

Water level indicators (dipmeters)

- ❑ **Kevlar® reinforced tape or cable option.**
- ❑ **Clear interval markings.**
- ❑ **Variable sensitivity control.**
- ❑ **Lightweight and durable.**
- ❑ **Rugged field-proven units.**



450-008 to 450-017

Dipmeters are portable instruments for measuring the water level in wells, standpipes and boreholes. The probe is lowered down a well or standpipe and when contact is made with water an aural and visual signal is produced in the centre of the reel. The dipmeter reel contains a replaceable 9 volt battery, buzzer and amplifier. The flat tape contains two conductors and three separate Kevlar® straining members which resist tape stretch and are capable of withstanding loads of up to 50kg (110lbs). The tape to probe joint is a terminal clamp protected by a PVC sheath. The standard probe size is suitable for use in 3/4" (19mm) standpipe. The probe housing is available in stainless steel or nickel plated brass. Groundwater conductivity can vary, dependent on location, and thus a variable sensitivity control is fitted as standard. This ensures that adequate signals are given in all types of groundwater. Each model incorporates a lightweight PVC reel mounted on a sturdy epoxy painted steel frame. The frame is fitted with protective feet, a reel brake and a holder for storing the probe.

Specification

sensor	gives aural & visual cue on contact with water
tape	Kevlar® reinforced. (10mm graduation) or cable (1m graduation)
power	9V replaceable battery

Ordering Information

450-008	Water level indicator. Fitted with 30m tape graduated every 10 mm.
450-010	Water level indicator. Fitted with 60m tape graduated every 10 mm.
450-011	Water level indicator. Fitted with 100m tape graduated every 10 mm.
450-012	Water level indicator. Fitted with 150m tape graduated every 10 mm.
450-013	Water level indicator. Fitted with 200m tape graduated every 10mm.
450-015	Water level indicator. Fitted with 300m tape graduated every 10mm.
450-017	Water level indicator. Fitted with 500m tape graduated every 10mm.
23-1757	Water level indicator. 50m cable graduated every 1m.
23-1759	Water level indicator. 100m cable graduated every 1m.

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Distributor:

ELE Environmental Division



Digital water level monitoring system

- ❑ Interval, event and logarithmic datalogging options.
- ❑ Log records all set up and calibration data as well as recorded readings.
- ❑ Pressure and Temperature readings.
- ❑ Easy to use, intuitive software.
- ❑ Fits inside 2 inch (50mm) borehole.
- ❑ User replaceable batteries.
- ❑ Designed for extended field deployment.

The digital water level monitoring system consists of two components; a logger at the top of the well containing the batteries; and an SDI-12 sensor unit at the bottom. Measurement occurs in the sensor unit. The sensor unit then applies a proven temperature compensation algorithm before digitally transmitting the calibrated pressure reading to the datalogger. This allows the logger units and sensor units to be interchanged. The cable is permanently attached to the sensor but can be detached from the logger.

The Digital water level monitoring system is available with three standard length options or with a user defined cable length. Borehole mounting kits are also available.



Specification

logger dimensions	1.9" (49mm) outside dia. x 15" (0.4m) length
sensor dimensions	1.1" (28mm) outside diameter x 8" (0.2m) length
logger enclosure	ABS plastic w/Delrin end-caps, weather-tight
sensor enclosure	1/10" (2.7mm) thick 316 stainless steel w/Delrin end-cap
battery type	3.6V D-size lithium (standard, field-replaceable)
battery life	6 years logging 1 sample/hour
operating temperature	-40°C to +50°C
pressure sampling range	15 psi (35ft/11m) 30 psi (70ft/21m) 5 psi (11ft/3.5m) 50 psi (115ft/35m)
static error	±0.03% FS (0.004 psi for 5 psi unit)
compensated	-10°C to +50°C
temperature sampling resolution	0.01° C
internal clock	1 sec resolution 1 min per month accuracy.
memory capacity	64,000 pressure (depth) readings or 48,000

Ordering Information

- 501-010/10** Digital water level monitoring system. Range 0-10m. Comprising: sensor 10m cable, datalogger and software.
- 501-010/30** Digital water level monitoring system. Range 0-10m. Comprising: sensor 30m cable, datalogger and software.
- 501-020** Digital water level monitoring system. Range 0-20m. Comprising: sensor datalogger and software. Order cable separately.

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Portable water level recorder

- ❑ **Provides a continuous record of small variations in water level.**
- ❑ **Corrosion resistant stainless steel, aluminium and plated brass construction.**
- ❑ **Supplied with painted aluminium cover with padlock.**

This recorder provides a continuous record of small variations in water movement, with high accuracy. Applications include agricultural and irrigation schemes and waterway installations, where flow characteristics are derived using a V-notch weir structure.

The record is made on a rotating chart drum, driven by a mechanical spring wound clock, with a choice of daily, weekly or monthly scales. A coated steel suspension tape, marked in millimetres, relays the vertical float movement via a tape wheel and drive to a pen carriage, operating on a highly polished stainless steel column. The chart marking device, either a disposable ink cartridge pen or a capillary reservoir type pen, is counter balanced to minimise friction. There is provision for fine zero adjustment of the pen. The chart measures 225mm (height) x 427mm (time) and is held in position by a retractable clip. The clock can be rewound in situ without removing the drum. If the operator is unable to attend the site within the chosen time scale of the chart, recording continues, with no damage to the clock or pen if the drum over-runs a full revolution.

An interchangeable tape wheel is available to extend the level range from 0-2.5m to 0-5m. Components are made from aluminium, stainless steel or plated brass to minimise corrosion and the whole mechanism is mounted on a strong cast, aluminium base. A painted aluminium cover with padlock, is supplied for protection and transportation.



Specification

range	0-2.5m (extended to 5m with 520-017)
accuracy	+/-1mm
dimensions	242mm (base diameter) x 432mm (height).
weight	7kg
chart size	225mm (height) x 427mm (time)
no. of charts supplied	200
fixing Details	3 x 6.7 mm holes in base
after Selection of Clock	1 day, 7 day or 28 day
suspension tape	Coated steel, marked in millimetres.

Ordering Information

520-016 **Portable water level recorder**, range 0 to 2.5m, vertical drum, monthly clock. Supplied with float and 200 charts.

Accessories

- 520-017** **Tape wheel.** Extends range to 0-5 metres.
- 520-019** **Daily clock**, with 24 hour rotation (8 day rewind)
- 520-021** **Monthly Clock**, with 28 day rotation

Spares

- 520-015/10** **Fibre-tip cartridge pen.**
- 520-015/11** **Charts**, pack of 200.
- 520-015/25** **Replacement tape.**

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Distributor:

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Bailers

- Used to collect water samples from wells or bore holes.
- Useful for contaminant or leachate monitoring.
- Two types available.



Specification

Plastic bailer

outside diameter	40mm
length	900mm
volume	840ml
check valve material	Delrin
bailer construction	plastic

Teflon bailer

outside diameter	42mm
length	657mm
volume	560ml
check valve material	Teflon
bailer construction	Teflon

Ordering Information

440-240 Plastic bailer, 40mm outside diameter, 900mm long with 30m of cord.

440-246 Teflon bailer, 42mm outside dia. x 657mm long. Requires cord.

Accessories

440-250 Polypropylene bailer cord. 10m.

440-252 Teflon coated stainless steel wire. 30m.

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Water sampler

- ❑ **For sampling water at depths up to 60m.**
- ❑ **Constructed from strong robust polypropylene.**
- ❑ **Will accept bottle for BOD tests.**
- ❑ **Good stability when submerged.**
- ❑ **Ideal for water quality and trace metal sampling.**

This water sampler is designed to take water samples down through the water column of lakes and still water bodies. The sampler is lowered to the desired depth and the lowering rope is pulled causing the spring to stretch and pull the plugs from the inlet and outlet ports in the sampler. Polypropylene plugs for inlet and outlet ports are fitted with adjustable nylon cord.

Sampler requires deployment rope. Dispensing reel is available as an option.

Specification

Capacity	1.4 litres.
Outside diameter	120mm.
Net weight	3.75kg.

Ordering Information

440-260 Water sampler

Accessories

- 440-262** **Rope for water sampler.** 15m long. Pre-stretched, kink resistant, Nylon Terylene rope. Fitted with strong swivel clip at one end.
- 440-264** **Rope for water sampler.** 60m long. Pre-stretched, kink resistant, Nylon Terylene rope. Fitted with strong swivel clip at one end.
- 440-266** **Reel** for dispensing water sampler rope.



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Tube water sampler

- Suitable for rivers, lakes or boreholes.

This versatile tube water sampler comes supplied with 20m steel measuring/deployment tape and dispensing reel with hand grip.



Specification

capacity	250ml
diameter	33mm
tape	20m stainless steel with grip & eye.

Ordering Information

520-200 Tube water sampler.

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Water trap sampler

- ❑ **Designed for use in flowing water.**
- ❑ **Supplied with transport case.**
- ❑ **Applications include:-** *Chemical analysis.*
Biological & bacteriological analysis.
Thermal analysis.
Mineralogical analysis.

The water trap sampler has been designed to take representative samples from running water up to a depth of approx. 25 meter. Samples are taken with the stainless steel device by catching part of a horizontal moving column at a certain moment at a certain depth.

The sampler is lowered by means of a hand winch fitted with a steel cable. The winch is fixed to a telescopic arm. The fastening clip of the telescopic arm allows fixing of the arm on the railing of a bridge or a boat. The depth at which the sampler is located can be read from a depth counter. The valves are opened before the sampler is lowered. The valves are kept in an open position by the falling clamps. As soon as the sampler is at the right depth the falling weight is allowed to slide down along the cable, thus thrusting the long falling clamp downwards, resulting in the closing of the downstream valve, only a moment later followed by the other clamp and the upstream valve. Rubber rings take care of the watertight sealing of the body with the sample, during retrieval. By relocating the weights and adjusting the fins, it is possible to hang the sampler in any required position relative to the direction of flow.

Specification

capacity	1,250ml
maximum depth	25m
supplied accessories	hand winch 25m steel cable depth meter transport case

Ordering Information

520-215 Water trap sampler



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Distributor:

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Combination sampling and measuring kit

- Idea for limnological studies.*
- Algae & plankton sampling.*
- Depth, temperature and turbidity measurement.*
- Sludge and sediment collection.*

A comprehensive kit designed for most routine sampling and measuring applications in stream, rivers, lakes and estuaries.

The kit comprises;

- Colour scale
- Water sampling bottle
- Plankton net
- Bottom sampling dredge
- Sounding lead and calibrated line
- Armoured thermometer
- Secchi disc
- Carrying case



Ordering Information

521-020 **Combination sampling and measuring kit**

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Distributor:**ELE Environmental Division**

Standard pond net

- ❑ *Removable, aluminium, net support frame allows nets to be interchanged.*
- ❑ *Stout wooden handle.*



Specification

dimensions of net	912mm circumference x 255mm deep
mesh	1000 micron
weight	1kg

Ordering Information

520-220 Standard pond net, 225mm x 915mm circumference, 1000um mesh.

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Distributor:**ELE Environmental Division**

Plankton tow net

- Useful in limnological studies.*
- Trawled behind boat or hand trawled from the bank.*

The frame hoop has four attachment points to which the bridal can be fastened. Rope and fasteners are provided for the bridal.



Specification

diameter of mouth	300mm
mesh size	118 micron
rim construction	stainless steel
weight	1kg

Ordering Information

520-221 Plankton tow net, 300mm diameter 118µm mesh bag c/w bridle.

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Distributor:**ELE Environmental Division**

Surber sampler

- ❑ *Used in the quantitative study of benthic invertebrates.*
- ❑ *Ideal for shallow streams.*

The Surber sampler is seated into the stream bed with the bag downstream. The area inside the metal enclosure is agitated thoroughly and the natural flow of the water carries down any invertebrates to be collected in the mesh bag.



Specification

mesh size	1000 micron
weight	3.25kg

Ordering Information

520-222 Surber sampler, 1000 µm mesh bag.

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Aston sampler

- **Designed for sampling benthic invertebrates in rivers and streams.**

This bottom sampler is constructed as an open-ended cylinder. The serrated teeth on the bottom edge of the cylinder facilitate easy penetration into the stream or river bed. Positioned with the bag net downstream, the oval mesh aperture opposite the port to the bag net, allows a flow of water to pass through the cylinder. The river or stream bed substrate within the Aston sampler is agitated and any disturbed organisms are washed by the water current into the mesh bag and the sample container.



Specification

sampling area	0.05m ²
weight	5.2kg
material	Stainless steel
net bag	Nylon - 1000µm

Ordering Information

520-224 Aston sampler

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Distributor:

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Naturalist's dredge

- Lightweight, hand-thrown dredge.**
- Ideal for benthic sampling studies.**

The Naturalist's Dredge is designed for use as a lightweight hand-thrown dredge and is ideal for taking benthic samples in ponds, lakes and rivers. The frame of the device consists of a stainless steel rectangular, open ended box, into which the collection bag is internally mounted. The frame also acts as the mounting point for the stainless steel wire towing bridle. The collection bag is constructed from 1000µm, nylon mesh and has tie ends at the tail of the mesh to secure the sample bottle and connector. The sample bottle has a capacity of 250ml.



Specification

width	305mm
height	100mm
weight	2kg

Ordering Information

520-226 Naturalist's dredge

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Distributor:**ELE Environmental Division**

Gilson core sampler

- ❑ **Designed for quantifiable collection of marine and freshwater sediment samples.**
- ❑ **Easy to used.**
- ❑ **Adjustable to suit operating requirements.**
- ❑ **Manufactured in brass with stainless steel legs & leg frame.**

The Gilson corer is designed to collect quantifiable samples from both marine and freshwater sediments. The device is very simple to use and can either operated via a pole, in shallow water or, via a rope. The corer is supplied (as illustrated) with a weight frame. The frame supports a configuration of weights on for legs, designed to ensure the corer is deployed in the right orientation and pushed into the sediment. Weights can be added or removed as required, depending on the compactness of the sediment or the mode of operation. A weight set is provided for extra ballast when sampling in deep water.



Specification

maximum operating depth	5 m with pole 125m with rope
dimensions	400mm dia. across base of leg weights 355mm height without tube 510mm with corer tube
weight	11.1kg

Ordering Information

520-228 Gilson core sampler, with weight frame for deep water (pole or rope operation).

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Distributor:

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Van Veen bottom sampler

- Simple to use.**
- Rugged, stainless steel construction.**
- Can be used at any depth.**

This stainless steel grab system is used for the retrieval of lake or sea bed sediment samples. The sampler is lowered in the 'jaws open' position (as pictured) through the water column. Once the device has come to rest on the sediment, the tension on the bridle is relaxed and the locking bar automatically releases. The grab can then be retrieved. As tension is placed on the hauling wire, the bridle draws the arms together retaining the sample of sediment in the buckets.

The bridle is included but a deployment rope is required.



Specification

sampling area	0.025m ²
weight	3.6kg

Ordering Information

520-230 Van Veen bottom sampler. Stainless steel grab 0.025m² (includes bridle).

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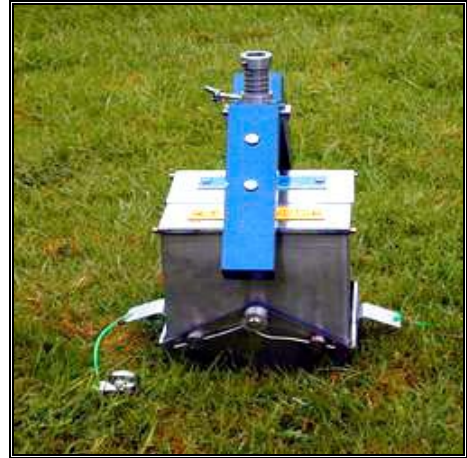
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Ekman sampler

- ❑ **Robust device designed for sampling sediments from lakes and river beds.**

The Ekman sampler is lowered with the stainless steel jaws open. When the sample depth is reached a messenger is dropped down the line, which activates the closure of the jaws. The top of the sampler has a cover to prevent sample loss during retrieval.

Supplied with mild steel weights and messenger.



Specification

sampling area	20 x 20cm
weight	8.7kg

Ordering Information

520-232 Ekman Sampler, stainless steel grab (20 x 20cm sample area).

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Distributor:**ELE Environmental Division**

Large current flow meter

- ❑ **Rugged, low maintenance design.**
- ❑ **Simple to use.**
- ❑ **Real time velocity reading.**
- ❑ **Wide measuring range.**
- ❑ **Battery powered.**

This robust unit is designed for use in fresh, salt or effluent laden waters. It may be used with wading rods or suspended on a cable. Long-life in use is assured by water-lubricated bearings, which once filled, will not permit entry of silt or weed. The unit covers velocities in the range 0.03-10.0m/s. Revolution counts are displayed on a back-lit, LCD display. The meter features an option to allow the user to choose between Real time and averaged display of velocity. The instrument is supplied in a hard-wearing, varnished marine ply carrying case. It also comes supplied with 3x 0.5m long wading rods, marked every 10mm.

When velocity measurements need to be taken at depth from a boat or pontoon, a hand suspension kit is required (in addition to the large current flow meter). This set consists of tail fin (to align the impeller with the direction of flow), 35m cable, suspension bar, & 14kg Columbus sinker weight.

If measurements of flow are to be taken in large rivers where a heavier sinker weight is required, or where sampling is to be carried out from a bridge or large vessel, the suspension derrick set may also be required. This set is comprised of a 1.7m height derrick manufactured from tubular steel fitted with two rubber-tyred wheels. The unit is 900mm wide with a 900mm jib length with the jib height adjustable in four different derrick positions. Supplied complete with a precision gauging reel, 35metres of armoured cable, a brake and a counter. This set requires 520-275 and 520-260 to complete a working system.



520-260



520-260, 520-275 & 520-285

Specification

Flow meter

impeller specification	125mm dia. with 0.27m pitch
impeller construction	High impact styrene, neutrally buoyant impeller
datalogger memory	up to 1000 velocity readings
display dimensions	244 x 163 x 94mm
measuring range	0.03-10m/s.
accuracy	±0.004m/s (below 0.15m/s) & ±1.5% of reading above 0.15m/s.
power	4x 1.5V, 'C' size, dry batteries
weight	8kg

Ordering Information

520-260 Large current flow meter with wading rods, for velocities 0.03 to 10 m/s.

Accessories

520-275 Hand held suspension set, includes; tail fin, 35m cable, suspension bar, & 14kg Columbus sinker weight. Total weight 23kg.

520-285 Suspension derrick set, includes; derrick, precision gauging reel, 35m cable, brake & counter. Weight 60kg

520-261 PC download cable

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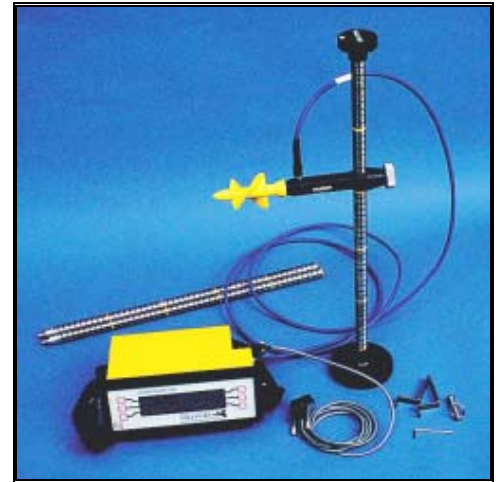
Distributor:

ELE Environmental Division

Miniature current flow meter

- ❑ **Rugged, low maintenance design.**
- ❑ **Simple to use.**
- ❑ **Real time velocity reading.**
- ❑ **Wide measuring range.**
- ❑ **Battery powered.**

This current meter is fitted with a high impact styrene, neutrally buoyant impeller with a jewelled main thrust bearing and PTFE radial guides running on a stainless steel shaft. Durability is achieved using a black acetal body designed to withstand long periods of operation in silt-laden water. The principle of operation is that rotation of the impeller causes magnets mounted in the impeller hub to open and close a reed switch, which is housed within a sealed, water tight, quick release adapter that screws into the end of the signal cable. This unit employs a 50mm diameter 0.1m pitch impeller to facilitate flow measurement in streams with a minimum depth of 60mm and any maximum depth. The instrument provides accurate real time and averaged velocity data, which is displayed on the back-lit LCD screen on the logger/display unit. This instrument is supplied with 3x 0.5m long wading rods, marked every 10mm, and comes in a hard-wearing, varnished, marine ply carrying case.



Specification

impeller specification	50mm dia. with 0.1m pitch
impeller construction	High impact styrene, neutrally buoyant impeller
datalogger memory	up to 1000 velocity readings
display dimensions	244 x 163 x 94mm
measuring range	0.03-10m/s.
accuracy	Accuracy ± 0.01 m/s (below 0.5m/s), $\pm 2.5\%$ of reading above 0.5m/s.
power	4x 1.5V, 'C' size, dry batteries
weight	8kg

Ordering Information

520-265	Miniature current flow meter, with wading rods. For velocities 0.046 to 5 m/s.
520-261	PC download cable

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Electromagnetic current flow meter

- ❑ **High accuracy flow measurements.**
- ❑ **Designed for open channel flow measurement of rivers and streams.**
- ❑ **Fully bi-directional range.**
- ❑ **Rugged design with no moving parts.**
- ❑ **Logging of up to 999 records.**
- ❑ **Choice of sensor shapes**

The electromagnetic flow meter is based on Faraday's Law that a conductor (water or any other conducting fluid) produces a voltage (measured by a pair of electrodes). The electrodes on the flay sensor are on the top surface of the sensor, so flow is measured above this surface. The sampling volume is a small cylinder whose diameter is the distance between the electrodes, and whose height extends approximately 10mm above the surface of the sensor. The flow rate is indicated on the control unit, which can also log the data. The control unit is also used to set up many other parameters such as the sampling and averaging periods. The logged data can be easily exported to PC using RS232 communications, and on line averaged readings are also available via RS232.

This instrument comes supplied with 3x 0.5m wading rods and a rugged carrying case.

Specification

range	± 5m/s bi-directional
accuracy	0.5%
operating temperature	-10 to +40°C
datalogging options	9 averaging periods between 5-240 seconds 999 reading memory capacity
power	8x 1.5V 'C' type batteries
minimum depth	5cm

Ordering Information

520-269	Electromagnetic current flow meter , with built-in datalogger. Supplied with software, wading set and carrying case.
520-261	PC download cable



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Flowstream portable flow meter

- ❑ **Simple, Fast, Accurate results.**
- ❑ **Portable and lightweight.**
- ❑ **No training necessary.**
- ❑ **Direct display in litres/second.**
- ❑ **Use on any open water course by a single operator.**
- ❑ **Rugged, low maintenance design.**
- ❑ **Uses Salt Gulp Dilution method, BS3680 2C, ISO9555/3.**

The Flowstream is a very easy-to-use hand-held device for monitoring flow rates in open channels and streams in the range up to 4,000 litres per second. The unit uses the principal of salt dilution gauging and all of the required calculations are performed automatically by the unit. A value for volume flow rate is then displayed.

The main principle of operation is that the operator selects a stretch of water course with fairly linear flow and adds a known quantity of salt into the water upstream of the point where the Flowstream is deployed. The Flowstream then monitors conductivity changes in the water course over time. The resulting graph of concentration over time is related to the flow rate of the stream or river.

The conductivity sensor is of dual ring, carbon electrode design and has a stainless steel body along with a 5m cable and connector. The Flowstream comes supplied with waterproof manual.

Specification

range	10 to 4000 l/s.
resolution	1 l/s.
accuracy	better than 5%
power	4 AA size batteries give up to 40 hours continuous operation.
average time per test	5 to 15 mins
dimensions	276 x 121 x 51mm(meter) 356 x 269 x 165mm (carrying case)
weight	0.7kg (meter) 2.7kg (complete kit)

Ordering Information

520-100 **Flowstream portable flow meter.** Range 10-4000 l/s. c/w probe, calibration solution, carrying case, batteries and operating Instructions.

Accessories

520-120 **Carrying case for Flowstream meter.**

520-110 **Portable electronic balance, 2,000 x 1g, battery powered.** Ideal for use in Flowstream surveys.

Spares

520-150 **Replacement probe and calibration solution** for Flowstream meter.



520-110

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Distributor:

ELE Environmental Division



Simple cut-throat flume

- ❑ **For measuring flows in the range of 0 to 15 litres/second.**
- ❑ **Manufactured from glass-fibre reinforced plastic.**

This simple cut-throat flume is suitable for measuring the discharge of small streams in the range 0-15 litres/seconds. The flume should be positioned in the stream bed so that the whole flow passes through the flume. It is important that the base of the flume is level. The water level gauge must be positioned at the upstream end of the flume. Water enters the flume under sub-critical (non-turbulent) flow. The constriction in the flume causes critical conditions and the water enters the downstream channel as super-critical flow. The water level is measured a short distance upstream of the critical flow using the water level scale provided. The flume must be inspected regularly to check for sediment deposits and to ensure no flow is by-passing the flume.

Specification

dimensions	700 x 345 x 200mm (L x W x H)
throat width	100mm
weight	1.8kg

Ordering Information

520-345 Simple cut-throat flume, 100mm throat.

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Distributor:**ELE Environmental Division**

Parshall flume

- ❑ **Small head loss.**
- ❑ **Designed for rapid evaluation of flow.**
- ❑ **2 sizes available.**

Developed by R. I. Parshall, these flumes have been designed to cause small head loss and to pass sediment easily. When used, as intended, in a straight channel in line with the flow and in relatively non-turbulent conditions, the flume is not particularly sensitive to the approach velocity of the flow. These flumes are designed for the rapid evaluation of flow in small ditches and furrows.

These flumes are constructed in lightweight, durable glass-reinforced plastic and are supplied complete with measuring scales, calibration curves and spirit levels.



Specification

throat width	25mm (small) 50mm (large)
flow range -- small	0.3 to 5.0 litres/sec
-- large	0.5 to 14.0 litres/sec
dimensions – small	270(H) x 360(W) x 710mm(D)
-- large	305(H) x 420(W) x 860mm(D)
weight	2 kg (small), 3kg (large)

Ordering Information

520-360 Parshall flume, small.

520-365 Parshall flume, large.

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Distributor:

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WSC flume

- Passes sediment freely.**
- Trapezoidal design.**
- 2 sizes available.**

A trapezoidal flume developed by Washington State College for field irrigation use. The WSC flume has advantages over rectangular flumes, like the Parshall flume, in that it; can cope with a wider range of discharge for a given depth of flow; conforms more closely to the channel section; and of passing sediment more freely.

These flumes are constructed in lightweight, durable GRP and come supplied with measuring scales, calibration curves and spirit level.



Specification

	Small	Large
flow range	0.1 to 2.0 litres/sec.	1 to 7.5 litres/sec.
dimensions	175(H) x 250(W) x 500mm(D).	230(H) x 350(W) x 780mm(D).
weight	2kg	3kg

Ordering Information

- 520-375** WSC flume, small
- 520-380** WSC flume, large

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Distributor:

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Weir plate with set of weirs and measuring scale

- Supplied with 4 plate profiles.**
- Overhung measuring scale for simple head measurement.**

These thin-plate weirs are constructed in stainless steel plate and are carried on a weir plate 1.2m wide by 0.75m deep, which can be set into the banks and bed of a small stream or bolted to the end of a concrete channel. The weirs are interchangeable and can be removed and replaced quickly and easily. The weir plate carries an overhung scale for simple head measurement.

Specification

weir plate dimensions	1.2m (wide) x 0.75m (high), plate thickness 5mm.
weir specifications	1x Rectangular weir with fully developed contractions. Max flow 28l/s. 1x Cipolletti trapezoidal weir, max flow rate 28 l/s. 1x 90 degree V-notch triangular weir, max flow rate 15 l/s. 1x 1/2 90 degree V-notch triangular weir, max flow rate 7.5l/s.
weight	10kg

Ordering Information

520-390 Weir plate with set of weirs and measuring scale.

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Distributor:**ELE Environmental Division**

Paqualab water quality laboratory

- ❑ **Portable drinking water quality testing system.**
- ❑ **Microbiological – Coliform & E. Coli.**
- ❑ **Physical – temperature, conductivity & turbidity.**
- ❑ **Chemical – pH, NH₃, Cl, plus over 40 chemical tests.**
- ❑ **AC/DC & rechargeable battery powered incubator.**
- ❑ **On-site testing for fast, accurate results.**
- ❑ **Long-term monitoring and emergency testing of drinking water to EC and WHO guidelines.**

The Paqualab is a portable testing system for the key drinking water quality parameters. The Paqualab allows the laboratory to be carried to water so that accurate results are obtained sooner even in remote areas. Laboratory standard results can be obtained by operators with the minimum of training. The equipment provided in each Paqualab has been specifically designed for field use. Aluminium replaces glass for many components for improved strength and lighter weight. The incubators have 2 pre-set temperatures that are usually set to 37 and 44 °C. The internal battery provides sufficient power for a full incubation cycle. A range of bacteria growth media is available. Powdered broth can be supplied in 4 test sachets, 200 test and 2600 test containers. Ready to use ampoules and impregnated pads are also available.

Over 1000 Paqualabs are in use throughout the world for monitoring drinking water in remote areas, emergency situations, research and education. The Paqualab is a completely modular system. Standard kits are available as shown below. All items are also available individually to enable the user to build a system to meet their specific requirements. In addition, Paqualab Incubator systems contain all the hardware required for microbiological tests (see below). Paqualab standard systems are based on the Incubator systems and also include tests for other parameters as shown below.

Specification

Items supplied	Standard system			Items supplied	Incubator system		
	50	25	25L		50	25	25L
	418-160	418-150	418-100		420-035	420-030	420-020
420-035 Incubator 50	✓	-	-	Large rigid carrying case	✓	-	-
420-030 Incubator 25	-	✓	-	Standard rigid carrying case	-	✓	-
420-020 Incubator 25L	-	-	✓	Universal incubator	✓	✓	-
430-020 pH/Temp/mV meter	✓	✓	-	Standard incubator	✓	-	✓
513-160 Conductivity/TDS/temp meter	✓	✓	✓	Incubator linking lead	✓	-	-
430-250 Turbidity tube	-	-	✓	Filtration unit	✓	✓	✓
430-260 Turbidity meter	✓	✓	-	Mains lead	✓	✓	✓
430-550 Photometer	✓	✓	✓	Battery lead	✓	✓	✓
433-115/10 Chlorine reagent system, free combined & total. pack of 250 tests.	✓	✓	✓	Cigar lighter plug	✓	✓	✓
433-102/10 Ammonia reagent system, pack of 250 tests.	✓	✓	-	Aluminium Petri dishes (x50)	✓	✓	✓
433-166/10 Nitrate reagent system, pack of 200 tests.	✓	✓	-	Plastic autoclavable bottles (x4)	✓	✓	✓
433-168/10 Nitrite reagent system, 4 packs of 50 tests.	✓	✓	-	Dropping pipettes (x2)	✓	✓	✓
433-180/10 pH reagent system, pack of 250 tests.	-	-	✓	Forceps	✓	✓	✓
422-010 Coliform starter pack. Sufficient for 200 tests.	✓	✓	✓	Magnifying glass	✓	✓	✓
				Thermometer (spirit)	✓	✓	✓
				Trim tool	✓	✓	✓
				Grease	✓	✓	✓
				Instruction manual in binder	✓	✓	✓



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Paqualab accessories & spares 1

Below is a list of accessories and spares for the Paqualab systems. For further specifications, accessories and spares for the digital meters, see dedicated pages elsewhere in this section of the catalogue.



Ordering Information

Accessories

- 420-410** Large Paqualab carrying case
- 420-413** Carrying case for Paqualab 25
- 420-422** Lightweight carrying case for Paqualab 25L
- 420-430** Microbiological accessory Kit.
- 420-445/01** Power pack, provides 12V DC Supply from Mains to Enable AC Operation of the ELE Paqualab 25L. 220-240V 50/60Hz 1ph.
- 420-450** Filtration unit, complete with sampling cup. A maximum of two filtration units can be accommodated in Paqualab cases.

Spares

- 420-015/10** Replacement incubator battery, 12v rechargeable.
- 420-052** General purpose grease, 50ml tube.
- 420-440** Incubator linking lead, used to connect the standard incubator to the universal incubator
- 420-451** Spare parts kit for filtration unit.
- 440-005** Paqualab manual in binder printed on waterproof paper.

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Paqualab accessories & spares 2

Below is a list of accessories and spares for the Paqualab systems. For further specifications, accessories and spares for the digital meters, see dedicated pages elsewhere in this section of the catalogue.



Ordering Information

Accessories

- 422-508** Absorbent pads and grid membranes. Pack of 200 each.
- 422-510** Absorbent pads and grid membranes. Pack of 1000 each.
- 422-515** Pad dispenser, for use with 422-508 & 422-510.
- 422-569** Sterile plastic petri dishes. Pack of 200.
- 422-570** Sterile plastic petri dishes. Pack of 700.




Spares

- 422-560** Aluminium petri dishes. Re-usable, pack of 25.

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Distributor:

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Paqualab photometer

- ❑ **Lightweight and portable for laboratory or field use.**
- ❑ **Advanced solid state electronics.**
- ❑ **Accurate results using tablet reagents which have a long shelf-life.**
- ❑ **Over 40 different water tests available for use with the photometer.**
- ❑ **Ideal for use with ELE's Paqualab systems.**

The Paqualab photometer accurately assesses the colour formed in the test sample and displays the readings as a digital transmittance readout – no more inaccurate results due to variation in operator eyesight or lighting conditions.

The Photometer is used in conjunction with a calibration chart for each test in this way, the instrument is universally applicable to a wide range of tests without the need for manual re-calibration or for plug-in calibration modules. Intended for use with ELE's Paqualab system, the photometer can also be used separately as a major part of any water analysis set up. With over 40 water tests available for use with this instrument, the Paqualab photometer is a truly versatile instrument. Users can select the photometer reagents they need to build a testing system that suits their requirements.

The photometer possesses a number of features including;

- Digital transmittance display.
- Five built-in colour filters.
- Automatic full scale setting.
- Single-button, one-press operation.
- Automatic power cut-off.
- Display 10mm LCD.
- Test chamber to take 10ml round glass test tubes, 20mm OD, 18mm path length.
- Automatic power turn off.

Specification

operating wavelengths	410, 490, 520, 570, 640nm.
filter band pass	±20nm.
range	0-100% transmittance.
batteries	8 x 1.5V AA size
dimensions	170 x 130 x 45mm
weight	320g (instrument only).

Ordering Information

430-550 Paqualab photometer, complete with six test tubes, dilution tube, operating manual and carrying case.

Accessories

- 430-551** Rack for 8 photometer test tubes.
- 430-553** Photometer test manual, covers all test methods and calculations.

Spares

430-550/10 Photometer test tubes, glass. Pack of six.



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Distributor:

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Photometer reagent packs

- ❑ **Starter packs and replacement tablet packs available.**

For use with ELE's Paqualab photometer, these starter packs and replacement reagent packs offer high quality reagents to determine a large range of water parameters. Starter packs provide; instructions on the test procedure, a calibration chart and enough reagent tablets for 50 tests. The replacement reagent packs provide enough reagent tablets for 250 tests.



Ordering Information

Reagent system	Range	Reagent Starter Packs (50 tests)	Replacement reagent packs (250 tests)
Alkalinity Methyl Orange End Point.	0-500mg/l	433-094	433-094/10
Alkalinity Phenolphthalein End Point	0-500mg/l	433-096	433-096/10
Alkalinity	0-500mg/l	433-098	433-098/10
Aluminium	0 - 0.5mg/l	433-100	433-100/10
Ammonia	0 - 1.0mg/l	433-102	433-102/10
Boron	0-2.5mg/l	433-103	433-103/10 (200 tests)
Bromine	0 - 6.0mg/l	433-105	433-105/10
Calcium Hardness	0-500mg/l	433-108	433-108/10
Chloride	0-50mg/l	433-110	433-110/10
Chlorine, free, combined and total	0 - 5.0mg/l	433-115	433-115/10
Chlorine HR	0-250mg/l	433-118	433-118/10
Chromium VI	0-1.0mg/l	433-120	433-120/10
Chromium III	0-1.0mg/l	433-122	433-122/10
Colour/turbidity	10 - 500 Hazen units	433-125	
Copper, total, free and chelated	0-5.0mg/l	433-130	433-130/10
Cyanuric Acid	0-200mg/l	433-134	433-134/10
Dissolved Oxygen	0-2mg/l	433-136 (30 tests)	433-136/10 (30 tests)
Fluoride	0-1.5mg/l	433-138	433-138/10 (200 tests)
Total Hardness	0-500mg/l	433-139	433-139/10
Hydrazine	0-0.5mg/l	433-141	433-141/10
Hydrogen Peroxide LR	0-2.0mg/l	433-142	433-142/10
Hydrogen Peroxide	0-100mg/l	433-146	433-146/10
Iron MR	0-5mg/l	433-151	433-151/10
Magnesium	0-100mg/l	433-154	433-154/10
Manganese	0-0.03mg/l	433-156	433-156/10
Molybdate HR	0-100mg/l	433-160	433-160/10
Nickel	0-10mg/l	433-164	433-164/10
Nitrate	0-20mg/l	433-166	433-166/10 (200 tests)
Nitrite	0-0.5mg/l	433-168	433-168/10
Organophosphonate	0-20mg/litre	433-170	433-170/10
Ozone	0-2.0mg/l	433-172	433-172/10
pH	6.8-8.4	433-180	433-180/10
Phenol	0-5mg/l	433-182	433-182/10
Phosphate LR	0-4.0mg/l	433-186	433-186/10
Phosphate	0-100mg/l	433-188	433-188/10
Potassium	0-12mg/l	433-189	433-189/10
Silica	0-4.0mg/litre as SiO ₂	433-190	433-190/10 (200 tests)
Sulphate	0-200mg/l	433-192	433-192/10
Sulphide	0-0.5mg/l	433-194	433-194/10 (200 tests)
Sulphite	0-500mg/l	433-196	433-196/10
Zinc	0-4.0mg/l	433-198	433-198/10

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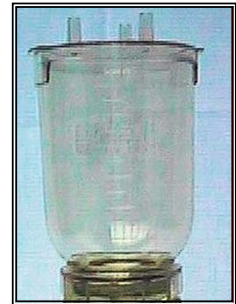

Filtration Manifold

- ❑ *Enables filtration of samples to be carried out more quickly.*
- ❑ *Ideal for use with the Paqualab system, in the laboratory.*

This 3 place filtration manifold is ideal for processing large numbers of samples, and is an ideal accessory to Paqualab systems when in a laboratory. The manifold is constructed of stainless steel. 3-place with independent two way valves.

The filter holders are fully autoclavable and have a 250ml sample reservoir. Three are required per manifold.

In order to operate the filtration manifold, a vacuum source is required. ELE offer an ideal vacuum for use with this system, a single stage oil filled vacuum pump.



Ordering Information

421-205 3 place stainless steel filtration manifold, for use with 421-210 filter holders.

421-210 Polysulphone autoclavable filter holder, with 250ml sample reservoir for use with 421-205.

Accessories

421-230/01 Single stage oil filled vacuum pump, supplied with 2m vacuum tube and water-trap flask. 220-240V 50Hz 1ph.

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Distributor:

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Microbiological growth media

- Impregnated filter pads.**
- Dehydrated powdered broth.**
- Individual sachets of powder.**
- Ampoules of liquid broth.**
- Ideal for use with ELE's Paqualab system.**



ELE have developed absorbent pads impregnated with membrane lauryl sulphate medium and dried. The pads have the advantage of no media preparation or measuring. They can be re-hydrated with sterile water when needed, and have a long shelf-life.

Dehydrated powdered medium is low cost and has a long shelf-life. It is available in 200 and 1000 test pots or 4 test sachets, which reduce wastage when only doing a few tests. Liquid media are also available in ampoules, which contain enough for 1 test. These are easy-to-use with no need to make up and dispense broth.

Ordering Information

- 422-450** **Impregnated filter pads.** impregnated with membrane lauryl sulphate medium. Pack of 50 pads.
- 422-113** **Sachets of dehydrated membrane lauryl sulphate medium.** Each sachet makes 4 tests. Pack of 50.
- 422-114** **Sachets of dehydrated membrane lauryl sulphate medium.** Pack of 250.
- 421-320** **Membrane endo coliform broth.** Pack of 50, 2ml ampoules.
- 421-322** **Membrane endo coliform broth.** Pack of 50, 2ml ampoules.
- 421-324** **Slanetz & Bartley broth.** Pack of 50, 2ml ampoules.
- 421-326** **Tryptone Soy broth.** Pack of 50, 2ml ampoules.
- 422-010** **Coliform starter pack.** Sufficient for 200 tests. Comprising 200 grid membranes and absorbent pads, 1x pad dispenser and 38.1 grams membrane lauryl sulphate medium.
- 422-020** **Faecal streptococci starter pack.** Sufficient for 200 tests. Comprising 200 grid membranes and absorbent pads, 1x pad dispenser and 100 grams Slanetz & Bartley medium.
- 422-110** **Membrane lauryl sulphate medium.** 38.1g to make approx. 200 tests.
- 422-112** **Membrane lauryl sulphate medium.** 500g to make approx. 2600 tests.
- 422-130** **Dual-test medium.** Simultaneous detection of *E. coli* and coliforms. Powder makes approx. 50 tests.
- 422-120** **Slanetz & Bartley medium.** 100g to make up to approx. 200 tests.
- 422-122** **Slanetz & Bartley medium.** 500g to make approx. 1000 tests.

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Portable steam sterilisers

- Lightweight.**
- Easy to maintain.**
- Cost effective.**
- Ideal accessory to the Paqualab System.**

To provide a method of cost effective sterilisation, both in the field and in the laboratory, ELE offer the following range of steam sterilisers. These appliances can be used to sterilise microbiological testing equipment such as; petri dishes, filtration units and culturing tools.

These sterilisers can also be used to destroy the bacteria that have been incubated on growth pads, prior to disposal.



Specification

420-600 & 420-606 steriliser sets include:-	steam steriliser	420-620/01 Electric steriliser	
	shoulder bag	internal temperature	126°C
	v-support	normal cycle time	35 minutes
	trivet	man. pressure release at 12mins	
	2x spare safety valves	internal dimensions	210.5mm dia
	plastic bowls	power consumption	255.5mm height
		weight	1.5KW
			4.1kg

Ordering Information

- 420-600** Small portable steam steriliser
- 420-606** Large portable steam steriliser
- 420-620/01** Automatic electric autoclave, complete with plug, lead set and instructions. For use with 220-240V, 50 Hz, 1 ph supply.

Accessories

- 420-015** Autoclave Indicator Strips. Provide independent means to check sterilisation. Pack of 50.

Spares

- 420-610** Portable steriliser spare parts kit, for EL420-600 and EL420-606 comprising 2 safety plugs, pressure valve and gasket set.
- 420-614** Spare parts kit for electric steam steriliser, for EL420-600 and EL420-606

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Colour comparator

- Simple to use.**
- Accurate results.**
- Can be used with a large number of tests.**

The comparator is very simple to use: just add the tablet reagent to the sample, place in the comparator and match the resulting colour of the sample to the colour disc that comes with the tablet reagent. The comparator provides fast, accurate results, ideal for on site investigations. The comparator discs are produced by the latest technology, which enables the colours to be printed from a pallet of over 2 million different shades. This ensures a perfect match with the colours produced during the tests. In order to build a working test system, simply purchase the comparator and add the appropriate starter pack. Additional reagent tablets can also be purchased.



Ordering Information

432-020 Colour comparator in carrying case. Supplied without colour disks and reagents.

Accessories

- 432-030** Ammonia starter pack including colour disk and reagents. Range: 0-1.0mg/l. Sufficient for 50 tests.
- 432-032** Chlorine starter pack including colour disk and reagents. Range: 0-5mg/l. Sufficient for 50 tests.
- 432-034** Iron starter pack including colour disk and reagents. Range: 0-1.0mg/l. Sufficient for 50 tests.
- 432-036** Manganese starter pack including colour disk and reagents. Range: 0-0.03mg/l. Sufficient for 50 tests.
- 432-038** Nitrate starter pack including colour disk and reagents. Range: 0-15mg/l. Sufficient for 50 tests.
- 432-040** pH (Phenol red) starter pack including colour disk and reagents. Range: 6.8-8.4. Sufficient for 50 tests.

Spares

- 432-030/10** Ammonia reagent pack for comparator. Range: 0-1.0mg/l. Sufficient for 250 tests.
- 432-032/10** Chlorine reagent pack for comparator. Range: 0-5mg/l. Sufficient for 250 tests.
- 432-034/10** Iron reagent pack for comparator. Range: 0-1.0mg/l. Sufficient for 250 tests.
- 432-036/10** Manganese reagent pack for comparator. Range: 0-0.03mg/l. Sufficient for 250 tests.
- 432-038/10** Nitrate reagent pack for comparator. Range: 0-15mg/l. Sufficient for 200 tests.
- 432-040/10** pH (Phenol Red) reagent pack for comparator. Range: 6.8-8.4. Sufficient for 250 tests.

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Water test kits

- Portable.**
- Easy to use in the field.**
- Range of kits available to suit different requirements.**

These kits have been designed to meet the diverse requirements of water resource professionals. Developed to be used quickly and efficiently in the field, these kits are the ideal choice both for industrial and educational applications.

The chlorination and pH test kit has reagents to allow the free, combined and total chlorine content of waters to be analysed along with the pH, via the colour comparator method. This kit is useful for testing water in swimming pools and other water-based leisure facilities. This kit comes with comparator, three colour discs, four square test tubes, tablet reagents sufficient for 100 tests and a plastic carrying case.

The water test kit includes tests for pH, chloride, total hardness and iron. This kit is useful for testing potable water. It is particularly suitable for use in the home where the user needs to monitor the dissolved ion content of water. The kit is supplied in a plastic carrying case.

River water and aquaculture test kit contains tests for ammonia, nitrate, nitrite and pH. This kit is designed for use in the field of aquaculture. The kit provides tests for the major water quality parameters that affect fish health and is thus suitable for both the private fish keeper and industrial scale fish farms. Portable and easy to use, this kit is ideal for use in the field. Contains sufficient reagent for 100 tests of pH and 50 tests of other parameters. Supplied complete in a plastic carrying case with instructions.

Specification

Chlorination and pH test kit

free Cl range	0-1.0mg/l
combined & total Cl range	0-4.0mg/l
pH (via phenol red method)	6.8-8.4

River water and aquaculture test kit

Ammonia	0-1.0 mg/l N
Nitrite	0-0.5 mg/l N
Nitrate	0-20 mg/l N
pH	4-11

Water test kit

pH	4-11
chloride	0-5000mg/l
total hardness	0-500mg/l
iron	0-1mg/l

Ordering Information

- 521-078** Chlorination and pH test kit for free, combined and total chlorine content. Tablet reagents sufficient for 100 tests.
- 521-080** Water test kit. Includes tests for pH, chloride, total hardness and iron. Sufficient reagents for 50 tests of each parameter.
- 521-082** River water & aquaculture test kit. Includes tests for ammonia, nitrate, nitrite and pH. Contains sufficient reagents for 100 tests of pH and 50 tests of other parameters.

Spares

- 521-078/10** Reagent pack for chlorination and pH test kit (521-078). Sufficient for 100 tests.
- 521-080/10** Reagent pack for water test kit (521-080). Sufficient for 50 tests.
- 521-082/10** Reagent pack for river water and aquaculture test kit 521-082. Sufficient for 100 tests of pH and 50 tests of other parameters.

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 http://www.ele.com

Distributor:

ELE Environmental Division



Basic water test kits

- ❑ **Simple to use test kits for a range of individual test parameters.**
- ❑ **Inexpensive.**
- ❑ **Pocket-sized kits.**
- ❑ **Range of tests include:** Ammonia
Chlorine
Hardness
Nitrate
pH
- ❑ **Sufficient tablets for 50 tests.**



These pocket kits provide a quick check method for the most commonly carried out water tests. The kits, which are all based on tablet reagents, use a variety of test procedures to derive results. These include; colour match methods, tablet count and turbidity methods. Pocket kits are particularly suitable for casual or occasional users where the cost of other kits cannot be justified, or where the precision of more sophisticated equipment is not required.

Specification

Test	Range
Ammonia	0-2mg/l
Chlorine (DPD)	0-2mg/l
hardness	0-500mg/l
Nitrate	0-75mg/l
pH	4-10

Ordering Information

431-004	Ammonia, basic test kit 0-2 mg/l. Sufficient for 50 tests.
431-010	Chlorine basic test kit 0-2 mg/l. Sufficient for 50 tests.
431-020	Hardness basic test kit 0-500 mg/l. Sufficient for 50 tests.
431-030	Nitrate basic test kit 0-75 mg/l. Sufficient for 50 tests.
431-050	pH basic test kit 4-10. Sufficient for 50 tests.

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Distributor:

ELE Environmental Division



Tablet count test kits

- ❑ **Simple and quick to use to use.**
- ❑ **Useful in the routine control of industrial waters, natural waters and public amenity waters.**

These tablet count tests provide an extremely straightforward method of analysis for an important range of water parameters. The tests are carried out by taking a measured volume of water and adding tablets, one at a time until a prescribed colour change take place. The result of the test is given by the number of tablets used in relation to the volume of water sample taken. These tests make an ideal companion to the photometer and comparator kits.

Ordering Information

- 432-100** **Total water hardness kit, low range, 0-50 mg/l,** uses tablet count method, supplied with case, instructions and tablets for 100 tests.
- 432-104** **Total water hardness kit, high range, 0-500 mg/l,** uses the tablet count method, supplied with instructions, case and tablets for 100 tests.
- 432-110** **Calcium hardness kit, 0-500 mg/l,** uses the tablet count method, supplied with case instructions, and tablets for 100 tests.
- 432-118** **Sulphite low range kit, 0-200 mg/l,** uses the tablet count method, supplied with case instructions and tablets for 50 tests.
- 432-122** **Sulphite high range kit, 0-3000 mg/l** uses tablet count method, supplied with instructions case and tablets for 50 tests.

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Distributor:

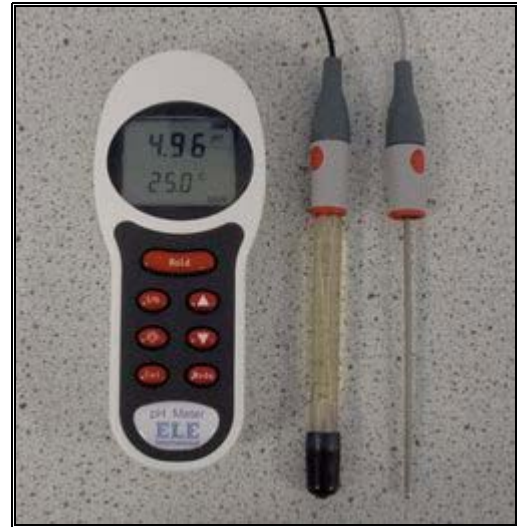
ELE Environmental Division



Digital pH/temp/mV meter

- General purpose pH meter**
- Drinking water quality**
- Waste water monitoring**
- Environmental protection**
- Can be used in conjunction with ORP electrode.**

This general purpose, hand held pH/mV meter, possesses a number of useful features including; automatic calibration and automatic buffer recognition; back-lit liquid crystal display and an IP67 case; simultaneously shows temperature compensated pH readings and temperature or electrode potential for ion work and temperature. The meter also possesses a hold key to freeze the display.



Specification

pH range	-2 to 16 pH	temperature range	-10 to 105 deg C
pH resolution	0.01 pH	temperature resolution	0.1 deg C
pH accuracy	± 0.02 pH	temperature accuracy	± 0.5 deg C
mV range	-1999 to 1999mV	temperature ATC range	0 to 100 deg C
mV resolution	1 mV	temperature man, temp comp	0 to 100 deg C
mV accuracy	± 1mV		

Ordering Information

430-020 Digital pH/temp/mV meter with electrodes, carrying case and pH buffers.

Accessories

513-058 Redox (ORP) electrode (Platinum). 12mm diameter probe. To be used with the digital pH/temperature/mV meter.

Spares

430-020/10 Spare pH probe, for use with 430-020 Meter with 1 metre lead and connector

432-060 pH buffer pack, for calibration of pH meters supplied with tablets for pH 4, 7 and 10 solutions and reusable de-ionised water maker.

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Distributor:

ELE Environmental Division

Conductivity/Temp/TDS meter

- ❑ **General purpose Conductivity meter.**
- ❑ **Drinking water testing.**
- ❑ **Environmental protection.**
- ❑ **Waste water monitoring.**
- ❑ **Improved range (up to 199mS) allowing fresh and saline water applications.**
- ❑ **Meter is auto-ranging.**

A general purpose, hand-held conductivity, temperature and TDS meter offering direct calibration on standard solutions or by direct cell constant entry. The custom back-lit, liquid crystal display simultaneously shows temperature compensated conductivity or TDS, and temperature. The conductivity/TDS range is automatically selected for optimum resolution and temperature compensated using an adjustable temperature coefficient. Calibration is achieved via the use of a standard solution.



Specification

Conductivity Ranges	0-19.99 μ S, 0-199.9 μ S, 0-1999 μ S, 0-19.99mS, 0-199mS & 0-1999mS
Conductivity Accuracy	\pm 0.5% or \pm 2 digits
TDS Ranges	0-19.99mg/l, 0-199.9mg/l, 0-1999mg/l, 0-19.99gl, 0-199.9gl & 0-1999gl.
TDS Accuracy	\pm 0.5% or \pm 2 digits.
Temperature Range	-10 to 105°C.
Resolution	0.1°C
Accuracy	\pm 0.5° C.
ATC Range	0-100°C
Manual Temp Comp	0-100°C

Ordering Information

513-160 Conductivity/Temp/TDS meter. With electrode and carrying case.

Accessories

434-484 Conductivity calibration solution 1,413uS, 460ml.

Spares

513-160/10 Spare conductivity cell for use with 513-160. Epoxy bodied, K=1 with 1m lead and connector.

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Distributor:

ELE Environmental Division



Dissolved oxygen / temp meter

- ❑ **General purpose D.O. meter.**
- ❑ **Easy to calibrate and use.**
- ❑ **Portable.**
- ❑ **Back-lit display and IP67 case.**

A general purpose, hand-held Dissolved Oxygen meter allowing accurate measurement with ease of use. The custom back-lit display simultaneously shows percentage dissolved oxygen or oxygen concentration and temperature. The dissolved oxygen reading is automatically corrected for temperature. Pressure and salinity compensation can be manually entered. Dissolved oxygen is shown as percentage Dissolved Oxygen or Oxygen concentration (mg/l) and temperature.



Specification

DO ranges and resolution	-5 – 199% @ 1% res. -5 – 25.0% @ 0.1% res.
accuracy	-5 – 19.99mg/ @ 0.01mg/l res. ±2% within 10°C of calibration temp.
temp. range	-10 – 105°C
temp. resolution	0.1°C
temp. accuracy	±0.5°C
temp. ATC range	0-60°C
manual temp. compensation range	0-60°C

Ordering Information

521-050 Dissolved oxygen/temp meter, with electrode and carrying case.

Spares

521-050/10 Spare dissolved oxygen sensor, for use with 521-050 meter, with 1m lead and connector.

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Distributor:

ELE Environmental Division



Hand held digital thermometer

- Easy to read with large back-lit LCD.*
- Rugged and robust casing, IP67 rating.*
- Reading hold function.*
- Maximum and minimum temperature record.*
- Easy single point calibration.*

Easy-to-use, rugged instrument ideal for a wide variety of applications both in the laboratory and in the field.



Specification

range	-199.9 to 1370°C
accuracy	0.2% +/-0.5 deg.C.
battery power	2x AA cells
battery life	500 hours
dimensions	175 x 75 x 35mm(L x W x D).
weight	250g

Ordering Information

583-026 Hand held digital thermometer. Supplied without probe.

Accessories

583-033 General purpose, fast response immersion probe with handle. Max. temp: 350°C. Fitted with 1m lead and standard miniature thermocouple plug.

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Distributor:

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Turbidity meter

- ❑ **Easy to use.**
- ❑ **High range.**
- ❑ **Calibration data storage facility.**
- ❑ **Suitable for testing either natural and treated water, or waste water and effluents.**
- ❑ **Results displayed as FTU (Formazine Turbidity Units).**

This portable microprocessor-based turbidity meter provides lab-grade accuracy even in the field. With 4 keys and weighing only 350 grams, the meter measures turbidity from 0 to 1000 FTU (NTU). For best field accuracy, it measures from 0 to 50 FTU in steps of 1/100th of FTU. This is 10 times better than comparable models on the market that measure 10 to 50 FTU only in decimal points! The meter meets the ISO 7027 requirements and is equipped with an infrared LED as source of light. Unlike standard lamps, the infrared LED has a long life. More significantly, it maintains constant emission for the entire life of the instrument. The wavelength peaks at 890nm, which provides the required intensity of diffused light even in samples with low turbidity values, and also reduces the interference from any colours. The meter is very easy to use. All operations can be carried out with only four keys and troubleshooting functions can be performed with error code on LCD. Moreover, the meter's versatility and durability ensure low maintenance.

The meter can store and retrieve the last calibration data. At the touch of a key, the last calibration data together with time and date are displayed allowing the user to maintain an accurate calibration schedule. Auto shut-off turns the meter off after 5 minutes of non-use to save batteries.

The turbidity meter come supplied with 2 cuvettes, tissues, cleaning solution and calibration solutions for 0 and 10 FTU



Specification

range	0 to 50 FTU, 50 - 1000 FTU
resolution	0.01 in the 0-50 FTU range & 1 FTU in the 50-1000 FTU range.
accuracy	± 0.5 FTU or ± 5%
battery life	60 hours or 900 measurements
weight	510g (including case and calibration solutions).
dimensions	220 x 82 x 66 mm

Ordering Information

430-260 Turbidity meter. Range 0-1000 FTU. Supplied with carrying case, batteries and calibration solutions.

Accessories

430-260/10 Replacement cuvettes, for turbidity meter. Pack of 4.

430-260/12 Calibration solutions, for turbidity meter. 0 and 10 FTU

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http://www.ele.com

Distributor:

ELE Environmental Division



Turbidity tube

- *Two-part tube 66cm long.*
- *Range 5-500 JTU.*
- *Weight: 217g.*



Ordering Information

430-250 Turbidity tube, 5-500 JTU.

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Distributor:

ELE Environmental Division



Secchi disc

- **Applications include; rivers, lakes and estuary monitoring & environmental monitoring, construction projects.**

Used for determining the turbidity of water in terms of the depth to which the disc remains visible to. The Secchi disc is simply lowered into the water body via the marked rope until the disc ceases to be visible. The depth in cm is then determined from the graduated rope.



Specification

rope 5m graduated in cm

Ordering Information

430-252 Secchi disc with sinker weight and 5m graduated rope.

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http://www.ele.com

Distributor:

ELE Environmental Division



Quick pH, conductivity & ORP testers

- ❑ **Pocket-sized meter.**
- ❑ **Easy to use and calibrate.**
- ❑ **Automatic temperature compensation.**

These pocket meters incorporate; large and easy to read LCD display and new ergonomics to improve grip and feel.

The pocket conductivity meter is ideal for quick conductivity results anywhere in the field or factory and has graphite sensors to improve repeatability and accuracy. The effects of temperature are automatically compensated for by the meter's sophisticated electronics and calibration is quick and easy via the trimmer point built into the meter.

The quick pH tester is ideal as a quick check instrument. This meter possesses sophisticated electronics which automatically compensate for temperature and provide accurate readings and a long battery life span (>1000 hours).

The ORP (redox potential value tester) tester is an accurate but inexpensive tester of oxygen reduction potential. This instrument is ideal for checking water quality in rivers and fish farming establishments.



Specification

Conductivity tester

range	0 to 1999 μ S/cm
resolution	1 μ S/cm
accuracy	$\pm 2\%$ of full scale
calibration	single point at 1413 μ S/cm
compensation	automatic between 0 and +70 C
battery	4 x 1.4volt giving 150 hours use
dimensions	175 x 41 x 23mm
weight	78g

pH tester

range	0-14pH
resolution	0.1
accuracy	± 0.1
operating temperature	0-50°C (when standardised in buffer solution).
compensation	automatic between 0-70°C
batteries	4x 1.5volt giving 1000 hours use
dimensions	175 x41 x 23mm
weight	60g

ORP tester

range	$\pm 999mV$
resolution	1mV
accuracy	$\pm 5mV$
operating temp	0-50°C
battery life	1000 hours of continuous use
dimensions	142 x 29 x 15mm
weight	65g

Ordering Information

513-091	Quick pH tester , range 0-14pH.
513-154	Quick conductivity tester , range 1 to 1999uS.
525-238	Quick ORP tester , range $\pm 999mV$.

Accessories

434-480	pH 4.01 buffer solution , 1 litre.
434-481	pH 7.01 buffer solution , 1 litre.
434-482	pH 10.01 buffer solution , 1 litre.
434-484	Conductivity calibration solution 1,413uS , 460ml.

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Distributor:

ELE Environmental Division



Portable water tester

- ❑ **Portable, battery powered meter.**
- ❑ **Parameters measured; pH, ORP, conductivity & temperature.**
- ❑ **Digital display.**

This instrument provides quick and reliable measurement of the four most important variables in water analysis; pH, ORP, conductivity and temperature. Lightweight and compact construction makes it perfect for use in the laboratory as well as in the field. Simple to use and practical, the tester features a built-in sample bucket for ease of use in the field. The sample bucket allows the unit to be safely stored away from the water source, and by using the range button on the front panel the parameters can be selected.



Specification

Sensors	Range	Accuracy	Resolution
pH	0-14 pH	±0.2pH	0.1pH
ORP	±1000mV	±5mV	1mV
conductivity	0-1999µS/cm	2% (over full scale)	1µS/cm
temperature	0-60°C	±1°C	0.1°C

Meter specifications

batteries	3 x 1.4V, (200 hours approx. use)
size	190mm x 85mm x 85mm
weight	0.26kg

Ordering Information

440-150 Portable water tester for pH, ORP (redox), temp, and conductivity.

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Distributor:

ELE Environmental Division



Hydrolab Quanta

- ❑ **Multi-parameter water quality analysis instrument.**
- ❑ **Portable instrument designed for field use.**
- ❑ **System & display are fully water and drop proof.**
- ❑ **Rebuildable pH reference electrode.**
- ❑ **Superior sensor technology.**
- ❑ **Unprecedented 3-year warranty.**

The Quanta is a complete system capable of monitoring multiple water quality parameters simultaneously. Developed by the Hydrolab Corporation, the Quanta is a well-built, easy to use multi-parameter instrument that is affordable in price without any compromise in data quality. The Quanta is designed for monitoring in rivers, lakes, streams oceans and everything in between. It can be used in polluted or non-polluted water.

A Quanta system is composed of three components; the transmitter (sonde), which houses the sensors; the Quanta display, which supplies power and shows the data; and a connecting cable which is 5m long as standard but can be up to 100m long. The display and sensors are covered by an unique 3 year warranty. In addition to the standard Quanta package featured here, it is possible to build a Quanta to meet your requirements from the suite of 9 water quality parameter sensors available. These are; temperature, dissolved oxygen, pH, ORP, specific conductance/salinity, depth 0-25m, depth 0-100m, vented level 0-10m, turbidity.



There are a number of other options available including differing cable lengths & PC download facility. (If you require a custom built system rather than the standard Quanta package, please contact ELE).

Specification

Sensor specifications				Instrument specifications	
Sensor	Range	Accuracy	Resolution	Quanta transmitter	
temperature	-5 to 50°C	±0.20°C	0.01°C	diameter	7.6cm
dissolved oxygen	0-50mg/l	±0.2mg/l ≤20mg/l ±0.6mg/l > 20mg/l	0.01mg/l	length	22.9cm
specific conductance	0-100mS/cm	±1% of reading ±1count	4digits	weight	1.3kg
pH	2 to 12	±0.2	0.01	Quanta display	
ORP	-999-999mV	±25mV	1mV	screen size	8.9cm
turbidity	0-1000NTU	±5% of reading ±1NTU	0.1NTU or 1NTU	weight (with batteries)	0.95kg
depth	0-25m	±0.1m	0.01m	data frame memory	100
depth	0-100m	±0.3m	0.1m	operating temperature	-5-50°C
vented level	0-10m	±0.003m	0.001m	power	3x 'C' size
salinity	0-70PSS	±1% of reading ±1 count	0.01PSS	battery life	15 hours

Ordering Information

434-100 Hydrolab Quanta including display, sonde, 5m cable, sample circulator, sensors for Conductivity, Dissolved Oxygen, pH and Temperature. With 3 year warranty

434-106 Quanta display, download option. With PC cable.

Accessories

434-109 Quanta basic maintenance kit

434-465 Turbidity calibration solution. Polymer 100NTU, 1 litre.

434-480 pH 4.01 buffer solution, 1 litre.

434-481 pH 7.01 buffer solution, 1 litre.

434-482 pH 10.01 buffer solution, 1 litre.

434-484 Conductivity calibration solution 1413uS, 460ml.

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Distributor:

ELE Environmental Division

Apparatus for BOD by the manometer method

- Six samples can be processed simultaneously.
- Five types of interchangeable scale (readings in mg/l).
- Built in sample stirrer.
- Low noise stirring mechanism.
- Designed to fit in low temperature incubator 430-100/01.
- Manufactured to EN standard EN 61010.1.



This apparatus has been designed to provide an accurate, repeatable method by which the Biochemical Oxygen Demand of water samples can be measured. The instrument is designed to work via the Warburg and Sierp method, allowing direct measurement of CO₂ production by heterotrophic bacteria, present in the water samples. The amount of CO₂ produced by any given sample is proportional to the O₂ utilised by the bacteria, which in turn is proportional to the concentration of metabolically active organic matter in the sample. An integrated sample stirrer system is included to continuously agitate the samples throughout the incubation period. The stirrer mechanism works via a geared pulley system, rotating magnets under the floor of the instrument. Magnetic stirrer beads are placed in the samples.

Note. The manometer assemblies contain mercury.

Specification

5 graduated scales	Scale A	100ml	0-1.000mg/l	set contains	6x 500ml dark glass bottles
	Scale B	150ml	0-600mg/l		6x magnetic stirring bars
	Scale C	200ml	0-400mg/l		6x screw cap bottle stopper assemblies
	Scale D	250ml	0-250mg/l		6x Manometers
	Scale E	400ml	0-90mg/l		dimensions
				weight	8kg

Ordering Information

430-075/01 Apparatus for BOD by the manometer method. With 6 bottles, 5 scales. Motor driven stirrer. Includes Mercury. 220-240V 50Hz 1ph.

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http://www.ele.com

Distributor:

ELE Environmental Division



Cooled incubator

- Microprocessor controlled temperature.**
- Heats, refrigerates and ventilates.**
- Internal power supply sockets for two 430-075/01 BOD units.**
- Temperature/time pair memory facility enables complex incubation runs.**
- Applications include; BOD, Bacteriology, Ageing tests.**
- CFC free.**

This low temperature incubator is ideal for microbiology laboratories as it has an incubation range that is suitable for most microbiological incubations. The unit is equipped with a multi-profile function, which can store up to 10 temperature/time pairs. This allows complex incubation schedules, that have several stages of different temperature and duration, to be created. In addition, the automatic timer function, allows the user to set an automatic start and finish time. The unit also possesses a calibration facility that allows the user to set the external temperature display (via the facia-mounted keyboard) to match the internal temperature (this is useful as external temperatures can affect the internal incubation temperature).

Specification

temperature range	3-47°C
accuracy	±0.5°C
external dimensions	540 x 560 x 1360mm (W x D x H)
internal dimensions	430 x 420 x 1000mm (W x D x H)
volume	220 litres
internal accessories	4x gridded shelves 2x internal power sockets
weight	71kg

Ordering Information

430-100/01 Low temperature incubator 3-47°C, 220 Litres, suitable for BOD and microbiological testing 220-240V 50Hz 1Ph.



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Distributor:

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Thermal reactor for COD analysis by the dichromate method.

- ❑ **Pre-set for 148°C (COD) & 100°C (sludge phosphorus).**
- ❑ **Microprocessor time controller.**
- ❑ **17 places for COD testing.**
- ❑ **2 places for phosphorous testing.**

This unit possesses 2 high accuracy and reliability temperature settings to allow the operator to carry out either COD testing (148°C) or sludge phosphorus testing (100°C). The control unit allows the user to start the digestion cycle immediately after loading without having to allow time for the heating block to reach operating temperature. This is possible via the timer unit which only initiates the test period once the unit has reached the correct temperature. The unit is constructed of stainless steel with an aluminium heating block. The reactor has a digital timer (with countdown facility), warning buzzer and automatic shutdown features.

Specification

temperature settings	100 & 148°C
accuracy	±2°C
places	16x COD (16mm dia.) 2x Phosphorous (22mm dia.)
power	1000Watt
dimensions	220 x 350 x 165mm (W x D x H)



430-175/01



430-175/10

Ordering Information

430-175/01 Thermal reactor for COD analysis by dichromate method. Suitable for 16x2 ml samples plus reference. 220-240V 50Hz 1ph.

Accessory

430-175/10 Reaction test tubes for COD. Screw top, pack of 24.

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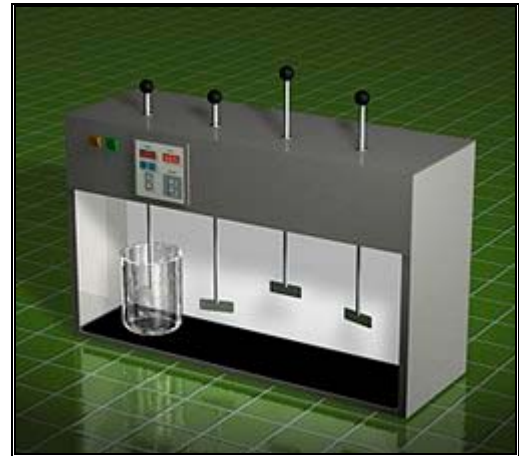
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ELE Environmental Division

Laboratory flocculator

- ❑ **Microprocessor controlled.**
- ❑ **Digital control panel.**
- ❑ **Back lit sample area.**
- ❑ **4 place & 6 place units available.**

This unit possesses a stable stirring mechanism, which maintains the stirring revolutions at the desired level. In addition the flocculator also has a digital timer that allows samples to be processed without the need for the continuous presence of the operator. The digital display shows both the speed (rpm) and the time remaining until the end of the test. The background to the sample area is coloured white and backlit to enable the flocculation process to be observed.



Specification

speed range	20 – 300rpm
timer range	0-999 minutes
no. of samples	4 or 6
dimensions (4 place)	650 x 250 x 560mm (W x D x H)
dimensions (6 place)	980 x 280 x 500mm (W x D x H)
weight (4 place)	2.1kg
weight (6 place)	2.8kg

Ordering Information

430-154/01 Laboratory flocculator. 4 Place with variable speed and timer. 220-240V 50Hz, 1ph.

430-156/01 Laboratory flocculator. 6 Place with variable speed and timer. 220-240V 50Hz, 1ph.

Accessories

82-0220 Glass beaker, 1000ml capacity. Squat form with spout.

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Sewage effluent test kit

- ❑ *Allows important water control tests to be carried out without the need for laboratory facilities.*
- ❑ *Portable kit designed for field use.*
- ❑ *Used for monitoring effluent waters.*

This kit provides a simple means of checking the quality of sewage effluents. It is used extensively for control testing at small sewage works. Based on simplified methods of sewage effluent testing, the kit contains tests for permanganate value, universal pH, turbidity, temperature and probable BOD, COD and TOC values. The kit enables these important control tests to be carried out without laboratory facilities. The kit includes tablet reagents, turbidity tube and spirit thermometer.



Specification

Permanganate value	0 -30
turbidity	5-500 JTU
pH	4-8

Ordering Information

521-084 Sewage effluent test kit for permanganate value, pH, suspended solids and temperature.

Spares

521-084/10 Spare reagents for permanganate value & pH. Sufficient for 250 tests.

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Distributor:

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Oil in water analyser

- ❑ *Used to determine the amount of trace hydrocarbons in soil or water.*
- ❑ *Broad measurement range eliminates the need for troublesome range switching.*
- ❑ *Quick, easy to use, accurate and reliable.*
- ❑ *Memory for 50 data sets.*
- ❑ *A microcomputer provides automated analysis of the samples at the touch of a button.*
- ❑ *Dynamic ranging provides analysis from 0mg/l-200mg/l without manual switching.*
- ❑ *The use of an S-316 extraction solvent ensures the highest levels of oil particle stability.*

This instrument is an automated, portable unit for monitoring oil content in both fresh water and saltwater. The one-touch monitoring process is fully automated, from sample extraction to analysis and sample expulsion. The analyser utilises an S-316 extraction solvent to ensure superior oil particle stability and infra-red absorptiometry for sample analysis. Using 0mg/l - 200mg/l dynamic ranging, the unit is capable of analysing both high and low concentrations. A wide range of information is displayed on-screen, including operational instructions, status notes and warning messages. RS232 and parallel printer ports allow readings to be output to a PC, datalogger or printer.

The oil-in water analyser provides swift, highly accurate analysis of the oil content of both fresh water and saltwater as well as that of such fluids as those found at factories and wastewater treatment plants.

Note. The instrument requires Flon-S 316 solvent for operation.

Specification

sample volume	20ml (sample to solvent ratio 2:1)
range	0-200 mg/l
resolution	0.1mg/l (0 to 99.9mg/l), 1mg/l (100-200mg/l)
repeatability	±0.2mg/l (0 to 9.9mg/l), ±2mg/l (10-99.9mg/l), ±4mg/l (100 to 200mg/l)
operational temperature	0 to 40° C.
dimensions	200 x 315 x 342mm (width x depth x height)
weight	7kg

Ordering Information

440-010/01 Oil in water analyser, range 0-200 mg/l. With built-in datalogger, syringe, and calibration standard. 220-240V 50Hz 1ph.

Accessories

440-012 Flon-S 316 solvent, 600ml.



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