

D2-210 Spectroscopy Module

Saturated Absorption High-Precision Frequency Reference

Vescent Photonics' D2-210 second-generation Spectroscopy Module makes locking to atomic transitions easier and more powerful than ever before. Completely redesigned to maximize performance in a number of laser-locking environments, the D2-210 makes atomic absorption-referenced frequency locks simple. Designed to work as a general-purpose frequency discriminator, it is compatible with our D2-125 Reconfigurable Servo as well as other feedback loop filters.



*D2-210
Spectroscopy Module*

The D2-210 can be charged with either Potassium, Rubidium, or Cesium. It is magnetically shielded to reduce perturbations due to magnetic fields and accommodates free-space or, optionally, fiber-coupled input. The D2-210 allows flexible operation, accepting laser powers from microwatts up to 1 W, and it also offers improved, easier-to-align optomechanics and a beam path that effectively eliminates back reflections to the laser. The D2-210 provides a signal to lock to either the side of an absorption or the peak and can optionally support Doppler-broadened background subtraction to flatten the baseline for side-of-transition locks.

The D2-210 Saturated Absorption Spectroscopy Module is an integral piece of our complete line of photonics tools supporting the AMO Community.

Features:

- Configurable for K, Rb, or Cs
- Side-of-transition or peak locking
- Temperature stabilized to eliminate drift
- Intensity normalized
- Optional Doppler-background subtraction
- Free-space or fiber-coupled input
- Magnetic shielding
- Pass-through or terminal configurations
- Improved optomechanics
- Requires only +5 & ± 15 VDC
- 5 MHz bandwidth

Applications:

- Absolute frequency standards
- Cold-atom physics
- Atomic clocks
- Inertial navigation
- Gravity measurement
- Quantum computing & cryptography



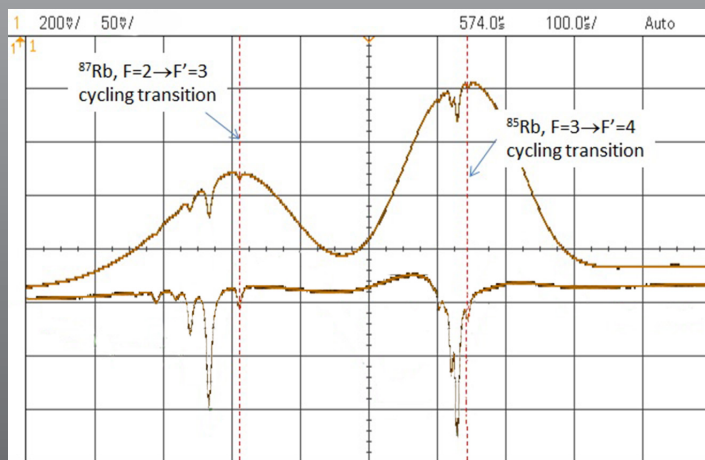
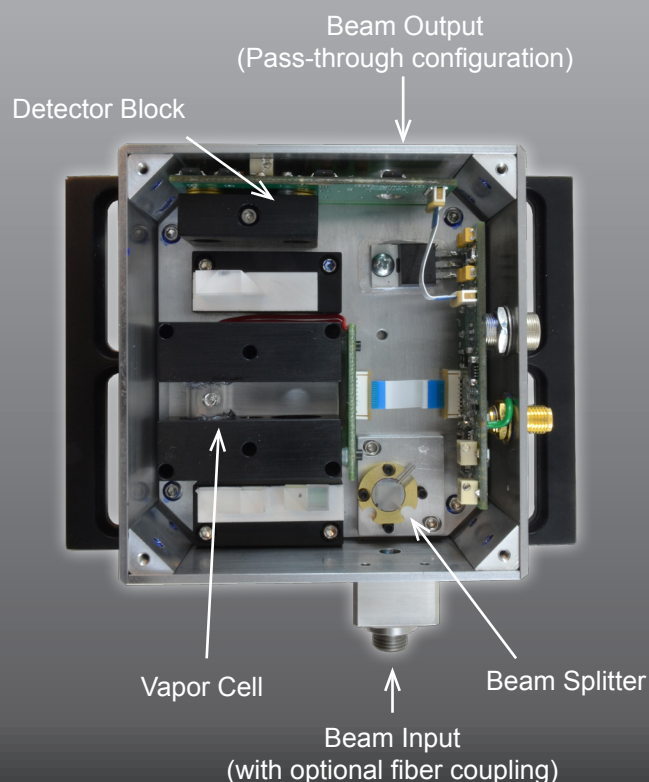
D2-210 Spectroscopy Module

Parameter	Specification
Fill Options	Potassium, Rubidium, or Cesium
Optical Input Configurations	Free-space or fiber-coupled ¹
	Pass-through or terminal
Input Power Range	2 to 1,000 mW
Supported Locks	Side of transition, peak lock
Doppler Subtraction	Optional
Response Bandwidth	>5 MHz
Temperature Stabilization	Included
Photodetection	Included
Power Input Requirements ²	+5, ±15 VDC
Dimensions	3.62 x 4.98 x 1.7"
	9.2 x 12.7 x 4.3 cm

All specifications subject to change without notice

¹Optional fiber-coupling

²Not included. Available from Vescent [D2-005](#) or [ICE-PB1](#)



Doppler Subtraction option

Dual vapor cells & detectors allow the D2-210 to optionally remove the Doppler-broadened line shape. (Note change of scale by 4x.)

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