Specac

Product Datasheet

rev C4
02.11.26

Omni-Cell™ demountable transmission cell

Universal transmission cell for analysis of liquids and mulls.

The Omni-Cell™ is a demountable system for transmission measurements of liquids, pastes, and mulls. A wide range of window materials are available to cover spectral ranges from the UV to the Far-IR and THz ranges. Windows are supplied in two forms: as permanently sealed window sets with a fixed pathlength, and as demountable combinations of rectangular or circular windows and pathlength spacers.

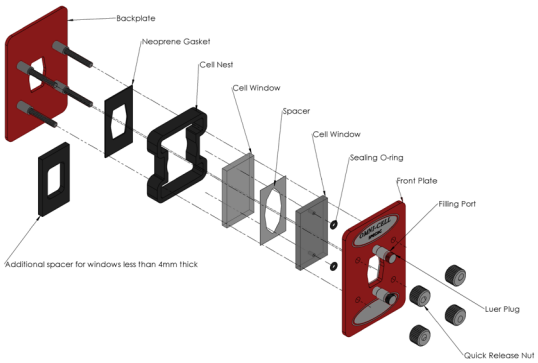


Key Features of the Omni-Cell™

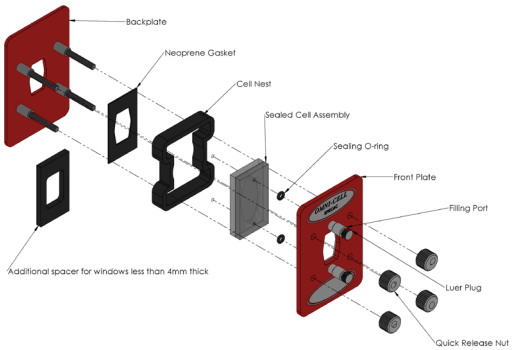
- Modular liquid transmission cell
- Permanently sealed or demountable windows
- Pathlengths from 0.006 mm to 1.00 mm
- Materials for UV-Vis, Near-IR, Mid-IR, and Far-IR/THz
- 3" x 2" slide mounted

Omni-Cell™ build configurations

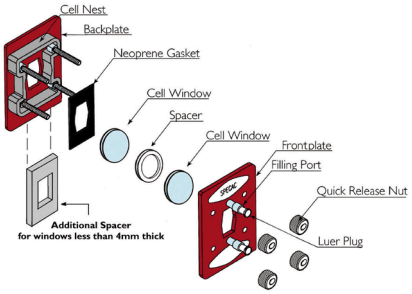
Demountable cell (rectangular windows)



Sealed cell (rectangular windows)



Mull cell (circular windows)



Which type of Omni-Cell™ is right for me?

The Omni-Cell has three build configurations: demountable windows, sealed windows, and mull windows.

The **demountable** option is best for applications requiring frequent changes of pathlength. The ports on the front of the cell can be used for drawing liquid samples into the cell.

A **sealed** cell is a fixed combination of window and spacer forming a sealed unit. It is used where the pathlength must remain constant and stable between measurements.

Viscous or greasy samples can be sandwiched between circular "**mull**" windows. An older technique for solid sampling involved mixing powders with a mulling agent, such as Nujol, which was then applied to a circular window.

Window material data

Window materials should be chosen based on the required spectral range and chemical compatibility. Choosing a window with a lower refractive index will minimize the intensity of interference fringes which can be used for pathlength determination but can also interfere with your measurement.

Window material	Spectral range (cm^{-1})	Refractive index @1000 cm^{-1}
KBr	40,000—400	1.53
NaCl	40,000—600	1.49
CaF_2	50,000—1100	1.31
BaF_2	66,000—800	1.40
ZnSe	20,000—500	2.41
KRS-5	16,000—250	2.37
Silica (IR)	22,000—300	2.17
AgBr	40,000—3000	1.4
Polyethylene	625—4	~1.5

Pathlength choice

Concentration of analyte in solution	Typical pathlength required
> 10%	0.05 mm
10—1%	0.1 mm
1—0.1%	0.2 mm
< 0.1%	>0.5 mm

The table above serves as a guide rather than a rule. Different samples have different molar attenuation coefficients that may require a slightly longer or shorter pathlength to obtain an optimal measurement.

Ordering Information

A complete Omni-Cell consists of the Omni-Cell™ body (GS01800) plus at least one of:

1. A set of rectangular windows & spacers
2. A set of circular (mull) windows & spacers
3. A permanently sealed window set

Omni-Cell™ Essentials Kit

3"x 2" Omni-Cell™ body plus 2 pairs of KBr rectangular windows, assorted PTFE spacers, and 2 luer syringes for sample filling.

GS01132 — Omni-Cell™ Essentials Kit

Omni-Cell™ Liquids Pack

3"x 2" Omni-Cell™ body plus 2 pairs of KBr rectangular windows, 2 pairs of CaF_2 rectangular windows, 1 pair KBr circular windows (for mulls), bottle of Nujol® mulling agent, assorted PTFE spacers, and a luer syringe for sample filling.

GS01140 — Liquid Sampling Pack

Ordering Information (individual parts)

Omni-Cell™ Body

GS01800 — Omni-Cell™ Body

Demountable Windows

Rectangular or circular (mull) windows sold in pairs. For rectangular windows, there is one window drilled for the sample ports, and one undrilled. Circular windows are not drilled.

Window material	Rectangular 41 x 23 mm	Circular (mull) 25 mm dia.
NaCl	GS01810	GS01830
KBr	GS01811	GS01831
CaF_2	GS01812	GS01832
BaF_2	GS01813	GS01833
ZnSe (*)	GS01814	GS01834
KRS-5	GS01815	GS01835
Silica (IR) (*)	GS01818	GS01838
AgBr (*)	GS01819	GS01839
Silicon (*)	GS01820	GS01840
Polyethylene (*)	GS01821	GS01841

(*) includes thin window insert GS01893

Spacers for demountable windows

Spacers for rectangular or circular (mull) window sets made from PTFE or Mylar. Sold as packs of five spacers (except GS01864)

Spacer material	Pathlength (mm)	Rectangular	Circular (mull)
PTFE	0.05	GS01850	GS01870
	0.1	GS01851	GS01871
	0.2	GS01852	GS01872
	0.5	GS01853	GS01873
	1.0	GS01854	GS01874
	2 each of all the above	GS01864	--
Mylar	0.006	GS01861	GS01881
	0.012	GS01862	GS01882
	0.025	GS01863	GS01883

Permanently sealed windows

Sealed window sets with a fixed pathlength. The windows are sealed together with a stainless-steel spacer using a proprietary technique.

Window material	0.025 mm	0.05 mm	0.1 mm	0.2 mm	0.5 mm	1.0 mm
NaCl	GS02211	GS02221	GS02231	GS02241	GS02251	GS02261
KBr	GS02212	GS02222	GS02232	GS02242	GS02252	GS02262
CaF_2	GS02213	GS02223	GS02233	GS02243	GS02253	GS02263
BaF_2	GS02214	GS02224	GS02234	GS02244	GS02254	GS02264
ZnSe	GS02215	GS02225	GS02235	GS02245	GS02255	GS02265

Spare parts

GS01894	Spare set of O-rings
GS01893	Spare insert for windows less than 4 mm thick
GS01892	Spare set of luer plugs (pair)
GS01891	Spare set of quick release nuts (pack of 4)
GS01890	Spare set of neoprene gaskets (pair)
GS03620	Bottle of Nujol® mulling agent (25 ml)
GS01110	1x Luer Syringe

United Kingdom
sales@specac.co.uk
+44 (0) 1689 892 902

United States
sales@specac.com
+800-248-3847

China
cn@specac.com

Singapore
sg@specac.com

