

The Pearl™ Data Sheet

The Pearl™ is a high specification liquid transmission accessory for laboratory sample analysis in the near and mid infrared.

The Pearl™ accessory contains Specac's innovative Oyster™ cell assembly, which holds the sample in a horizontal plane. The top Oyster™ cell holder is simply lifted out of the way to allow for fast and easy application of the sample and cleaning between samples.

For more volatile samples, there is an injection access port in the top of the Oyster™ cell so that the assembly does not have to be fully opened. The sample can be viewed through the two windows, allowing the user to ensure that no bubbles have been trapped. The Oyster™ cell can be cleaned very easily and quickly using tissue and an appropriate solvent.

The Pearl™ has been designed to provide a more accurate pathlength than can be achieved using a traditional liquid transmission accessory, with pathlengths repeatable to significantly better than 1 µm thanks to the Oyster™ sample holder. Oyster™ cells have the unique feature of being offered with either parallel mounted windows, or windows with a slight wedge angle to remove troublesome fringing patterns.

Pearl™ can be fitted with ZnSe or CaF₂ Oyster™ cell assemblies which can be interchanged in seconds. Oyster™ cells are available in six pathlengths from 25 to 1000 µm.

The Oyster™ cell mechanism is so easy to use that it makes the Pearl™ accessory suitable for handling highly viscous sample such as oils and greases.

THE BENCHMARK™ BASEPLATE SYSTEM

Specac believe that it should be possible to quickly and easily switch between sampling accessories. To facilitate this, we have developed the Benchmark™ Baseplate system which ensures that a single instrument-specific baseplate can be used for all Benchmark™ compatible accessories. You only ever need as many baseplates as the number of different spectrometer models in your laboratory.

KEY BENEFITS

- The easiest to use FTIR liquid sampling system available
- Faster, more accurate and more repeatable than traditional liquid cells
- Wedged option to eliminate troublesome fringing completely
- Different pathlengths and window materials in seconds
- Handles viscous materials with ease



Key Applications:

- Used oils & lubricants
- FAME & Diesel
- Edible oils
- Greases, pastes & slurries



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ORDERING INFORMATION

The Pearl™ Liquid Transmission Accessory consists of the Pearl™ base unit with a slide-out drawer and Oyster™ cell holder. The drawer can be ordered in a choice of colours.

The Oyster™ cell itself consists of two machined window assemblies which can be ordered as a complete set, or as separate parts. To vary the pathlength or wedge angle, different pre-determined bottom window assemblies must be purchased. The top window assembly is common to all pathlengths.

N.B. It is not possible to remove the windows from the Oyster™ window assemblies.

Pearl™ base unit

GS31000-A (Blue) GS31000-B (Black) GS31000-G (Green) GS31000-O (Orange)
 GS31000-P (Purple) GS31000-R (Red) GS31000-Y (Yellow)



Oyster™ Complete Cells

Window Material	Wedged or Parallel	Pathlength					
		25 µm	50 µm	100 µm	200 µm	500 µm	1000 µm
ZnSe	Parallel	GS31216	GS31211	GS31212	GS31213	GS31214	GS31215
ZnSe	Wedged	GS31226	GS31221	GS31222	GS31223	GS31224	GS31225
CaF ₂	Parallel	GS31316	GS31311	GS31312	GS31313	GS31314	GS31315
CaF ₂	Wedged	GS31326	GS31321	GS31322	GS31323	GS31324	GS31325

Oyster™ Bottom Window

Window Material	Wedged or Parallel	Pathlength					
		25 µm	50 µm	100 µm	200 µm	500 µm	1000 µm
ZnSe	Parallel	GS33216	GS33211	GS33212	GS33213	GS33214	GS33215
ZnSe	Wedged	GS33226	GS33221	GS33222	GS33223	GS33224	GS33225
CaF ₂	Parallel	GS33316	GS33311	GS33312	GS33313	GS33314	GS33315
CaF ₂	Wedged	GS33326	GS33321	GS33322	GS33323	GS33324	GS33325

Oyster™ Top Window

Window Material	Product No.
ZnSe	GS32200
CaF ₂	GS32300