen for acne scars. It's mainly used for carbon peeling, skin whitening.
- 755nm Wavelength: Dark pigment (blue/black), Targets deep pigmentation and darkblue/black tattoo inks

The advertisement for the Q Switch ND YAG Laser features a central graphic with the title 'Q SWITCH ND YAG LASER' and the subtitle 'Advanced Laser Technology for Flawless Skin'. It highlights four wavelengths: 532nm (blue), 755nm (red), 1064nm (yellow), and 1320nm (black). The graphic also includes icons for 'High Energy Output', 'Q-Switched Technology', and 'Safe & Effective'. A 'BEFORE & AFTER' section shows skin improvements for tattoo removal, carbon peeling, skin rejuvenation, and pigmentation treatment. A 'MULTI-FUNCTION SOLUTIONS' list includes Tattoo Removal, Carbon Peeling, Skin Rejuvenation, and Pigmentation Treatment. The bottom of the graphic features icons for 'Powerful Performance', 'Precise Treatment', 'Cooling System for Comfort', and 'Stable & Reliable'. On the right, a photograph shows the red laser machine with two handpieces.

Wavelength	Primary Target	Q-Switch Laser Function
532nm	Superficial pigment (red/brown)	Breaks sun damage, freckles, and red/orange tattoo inks
755nm	Dark pigment (blue/black)	Targets deep pigmentation and dark blue/black tattoo inks
1064nm	Deep pigment and uneven skin tone	Resurfaces uneven texture and removes black/dark blue tattoos
1320nm	Water in tissue	Stimulates collagen for acne scars

Portability and Design Efficiency

The compact design facilitates easy movement between treatment rooms. The reduced weight does not compromise the power stability. The Portable Q Switch ND YAG Laser integrates a sealed optical system that protects internal components from dust and contamination.

Clinical Functions and Treatment Applications

The Portable Q Switch ND YAG Laser supports a broad spectrum of aesthetic procedures. The following points detail its primary clinical functions.

- **Tattoo Removal:** Eliminates both amateur and professional tattoos. The dual wavelengths enable clearance of multi-colored designs.
- **Pigmented Lesion Treatment:** Reduces the appearance of age spots, lentigines, and ephelides. The device improves skin tone uniformity.
- **Melasma Management:** Offers a treatment option for this challenging condition when used with appropriate protocols.
- **Skin Rejuvenation:** Stimulates neocollagenesis. The thermal effect promotes dermal remodeling, reducing fine lines and improving texture.
- **Nevus Removal:** Addresses congenital and acquired nevi, including café-au-lait spots and Becker's nevi.
- **Carbon Peeling:** Carbon peel laser treatment has been described for the improvement of skin texture, with pore reduction and treatment of acne lesions.



1320nm carbon peel lens

A carbon laser facial peel is a revolutionary laser treatment that is completely painless.

It's highly beneficial for people with any of the following skin issues:

- Oily skin
- Blackheads
- Enlarged pores
- Dull skin
- Acne across the face and body



It's also an excellent way to exfoliate and refresh your skin providing an instant refreshed appearance leaving the skin feeling softer, smoother and firmer.



Detailed Technical Specifications

Wavelength	1064/755/1320nm	532nm
Pulse Energy	Up to 2000 mJ	Up to 1000 mJ
Pulse Width	5-8 ns	5-8 ns
Repetition Rate	1-10 Hz (adjustable)	1-10 Hz (adjustable)
Peak Power	High stability output	High stability output
Energy Stability	$\leq \pm 5\%$	$\leq \pm 5\%$
Spot Size Range	1.5 mm to 8 mm (continuous adjustment)	
Beam Profile	Flat-top or Gaussian (selectable)	
Handpiece Type	Lightweight, ergonomic design	
Cooling Method	Built-in contact cooling or air cooling	
Gross Weight	32 kg	
Dimensions (W x D x H)	64*54*48cm	
Display	8.0-inch high-resolution touchscreen	
Power Supply	AC 110-240V, 50/60Hz	
Power Consumption	1000W	
Cooling System	Air cooling +Cooling Fans	
Operating Temperature	10°C to 42°C	
Storage Temperature	-10°C to 50°C	
Safety Interlock	Emergency stop button and door interlock	
User Authentication	Password-protected settings	
Treatment Counter	Automatic pulse counting system	
Calibration	Self-diagnostic and calibration routine	

Frequently Asked Questions

What are the advantages of the Portable Q Switch ND YAG Laser over larger stationary units?

The Portable Q Switch ND YAG Laser offers several practical advantages. The compact size allows clinicians to move the device between different rooms or locations without difficulty. The energy output remains comparable to larger systems, ensuring treatment efficacy is not compromised. The portable design also reduces storage requirements and simplifies maintenance procedures. This makes the Portable Q Switch ND YAG Laser an ideal choice for clinics with limited space or for practitioners who provide services at multiple sites.

How does the treatment protocol differ for the 1064nm and 532nm wavelengths?

Treatment protocols vary significantly between the two wavelengths. For the 1064nm mode, practitioners typically use higher energy levels due to deeper penetration. This setting requires careful monitoring of skin response to prevent adverse effects. The 532nm mode operates at lower energy settings because of higher melanin absorption in the epidermis. The Portable Q Switch ND YAG Laser allows independent adjustment of parameters for each wavelength. Practitioners should select spot sizes and fluence based on the specific lesion characteristics and patient skin type.

What maintenance procedures are required for the Portable Q Switch ND YAG Laser?

Routine maintenance for the Portable Q Switch ND YAG Laser involves several straightforward procedures. The external surfaces should be cleaned with a soft, dry cloth after each use. The handpiece requires periodic inspection for optical integrity. The air intake filters need cleaning or replacement every three months to ensure proper cooling. The system includes a self-diagnostic program that verifies optical alignment and energy output. Annual professional calibration is recommended to maintain performance standards. The manufacturer provides detailed maintenance schedules in the user manual.

How does the treatment response vary across different skin types?

Treatment response depends on multiple factors including skin type, lesion depth, and pigment concentration. For Fitzpatrick skin types I to III, both wavelengths demonstrate predictable responses with minimal side effects. For types IV to VI, the 1064nm wavelength is preferred due to reduced epidermal melanin competition. The Portable Q Switch ND YAG Laser features adjustable parameters that allow clinicians to customize treatments for each patient. Test spots are recommended before full treatment to assess individual response patterns.

What is the expected recovery time following treatment with this device?

Recovery times vary based on treatment parameters and individual healing capacity. Most patients experience mild erythema and edema lasting 24 to 48 hours. Crusting may occur in some cases, particularly with higher energy settings. These effects typically resolve within one week. The Portable Q Switch ND YAG Laser minimizes thermal damage through its short pulse duration, reducing the risk of prolonged healing times. Patients should avoid sun exposure during the healing period and use appropriate sun protection.

Conclusion

The Portable Q Switch ND YAG Laser offers a versatile and reliable solution for aesthetic practitioners. Its dual-wavelength capability, combined with compact design, makes it suitable for diverse clinical applications. The technical specifications demonstrate consistent performance across various treatment parameters. Proper training and adherence to established protocols ensure optimal outcomes for patients seeking tattoo removal, pigmentation correction, and skin rejuvenation.

BEFORE & AFTRS



Results after 2 treatments