



USM BOD/COD

Meter and Wastewater Probe

USM BOD/COD Probe

OPTIMISE THE EFFICIENCY OF YOUR WASTEWATER TREATMENT PLANT

Whether it is BOD/COD measurement for aeration management, chemical dosing or monitoring your UV disinfection performance, UV254 measurement will provide you with a fast, responsive and cost efficient means of optimising your process.

USM BOD/COD Probe

Small footprint probe with 39mm diameter. The probe can be configured with either a 2mm, 5mm, 20mm or 50mm path length depending upon the water quality and measurement requirements.

Self monitoring and fouling compensation ensures a long time between services.

The stainless steel housing for the probe and flow cell are suited to use in dirty water. The flow cell has a special cleaning port for use with a jet wash system.

Investigate trends and upsets with data storage that records every measurement.

Modern Control Unit

Display results, trend and alarm data in real time for multiple parameters simultaneously on a colour display control unit with a touch screen interface.

Data Review

20 year data logger.

See a graphical review of trend data.

Easily transfer Excel-compatible CSV output files.

Advanced Optics and Electronics

Long life pulsed UV LEDs ensure an extended service life and have none of the decay issues associated with mercury lamp analysers.

Measurements	UVA, UVT and SUVA surrogate measurements TOC, BOD, COD and others
Range	0-100% UVT 0-2.5 ABS
Accuracy	±0.5% UVT
Repeatability	±0.05% UVT
Path Length	2, 5, 20 or 50mm
Sampling Time	10 seconds
Material	Stainless steel
Wavelength	254nm LED and narrow filter photodiode
Light Source	Deep UV LED long-life, self monitoring
Dimensions	Probe: 39mm diameter, height 150mm + path length Control Unit: 262 x 128 x 91mm

Flowcell Probe



RANGES

Parameter	1mm path length in mg/L	2mm path length in mg/L	5mm path length in mg/L	10mm path length in mg/L	20mm path length in mg/L	50mm path length in mg/L
COD	0-2800	0-1400	0-560	0-280	0-140	0-56
BOD	0-1400	0-700	0-280	0-140	0-70	0-28
TOC	0-1200	0-600	0-240	0-120	0-60	0-24
DOC	0-1000	0-500	0-200	0-100	0-50	0-20

ACCURACY

Parameter	1mm path length in mg/L	2mm path length in mg/L	5mm path length in mg/L	10mm path length in mg/L	20mm path length in mg/L	50mm path length in mg/L
COD	4	2	0.8	0.4	0.2	0.08
BOD	2	1	0.4	0.2	0.1	0.04
TOC	2	1	0.4	0.2	0.1	0.04
DOC	2	1	0.4	0.2	0.1	0.04

USM UNIVERSAL SMART METER

The USM is a small but powerful meter for intelligent water quality monitors.

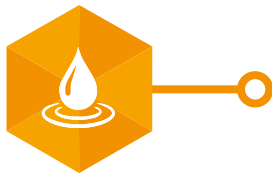
In common with all Smart Storm products the USM has been designed with the user in mind. Its four button keypad allows fast and simple programming. The intuitive menu guide the user through clearly worded choice fields and help the user to navigate to a successfully programmed unit in a matter of minutes.



USM SPECIFICATIONS

DISPLAY	
Display	3" graphic LCD display 128 x 64 px, white on blue
PHYSICAL	
Dimensions (mm)	130 (H) x 160 (W) x 60 (D) mm
Ratings	IP66/NEMA 4X
Approvals	ASA+PC, UL 94V-0
Mounting	Wall mounted
POWER	
Supply (AC)	100 - 240Vac, 5W (5V @ 0.38A)
Supply (DC)	9 - 36Vdc, 5W (5V @ 0.38A)
ELECTRONIC PERFORMANCE	
Processor	Texas Instrument MSP430, 16-Bit architecture
Temperature Range	-20 to +80°C (-4 to +176°F)

WATER QUALITY MEASUREMENT



- › BOD – Biochemical Oxygen Demand
- › COD – Chemical Oxygen Demand
- › TOC – Total Organic Carbon
- › DOC – Dissolved Organic Carbon

The USM is a small but powerful, low cost meter.

The Universal Smart Meter (USM) is designed for smaller budgets but with a user-friendly interface, a 4-20mA output and also a 20 year data logger as standard.

Its four button keypad allows for fast and simple programming. The intuitive menu guide the user through clearly worded choice fields and help the user to navigate to a successfully programmed unit in a matter of minutes.

INPUTS & OUTPUTS	
Outputs	2 x 4-20mA Isolated
Comms	RS485 Modbus RTU
Relays	3 x relays, 230Vac 5A / 30Vdc 6A contact rating
Options	Datalogger >20 years' storage. Inquisitor Windows based reporting software.



Universal Smart Meter

USM COD LITE PORTABLE UV254 ANALYSER

The quickest, easiest and most accurate portable UV254 analyser

Whether you are in a lab, at an industrial effluent point, water treatment works or remote river, the USM COD Lite will perform for you.

The USM COD Lite measures UV254 transmission and absorption on a small handheld device. UV254 absorption (UVA) lets you measure the Natural Organic Materials (NOMs) in your water. Surrogate measurements* of TOC, BOD and COD can be achieved without the need for expensive reagents.

Studies have also shown UVA as a reliable indicator of disinfection by-products such as Trihalomethanes (THM).



Portable USM UV254 Analyser

Multi-Parameter

Display up to four surrogate measurements at the same time in addition to UVA and UVT results.

Surrogate measurements such as TOC, BOD and COD can be quickly calibrated for a number of locations.

Advanced Optics and Electronics

Long life pulsed UV LEDs ensure an extended service life and have none of the longer warm up times associated with mercury lamp analysers.

Modern User Interface

The modern interface offers an icon-driven, colour touch screen interface, ensuring that taking measurements is as simple and quick as possible.

Data Review

Store a lifetime of data on the analyser. See a graphical review of trend data Easily transfer Excel-compatible CSV output files.

Measurement screen



Data trending screen



Measurements	UVA, UVT and SUVA surrogate measurements TOC, BOD, COD and others
Range	0-100% UVT 0-2.5 ABS
Accuracy	±0.5% UVT
Repeatability	±0.05% UVT
Cuvettes	10mm square UV quartz cuvette 1, 2, 5 & 10mm options
Measurement Time	10 Seconds
Power	Internal lithium polymer battery USB charger
Wavelength	254nm LED and narrow filter photodiode
Light Source	Deep UV LED Long life, self monitoring
Data Logger	Lifetime measurement storage
Dimensions	140 x 160 x 77mm
Display	800 x 480 pixel 4in capacitive touch TFT colour LCD
Operating Conditions	10 to 45 °C, max 80% relative humidity (non-condensing)
Enclosure Rating	IP65
Interfaces	USB for data retrieval
Accessory Options	Hard case, UV quartz cuvettes

RANGES				
Parameter	1mm path length in mg/L	2mm path length in mg/L	5mm path length in mg/L	10mm path length in mg/L
COD	0-2800	0-1400	0-560	0-280
BOD	0-1400	0-700	0-280	0-140
TOC	0-1200	0-600	0-240	0-120
DOC	0-1000	0-500	0-200	0-100

ACCURACY				
Parameter	1mm path length in mg/L	2mm path length in mg/L	5mm path length in mg/L	10mm path length in mg/L
COD	2	1	0.4	0.2
BOD	1	0.5	0.2	0.1
TOC	1	0.5	0.2	0.1
DOC	1	0.5	0.2	0.1

* Measurement of surrogates requires routine calibration to standard procedures, as the water matrix chemistry may change with time.



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