

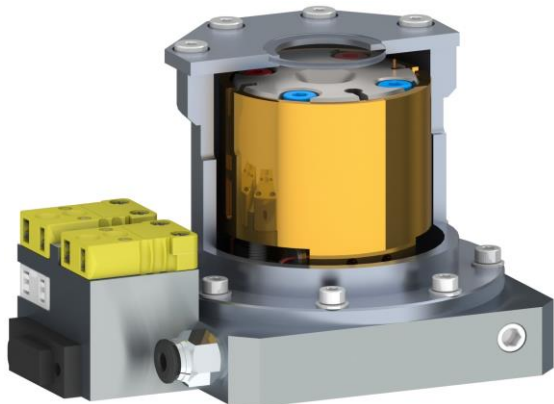


MINI SYMMETRIC (40mm) DIAMOND ANVIL CELL

Model 40mm-Mini-SYMM-DAC-REG(SHORT)-SS440C

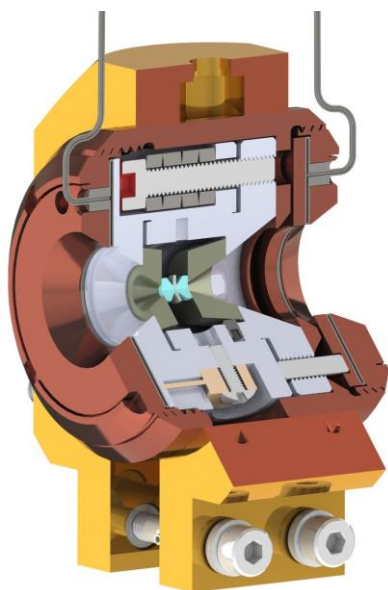
The Symmetric Diamond Anvil Cell (DAC) perhaps remains the most popular DAC in the World. It is compact, versatile, simple to operate, user-friendly, easily adaptable to multiple experimental environments and can be used for a multitude of optical and X-ray studies and a large variety of different experimental techniques. With proper diamond anvils, alignment and sample preparation the DAC can readily reach megabar pressures (>100 GPa).

DACTool's Mini Symmetric (40mm) DAC is a direct derivative of the classic 1.875" / 48 mm symmetric DAC where unnecessary outside material was removed making it about 5 mm shorter (9 mm for shortened version) and ~8 mm smaller in diameter, thus reducing the mass of the DAC by ~50%. At the same time the inner diameter and height of the piston remain about the same as in classic symmetric DACs allowing to use standard size diamond seats and anvils. Moreover, thicker piston walls and special honing and fittings techniques make this Mini Symmetric DAC even more robust and stable than the original Standard Symmetric DAC.



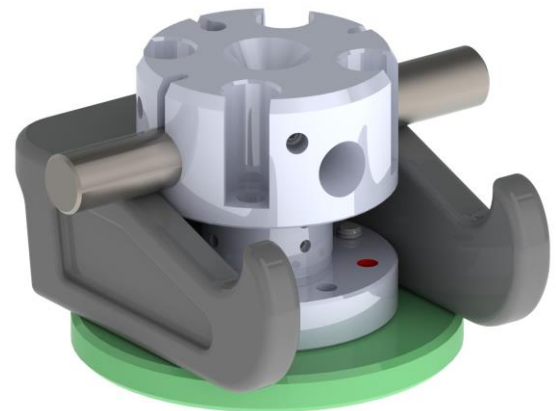
The DAC is versatile and can be used for x-ray diffraction with symmetric diffraction opening of $58^{\circ} \pm 4^{\circ}$ with BA anvils with conical support. The short working distance (~11-12 mm) also makes it convenient for optical studies, such as Raman spectroscopy and other spectroscopic techniques. It can be easily integrated with a compact "whole cell" resistive heater in water cooled enclosure when mild heating the sample to 200-300°C is required.

Usually handling small DACs is a little more difficult than larger DACs. To minimize this problem we supply the DAC with several attachments (detachable base, removable handles, and lever rocker tool) to simplify handling of the DAC.



Usually handling small DACs is a little more difficult than larger DACs. To minimize this problem we supply the DAC with several attachments (detachable base, removable handles, and lever rocker tool) to simplify handling of the DAC.

The DAC allows for multiple ways of pressure control. Typically the pressure in the DAC is controlled by four M4 screws – either two left (LH) and two right (RH), or all RH screws on request. Nevertheless the DAC can be easily integrated with single or double membrane BeCu or Steel canister (compression and decompression) and fit into 47 mm (all versions) and down to 59 mm (shortened version) cryostat bores along and perpendicular the bore axis respectively.





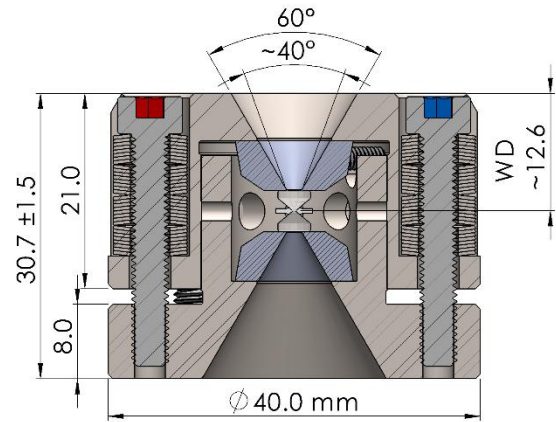
SPECIFICATIONS OF MINI SYMMETRIC 40 mm DIAMETER DIAMOND ANVIL CELL

Main DAC Specifications

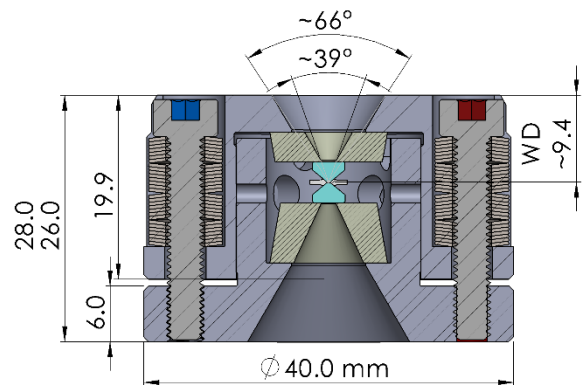
Material:	Hardened SS 440C BeCu C17200
Height:	~30.7 (27.5) ± 1.5 mm
Diameter:	40.0 mm
Working distance:	~12.6 (11.0) ± 1 mm
Mass:	~ 250 (220) g
Optical opening:	Up to 60 degrees
Diamond seats:	Tungsten carbide (typ.), Optional cBN, BeCu, and Pascalloy (Non-magnetic)
Pressure screws:	M4 x 25 (22) mm, 2x LH and 2x RH or 4x RH (model dependent)
Spring washers:	8.0 mm OD, 4.2 mm ID, 0.3-0.5 mm thick.
Diamond seat diameter:	12.5-13.0 mm (13.5 mm max)
Minimum height of two seats + two diamonds:	13.5 mm (13.0 mm)
Maximum experimental P:	>100 GPa

DAC Dimensions

Regular Version



Shortened Version



Related Equipment

Laser drilling systems



Ruby pressure systems



Membrane P Control



For more information please visit www.DACTools.com