

Atmos™ Long Pathlength Gas Cells

Atmos™ is our range of long pathlength gas cells for measuring the infrared spectra of trace gases and vapors. Available in fixed pathlengths of 2.5, 5.0, 10.0, or 20.0 meters for maximum versatility. Each cell has been individually optimized for maximum optical throughput and signal-to-noise.

To prevent outgassing the gas chamber is free of glues, common to other gas cell designs. Fitted as standard with Viton® O-rings, for more chemically demanding applications these can be upgraded to FFKM O-rings.

An optional heating jacket is retrofittable to all Atmos™ gas cells, capable of heating the contents of the cell to 200 °C. A sample thermocouple is also available to measure the temperature of the sample.



Atmos™ A2.5 gas cell.

Key Features of the Atmos™ gas cell

- **Robust internal optics** making use of highly reflective and chemically inert gold coatings and mechanical mounts to reduce off-gassing into the cell from adhesives.
- **Optimized optical path** to maximise throughput and signal-to-noise.
- **Reduced cell volume** to minimise the time required for exchanging gases sample-to-sample.
- **Heating jacket option**
Heatable to 200 °C using digital temperature controller.
- **“Leverlock” baseplate mounting system** gives maximum physical stability and protection against tipping when mounted.



Atmos™ A5 gas cell with heating jacket and 4000 series temperature controller.

Atmos™ gas cell models and specifications

Model	A2.5	A5	A10	A20
Pathlength (m)	2.5	5	10	20
Single pass length (mm)	104	139	250	455
Number of passes	24	36	40	44
Volume (L)	0.25	0.59	2.02	3.59
Maximum pressure	125 psi (8.5 bar g)			80 psi (5.5 bar g)
Vacuum (Torr)	3×10^{-3}			
Leak rate (Torr.L.s ⁻¹)	$> 6.4 \times 10^{-5}$	$> 2.3 \times 10^{-5}$	$> 3.0 \times 10^{-5}$	$> 3.0 \times 10^{-5}$
Total height (mm)	265	313	433	639
Total width (mm)	154.1	154.1	154.1	154.1
Weight (kg)	2.1	2.6	5.0	6.0



“Leverlock” baseplate mounting system for optimum stability.

Atmos™ gas cell general specifications

Item	Specification
Cell body	Nickel-plated aluminium
Gas fittings	1/4" tubing with optional pressure gauges and valve taps.
Window materials	ZnSe or CaF ₂
Sealing materials	Viton® or FFKM
Reflective optics	Gold-coated stainless-steel mirrors, mechanical mounting.
Mounting system	"Leverlock" baseplate mounting system compatible with all common benchtop FTIR spectrometer systems.

Heating Jacket Specification

Maximum Temperature:	200 °C
Stability:	±1 °C
Heater Voltage:	30 V
Compliance:	CE

Ordering Information

Complete Atmos™ A2.5 Accessory

Includes Atmos™ A2.5 gas cell and a baseplate matched to your spectrometer

GS24602CV	Atmos A2.5 with CaF ₂ windows and Viton® seals
GS24602CX	Atmos A2.5 with CaF ₂ windows and FFKM seals
GS24602ZV	Atmos A2.5 with ZnSe windows and Viton® seals
GS24602ZX	Atmos A2.5 with ZnSe windows and FFKM seals

Complete Atmos™ A5 Accessory

Includes Atmos™ A5 gas cell and a baseplate matched to your spectrometer

GS24605CV	Atmos A5 with CaF ₂ windows and Viton® seals
GS24605CX	Atmos A5 with CaF ₂ windows and FFKM seals
GS24605ZV	Atmos A5 with ZnSe windows and Viton® seals
GS24605ZX	Atmos A5 with ZnSe windows and FFKM seals

Complete Atmos™ A10 Accessory

Includes Atmos™ A10 gas cell and a baseplate matched to your spectrometer

GS24610CV	Atmos A10 with CaF ₂ windows and Viton® seals
GS24610CX	Atmos A10 with CaF ₂ windows and FFKM seals
GS24610ZV	Atmos A10 with ZnSe windows and Viton® seals
GS24610ZX	Atmos A10 with ZnSe windows and FFKM seals

Complete Atmos™ A20 Accessory

Includes Atmos™ A20 gas cell and a baseplate matched to your spectrometer

GS24620CV	Atmos A20 with CaF ₂ windows and Viton® seals
GS24620CX	Atmos A20 with CaF ₂ windows and FFKM seals
GS24620ZV	Atmos A20 with ZnSe windows and Viton® seals
GS24620ZX	Atmos A20 with ZnSe windows and FFKM seals

Heating Jackets

Includes heating clamp, insulating jacket and temperature controller

GS24651	Atmos A2.5 Heating Jacket
GS24652	Atmos A5 Heating Jacket
GS24653	Atmos A10 Heating Jacket
GS24654	Atmos A20 Heating Jacket
GS24641	Optional Sample Temperature monitor attachment

Gas fitting accessories

GS24160	Pressure gauge attachment (please specify high or low pressure required)
GS24161	Pair of Gas Valve taps

Spares

GS24625	Essential Spares kit for Atmos A2.5 & A5
GS24626	Essential Spares kit for Atmos A10 & A20
GS24627	Replacement ZnSe windows
GS24628	Replacement CaF ₂ windows
GS10707	Replacement purge bellows

Laser Alignment Kit

For realigning the Atmos gas cell (for instance after cleaning). Requires both a laser alignment platform and the appropriate target set

GS24501	Laser Alignment Platform
GS24638	A2.5 Atmos Gas Cell Laser Target
GS24639	A5 Atmos Gas Cell Laser Target
GS24640	A10 & A20 Atmos Gas Cell Laser Target

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

United States
sales@specac.com
+1 215 793 4044

China
cn@specac.com

Singapore
sg@specac.com



Please note: Illustrations, descriptions and specifications quoted in this document were correct at the time of publication. Specac reserves the right to update, amend, or withdraw this information at any time as part of our continuous product portfolio management.