# CVFL-KILO series

## FREQUENCY CONVERTED FIBER LASERS FOR ATOM COOLING

KEOPSYS BY LUMIBIRD

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

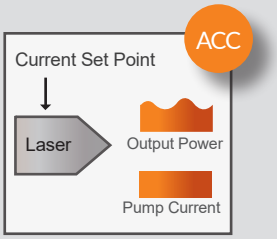
- Rubidium, Potassium, Ytterbium, CaF,.. cooling lines
- Single frequency fiber laser
- Output power up to 1W out of single mode fiber
- Diffraction limited output
- Excellent SMSR
- Linear polarization
- Very low phase noise and RIN
- Wavelength tunability
- Laser frequency modulation
- Maintenance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

## What applications

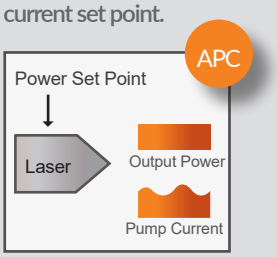
- Atom cooling and quantum optics
- Formation of cold molecules
- Entangled photon generation
- Optical tweezing
- Metrology

### 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.

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

Non contractual photos

# 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.

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LASER RADIATION
AVOID EYE OR SKIN EXPOSURE TO DIRECT OR SCATTERED RADIATION
CLASS 4 LASER PRODUCT

Lumibird undertakes a continuous and intensive product development program to ensure that its products perform to then highest technical standards. As a result, the specifications in this document are subject to change without notice.

Lumibird has locations across the globe that are available to provide support for any product, service or inquiry.
Visit www.lumibird.com to connect with any of our global sites.

V1.0