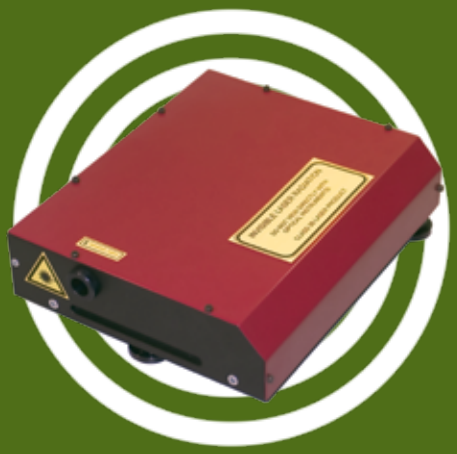
# Tamarack Fiber Lasers

## Er-Doped Femtosecond Fiber Laser



Femtosecond Fiber Laser Advantages
- Turnkey operation
- Small footprint
- Affordable cost
- Stable and compact
- Great teaching tool

| | |
|---|---|
| Pulse Width | 70-100 fs (fixed) |
| Center Wavelength | 1560 ± 10 nm |
| Average Output Power | 10 mW |
| Peak Output Power | 2 kW |
| Repetition Rate | 70 MHz |
| Output Coupling | |
| - Fiber - | - SM Fiber - |
| - Free-space - | - $TEM_{00}$ - |
| Polarization | Linear - Horizontal |

Femtosecond pulsed lasers are used in a growing number of applications in physics and the life sciences including material processing, multi-photon imaging, pump-probe spectroscopy and parametric generation.

As the number of applications for ultrafast lasers grows so does the need for small and reliable, low noise femtosecond pulse sources. All solid-state fiber lasers based on Er-doped and Yb-doped fibers are an ideal solution. Mode locked femtosecond lasers based on Er-doped and Yb-doped nonlinear optical fibers offer an alternative to conventional Ti:sapphire and Cr:forsterite femtosecond laser systems. Fiber lasers do not require the expensive pump lasers that traditional solid-state femtosecond lasers do and are assembled from established telecommunication components, further reducing the system cost.

Using standard fiber components, fiber based femtosecond lasers offer robust and stable operation without the need for constant realignment. The low cost and stability of fiber based femtosecond lasers means that even basic research labs can have a femtosecond pulse source without the need for expensive or complicated equipment. This brings ultrafast research into the realm of undergraduate and other educational environments. With pulse lengths of 70 fs at 1560 nm, fiber femtosecond lasers can also be used as a seed source for femtosecond amplifiers. The 1560 nm wavelength of Er-doped fiber lasers make them an attractive tool for ultrahigh-speed optical communications applications.

Excellent source for:
- Amplifier systems seeding
- Teraherz generation and detection
- Multi-photon microscopy
- Frequency metrology
- Ultrafast spectroscopy
- Semiconductor device characterization

DEL MAR PHOTONICS

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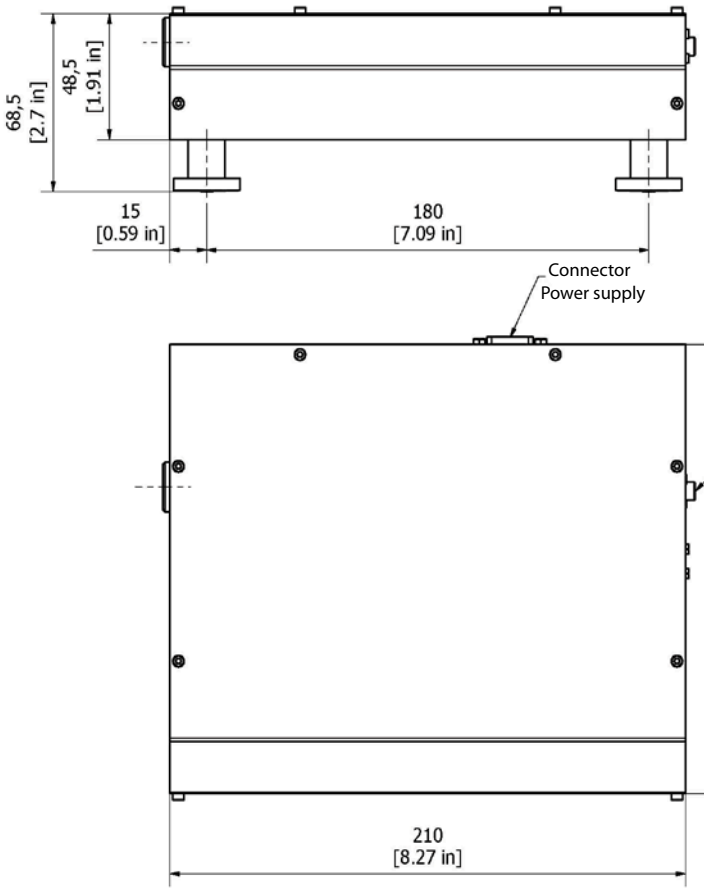
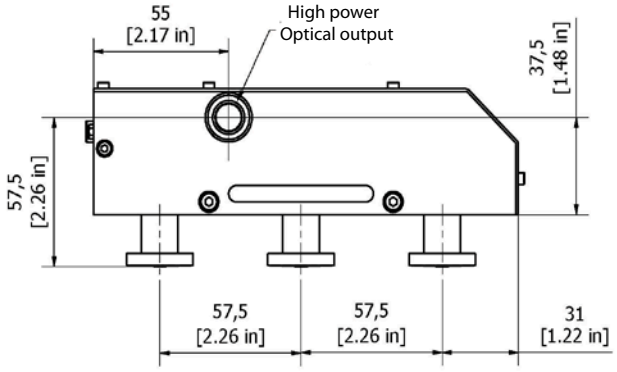
## Outline drawing
## Dimensions in millimeters (inches)

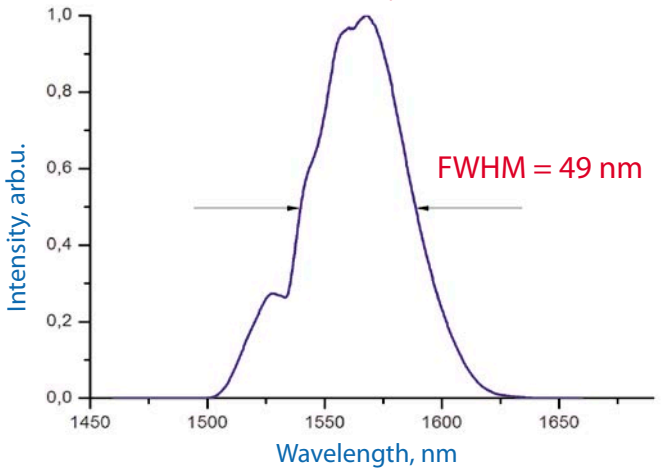


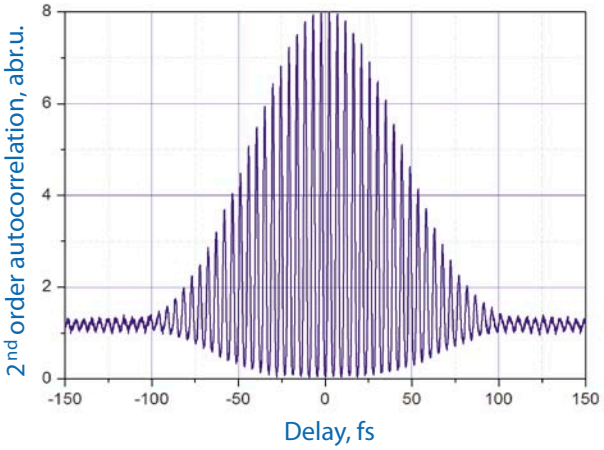



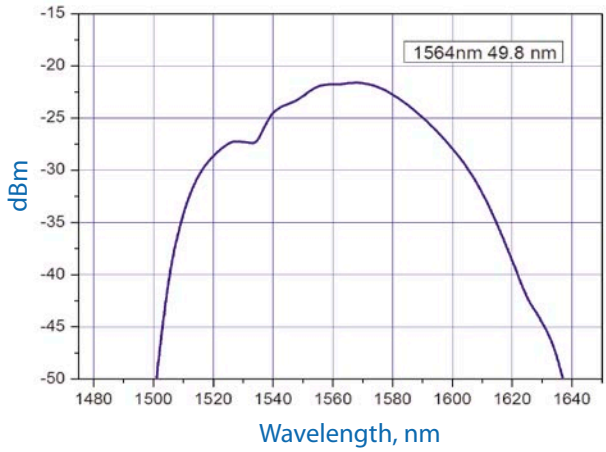

## TEST LIST (sample)

| | |
|---|---|
| Output power: | 10.5 mW |
| Pulse width (FWHM): | <70 fs |
| Spectral width (FWHM): | 49 nm |
| Repetition rate: | 71.6 MHz |
| Output power of service output: | ~900 µW |
| Operating temperatute: | 22 ± 5 ° C |

Optical spectrum: $\lambda_{peak}$ = 1564 nm




Ultra-fast Femtosecond Fiber Laser
Model: Tamarack
INVISIBLE LASER RADIATION
DO NOT VIEW DIRECTLY WITH
OPTICAL INSTRUMENTS !
CLASS 3b LASER PRODUCT

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