

ATR Family

Quest ATR Accessory

The Quest ATR, a journey into performance and value.

The Quest ATR Accessory is a performance single-reflection ATR accessory from Specac designed for laboratory spectroscopic sample analysis in the mid- and far-infrared. With an innovative optical design and durable monolithic diamond ATR crystal option, this product sets the benchmark in performance and value for ATR spectroscopy.

In its standard configuration, the Quest ATR Accessory has a strong and durable monolithic diamond ATR crystal which is ideal for analysing hard inflexible solid materials without risk of being scratched or damaged even for extreme point loads. Coupled with diamond's inherent chemical resilience, this allows the Quest ATR Accessory to be used with the broadest range of sample types. A 1.8mm diameter diamond sample area means that good contact can be achieved even with the smallest amount of material available for analysis.

The Quest ATR Accessory features an all-reflective optical design, based around Specac's proprietary Synopti-Focal Array technology. This comprises precision-molded aspheric mirrors and gold-coated optics as standard, and provides the Quest ATR Accessory with high transmission throughput and an extended wavelength range capability to match that of your mid- and far-infrared FTIR instrument. Together with an optimised angle of incidence on the ATR crystal, these features ensure outstanding quality of spectra.

Four easily-interchangeable crystal pucks are available for use with the Quest ATR Accessory: a high-throughput diamond puck for mid-infrared analysis (7800 to 400 cm^{-1}), an extended wavelength range diamond puck for the mid- and far-infrared (10000 to 40 cm^{-1}), a ZnSe crystal puck for softer materials, and a Ge crystal puck for strongly absorbing samples. These ATR crystals are mounted in a durable stainless steel puck and held in place against a robust metal seal to ensure compatibility with a broad range of sample types.

Repeatable and reproducible sample loads are enabled by a full-function pressure tower. This has an audible 'click' to indicate at the preset pressure limit, and features a swing anvil arm to allow easy access to the ATR crystal puck. Both plane and pellet anvils are provided with the



accessory to allow analysis of samples of various shapes. These anvils are easily interchangeable and stored on the top plate when not in use.

Note that the Quest ATR Accessory is Benchmark Baseplate™ compatible.

Key Features

- Strong and durable monolithic diamond
- Extended wavelength capability from 10,000 to 40 wavenumbers
- High spectral quality and high throughput capability
- Interchangeable Diamond, ZnSe and Ge ATR crystal puck options

The Benchmark Baseplate™ System

Specac believe that your accessory should be able to be quickly and easily switched from instrument to instrument in your laboratory. To facilitate this, we have developed the "Benchmark Baseplate™" system as an interface between the accessory and instrument, and to which the accessory can be fitted with a single thumbscrew fixing. The Benchmark Baseplate™ is unique to the instrument model being used (a baseplate is supplied with the Quest ATR Accessory), and can be left in the sample compartment, if required, for use with other Specac Benchmark compatible accessories. You should specify your spectrometer when ordering your Quest.

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Why is a monolithic diamond important?

'Diamond' ATR Accessories on the market are generally available in two forms: those that feature a solid monolithic diamond and those with a thin diamond wafer supported by an optical element (typically ZnSe). Monolithic diamond ATR accessories are seen to benefit from the inherent robustness and durability of a solid diamond element, and are particularly resilient to high point loads typically encountered when analysing hard irregularly-formed samples. They can also take advantage of the broad transmission window of diamond (10,000 to 40 cm⁻¹).

Conversely, diamond wafer ATR accessories are seen to be more fragile under point loads, can suffer de-lamination from the supporting element, and have a useable transmission range that is often limited by the support material. However, featuring a thinner diamond, they also have weaker diamond absorption features at 2000 to 2500 cm⁻¹.

Ordering Information

Complete Quest ATR Accessory

- GS10800-X Quest ATR Diamond Accessory
- GS10801-X Quest ATR Diamond Extended Range Accessory
- GS10802-X Quest ATR ZnSe Accessory
- GS10803-X Quest ATR Ge Accessory

Please specify spectrometer make & model

X represents Top Plate colour, the colours available are:

- B is for Black colour
- R is for Red colour
- Y is for Yellow colour
- P is for Purple colour
- O is for Orange colour
- G is for Green colour
- A is for Aqua colour

Quest ATR Puck Only

- GS10810 Quest ATR Diamond Crystal Puck
- GS10811 Quest ATR Diamond Extended Range Crystal Puck
- GS10812 Quest ATR ZnSe Crystal Puck
- GS10813 Quest ATR Germanium Crystal Puck

Spares and Accessories

- GS10820 Quest ATR Stainless Steel Flat Anvil
- GS10821 Quest ATR Stainless Steel Pellet Anvil
- GS10825 Quest ATR Volatiles Cover
- GS10707 Purge Bellows (Pair)



Illustrations, descriptions and specifications in this datasheet were correct at the time of going to press. However, Specac's policy is one of continuous product development and we reserve the right to change descriptions and specifications at any time.

For the latest details please contact your local Specac office or representative.

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