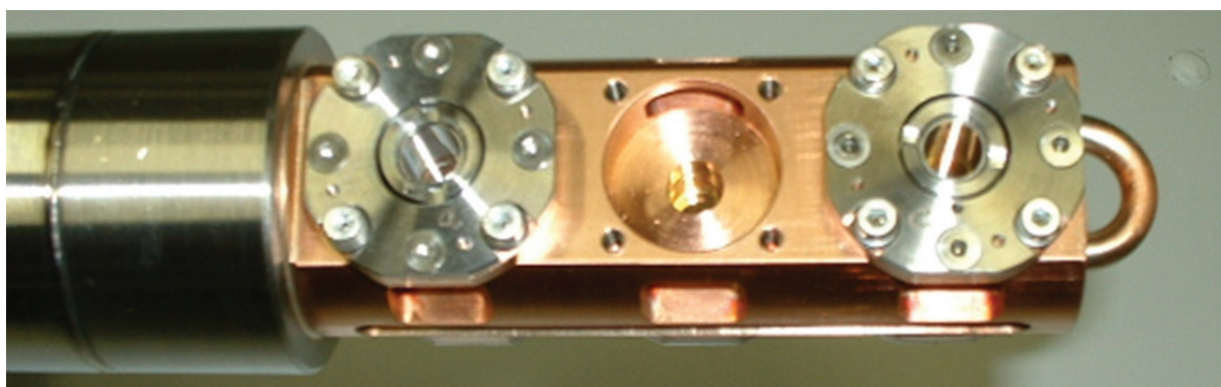


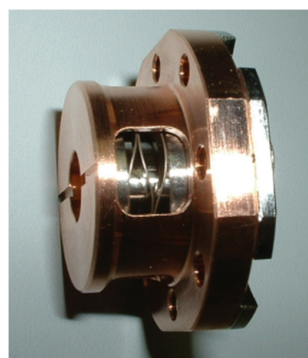
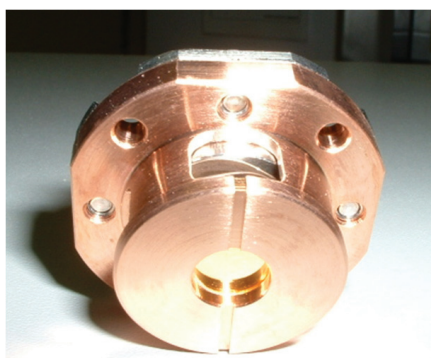
## High-Power Diamond Attenuators

High-power diamond attenuators (HPDA) are installed on ESRF beamlines to cope with high-power densities of beam, using to a new design of filters consisting of a coating of an appropriate thickness of metal (for example gold) on a diamond support.

- ◆ UHV compatible
- ◆ High-power density compatible



*Cooled motorised axis with 2 filters*



*One filter assembly = 0.7  $\mu\text{m}$  of Au coated on a diamond*

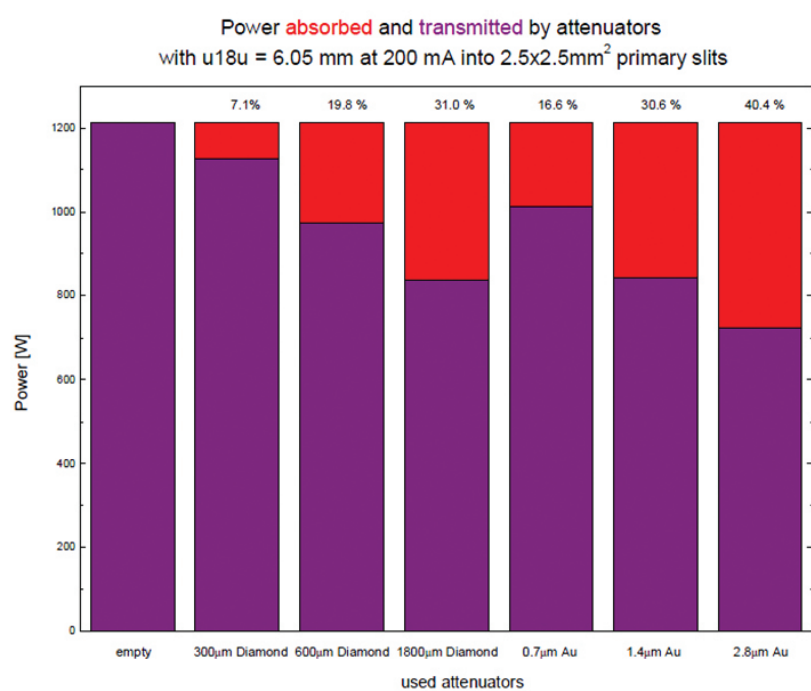
### Characteristics

Vacuum	Number of axes	Number of filters	Maximum beam diameter
$10^{-9}$ mbar	3	6 / axis	5mm

## ESRF expertise

ESRF is able to provide a ray-tracing study to define and optimise the characteristics of the filters (nature of coatings, thickness, combination) depending on source characteristics and energies.

Many units are operating at ESRF, for example on beamlines ID22, ID11, ID6, ID31, ID24 and ID30.



Example of thermal power absorbed on beamline ID06

