

MGSA saturated absorption spectroscopy unit



The MOGLabs MGSA is a compact atomic reference for stabilising tunable lasers. It uses saturated absorption spectroscopy with an alkali cell (Rb, Cs or K) to provide an absolute frequency reference. Beam expansion reduces power broadening so that spectral features approach the natural linewidth. The laser can be fibre-coupled or free-space. A low-noise amplified photodetector is included, with connection compatible with the MOGLabs DLC range of laser controllers. A resonant Zeeman coil allows modulation for AC locking, without modulation of the laser itself.

Features

- Rb, Cs or K cell
- Free space or fibre coupled input
- Low noise amplified photodetector
- Zeeman modulation for AC locking
- Direct connection to MOGLabs DLC controllers

Saturated absorption spectroscopy unit

Specifications MGSA

Atomic references

Cell type Borosilicate glass

Rb cell 70mm path length, 22mm OD
Cs cell 20mm path length, 15mm OD
K cell 75mm length, 25mm OD

Natural isotopic abundance. Isotopically pure fill available as option.

Photodetector

Photodiodes Si-PIN, 740 – 1100nm

Optional: 400nm - 1100nm or InGaAs

Coupling AC and DC, single or differential

Bandwidth 720 kHz

Sensitivity 15 V for 0.25mW input

Connection 6-pin IEEE-1394, to MOGLabs DLC

Zeeman coil

Modulation 250kHz, <10mA

Dimensions

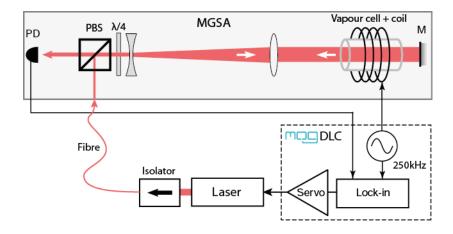
Dimensions 200mm x 86mm x 51mm (LxWxH); 0.7kg

Ordering

Free-space: MGSA-zz where zz is Rb, Cs or K

Fibre-coupled: MGSA-zz-APC for FC/APC connection, or MGSA-zz-PC for FC/PC connection.

Typical configuration



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