

High pressure diamond anvil cells

The ESRF sample environment group carries out development of high pressure diamond anvil cells [1] which are very well suited for synchrotron X-ray diffraction, absorption and scattering experiments.

The standard and CuBe cells are LeToullec type (membrane driven) cells using conical Boehler-Almax anvils for larger opening angles, increased mechanical stability and ease of operation and maintenance.

- ◆ Pressure range 1GPa to above 100GPa, Boehler-Almax conical anvils
- ◆ Membrane driven, in situ pressure change
- ◆ Temperature range depending on cell type



Standard cell, membrane and microvalve



CuBe cell, membrane and microvalve

CHARACTERISTICS

Description	Diamond culet size	Temperature range	...	Diameter	Height
Standard	100 -1000um	77K → 600K	20	50mm	34mm
CuBe	100 - 1000um	10K → 400K	32	50mm	34mm
High temperature	Under design (up to 1000K)				

[1] Datchi F., Mallick B., Salamat A., Ninet S. - Structure of polymeric carbon dioxide CO₂-V
Physical Review Letters 108, 125701-1-125701-5 (2012)