

Cold Atom Source Cell

PRODUCT HIGHLIGHTS

- Ultra-high vacuum glass cell
- Optimized for 2D+ MOT operation
- Pinhole isolation for differential pumping
- Available with **rubidium** sources, **cesium** sources or both

Infleqtion's Cold Atom Source Cell (CASC) is a compact vacuum component that enables the production of high-flux beams of laser-cooled atoms using a 2D+ MOT. The CASC easily integrates into the end user's vacuum system through a standard CF interface and is bakeable to 225°C. Differential pumping of the system is maintained by an aperture in a silicon plate that isolates the user's vacuum system from the higher pressures required for 2D MOT operation. Fluxes greater than 10^9 atoms-per-second can be achieved with rubidium or cesium.



PRODUCT SPECIFICATIONS

Overall Dimensions (W x D x L)	30 mm x 30 mm x 94.6 mm 1.2 in x 1.2 in x 3.7 in
Clear Aperture	40 mm x 16 mm side walls, Ø10 mm end cap
Atom Sources	Up to two pre-installed sources: Rb, Cs or both
Glass Thickness	1.5 mm
Vacuum Connection	DN16 (1.33") CF 2.75" adapter plate available
Vacuum Aperture	0.75mm Ø
Vacuum Conductance	0.05 l/s
Electrical Conductance	4 PCB pin connections (2 per source)
Maximum Bake Out Temp.	225 °C
Ramp Up/Down Temp.	1 °C/min
Typical Atom Flux	1×10^9 atoms per second
Typical Atom Exit Velocity/Temp.*	10 m/s – 20 m/s Longitudinal (<10K) <1m/s Transverse (~1mK)
Atomic Beam Divergence	4° (Full Angle)

*Output condition depends on 2D MOT laser parameters

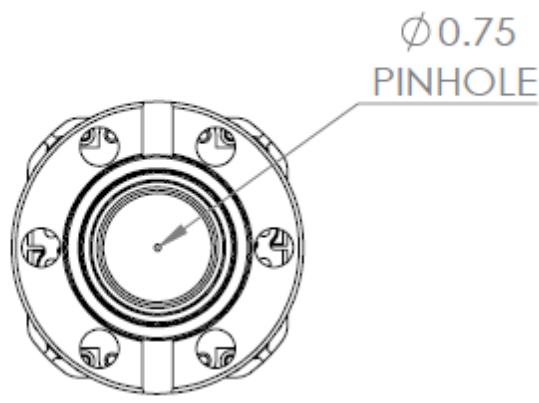
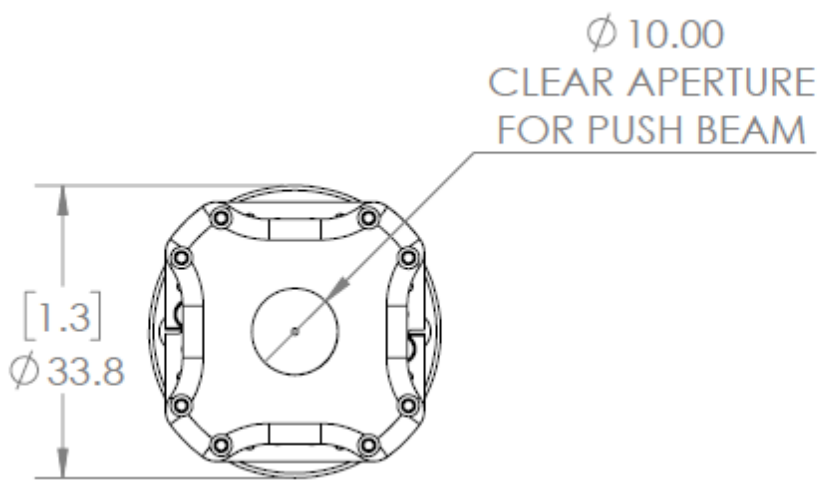
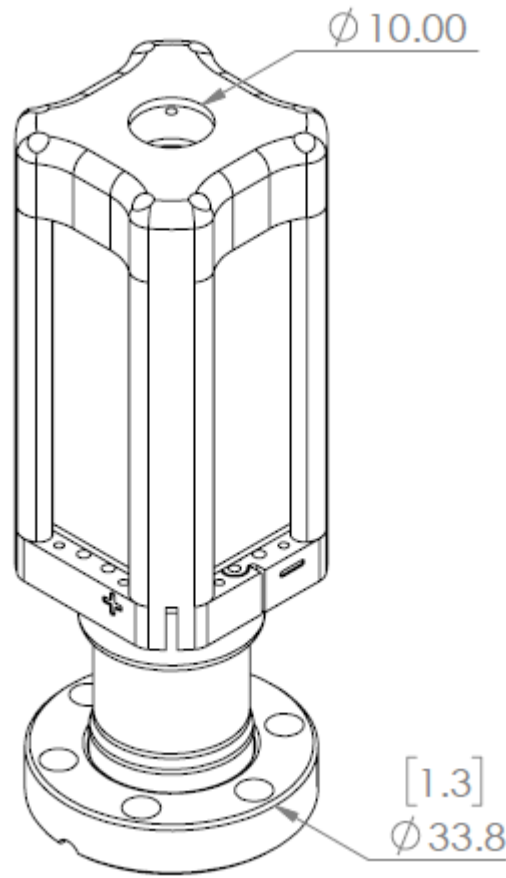
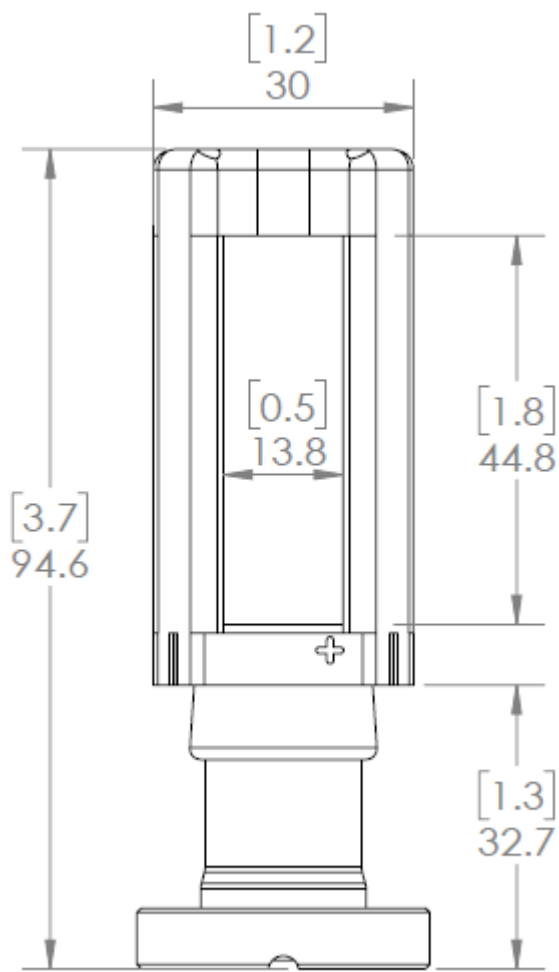
PRODUCT OPTIONS

Single source (Rb or Cs)	CSFX00
Rubidium-rubidium	CSFRR0
Cesium-cesium	CSFCC0
Rubidium-cesium	CSFRC0

"X" notes source type

For more information,
please contact
sales@infleqtion.com

MECHANICAL DRAWINGS
Measurements in mm and [inches]



UNCONTROLLED SALES DRAWING
For more information, please contact sales@infleqtion.com

