

Laser QS 1064/532nm High Power Module

Tattoo Removal and Vascular Lesions SOP



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The information contained in this manual is for use as a reference only and does not serve as a substitute for reading the Operator Manual included with your system.

Chapter Contents

QS 1064/532nm High Power Module Description	1
Laser QS 1064/532nm High Power Module Specifications	1
Standard Tip Module Specifications	1
532nm KTP tip Module Specifications	1
QS 1064/532nm High Power Module Operating Screen	2
QS 1064/532nm High Power Module Clinical Guide	2
Indications for Use	2-4
Pre-Treatment	4-5
Treatment	6
Suggested Setup Parameters	7
Post-Treatment Care	7
Follow-Up	8

QS 1064/532nm High Power Module Description

The Laser QS 1064/532nm module has a high-power targeted laser module for the non-invasive removal of various colored tattoos, as well as deep and superficial, benign pigmented lesions.

The module can be operated in Laser QS or Frequency Doubled (FD) Laser QS modes, depending on the connected tip.

The Laser QS 1064/532nm module is identified by **QS 1064nm** printed on the module.

Laser QS 1064/532nm High Power Module

Standard Tip Module Specifications

- Light Source: Q-Switched Nd:YAG
- Wavelength: 1064nm
- Pulse Width: fixed at 20 nsec
- Spot Size: 3, 5 mm
- Pulse Frequency: 1, 2, 4 Hz
- Energy Density (Fluence): 500 – 1200 mJ/pulse

532nm KTP Tip Module Specifications

- Light Source: FD Q-Switched Nd:YAG
- Wavelength: 532nm
- Energy Density (Fluence): 500 – 1200 mJ/pulse
- Tip Spot Size 3 mm
- Pulse Width: fixed at 20 nsec
- Pulse Frequency: 1, 2, 4 Hz

QS 1064/532nm High Power Module Clinical Guide

The **Laser QS 1064/532nm (1064nm and 532nm KTP)** high power module is indicated for tattoo removal and the treatment of benign epidermal pigmented (solar lentigines, nevi of Ota and Ito and Café-au-lait macules) and superficial vascular lesions. The Laser QS 1064nm tip is indicated for the treatment of deep pigmented lesions. The 1064nm and 532nm (bright green light) wavelength and the nanosecond pulse domain is chosen based upon the significant attraction to a dark pigment chromophore while minimizing the nonspecific thermal effects from the primary endogenous chromophores.

Warning

- **The appropriate protective eyewear should be worn by both the operator and the patient when using this module.**
- **When using the 532nm KTP tip appropriate eyewear protection must be used by both the practitioner and the patient (and anyone else in the room).**
- **Different eyewear is indicated and therefore must be used for the 1064nm vs. the 532nm wavelength.**

Indications for Use

The 532nm Frequency-Doubled (FD) Nd:YAG laser module tips (Q-Switched) is indicated for:

- Incision, excision, ablation, vaporization of soft tissue.
- Tattoo removal:
 - Light blue
 - Yellow
 - Red
 - Green
- Vascular lesions:
 - Hemangiomas (port wine stains/birthmarks, cavernous, cherry, and spider hemangiomas).
 - Angiomas (cherry, spider)
 - Telangiectasia
 - Spider nevi

- Benign pigmented lesions:
 - Café-au-lait (macules)
 - Lentigines (senile and solar)
 - Freckles (ephelides)
 - Chloasma
 - Nevi
 - Nevus spillus
 - Nevus of Ota
 - Becker's nevi

Absolute Contraindications

- Cellulitis (MRSA)
- Psoriasis
- Lichen Planus
- Lichen Nitidus
- Renal Failure (Acute or Chronic)
- Malignancy
- Multiple Sclerosis
- Vitiligo
- Immunosuppression
- Keloids
- Certain Medications (i.e. Accutane)
- Collagen Vascular Diseases

Relative Contraindications

- Poorly Controlled Diabetes Mellitus
- Thrombocytopenia
- Peripheral Vascular Disease
- Anemia
- Bleeding Disorders
- Rheumatoid Arthritis/ Juvenile Rheumatoid Arthritis
- Subnormal Intelligence or Psychiatric Disorders
- History of Post-Inflammatory Hyperpigmentation
- Chronic Disease (Crohn's Disease, IBD, etc.)

Pre-Treatment

Assessing the Condition

The treatment parameters for any given skin condition depend on the skin type and the lesion type, depth and density.

Before treatment the practitioner should conduct a full tattoo patient history: When was the tattoo placed? What inks/dyes were used? Where were the inks mixed together to make the color? Is there any white ink in the tattoo to the patient's knowledge? Has the patient attempted to remove or alter the tattoo previously? If so - how? Has the patient used oral retinoids within the past year? History of herpes infection or cold sores? History of keloid formation or easy scarring, current suntan, tanning bed or bronze use? Fitzpatrick skin type?

The treatment parameters for tattoos depend on the skin and on the characteristics of the tattoo itself (i.e., professional, amateur or traumatic). Color, depth, skin type, age of the tattoo and density of colors are all important factors when deciding on parameters for tattoo removal. The composition of an amateur tattoo is elemental carbon and the professional - organic dyes mixed with metallic elements. Response rate for tattoo removal is a function of pigment depth, total pigment volume as well as surface area.

Pre-Treatment - cont'd

Preparing the Tattoo for Treatment

Most practitioners will apply a topical anesthetic (i.e. EMLA) on the tattoo area 60 minutes before treatment. This may not be necessary for tattoos that are less dense based upon the design or on the age of the tattoo. The Laser QS HarmonyXL high power module has different spot size tips. It may be desirable to alternate the spot size beginning with a large spot size tip on the first treatment.

Skin Test

Always perform a skin test on the intended treatment area during the first treatment session according to the following parameters. It is important to ensure that the patient is not tanned.

Warning: Appropriate protective eyewear protection must be used by both the practitioner and the patient (and anyone else in the room).

Tattoo Removal Skin Test Parameters for Blue, Black & Green Tattoos (standard tips)

Skin Type	Spot Size	Pulse Repetition Rate (Hz)	Energy (mJ)	Waiting Period
I-IV	3 mm	1,2,4	500-700	2 Weeks
I-VI	5 mm	1,2,4	800-1000	2 Weeks

Tattoo Removal Skin Test Parameters for Red Tattoos (KTP tip)

Skin Type	Spot Size	Pulse Repetition Rate (Hz)	Energy (mJ)	Waiting Period
I-III	3 mm	1,2,4	500-700	2 Weeks
IV-VI	3mm	1,2,4	400-600	2 Weeks

Note: It is recommended that the patient return for treatment 2 weeks after the skin test.

Treatment

1. Clean and dry the skin to remove the EMLA cream from the tattoo area.
2. Appropriate protective eyewear protection must be used by both the practitioner and the patient (and anyone else in the room).
3. Place the module perpendicular to the tattooed skin.
4. Overlapping should not exceed 10%.
5. Set the initial fluence parameter according to the skin test results
6. Trigger the Laser QS laser by pressing the footswitch and the module trigger simultaneously.
7. Diagnose carefully. Remember: darker skin types take longer to respond than lighter skin types. The desired effect is a change in tattoo color (whitening effect), without changes in the surrounding epidermis.
8. If, along with a good response in the tattoo, adverse skin effects occur (such as excessive red- dening or swelling in the shape of the lightguide), you should reduce the fluence by 10-20% and attempt to treat in an adjoining area.
9. If the skin shows no adverse effects or extended side effects and changes observed in the tat- too color are unsatisfactory, you may increase the fluence.
10. After treatment it is recommended to cool the area immediately, apply antibacterial ointment and cover the treated tattoo area with sterile pad gauze.
11. Recommended treatment intervals: between eight and twelve weeks.

Note: The Laser QS 1064nm high power module can remove black, blue & green pigmented tattoos with the 1064nm wavelength, and red & brown pigments with the 532nm KTP wavelength.

Caution: It is imperative that the tips and their lenses remain clean and free of debris. The tips and the lenses must be cleaned with a cotton swab and warm water after each treatment. During long treatments, the operator should visually inspect the tip attachment and clean it as necessary.

Suggested Setup Parameters

Suggested Setup Parameters for Blue, Black & Green Tattoos

Skin Type	Spot Size	Wavelength	Pulse Repetition Rate (Hz)	Energy (mJ/P)
I-IV	3 mm	1064nm	1,2,4	500-800
I-VI	5 mm	1064nm	1,2,4	600-1000

Suggested Setup Parameters for Red Tattoos

Skin Type	Wavelength	Pulse Repetition Rate (Hz)	Energy (mJ/P)
I-III	532nm KTP	1,2,4	500-800
IV-VI	532nm KTP	1,2,4	500-600

Post-Treatment Care

- Apply a layer of Polysporin ointment, Petrolatum, or Bacitracin, beneath a dressing of nonstick gauze and paper tape.
- Instruct the patient to change the dressing twice daily after first gently cleansing the area with soap and water; continue until re-epithelialized.
- Keep the area moist with antibiotic ointment at all times.
- Apply Aloe Vera gel for soothing.
- Avoid direct exposure to the sun on the treatment area; use UVA/UVB sun blockers.

Follow-Up

Measures presented below are only the manufacturer's recommendations for follow-up. They may serve as a basis for defining your treatment regimen.

- Patients should return no sooner than eight weeks after the last treatment, for examination of the treatment site and for additional treatment, if necessary.
- If no additional treatment is necessary, the patient should return for a follow-up examination after two months.
- If there has been partial clearance of the tattoo, treatment should be continued, and the patient should return after a minimum of eight weeks for examination and for additional treatment, if necessary.
- If no change is noted in the tattoo, fluence should be increased by at least 10%, and the patient should return no sooner than four weeks for an examination.
- Intervals between treatments can be increased in successive treatments.
- Treatment is complete when satisfactory results are obtained.
- Patients should be instructed to avoid sun exposure after and in between treatments.