

CM5017 – CO₂ Coulometer

By Coulometric Detection Only

Instrument used to measure carbon as CO₂ in a carrier gas with coulometric precision.

The CM5017 measures carbon as CO₂ in a carrier gas. The gas stream is bubbled into a coulometric titration cell which contains a CO₂-sensitive ethanolamine solution. There, CO₂ reacts to form a strong, titratable acid. That acid, in turn, causes the ethanolamine solution's coulometric pH indicator to fade from blue to clear. The CM5017 photometer recognizes this color change and automatically prompts the instrument to initiate a current within the cell.

The current electrochemically generates a neutralizing base at a rate roughly comparable to 1500 micrograms of carbon per minute. As base is produced, the pH of the cell solution gradually returns to its initial level and the colorimetric indicator returns to blue. The current generated in this 100% efficient coulometric process is integrated to determine the total energy required. Using Faraday's Law of Electrolysis, the total charge used in the titration is directly proportional to the amount of CO₂ initially absorbed by the ethanolamine solution.

The automatic CM5017 allows the analyst to select the type of analysis to be run, as well as other user selectable parameters. Names, weights, volumes or areas of up to 50 samples can be entered, to be used by the CM5017 in calculating the final result.

Analytical progress is digitally displayed in user selectable units and a detailed data is displayed while each sample is running. A summary report is displayed on the touch screen during and after sample analysis runs.

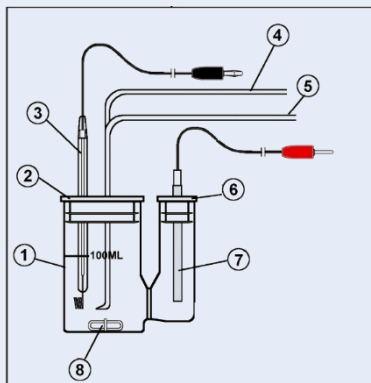
Detailed analysis data and parameters are automatically saved to USB Thumb Drive. Data can also be transferred through the serial and Ethernet ports located on the left side of the instrument for further data processing.

* An optional printer is available for detailed hard copy of data as well.

Part Numbers:

CM5017-01 for 110V / 50/60Hz

CM5017-02 for 220V / 50/60Hz



CM5017 CO₂ Coulometer

- No user calibration
- 100% efficient coulometric detection
- Wide, linear dynamic range
- Readability to 0.01 µg Carbon
- Relative standard deviations of < 0.2% for standard certified materials
- User selectable display units
- 12.1" LCD Touch Screen
- Keyboard for rapid Sample Data entry
- Typical analysis time of 7-8 minutes
- USB Flash Drive Storage
- LIMS Compatible

CM310-001 – Cell Reagent Kit includes:

- CM300-001 – Carbon Cathode Solution (1 gallon)
- CM300-002 – Carbon Anode Solution (16 ounces)
- CM300-003 – Potassium Iodide (50 grams)

CM210-032 – Titration Cell includes:

1. CM200-051 – Titration Cell with Side Arm
2. CM119-027 – Cathode Top, White Teflon
3. CM101-135 – Platinum Electrode (black lead)
4. CM190-020 – Gas Inlet Tube (blue tag)
5. CM190-021 – Gas Exit Tube (red tag)
6. CM119-028 – Anode Top, White Teflon
7. CM101-033 – Silver Electrode (red lead)
8. CM121-001 – Stir Bar