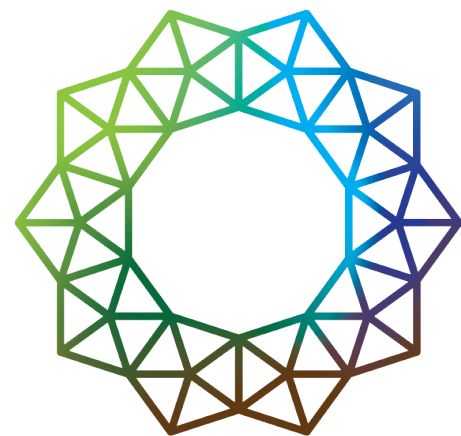


GAS ANALYZER CALIBRATION PROTOCOL (CH₄)

User calibrations define linear regression coefficients based on a zero and span value. This protocol checks for zero and span drift.

Last edit August 12, 2023



AMERIFLUX

Protocol purpose:

The purpose of calibration is to establish a known relationship between the sensor's response and the actual concentration of the gas being measured. Over time, sensors can drift or degrade, leading to measurement inaccuracies. Calibration corrects for these deviations and ensures that the instrument provides consistent and accurate readings.

PREPARATION

- Turn off any HVAC systems to minimize temperature fluctuations. Ideal conditions would be a stable temperature between 20–30°C.
- Power on and allow the instrument to reach equilibrium temperature for several hours. Note that optics takes about 30 minutes to reach equilibrium before calibration.
- Clean mirrors on the top and bottom of the instrument. Record before/after signal strengths.
- Begin filling out the calibration spreadsheet's relevant sections (e.g., date/time/location, serial numbers, pre-cal coefficients, ambient temperature, signal strength). Pre-cal coefficients are buried under the Help menu – About – Factory Setup – Watch LI-7700 – Cal.
- Connect all plumbing for calibration. Insert the calibration sleeve over the instrument. To monitor flow rates, use an in-line 0–5 LPM flow meter. Use a pigtail (6 + inches) on the outlet of the calibration sleeve.

EQUIPMENT

LI-COR 7700 open path analyzer

N₂ tank CH₄ tanks (span and check)

Paper tissues

CHEMICALS

N₂ CH₄

DANGERS

Chemicals
Physical
Environmental



PROTECTIVE GEAR

Safety glasses

