

CVFL-KILO series

FREQUENCY CONVERTED FIBER LASERS FOR ATOM COOLING



● EYLSA



Rubidium, Potassium, Ytterbium, CaF,..
cooling lines,
Single frequency laser,
...

The high performance design of the CVFL-KILO lasers is based on high stability laser diode or fiber laser microcavity which are amplified by fiber amplifier stages and then frequency converted with single-pass periodically poled crystals. For the most demanding applications, the CVFL-KILO platform integrates wavelength locking input, monitoring output and optional mid-stage access. The CVFL-KILO high performance design uses embedded air-cooling to provide exceptional high wall plug efficiency.

This robust architecture provides industry leading performance which is insensitive to both ambient temperature changes and environmental vibrations. The high reliability of CVFL-KILO's integrated components ensures a long lifetime without any maintenance or preventive service (no realignment, no need to clean optics,...).

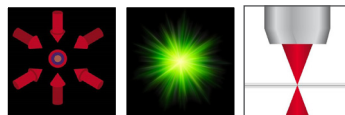
The laser might be controlled by using touch-screen interface, or Ethernet control software or TTL signals.

Key features

- Rubidium, Potassium, Ytterbium, CaF,.. cooling lines
- Single frequency fiber laser
- Output power up to 1W out of single mode fiber
- Diffraction limited output
- Excellent SMSR
- Linear polarization
- Very low phase noise and RIN
- Wavelength tunability
- Laser frequency modulation
- Maintenance free
- Turn-key operation

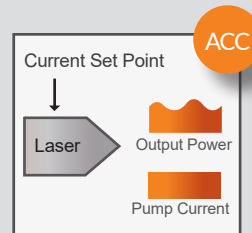
What applications

- Atom cooling and quantum optics
- Formation of cold molecules
- Entangled photon generation
- Optical tweezing
- Metrology

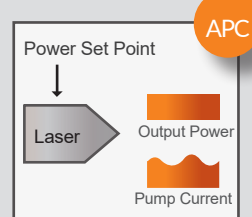


Modes of operation

The devices offer several modes of operation :



ACC (Automatic Current Control) mode is standard for all devices. The laser is controlled from diodes current set point.



APC (Automatic Power Control) mode allows controlling the laser at a fixed output power set point. The device maintains a constant optical output power monitored with a photodiode. The current is adjusted automatically.

CVFL-KILO series

VISIBLE KILAS FIBER AMPLIFIER



Optical Specifications @ 25 °C	CVFL-KILO
Mode of operation	CW
Output power	Up to 2 W
Operating wavelength capability	Range 530 to 560, 630 to 650, 767 to 790 nm / Standard wavelengths: 531, 532, 767, 775, 778, 780
Wavelength stability over 1 hour, +/-1 °C	+/-15 MHz
Wavelength thermal tuning range	Option
Laser frequency modulation range	Option
Laser frequency modulation bandwidth	DC to 35 kHz
Spectral linewidth	Down to kHz range
Output isolation	Not required
Polarization	Random or Linear (17 dB PER)
Seed Tap	Seed tap or mid-stage access option
Output monitoring	Integrated
Beam quality, M ²	< 1.2
Output termination	FC/APC or free-space version

The CVFL-KILO is available as turn-key benchtop.

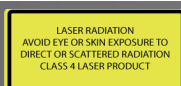
RELIABILITY

The Lumibird range of fiber lasers are manufactured with tested components and are submitted to several inspections during the manufacturing process under a rigorous quality management certified in accordance with the ISO 9001:2015 standard. Our all-in-fiber systems offer maintenance-free operation. Countless units are continuously running in demanding environments with no failure.

GUARANTEE

Our fiber systems are under 1 full year parts and labor warranty. We offer a warranty extension of 1 or 2 years. Please contact us.

For ordering information and custom solutions, please contact us : websales@keopsys.com



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CVFL-MEGA series

VISIBLE FIBER LASERS FOR SCIENTIFIC APPLICATIONS



● EYLSA



Available as standards at 532, 767 and 780 nm,
1W out of single mode fiber,
...

CVFL-MEGA series are frequency converted fiber lasers. They provide single longitudinal and transverse mode laser in a turn-key, ease-of-use platform.

CVFL-MEGA are based on a MOPFA design, they integrate a low noise and narrow linewidth seed laser which is amplified through several fiber amplifier stages. The output is then frequency converted to visible wavelength by a single pass periodically-poled crystal. The lasers can be thermally and current tuned in order to lock their wavelength on saturated absorption.

These lasers are renowned for their robustness, reliability and maintenance free operation.

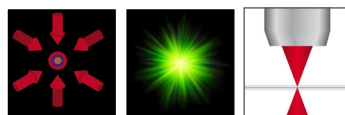
The laser might be controlled by using touch-screen interface, or Ethernet control software or TTL signals.

Key features

- Available as standards at 532, 767 and 780 nm
- 1W out of single mode fiber
- Low phase noise and RIN
- Excellent SMSR
- Wavelength tunability option
- Laser frequency modulation option
- Diffraction limited output
- Random or linear polarization
- Maintenance free
- Turn-key operation

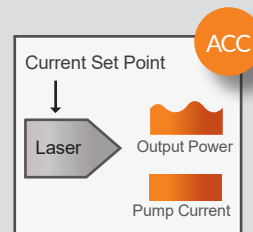
What applications

- Quantum optics such as Bose-Einstein condensate
- Optical tweezing
- Atomic laser interferometry
- Raman spectroscopy
- Metrology

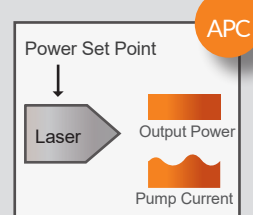


Modes of operation

The devices offer several modes of operation :



ACC (Automatic Current Control) mode is standard for all devices. The laser is controlled from diodes current set point.



APC (Automatic Power Control) mode allows controlling the laser at a fixed output power set point. The device maintains a constant optical output power monitored with a photodiode. The current is adjusted automatically.

CVFL-MEGA series

VISIBLE FIBER LASERS FOR SCIENTIFIC APPLICATIONS



Optical Specifications @ 25 °C	CVFL-MEGA
Mode of operation	CW
Output power	Up to 2 W
Operating wavelength capability	Range 530 to 560, 630 to 650, 767 to 790 nm / Standard wavelengths: 532, 767, 780
Wavelength stability over 1 hour, +/-1 °C	+/-50 MHz
Wavelength thermal tuning range	Option
Laser frequency modulation range	Option
Laser frequency modulation bandwidth	DC to 35 kHz
Spectral linewidth	Down to MHz range
Output isolation	Not required
Polarization	Linear (20dB PER for free-space version and 17dB for single mode fiber output version)
Seed Tap	Seed tap or mid-stage access option
Output monitoring	Integrated
Beam quality, M ²	< 1.2
Output termination	FC/APC or free-space version

The CVFL-MEGA is available as turn-key benchtop.

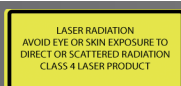
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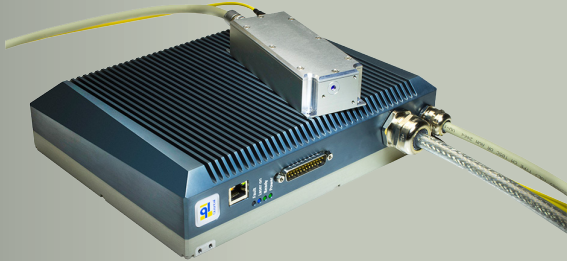


CVFL-GIGA 5xx series

VISIBLE FIBER LASERS FOR BIOTECHNOLOGY AND SUPER-RESOLUTION MICROSCOPY APPLICATIONS



● ELBA-C + ELBA-M



Output power up to 3 W
520, 532, 546, 560 and 577 standard wavelengths, ...

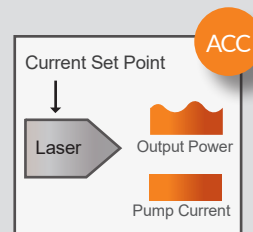
The Lumibird CVFL-GIGA are frequency converted Ytterbium doped fiber lasers emitting at a design fixed wavelength from 520nm up to 590nm.

The design is composed by an all-fiber laser cavity emitting in the IR range and a frequency conversion module which converts IR laser to visible laser. The frequency conversion module is a single pass periodically poled crystal integrated in a dust free mechanical package. This frequency conversion module is very compact and might be placed up to 3 meters ahead from the laser box. No active cooling is required for the module.

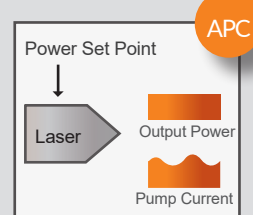
These fiber lasers represent a very reliable, robust and stable solution compare to other DPSS technologies.

Modes of operation

The devices offer several modes of operation :



ACC (Automatic Current Control) mode is standard for all devices. The laser is controlled from diodes current set point.



APC (Automatic Power Control) mode allows controlling the laser at a fixed output power set point. The device maintains a constant optical output power monitored with a photodiode. The current is adjusted automatically.

Key features

- Output power up to 3 W
- 520, 532, 546, 560 and 577 standard wavelengths
- 20 GHz linewidth
- Linear polarization
- Short modulated pulse option
- Optional Limited longitudinal mode number operation
- Diffraction limited output
- Robust and reliable
- Turn-key system

What applications

- Super-resolution microscopy
- DNA sequencing
- Medical application (ophthalmology and dermatology)
- Laser shows
- Laser Doppler Velocimetry



CVFL-GIGA 5xx series

VISIBLE FIBER LASERS FOR BIOTECHNOLOGY AND SUPER-RESOLUTION MICROSCOPY APPLICATIONS



Optical Specifications @ 25 °C	CVFL-GIGA 5xx
	Mode of operation
Output power	Up to 3 W
Operating wavelength	From 520nm up to 590nm / Standard 520, 532, 546, 560, 577
Wavelength stability over 1 hour, +/-1 °C	< 10 pm
Spectral linewidth	typ. 20 GHz
Power stability (rms) over 1 hour	< 2 %
Polarization	Linear (PER > 20 dB)
Output monitoring	Integrated
Beam quality, M ²	< 1.2
Output termination	Free-space collimated beam

The CVFL-GIGA 5xx is available as turn-key benchtop.
A control box and a mounted heatsink set are optionally available.

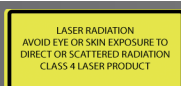
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CVFL-GIGA 6xx and 7xx series

VISIBLE FIBER LASERS FOR BIOTECHNOLOGY
AND SUPER-RESOLUTION MICROSCOPY APPLICATIONS



● ELBA-M



Output power up to 3 W,
642, 660 and 780 standard wavelengths,
...

The Lumibird CVFL-GIGA are frequency converted Ytterbium and Erbium-Ytterbium doped fiber lasers designed to provide fixed wavelength outputs from 635 to 665 nm and 767 to 790 nm.

The design is composed by an all-fiber laser cavity emitting in the IR range and a frequency conversion module which converts IR laser to visible laser. The frequency conversion module is a single pass periodically poled crystal integrated in a dust free mechanical package. This frequency conversion module is very compact and might be placed up to 3 meters ahead from the laser box. No active cooling is required for the module.

These fiber lasers represent a very reliable, robust and stable solution compare to other DPSS technologies.

The CVFL-GIGA is a reliable, robust, and stable solution for industrial and medical applications.

Key features

- Output power up to 3 W
- 642, 660 and 780 standard wavelengths
- 20 GHz linewidth
- Linear polarization
- Short modulated pulse option
- Diffraction limited output
- Robust and reliable
- Turn-key system

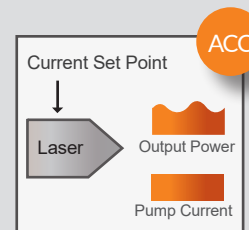
What applications

- Super-resolution microscopy
- DNA sequencing
- Medical application (ophthalmology and dermatology)
- Laser shows
- Petawatt laser line alignment

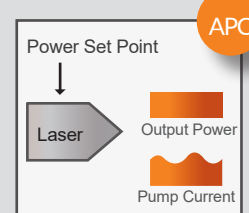


Modes of operation

The devices offer several modes of operation :



ACC (Automatic Current Control) mode is standard for all devices. The laser is controlled from diodes current set point.



APC (Automatic Power Control) mode allows controlling the laser at a fixed output power set point. The device maintains a constant optical output power monitored with a photodiode. The current is adjusted automatically.

CVFL-GIGA 6xx and 7xx series

VISIBLE FIBER LASERS FOR BIOTECHNOLOGY
AND SUPER-RESOLUTION MICROSCOPY APPLICATIONS



Optical Specifications @ 25 °C	CVFL-GIGA 6xx and 7xx
Mode of operation	CW
Output power	Up to 2 W
Operating wavelength	From 635 to 665nm and 767 to 790nm / Standard 642, 660 and 780nm
Wavelength stability over 1 hour, +/-1 °C	< 10 pm
Spectral linewidth	20 GHz
Power stability (rms) over 1 hour	< 2 %
Polarization	Linear (PER > 20 dB)
Output monitoring	Integrated
Beam quality, M ²	< 1.2
Output termination	Free-space collimated beam

The CVFL-GIGA 6xx and 7xx is available as turn-key benchtop.
A control box and a mounted heatsink set are optionally available.

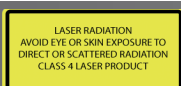
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