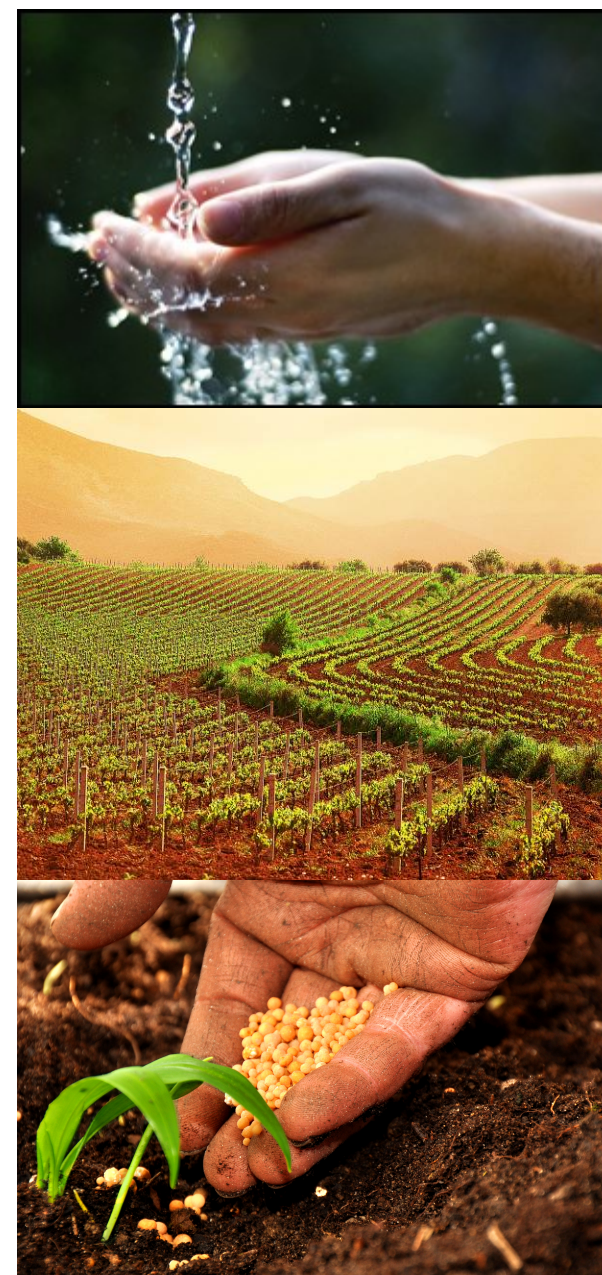


Technical Data	
Technology	Direct Reading
Samples/reagents preheating	Yes
Sample capacity and number of reagents	a) Samples 10 positions dedicated to samples/Reagents 20 positions x 40mL each, including stock & diluents b) Samples 20 positions dedicated to samples/Reagents 10 positions x 40mL each, including stock & diluents
Test hour	Up to 150 (Single reagent)
Dosing syringe (sample & reagents)	368 microliters syringe with 0.07 µl resolution; Zero automatic setting; Accuracy +/- 0.5% from 2 to 350 µL
Stock solutions on reagent tray	Yes, working calibrants and QC diluted from stocks
Diluents position	On refrigerated reagent tray,
Refrigerated reagent tray	Yes standard
Reagent & Sample level sensor	Yes
Number of reaction cuvettes	96 reaction microcuvettes disposable, incubation temperature programmable +/- 0.1 °C.
Optical path length (mm)	10.0mm
Reaction plate temperature	37° to 50°C adjustable +/-0.1°C
Incubator type	Thermoelectric
Cuvette cell type	Bionex ® disposable
Main Detector	Colorimetric, temperature controlled; halogen lamp extended UV emission; automated zero settings; accuracy +/- 1% from 0 to 2.5 O.D.; linearity better than 0.5%; noise < +/- 2m Abs. At 340 nm 2.5 O.D..
Detector techn./Numb. of Wavelengths	Interferential Filters/ 9+blank
Reading methods	End point: mono o bichromatic; End Point differential (Sample blank correction); Kinetic
Communication & software	USB port; Software compatible Windows XP, 7.0, 8.0 & 10
Sample analysis	Work lists stored by the software with possibility to select independent list of parameters per each sample,
Sample ID	Alphanumeric
Random access to samples, calib. Etc.	Yes
Sample addition during run	Yes
Sample & reagent blanking	Yes
Working Calibrant dilution	Yes, from stock solution located in the refrigerated tray
Pre run sample dilution	Yes
Post run sample dilution	Yes, automated dilution and rerun of off scale samples
Multilevel QC & Closed loop	Up to 5 QC levels, with closed loop control (QC check & pre programmed actions in case of QC and or Spike recovery failure)
QC database and QC chart	Yes
Automated spike & recovery check	Yes
Automated calibrations; calibration fits linear, polynomial, etc.	Yes; up to 16 calibrants
Calibration correction	Yes; enable disable calibrants change calibration fit
Calibration QC check & Calibration repeat	Yes, if correlation lower than set value option for calibration repeat
Reagent Blank OD and Top Cal OD check	Yes, if out of tolerance pre programmed actions
Results correction	Yes, correction by: dilution factor, moisture & weight
Import Work list & export results to LIMS	Yes
Possibility to use multiple diluents (soils analysis, phenols, cyanide etc.)	Yes
Size/Weight	40cmx60cmx38cm(HxDxW)/20Kg 15.7inx23.6inx14.9in/41.8lbs
Power Supply	110-240VAC - 50/60Hz Single phase with ground - Fuses 2.0Amp 230VAC, 4.0Amp 115VAC

Subject to change without notice



EASYCHEM JUNIOR

DIRECT READING DISCRETE
ANALYZER FOR AUTOMATED
CHEMISTRIES



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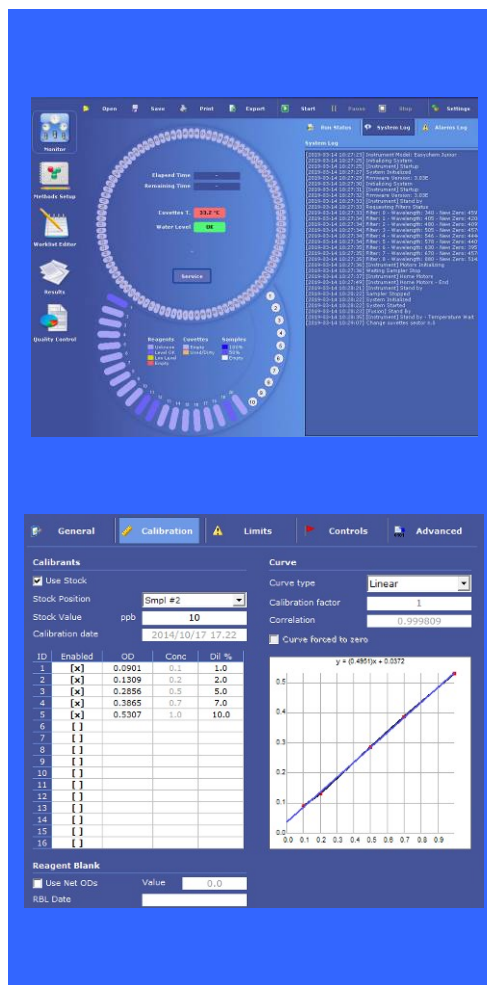
EASYCHEM OPERATION PRINCIPLE

A 'work-list' on external PC is created by the operator, containing the samples, their location, their ID code and the determinations required for each sample. Usual combinations of methods can be pre-defined as 'profiles' in the software setup.

The 'work list' includes also calibrants and QC that are automatically diluted from a stock solution in the reaction cuvette. The operator does not need to position any cups other than samples in the work list and in the sample tray.

To start analysis of the work-list or a part of it, the operator has to pass a check-and-confirmation protocol, to establish correct analysis conditions. Selected methods are confirmed, the use of auto-calibration and control samples is set, and the execution is scheduled. Reagent demand and used cuvettes are displayed. Final confirmation starts the execution.

The automatic analyzer starts the execution with a self test procedure, and displays along the execution the actual activity carried out. Analysis results will be reported on the screen just after reading and stored for later printout. Results file can be reprocessed and after reprocessing a results file must be saved with a different name. Stored results documentation for each method is headed by relevant quality data, including the operator ID.



EASYCHEM JUNIOR AUTOMATED DISCRETE ANALYZER

Fully automated analyzer based on **Direct Reading Discrete analysis** technology, sample capacity 10 OR 20 positions dedicated to samples.

- ✓ Cooled reagents tray with capacity of 10 or 20 18 or 35mL reagents bottles
- ✓ Temperature controlled Reaction tray containing 96 reaction cuvettes, disposable
- ✓ Colorimetric detector including 9 position filter wheel for automatic wavelength selection
- ✓ Pre or post run sample autodilution
- ✓ Samples throughput: up to 150 test per hour

The screenshot shows the 'General' tab of the EASYCHEM software. It includes fields for Name (Yellow), Code (YELLOW), Instrument (Easychem Junior), Type (Endpoint), Measuring unit (mg/l), Number of decimals (2), Filter (340), 2nd Filter (Off), Diluent Position (R19), and Timings and Volumes (Sample volume 190 ul, R1 11, 150, 0, 30, R2 12, 150, 2, 60, R3 Off). It also shows a section for Default Sample Predilution with fields for Predilution Mode (Off), Predilution % (100), Predilution Multiplier (1:X) (1.0), and Dilution factor correction (checked). A Notes section is at the bottom.

Water Wastewater methods

ALKALINITY AS CaCO_3	HARDNESS AS CaCO_3	NITROGEN TKN* AS N-NH_3
AMMONIA AS N-NH_3	HYDRAZINE AS NH_2NH_2	ORTHOPHOSPHATE AS P-PO_4
BORON AS B(III)	IRON DISSOLVED AS $\text{Fe}^{(\text{II}+\text{III})}$	PHENOLICS* AS $\text{C}_6\text{H}_5\text{OH}$
CALCIUM AS Ca^{2+}	LEAD DISSOLVED AS Pb^{2+}	PHOSPHORUS TKP* AS P-PO_4
CHLORIDE AS Cl^-	MAGNESIUM AS Mg^{2+}	PHOSPHORUS TOTAL * AS P-PO_4
CHLORINE FREE AS Cl_2	MANGANESE DISSOLVED AS Mn^{2+}	SILICA AS Si
CHLORINE TOTAL AS Cl_2	MONOCHLORAMINE AS NH_2Cl	SULPHATE AS SO_4^{2-}
CHROMIUM DISSOLVED AS Cr^{6+}	NICKEL DISSOLVED AS Ni^{2+}	SULPHIDE AS S^{2-}
COLOR AS PT/CO SCALE	NITRATE AS N-NO_3	UREA AS NH_2CONH_2
COPPER DISSOLVED AS $\text{Cu}^{(\text{I}+\text{II})}$	NITRATE+NITRITE AS NO_x	ZINC DISSOLVED AS Zn^{2+}
CYANIDE* AS CN^-	NITRITE AS N-NO_2	* External sample
FLUORIDE* AS F^-	NITROGEN TOTAL * AS N-NO_3	pre-treatment required

Soils, plants, feeds and fertilizers*

ALKALINITY - CaCO_3	PHOSPHORUS ACID-EXTRACT. - P-PO_4
AMMONIA CaCl_2 -EXTRACT. - N-NH_3	PHOSPHORUS AVAIL.-BRAY - P-PO_4
AMMONIA KCl -EXTRACT. - N-NH_3	PHOSPHORUS CaCl_2 -EXTRACT. - P-PO_4
BORON CaCl_2 -EXTRACTABLE - $\text{B}^{(\text{III})}$	PHOSPHORUS COLWELL-EXTR. - P-PO_4
CALCIUM - $\text{Ca}^{(\text{II})}$	PHOSPHORUS KJELDAHL - P-PO_4
CHLORIDE WATER-EXTRACTABLE - Cl^-	PHOSPHORUS OLSEN-EXTRACT. - P-PO_4
COPPERACID-EXTRACTABLE - $\text{Cu}^{(\text{I}+\text{II})}$	PHOSPHORUS SORPTION - P-PO_4
IRON ACID-EXTRACTABLE - $\text{Fe}^{(\text{II}+\text{III})}$	PROTEIN TOTAL
MAGNESIUM - $\text{Mg}^{(\text{II})}$	SILICON ACID-EXTRACTABLE - Si
NITRATE CaCl_2 -EXTRACT. AS N-NO_3	SILICON CaCl_2 -EXTRACTABLE - Si
NITRATE KCl -EXTRACT. - N-NO_3	SULPHATE CaCl_2 -EXTRACT.- SO_4^{2-}
NITRATE WATER-EXTRACT. - N-NO_3	ZINC ACID-EXTRACTABLE - $\text{Zn}^{(\text{II})}$
NITROGEN TOTAL KJELDAHL - N-NH_3	

NOTE

Method list includes only the most common methods and it is under continuous development. For any method not included in the list please contact our application laboratory to check method availability

* External sample pre-treatment required

ADVANTAGES AND BENEFITS

- **Easy to use:** no specific experience or training required.
- **Flexibility:** individual parameters list selectable on each sample, pre or post run sample autodilution, working standard autodilution from a stock standard.
- **Low reagents consumption:** only a few microliters of reagents per analysis.
- **Low running costs:** low reagents and consumables costs.
- **Immediate start up:** no time waste or problems to reach hydraulic equilibrium.
- **Immediate shut down:** no washing procedure required.
- **Windows based Software:** easy to use and to learn; short training, specifically designed for chemists.
- **QC control:** up to five level of real time QC can be used, QC results are automatically stored and plotted in a quality control chart.
- **QC actions:** in case of QC out of tolerance the analyzer can stop the run or simply inform the operator leaving trace of malfunction storing the QC out of tolerance.
- **Data reprocessing** allows to check and reprocess the results file, including or deleting data treatment.

