

Carbon Monoxide Trace Level Analyzer (CO)
Minimum Specifications

1) General instrument specifications:

- a) Must be certified and listed on EPA "List of Designated Reference Methods and Equivalent Methods in accordance with Title 40, Part 53 of the code of Federal Regulations (40 CFR Part 53) dated July 22, 2008.
- b) Electronic temperature and pressure transducers capable of being turned off and on while the instrument is operating.
- c) The instrument must electronically generate zero, full scale and intermediate points for diagnostics and operator generated calibrations and checks without powering down.
- d) Microprocessor controlled using a minimum standard of Motorola 68HC11.
- e) Units will be factory set to 0 to 50 PPM.
- f) Noise at zero will be less than 0.05 parts per million.
- g) Lower detectable limit is 0.05 parts per million.
- h) Electronically store minimum of two weeks of 5-minute averages and diagnostic parameters.
- i) Instrument uses gas correlation wheel technique.
- j) Adjustable intensity front panel digital display- shows instrument's data and internal diagnostics.
- k) Instrument will operate on 120 volts AC, 60 Hz
- l) The instrument must have a carrying handle mounted on the side of the instrument, as opposed to the front or back of the instrument.
- m) Instrument returns to the run mode after one hour of non-use from a diagnostics or calibration status.

2) Communications: all the devices listed in this section will be physically built into the instrument's case.

- a) Two independent 0 to 10 volt single-ended analog outputs.
- b) One bi-directional DB 9F RS232 serial interfaces, capable of daisy chaining with other same brand analyzers, and dataloggers.
- c) One Ethernet RJ-45 jack.
- d) The instrument must communicate with all models of Environmental Systems Corp. Data loggers via analog and digital communications and DR DAS data loggers analog and digital communications.

3) Peripheral items must be included:

- a) A 120 volt 60 Hz AC external mechanical vacuum pump or pumps which are necessary for operation of this instrument.
- b) An instruction manual specifically written for this instrument only. A generic manual covering multiple air monitoring analyzers is not acceptable.
- c) Electrical schematic board layout drawings and electrical schematic diagrams are required.
- d) A 47 millimeter diameter particulate filter assembly which may be mounted internal or external.
- e) Two year's supply of expendable maintenance supplies shall be included. It will consist of:
 - 1. At least 100 each, 47 millimeter diameter particulate filters or filter elements
 - 2. At least 8 DFU filters for Nafion® brand or other air drier, if so equipped
 - 3. 2 sets of replacement pump diaphragms for any internally mounted pumps or maintenance kits for same pump.

4. 1 set of capillaries or orifices with 2 sets sintered filters and O rings, if equipped.

4) **Two-year warranty for parts, labor and return shipping to and from the factory, if the instrument must be returned for factory service.**

5) **Vendor will provide operator support technical assistance** during normal hours of business, which are 8:00 am to 5:00 pm, Monday to Friday, US Central Standard Time. A toll free telephone number will be provided to ODEQ personnel for this purpose.

6) **All costs associated with this instrument bid will be paid by the vendor.** Examples are shipping, operator training costs, training materials, instrument instruction manuals, vendor travel and telephone calls shall be included in the final bid price for this instrument.

7) **Vendor must show in writing how each individual item specification on this bid sheet has been met. This includes all subcategories.**

a) This document will be written on a separate sheet(s) of paper. The following information will be prominently displayed on each page.

1. company's name
2. main street address and post office box
3. telephone number
4. fax number
5. federal identification number
6. the current date when this document was completed

b) A copy of the original bid specifications sheet shall be affixed to the above document.

8) **Vendors must deliver the instrument within 60 days of notification of bid acceptance by Oklahoma Central Purchasing.** Oklahoma Department of Environmental Quality (ODEQ) shall have the exclusive right to refuse any and all instruments past this date and declare the contract null and void or select the next bidder that meets the minimum specifications as stated in this bid.

