DOUBLE-MOT
ULTRACOLD ATOM CELL

Related Products

The Double-MOT is frequently used in conjunction with:

AR Coated cells	SAR-2016
3-axis coils	MAG-3000
2D MOT magnets	MAG-2000
Physics Platform	PP-1000
Physics Station	PP-2000

Product

Ultrahigh vacuum system

Active and passive pumps to maintain vacuum

Two MOT operation for improved vacuum and control

Assembled without epoxies or frits

Product Description

The Double-MOT is a self-contained, tabletop, ultrahigh vacuum system designed to enable the easy production of cold matter. The system can be used for a wide variety of projects, ranging from basic research in quantum physics to the development of sensors and new technologies that are based on cold atoms. The Double-MOT utilizes two chambers, isolated by a silicon pinhole disc: a lower chamber to achieve high atom number, and an upper chamber to maintain an ultra-high vacuum. A rail system allows for easy integration of ColdQuanta's magnetics managment products. The Double-MOT is shipped permanently under vacuum and ready to be placed into an appropriate apparatus such as the ColdQuanta Physics Station or Physics Platform.

Product Specifications

Typical Flux	Rb > 1 x 10^8 atoms / sec Cs > 1 x 10^8 atoms / sec ^{39}K > 1 x 10^8 atoms / sec ^{41}K 2-3 x 10^7 atoms / sec
Typical MOT Size	Rb > 5 x 10^8 atoms Cs > 5 x 10^8 atoms ^{39}K 2-3 x 10^8 atoms ^{41}K 5 x 10^7 atoms
Typical MOT Lifetime	100s 1/e
Science Cell Vacuum	< 0.8 nTorr
Ion Pump Speed	2 l/s
Alkali Source Resistance	< 1 Ohm
External Dimensions	12.5 x 12.5 x 24 cm (4.9 x 4.9 x 9.5 inches)
Weight	0.9 kg (2 lbs), vacuum chamber only 3.9 kg (8.6 lbs), with all mounting hardware

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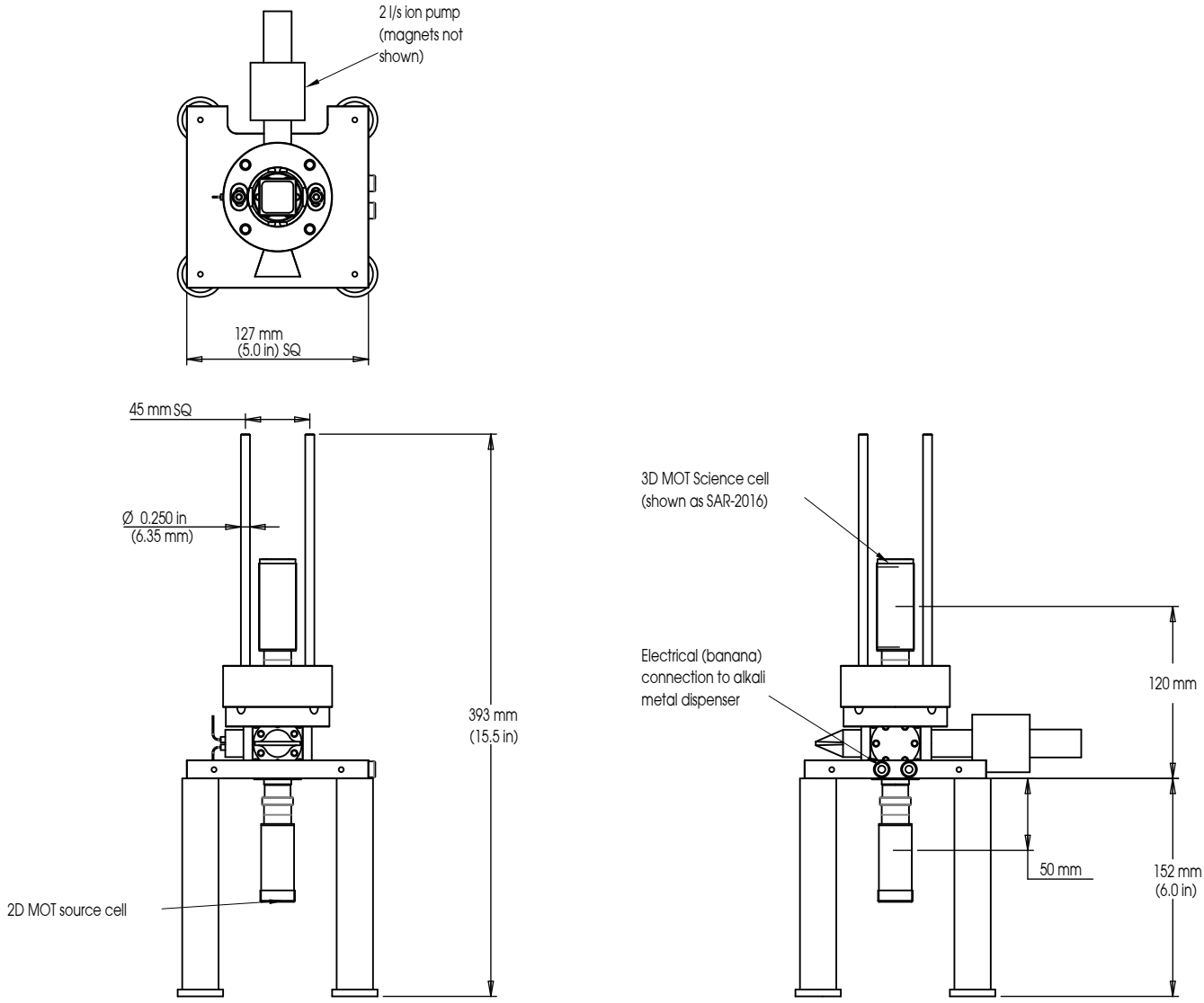
Product Options

Alkali metal source:	Rubidium:	UAC-2000-RB	Rubidium + Cesium:	UAC-2000-RB/CS
	Cesium:	UAC-2000-CS	Rubidium + Potassium:	UAC-2000-RB/K
	Potassium:	UAC-2000-K	Cesium + Potassium:	UAC-2000-CS/K
Science cell:	Includes a ColdQuanta UCC-2016 science cell. This may be upgraded to an AR coated SAR-2016, or RAR-1013 cell.			

Mechanical Drawing (shown with SAR-2016 upgrade)



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Pictured with
3 - Axis Coils
& 2D Magnets