

The digital refractometers are optical instruments that employ the measurement of refractive index to determine the Brix of sugar MA871), % Brix, °Oechsle and °KMW in Grape Juice Must (MA885), Sodium chloride concentration (MA886), Salinity (MA887), in aqueous solutions.

The digital refractometers eliminate the uncertainity associated with mechanical refractometers and are easily portable for measurements in the field.

## Key features include:

- Dual-level LCD
- Automatic Temperature Compensation (ATC)
- Easy setup and storage
- Battery operation with Low Power indicator (BEPS) Automatically turns off after 3 minutes of non-use

Specifications	MA871 Brix of sugar	MA885 Grape Juice Must	MA886 Sodium chloride	MA887 Salinity
Range	0 to 85% Brix	0 to 50% Brix	0 to 28 g/100 g	0 to 50 PSU
-	0 to 80°C / 32 to 176°F	0 to 230 °Oechsle	0 to 34 g/100 ml	0 to 150 ppt
	_	0 to 42 °KMW	1.000 to 1.216 Specific Gravity	1.000 to 1.114 S.G. (20/20)
	_	0 to 80°C / 32 to 176°F	0 to 26 °Baumé	0 to 80°C / 32 to 176°F
	_	—	0 to 80°C / 32 to 176°F	_
Accuracy	±0.2% Brix	±0.2% Brix	±0.2 g/100 g; 100 ml	±2 PSU
-	±0.3°C / ±0.5°F	±1 °Oechsle	±0.002 Specific Gravity	±2 ppt
	_	±0.2 °KMW	±0.2 °Baumé	±0.002 S.G. (20/20)
	_	±0.3°C / ±0.5°F	±0.3°C / ±0.5°F	±0.3°C / 0.5°F
Light source		yellow LE	D	
Measurement time		approx. 1.5 se	econds	
Minimum sample vol.		100 µL (cover pris	sm totally)	
Sample cell		SS ring and flint g	lass prism	
Temp. compensation		automati	с	
Case material	ABS			
Battery type		1 x 9V AA (inc	luded)	
Auto-shut off	after 3 minutes of non-use 192 x 102 x 67 mm / 420 g			
Dimensions / Weight				

Turbidity refers to the concentration of undissolved, suspended particles present in a liquid. Turbidity is a measure of the clarity of a sample. For potable water applications turbidity is a good indicator of water quality. Turbidity measurement is achieved by analyzing the amount of light refracted from suspended particles such as clay, silt and organic material. By measuring turbidity, by photometric or tube methods, it is possible to estimate suspended solids content.

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MI415 has two operating ranges; 0.00 to 50.00 FNU, and 50 to 1000 FNU that can accommodate the most turbid condition you may encounter.

MI415 is supplied in a hard carrying case. complete with calibration



Specification	MI415 PRO	
Range	0.00 to 50.00 FNU; 50 to 1000 FNU	
Resolution	0.01 FNU; 1 FNU	
Accuracy	±0.5 FNU or	
	±5% of reading (whichever is greater)	
Method	detection of scattered light	
Light source	infrared LED	
Light detector	silicon photocell	
Environment	0 to 50°C; max RH 100%	
Battery Type	1 x 9V	
Auto off	after 5 minutes of non use	
Dimensions	192 x 104 x 52 mm	
Weight	380 g	

The revolutionary new range of Milwaukee handy photometers are compact and easy to use. Within a few minutes you can get the required result on the LCD and the meter automatically turns off after 2 minutes in order to save battery life.

MW10: Free chlorine photometer, 0.00 to 2.50 ppm range. MW11: Total chlorine photometer, 0.00 to 3.50 ppm range. MW12: Phosphate photometer, 0.00 to 2.50 ppm range. **MW13**: lodine photometer, 0.0 to 12.5 ppm range. MW14: Iron photometer, 0.00 to 5.00 ppm range.



Specification	MI404 PRO	MI405 PRO	MI411 PRO	MI412 PRO	MI414 PRO
Range	0.00 to 5.00 mg/l (Cl <sub>2</sub> )	0.00 to 9.99 mg/l (NH <sub>3</sub> -N)	0.00 0b020.516 5n9j0l (Rrg0k_)(Cl₂) 0 6.5 to 8.0 pH	.00 to 20.00 mg)	te 20.00 me/l (Cl )
Accuracy	±0.06 mg/l @1.50 mg/l	±0.30 mg/l u@5.00 mg/l	±0.06 mg/l @1.50 mg/l ±0.1 pH @7.2 pH	±0.07 mg/l @1.00 mg/l	±1.0 mg/l @10.0 mg/l
Method	Standard	Nessler	Standard	Standard	Standard
Reagents (included)	Mi504-100	Mi505-100	Mi511-100	Mi512-100	Mi514-100
Light source	tungsten lamp	LED 466 nm	tungsten lamp	tungsten lamp	LED 466 nm
Calibration	automatic	automatic	automatic	automatic	automatic
Auto off	after 10 minutes of non use	after 10 minutes of non use	after 10 minutes of non use	after 10 minutes of non use	after 10 minutes of non use
Dimensions / Weight	192 x 104 x 52 / 380 g	192 x 104 x 52 / 380 g	192 x 104 x 52 / 380 g	192 x 104 x 52 / 380 g	192 x 104 x 52 / 380 g

Milwaukee has a wide assortment of pH, ORP, Conductivity and other specialty sensors and calibration, maintenance and cleaning solutions, to meet all your specific requirements. Finding the right electrode for a specific application is a very important task and in order to solve this selection problem it is important to consider the following: electrode body, reference construction and junction.

## **Electrodes and Probes**

MA815D/1	4-ring Conductivity/TDS/NaCl/Temperature probe with DIN connector and
/A840	Polarographic D.O. probe with 3 meter cable
/A906BR/1	pH/Temp. Amplified Probe with 1 meter cable
MA814DB/1	4-ring Conductivity/TDS/NaCl/Temperature probe with DIN connector and
SE220	Double junction pH electrode with 1 meter cable and gel filled electrolyte
/A916B/1	pH Glass Electrode with BNC Connector and 1m cable
MA917B/1	Refillable Combined Glass pH Electrode with Double Junction and 1 meter
/A918B/1	Combined Glass pH Electrode with 3 Diaphrams, Double Junction and 1
MA921B/1	Double junction Platinum ORP electrode with BNC Connector and 1 m ca

Calibration, Maintenance & Cleaning Solutions					
MA9001	pH 1.68 calibration buffer solution 230 ml				
MA9004	pH 4.01 calibration buffer solution 230 ml				
MA9006	pH 6.86 calibration buffer solution 230 ml				
MA9007	pH 7.01 calibration buffer solution 230 ml				
MA9009	pH 9.18 calibration buffer solution 230 ml				
MA9010	pH 10.01 calibration buffer solution 230 ml				
MA9011	Refilling electrolyte solution 3,5M KCI 230 ml				
MA9015	Storage solution for pH/ORP electrodes 230 ml				
MA9016	Cleaning solution 230 ml				
MA9020	200-275 mV ORP solution 230 ml				
MA9061	1413 µS/cm conductivity calibration solution 230 ml				
MA9071	Electrolyte solution for D.O. probes 230 ml				



Website : www.lutrontestinginstruments.com

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The latest laboratory grade microprocessor photometers have an excellent repeatability and are ideal for field measurements. Chlorine is the most commonly used water disinfectant.

Applications vary from treatment of drinking water and wastewater to pool and spa sanitization and food processing to sterilization.

All photometers come complete in hard carrying case and reagents for 100 tests, making it ideal for field measurements.



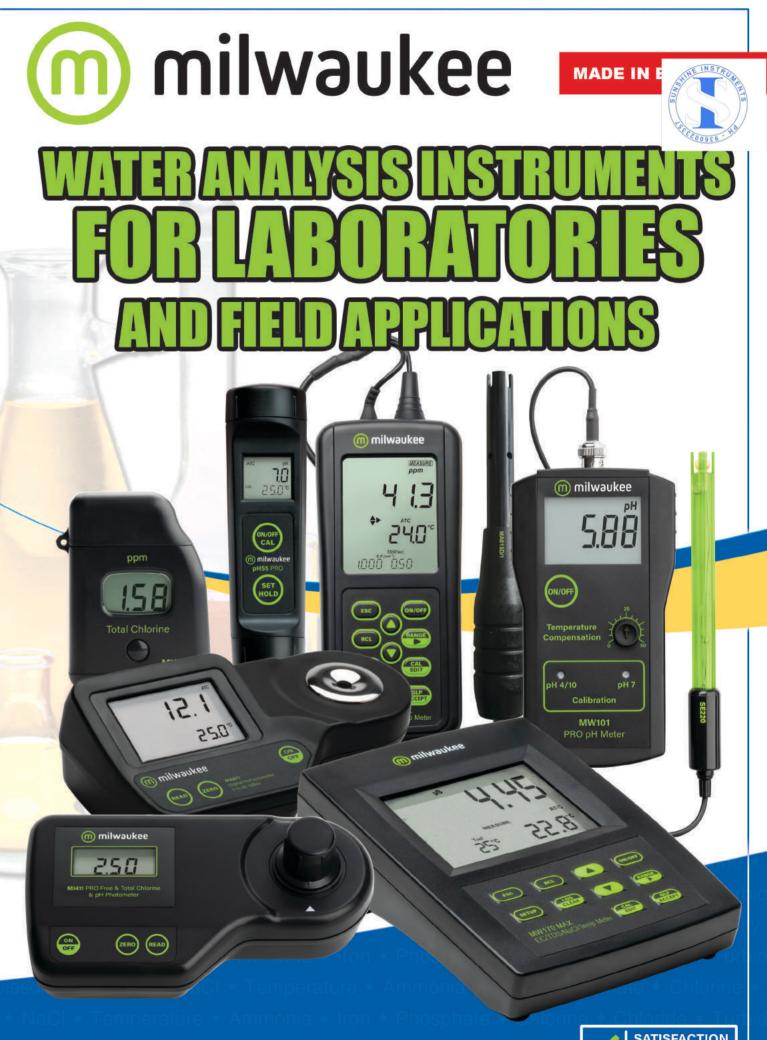


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## **IMPORTERS / EXPORTERS & SUPPLIERS :-SUNSHINE INSTRUMENTS**

Deals in :- Industrial / R&D / Scientific / Analytical / Diagnostics / Accessories 83, Chinny's Chamber, Dr. Nanjappa Road, Coimbatore - 641 018. (T.N) Ph : +91 422 2393357, +91 93600 23357 E-mail : instrumentsindia2012@gmail.com Website : www.lutrontestinginstruments.com



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The high performance economy microprocessor-based bench meters are an ideal tool in schools, laboratories and production plants. They are provided with a series of new diagnostic features which add an entirely new dimension to the measurement of pH, ORP, TDS, EC, NaCl, Temp by allowing the user to dramatically improve the reliability of the measurement

- pH extended range: -2.00 to 20.00 pH, -2.000 to 20.000 pH (MW106) • Logging: Maximum 1000 records (maximum 100 lots) On demand, 200;
- On stability, 200; Interval logging, 1000
- PC connectivity (MW151): 1 micro USB port
- auto-off feature to preserve battery life
- dedicated GLP key
- Built-in rechargeable battery with 8 hours battery life

Each meter is supplied in a carton box complete with sensors and calibration solutions.

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	Specifications	MW151 MAX	MW170 MAX	MW180 MAX
	Range pH	-2.00 to 20.00 pH / -2.000 to 20.000 pH	_	-2.00 to 20.00 pH; -2.000 to 20.000 pH
	mV	±1000.0 mV / ±2000.0 mV	—	±699.9 mV; ±2000 mV
	EC	—	0.00 to 29.99 µS/cm; 30.0 to 299.9 µS/cm;	0.00 to 29.99 µS/cm; 30.0 to 299.9 µS/cm;
			300 to 2999 µS/cm; 3.00 to 29.99 mS/cm;	300 to 2999 µS/cm; 3.00 to 29.99 mS/cm;
			30.0 to 200.0 mS/cm; up to 500.0 mS/cm	30.0 to 200.0 mS/cm; up to 500.0 mS/cm
	TDS	_	0.0 to 14.99 mg/l (ppm); 15.0 to 149.9 mg/l (ppm);	0.0 to 14.99 mg/l (ppm); 15.0 to 149.9 mg/l (ppm);
			150 to 1499 mg/l (ppm); 1.50 to 14.99 g/l (ppt);	150 to 1499 mg/l (ppm); 1.50 to 14.99 g/l (ppt);
			15.0 to 100.0 g/l (ppt); up to 400.0 g/l	15.0 to 100.0 g/l (ppt); up to 400.0 g/l
	NaCl	—	0.0 to 400.0%	0.0 to 400.0%
7İ	Temp.	-20.0 to 120.0°C / -4.0 to 248.0°F	-20.0 to 120.0°C / -4.0 to 248.0°F	-20.0 to 120.0°C / -4.0 to 248.0°F
	Calibration pH	up to 5-point, with 7 standard buffers	—	up to 5 points, 7 memorized buffers
	EC	—	Single cell factor calibration 6 standards	1-point slope calibration
				with 6 memorized solutions
	NaCl	—	1 point, with MA9066 calibration solution	1 point, with MA9066 solution
	Temp.	<u> </u>	2 points, 0 to 50°C / 32 to 122°F	2 points, 0 to 50°C / 32 to 122°F
	Temp. compensation	automatic, or manual	automatic, or manual, or without	automatic, or manual
	Electrode/Probe	MA917B/1, MA831R	MA814DB/1	MA917B/1, MA814DB/1, MA831R
	Log		Maximum 1000 records	
	PC interface	1 USB port, 1 micro USB port	1 micro USB port	RS232/USB opto-isolated
	Power supply	12VDC adapter, 5 VDC USB adapter	12V DC adapter	12V DC adapter
	Dimensions	230 x 160 x 95 mm / 0.9 Kg	230 x 160 x 95 mm / 0.9 Kg	230 x 160 x 95 mm / 0.9 Kg

MW150 is an advanced pH/ORP/Temp microprocessor-based bench meter. It is ideal for students and technicians who need fast and reliable measurements.

> The MW190 is ideal for testing Dissolved Oxygen in the pharmaceutical and food Industry, as well as monitoring in water treatment plants. The user can choose to measure D.O. readings in mg/L or % of saturation of O2. This meter can be used for any type of water, as it allows measurements to compensate for temperature, altitude and salinity factors. The automatic logging interval can be set to perform analysis and store data into the memory.

Milwaukee has a wide assortment of pH, ORP sensors to meet all your requirements. Finding the right electrode for a specific application is a very important task and in order to solve this selection problem it is important to consider the following: electrode body, reference construction and junction.

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Specifications

Conversion Factor

Temp. Compensation

Accuracy

(@25°C)

Calibration

Battery Type Battery Life Auto-off

Probe

Calibration

MW101

PRO pH Mete

EC

TDS

EC/TDS

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manaal, at i point	
utomatic, from 5 to 50°C	autom
E510 / SE520 (included)	SE510
0 to 50°C, max RH 95%	0 to 5
x 9V alkaline (included)	1 x 9\
300 hours of use	30
_	
145 x 80 x 40 mm	14
220 g (with battery)	220
120 mm	120 mm

Specifications

Accuracy pH/ORP

Temp. Compensation

emperature Probe vironment

Range

(@25°C)

Calibration

H Electrode

ORP Electrode

attery Type

Battery Life Auto-off

pH/ORP

Temp.

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Specifications		MW150 MAX	MW190 MAX
Range pH /	mV	-2.00 to 20.00 pH / ±1000.0 mV / ±2000.0 mV	_
	<b>O</b> <sub>2</sub>	_	0.00 to 45.00 mg/l (ppm)
% saturation	1 <b>O</b> <sub>2</sub>	—	0.0 to 300.0%
Tei	mp.	-20.0 to 120.0°C / -4.0 to 248.0°F	-20.0 to 120.0 °C (-4.0 to 248.0 °F)
Calibration	рΗ	up to 3 points, with 7 memorized buffers	—
	<b>O</b> <sub>2</sub>	—	1 or 2 points 0% and 100%
Temp. compensation	n	automatic or manual	automatic, 0.0 to 50.0°C / 32.0 to 122.0°F
Altitude compensati	on	_	-500 to 4,000 m
Salinity compensation	on	—	0 to 40 g/l
Electrode / Probe		MA917B/1, MA831R	MA845
PC interface		_	1 USB type A port, 1 micro USB port
Power supply		12V DC adapter (included)	12V DC adapter (included)
Dimensions / Weight		230 x 160 x 95 mm / 0.9 Kg	230 x 160 x 95 mm / 0.9 Kg

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Code	MA991B/1	MA919B/1	MA924B/1	MA917B/1	MA918B/1	MA920B/1
Range	0 to 13 pH	0 to 13 pH	±2000 mV	0 to 14 pH	0 to 12 pH	0 to 12 pH
Temp. range	-5 to 40°C	-5 to 40°C	20 to 40°C	20 to 40°C	-5 to 30°C	-5 to 40°C
Shaft material	glass	glass	glass	glass	glass	PVDF
Ref. electrolyte	KCL 3.5M	KCL 3.5M	KCL 3.5M	KCI 3.5M	KCI 3.5M + AgCI	Viscolene
Reference type	single, Ag/AgCl	double Ag/AgCl	double Ag/AgCl	double, Ag/AgC	double, Ag/AgCl	single, Ag/AgCl
Reference junction	ceramic, single	open	open	ceramic	ceramic, triple	open
Shape of membrane	spheric	spheric	platinum ring	spheric	conic	conic
Max. pressure	0.1 bar	0.1 bar	0.1 bar	0.1 bar	0.1 bar	0.1 bar
Connector type	BNC	BNC	BNC	BNC	BNC	BNC
Cable	coaxial, 1 m	coaxial, 1 m	coaxial, 1 m	coaxial, 1 m	coaxial, 1 m	coaxial, 1 m
Shaft length	120 mm	120 mm	120 mm	120 mm	120 mm	75 mm
Diameter	12 mm	8 mm	8 mm	12 mm	12 mm	6 mm
Application	laboratory applications	food laboratory	food laboratory	laboratory applications	laboratory applications	laboratory applications

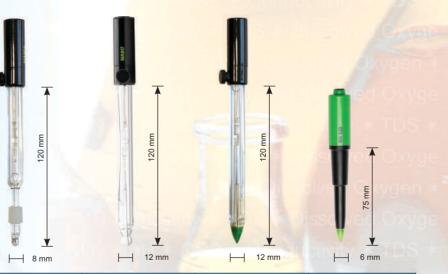
MW series are compact portable meters. These handy and ergonomically designed portable meters are ideal for anyone working on a low budget and still requires fast and reliable measurements.

These easier and faster to calibrate portable meters have a small, ergonomic case design. Other features include a large and easy to read LCD and long battery life.

All meters are supplied with electrode/probe and calibration solutions in a carton box.

MW101 PRO	MW102 PRO+	MW500 PRO
0.00 to 14.00 pH	-2.00 to 16.00 pH	±1000mV
_	-5 to 70°C	—
±0.02 pH	±0.02 pH	±5mV
_	±0.5°C	_
manual, 0 to 50°C	automatic, 0 to 70°C	—
manual, 2-points through	automatic at 1 or 2 points	—
offset and slope trimmers		
SE220 (included)	SE220 (included)	—
—	—	SE300 (included)
—	MA830R (included)	—
0 to 50°C, max RH 95%	0 to 50°C, max RH 95%	0 to 50°C, max RH 95%
1 x 9V alkaline (included)	1 x 9V alkaline (included)	1 x 9V alkaline (included)
approx. 300 hours of use	approx. 300 hours of use	approx. 300 hours of use
_	after 8 minutes of non-use	_
145 x 80 x 40 mm / 220g	145 x 80 x 40 mm / 220 g	145 x 80 x 40 mm / 220 g

MW301 PRO/MW302 PRO	MW401 PRO/MW402 PRO	MW801 PRO/MW802 PRO	MW600 PRO
_	_	0.0 to 14.0 pH / 0.00 to 14.00 pH	_
0 to 1900 µS/cm / 0.0 to 10.0 mS/cm	—	0 to 1990 µS/cm / 0.00 to 6.00 mS/cm	—
—	0 to 1900 mg/L / 0.0 to 10.0 g/L (ppt)	0 to 1990 ppm / 0 to 4000 ppm	—
—	—	—	0.0 to 19.9 mg/L
_	—	±0.2 pH / ±0.20 pH	—
±2% Full Scale	±2% Full Scale	±2% Full Scale	—
—	—	—	±1.5% Full Scale
—	—	0.5 / 0.68	_
manual, at 1 point	manual, at 1 point	manual, at 1 point	manual on 2 points
automatic, from 5 to 50°C	automatic, from 5 to 50°C	automatic, from 0 to 50°C	automatic from 0 to 30°C
SE510 / SE520 (included)	SE510 / SE520 (included)	SE600 (included)	MA840 (included)
0 to 50°C, max RH 95%	0 to 50°C, max RH 95%	0 to 50°C; max RH 95%	0 to 50°C; max RH 95%
1 x 9V alkaline (included)	1 x 9V alkaline (included)	1 x 9V alkaline	1 x 9V alkaline
300 hours of use	300 hours of use	150 hours of use	70 hours of use
_	—	after 8 minutes of non-use	_
145 x 80 x 40 mm	145 x 80 x 40 mm	185 x 82 x 45 mm	145 x 80 x 40 mm
220 g (with battery)	220 g (with battery)	165 g (with battery)	220 g (with battery)



These pH, Conductivity, TDS, NaCl, Dissolved Oxygen, and Temperature portable meters are designed to provide laboratory results and accuracy even under harsh industrial condition. This new line of MW portable meters will suit all budgets and provide the user with flexibility in a wide range of applications.

### IP67 waterproof casing

- pH extended range: -2.00 to 20.00 pH, -2.000 to 20.000 pH (MW106)
- Logging: Maximum 1000 records (maximum 100 lots) On demand, 200; On stability, 200; Interval logging, 1000
- PC connectivity (MW106): 1 micro USB port
- alphanumeric LCD displayed messages for user friendly, intuitive information / warning / error messages
- auto-off feature to preserve battery life
- internal clock and date to keep track of different time-dependent functions (calibration timestamp, calibration time out)
- dedicated GLP key

CAL

Each meter is supplied in a hard carrying case complete with sensors and calibration solutions.

Specificati	ons	MW105 MAX	MW106 MAX	<b>MW306 MAX</b>	MW605 MAX
Range	pН	-2.00 to 20.00 pH	-2.00 to 20.00 pH/-2.000 to 20.000 pH	_	—
-	mV	±2000 mV	±2000 mV	—	—
	EC	_	_	0.00 µS/cm up to 500.0 mS/cm	_
	TDS	_	_	0.00 mg/l up to 400.0 g/l	_
	NaCl	_	_	0.0 to 400.0%	_
	<b>O</b> <sub>2</sub>	—	_	—	0.0 to 45.00 mg/L / 0.0 to 300%
	Temp	-20.0 to 120.0°C	-20.0 to 120.0 °C -	20.0 to 120.0 °C	-20.0 to 120.0 °C
Accuracy	pН	±0.02 pH	±0.01 pH / ±0.002 pH	—	—
(@25°C)	mV	±1 mV	±1 mV	—	-
	EC	—		±1% of reading	-
	TDS	—		±1% of reading	—
	NaCl	—		±1% of reading	—
	<b>O</b> <sub>2</sub>	—		—	±1.5 % of reading ±1 digit
	Temp	±0.5°C	±0.5°C up to 60°C	±0.5 °C	±0.4 °C
Calibration		automatic, up to 3 points	up to 5 points, with 7 standard buffers	automatic, 1 point	One or two % saturation calibration points
Temp. Comper	nsation	automatic	automatic	automatic or manual or without	automatic, from 0 to 50°C
Probe		MA906BR/1 (included)	MA906BR/1 (included)	MA815D/1 (included)	MA860 (included)
Environment		0 to 50°C, max RH 95%	0 to 50°C, max RH 95%	0 to 50°C, max RH 95%	0 to 50°C, max RH 95%
Battery Type		3 x 1.5V alkaline AA (included)	3 x 1.5V alkaline AA (included)	3 x 1.5V alkaline AA (included)	3 x 1.5V alkaline AA (included)
Battery Life		approx. 200 hours of use	approx. 200 hours of use	approx. 200 hours of use	approx. 200 hours of use
Dimensions		200 x 85 x 50 mm	200 x 85 x 50 mm	200 x 85 x 50 mm	200 x 85 x 50 mm
Weight		260 g	260 g	280 g	280 g

Waterproof pH testers with large dual-level LCD that displays pH, ORP, EC, TDS and temperature (°C or °F). They have a stability indicator and hold function that freezes the display for easy and accurate recording. The large display also has graphic symbols to guide you through all operations.

Complete with a temperature probe for faster and more precise temperature measurement they compensate automatically for temperature. Calibration is made automatically in 1 or 2 points with memorized standard and NIST buffer sets. Auto power OFF saves battery power after non-use.

The double-junction electrode can be replaced in a very fast and simple way! The modular design allows easy electrode and battery replacement.

The MW803 and MW804 Combination testers with dual-level LCD measure pH/Conductivity/TDS/Temperature in one single tester!

Specifications		pH55 PRO/pH56 PRO	EC59 PRO/EC60 PRO	MW803 MAX/MW804 MAX
Range	pН	-2.0 to 16.0 / -2.00 to 16.00	_	0.00 to 14.00 pH
-	ËC	_	0 to 3999 µS/cm / 0 to 20.00 mS/cm	0 to 3999 µS/cm / 0 to 20.00 mS/cm
	TDS	_	0 to 2000 ppm / 0 to 10.00 ppt	0 to 2000 ppm / 0 to 10.00 ppt
	Temp.	-5.0 to 60.0°C	-5.0 to 60.0°C	0.0 to 50.0°C
Resolution	pH	0.1 pH / 0.01 pH	—	0.01 pH
	EC	_	1 µS/cm / 0.01 mS/cm	1 µS/cm / 0.01 mS/cm
	TDS	—	1 ppm / 0.01 ppt	1 ppm / 0.01 ppt
	Temp.	0.1°C	0.1°C	0.1°C
Accuracy	pН	±0.1 / ±0.05	—	±0.05 pH
(@20°C)	EC	—	±2% Full scale	±2% Full scale
	TDS	_	±2% Full scale	±2% Full scale
	Temp.	±0.3°C	±0.3C	±0.5°C
Calibration		automatic 1 or 2 points	automatic, 1 point	automatic, 1 point for EC
				and 1 or 2 points for pH
Temp. comper	nsation	automatic	automatic	automatic
Probe (included)		pH/Temp. (Mi56P)	EC/TDS/Temp. (Mi59P)	pH/EC/TDS/Temp. (Mi60P)
Auto off		after 8 minutes of non use	after 8 minutes of non use	after 8 minutes of non use
Dimensions / Weight		200 x 38 mm / 100 g	200 x 38 mm / 100 g	200 x 38 mm / 100 g



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GLP

SETUP

