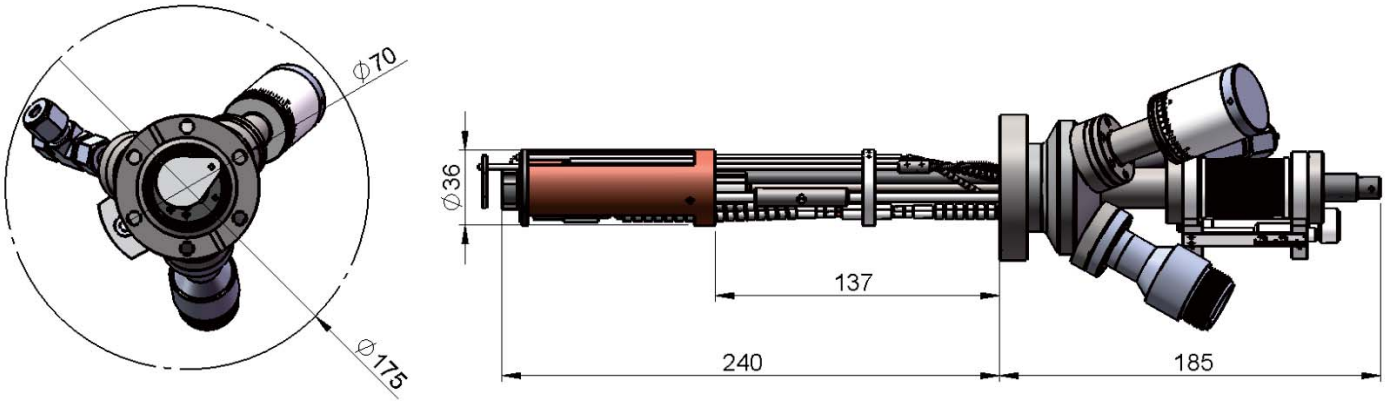
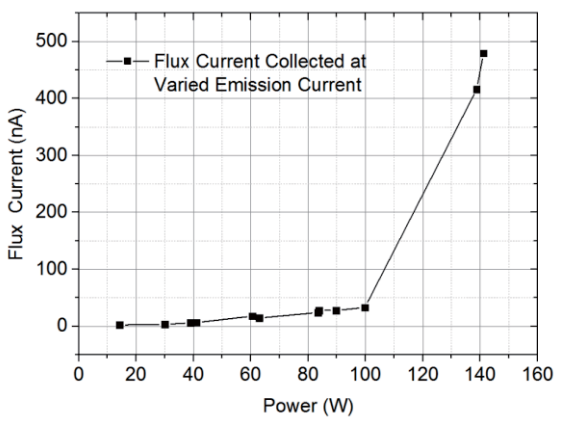
E-Beam Evaporator

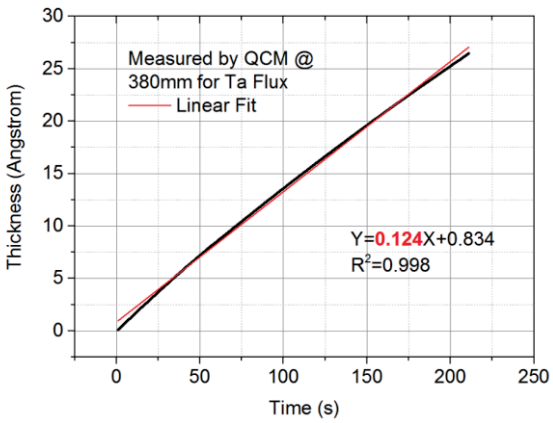


All dimensions in mm

Effusion Cells with different configurations have proven their capability in evaporating most elements in a controllable and stable manner. However, there is still limit on the effusion cells, with the wired filament design, the highest temperature one could achieve is around 2000 degrees which has pushed the tungsten filament to the limit. This is still below the evaporating point of many refractory metal such as Ta/ Mo et al.,
The e-beam evaporator pushed the highest working temperature to around 3000 degrees by electron bombardment from the surrounding filament to a rod form material or crucibles.
The heated zone is enclosed in a water-cooled copper shroud which keeps the degassing in a very low level. By tuning the input power from 0 to 300 W max, flux control from <0.1Å/min to >50Å/min is achieved for many materials. A 25mm (max. 50mm) stroke linear translator is fitted with the evaporator to support the movement of rod material and guarantee the rod tip always in the optimized position.
The e-beam evaporator includes power supply with intelligent front plate for control of filament current/voltage and emission current. It will generate enough power to evaporate the thickest rods (4 mm) and is also robust enough to survive misuse without the dire consequences seen in more complex failure-prone electronics



Flux Test



Flux Test