

MC500™ Multi-Parameter Colorimeter

Highlights

- Industry-leading 6 wavelength photo detector array improves testing capabilities and accuracy
- Automatic wavelength selection
- Infrared interface for data transfer to a computer or printer
- Waterproof
- "User favorites menu" allows easy access to most commonly used testing methods
- Internal Data Storage of 1,000 results
- Portable
- Test using a wide variety of reagent platforms--from unit dose powder packs, to tablets, to liquids.



Specifications

Display	Graphic-display
Interfaces	Infrared interface for test data transfer ¹ , RJ45 socket for Internet updates ²
Optics	Light-emitting diodes and photosensor-intensifier featuring automatic wave length selection. Wavelength range: 1 = 530 nm IF $\Delta\lambda = 5$ nm 2 = 560 nm IF $\Delta\lambda = 5$ nm 3 = 610 nm IF $\Delta\lambda = 6$ nm 4 = 430 nm IF $\Delta\lambda = 5$ nm 5 = 580 nm IF $\Delta\lambda = 5$ nm 6 = 660 nm IF $\Delta\lambda = 5$ nm IF = interference filter
Wavelength Accuracy	± 1 nm
Photometric Accuracy*	2% FS (T = 68°F– 77°F)
Colorimetric Resolution	0.005 A
Operation	Acid and solvent resistant, touch-sensitive keypad with audible feedback
Power Supply	4 batteries (Size AA / LR6); Operation time: approx. 26 hours continuous operation or 3,500 tests
Auto-Off	approx. 20 minutes after last key press with audible signal
Dimensions (LxWxH)	Instrument: 8.3" x 3.7" x 1.8" Case: 15.5" x 11.6" x 4.2"
Weight (unit)	approx. 1 lb (450 g)
Operating Conditions	41– 104°F 30– 90% relative humidity non condensing
Language Selection	English, German, French, Spanish, Italian, Portugese, and Polish
Memory Capacity	1,000 data sets
Certification	CE

¹ optional available: IRiM (Infrared Data Transfer Module)

² optional available: connection cable with integrated electronics

* tested with standard solutions

The MC500 Multi-Parameter Colorimeter is an extremely versatile instrument which tests for a wide range of water quality parameters from Alkalinity to Zinc, and its compact size makes it perfect for use in either the field or laboratory.

Using Orbeco-Hellige's "Open Reagent System" (which uses Powder Pack™, tablets, liquid, and ampoule reagents), the MC500 features an industry-leading 6 LED photodetector array that allows the instrument to conduct over 70 pre-programmed test methods and over 20 user defined methods.

A convenient "User favorites menu" allows easy access to most commonly used testing methods. As new methods and parameters become available, users can download the updates by using our website.

Up to 1,000 data sets can be stored in the instrument's internal memory and transferred to a computer using the Orbeco-Hellige's Infrared Interface Module, the IRiM (See pg. 31)

The MC500 comes with 3 of the 24 mm sample cells, 3 of the 16 mm sample cells, 16 mm tube adapter, 13 mm tube adapter, batteries, instruction manual, and carrying case.

Part Number	Description
MC500-10	MC500, Multi-Parameter Colorimeter
MC500-60	IRiM , Infrared Data Transfer Module
L215640	Verification Standard Kit, MC500 (Zero/430/530/560/580/610/660 nm)
L197610	Multi Vial, Plastic , 10 mm with lid, 12 pack
L197615	Multi Vial, Plastic, 10 mm with lid, 5 pack
L197620	Sample Cell, Glass , 24 mm with lid, 12 pack
L197665	Sample Cell, Glass , 16 mm with lid, 10 pack
L197635	Cleaning Cloth For Sample Cells



MC500™ Multi-Parameter Colorimeter

Parameter	Method	Range (mg/L)	# of Tests	Form of Reagent	Replacement Reagents
Acid Demand, pH 4.3	Acid/Indicator	0.1-4 mmol/L	100	Tablet	RT321-0
Alkalinity-M (Total)	Acid/Indicator	5-200	100	Tablet	RT321-0
Alkalinity-P	Acid/Indicator	5-500	100	Tablet	RT323-0
Aluminum	Eriochrome cyanide R (Tablet)	0.01-0.3	100	Tablet	RS5460
Aluminum	Eriochrome cyanide R (Powder)	0.01-0.25	100	Powder Pack	RS5000
Ammonium	Indophenole	0.02-1	100	Tablet	RS5540
Ammonium	Salicylate	0.01-0.8	100	Powder Pack	RS5500
Ammonium, LR	Salicylate	0.02-2.25	50	Powder Pack	RS5600
Ammonium, HR	Salicylate	1-50	50	Powder Pack	RS5650
PHMB (Biguanide)	Buffer/Indicator	2-60	100	Tablet	RT610-0
Boron	Azomethine	0.1-2	100	Tablet	RS5050
Bromine	DPD	0.05-13	100	Tablet	RT106-0BT
Calcium Hardness	Murexide	50-900	100	Tablet	RT565-0
Chloride	Silver nitrate/Turbidity	0.5-25	100	Tablet	RS5910
Chlorine (Free)	DPD	0.02-2	100	Powder Pack	RP010-0
Chlorine (Total)	DPD	0.02-2	100	Powder Pack	RP012-0
Chlorine	DPD	0.01-6	100	Tablet	RS1060
Chlorine	DPD	0.02-4	100	Liquid	RS1056
Chlorine, HR	Potassium Iodide/Acid	5-200	100	Tablet	RS5480
Chlorine, UHR (Sodium Hypochlorite)	Potassium Iodide	0.02-16% NaHCl	100	Tablet	RS5480
Chlorine Dioxide	DPD	0.05-11	100	Tablet	RS1060
COD, LR	Dichromate/H ₂ SO ₄	0-150	25 150	Tube Test Tube Test	TT20720* TT20725
COD, MR	Dichromate/H ₂ SO ₄	0-1500	25 150	Tube Test Tube Test	TT20721* TT20726*
COD, HR	Dichromate/H ₂ SO ₄	0-15000	25 150	Tube Test Tube Test	TT20722* TT20727
Copper	Biquinoline	0.05-5	100	Tablet	RS3550
Copper (Free)	Bicichoninate	0.05-5	100	Powder Pack	RP030-0
Cyanide	Pyridine-barbituric acid	0.01-0.5	260	Powder & Liquid	L2418875
Cyanuric Acid	Melamine	2-160	100	Tablet	RT132-0BT
DEHA	PPST	20-500 µg/L	100	Tablet	RS3220
DEHA	PPST	20-500 µg/L	100	Powder Pack	RS6000
Fluoride	SPANDS	0.05-2	~125	Liquid	L467481
Hardness, (Total)	Metal Phthalein	2-250	100	Tablet	RT566-0
Hardness, HR (Total)	Metal Phthalein	20-500	100	Tablet	RT566-0
Hydrazine	Dimethylaminobenzaldehyde	0.05-0.5	100	Liquid	RS2910
Hydrazine	Dimethylaminobenzaldehyde	0.01-0.6	~100	Liquid	L531200

* Mercury-Free version available

Parameter	Method	Range (mg/L)	# of Tests	Form of Reagent	Replacement Reagents
Hydrazine	PDMAB	0.01-0.7	30	Ampoules	L380470
Hydrogen Peroxide	DPD/Catalyst	0.03-3	100	Tablet	RT238-0
Iodine	DPD	0.03-3	100	Tablet	RT106-0BT
Iron (II, III) Soluble	PPST	0.02-1	100	Tablet	RS5370
Iron (II, III) Soluble	1, 10-Phenanthroline	0.02-3	100	Powder Pack	RP056-0
Iron (Total)	TPTZ	0-0.2-1.8	100	Powder Pack	RP055-0
Manganese	Formaloxime	0.2-4	100	Tablet	RS6080
Manganese, LR	PAN	0.01-0.7	50	Powder & Liquid	RS5090
Manganese, HR	Periodate Oxidation	0.1-18	100		RS6500
Molybdate	Thioglycolate	1-50	100	Tablet	RS3060
Molybdate, HR	Mercaptoacetic acid	0.5-66	100	Powder Pack	RS5300
Nitrate	Chromotropic acid	1-30	50	Powder Pack	RS5580
Nitrite	N(1-Naphthyl) ethylenediamine	0.01-0.5	100	Tablet	RT231-0
Nitrite, LR	Diazotization	0.01-0.3	100	Powder Pack	RP098-0
Nitrogen, LR (Total)	Persulfate Digestion method	0.5-25	50	Powder Pack	RS5550
Nitrogen, HR (Total)	Persulfate Digestion method	5-150	50	Powder Pack	RS5560
Oxygen, active	DPD	0.1-10	100	Tablet	RT122-0BT
Oxygen, dissolved	Rhodazine D™	10-800 µg/L	30	Ampoules	L380450
Ozone	DPD/Glycine	0.02-1	100	Tablet	RS5555
Phosphate, ortho LR	Phosphormolybdic blue/ Ascorbic acid	0.05-4	100	Tablet	RS3040
Phosphate, ortho HR	Vanado molybdate	5-80	100	Tablet	RS5810
Phosphate, ortho	Ascorbic acid	0.06-2.5	100	Powder Pack	RP155-0
Phosphate, ortho	Ascorbic acid	0.06-5	50	Powder & Liquid	RS5200
Phosphate, acid-hydrolyzable	Acid digestion	0.02-1.6	50	Powder & Tube Test	RS5250
Phosphate, (Total)	Acid persulfate digestion	0.02-1.1	50	Powder & Tube Test	RS5210
Phosphate 1, ortho	Vanado molybdate	5-40	30	Ampoules	L380460
Phosphate 2, ortho	Stannous chloride	0.05-5	30	Ampoules	L380480
pH-value	Bromocresol purple	5.2-6.8	100	Tablet	RT570-0
pH-value	Phenol Red	6.5-8.4	100	Tablet	RT177-0BT
pH-value	Phenol Red	6.5-8.4	15 mL	Liquid	L471040
pH-value	Thymol blue	8.0-9.6	100	Tablet	RT571-0
Potassium	Tetraphenylborate (Turbidity)	0.7-12	100	Tablet	RT567-0
Silica	Silicomolybdate	0.05-4	100	Powder Pack	RS3130
Silica, LR	Heteropoly blue	0.1-1.6	100	Powder Pack	RS5690
Silica, HR	Silicomolybdate	1-90	100	Powder Pack	RS5700
Sulfate	Barium sulfate (Turbidity)	5-100	100	Tablet	RT545-0
Sulfate	Barium sulfate (Turbidity)	5-100	100	Powder Pack	RP216-0
Sulfide	DPD/Catalyst	0.04-0.5	100	Tablet	RS2930
Sulfite	DTNB	0.1-5	100	Tablet	RT802-0
Urea	Indophenol/Urease	0.1-3	100	Tablet & Liquid	RS9300
Zinc	Zincon	0.02-1	100	Tablet	RS2620

MC500™ Multi-Parameter Colorimeter

As new test methods are created or updated, users can find software updates on our website, www.orbeco.com.

The instrument can be calibrated by the user in a "User Calibration Mode." With the help of a program, the corresponding polynomial is created from data sets (concentration / absorption). A known polynomial may also be used. 25 order polynomials ($y = A + Bx + Cx^2 + Dx^3 + Ex^4 + Fx^5$) can be stored together with user-specific parameters such as wavelength, measuring range, unit, and number of decimals.

On the basis of the concentrations / absorption pairs obtained, the colorimeter will calculate a linear interpolation between the measured points. Up to 10 methods can be stored for further sample measurements.



Verification Standard Kit

P/N: L215640

The Verification Standard Kit for the MC500 is designed to confirm the accuracy and reliability of measurement results. Orbeco-Hellige recommends testing your instrument with this kit every three months to ensure the greatest accuracy.

Confirms the proper optical operation of all instrument wavelengths:
430, 530, 560, 580, 610 and 660 nm.

The shelf life of the Verification Standard Kit is two years from the date of production, provided that storage and use are in accordance with the instructions provided.

IRiM: Data Transfer Module

Highlights

- Facilitates infrared data transfer of data to a computer without compromising the MC500's waterproof housing.
- Option of 3 different interfaces
- Ability to quickly and easily save data in an Excel spreadsheet

The IRiM uses state-of-the-art infrared technology to transmit data from the MC500 Multi-Parameter Colorimeter to one of 3 optional interfaces. Users can choose to connect to a computer, a USB printer or a serial printer. The interface can be easily selected, and the choice is displayed by an LED function indicator. The user can switch between the interfaces using a "Select" button.

The IRiM comes with the software necessary to begin quickly and easily transferring data to your computer. As an option the data can be saved as an Excel spreadsheet or a .txt file. Measurement data can quickly be printed out, using a specified USB or serial printer connected to the IRiM.

The IRiM comes ready for use, with the following accessories :

USB cable, 4 batteries, screwdriver, CD-ROM, operating instructions and guarantee certificate

P/N: MC500-60

Specifications

Dimensions (L x W x H)	4.8 x 3.6 x 1.65 inches
Weight	~ 0.5 lb.
Power supply	4 AA alkaline batteries or, if available : USB-PC interface
Connections	USB device USB host RS232
Controls	Acid & solvent-proof tactile foil keyboard
Certification	CE

