

# Manta Plus

- Site-to-site profiling
- Process monitoring
- Unattended monitoring
- Groundwater
- Telemetered deployments
- Data buoy deployments
- Lakes, rivers, estuaries, streams and oceanographic
- Wastewater
- Laboratory research

**eureka**<sup>™</sup>  
water probes



The Manta family offers up to 12 sensors in one, integrated package. Each Manta comes standard with a weighted sensor guard, storage and calibration cups, temperature sensor, embedded memory for internal logging, marine connector, electronic manual, MantaManager software and standard three year warranty. Available sensors include temperature, optical DO, pH, ORP, conductivity, depth, level, turbidity, fluorometers including chlorophyll a, chlorophyll red, phycocyanin, phycoerythrin, fDOM, fDOM II, rhodamine, fluorescein, crude oil, refined fuels, optical brighteners, and tryptophan/BOD, CO<sub>2</sub>, ammonium, nitrate, sodium, calcium, bromide, chloride, TDG, PAR, dual PAR, and transmissivity.

## Trimeter - Three Parameters at the Lowest Possible Cost

Get all the features of a Manta, including top-grade sensors and simple software, in an instrument designed for economy. Each Trimeter employs one of any sensor that Eureka offers, plus optional temperature and depth sensors.

### Rugged

- Anti-corrosive housings and sensors
- Industry leading 3 year warranty
- Anti-fouling options
  - wipers and copper gauze

### Intelligent

- Sensor health indicator
- Automatic recording of internal calibration data
- LED status indicator

### Simple

- One touch and automatic data capture
- Fast easy calibration
- Intuitive software

## Accessories

- Flow Cells
- Copper-gauze anti fouling kits
- SDI-12 convertors
- Hard-sided cases
- Pipe kits
- Weather stations
- Leapfrog Bluetooth
- Calibration standards

## Data Display

Use your own smart phone or other display! The Leapfrog Bluetooth provides power to the Manta, and wireless communication to any Bluetooth-enabled display running the Manta Manager application - Windows Mobile, Windows for PC, or Android and iOS.

## Manta+™ Multiprobe Specifications

	Triometer	Manta+20	Manta+25	Manta+30	Manta+35	Manta+40
<b>Diameter</b>	1.85"	1.95"	2.45"	2.95"	3.5"	4.00"
<b>Length - w/o Battery Pack</b>	13.5"	19"	19"	19"	19"	19"
<b>- Add Internal Battery Pack</b>	22"	27"	27"	27"	19"	19"
<b>Weight - with IBP</b>	2.8 lbs	2.4 lbs	2.5 lbs	5 lbs	9 lbs	10 lbs
<b>Weight - without IBP</b>	2.2 lbs	-	-	-	-	-
<b>Number of sensors</b>	Any single sensor plus depth and temp option	Up to 6	Up to 6	Up to 7	Up to 11	Up to 13
<b>Battery Pack</b>	3 "D"	3 "D"	3 "D"	8 "C"	6 "C"	6 "C"
<b>Operating Temperature</b>	-5 to 50 C					
<b>Depth Rating</b>	200 m, Max depth for ISE and TDG sensors is 15 meters					
<b>Communications</b>	RS-232, SDI-12, USB or Bluetooth					
<b>Sample Rate</b>	1 Hz					
<b>Data Memory</b>	>1,000,000 logged readings					

### WARRANTY

<b>Manta+ Multiprobe</b>	3 years *	<b>Leapfrog Bluetooth</b>	3 years (battery - 90 days)	<b>Underwater cables</b>	3 years
<b>Optical DO Cap</b>	3 years	<b>Turbidity Wiper</b>	2 years		

\*All sensors included except ISE's (Ammonia/nitrate/chloride); pH sensor included in 3 year warranty

## Manta Display Software

The Manta Software features simple to use, intuitive menus. Instructions take the user through the calibration of each sensor. Easy set-up for discrete sampling \*snapshot" files or log files for internal logging, using Windows architecture. All files are in .csv format.

DATE	TIME	Temp deg C	pH units	SpCond uS/cm	Salinity PSS	TDS mg/l	TurbDig NTU	HDO mg/l	HDO %Sat	ORP mV	Depth m
08/14/18	11:37:30	24.53	9.46	428.9	0.20	274.5	-0.17	7.30	90.0	201.3	0.00
08/14/18	11:37:29	24.53	9.47	428.8	0.20	274.4	-0.17	7.30	90.0	201.3	0.00
08/14/18	11:37:28	24.53	9.47	428.9	0.20	274.5	-0.16	7.30	90.0	201.3	0.00
08/14/18	11:37:27	24.53	9.47	428.8	0.20	274.4	-0.16	7.30	90.0	201.1	0.00
08/14/18	11:37:26	24.53	9.47	428.9	0.20	274.5	-0.16	7.30	90.0	201.0	0.00
08/14/18	11:37:25	24.53	9.47	428.9	0.20	274.5	-0.16	7.30	90.1	200.9	0.00
08/14/18	11:37:24	24.53	9.47	428.9	0.20	274.5	-0.16	7.30	90.1	200.7	0.00
08/14/18	11:37:23	24.53	9.47	428.8	0.20	274.4	-0.16	7.30	90.1	200.7	0.00
08/14/18	11:37:22	24.53	9.47	428.9	0.20	274.4	-0.14	7.30	90.1	200.6	0.00
08/14/18	11:37:21	24.53	9.47	428.9	0.20	274.5	-0.14	7.30	90.1	200.5	0.00
08/14/18	11:37:20	24.53	9.47	428.9	0.20	274.5	-0.14	7.30	90.1	200.3	0.00
08/14/18	11:37:19	24.53	9.47	428.9	0.20	274.5	-0.05	7.30	90.1	200.2	0.00
08/14/18	11:37:18	24.53	9.47	428.9	0.20	274.5	-0.05	7.30	90.1	200.1	0.00
08/14/18	11:37:17	24.53	9.47	429.0	0.20	274.5	-0.05	7.30	90.1	200.0	0.00
08/14/18	11:37:16	24.53	9.47	428.8	0.20	274.4	-0.05	7.31	90.1	199.9	0.00
08/14/18	11:37:15	24.53	9.47	429.0	0.20	274.5	-0.05	7.31	90.1	199.7	0.00

DATE	07/14/17
TIME	09:45:54
Temp	51.23 deg/C
pH	8.91 units
Depth	0.00 m
SpCond	327.5 uS/cm
HDO	5.75 mg/l
HDO	110.9 %Sat

15.20	8.83
temp C	DO %sat
5.67	438.20
pH units	SC uS/cm
8.12	28.44
turbidity FNU	depth m

Android Mobile App

iOS Mobile App

## Mobile Version

MantaLink software is available for Android and iOS with small screen features like "swipeable" pages and large, high-contrast numbers for easier visibility in sunlight.

## About Eureka

Eureka was formed in 2002 by the innovators of the multiprobe industry dedicated to transforming multiprobe technology and customer support. Eureka is now the leading global supplier of professional grade multiprobes and multiprobe accessory systems, who still listen to our customers everyday.

Trimeter



Temperature  
Depth  
+ any other sensor

20



Temperature  
pH  
Conductivity  
DO (optical)

25



Temperature  
pH  
Conductivity  
Turbidity (or any medium sensor)

30



Temperature  
pH  
Conductivity  
DO (optical)  
Turbidity (or any medium sensor)

35



Standard on  
35/40



Temperature  
pH  
Conductivity  
DO (optical)  
Universal wiper  
Turbidity

40



**Medium sensor options**

- PAR
- Chlorophyll
- Blue-green algae
- Rhodamine
- Crude oil
- Refined oil
- CDOM/FDOM
- Fluorescein dye
- Optical brighteners
- Tryptophan
- \*Depth and ORP (must have pH) optional on any probe

**Small sensor options**

- Sodium
- Ammonium
- Nitrate
- Chloride
- TDG



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Version 1.0

Parameter		Range**	Resolution	Accuracy	Comments	
<b>Temperature</b>	Temperature	-5 to 50°C	0.01	±0.1	Calibration not required	
<b>pH/ORP</b>	pH	0 to 14 units	0.01	±0.1 within 10°C of calibration, 0.2°C otherwise	Refillable reference electrode; corrected for temperature; typical sensor life > 6 years. Optional ORP sensor is combined with pH sensor.	
	ORP	-999 to 999 mV	0.1	±20 mV		
<b>Turbidity</b>	Turbidity	0 to 1000 FNU	0.01	±0.3 FNU or ±2% of reading w.i.g.	Filtered for non-turbidity spikes; includes wiper to clean the optics.	
		1000 to 4000 FNU		±4% of reading		
<b>Transmissivity</b>	Transmissivity	0 to 100 % transmission	0.01	Linearity of 0.99R <sup>2</sup>	Transmissometer mounts externally to Manta.	
<b>Optical Dissolved Oxygen</b>	Concentration	0 to 20 mg/l	0.01	±0.1	Compensated for temperature and salinity; EPA approved "lifetime" luminescence method; typical sensor cap life > 6 years.	
		20 to 30 mg/l	0.01	±0.15		
		30 to 50 mg/l	0.01	±5 % of reading		
	% saturation	0 to 500 % saturation	0.1	Corresponds with the accuracy of the concentration reading		
<b>Conductivity</b>	Specific conductance, µS/cm	0 to 5000 µS/cm	0.1	±0.5 % of reading ±1 w.i.g.	Corrected for temperature; four easy-to-clean graphite electrodes; optional sensor provides ±0.5% of reading accuracy to 100 mS/cm.	
	Specific conductance, mS/cm	0 to 100 mS/cm	0.001	±1 % of reading ±0.001		
		100 to 275 mS/cm	0.001	±2 % of reading		
	Salinity	0 to 70 PSU	0.01	±2 % of reading		Calculated from conductivity and temperature, PSU is equivalent to ppt
	Total dissolved solids (TDS)	0 to 65 g/l	0.1	±5 % of reading		
<b>Pressure</b>	Depth	0 to 25 m	0.01	±0.05	Compensated for temperature and salinity	
		0 to 200 m		±0.4		
	Vented depth	0 to 10 m	0.001	±0.003	Compensated for temperature; salinity, barometric pressure	
	Barometric pressure	400 to 900 mm Hg	0.1	±1.5	Included with depth sensor	
	Total dissolved gas (TDG)	400 to 1,400 mm Hg	0.1	±1	Compensated for temperature, maximum depth 15m	
<b>Fluorometers</b>	Chlorophyll a - blue	0 to 100 µg/l	0.01	linearity of 0.99 R <sup>2</sup>	Highest-quality fluorometric sensors; fluorometers often require non-trivial calibration; custom optics available upon request	
	Chlorophyll a - red	0 to 500 µg/l				
	Rhodamine dye	0 to 200 ppb				
	Phycocyanin (freshwater BGA)	0 to 4500 ppb				
	Phycoerythrin (marine BGA)	0 to 700 ppb				
	CDOM/FDOM	0 to 500 ppb				
	Optical brightener	0 to 300 ppb				
	Tryptophan	0 to 5000 ppb				
	Fluorescein dye	0 to 150 ppb				
	PTSA	0 to 650 ppb				
	Refined oil	0 to 20 ppm				
	Crude oil	0 to 300 ppb				
<b>Ion-selective electrodes (ISE's)</b>	Ammonium	0 to 100 mg/l as nitrogen	0.1	±10% of reading or 2mg/L w.i.g	Corrected for ionic strength (via conductivity readings); the accuracy specification relies on non-trivial maintenance practice and frequent calibration near the temperature of measurement; sensors require periodic tip replacement	
	Nitrate	0 to 100 mg/l as nitrogen				
	Chloride	0.5 to 18,000 mg/l				
	Sodium	0.05 to 20,000 mg/l				
	Calcium	0 to 40,000 mg/l				
	Bromide	0 to 80,000 mg/l				
<b>PAR</b>	Photometric PAR	10,000 µmol/cm <sup>2</sup>	0.1	±5% of full scale	LiCor spherical sensor	
<b>CO2</b>	Carbon Dioxide	0 to 2000 ppm	0.1	±3% of full scale	Other ranges available	

For best accuracy, always calibrate near the anticipated field readings, and near the temperature of the anticipated field readings.

Specifications indicate typical performance and are subject to change.