

# QuickLase™ DUAL 810+980nm



The QuickLase Dual system is the only system in the world that combines ultimate ablation and excellent coagulation. The QuickLase Dual combines the wavelength of 810 nanometre, (provides better coagulation and would be preferred in larger area surgeries involving more vascularised tissue), and 980 nanometre (provides better ablation and narrower area involvement and would be preferred in areas where the tissue is less vascularised and/or in areas where narrower tissue involvement is indicated).

The histological evaluation 810nm vs. 980nm wavelength laser radiation presented to the US FDA concluded that mixing the two wavelengths provides definite advantages. General recommendations can be advanced to practitioners on the preferred mixture of the two wavelengths, based on tissue types and dependent procedures.

In figure 2, the vertical axis represents diameter in millimetres. The horizontal axis represents the mixture of wavelengths starting on the left with 100% 810nm and 0% 980nm, then to the right of the graphic with 0% 810nm and 100% 980nm. The top line is the coagulation zone and the bottom line is the ablation zone. The most astounding finding is that when the wavelengths are mixed, refer to the middle portion of both lines, that the effects are greatly magnified: a mixture of the two wavelengths provide superior coagulation and ablation effects when compared to a single wavelength alone.

The QuickLase Dual is the only system in the market with a FiberCaddy™. The FiberCaddy™ system is sterilisable complete with both hand piece and fibre optic cable at the same time.

## TECHNICAL SPECIFICATIONS

**Dimensions** 16 x 13 x 16 cm

**Weight** 1.3 kg

**Medium** GaAlAs Diodes

**Wavelength** 810+980nm +/- 10

**Power Output** 0.1 - 12w (6w + 6w)

**Power modes** Continuous/Pulse

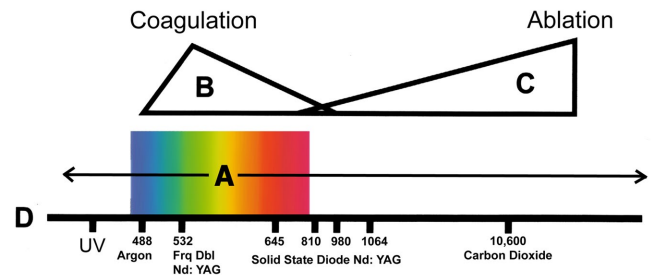
**Pulse Width** 50, 30, 10ms + User

**Fibre Diameter** 200 - 400 µm

**Voltage** 100 - 240 V, 1.0 A (50/60Hz)

**Preset Procedures** 20

Figure 1



Source: Laser article, Dr. Mervyn Druihan

## The Beauty of Dual Wavelengths

Diode lasers are compact, competitively priced, versatile additions to the dentists repertoire predominantly used in performing soft tissue management applications.

The biggest advantage of the diode laser is that when used at the correct wavelength it has a high level of absorption by the haemoglobin, resulting in superb haemostasis, an easy to see bloodless work field and reduced post operative pain.

Figure 1 contains a triangular image that represents the scope and intensity of the coagulation effect of the various wavelength (B), a triangular image that represents the scope an intensity of the ablation effect of the various wavelength (C), and the scale which defines the wavelength measurement in nanometre and the laser medium responsible for generating that particular wavelength (D). As one can see:

- 1.- The shorter wavelengths have a greater effect on coagulation. This is because the shorter wavelengths affect coagulation factors in the blood, directly.
  - 2.- The longer wavelengths have a greater effect on tissue removal or ablation. This is because the longer wavelengths are absorbed by water.
  - 3.- The on-tissue effects of these wavelengths have been known for decades. Carbon Dioxide (CO2) lasers produce some of the fastest and most complete ablation known, and Argon lasers produce some of the fastest and most complete photocoagulation witnessed. However, Carbon Dioxide doesn't coagulate and neither do Argon lasers ablate.
- Before the QuickLase Dual, only the Nd:YAG lasers with frequency doubling, supplying both 532nm and 1062nm wavelengths could provide a complete package of photocoagulation and ablation. The problem with this type of system is the price, costing tens of thousands.
- 4.- As one re-examines figure 1, it is noted that two relatively inexpensive and easy to package alternatives exist; these are the 810nm and 980nm Diode lasers. Many current laser systems output either 810 or 980nm, 810 for better coagulation or 980 for better ablation.

The QuickLase Dual is the only Soft-Tissue Laser System on the market that combines both wavelengths, providing incredible results at an unbelievably low price.

Figure 2

