

Carbon Monoxide Analyzer For Landfill Applications Model: FD-600-CO-LAND

Date: 5th of August, 2022

<p>Description:</p>	<p>Herein documents conformance of our Carbon Monoxide Analyzer for Landfill to the requirements as set by <i>"ALTERNATIVE METHOD FOR THE FIELD DETERMINATION OF CARBON MONOXIDE CONCENTRATION IN LANDFILL GAS WELLHEADS UNDER 40 CFR 63, SUBPART AAAA."</i> These requirements were approved on 09/14/2021.</p>
<p>Gas Source:</p>	<p>Calibration gas bottles used in this analysis are certified to have an analytical uncertainty of +/- 2% verified by direct comparison to calibration standards traceable to National Institute of Standards and Technology (N.I.S.T) weights and/or N.I.S.T Gas Mixture reference materials. Supplied by GASCO and Ideal Calibrations.</p> <p>Low CO gas = 4.9ppm (for linearity) Medium CO gas = 192ppm (for linearity) Medium CO + H₂ gas = 206.4ppm [CO] + 204.8ppm [H₂] (for cross sensitivity) High CO gas = 916ppm (for linearity)</p>
<p>Location:</p>	<p>Testing and calibration undertaken at Forensics Detectors laboratory in Los Angeles, CA, USA.</p>
<p>Calibration Conditions:</p>	<p>Typical calibration was undertaken at ambient conditions: Temperature: 72F Humidity: 60 %RH</p>
<p>Procedure:</p>	<p>As specified in <i>"ALTERNATIVE METHOD FOR THE FIELD DETERMINATION OF CARBON MONOXIDE CONCENTRATION IN LANDFILL GAS WELLHEADS UNDER 40 CFR 63, SUBPART AAAA."</i> These requirements were approved on 09/14/2021.</p>

Manufacturer Documentation

LINEARITY

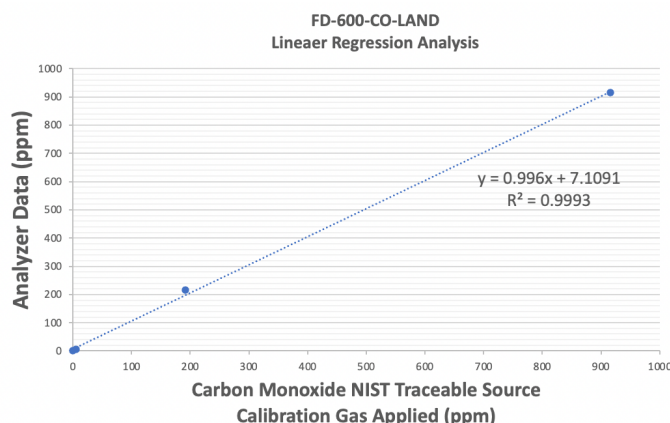
7.2.1 Select one cell from a batch of cells of the same model and make obtained from a CO cell supplier.

7.2.1.1 Introduce a standard to the selected CO cell at a low, mid, and high concentration within the cell span established by the CO cell supplier.

7.2.1.2 Determine the best fit line between the standard gases. The line must have an R-squared greater than or equal to 0.975 to be considered linear.

7.2.2 Verify the linearity of a specific model/make of CO cell any time a new model/make CO cell is obtained from a supplier, or the supplier has changed the specifications of the CO cell.

Calibration Gas Applied	FD-600-CO-LAND Analyzer Data Output
0ppm	0ppm
4.9ppm	6ppm
192ppm	215ppm
916ppm	916ppm



The instrument manufacturer must provide or make available information as follows:

7.2.3 A statement pertaining to the instrument range based on the CO cell supplier's specification.

7.2.4 A statement that the linearity of the CO cell used in the instrument has been verified.

7.2.5 A statement of the interference compensation limit.

7.2.6 A statement certifying that annual instrument performance checks have been conducted and the instrument passes those checks.

- The model FD-600-CO-LAND has a carbon monoxide detection **range** from 0 to 1000ppm.
- The model FD-600-CO-LAND **linearity** has been tested and verified.
- The model FD-600-CO-LAND **interference compensation to H₂** has been tested and verified.
- The model FD-600-CO-LAND is equipped with a H₂ compensated CO sensor that measures and reduces H₂ interference to less than 2.5% of the standard gas concentration applied.

Gases Applied	Gas	Interference Gas	Pass or Fail?
	{192 ppm CO}	206.4ppm (CO) + 204.8ppm (H ₂) Interference +/- 2.5% (5@200ppm)	
Analyzer Data	192ppm	196ppm	PASS

- The model FD-600-CO-LAND when manufacturer and prior to shipping passes all instrument performance checks. We recommend the customer to perform calibration between 6 to 12 months on an annual basis.

