



SPECTRUM LASERS INC

S-3 ORTHODONTIC LASER PROCEDURES GUIDE

- Hand Piece:** Loosen end nut, never remove the nut, insert fiber through the nut end. unscrew the metal tip feed the fiber through the small hole on the tip, screw on the tip. Tips and hand piece are autoclavable. Extend the fiber beyond end of the metal tip approx 5mm. Tighten down end nut. Your laser includes 2 curved tips. You can bend the tip to increase the curve to approx 45 degrees. Watch the fiber cleaving video on the training page. <https://youtu.be/r2mrxowTYOk>
Fiber cleaving. Loosen the nut and extend approx 6 inches of fiber. Firmly hold the fiber about 1/2 inch parallel from from the edge of a counter top. Firmly hold down the fiber about 1/2 inch from the end (to prevent the fiber from slipping). Open the scissors, hold one blade at a 45 degree angle on the fiber, about 3mm from the end, and pull towards you for about 1 inch, stop before reaching the end of the scissors to avoid snapping the fiber. You are making 1 scratch/score on the fiber. Snap the fiber off at the score line. Do not press hard and break the fiber.
Condition the end of the fiber tip, carbonized tip for 980nm, not 450nm and not 650nm
0.8W setting either pulse or CW. Wipe the end of the fiber tip to articulating paper or a Sharpie with the foot pedal down to coat the end of the tip with carbon (ink), approx 2mm up side of fiber. You cannot overdo the amount of ink applied.
<https://youtu.be/r2mrxowTYOk>
- Topical:** Apply a medium thick layer, similar to applying etch, and leave to penetrate for approx 4 minutes. Wipe off and wait about 5 minutes before lasing. Patient should be numb for approx 20 minutes. Re-apply if needed.
- Gingivectomy and Gingivoplasty:**
980nm 1.0W-1.2W, pulse mode, carbonized tip, gentle contact with target tissue and slowly glide the fiber tip on the tissue removing a thin layer at time. Fibrous tissue: increase power as needed 1.4W-2.0W, pulse mode. Excisions, grip with forceps and lase at the base. Start at desired finish point and excise opposed to working from margin. Wipe excess tissue collected at tip of laser on wet gauze or flick into suction. No need to re-carbonize after wiping. Fibrous tissue apply more pressure with fiber tip.
450nm for thick tissue. See 450 instructions below.
- Tooth Exposure:**
980nm 1.0W-1.2W, pulse mode, carbonized tip, increase power as needed for fibrous tissue, use a probe to locate tooth. Make an incision by gently lasing around the perimeter of the desired window until you can feel the tooth. You can touch tooth, bone, and metal. Depending on the desired depth, the incision may require 1 or several gentle passes. Remove the tissue flap with forceps or cotton pliers. Clean, dry, and bond.
- Anterior Gingival Height:**
980nm 1.0W-1.2W, pulse mode, carbonized tip, measure pocket depth and leave 1mm of sulcus when finished, hold fiber near perpendicular to tissue at gingival margin and paint away the tissue surface a layer at a time until height and reshaping goals are met, lightly scrub area with a tooth brush dipped into hydrogen peroxide. Apple vitamin E gel.
- Beveling Anterior Tissue:**
980nm 1.0W-1.2W, pulse mode, carbonized tip, carbonize approx 2mm up the side of the fiber. Using the side of the fiber gently thin the margin to make a knife-edge. Remove bulbous tissue areas away from the tissue margin first using the tip end and thin down as needed using a cross hatch motion.
Fibrous tissue: increase power as needed 1.4W-2.0W, pulse mode.
- 450nm Blue Lase**
2.5-4.0 pulse mode, non carbonized tip
The laser beam is very bright and laser glasses are necessary for clear vision. Use a non initiated tip and cut out of contact as close to the tissue as possible. It is not a problem if you touch the tissue. The tip may glow, which is also not harmful. Hold the tip in place until it penetrates and then move slowly. The slower the tip is moved the more energy will be absorbed by the tissue and the faster it will cut.
450 can be used for all procedures except precise margin adjustments where a 980 is better suited.

The 450 laser will sometimes produce tissue char that needs to be constantly cleaned with a micro brush and water. This wavelength has difficulty cutting through charred tissue. Finish by lightly scrubbing with a toothbrush dipped in hydrogen peroxide. The metal fiber tip can get hot during long procedures and you can cool it by wiping with wet gauze or spraying with water. Apply vitamin E gel over the counter gel caps.

https://youtu.be/56NYj1ws92E?si=A8_9Ng7RUKqchO9p

8. **650nm pain management laser**

0.60 CW

Most patients experience 50 - 100% relief after orthodontic adjustments for 1-2 days.

Attach the clear pain management tip onto the hand piece. Cover the tip with a clear sleeve.

Screw the pain management cord into the laser port on upper left rear of the laser.

Use the clear hook on the rear of the laser to hold the unattached

cutting fiber after attaching the cap to the fiber for protection.

Press the 650nm button until it illuminates blue. 980 and 450 should not be illuminated.

Set the timer for 20 seconds.

Press the foot pedal and lase for 20 seconds per area, you can go up to 60 seconds per area with no problems. This wavelength does not produce heat and can be placed in contact with tissue. Use the provided laser safety glasses.

To clean wipe down. The clear tip and spot tip are not autoclaveable.

Use the bleaching tip for large areas and the spot tip for small targets.

Occasionally clean the fiber connector lens (that connects into the laser) with alcohol.

There is nothing harmful whatsoever with the 650nm wavelength.

<https://youtu.be/9em5x3ygxpc?si=vGr4IQG1MuA4RVPb>

9. **Dual and triple wavelengths**

You may use 650nm with 980nm or 450nm simultaneously for comfort by pressing the button for both to illuminate blue. We have not found using all three wavelengths together as an advantage.

To change laser modes the laser must be in standby. Energy settings can be changed anytime.

FDA does not allow us to include batteries for the cordless foot pedal. It require 1 AA battery.

Set-up video

<https://youtu.be/b7OKxYc6mdc?si=Sr4184UaibjI7Vvd>

Topical formula: Lidocaine 12.5% , Tetracaine 12.5% , Prilocaine 3% , Phenylephrine 3% Gel. We recommend using a local compound pharmacy.

Laser cuts faster on wet tissue, not flooded.

Start with a lower power setting and increase as needed.

Too much energy will produce charred tissue, which is not harmful but laser energy cannot penetrate through char and it must be cleaned to continue laser treatment in the area.

Sometimes to cut fibrous tissue char cannot be avoided. Constantly clean the area with a micro brush and water. Apply over the counter vitamin E gel from gel caps after recontouring cases.

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Website training page password is member.