



Natural Gas Applications:

- Gas Turbine Fuel Gas Optimizing
- Gas Boiler Tuning
- Appliance Performance
- Natural Gas Well Spot Check
- City Gas Spot Check



CV PRO™ Features:

- 15 Second Response Time
- 20 Hour Battery Life
- Small & Light Weight
- Calibrates In Normal Air

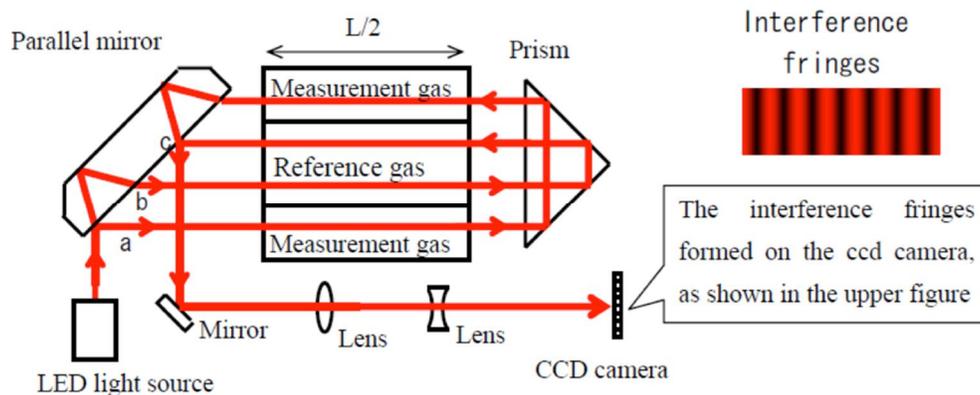
CV PRO™

Portable Calorific Value Measurement
BTU/cf • kcal/m³ • MJ/m³

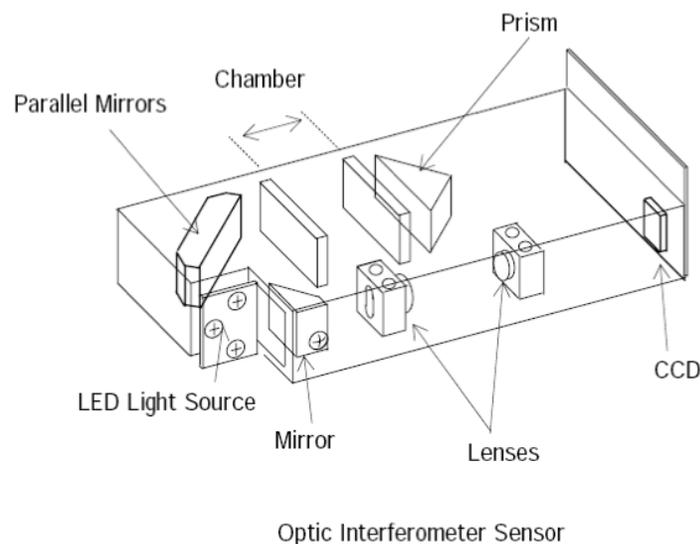
Methodology

The Reflection ratio of gas mixture is determined by the kinds of composing gases as well as the mixture ratio. As long as the kinds of composing gases are known, the mixture ratio (concentration) can be determined by measuring the reflection ratio.

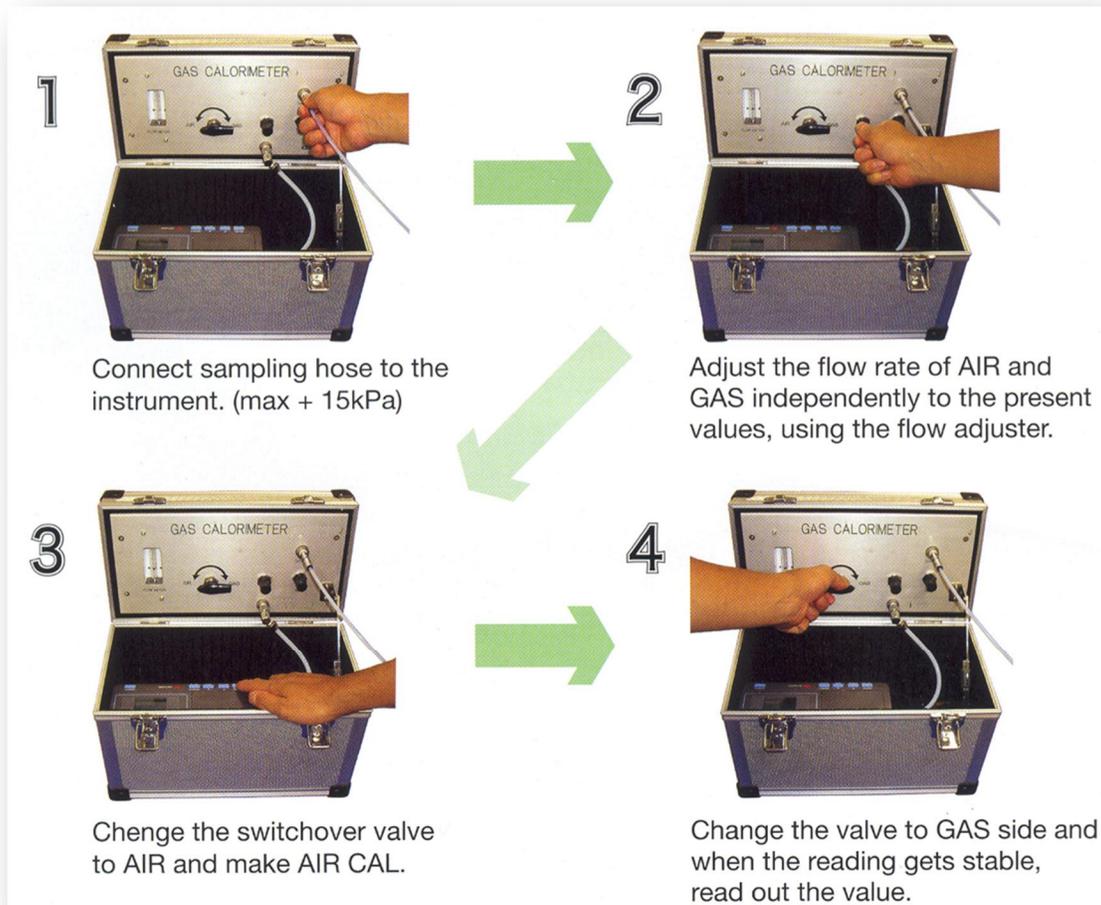
The optic interferometer applied in the CV Pro™ displays “Interference Stripes” on the CCD. The Interference Stripes move proportional to the reflection ratio. The amount of the movement is measured by the solution of the interference stripes on CCD with Fourier analysis, and the result is converted to the reflection ratio.



Concentration can be displayed by adding data like “measuring gas” and “base gas” to the reflection ratio determined by high accuracy. Sensitivity of the optic interferometer depends on the length of the chamber. Since the length of the chamber is physically unchanged by elapsing time, the high accuracy is maintained.



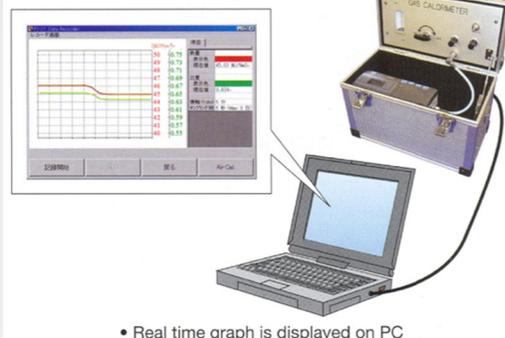
Overview of Operation



One Button Calibration

Features

Data recorder software (Optional)



Logging & Graphing



Easy to read LCD

SPECIFICATIONS

Model	CV PRO™
Detection principle	Interferometry
Measuring gas	Natural Gas or NG + LPG *See Note
Measurement range	25-55 MJ/Nm ³ (670-1475 BTU/cf)
0-1V external output	40-50 MJ/Nm ³ (1073-1341 BTU/cf)
Accuracy	±0.1 MJ/Nm ³ (2.7 BTU/cf) *See Note
Repeatability	±0.03 MJ/Nm ³ 10°C @ 1Atmosphere (0.8 BTU/cf)
Response time	≤15 sec Time to 90% response
Drifting	0.22 MJ/Nm ³ 10°C @ 1Atmosphere (5.9 BTU/cf)
Sample flow rate	~0.2L/min
Sample pressure	Atmospheric pressure to +15 kPa
Ambient temperature	-10 to +40°C, 95%RH (non-condensing)
Power source	C size alkaline battery x 4 or AC adaptor
Battery life	Approximately 20 hours (continuous power on)
Internal Data Logging	100 measurements logged showing date/time/Calorific Value
PC external output	Recorder output (RS-232C) by use of exclusive cable (optional)
Dimensions & weight	340(W) x 235(H) x 180(D) mm, approximately 5.5kg

*NOTE: Error per 1% vol.

Gas	Error (bias)	Calibration gas of like composition to the stream gas being measured can be used to calibrate the CV PRO™ to reduce measurement bias when the stream gas composition contains appreciable amount of one or more of the constituents noted in the error by percent table. Typically the factory calibration of the CV PRO™ will be calibrated to meet the ±0.1 MJ/Nm ³ (2.7 BTU/cf) accuracy statement.
O ₂	+0.237 MJ	
N ₂	+0.262 MJ	
CO	+0.172 MJ	
CO ₂	+0.405 MJ	
C ₂ H ₄	+0.0263 MJ	
C ₃ H ₆	+0.0601 MJ	

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