



CALIBRATION GAS

Technical Specification

Cylinder Volume	110 Litre
Cylinder Pressure	70 Bar
Dangerous Goods Class	2.2 (Non-flammable Compressed Gas)

Composition

The standard cylinder provided is a dual gas cylinder so can be used for most plant room applications, and includes:

- Methane 2.5% (50% LEL)
- Carbon Monoxide 200ppm
- Balance Air

Other Gases are available on request – this must be clearly specified at point of order.

Part Numbers & Options/Accessories

Part No	Description
CAL-GAS	110l Calibration Gas Cylinder (Specify Mixture)
CAL-KIT	0.5l/m Fixed Flow Regulator, Hood & 2m Hose

| OVERVIEW |

To complement our range of Gas Sensors and Detectors, Flamefast offer Calibration Gas and Calibration kits. These can be used to prove the correct operation of sensors (bump test), as well as to provide the required annual calibration.

With the 110l cylinder and 0.5l/min fixed flow regulator, you will get approximately 220 minutes of gas, which can be used to either bump test or calibrate 100 to 300 sensors. The Calibration Gas must be ordered specific to the target gas of the sensors you are working with, and they are non-refillable so must be disposed of appropriately.

PLEASE NOTE: THE BAC & TR RANGES DO NOT REQUIRE ANNUAL CALIBRATION

GAS SENSOR TECHNOLOGY

Electro-chemical Cells

- Used for Toxic Gases (i.e. CO)
- Contain a chemical compound that reacts with the target gas
- Depletes, dries out or get blinded over time
- Can look like they are working but may not respond.

Catalytic / Pellistor Sensors

- Use a heated element to 'burn' the target combustible gas
- Change in resistance across the element is used to determine the gas concentration
- Elements deteriorate or get coated by other substances over time

Infra-red

- Poison resistant with better long-term stability
- For combustible gas monitoring, CO₂, SF₆ and refrigerants
- Do not require oxygen to operate
- LED intensity can weaken or the lens glaze over

Semiconductor Sensors

- Reserved for cheap sensors or handheld devices
- Oversensitive to combustible gases or contaminants, inc steam and vapours from hand sanitiser
- Inaccurate, unstable and non-linear, difficult to calibrate in the field – avoid for safety applications

BUMP TEST

A 'Bump' test simply involves applying the target gas to the sensor for a short period of time to ensure it responds and alarms appropriately.

Sensors should be bump tested following installation to verify that they have been installed correctly and haven't been damaged during transit or installation. Periodic bump test may also be carried out depending on the site-specific requirements.

CALIBRATION

Sensors should be calibrated at least annually to counter any deterioration in the sensing elements.

This involves providing a Zero reference (usually clean air), then applying a Calibration Gas for a Span reference (typically the sensor range, or 50% LEL for combustible sensors) and adjusting the sensor readings to ensure they are reading correctly at both ends of the scale.