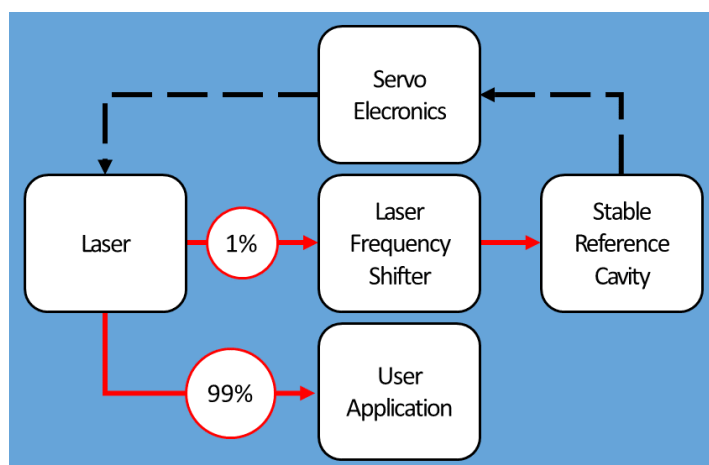


Fiber Coupled Laser Frequency Shifter LFS-0700-15-100

Stable Laser Systems is proud to introduce the LFS series laser frequency shifter: a compact, fiber-coupled solution for shifting laser light to **any wavelength** between cavity resonances with **rock-solid stability**. The double-pass acousto-optic modulator design enables **broad frequency shifting without optical realignment¹**, and ensures retention of servo lock during tuning. A continuous frequency tuning range of > 750 MHz allows the total possible frequency shift to span 1.5 GHz², the free spectral range of a standard stable reference cavity. Cavity stabilized light can thus be generated at any frequency, and is generally limited only by the tuning range of the laser source. Dynamic shifting of a cavity-bound laser beam allows the full laser power to be swept stably and reliably through any wavelength range of interest, enabling applications which require accurate and precise frequency tuning.



Placement of a laser frequency shifter within a stabilized laser system.

INSIDER TIP

Cavity resonances are fixed in frequency, but addition of acousto-optic shifting between the source and the cavity enables the user to position the laser frequency at any desired optical frequency. The optical arrangement shown provides such shifting without altering the optical linewidth, drift, or available output power.

Rapid, Precise Frequency Shifting for Stable Light at Any Wavelength

APPLICATIONS

- Atomic spectroscopy
- Precision laser wavelength tuning
- Optical frequency shift/sweep generation
- Dynamic frequency variation for laser cooling and trapping
 - Maximize atom count
 - Optimize atomic cooling

SPECIFICATIONS

Frequency Shift	Spans >1.5 GHz cavity free spectral range ³
Continuous frequency tuning	> 750 MHz
Input / Output	Fiber coupled: Polarization maintaining FC/APC
Input power	> 0.1 mW
Insertion loss	< 20 dB ⁴
Wavelength	700 nm or custom, as requested

THIS PRODUCT IS CURRENTLY IN BETA PROTOTYPE

¹ Donley, Heavner, Levi, Tataw, and Jefferts, Review Of Scientific Instruments **76**, 063112 (2005)

² 750 MHz continuous shifting bandwidth; minor realignment required to switch AOM order for full span

³ Other frequency spans available upon request

⁴ Loss does not impact user output power in the preferred system configuration