



**convergent**

**est**

**Medical Lasers**

Product Overview  
Rev. 00

**CSt SERIES - Medical Lasers**

Convergent Photonics’s CSt Series is the new Medical lasers family designed to better suit the customer needs in Medical markets.

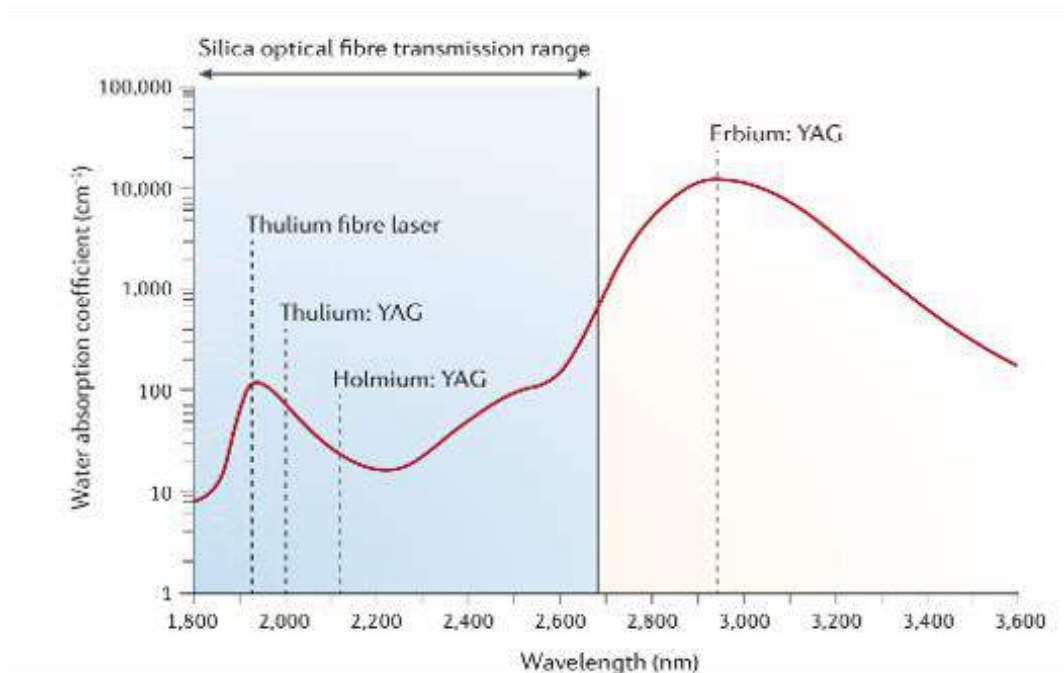
Convergent’s Thulium Fiber lasers family is a new concept for most of the players in surgical laser market.



Thulium fiber laser technology has been recently introduced into the medical world globally as the new revolutionary tool for several surgery applications.

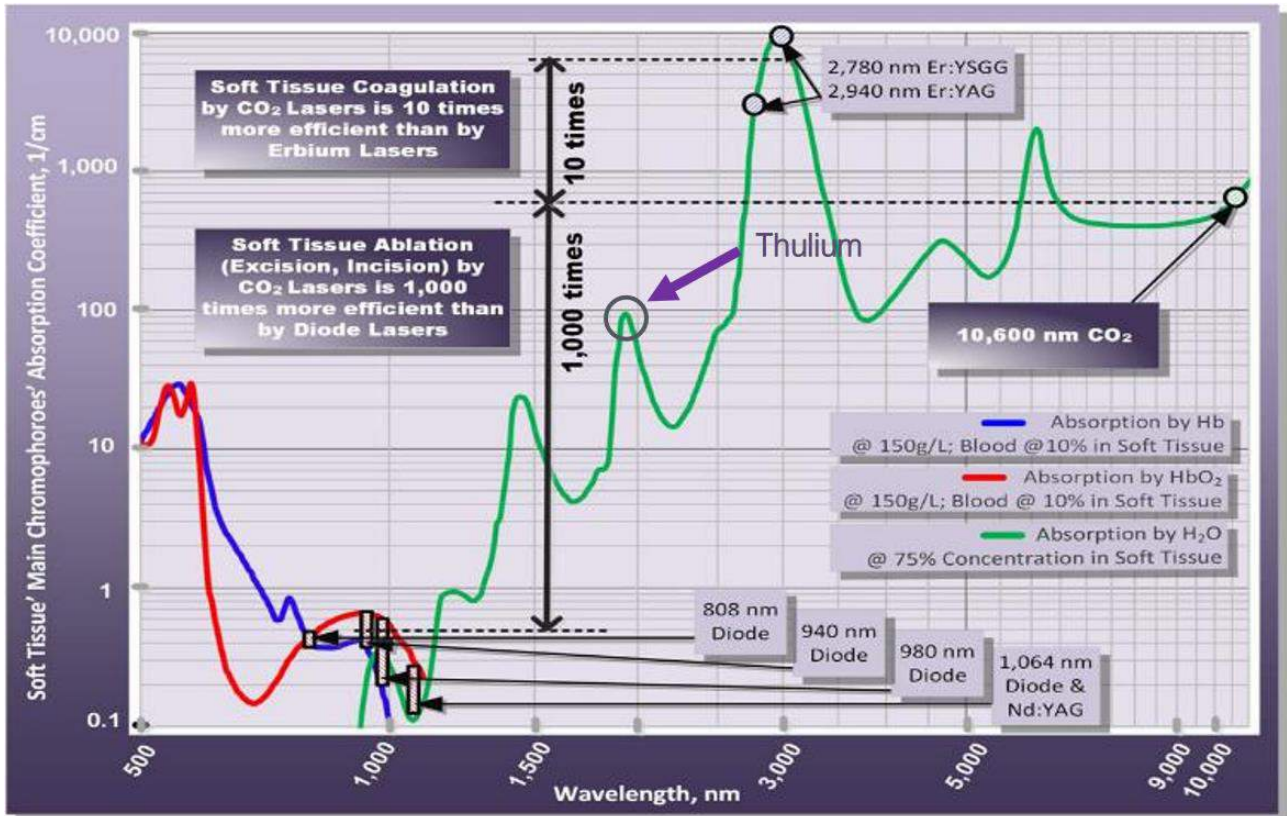
The TFL is a versatile laser energy source which, compared to other lasers, allows a “mix” of cutting and coagulation, minimizing blood losses. Among its characteristics there is also the superficiality, which allows a precise and respectful surgical approach to the other bodily functions.

The TFL operates with primary emission wavelength at 1,940nm, which more closely match a water absorption peak than that of the holmium laser at 2100nm as a consequence shows outstanding tissue ablation rate.





Lab testing on synthetic kidney stones has shown this advanced technology can dust stones in half the time it takes other laser systems, ensuring excellent results in terms of unblocking (minimizing the risk of bleeding) and post-surgery irritative symptoms.



## CSt200 Medical Lasers



## CSt200

CSt200 is one of the powerful model of CSt Thulium Fiber laser family proposed by **Convergent Photonics**.



## Application Guide

CST200 is design to cover different surgical applications (pre and clinical trial already done):

- THORACIC & PULMONARY SURGERY: the use of CSt Series in this field has been recently explored, showing interesting features with respect to alternative and more established methods
- KIDNEY STONES LITHOTRIPSY: Super Pulse and High Power CSt Series are now available for striking results compared to conventional flash lamp Holmium:YAG.
- ENDOSCOPIC SURGERY: CSt Series is an ideal solution for the treatment of BPH and ENT. Thulium can be used to carry out different techniques (enucleation, vaporization and resection), showing significant flexibility in use, safety and reliability.



## Main Advantages

Main advantages in installing CSt fiber lasers include:

- Easy to integrate
- Compact footprint at an eighth of the size of Holmium YAG
- Quieter than Holmium YAG generating 50 percent less noise (at comparable settings)
- Easy to maintain Vs complex HolmiumYAG architecture
- Quicker “dusting” Vs Holmium YAG
- Wall plug efficiency > 22% (Holmium laser < 9%) match all the requirements for BioMed devices standards
- Higher surgical effectiveness due to considerable smaller delivery fiber size Vs Holmium YAG
- Precise soft tissue cutting with improved hemostasis capability



## General Specifications

|  |              | Minimal                                | Typical | Maximum | Unit  |
|--|--------------|--|---------|---------|-------|
| Nominal Peak Power Output                |              |  |         | 300     | W     |
| Average Output Power                     |              |  |         | 200     | W     |
| Power tunability                         |              | 10 to 100                              |         |         | %     |
| Pulse energy                             |              | < 4                                    |         |         | J     |
| Operation mode                           |              | CW and QCW                             |         |         | -     |
| Pulsing Frequency                        |              | 1 - 2500                               |         |         | Hz    |
| Pulsing width                            |              | 0.1 to 12                              |         |         | ms    |
| Output Wavelength                        |              | 1930                                   | 1940    | 1950    | nm    |
| Spectral width (FM/HM)                   |              |  | 4 nm    |         | nm    |
| Polarization                             |              | Random                                 |         |         | -     |
| Feeding fiber core diameter              |              | 25um                                   |         |         | µm    |
| Feeding fiber NA                         |              | 0,1                                    |         |         |       |
| Feeding fiber length                     |              | 1.5m ± 10%                             |         |         | M     |
| Output connector                         |              | SMA905                                 |         |         | -     |
| Minimum bend radius                      |              | 10 cm                                  |         |         | cm    |
| Aiming diode wavelength (<2mW)           |              | 635                                    |         |         | nm    |
| Laser operating voltage                  |              |  | 78VDC   |         | V     |
| Laser power consumption (measured in CW) |              |  |         | 1000    | W     |
| Laser Cooling 35% Glycol Mix             | Cooling cap  | 800W                                   |         |         | kW    |
|  | Max Pressure |  |         | 6       | bar   |
|  | Min Flow     | 4                                      |         |         | L/Min |
|  | Temp         | 20 ± 2.0                               |         |         | ° C   |
| Water cooling connection                 |              | 10 mm OD quick disconnect fitting (x2) |         |         |       |
| Operating environment                    |              | 5                                      |         | 50      | ° C   |
| Relative humidity (non condensing)       |              |  |         | 95      | %     |
| Dimensions W / H / L                     |              | 490 / 127 / 640                        |         |         | mm    |
| Weight                                   |              | 22                                     |         |         | kg    |
| Ingress protection rating (IEC60529)     |              | IP54                                   |         |         |       |

CHP250 Hybrid Fiber Laser

General Specifications

|                                      | Minimal                                  | Typical | Maximum  | Unit |
|--------------------------------------|--|---------|----------|------|
| Wavelength Erbium                    | 1550                                     | 1550    | 1550     | nm   |
| Wavelength Thulium                   | 1930                                     | 1940    | 1950     | nm   |
| Nominal Peak Output Power            | 1400                                     |         |          | W    |
| Average Power CW                     | 250 (@1940nm) - 30 (@1550nm)             |         |          | W    |
| Pulse energy @1940nm                 | 0.2                                      |         | 12       | J    |
| Pulse width                          | 0.2                                      |         | 12       | ms   |
| Power tunability                     | 10                                       |         | 100      | %    |
| Pulsing frequency                    | 1  |         | 2500     | Hz   |
| Delivery fiber core diameter         | 100                                      |         |          | µm   |
| Feeding fiber length                 | 1.5 or longer                            |         |          | m    |
| Output connector                     | Optical quartz block / SM/ D80 connector |         |          | -    |
| Safety                               | Ple                                      |         |          | -    |
| Diode pointing laser                 | 650 with <3mW                            |         |          | nm   |
| Electrical power consumption         |  | 1100    | 1250 EOL | W    |
| Voltage                              | 80 and 24                                |         |          | VDC  |
| Operating environment                | 15                                       |         | 30       | ° C  |
| Cooling                              | Water                                    |         |          |      |
| Relative humidity (non-condensing)   | <95                                      |         |          | %    |
| Dimensions W / H / L                 | 450 / 170 / 630                          |         |          | mm   |
| Weight                               | 22                                       |         |          | kg   |
| Ingress protection rating (IEC60529) | IP54 (NEMA13 equivalent)                 |         |          | -    |



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