

Cyclone™

Long Pathlength Gas Cell

The Cyclone™ Series of fixed and variable long pathlength gas cells is the ultimate in sampling accessories for measuring the infrared spectra of gases and vapors.

Designed for use at a wide range of pressures, they are the ideal choice for the analyst who demands superior performance characteristics, high standard specifications and in-built upgradability.

Based on the White cell principle of multiple light passes between an arrangement of reflecting mirrors, Cyclone™ gas cells are available in three sizes.

Cyclone™ series gas cells are suitable for operation in all modern FT-IR spectrometers using the Specac Benchmark™ baseplate provided as a standard.

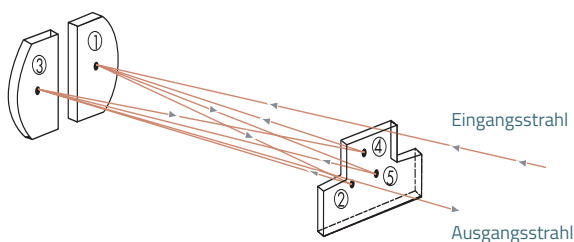
Cells are available as standard with a borosilicate glass body for operation at ambient temperatures and pressures ranging from vacuum to 15 psi. Protected gold mirrors, internal and external components made from nickel-plated aluminium and stainless steel, and Viton® O-Rings are combined to ensure the highest chemicals compatibility and protection from leaks.

Vacuum / gas inlet and outlet taps, KBr windows and a purgeable transfer optics body further enhance this already highly featured range.

Optional Purge bellows allow the transfer optics to be used under inert gas atmospheres (e.g. nitrogen) in applications where the elimination of atmospheric H₂O and CO₂ absorbance is required.

The cells are completely free from adhesives and all Viton® O-Ring seals are carefully pre-baked to solvents or out-gassing. Internal screws have small bleed holes drilled into them to prevent any trapped pockets of gas causing sample cross contamination.

All Cyclone™ series gas cells systems are CE compliant ensuring they can be operated safely at all times under the recommended conditions.



Beam path of the cyclone gas cell



Cyclone™ C2 gas cell with purge bellows

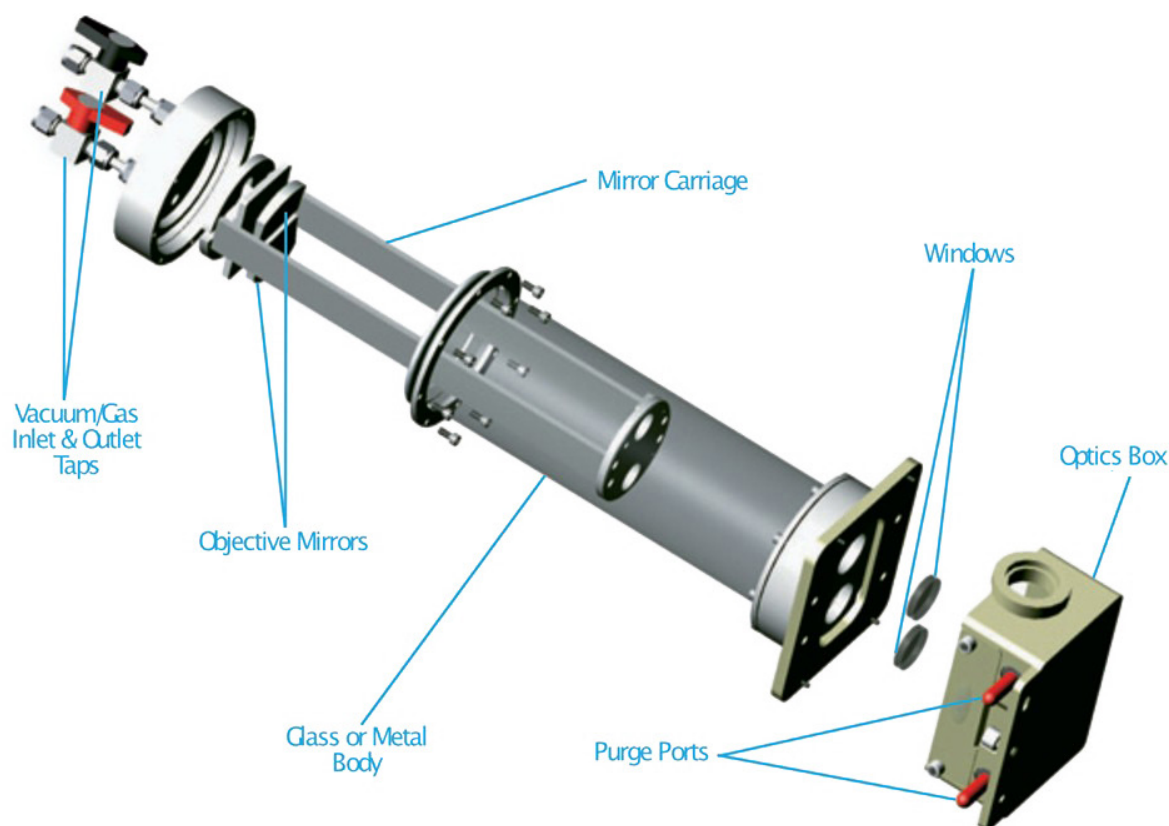
FEATURES

- **Configurable long pathlength**
Made to a specified pathlength within the ranges described below. Each of the three bodies permits a different range and has a different internal volume.
- **Adjustable mirror**
Adjustable mirror carriage which can be fitted to Cyclone™ cells to enable the user to vary the pathlength throughout the specified range.
- **Choose from different window materials**
To fit your application perfectly you can choose between the following window materials:
CaF₂, KBr and ZnSe

Cell	Base Pathlength	Pathlength Range	Volume
C2	12.5 cm	0.5 – 2.5 m (in 0.5 m steps)	0.19 liters
C5	25 cm	1 – 8 m (in 1 m steps)	1.33 liters
C10	26.4 cm	2.1 – 10.6 m (in 1.06 m steps)	2.60 liters

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Cyclone™ gas cell models configuration



Features of the range

Specifications of all models	
Pressure range:	Vacuum to 15 psi (with additional Gauge kit up to 125 psi)
Temperature range:	Ambient
Mirrors:	Gold (protected)
Window materials:	CaF ₂ ; KBr; ZnSe
Inlet/outlet fittings:	Stainless steel taps
O-Rings:	Viton®
Internal components:	Nickel-plated aluminium & stainless steel
Transfer optics:	Aluminium mirrors in purgeable optics box
Cell mount:	Benchmark™ series baseplate

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Cyclone™ C2

Volume: 0.19 liters
 Dimensions (mm): H 384 / W 153 / D 120



Variable Pathlength

Baseplate for your spectrometer (specify with your order)

Part-ID	pathlength	Material	Window
324102GCAV	0.5-2.5 m	Glas body	CaF ₂
324102GKAV	0.5-2.5 m	Glas body	KBr
324102GZAV	0.5-2.5 m	Glas body	ZnSe
324102MCAV	0.5-2.5 m	Metal body	CaF ₂
324102MZAV	0.5-2.5 m	Metal body	ZnSe

Fixed Pathlength

Choose from: 0.5 / 1.0 / 1.5 / 2.0 / 2.5 m (specify with your order)
 Baseplate for your spectrometer (specify with your order)

Part-ID	pathlength	Material	Window
324102GCFV	fixed	Glas body	CaF ₂
324102GKfV	fixed	Glas body	KBr
324102GZFV	fixed	Glas body	ZnSe
324102MCFV	fixed	Metal body	CaF ₂
324102MZfV	fixed	Metal body	ZnSe

Cyclone™ C5

Volume: 1.3 liters
 Dimensions (mm): H 536 / W 153 / D 130



Variable Pathlength

Baseplate for your spectrometer (specify with your order)

Part-ID	pathlength	Material	Window
324105GCAV	1 - 8 m	Glas body	CaF ₂
324105GKAV	1 - 8 m	Glas body	KBr
324105GZAV	1 - 8 m	Glas body	ZnSe
324105MCAV	1 - 8 m	Metal body	CaF ₂
324105MZAV	1 - 8 m	Metal body	ZnSe

Fixed Pathlength

Choose from: 1/2/3/4/5/6/7/8 m (specify with your order)
 Baseplate for your spectrometer (specify with your order)

Part-ID	pathlength	Material	Window
324105GCFV	fixed	Glas body	CaF ₂
324105GKfV	fixed	Glas body	KBr
324105GZFV	fixed	Glas body	ZnSe
324105MCFV	fixed	Metal body	CaF ₂
324105MZfV	fixed	Metal body	ZnSe

Cyclone™ C10

Volume: 2.6 liters
 Dimensions (mm): H 540 / W 153 / D 146



Variable Pathlength

Baseplate for your spectrometer (specify with your order)

Part-ID	pathlength	Material	Window
324110GCAV	2.1 - 10.6 m	Glas body	CaF ₂
324110GKAV	2.1 - 10.6 m	Glas body	KBr
324110GZAV/K	2.1 - 10.6 m	Glas body	ZnSe
324110MCAV	2.1 - 10.6 m	Metal body	CaF ₂
324110MZAV	2.1 - 10.6 m	Metal body	ZnSe

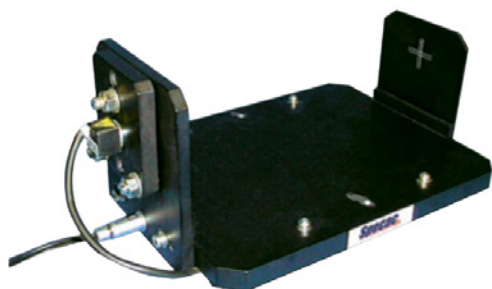
Fixed Pathlength

Choose from: 2.1/3.2/4.2/5.3/6.3/7.4/8.5/9.5/10.6 m (specify with your order)

Baseplate for your spectrometer (specify with your order)

Part-ID	pathlength	Material	Window
324110GCFV	fixed	Glas body	CaF ₂
324110GKfV	fixed	Glas body	KBr
324110GZFV	fixed	Glas body	ZnSe
324110MCFV	fixed	Metal body	CaF ₂
324110MZfV	fixed	Metal body	ZnSe

Accessoires / Optional Features



Benchmark™ Series Laser Alignment Accessory

This accessory allows the visual verification of the optical pathlength through Cyclone™ gas cells. This is especially useful when different pathlengths are regularly used with variable pathlength cells. The accessory is based on a low power (0.8mW) visible continuous wave LED precisely located in position in a Benchmark™ accessory housing. The gas cell simply slots into the alignment accessory. The 635 nm Class II laser can be powered from a battery unit or by the dedicated mains transformer supplied. This accessory is CE compliant.

Part ID: 324500



Pressure Gauge Kit

A pressure gauge kit is available to fit the Cyclone™ series gas cells. Gauge can be specified for low pressure operation (vacuum to 15 psi) and high pressure operation (vacuum to 125 psi). An integral pressure relief valve ensures that cells are automatically depressurised in the event of accidental over pressurisation.

Specac recommend the use of a pressure gauge when operation gas cells at elevated pressures.

Part ID: 324160

(specify high or low pressure with your order)



Desiccant Storage Caps

These caps are designed to fit over the optical inlet and outlet ports of the Cyclone™ to seal the transfer optic when the cells are not in use.

One of the caps contains a desiccant material which maintains a dry atmosphere within the transfer optic boy and extends the life of KBr windows.

Part ID: 324150



Purge Bellows

Allow the transfer optics to be used under inert gas atmospheres (e.g. nitrogen) in applications where the elimination of atmospheric H₂O and CO₂ absorbance is required.

Part ID: 310707