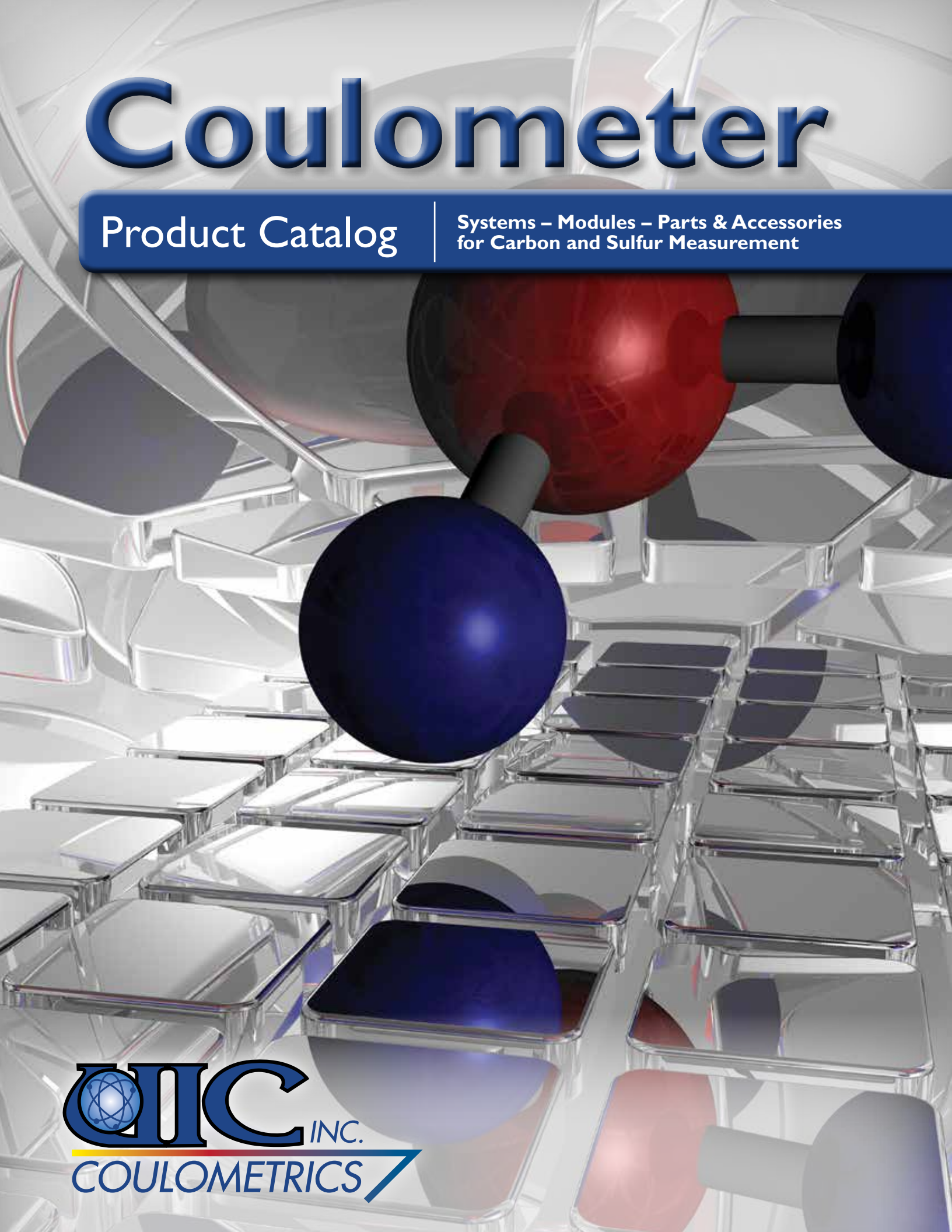
Coulometer

Product Catalog

Systems – Modules – Parts & Accessories for Carbon and Sulfur Measurement

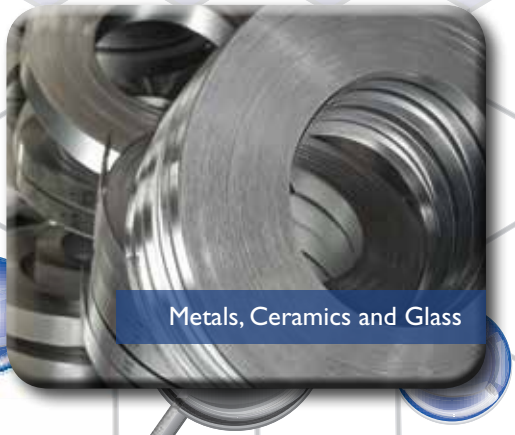


UIC INC.
COULOMETRICS

UIC, Inc. has been at the forefront of carbon and sulfur measurements since 1986. Our instruments are based upon the principles of coulometry and Faraday's Law, providing excellent accuracy and precision without requiring costly, time-consuming user calibrations. They are designed to analyze varying concentrations (from low ppm levels to 100%) in most complex matrices.


Environmental


Oceanographic


Metals, Ceramics and Glass


Chemical and Petrochemical


Geological

Table Of Contents:

CM130 – Total Carbon (TC) and Total Organic Carbon (TOC) Analyzer for Liquids

By Combustion and Coulometric Detection
Conforms To ASTM D 4129

Applications include: Water, wastewater, brines, process fluids, corrosive agents and acids.

The CM130 Total Carbon Analyzer is a complete analytical system capable of measuring total carbon and total organic carbon in aqueous samples. Combining a high-temperature combustion furnace with a highly sensitive CO_2 detector, the CM130 is capable of analyzing samples containing carbon concentrations from ppm levels to 100% (absolute) without user calibration. UIC's analyzers are rugged, accurate and adaptable to most TC/TOC applications. The CM130 system includes the following components listed below and pictured to the left.

CM5015 CO_2 Coulometer

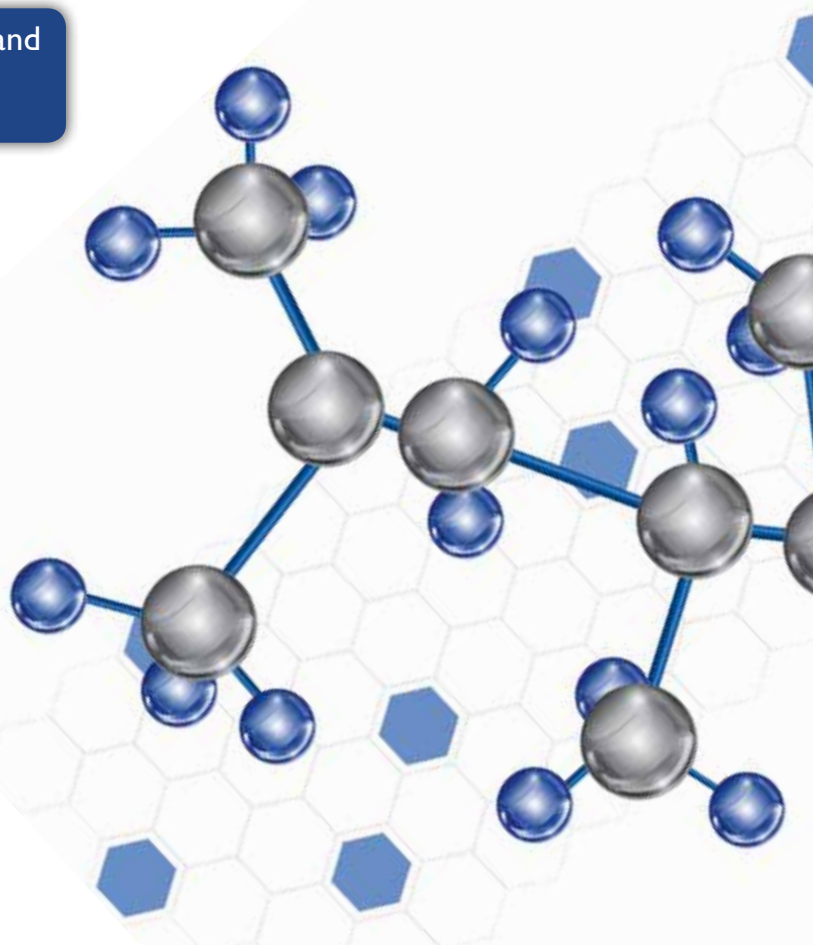
- No user calibration
- 100% efficient coulometric detection
- Wide, linear dynamic range
- Readability to 0.01 ug Carbon
- Relative standard deviations of < 0.2% for standard certified materials
- User selectable display units
- 10" LCD Touch Screen
- Typical analysis time of 7-15 minutes
- SD Card data storage
- LIMS Compatible

CM5300 Horizontal Furnace with CM5321 Furnace Kit

- Programmable up to 1100° C
- Pre-combustion scrubbers for removal of interferences from oxygen carrier gas
- Post-combustion scrubbers for removal of interfering gases formed during sample combustion
- Sample introduction using constant rate syringe

Part Number
CM130-01 110V, 50/60Hz
CM130-02 220V, 50/60Hz

CM120 – Total Carbon (TC) and Total Organic Carbon (TOC) Analyzer for Liquids



CM120 – TC / TOC Analyzer for Solids

Includes CM5015 CO_2 Coulometer, CM5300 Horizontal Furnace and CM5122 Furnace Kit with tools and accessories for the analysis of solid samples. Must also choose either Sample Introduction Kit CM5323 (small volume) or CM5324 (large volume) to be included with system.

Part Numbers
CM120-01 110V, 50/60Hz
CM120-02 220V, 50/60Hz

CM220 – Total Carbon Analyzer

By Automated Combustion and
Coulometric Detection

Applications include: Soils, sediments, geological materials, sludges, sulfur, coals, ceramic powders and column packing materials.

The CM220 Total Carbon Analyzer is a complete analytical system capable of measuring total carbon in a wide variety of sample types and matrices. Combining a high-temperature combustion furnace with a highly sensitive CO_2 detector, the CM220 is capable of analyzing samples containing total carbon concentrations from ppm levels to 100% without user calibration. The CM220 system includes the following components listed below and pictured to the left.

CM5015 CO_2 Coulometer

- No user calibration
- 100% efficient coulometric detection
- Wide, linear dynamic range
- Readability to 0.01 ug Carbon
- Relative standard deviations of < 0.2% for standard certified materials
- User selectable display units
- 10" LCD Touch Screen
- Typical analysis time of 7-8 minutes
- SD Card data storage
- LIMS Compatible

CM5200 Autosampler Furnace

- Two independent combustion zones programmable up to 1100° C
- 29 position sample carousel
- Post-combustion scrubbers for removal of interfering gases formed during sample combustion

Part Numbers

CM220-01 for 110V / 50/60Hz
CM220-02 for 220V / 50/60Hz

CM140 – Total Inorganic Carbon (TIC) Analyzer

By Acidification and Coulometric Detection
Conforms To ASTM D 513

Applications include:
Carbonates in pharmaceuticals, dissolved carbon dioxide in sea water, carbonates in geological materials, carbon dioxide in amine and hydrazine, carbonates in black liquors and carbonates in food.

The CM140 Total Inorganic Carbon Analyzer is a complete analytical system allowing the direct measurement of total inorganic carbon in a wide variety of sample matrices and concentrations. Combining a self-contained unit for the acidification of a sample (to evolve CO_2), with a highly sensitive CO_2 detector, the CM140 easily handles solid or liquid samples with concentrations from ppm levels to 100% inorganic carbon without user calibration. UIC's analyzers are rugged, accurate and adaptable to most TIC applications. The CM140 system includes the following components listed below and pictured to the left.

CM5015 CO_2 Coulometer

- No user calibration
- 100% efficient coulometric detection
- Wide, linear dynamic range
- Readability to 0.01 ug Carbon
- Relative standard deviations of < 0.2% for standard certified materials
- User selectable display units
- 10" LCD Touch Screen
- Typical analysis time of 7-10 minutes
- SD Card data storage
- LIMS Compatible

CM5230 Acidification Module

- 10, 25, 50 or 100 ml reaction vessels
- Selectable volume acid dispenser
- Internal air pump with flow controller
- Pre-acidification scrubber for removal of CO_2 from carrier gas
- Post-acidification scrubber for removal of interferents released during sample digestion
- Controlled sample heating and stirring

Part Number
CM140-01 for 110V / 50/60Hz
CM140-02 for 220V / 50/60Hz

No External Carrier Gas Needed

CM240 – Total Inorganic Carbon (TIC) Analyzer

By Automated Acidification
and Coulometric Detection
Conforms To ASTM D 513

Applications include: Soils, sediments, geological materials, sludges, sulfur, coals, ceramic powders, column packing materials.

The CM240 Total Inorganic Carbon Analyzer is a complete analytical system allowing the direct measurement of total inorganic carbon in a wide variety of sample matrices and concentrations. Combining a self-contained unit for the acidification of a sample (to evolve CO_2), with a highly sensitive CO_2 detector, the CM240 easily handles solid or liquid samples with concentrations from ppm levels to 100% inorganic carbon without user calibration. The CM240 system includes the following components listed below and pictured to the left.

CM5015 CO_2 Coulometer

- No user calibration
- 100% efficient coulometric detection
- Wide, linear dynamic range
- Readability to 0.01 ug Carbon
- Relative standard deviations of < 0.2% for standard certified materials
- User selectable display units
- 10" LCD Touch Screen
- Typical analysis time of 7-8 minutes
- SD Card data storage
- LIMS Compatible

CM5240 Acidification Module

- 45 position carousel
- Low dead volume reaction chamber
- Self cleaning
- Pre-acidification scrubber for removal of CO_2 from carrier gas
- Post-acidification scrubber for removal of interferents released during sample digestion
- Controlled sample heating

Part Numbers
CM240-01 for 110V / 50/60Hz
CM240-02 for 220V / 50/60Hz

CM150 – Total Carbon (TC), Total Organic Carbon (TOC) and Total Inorganic Carbon (TIC) Analyzer

By Combustion, Acidification
and Coulometric Detection
Conforms To ASTM D 513 and ASTM D 4129

Applications include:
Pharmaceuticals, sea water, amines and hydrazines, black liquors, food, soils, sediments, geological materials, sludges, sulfur, liquids containing particulates, water and wastewater, brines, process fluids, corrosive agents and acids.

The CM150 Total Carbon Analyzer is a complete analytical system capable of measuring total carbon, total organic carbon and total inorganic carbon in solid and/or liquid samples. Combining a high-temperature combustion furnace, self-contained acidification module and a highly sensitive CO_2 detector, the CM150 offers the flexibility to analyze most any sample type and concentration with a precision unmatched by other analytical techniques. The CM150 system includes the following components listed below and pictured above.

CM5300 Horizontal Furnace

- Programmable up to 1100° C
- Pre-combustion scrubbers for removal of interferences from oxygen carrier gas
- Post-combustion scrubbers for removal of interfering gases formed during sample combustion

CM5230 Acidification Module

- 10, 25, 50 or 100 ml reaction vessels
- Selectable volume acid dispenser
- Internal air pump with flow controller
- Pre-acidification scrubber for removal of CO_2 from carrier gas
- Post-acidification scrubber for removal of interferences released during sample digestion
- Controlled sample heating and stirring

Part Numbers
CM150-01 for 110V / 50/60Hz
CM150-02 for 220V / 50/60Hz

CM5015 CO_2 Coulometer

- No user calibration
- 100% efficient coulometric detection
- Wide, linear dynamic range
- Readability to 0.01 ug Carbon
- Relative standard deviations of < 0.2% for standard certified materials
- User selectable display units
- 10" LCD Touch Screen
- Typical analysis time of 7-15 minutes
- SD Card data storage
- LIMS Compatible

CM250 – TC, TOC and TIC Analyzer

By Automated Combustion, Acidification and Coulometric Detection
Conforms To ASTM D 513

Applications include:
Pharmaceuticals, food, soils, sediments, geological materials, sulfur and coal.

The CM250 Total Carbon Analyzer is a complete analytical system capable of measuring total carbon, total organic carbon and total inorganic carbon in solid samples. Combining a high-temperature combustion furnace, self-contained acidification module and a highly sensitive CO_2 detector, the CM250 offers the flexibility to analyze most any sample type and concentration with a precision unmatched by other analytical techniques. The CM250 system includes the following components listed below and pictured above.

CM5200 Autosampler Furnace

- Two independent combustion zones programmable up to 1100° C
- 29 position sample carousel
- Post-combustion scrubbers for removal of interfering gases formed during sample combustion

CM5240 Auto-Acidification Module

- 45 position carousel
- Low dead volume reaction chamber
- Self cleaning
- Pre-acidification scrubber for removal of CO_2 from carrier gas
- Post-acidification scrubber for removal of interferences released during sample digestion
- Controlled sample heating

Part Numbers
CM250-01 for 110V / 50/60Hz
CM250-02 for 220V / 50/60Hz

CM5015 CO_2 Coulometer

- No user calibration
- 100% efficient coulometric detection
- Wide, linear dynamic range
- Readability to 0.01 ug Carbon
- Relative standard deviations of < 0.2% for standard certified materials
- User selectable display units
- 10" LCD Touch Screen
- Typical analysis time of 7-10 minutes
- SD Card data storage
- LIMS Compatible

CM180 – Surface Carbon Analyzer

By High Temperature Oxidation and Coulometric Detection

Applications include: Cold rolled steel surfaces, silicon wafers & substrates, galvanized & aluminum surfaces, catalysts and glass.

The CM180 Surface Carbon Analyzer is a complete analytical system capable of measuring the surface carbon on a wide variety of non-combustible materials including metals and glass. Combining a high-temperature oxidation furnace and a highly sensitive CO_2 detector, the CM180 provides a direct measurement of surface carbon levels without the need for calibration using difficult-to-obtain surface carbon "standards". The CM180 system includes the following components listed below and pictured above.

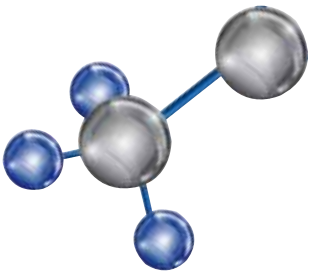
CM5015 CO_2 Coulometer

- No user calibration
- 100% efficient coulometric detection
- Wide, linear dynamic range
- Readability to 0.01 ug Carbon
- Relative standard deviations of < 0.2% for standard certified materials
- User selectable display units
- 10" LCD Touch Screen
- Typical analysis time of 7-15 minutes
- SD Card data storage
- LIMS Compatible

CM5300 Horizontal Furnace with CM5322 and CM5324 Furnace Kits

- Programmable up to 1100° C
- Pre-combustion scrubbers for removal of interferences from oxygen carrier gas
- Post-combustion scrubbers for removal of interfering gases formed during sample combustion
- Sample introduction using porcelain boats and manipulator rod

Part Number
CM180-01 for 110V / 50/60Hz
CM180-02 for 220V / 50/60Hz



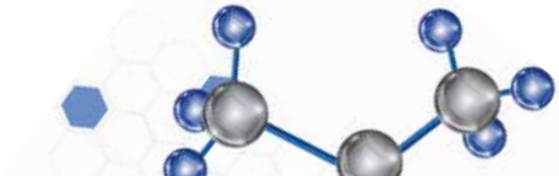
CM190 – Surface Carbon Analyzer

By High Temperature Oxidation and Coulometric Detection

Dual Zone Heating

The CM190 applications and features are the same as the CM180 specifications above except it comes standard with a CM5380 Dual Zone Furnace and 5381 Furnace Kit. The CM190 system is capable of measuring organic and non-organic surface carbon.

Part Numbers
CM190-01 for 110V / 50/60Hz
CM190-02 for 220V / 50/60Hz



CM320 – Total Sulfur Analyzer

By Combustion and Coulometric Detection

Applications include: Total sulfur in organics, coal, geological materials, inorganics, natural products, foods and beverages.

The CM320 Total Sulfur Analyzer is a complete analytical system allowing the direct measurement of total sulfur in a wide variety of sample matrices and concentrations. The CM320 consists of a dual zone, high temperature furnace and a sulfur coulometer. The CM320 easily handles solid or liquid samples with concentrations from ppm levels to 100% without user calibration. The CM320 system includes the following components listed below and pictured above.

CM5015S SO_2 Coulometer

- No user calibration
- Wide, linear dynamic range
- Readability to 0.01 ug Sulfur
- Relative standard deviations of .2% or better for standard certified materials
- 10" LCD touch screen
- Typical analysis time of 7-15 minutes
- SD card data storage
- LIMS compatible

CM5380 Dual Zone with CM5382 Sample Introduction Kit

- Programmable up to 1100° C
- Separate catalyst zone
- Automated oxygen dosing
- Split-tube furnace design for easy maintenance

Part Numbers

CM320-01 for 110V / 50/60Hz

CM320-02 for 220V / 50/60Hz

CM340 – Total Sulfite, SO_2 / H_2S Analyzer

By Acidification and Coulometric Detection

Applications include: Total sulfites in foods, dissolved SO_2 and H_2S in amine scrubbing solutions, and sulfites in geological materials and wallboard.

The CM340 Total Sulfite, SO_2/H_2S Analyzer is a complete analytical system allowing the direct measurement of total sulfites or dissolved SO_2/H_2S in a wide variety of sample matrices and concentrations. Combining a self-contained unit for the acidification of a sample (to evolve SO_2 and/or H_2S), with a highly sensitive SO_2/H_2S detector, the CM340 easily handles solid or liquid samples with concentrations from ppm levels to 100% without user calibration. The CM340 system includes the following components listed below and pictured to the left.

CM5015S SO_2 Coulometer

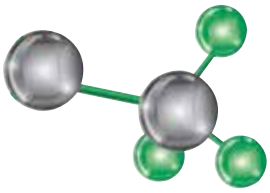
- No user calibration
- Wide, linear dynamic range
- Readability to 0.01 ug Sulfur
- Relative standard deviations of .2% or better for standard certified materials
- 10" LCD touch screen
- Typical analysis time of 7-10 minutes
- SD card data storage
- LIMS compatible

CM5230 Acidification Module

- 10, 25, 50 or 100 ml reaction vessels
- Selectable volume acid dispenser
- Internal air pump with flow controller
- Pre-acidification scrubber for removal of CO_2 from carrier gas
- Post-acidification scrubber for removal of interferents released during sample digestion
- Controlled sample heating and stirring

Part Number
CM140-01 for 110V / 50/60Hz
CM140-02 for 220V / 50/60Hz

No External Carrier Gas Needed



CM440 – Total Sulfite, SO_2 / H_2S Analyzer

By Acidification and Coulometric Detection

The CM440 applications and features are the same as the CM340 specifications above except it comes standard with a CM5240 Auto-Acidification Module.

CM5240 Auto-Acidification Module

- 45 position carousel
- Low dead volume reaction chamber
- Self cleaning
- Post-acidification scrubber for removal of interferents released during sample digestion
- Controlled sample heating

Part Numbers
CM440-01 for 110V / 50/60Hz
CM440-02 for 220V / 50/60Hz

CM740 – Simultaneous CO_2 / H_2S Amine Analyzer

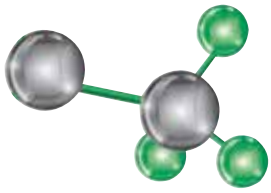
By Acidification and Coulometric Detection

Applications include:
Instrument used to determine dissolved CO_2 and H_2S concentrations in amine scrubbing solutions with coulometric precision.

The CM5016 with CM5230 Acidification Module is a complete analytical system typically used for the analysis of amine solutions that are used to remove environmentally controlled emissions from flue gases. This method measures the amount of carbon dioxide (CO_2) and the amount of hydrogen sulfide (H_2S) in the scrubbing solution. This result is used along with other analyses to determine the amine scrubbing solution's efficiency and remaining capacity. This procedure may also be used for the analysis of "sour" water. This system includes the following components listed below and pictured above.

CM5016 CO_2/SO_2 Coulometer

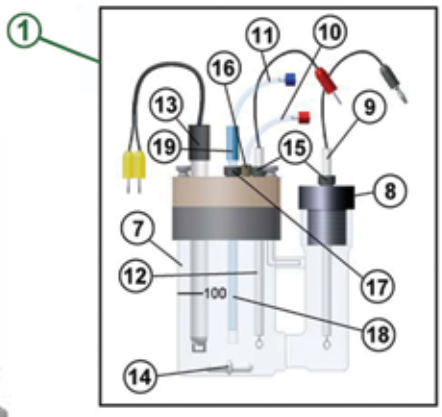
- No user calibration
- 100% efficient coulometric detection
- Wide, linear dynamic range
- Readability to 0.01 ug Carbon
- Relative standard deviations of < 0.2% for standard certified materials
- User selectable display units
- 10" LCD Touch Screen
- Typical analysis time of 7-8 minutes
- SD Card data storage
- LIMS Compatible

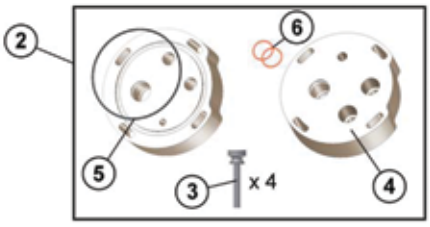


CM5230 Acidification Module

- 10, 25, 50 or 100 ml reaction vessels
- Selectable volume acid dispenser
- Internal air pump with flow controller
- Pre-acidification scrubber for removal of CO_2 from carrier gas
- Post-acidification scrubber for removal of interferences released during sample digestion
- Controlled sample heating and stirring

Part Numbers
CM740-01 for 110V / 50/60Hz
CM740-02 for 220V / 50/60Hz





Part	Number	Description
1	**CM210-031**	**Complete Simultaneous Sulfur Cell**
2	CM119-078	Anode Top Assembly
3	CM111-083	Thumb Screws
4	CM118-442	Anode Top
5	CM153-035	O-Ring, EPDM, -138
6	CM153-036	O-Rings, Silicone, -111
7	CM210-030	Cell with Ring Attached
8	CM119-077	Cathode Top
9	CM101-135	Platinum Electrode
10	CM101-136	Cell Outlet Tube
11	CM101-209	Cell Inlet Tube
12	CM101-210	Pt Electrode w/ Pin Plug
13	CM101-275	Detector Electrode
14	CM121-006	Stir Bar, 1-1/2"
15	CM191-057	Nut, Flangeless, 1/4"
	CM191-058	NOT SHOWN- Ferrule, Flangeless, 1/4"
16	CM191-059	Nut, 5/16-24, PEEK
	CM191-060	NOT SHOWN- Ferrule, Flangeless, 1/8"
17	CM191-061	Nut, Flangeless, 5/16"
	CM129-120	NOT SHOWN- Ferrule, ETFE, 7mm
18	CM200-062	Dispersion Tube
19	CM191-001	Union, 1/4" x 1/8"

CM5700 AutoMateFX Autosampler

The CM5016 is also available with the CM5700 AutoMateFX Autosampler.

CM5700 AutoMateFX Autosampler

- 45 position carousel
- Low dead volume reaction chamber
- Post-acidification scrubber for removal of interferents released during sample digestion

Order the CM5700 AutoMateFX Autosampler separately from the CM5016 system.

Part Numbers
CM5700-01 for 110V / 50/60Hz
CM5700-02 for 220V / 50/60Hz

CM5015 – CO_2 Coulometer

By Acidification and Coulometric Detection

Applications include: Instrument used to measure carbon as CO_2 in a carrier gas with coulometric precision.

The CM5015 measures carbon as CO_2 in a carrier gas. The gas stream is bubbled into a coulometric titration cell which contains a CO_2-sensitive ethanolamine solution. There, CO_2 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 CM5015 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 CO_2 initially absorbed by the ethanolamine solution.

The automatic CM5015 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 CM5015 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 can be accessed on the touch screen during and after sample analysis runs.

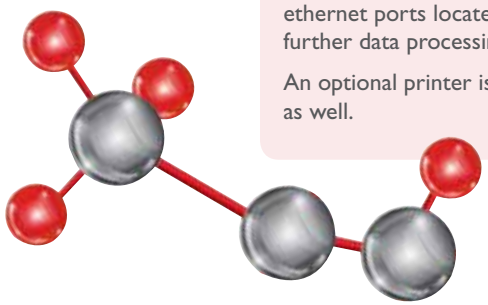
Detailed analysis data and parameters are automatically saved to SD card. Data can also be transferred through the serial and ethernet ports located on the left side of the instrument for further data processing.

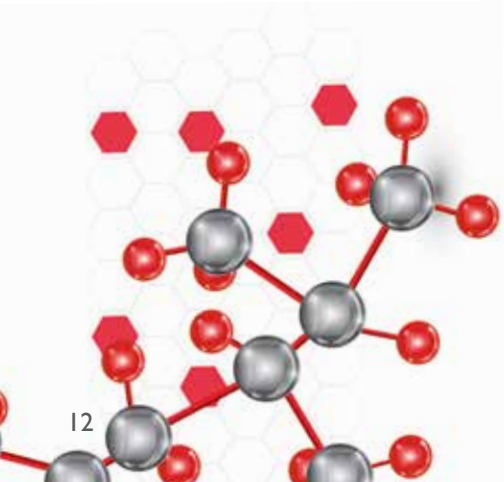
An optional printer is available for detailed hard copy of data as well.

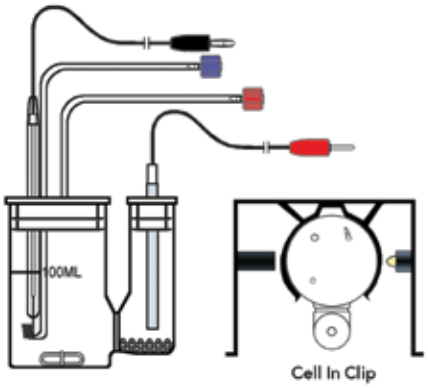
CM5015 CO_2 Coulometer

- No user calibration
- 100% efficient coulometric detection
- Wide, linear dynamic range
- Readability to 0.01 ug Carbon
- Relative standard deviations of < 0.2% for standard certified materials
- User selectable display units
- 10" LCD Touch Screen
- Typical analysis time of 7-8 minutes
- SD Card data storage
- LIMS Compatible

Part Numbers
CM5015-01 for 110V / 50/60Hz
CM5015-02 for 220V / 50/60Hz







CM210-015 – Titration Cell includes:

- CM200-051 – Titration Cell with Side Arm
- CM101-135 – Platinum Electrode (black lead)
- CM101-033 – Silver Electrode (red lead)
- CM101-136 – Gas Exit Tube (red fitting)
- CM101-137 – Gas Inlet Tube (blue fitting)
- CM119-027 – Cathode Top, White Teflon
- CM119-028 – Anode Top, White Teflon
- CM121-001 –Stir Bar

Part Numbers
CM210-015

CM310-001 – Cell Reagent Kit includes:

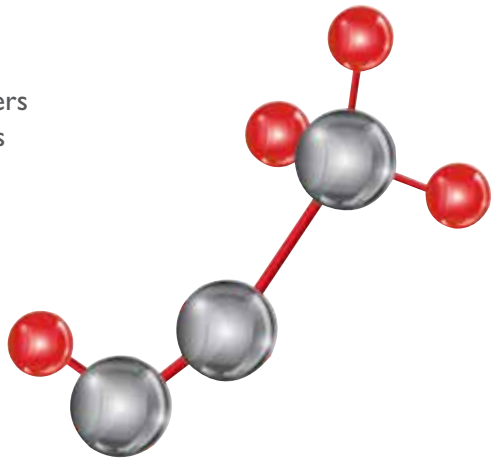
- CM300-001 – Carbon Cathode Solution (1 gallon)
- CM300-002 – Carbon Anode Solution (16 ounces)
- CM300-003 – Potassium Iodide (50 grams)

Part Numbers
CM310-001

CO_2 Coulometer –Parts & Supplies

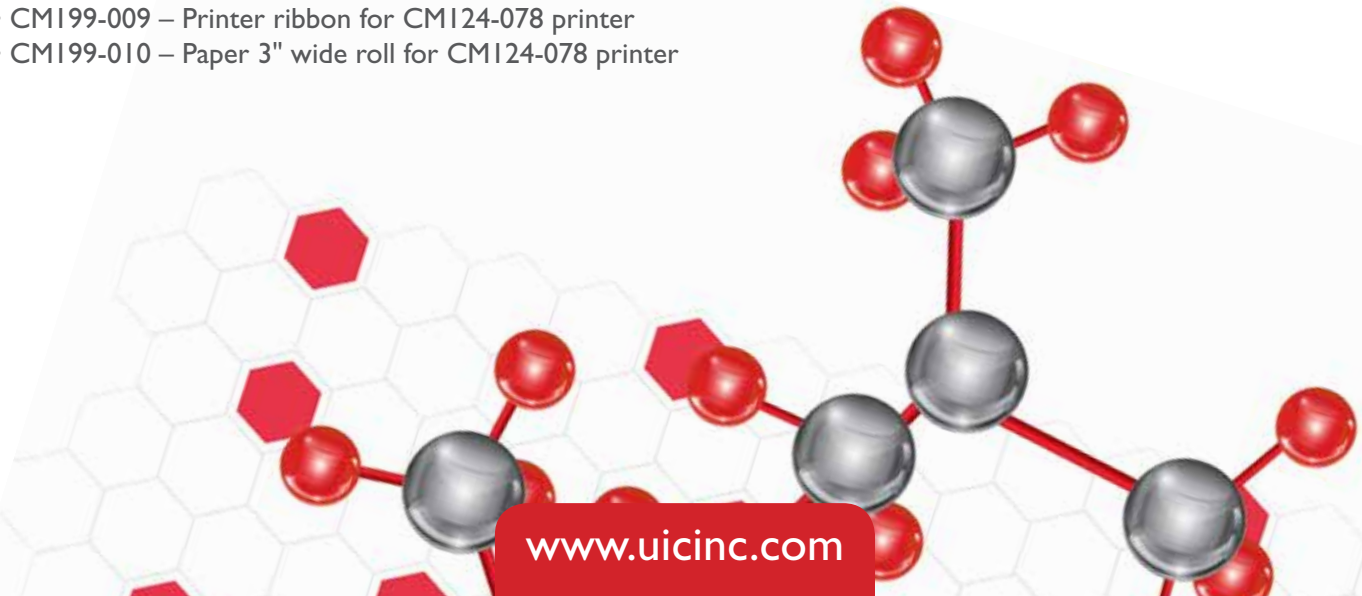
Electrodes
- CM101-033 – Silver Electrode for all carbon coulometers
- CM101-034 – Platinum Electrode for CM5011 coulometers only
- CM101-135 – Platinum Electrode with banana plug for CM5012, CM5014, CM5015 & CM5016

Spare Parts & Accessories
- CM101-136 – Cell outlet tube with red luer lock connector
- CM101-137 – Cell inlet tube with blue luer lock connector
- CM119-013 – Component attachment clip (2 1/4")
- CM119-027 – Top, white Teflon, cathode compartment for all carbon coulometers
- CM119-028 – Top, white Teflon, anode compartment for all carbon coulometers
- CM121-001 – Stir bar (1")
- CM129-066 – Tubing, 3/32" inside diameter, (F), luer lock
- CM129-071 – Male luer connector with barbs, 1/16" inside diameter
- CM129-072 – Luer lock ring, red
- CM129-073 – Luer lock ring, blue
- CM129-074 – Lock nut
- CM140-005 – Lamp, L4038, coulometer
- CM151-017 – Lamp socket
- CM190-009 – Tubing, Teflon, 1/16" inside diameter x 1/8" outside diameter
- CM190-010 – Tubing, Teflon, 3/32" inside diameter x 5/32" outside diameter
- CM191-001 – Unions, small, 1/4" x 1/8" (10 per package)
- CM192-003 – Check valves (6 per package)
- CM200-051 – Cell with side arm (straight sides) for all coulometers
- CM210-015 – Carbon coulometer cell assembly, CM5012, CM5014, CM5015 & CM5016
- CM210-016 – Carbon coulometer cell assembly, CM5010 & CM5011



Chemicals
- CM300-001 – Carbon cathode solution (1 gallon)
- CM300-002 – Carbon anode solution (16 ounces)
- CM300-003 – Potassium iodide (50 grams)
- CM301-002 – Calcium carbonate standard (100 grams)
- CM310-001 – Carbon cell reagent kit

Printers
- CM124-078 – Printer, 3" format impact printer, cable, power supply, paper & ribbon
- CM199-006 – Printer paper for CM5014 (250 sheets)
- CM199-007 – Ribbon, KXP2130 printer for CM5014
- CM199-009 – Printer ribbon for CM124-078 printer
- CM199-010 – Paper 3" wide roll for CM124-078 printer



CM5015S – SO_2 Coulometer

By Combustion, Acidification and Coulometric Detection

Applications include: Instrument used to determine total sulphur, SO_2 and H_2S in a solution with coulometric precision.

The CM5015S quantitatively titrates SO_2 and H_2S. Typical applications include the determination of total sulphur (by combustion) and the determination of SO_2 and H_2S (by acid evolution). The coulometer cell is filled with a solution which initially contains a slight excess of free iodine. When SO_2 or other reducing substances enter the cell, iodine is consumed. The amperometric-sensing circuit detects the deficiency of iodine in the solution and causes iodine to be electrically generated at a rate proportional to the sensed deficiency. When all of the substance has been titrated, the iodine is restored to its initial concentration, and the quantity of the titration is read directly on the display in user-selectable units. Since the coulometric efficiency is 100 percent, sample calibration is not necessary. The linear range and accuracy of the coulometric technique exceeds that obtained by other detection methods.

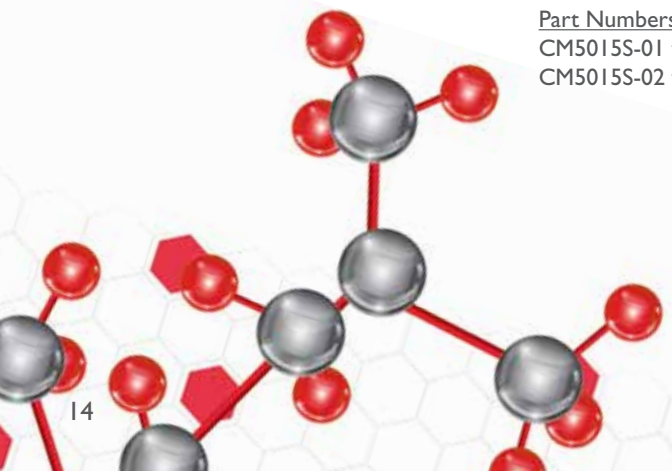
The CM5015S features the following advantages:

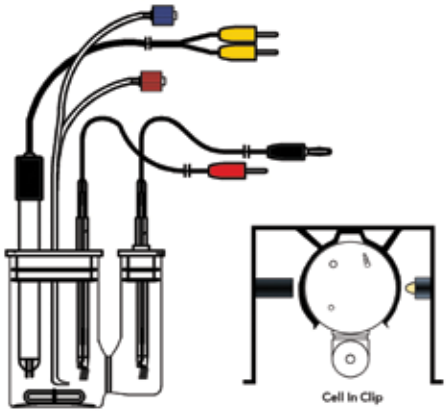
- Factory calibration – does not require sample standardization or calibration
- Rapid analysis time
- User friendly, all peripherals are designed for ease of operation
- Minimum maintenance
- High reliability
- High sensitivity

CM5015S SO_2 Coulometer

- No user calibration
- 100% efficient coulometric detection
- Wide, linear dynamic range
- Readability to 0.01 ug Sulfur
- Relative standard deviations of < 0.2% for standard certified materials
- User selectable display units
- 10" LCD Touch Screen
- Typical analysis time of 7-8 minutes
- SD Card data storage
- LIMS Compatible

Part Numbers
CM5015S-01 for 110V / 50/60Hz
CM5015S-02 for 220V / 50/60Hz





CM210-028 – Titration Cell includes:

- CM200-051 – Titration Cell with Side Arm
- CM101-210 – Platinum Anode (red lead)
- CM101-275 – Detector Electrode
- CM101-136 – Gas Exit Tube (red fitting)
- CM101-137 – Gas Inlet Tube (blue fitting)
- CM101-135 – Platinum Cathode (black plug)
- CM101-213 – Cathode Top, White Teflon
- CM119-040 – Anode Top, White Teflon
- CM121-006 – Stir Bar (1 1/2")

Part Numbers
CM210-028

CM310-001 – Cell Reagent Kit includes:

- CM300-026 – Sulfur Anode Solution (4 quarts)
- CM300-027 – Sulfur Cathode Solution (1 quart)

Part Numbers
CM310-001

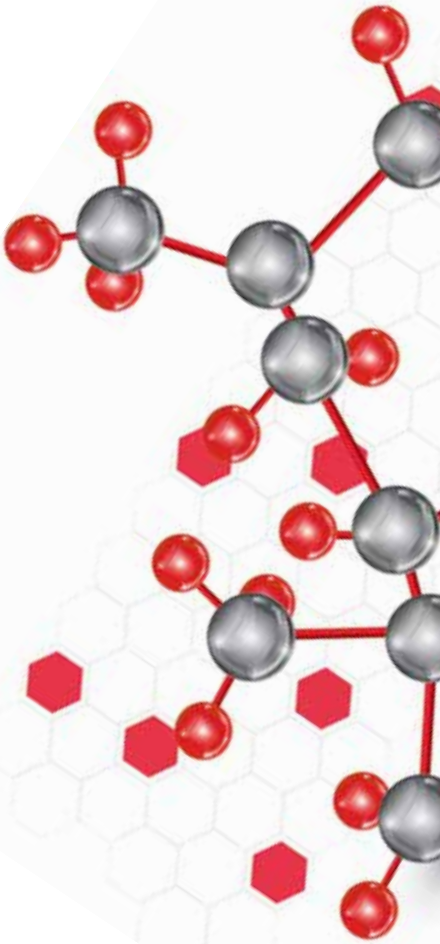
SO_2 Coulometer – Parts & Supplies

Electrodes
- CM101-135 – Platinum Cathode with black lead for CM5014S, CM5015S and CM5016
- CM101-210 – Platinum Anode with red for all sulfur coulometers
- CM101-098 – Detector Electrode with silver plug for CM3200 and CM5014S
- CM101-204 – Platinum Cathode with black plug for CM5014 SO_2
- CM101-275 – Detector electrode, dual platinum with pin plugs for CM5015 and CM5016

Spare Parts & Accessories
- CM101-136 – Cell outlet tube with red luer lock connector
- CM101-137 – Cell inlet tube with blue luer lock connector
- CM119-013 – Component attachment clip (2 1/4")
- CM124-006 – Stir bar (1 1/2")
- CM129-066 – Tubing, 3/32" inside diameter, (F), luer lock
- CM129-071 – Male luer connector with barbs, 1/16" inside diameter
- CM129-072 – Luer lock ring, red
- CM129-073 – Luer lock ring, blue
- CM129-074 – Lock nut
- CM190-009 – Tubing, Teflon, 1/16" inside diameter x 1/8" outside diameter
- CM190-010 – Tubing, Teflon, 3/32" inside diameter x 5/32" outside diameter
- CM191-001 – Unions, small, 1/4" x 1/8" (10 per package)
- CM192-003 – Check valves (6 per package)
- CM192-007 – Top, green rubber, anode compartment for CM3200 SO_2
- CM192-008 – Top, green rubber, cathode compartment for CM3200 SO_2
- CM200-051 – Cell with side arm (straight sides) for all coulometers
- CM210-009 – CM3200 SO_2 cell assembly for CM5014S
- CM210-025 – CM5015S SO_2 cell assembly
- CM210-028 – Cell assembly for CM5015S

Chemicals
- CM300-026 – Sulfur anode solution (4 quarts)
- CM300-027 – Sulfur cathode solution (1 quart)
- CM310-002 – Sulfur cell reagent kit

Printers
- CM124-078 – Printer, 3" format impact printer including cable, power supply, paper and ribbon
- CM199-006 – Printer paper for CM5014 (250 sheets)
- CM199-007 – Ribbon, KXP2130 printer for CM5014



CM5230 – Acidification Module

Applications include: Analysis begins with the introduction of a solid or liquid sample into the sample flask located at the base of the sample column assembly. While pre-weighted solid samples are typically introduced directly into the sample flask, liquid samples are usually introduced by syringe injection through the septum located at the head of the sample column assembly.

Following sample introduction, a CO_2 free carrier gas is used to purge the system of any atmospheric CO_2 that may have been introduced with the sample. A pre-scaled volume of acid is then added to the sample flask through a single pump of the acid dispenser and sample acidification is complete.

Using the built-in heater and magnetic stirrer to facilitate more efficient digestion of the sample, pre-scrubbed carrier gas transports all volatile digestion products through a post-scrubber and into the reaction cell of a CM5015 CO_2 coulometer where inorganic carbon as CO_2 is measured automatically by a 100% efficient coulometric titration.

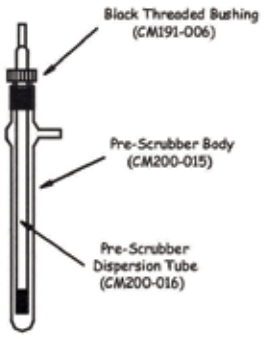
When used for the determination of sulfur (as in the Monier-Williams procedure), similar steps are taken to achieve the evolution of sulfur as SO_2 which is, in turn, automatically titrated in the reaction cell of a CM5015S coulometer.

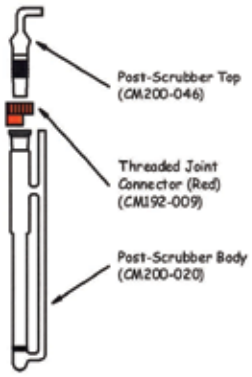
CM5230 Acidification Module features:

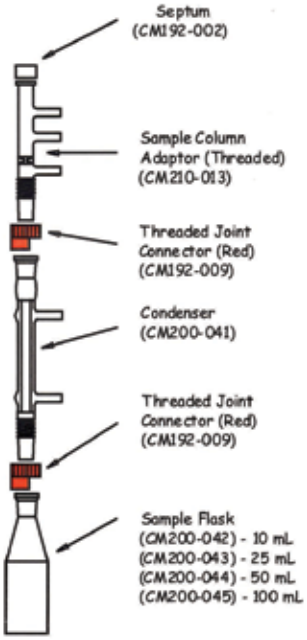
- 0, 25, 50 or 100 ml reaction vessels
- Selectable volume acid dispenser
- Internal air pump with flow controller
- Pre-acidification scrubber for removal of CO_2 from carrier gas
- Post-acidification scrubber for removal of interferences released during sample digestion
- Controlled sample heating and stirring

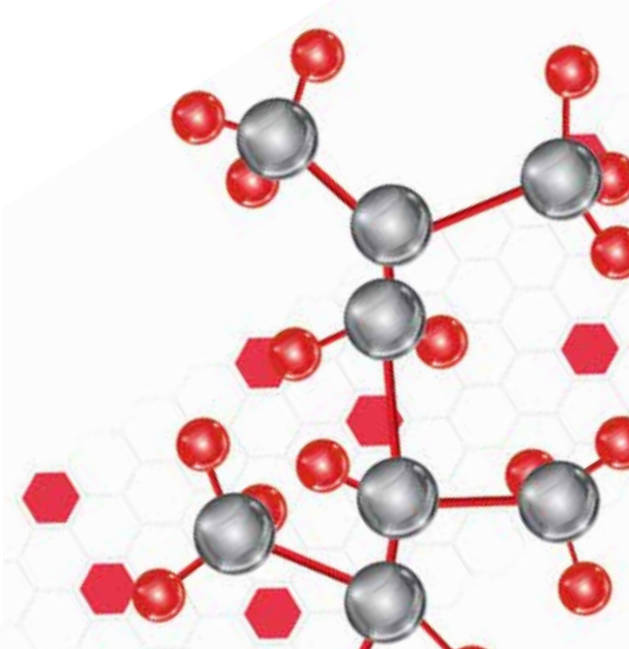
Part Numbers

CM5230-01 for 110V / 50/60Hz
CM5230-02 for 220V / 50/60Hz









CM5230 – Parts & Supplies

Pre-Scrubber Assembly
- CM191-006 – Black threaded bushing with o-ring
- CM200-015 – Pre-scrubber body
- CM200-016 – Pre-scrubber dispersion
- CM210-002 – Pre-scrubber assembly, complete

Post-Scrubber Assembly
- CM192-009 – Red, threaded joint connector
- CM200-020 – Post-scrubber body
- CM200-046 – Post-scrubber top
- CM210-012 – Post-scrubber assembly, complete

Sample Column Assembly
- CM192-002 – Septa (10 per package)
- CM192-009 – Red, threaded joint connector
- CM200-041 – Threaded condenser
- CM200-042 – Sample flask (10 ml)
- CM200-043 – Sample flask (25 ml)
- CM200-044 – Sample flask (50 ml)
- CM200-045 – Sample flask (100 ml)
- CM210-010 – Sample column assembly, complete
- CM210-013 – Sample column adaptor with septum, threaded

Other Parts & Accessories
- CM101-115 – Acid dispenser with 500 ml bottle
- CM101-122 – Clamp assembly
- CM119-016 – Component attachment clip (3/4")
- CM119-017 – Component attachment clip (1/2")
- CM121-001 – Stir bar (1")
- CM122-042 – Heater block insert (10 ml)
- CM122-043 – Heater block insert (25 ml)
- CM122-044 – Heater block insert (50 ml)
- CM123-017 – Flow meter
- CM124-024 – Air pump, internal
- CM190-009 – Tubing, Teflon, 1/16" inside diameter x 1/8" outside diameter
- CM191-001 – Unions, small, 1/4" x 1/8" (10 per package)
- CM191-012 – Union, Teflon, 1/4" x 1/8" (each)
- CM192-003 – Check valves (6 per package)
- CM300-037 – Potassium hydroxide (100 grams)
- CM300-025 – Silver nitrate (30 grams)
- CM332-010 – Bottle, polyethylene (acid dispenser)

CM5240 – Autoacidification Module

Applications include: Samples are initially weighed into disposable Teflon cups and loaded into a 45 position sample carousel. For more volatile liquid samples, the carousel compartment can be purged with nitrogen.

As the carousel rotates, each sample drops from the carousel into a small slider valve where it is purged with inert carrier gas to eliminate atmospheric CO_2.

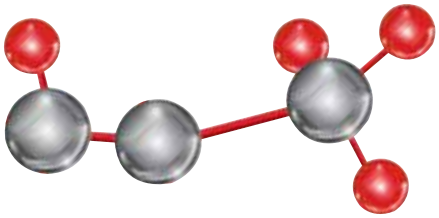
Once purged, the sample moves automatically into the acidification chamber where it is digested. A second stream of carrier gas transports the digestion products through a series of post-scrubbers to remove potential interferences and ultimately into the reaction cell of a CM5015 CO_2 or CM5015S coulometer where inorganic carbon evolved as CO_2 or sulfur as SO_2 is automatically measured by a 100% efficient coulometric titration.

A heated condenser is provided for the more efficient digestion of difficult samples.

CM5240 Autoacidification Module features:

- 45 position carousel
- Low dead volume reaction chamber
- Self cleaning
- Post-acidification scrubber for removal of interferents released during sample digestion
- Controlled sample heating

Part Number
CM5240-01 for 110V / 50/60Hz
CM5240-02 for 220V / 50/60Hz



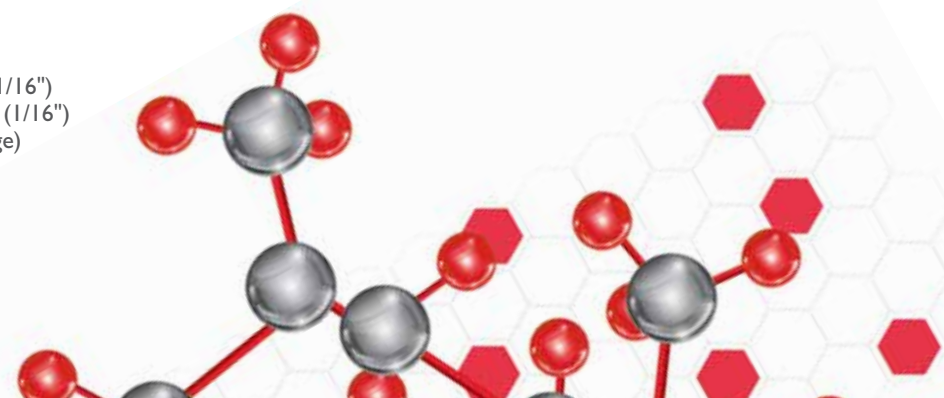
CM5240 – Parts & Supplies

Sample Carousel
- CM101-186 – 45 position carousel assembly
- CM119-033 – Plexiglass carousel cover
- CM119-034/50 – Teflon sample cups

Scrubbers
- CM192-009 – Red, threaded joint connector
- CM200-020 – Post-scrubber body
- CM200-046 – Post-scrubber top
- CM210-012 – Post-scrubber assembly, complete
- CM210-022 – Solid CO2 pre-scrubber

Other Parts & Accessories
- CM101-182 – Connection hose, condenser, CM5240
- CM101-183 – Connection hose, CM5240 to coulometer
- CM101-185 – Bottle rack assembly
- CM101-187 – Sample cup splitter
- CM123-017 – Flow meter
- CM129-098 – Quick disconnect, male
- CM129-109 – Coupling, male, with hose barbs (1/16")
- CM129-110 – Coupling, female, with hose barbs (1/16")
- CM153-027 – O-rings, Viton, #206 (5 per package)
- CM190-009 – Tubing, Teflon, 1/8" x 1/16"
- CM191-001 – Unions, small, 1/4" x 1/8" (10 per package)
- CM192-003 – Check valves (6 per package)
- CM192-009 – Red, threaded joint connector
- CM210-021 – Glass condenser, non-heated
- CM210-023 – Glass condenser, heated
- CM332-013 – 2 liter waste bottle
- CM332-014 – 1 liter bottle for deionized water
- CM332-015 – 1 liter bottle for acid
- CM332-016 – Holder for sample cup splitter

Tools
- CM251-009 – Micro spatula
- CM251-010 – Forceps, curved, fine point
- CM251-011 – Forceps, curved, membrane



CM5200 – Autosampler Furnace Module

Applications include: Total Carbon or Total Organic Carbon can be determined using a high-temperature combustion process. Using the CM5200 Autosampler Furnace, samples are encapsulated in tin boats and introduced via the 29 position auto sampler. At a typical temperature of 950˚C, all carbon in the sample is oxidized to form CO_2. At lower furnace temperatures, organic carbon can be selectively oxidized. Inorganic carbon can be determined by difference.

A pre-scrubber removes any trace CO_2 from the carrier gas, while interfering combustion products (including sulfur oxides, halides, water and nitrous oxides) are removed by a series of post-combustion scrubbers.

The resulting carbon dioxide is then swept into the reaction cell of a CM5015 CO_2 analyzer where it is automatically titrated by a 100% efficient coulometric process.

When necessary, a second heated zone can be used to control the temperature of combustion catalysts independently.

CM5200 Autosampler Furnace features:

- Two independent combustion zones programmable up to 1100˚C
- 29 position sample carousel
- Post-combustion scrubbers for removal of interfering gases formed during sample combustion

Part Number
CM5200-01 for 110V / 50/60Hz
CM5200-02 for 220V / 50/60Hz

CM5200 – Parts & Supplies

Scrubber Tube Assembly
- CM130-017 – Scrubber tube outlet, 12/3 ball joint
- CM130-018 – Scrubber tube outlet, 18/3 ball joint
- CM130-019 – Scrubber u-tube
- CM191-017 – Component attachment clip (1/2")
- CM192-011 – Clamp #12 ball/socket
- CM192-015 – Clamp #18 ball/socket
- CM210-018 – Scrubber tube assembly, threaded (2 per package)

Combustion Tube (Standard Volume System)
- CM147-012 – Ceramic tube, 1.37" outside diameter x 1.125" inside diameter
- CM153-018 – O-ring, #28 ball fitting
- CM192-012 – Clamp, #28 ball fitting
- CM201-035 – Vertical combustion tube
- CM251-008 – Tin boats, 6 x 6 x 12 mm (500 per package)
- CM251-012 – Slotted ceramic inserts

Combustion Tube (High Volume System)
- CM130-031 – 12/3 socket assembly, Type B
- CM130-032 – 12/3 ball tube, Type B
- CM130-033 – Scrubber U-Tube, Type B
- CM130-034 – Transfer line
- CM130-035 – Transfer line
- CM201-043 – Combustion tube, large volume
- CM211-021 – Catalyst U-Tube, filled
- CM200-052 – Catalyst U-Tube, unfilled

Other Parts & Accessories
- CM123-017 – Flow meter
- CM162-016 – Ceramic fiber insulation pack
- CM190-009 – Tubing, Teflon, 1/8" x 1/16"
- CM191-001 – Unions, small, 1/4" x 1/8"
- CM300-004 – Quartz wool (4 grams)

Tools
- CM251-009 – Micro spatula
- CM251-010 – Forceps, curved, fine point
- CM251-011 – Forceps, curved, membrane

Chemicals
- CM300-008 – Acid dichromate on silocel (14 grams)
- CM300-009 – Manganese dioxide (5 grams)
- CM300-012 – Reduced silver (100 grams)
- CM300-039 – Barium chromate, 10-20 mesh (200 grams)
- CM300-044 – Mangnesium perchlorate (50 grams)
- CM301-002 – Calcium carbonate (100 grams)

CM5300 – Horizontal Furnace Module

Applications include: Total sulfites in foods, dissolved SO_2 and H_2S in amine scrubbing solutions, and sulfites in geological materials and wallboard.

Solids and slurries are initially weighed into platinum or porcelain "boats" which are then placed into a quartz ladle. Liquid samples up to 200 µl are drawn into a constant rate syringe.

The analysis is initiated by introducing the sample into the oxygen rich atmosphere of the high-temperature (typically 950˚C) sample combustion zone. In that environment, all carbon within the sample is rapidly oxidized to CO_2.

A pre-scrubber removes any trace CO_2 from the carrier gas, while interfering combustion products (including sulfur oxides, halides, water and nitrous oxides) are removed by a series of post-combustion scrubbers.

The resulting carbon dioxide is then swept into the reaction cell of a CM5015 CO_2 analyzer where it is automatically titrated by a 100% efficient coulometric process.

CM5300 Horizontal Furnace features:

- Programmable up to 1100˚C
- Pre-combustion scrubbers for removal of interferences from oxygen carrier gas
- Post-combustion scrubbers for removal of interfering gases formed during sample combustion
- Sample introduction using porcelain boats and manipulator rod

Part Number
CM5300-01 for 110V / 50/60Hz
CM5300-02 for 220V / 50/60Hz

CM5390 – Automated Boat Inlet

The Automated Boat Inlet has a large, easy to access sample entry box, user selectable sample entry speeds, variable purge time setting and an integrated flowmeter. The CM5390 replaces the traditional "dog houses" and breech block assemblies found on UIC's standard analytical systems. The CM5390 eliminates the need to remove and replace breech block caps to insert and retrieve sample ladles. This also eliminates the chance of breaking any sample ladles.

Sample is weighed, place it into the sample entry box, lid is closed & latched, and the analysis is then started. The system is automatically purged of atmospheric CO_2. The sample is then automatically introduced, analyzed and retracted with no user input.

The CM5390 Automated Boat Inlet is designed to provide enhanced ease-of-use and analytical reproducibility. It is used in conjunction with the CM5300 high-temperature furnace and either the CM5015 or CM5016 coulometer to provide an improved method of sample introduction.

CM5390 Automated Boat Inlet features:

- Improved Sample Introduction
- Solid or Liquid Samples
- Eliminates Ladle Breakage
- Controlled Sample Handling

CM5390-01 – Automated Boat Inlet includes:

CM5390 base unit, CM211-019 combustion tube, CM201-040 ladle entry tube, CM201-042 hook ladle, 3 x CM251-005 large porcelain boats, accessories, power cord and operation manual. For 115V operation.

Part Number
CM5390-01 for 115V / 50/60Hz
CM5390-02 for 230V / 50/60Hz

CM5390S-01 – Automated Boat Inlet includes:

Same as CM5390-01, except equipped for use with total sulfur systems.

Part Number
CM5390S-01 for 115V / 50/60Hz
CM5390S-02 for 230V / 50/60Hz

CM5300 – Parts & Supplies

Pre-Scrubber Assembly
- CM191-001 – Unions, small, 1/4" - 1/8" (10 per package)
- CM191-006 – Black threaded bushing with o-ring
- CM200-015 – Pre-scrubber body
- CM200-016 – Pre-scrubber dispersion tube
- CM210-002 – Pre-scrubber assembly, complete

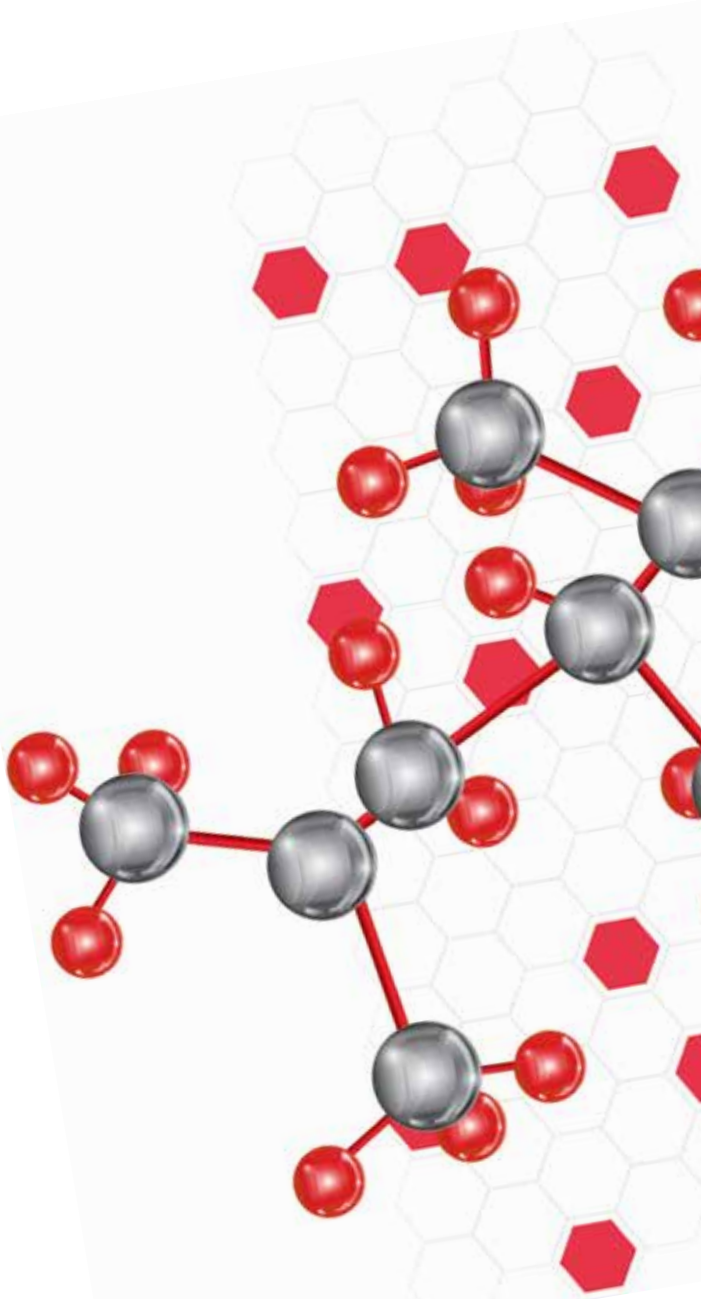
Post-Scrubber Assembly
- CM101-113 – Balston filter with tubing & clamp
- CM119-017 – Component attachment clip, 1/2"
- CM119-018 – Component attachment clip, 1 1/2"
- CM191-001 – Unions, small, 1/4" - 1/8" (10 per package)
- CM191-002 – Unions, small, 1/2" - 1/8" (4 per package)
- CM200-014 – Scrubber tubes (4 per package)
- CM210-006 – Post scrubber, complete

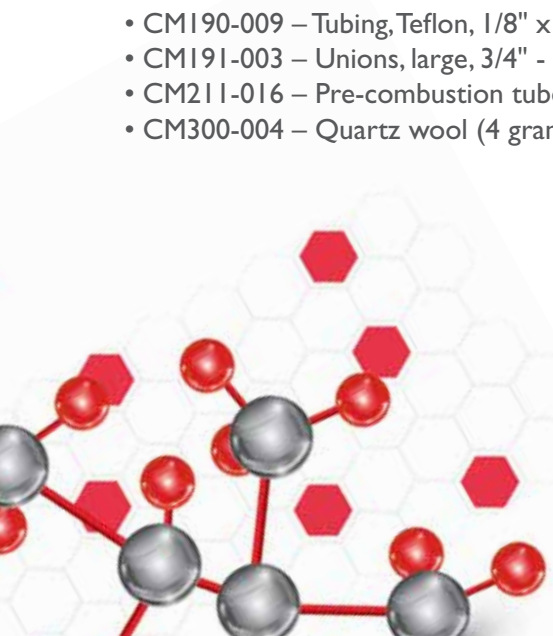
Combustion Kit - Small Solids
- CM201-005 – Ladle, open end
- CM201-014 – Scoop ladle, open end
- CM211-002 – Ladle combustion tube, 15 mm, filled
- CM251-003 – Porcelain boat, 4 x 5 x 17 mm

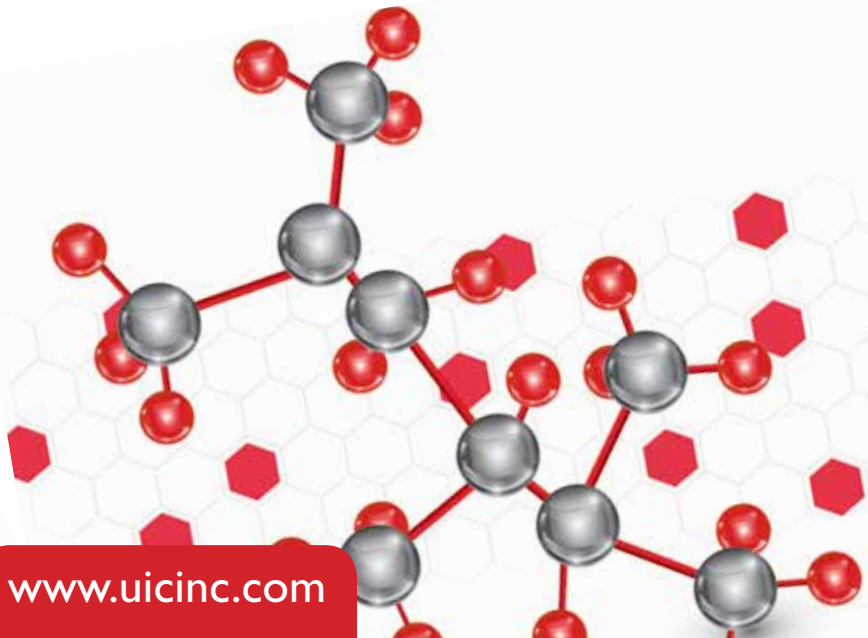
Combustion Kit - Large Solids
- CM201-026 – Hook ladle, for use with CM251-005
- CM211-002 – Large combustion tube, 25 mm, filled
- CM251-003 – Porcelain boat, 10 x 16 x 97 mm

Combustion Kit - Liquids
- CM129-035 – Stopper for Luer adaptor
- CM211-012 – Syringe combustion tube, 15 mm, filled
- CM250-001 – Syringe, spring loaded, variable volume too 200 µl
- CM250-002 – Replacement needle for CM250-001

Other Parts & Accessories
- CM123-017 – Flow meter
- CM129-097 – Vespel ferrules (10 per package)
- CM162-016 – Ceramic fiber insulation pack
- CM190-009 – Tubing, Teflon, 1/8" x 1/16"
- CM191-003 – Unions, large, 3/4" - 1/8"
- CM211-016 – Pre-combustion tube, filled
- CM300-004 – Quartz wool (4 grams)







CM5300 – Parts & Supplies

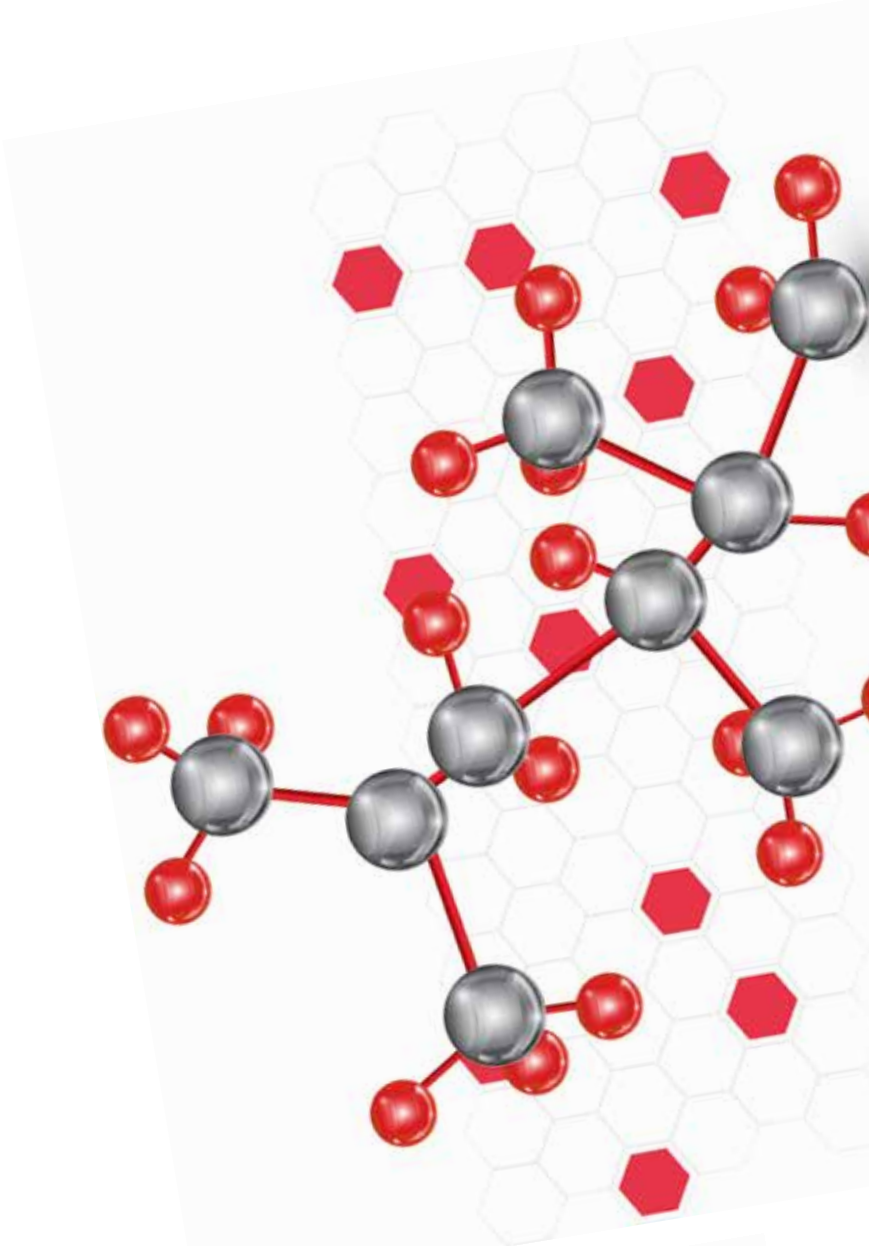
Furnace Kits
- CM5121 – Liquid samples
- CM5122 – Solid samples
- CM5124 – Surface carbon, single zone
- CM5125 – Surface carbon, dual zone
- CM5126 – Large solids

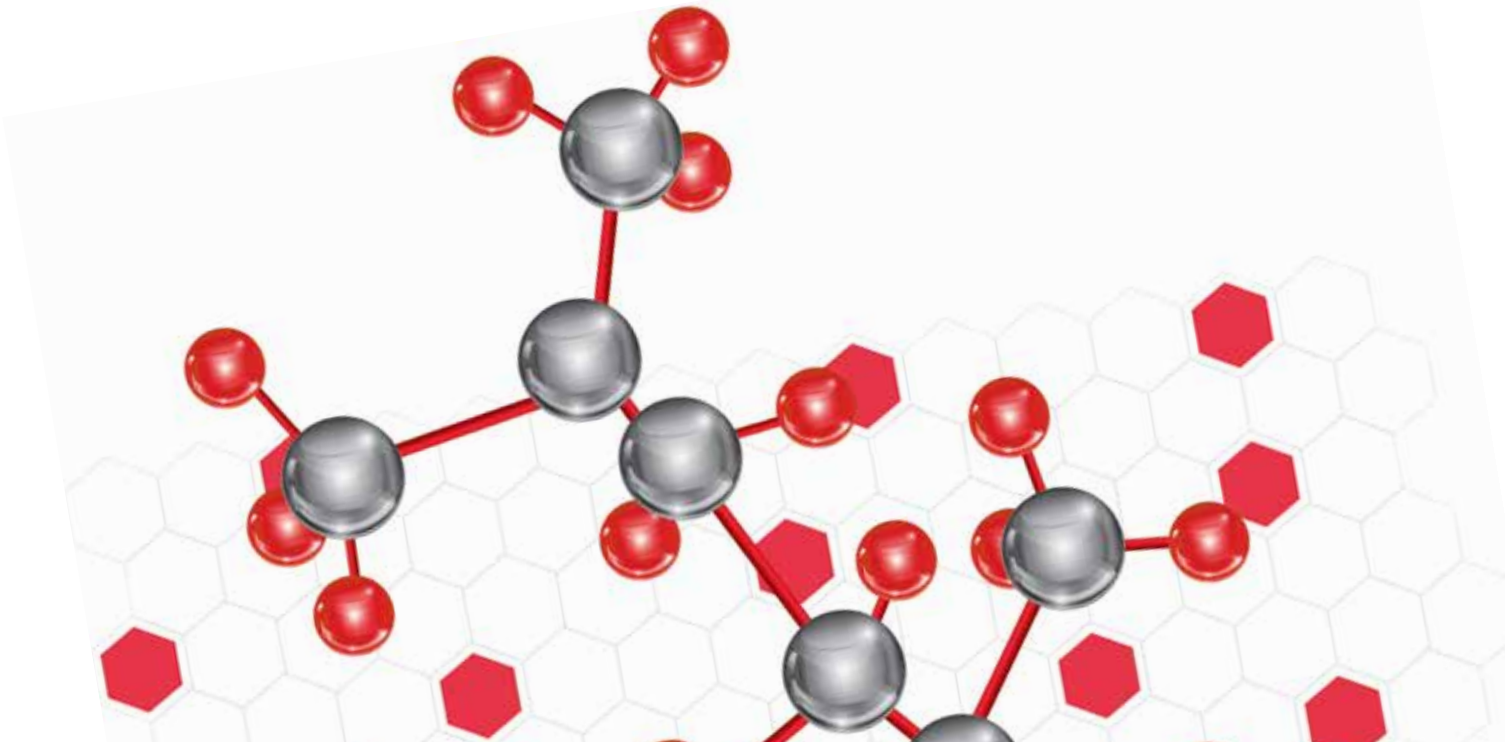
Breech Blocks & Adaptors
- CM101-077 – Manipulator rod adaptor, 15 mm
- CM101-092 – Syringe injection adaptor, 15 mm
- CM101-126 – Breech block assembly, 15 mm
- CM101-127 – Breech block assembly, 25 mm
- CM101-129 – Manipulator rod adaptor, 25 mm

Manipulator Rods
- CM118-132 – Manipulator rod, 33.5"
- CM118-133 – Manipulator rod. 19.5"

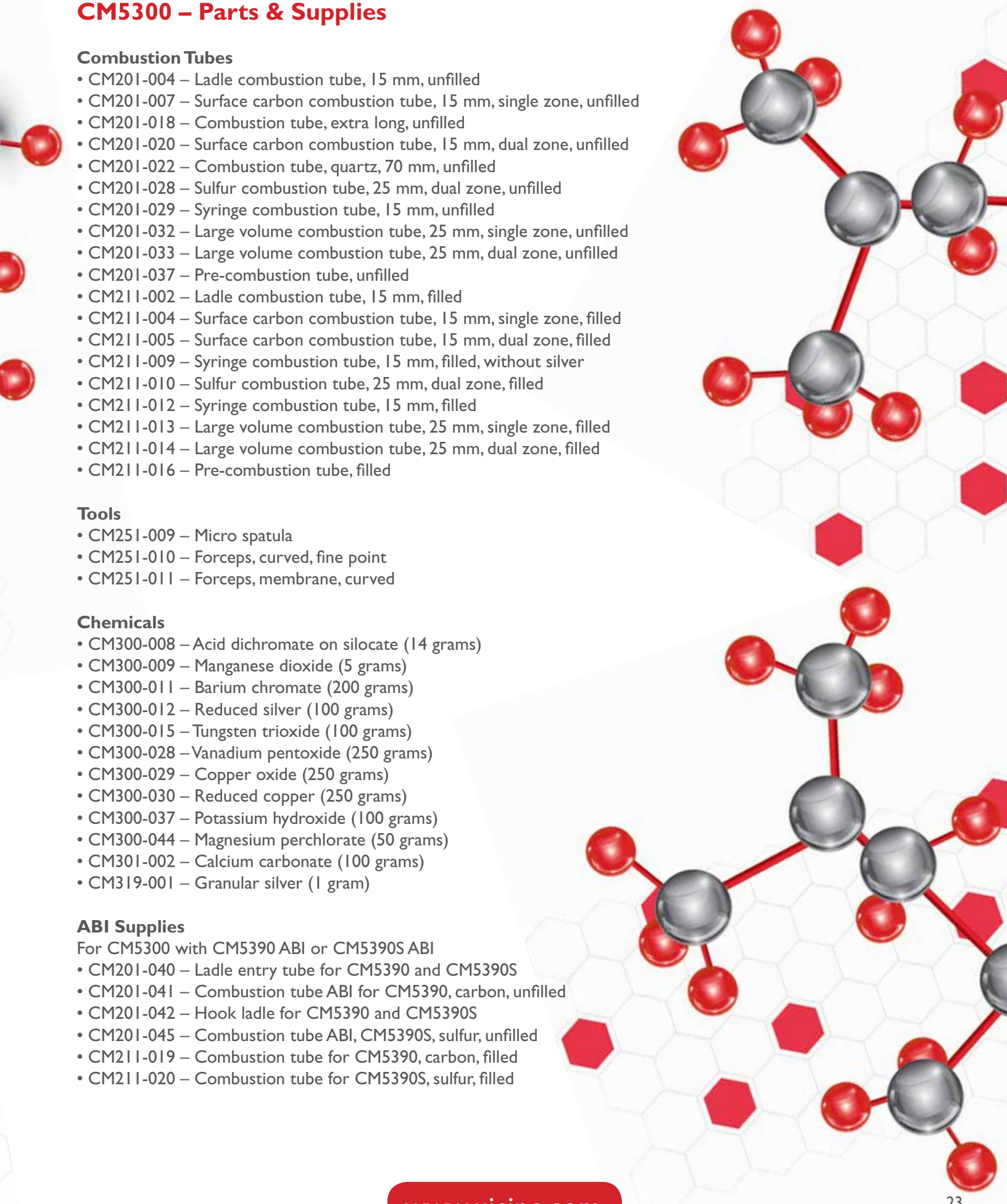
Ladles
- CM121-002 – Magnet for ladle introduction
- CM201-005 – Ladle, open end
- CM201-014 – Ladle, scoop
- CM201-016 – Ladle, small hook
- CM201-026 – Ladle, large hook

Sample Boats
- CM251-001 – Platinum boat, 4 x 4 x 12 mm
- CM251-002 – Platinum boat, 3.5 x 5 x 30 mm
- CM251-003 – Porcelain boat, 4 x 5 x 17 mm
- CM251-004 – Porcelain boat, 8 x 10 x 60 mm
- CM251-005 – Porcelain boat, 10 x 16 x 97 mm
- CM251-006 – Ceramic boats for total sulfur analysis (500 per package)
- CM251-008 – Tin boats 6 x 6 x 12 mm (500 per package)





CM5300 – Parts & Supplies



Combustion Tubes

- CM201-004 – Ladle combustion tube, 15 mm, unfilled
- CM201-007 – Surface carbon combustion tube, 15 mm, single zone, unfilled
- CM201-018 – Combustion tube, extra long, unfilled
- CM201-020 – Surface carbon combustion tube, 15 mm, dual zone, unfilled
- CM201-022 – Combustion tube, quartz, 70 mm, unfilled
- CM201-028 – Sulfur combustion tube, 25 mm, dual zone, unfilled
- CM201-029 – Syringe combustion tube, 15 mm, unfilled
- CM201-032 – Large volume combustion tube, 25 mm, single zone, unfilled
- CM201-033 – Large volume combustion tube, 25 mm, dual zone, unfilled
- CM201-037 – Pre-combustion tube, unfilled
- CM211-002 – Ladle combustion tube, 15 mm, filled
- CM211-004 – Surface carbon combustion tube, 15 mm, single zone, filled
- CM211-005 – Surface carbon combustion tube, 15 mm, dual zone, filled
- CM211-009 – Syringe combustion tube, 15 mm, filled, without silver
- CM211-010 – Sulfur combustion tube, 25 mm, dual zone, filled
- CM211-012 – Syringe combustion tube, 15 mm, filled
- CM211-013 – Large volume combustion tube, 25 mm, single zone, filled
- CM211-014 – Large volume combustion tube, 25 mm, dual zone, filled
- CM211-016 – Pre-combustion tube, filled

Tools

- CM251-009 – Micro spatula
- CM251-010 – Forceps, curved, fine point
- CM251-011 – Forceps, membrane, curved

Chemicals

- CM300-008 – Acid dichromate on silocate (14 grams)
- CM300-009 – Manganese dioxide (5 grams)
- CM300-011 – Barium chromate (200 grams)
- CM300-012 – Reduced silver (100 grams)
- CM300-015 – Tungsten trioxide (100 grams)
- CM300-028 – Vanadium pentoxide (250 grams)
- CM300-029 – Copper oxide (250 grams)
- CM300-030 – Reduced copper (250 grams)
- CM300-037 – Potassium hydroxide (100 grams)
- CM300-044 – Magnesium perchlorate (50 grams)
- CM301-002 – Calcium carbonate (100 grams)
- CM319-001 – Granular silver (1 gram)

ABI Supplies

For CM5300 with CM5390 ABI or CM5390S ABI

- CM201-040 – Ladle entry tube for CM5390 and CM5390S
- CM201-041 – Combustion tube ABI for CM5390, carbon, unfilled
- CM201-042 – Hook ladle for CM5390 and CM5390S
- CM201-045 – Combustion tube ABI, CM5390S, sulfur, unfilled
- CM211-019 – Combustion tube for CM5390, carbon, filled
- CM211-020 – Combustion tube for CM5390S, sulfur, filled

CM5700 – AutoMateFX Autosampler

Applications include: The CM5700 AutoMateFX Autosampler is an automated front-end acid digestion instrument used to convert inorganic carbon species into CO_2.

Samples are weighed into reusable 12 ml sample vials and sealed with septum screw caps. The CM5700 interfaces with a CM5015 or CM5016 Coulometer using the UIC interface box supplied with the unit. Sample vials are transported under the needle plunger unit via a carousel. The needle plunger unit descends and the two needles pierce the septum cap on the sample vial. Carrier gas is passed through the longer needle in order to purge the sample vial of atmospheric CO_2. Acid is then injected into the sample vial through the long needle while the coulometer is simultaneously reset to 0. The generated CO_2 is transported in a nitrogen carrier gas stream to the CM5015 Coulometer for analysis.

After the CM5015 goes through the analysis process, the analysis is terminated according to operational parameters inputted by the user into the CM5015 and the CM5700 injects a small amount of rinse water through the long syringe. The carousel advances to the next sample vial and the cycle is repeated until all samples have been analyzed. Up to 44 samples can be analyzed by the CM5700 in a single run. The CM5700 comes with a Control Box and Wet Box (pictured left) and interface box (not pictured).

CM5700 AutoMateFX Autosampler features:

- 45 position carousel
- Low dead volume reaction chamber
- Post-acidification scrubber for removal of interferents released during sample digestion

Part Number
CM5700-01 for 110V / 50/60Hz
CM5700-02 for 220V / 50/60Hz

CM5700 – Parts & Supplies

Sample Carousel

- CM332-023 – Acid bottle assembly; bottle, red tubing, fitting
- CM101-282 – Carrier gas tubing assembly; black tubing, connection to regulator
- CM161-155 – Cable, controller to carousel, DB25(M) to DB25(F)
- CM161-157 – Cable, controller to computer, DB9(M) to DB9(F)
- CM161-157 – Cable, controller to coulometer, DB9(M) to DB9(F)
- CM161-156 – Cable, controller to Wet Box, DB15(M) to DB15(F)
- CM250-018 – Needle, inlet
- CM250-019 – Needle, outlet
- CM250-020 – Needle tool
- CM101-283 – Tube assembly, post-scrubber to coulometer; tubing, screw cap, o-ring
- CM101-284 – Tube assembly, outlet needle to post-scrubber; tubing, screw cap, o-ring
- CM200-066 – Post-scrubber body
- CM200-067 – Pre-scrubber body
- CM200-068 – Sample vials with septum caps (100 per box)
- CM332-024 – Water bottle assembly; bottle, blue tubing, fitting
- CM333-020 – Septum caps (100 per package)
- CM161-027 – Power cord

CM5015O – Oceanographic Coulometer

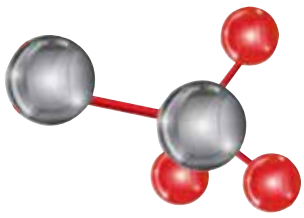
Applications include: (DIC) Dissolved Carbon Dioxide In Sea Water for use with Somma and Vindta Systems

The CM5015O Coulometer is an instrument that sits on a conventional lab bench capable of supporting 40 lbs. The Coulometer stands 11" wide by 24" high by 17 " deep. The instrument is constructed of aluminum and steel. The unit is designed with a cell compartment, power switch, cell current switch, and a 10" LCD touch screen to act as the user interface to the instrument. The instrument is supplied with an analytical cell assembly, power conditioner, power cord with a NEMA 5-15 plug and an RS232 serial cable. The unit is also supplied with a set of a Cell reagents and operation manuals. All Coulometers have CE approval. The unit when supplied for 110-120V 50/60 HZ operation requires one AC circuit capable of supplying 1.5 amps.

The Coulometer uses coulometric detection. The carbon Coulometer measures carbon as CO_2. The gas stream resulting from the Vinita unit is bubbled through the coulometer analytical cell. The carbon coulometer solution contains ethnolamine and a colorimetric PH indicator. The CO_2 from the gas stream reacts with the ethnolamine forming a strong titratable acid, causing the color indicator to fade. The coulometer photometer recognizes this condition and initiates the electrochemical generation of a base returning the solution to the original color. The current for this is 100% efficient coulometric process is integrated and digitally displayed in user selected units. The Oceanographic unit is supplied with the CM5011 Emulation firmware necessary to allow direct connection to the Vindta software. No other software is required.

The CM5015O Oceanographic CO_2 Coulometer with CM5011 Emulation, 50ma optimization and Open Cell Compartment, comes complete with cell assembly, reagents and accessories.

Part Number
CM5015O-01 for 110V / 50/60Hz
CM5015O-02 for 220V / 50/60Hz



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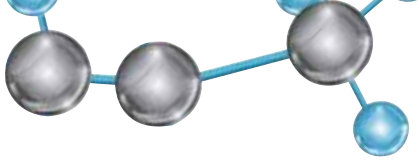

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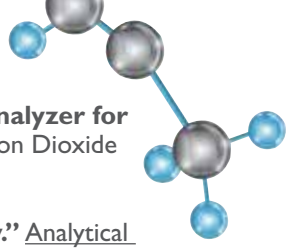

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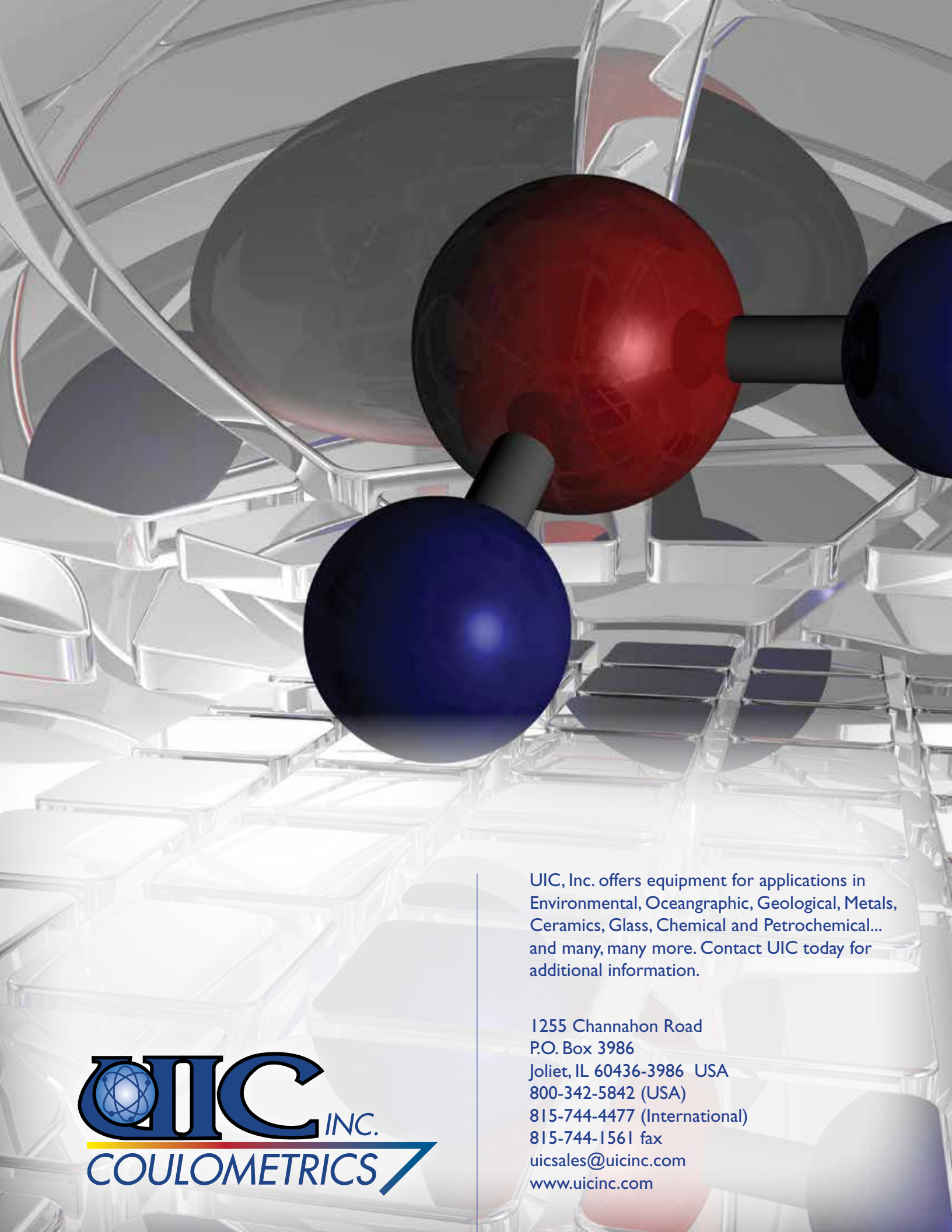

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