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Specac

Product Datasheet

Golden Gate® diamond ATR

Advanced monolithic diamond ATR with interchangeable sampling top-plates.

The Golden Gate is the original diamond ATR accessory. A flagship product for more than two decades, the Golden Gate remains unrivalled for choice of sampling options and durability of construction.





Key Features of the Golden Gate®

- **Multiple sampling top-plates and sampling aids**
- **Monolithic diamond with brazed tungsten carbide mounting**
- **Extremely robust construction**
- **Signature bridge design allows up to 80 lbs force to be applied to solid samples for optimal sample contact**
- **Benchmark™ baseplate maintains alignment in the spectrometer**
- **Purgeable optics to reduce atmospheric interference**

Advanced sampling options



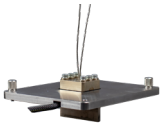
High Temperature

Investigate the temperature response of solid and liquid samples with controlled temperatures up to 300 °C.



Reaction Cell

Characterize batch chemical processes with the 24 ml reaction cell. Handles pressures up to 206 bar (3000 psi) and heating to 200 °C.



Supercritical Fluids

Investigate supercritical fluids at pressures up to 413 bar (6000 psi) and temperatures to 300 °C with this stainless-steel sample chamber.

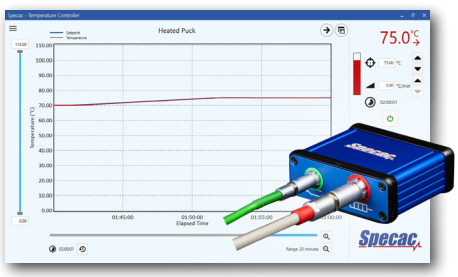


Low Temperature

Thermally insulated copper and stainless-steel flask for controlled cooling to -150 °C and heating up to 80 °C.

USB temperature controller

- For the high temperature top-plate we now offer a compact USB interface and PC Temperature Controller software application.
- The software is used to program the intended temperature ramping profile, graphically displaying the current temperature against the target profile.
- With added macro suppor, the Temperature Controller software can be sent commands by your spectrometer to collect spectra when certain temperature steps have been reached.



Specifications

ATR material	Monolithic diamond only high-temperature bonded into tungsten carbide support
Nominal angle of incidence	45°
Spectral range	KRS-5 lenses: 6500-400 cm^{-1} ZnSe lenses: 5000-700 cm^{-1}

Focusing optics

The Golden Gate uses focusing lenses to achieve a tightly focused beam on the diamond ATR crystal. The standard lens material is ZnSe but KRS-5 lenses are also available as an option where access to the lower wavenumber region of the spectrum is required.

Golden Gate sampling anvils



Solid samples require firm contact with the diamond ATR to achieve a measurement. The standard sapphire-tipped anvil can be removed and replaced with one better suited to different shaped solids.

Sapphire anvil

This is the standard anvil for the Golden Gate. It has the advantage of being very hard and resistant to point loads. It has a self-levelling fitting making it the most versatile anvil choice.

Reactive sample anvil

Samples which are sensitive to air or moisture can be loaded and pressed in a dry box. The anvil has a seal providing an inert environment while the spectrum is being run.

Grooved anvils

Narrow and wide gauge grooved anvils are used for positioning thin wires over the measurement point. Especially useful for studing coatings on transformer wires.

Stainless-steel flat anvil

Used for fibres and fine wires. It is not self-levelling, which can be an advantage for this kind of sample.

Pellet anvil

This anvil has a slight recess at the tip which captures the corners of sample pellets or granules like those found in the polymer industry. A pellet anvil is supplied as standard with each Golden Gate accessory.

Volatiles cover

This cap encloses liquid samples after application to prevent them evaporating during collection of the spectrum. A volatiles cover is included as standard with each Golden Gate accessory.

View-thru anvil



The View-thru anvil features a 4x lens system and b to allow viewing of the sample under the anvil. This positioning of the sample over the diamond crystal.

Reaction flow cell anvil



This micro-flow cell has two swagelok fittings for introducing reactants under pressure (up to 1000 psi). The internal volume of the cell is 28 µl.

Ordering Information

Complete Golden Gate® accessories

Includes optical base unit with KRS-5 or ZnSe focusing lenses (to be specified by the customer), a choice of top-plate and temperature controller (as required), and a Benchmark™ baseplate plus accessories.

GS10500	Standard Golden Gate diamond ATR
GS10642	High Temperature Golden Gate diamond ATR
GS10592	Low Temperature Golden Gate diamond ATR
GS10586	Supercritical Fluids Golden Gate diamond ATR
GS10525	Reaction Cell Golden Gate diamond ATR
GS10513	*Stirring option for Reaction Cell Golden Gate*

Spares & replacements

GS10550	Golden Gate essential spares kit (*)
GS10707	Purge bellows (*)

Anvil options

GS10503	Volatiles cover (*)
GS10531	Sapphire anvil (*)
GS10532	Pellet anvil (*)
GS10536	Reactive sample anvil
GS10547	Grooved anvil — narrow gauge
GS10548	Grooved anvil — wide gauge
GS10549	Stainless-steel flat anvil
GS10568	Reaction flow cell anvil
GS10569	View-thru bridge assembly

Note: please specify spectrometer make and model when ordering to receive the correct Benchmark™ baseplate.

For temperature controllers specify country of use.

Asterisk (*) denotes a standard part included with all complete accessory orders.

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