

moglabs

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
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Dimensions

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

