

Thermo Environmental Instruments

MODEL 49C

U.V. Photometric O₃ Analyzer

Advanced Technology

The *Model 49C* combines the unique, time shared dual cell design of its predecessor, the *Model 49*, with an enhanced electronics package and user interface. The outcome is a powerful, easy-to-use, UV photometric based ozone analyzer which offers increased specificity via its balanced optical system.

Thermo Environmental Instruments design engineers have introduced a user interface which literally guides one through operation of the *Model 49C*. This is accomplished via a 4 line by 20 character Vacuum Fluorescent Display and simple layout of easy-to-use function keys. The end result is a combination of self explanatory display messages and intuitive function entries.

User programmable software capabilities allows selection of frequency at which internal zero/span activation and instrument calibration checks will occur. Additionally, field programmable measurement range settings can be stored in memory for subsequent recall.

Extended troubleshooting diagnostics now provide instantaneous indication of instrument operating parameter, status including: Pressure, Flow, DC Supply Voltages, Optical Bench Temperature, Ozonator Power Supply Voltage and Lamp Voltage.

KEY FEATURES

- Dual Cell Design
- Electronic Diagnostic Transducers
- Multi-Line Alpha Numeric Display
- Dedicated Communications Processor
- Remote Performance Diagnostics
- U.S. EPA Designated Method (EQOA-0880-047)



MODEL 49C SPECIFICATIONS

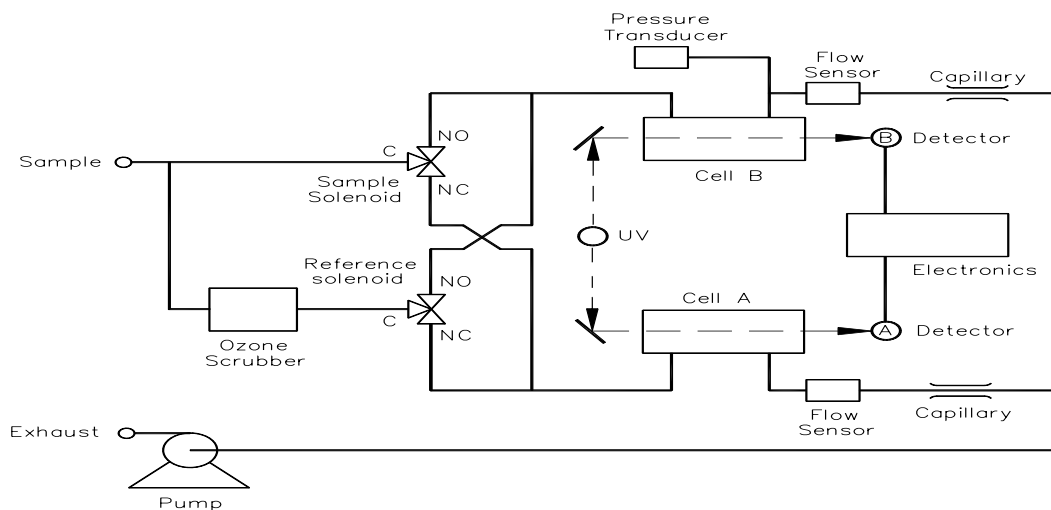
Ranges	0 - 50, 100, 200, 500, 1000 ppb and 0 - 1, 2, 5, 10, 20, 50, 100, 200 ppm
Zero Noise	0.5 ppb RMS
Lower Detection Limit	1.0 ppb
Zero Drift (24 hour)	<1 ppb/24 hour, <2 ppb/7 day
Span Drift	less than 1% per month (including drift of transducer)
Response Time	20 sec (10 seconds lag time)
Precision	1 ppb
Linearity	+ 1% full scale
Sample Flow Rate	2 liter/min. (standard) 1 - 3 LPM (optional)
Operating Temperature	20° - 30°C (may be safely operated over the range of 5° - 45°C)
Power Requirements	105 - 125 VAC, 60 Hz 220 - 240 VAC, 50 Hz 150 WATTS
Physical Dimensions	16.75" (W) x 8.62" (H) x 23" (D)
Weight	35 lbs.
Outputs	Selectable voltages and RS - 232 (standard) 4 - 20 mA isolated current (optional)

FLEXIBLE COMMUNICATIONS

- Bidirectional Addressable RS-232 Communication Port
- Analog Data Outputs with Selectable Voltages
- Isolated Current Outputs (optional)
- Analog Status Outputs (optional)
- Instrument Diagnostics, local and remote



Model 49C - OPTICAL SYSTEM



Superior Optical System

The *Model 49C* features a symmetric dual cell UV Photometric design whereby a simultaneous zero and sample measurement result in increased ozone specificity.

A real-time cancellation of potential interferant species occurs via the cyclic process illustrated in the diagram below. In the beginning of the cycle, sample enters one cell and reference air (sample with the ozone catalytically removed) enters the second cell. Detectors then measure the light intensity transmitted through each cell. During the second half of the cycle, the roles of the two cells are interchanged by appropriate switching of the solenoid valves.

Hence, any absorption of UV energy by chemical species other than ozone are cancelled out. Additionally, this balanced optical system serves to correct for fluctuations in lamp intensity and improve response time.

Specially designed flow sensors monitor sample/reference flow rates prior to Cell A and Cell B. Temperature and pressure correction provide more precise ozone concentration measurements. Additionally, a temperature regulated lamp environment minimizes zero drift and maintains a high level of signal stability.

For Price and Delivery Information, Contact:

Thermo Environmental Instruments

8 West Forge Parkway
Franklin, MA 02038 USA

Tel: 508 520-0430 Fax: 508 520-1460
E-mail: thermo@thermoei.com Web Site: www.thermoei.com