

Omni Cell System

A Universal Transmission Cell for the analysis of liquids and mulls in FTIR or Dispersive Spectroscopy



The Omni-Cell™ System is a novel approach to the analysis of liquid samples in transmission spectroscopy - one cell is suitable for all applications.

The cells are compatible with all FTIR Spectrometers, as well as older dispersive systems. They can be configured easily for use as demountable liquid cells, permanently sealed liquid cells, or as mull cells.

Transmission is well established as a technique for analyzing samples in the infrared. The choice of window material, pathlength, and window configuration are determined by the sample and wavelength range of interest.

Samples can be analyzed neat or diluted with an appropriate solvent. For quantitative analysis, the sample is often analyzed in a cell with a known pathlength. A guide to the selection of the correct pathlength for various concentrations is shown opposite.

Solid samples can be analyzed using the mull technique. The solid is mixed with a mulling agent, such as Nujol, to form a mull. The mull is then analyzed between circular windows.

Features

- Quick to assemble and change windows
- Windows and Spacers compatible with older cells
- FTIR and Dispersive compatibility
- Quick release clamping mechanism
- Low cost and reliable
- Wide choice of window materials

Applications

Demountable Cells

- General Purpose
- All liquids
- Quantitative analysis

Sealed Cells

- Volatile liquids
- Quantitative applications
- Low viscosity liquids

Mull Cells

- High viscosity liquids
- Gels and pastes
- Oils and greases
- Solids suspended as mulls

Analytical concentration	Typical pathlength
> 10 %	0.05 mm
10 % - 1%	0.1 mm
1% - 0.1%	0.2 mm
< 0.1%	> 0.5 mm

• Illustrations, descriptions and specifications in this data sheet 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.

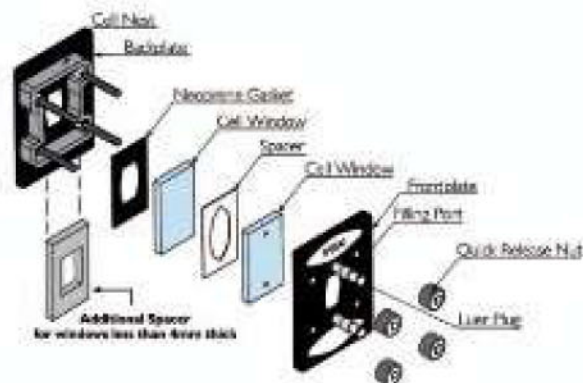
Omni Cell System

Demountable Cell

This is a general-purpose cell for all liquids. It has the advantage of being easy to dismantle for cleaning, and for changing windows and spacers.

Applications

- General purpose
- All liquids
- Quantitative analysis

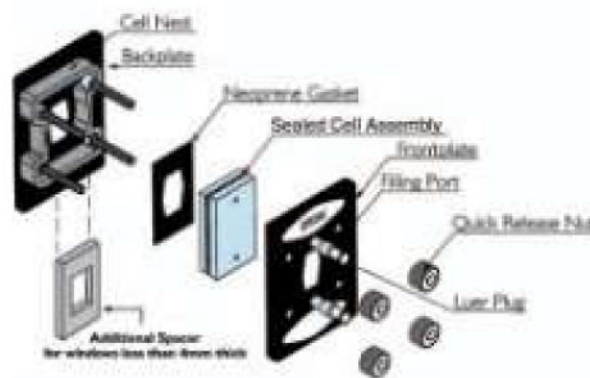


Sealed Cell

The window pair and spacer are amalgamated as an assembly. The advantages of this cell are a constant pathlength for quantitative analysis and suitability for use with volatile liquids.

Applications

- Volatile liquids
- Quantitative applications
- Low viscosity liquids

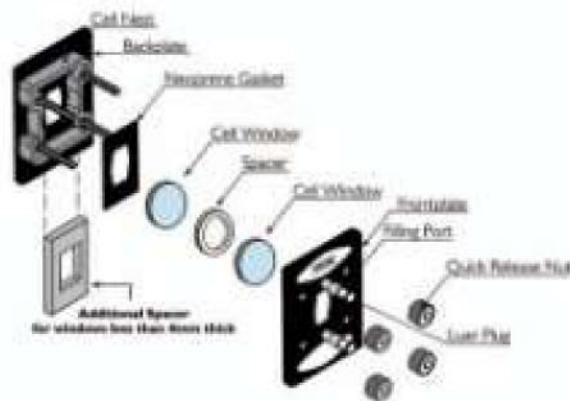


Mull Cell

The Mull Cell does not use the standard liquid filling ports. The sample is placed directly onto one of the circular windows and the other window is then placed on top. The advantage is that very viscous liquids, gels and pastes can easily be analyzed.

Applications

- High viscosity liquids
- Gels and pastes
- Oils and greases
- Solids suspended as mulls



Ordering Information

Ordering an Omni-Cell is easy - just order the Universal Omni-Cell Body, and buy the windows and spacers (detailed on the following page) to suit your application.

Universal Omni-Cell Body

GS01800

The Omni-Cell Body. Includes front and back plates, cell nest, 4 quick release nuts, bonded front PTFE gasket, rear neoprene gasket and 2 PTFE Luer plugs.



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Ordering information

Demountable Liquid Omni-Cell Window Pairs (Rectangular) 41mm x 23mm

GS0 18 10	NaCl Liquid Omni Windows
GS0 18 11	KBr Liquid Omni Windows
GS0 18 12	CaF2 Liquid Omni Windows
GS0 18 13	BaF2 Liquid Omni Windows
GS0 18 14 *	ZnSe Liquid Omni Windows
GS0 18 15	KRS-5 Liquid Omni Windows
GS0 18 18 *	Silica (IR) Liquid Omni Windows
GS0 18 19 *	AgBr Liquid Omni Windows
GS0 18 20 *	Silicon Liquid Omni Windows
GS0 18 21 *	Polythene Liquid Omni Windows

Mull Omni-Cell Window Pairs (Circular) 25mm Dia

GS0 18 30	NaCl Mull Omni windows
GS0 18 31	KBr Mull Omni Windows
GS0 18 32	CaF2 Mull Omni Windows
GS0 18 33	BaF2 Mull Omni Windows
GS0 18 34 *	ZnSe Mull Omni Windows
GS0 18 35	KRS-5 Mull Omni Windows
GS0 18 38 *	Silica (IR) Mull Omni Windows
GS0 18 39 *	AgBr Mull Omni Windows
GS0 18 40 *	Silicon Mull Omni Windows
GS0 18 41 *	Polythene Mull Omni Window

Liquid Omni-Cell Spacers (Rectangular)

GS0 18 50	0.05mm PTFE Spacers (5)
GS0 18 51	0.10mm PTFE Spacers (5)
GS0 18 52	0.20mm PTFE Spacers (5)
GS0 18 53	0.50mm PTFE Spacers (5)
GS0 18 54	1.00mm PTFE Spacers (5)
GS0 18 55	0.025mm Lead Spacers (5)
GS0 18 56	0.05mm Lead Spacers (5)
GS0 18 57	0.10mm Lead Spacers (5)
GS0 18 58	0.20mm Lead Spacers (5)
GS0 18 59	0.50mm Lead Spacers (5)
GS0 18 60	1.00mm Lead Spacers (5)
GS0 18 61	0.006mm Mylar Spacers (5)
GS0 18 62	0.012mm Mylar Spacers (5)
GS0 18 63	0.025mm Mylar Spacers (5)
GS0 18 64	Assorted PTFE Spacers

2 of each thickness supplied

Mull Omni-Cell Spacers (Circular)

GS0 18 70	0.05mm PTFE Spacers (5)
GS0 18 71	0.10mm PTFE Spacers (5)
GS0 18 72	0.20mm PTFE Spacers (5)
GS0 18 73	0.50mm PTFE Spacers (5)
GS0 18 74	1.00mm PTFE Spacers (5)
GS0 18 75	0.025mm Lead Spacers (5)
GS0 18 76	0.05mm Lead Spacers (5)
GS0 18 77	0.10mm Lead Spacers (5)
GS0 18 78	0.20mm Lead Spacers (5)
GS0 18 79	0.50mm Lead Spacers (5)
GS0 18 80	1.00mm Lead Spacers (5)
GS0 18 81	0.006mm Mylar Spacers (5)
GS0 18 82	0.012mm Mylar Spacers (5)
GS0 18 83	0.025mm Mylar Spacers (5)

* These windows require additional spacer
P/N **GS0 18 93**

Permanently Sealed Omni-Cell Window Units (Rectangular With Lead Spacer)

The table below gives the part numbers of the Sealed Cell Assemblies.

These assemblies require, but do not include, the Omni-Cell Body (01800)

Material	0.025 mm	0.05mm	0.10mm	0.20mm	0.50mm	1.00mm
NaCl	GS0 1910	GS0 1920	GS0 1930	GS0 1940	GS0 1950	GS0 1960
KBr	GS0 1911	GS0 1921	GS0 1931	GS0 1941	GS0 1951	GS0 1961
CaF2	GS0 1912	GS0 1922	GS0 1932	GS0 1942	GS0 1952	GS0 1962
BaF2	GS0 1913	GS0 1923	GS0 1933	GS0 1943	GS0 1953	GS0 1963
ZnSe*	GS0 1914	GS0 1924	GS0 1934	GS0 1944	GS0 1954	GS0 1964
KRS-5	GS0 1915	GS0 1925	GS0 1935	GS0 1945	GS0 1955	GS0 1965
Silica (IR)*	GS0 1918	GS0 1928	GS0 1938	GS0 1948	GS0 1958	GS0 1968

Silicon, AgBr and Polythene are not offered as permanently sealed cell units. All rectangular window pairs and assemblies consist of one drilled and one undrilled window. *All windows are 4 mm thick except ZnSe, Silica (IR), AgBr and Si, which are 2 mm thick, and Polythene which are 3 mm thick. These windows require the additional rear spacer for thin windows (01893).

Spares

GS0 1110	Luer Syringe (2ml)
GS0 18 90	Rear Neoprene Gaskets (2)
GS0 18 91	Quick Release Nuts (4)

GS0 18 92	Luer Plugs for Omni-Cell (2)
GS0 18 93	Spacer for thin windows (1)
GS0 3 6 2 0	Bottle of Nujol (25ml)
GS0 3 6 2 1	Bottle of Fluorolube (25ml)

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