Atom Beam Sources

Atom Oven

Atomic oven with collimated output for ultra-high vacuum systems, loaded with Ba, Ca, Sr or Yb. The oven provides superior heat isolation while achieving high atomic flux. Its low power consumption results in exceptionally low pressures during normal operation for temperatures up to 650 °C. The chamber is shipped in an ultra-high vacuum storage chamber supplied by AOSense. Customers can provide AOSense with a previously purchased storage chamber for repeat orders. Chambers can be configured to ship multiple ovens at once.

Features

- **High flux**
- **Collimated output**
- **Low power consumption**
- **Low outgassing**
- **Compact packaging**
- **CF-flanged**
- **Thermocouple temperature readout**
- **4 atom options: Ba, Ca, Sr, Yb**
- **Oven refurbishment service available**

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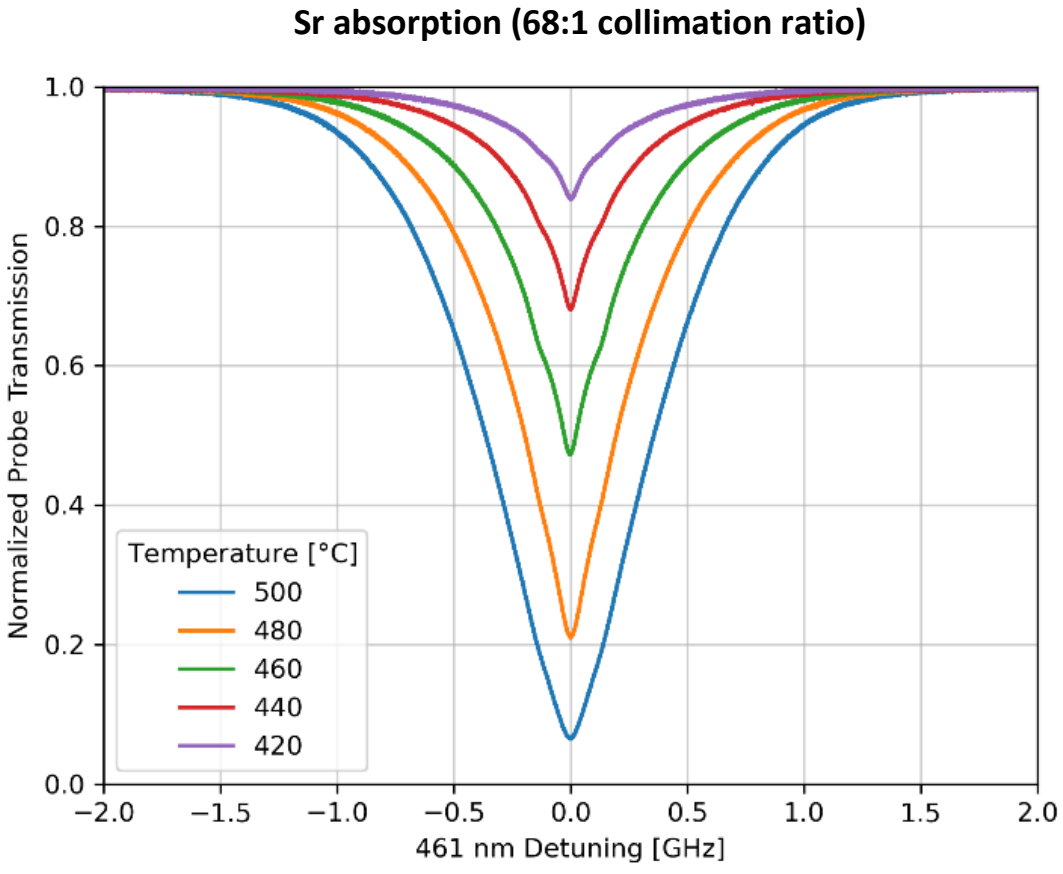
Specifications

Atomic Beam Oven	
Strontium flux @ 420 °C	8×10^{13} atoms/s
Calcium flux @ 520 °C	4×10^{14} atoms/s
Ytterbium flux @ 420 °C	4×10^{14} atoms/s
Barium flux @ 550 °C	2×10^{14} atoms/s
Collimation ratio	34:1
*On request**	*68:1*
Power consumption	10 W at 520 °C
Water cooling	none
Maximum temperature (tested)	650 °C
Flange size†	2.75”
Thermocouple type	K
Maximum rated power	19 W
Approx. strontium lifetime at 420 °C	15000 h

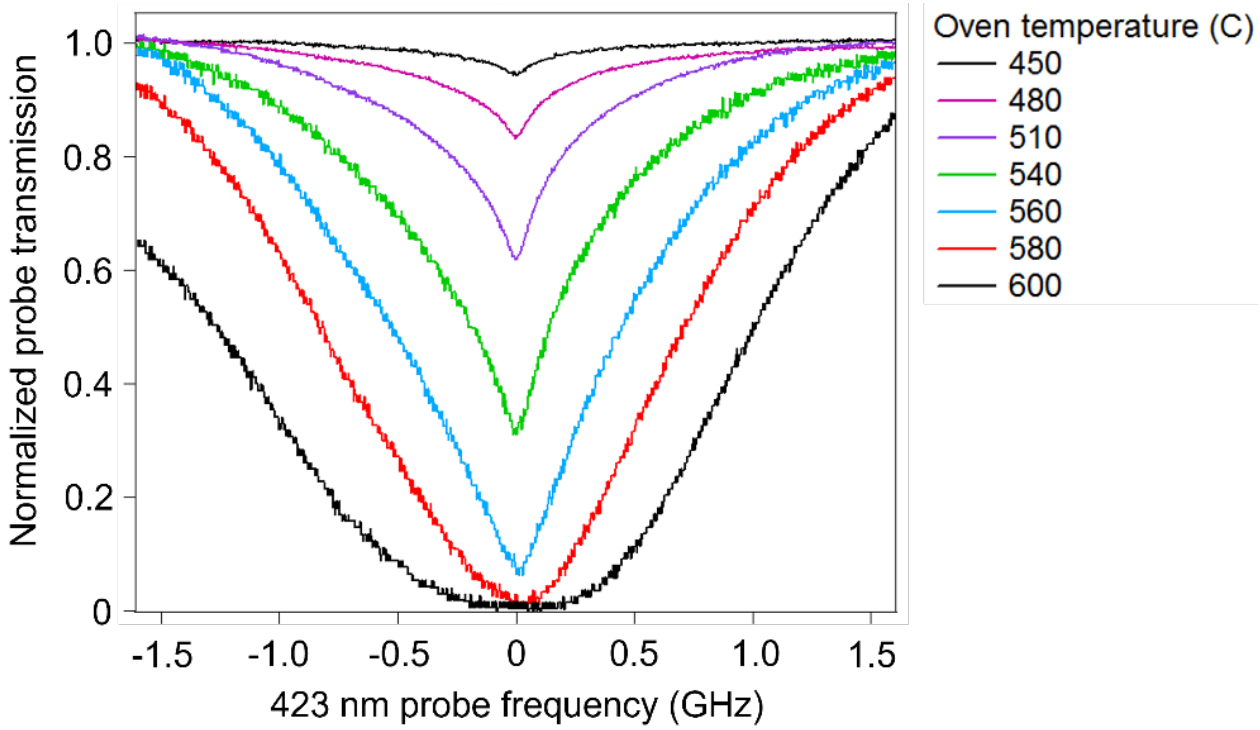
**Total flux will be reduced at same temperature with higher collimation*

†*Receiving flange ID ~43 mm recommended (larger than standard CF275)*

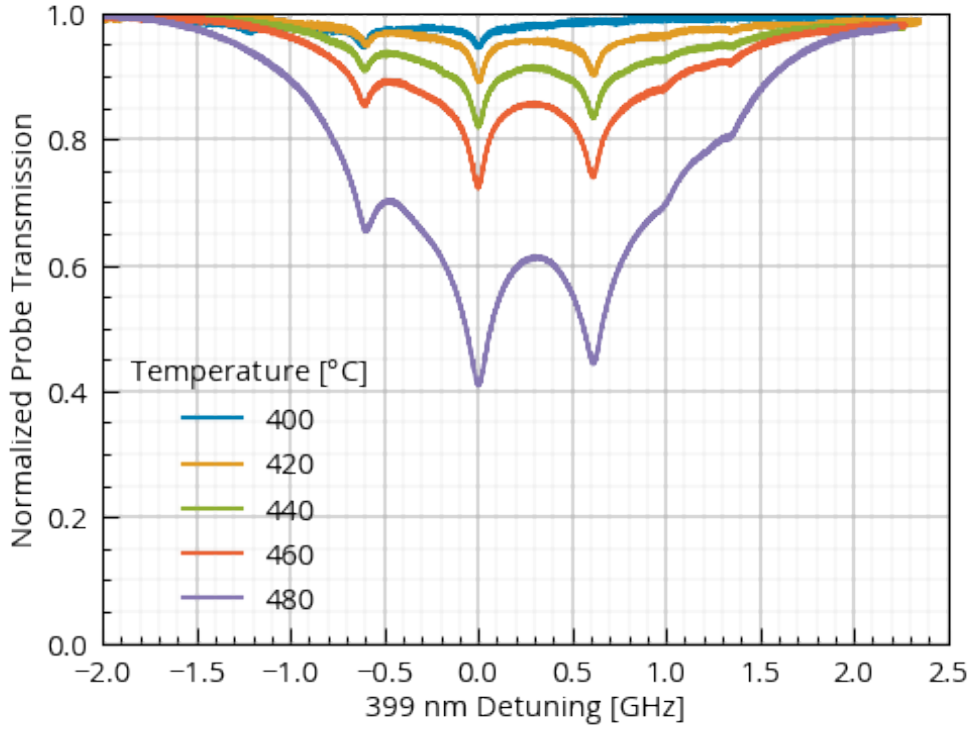
Absorption Measurements



Ca absorption (68:1 collimation ratio)



Yb absorption (68:1 collimation ratio)



For more information, contact us at sales@aosense.com