ColdQuanta’s cold atom source cell is a compact vacuum component that enables the production of high-flux beams of laser-cooled atoms using a 2D(+) MOT. The unit is easily integrated 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. The CASC is based on a well-tested design used in ColdQuanta’s RuBECi® two-chamber ultrahigh vacuum system. Fluxes greater than $10^9$ atoms-per-second can be achieved with rubidium or cesium.

### Product Description

- **Ultrahigh vacuum cell**
- **Optimized** for 2D(+) MOT operation
- **Pinhole** isolation for differential pumping
- **Output** fluxes of $10^9$ atoms/s
- **Available** with rubidium or cesium

### Product Specifications

<table>
<thead>
<tr>
<th>Atom Sources</th>
<th>Two pre-installed sources (Rb, Cs or both)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vacuum Connection</td>
<td>DN16 (1.33&quot;) CF</td>
</tr>
<tr>
<td>Vacuum Aperture</td>
<td>0.75 mm Ø</td>
</tr>
<tr>
<td>Vacuum Conductance</td>
<td>0.05 l/s</td>
</tr>
<tr>
<td>Temperature Range</td>
<td>up to 225 °C</td>
</tr>
<tr>
<td>Clear aperture</td>
<td>40mm x 16 mm side walls, 10mm from end</td>
</tr>
<tr>
<td>Overall Dimensions</td>
<td>30m x 30mm x 93mm</td>
</tr>
</tbody>
</table>
Product Options

<table>
<thead>
<tr>
<th>Product numbers</th>
<th>Rubidium-rubidium configuration:</th>
<th>CASC-1000-RB</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cesium-cesium configuration:</td>
<td>CASC-1000-CS</td>
</tr>
<tr>
<td></td>
<td>Rubidium-cesium configuration:</td>
<td>CASC-1000-RB-CS</td>
</tr>
</tbody>
</table>

Mechanical Drawing

- Ø 36
- Ø 10
- Rotatable DN16 CF flange
- Ø 0.75 pinhole
- Dispenser 1 connection
- Dispenser 2 connection

SECTION A-A