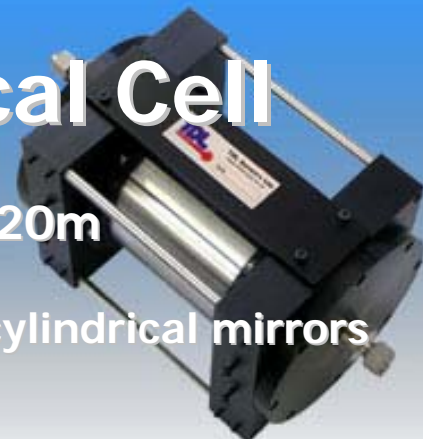


Multipass Optical Cell

- Compact
- Variable path length up to 20m
- Base length of 0.11m
- NIR, Mid-IR or UV coated cylindrical mirrors

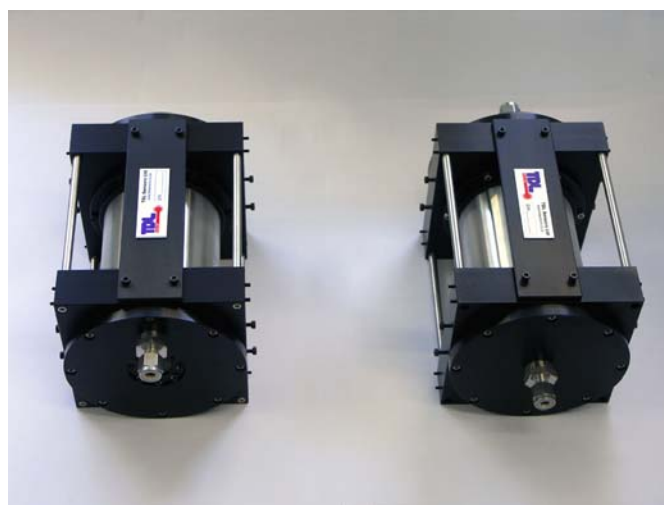


Multipass Optical Cell

A compact and versatile **multipass cell** for absorption spectroscopy from TDL Sensors Ltd.

Multipass optical cell offers:

- Variable optical path length up to 20m for a base length of 0.11m
- In-situ variation of optical path length
- Compact and rugged design
- Options for operation in the NIR, Mid-IR, and UV spectral regions



Features

- Variable optical path length up to 20m
- Base length 0.11m
- Volume of 0.5L
- In-situ variation of optical path length
- Inner tube can be removed without disturbing alignment
- The input and output beams are well separated
- Compact and rugged design

Applications

The multipass cell, with variable optical pathlength up to 20m and a base length of 0.11m, is well suited to absorption spectroscopy in scientific research and gas measurements in industrial environments.

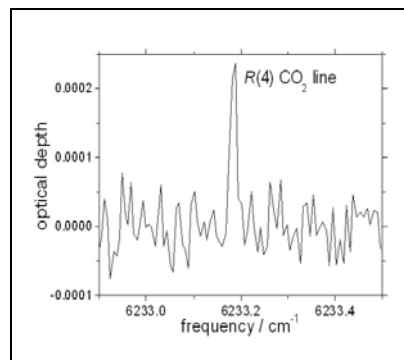
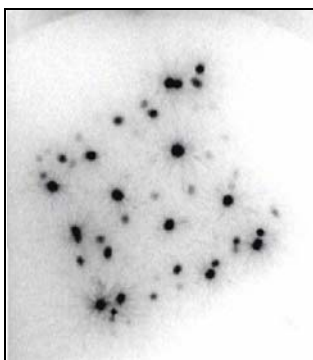
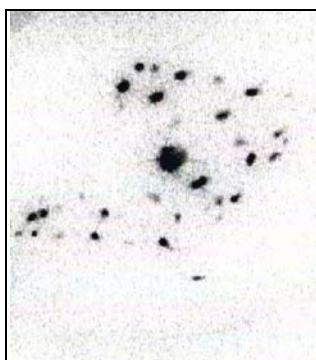
Ordering Options

Multipass cells with longer optical pathlengths are available upon request.

General specifications

Parameter	Value	Units
Optical path length	Up to 20	m
Base length	11	cm
Volume	500	cm ³
Optical axis height	6.0	cm
Mirror diameter	7.6	cm
Mirror reflectivity ($\lambda > 1 \mu\text{m}$)	>96	%
In-out beam half angle	10.2	degree
Input hole diameter	5.1	mm
Operating pressure	0.1 – 760	Torr
Dimensions		
Overall length	18	cm
Overall height	12	cm
Overall width	12	cm

Optical design	Two cylindrical mirror system with central coupling hole
Mirrors	Cylindrical mirror on AlMgSi1 substrate with protected gold coating
Wavelength range	1 – 5 μm
Body material	Aluminum, stainless steel



Beam spot patterns observed on the front and back cylindrical mirrors of the multipass optical cell adjusted for 138 passes (optical pathlength of 15.2m) of a 980nm laser diode beam.

Typical spectrum of CO₂ recorded at a pressure of 22 Torr using a 1605 nm DFB laser.

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