

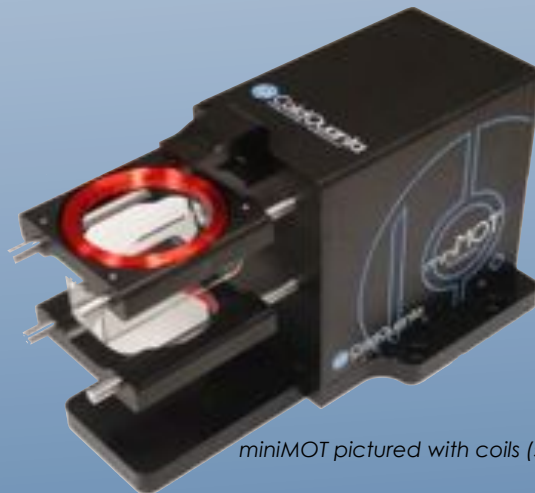


## The miniMOT™

### Laser-Magnetic Cooling/Trapping for Education and Research

ColdQuanta's miniMOT™ is a miniature magneto optic trap designed to enable the production of cold atoms. This product is designed for immediate implementation in any educational or research group working on cold atoms.

The miniMOT™ is preprocessed and shipped under vacuum allowing researchers with no vacuum processing equipment or previous expertise in vacuum processing to immediately dive into the creation of cold atoms and research thereof. The device comprises of the ultra-high vacuum cell, the rubidium source, excellent optical access and an ion pump in a compact cost-efficient package. Customers will be able to produce cold trapped atoms at temperatures as low as three hundred micro-Kelvin in a Rubidium MOT and as low as 10 micro-Kelvin with sub-Doppler laser cooling.



*miniMOT pictured with coils (sold separately)*

### KEY FEATURES

- ultra high vacuum chamber
- active rubidium dispenser
- non-evaporable getter
- ion pump to maintain vacuum
- Integrated electronics to power ion pump and rubidium source
- coil driver (coils sold separately)



## The miniMOT kit

ColdQuanta's optomechanics kit is designed for either the seasoned researcher or a student in a physics lab to produce a rubidium MOT easily and rapidly. The kit contains the miniMOT™ and coils on an 15" × 24" aluminum breadboard with a periscope/beamsplitting/polarization assembly; mirrors for ease of trap alignment and a small B&W CCD camera for MOT imaging. This compact kit enables the researcher, educator or student to produce a MOT with or without the optical expertise normally required to design, acquire, and setup their own system. Significant time and cost savings can be realized by using this pre-assembled unit. For a well-rounded educational institution teaching cold atom physics it will be indispensable.

While the configuration has been preset for optimal ease of use, it is simple to adjust for both minor and radical changes. As it stands, beam shaping and splitting has been radically simplified. The miniMOT™ Kit has a lower beam height of 1.5" and a focusing system with a magnification of 22.2X (100mm/4.51mm @ 780). Aside from the miniMOT™ kit the customer will need two lasers (or single laser and modulator) and coupling optics.



ColdQuanta, Inc.  
1600 Range Street, Suite 103  
Boulder, CO 80301  
303-440-1284  
[info@coldquanta.com](mailto:info@coldquanta.com)  
[www.coldquanta.com](http://www.coldquanta.com)