

10m optical path miniaturized gas chamber

1960-2400nm



● Product Description

The 10-meter optical input and electrical output gas absorption cell is used for various gas spectral analysis and detection. The optical path structure of the gas cell uses the self-patented design, the flat wave gas cell (SlimBoss Gas Cell) with excellent optical stability, and the auxiliary and high-stability optical packaging structure, which is mainly composed of the gas cavity, reflector, standard optical fiber connector, gas inlet and outlet, and shockproof base. The unique suspension optical path design has excellent vibration and temperature stability, can work stably in various



complex environments, and is very suitable for online real-time detection of various gases. It has low system noise and can be applied to trace gas analysis.

● Product features

The air chamber structure is stable and resistant to vibration and external extrusion. The air chamber is small in size, compact in structure, and easy to carry. The effective optical path is long. The input uses standard single-mode optical fiber, and the output uses PD or optical fiber

● Part Number

MP-OGC-1924-10-FFPD

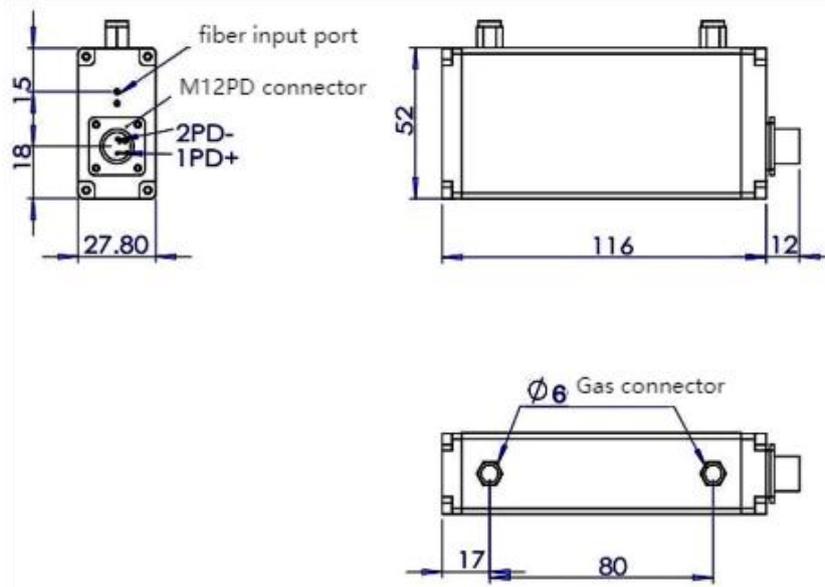
● Application area

Air pollutant monitoring、 Coal flue gas emission monitoring、 Waste incineration emission monitoring、 Chemical park pollutant monitoring

● Core parameters

Wavelength	Effective Optical Path	Maximum Input Optical Power
1960-2400nm	10m	2mW

● Dimension Drawing



● General Parameters

Parameter

Parameters	Technical specifications
Effective optical path	10m
Wavelength range	1960-2400nm
Insertion loss	≤2dB
Maximum input optical power	2mW
Fiber type	nufernSM1950 optical fiber
Output type	PD
Reflector	Dielectric film
Pressure range	≤0.3MPa
Gas interface	Φ6 straight-through
Gas volume	About 69mL
Total product weight	About 450g
Shell material	6061



Parameters	Technical specifications
Operating temperature	-20°C-70°C
Storage temperature	-40°C-85°C

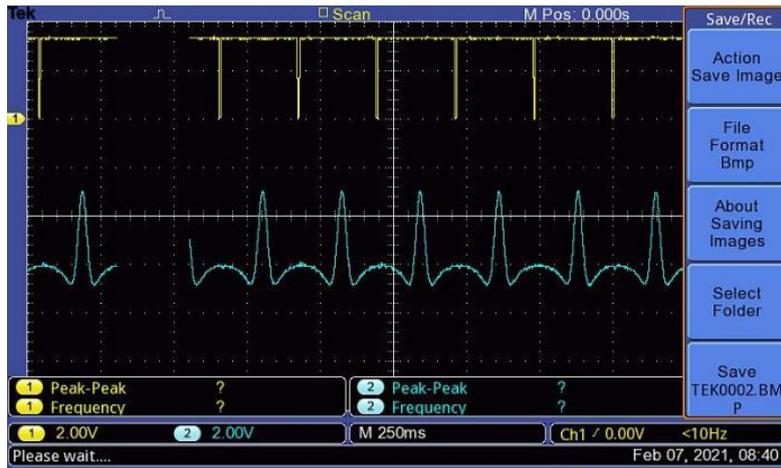
PD parameter

Parameters	Symbol	Min	Typical	Max	Unit
Storage temperature	Tstg	-50	-	125	°C
Operating temperature	Top	-40	25	85	°C
PD reverse bias voltage	VR	-	-	1	V
Soldering temperature	Tsold/t	260/10	-	-	°C/s
Wavelength range	λ_p	900	-	2600	nm
Photosensitive surface	Φ	0.3			mm
Responsivity	$Re=\lambda_p$	1	-	-	A/W
Dark current	ID(TC=+25°C/VR=0.5V)	0.4	-	4	uA
Capacitance	CJ(VR=1V, f=1MHz)	-	50	100	pF

10 meter optical path miniaturization chamber usage test

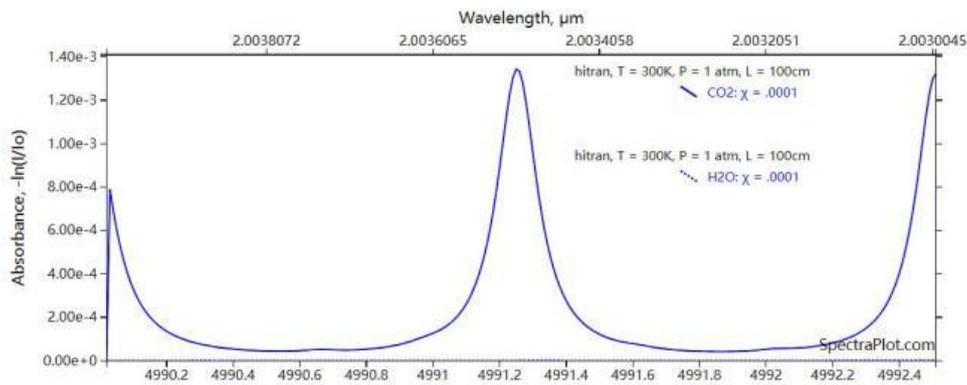
Using 2004nm and 2327nm DFB lasers, we built a TDLAS gas absorption system and measured the signal through the gas chamber.

For 2004nm DFB laser, it is used to measure the gas absorption concentration of CO₂:

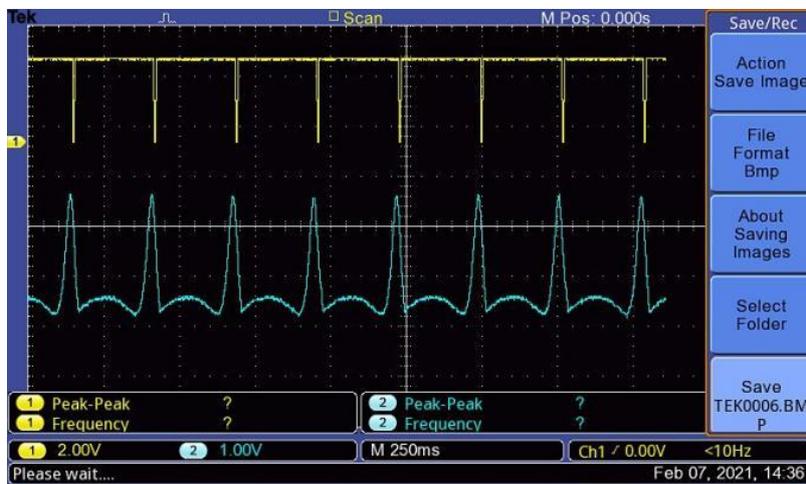


2004nm DFB laser measurement of CO₂ gas absorption concentration amplitude

Compare with our database data:

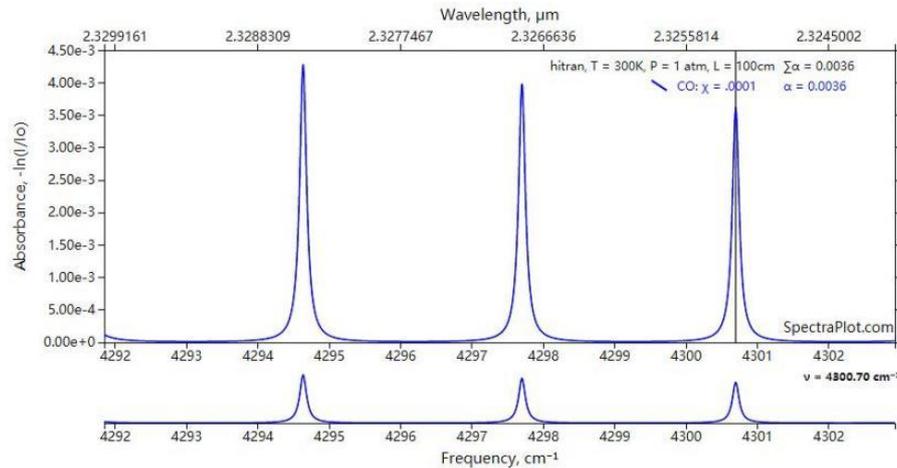


For 2327nm DFB laser, used to measure the gas absorption concentration of CO:



2327nm DFB laser measurement of CO gas absorption concentration amplitude

Compare with our database data:



Verify that this absorption peak is the absorption peak of CO gas we measured at 2327nm

By comparison, we can find that after using the 10-meter miniaturized gas chamber, the measured gas absorption molecular amplitude becomes larger as the optical path lengthens, and a lot of detection noise is filtered out, the interference to the signal becomes smaller and smaller, and the measurement accuracy is improved.

Ordering Information

Model: MP-GC-10M (1960~2400nm)

10M-----The optical path of the gas chamber is 10 meters

(1960-2400nm)-----The working wavelength range of the gas chamber