



Advancing Laser Innovation from Deep Sea to Space

Laser Innovation . . .

Pressing the Boundaries

At Q-Peak our experienced staff in Solid State lasers, Fiber Optic lasers, Ultrafast lasers, Non-linear Optics, and Fiber Components will focus on your specific laser requirements to develop an optimal laser architecture for your application.



Q-Peak's blue-green laser systems



Q-Peak's Moonbow LIBS laser designed for the MARS rover mission.

Areas of Application

- Aerospace and Defense
- Space Missions
- Materials Processing
- Laser Communications
- Scientific Research
- Medical Lasers
- Sensors and Instruments

Solid State Lasers

Q-Peak's focus on solid-state lasers spans our entire 30-year history, with significant developments across all areas of laser performance: CW to ps, UV to mid-IR, single-shot to GHz, μJ to J's, and mWs to 100s of Watts.



High Power Illumination Eyesafe Laser
Aurora E1516



High Power LADAR kHz,
<1 ns Nd:YVO₄ MOPA
Aurora E2520

Capabilities

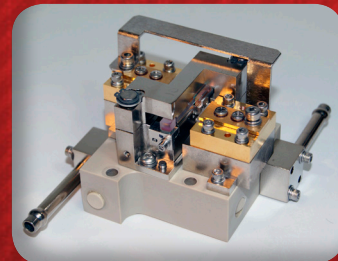
- Strong expertise with lasers based on Nd:YAG, Nd:YLF, Nd:YVO₄, Ho:YLF, Tm:YLF, and Yb:YAG.
- Hybrid fiber/solid-state systems
- Nonlinear frequency conversion via harmonic/parametric generation
- Compact and ruggedized laser components and system hardware



Compact Green and NIR Lasers
Moonbow Compact Series



Compact High PRF Short Pulse Oscillator
Moonbow SPO



Multipass Slab Gain Module

Fiber Lasers

Q-Peak offers a variety of 1- μm oscillator and amplifier platforms.

The 1- μm platforms concentrate on quasi-CW, variable repetition rate, picosecond oscillators and amplifiers to generate high average powers and narrow bandwidths without the complexity and cost of mode-locking.



Firebow 1- μm Fiber Laser

Tunable Fiber Lasers

Q-Peak provides a host of state-of-the-art fiber laser platforms operating in the 2- μm wavelength region. These offer unique capabilities in chemical sensing, laser surgery, atmospheric spectroscopy, and materials processing.

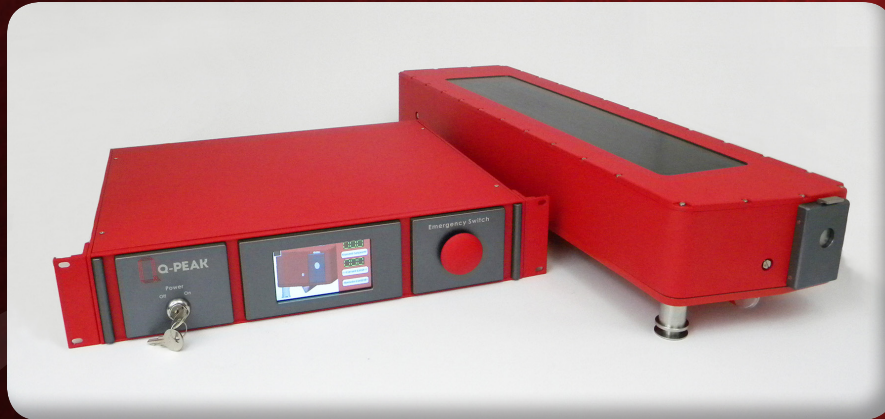


Firebow 2- μm Tunable Fiber Laser

The 2- μm platforms offer fixed frequency (~1960-2060 nm), single frequency within this same range (SBS free) and continuous tuning between 2000 – 2050 nm in CW, Q-switched, or mode-locked formats based on high efficiency, 793-nm laser diode pumping. High power amplifiers complement the oscillators in all pulse formats.

Ultrafast Lasers

Q-Peak has developed ultrafast laser technologies utilizing novel gain materials, including Yb:KYW ($\lambda = 1040$ nm) and Cr:ZnSe ($\lambda = 2500$ nm), for use in research and materials processing environments.

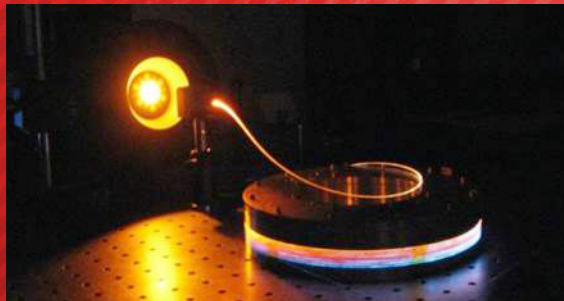


Q-Peak's diode-pumped Cr:ZnSe ultrafast oscillator
<100 fs pulses at 100 MHz , Anthelion CR185

Capabilities

- High repetition rate ultrafast oscillators
- Regenerative amplifiers for high peak power
- Pulse stretching and compression
- Parametric chirped-pulse amplification
- UV through IR nonlinear conversion
- Custom laser system design

Non-Linear Optics



Q-Peak offers access to wavelength ranges from the ultraviolet to the long-wave infrared through SHG, OPG/OPA, OPO, DFG, Raman shifting, and supercontinuum generation. Large tuning ranges are available when pairing quasi-phase-matched nonlinear crystals (PPLN, OP-GaAs) with Q-Peak's tunable pump lasers.

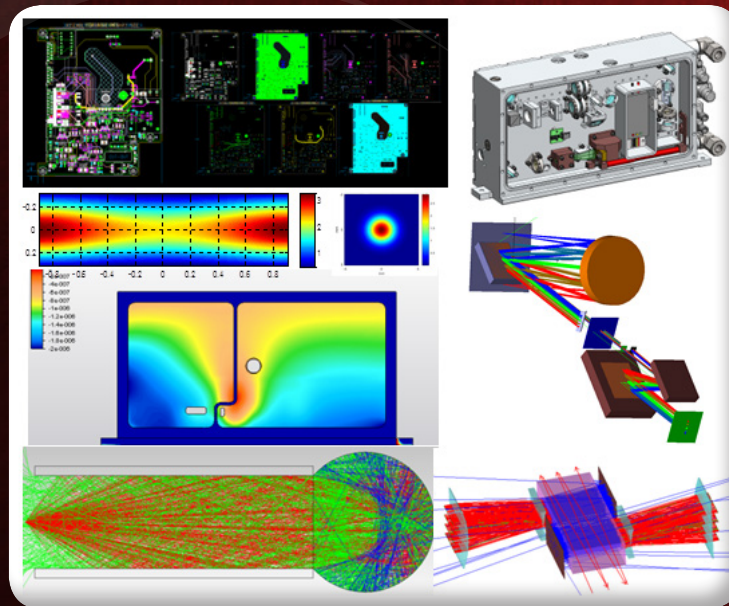
Fiber Components



Q-Peak offers a variety of high power fiber components such as pump-signal combiners for both co- and counter-pumped lasers, taps, custom wavelength WDM, mode-filled adaptors, pump-dumps, cladding-mode strippers, end caps, etc.

Engineering Design Capability

Q-Peak provides extensive engineering design capabilities for a broad range of laser applications. We utilize a host of theoretical optical software packages, as well as established software platforms for electrical, thermal, and mechanical design.





Facility

- Located in the Boston, MA High Technology Region
- Q-Peak has over 17,000 sq. ft. of office, laboratory, and manufacturing space to service multiple programs
- DoD secure facility for defense applications
- Cleanroom area for critical high power laser manufacturing

Customer Focused

Experienced Staff

Laser Driven Innovation



Main Office
(781) 275-9535
Corporate Business Development
(781) 271-1802
135 South Road, Bedford, MA 01730
www.qpeak.com

