

SPECIFICATION FOR SEGMENTED FLOW AUTO ANALYSER

FOUR CHANNEL CONTINUOUS FLOW ANALYSER FOR THE SIMULTANEOUS ANALYSIS OF THE FOLLOWING CHEMISTRIES IN SEA WATER SAMPLES

- Ammonia
- Phosphate
- Nitrate+Nitrite
- Silicate
- System must be capable of handling simultaneous analysis & flexibility to upgrade from 4 chemistries to 16 chemistries in future to run simultaneously.
- System need to be upgradeable in future, for the operation of unattended / extended hours of operation with reagent switching valves and details to be offered presently.
- Tender bid will be entertained only from a reputed firm which has supplied the similar equipment (Continuous flow analyser) to at least five national institute or organization involved in Sea Water analysis (documentary proof should be enclosed along with tender documents) within India.
- Cost of the equipment should include On-site installation, demonstration and training of the users.

System should Includes:

- **Robotic Auto Sampler**
 - Fully Random Access Auto Sampler with minimum of 50 / 100 sample cup positions
 - 4 – channel built-in rinsing pump
 - Single rotary removable sample tray with dustcover ample uptake with single Pt Ir sample needle.
 - Random access.
 - 4 channel built-in rinsing pump for supply of 1 or 2 independent rinsing liquids.
 - LED indication for power on/off, busy, error.
 - Built-in audiovisual status indication a.o. last sample pick-up indication.
- **Chemistry Module Holder**
 - Module Holder for 5 chemistry channels
 - 2 x 16 channel proportioning pump with dual pump deck
 - Multi-speed pump function with standby / analyze / fast rinse positions
 - Built-in 10 channel high precision air injector
 - Built-in air supply pump
 - 3 cuffed pump tubes to be supplied as standard to reduce maintenance and doubles the lifetime of the tubes.
 - Pressure regulator for air segmentation
 - Should have display of temperature of reactors in the module wherever required in specific chemistry analysis.
 - Separate compartments for electronics, chemistry and detector heads

- **Digital Photometric Detector, Data Acquisition Unit and Flow Access Window NT Software – to run all four parameters simultaneously**

- Wavelength selection by insert of interference filters.
- Wavelength range 340 – 1050 nm.
- Accommodation for 2 flow cells of 5 up to 50 mm path length each.
- Software controlled automatic baseline and peak height settings.
- Software controlled lamp switching on/off.
- 20 bits high resolution absorption recording.
- Detection range up to 6.5 AU.
- Signal / noise ratio < 0.0003 AU.
- 8 available slots for up to 8 analogue detectors
- Future firmware upgrades by USB memory stick – manufacturer to provide any software upgrades on free of charge basis, atleast for next 5 years, after purchase of unit.
- Automatic conversion of ASCII or EXCEL format tables download from LIMS
- Automatic re-sampling of carry over samples, automatic base line and sensitivity drift correction with offset / gain control

- **PC , Printer, Ups & AC**

Latest PC with i5 configuration to work with latest windows software platforms, a laser Printer with current specification, 5 KVA Online UPS and a 1.5 ton Air conditioner to be supplied along with Auto Analyzer

- Flow Access Software to control Continuous Flow Analyzer should include
 - Controls up to 16 analysis channels simultaneously
 - Sample table set up, includes sample weight, dilution factors, automatic numbering of sample identity and sample positions
 - User definable multiple drift containers for larger capacity in long runs.
 - Needle height for sample pickup at different height per sample rack
 - Editable field per sample for user comments
 - Each sample result with date and time stamp of analyses.
 - Real time display of 1st, 2nd calibration curve according ISO 8466, 3rd order and inverse logarithm for use with Ion Selective Electrodes
 - User definable multiple result views
- Compliant to 21 CFR Part 11 for data integrity and data safety Compliant to CLP (Contract Laboratory Program)
- Multi tasking capabilities.
- On-line help.

- Ammonia with 50mm flow cell
- Phosphate with 50mm flow cell
- Nitrate+Nitrite with 50mm flow cell
- Silicate with 50mm flow cell