**Technical Specification for Ion Chromatography**

System should be designed and manufactured under ISO-9001 and should comply with international regulatory, safety and electromagnetic compatibility requirement. The multi functional data system should be based on Microsoft Windows operating system for instrument control, data acquisition and data analysis.

**Core specifications:**

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| **S.No** | **Specifications** | **Descriptions** |
| 1 | Ion Chromatography system | Upgradable to Gradient - Compatibility with mobile phases (like KOH, NaOH for anions and MSA for Cations) with Conductivity Detector, Self Regenerating Suppressors for both for anions and cations, columns for analyzing anions (like - fluoride, chlorite, chloride, chlorate, bromide, bromate, nitrite, nitrate, phosphate, sulfate etc.) cations (Alkali-alkali earth metals, amines, ammonium etc.),organic acids, oxy anions etc., with fully system control software.  Ion Chromatography system can quantitatively analyze carbohydrates like monosaccharides and disaccharides. |
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**Pump:**

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| **S.No** | **Specification** | **Descriptions** |
| 1 | Dual piston pump | should be made up of PEEK and compatible with aqueous eluent of pH 0-14 and reversed phase solvents |
| 2 | Flow rate range | 0.001 – 10.0 mL/min |
| 3 | Maximum operating pressure | 6000 psi or better |
| 4 | Pressure ripple | < 0.1% or better |
| 5 | Flow precision and accuracy | < 0.1% or better |

**Ion - Exchange column with guard column and detector specification:**

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| **S. No** | **Specifications** | **Descriptions** |
| 1 | Anion column and guard column | Anion (4 x 250 mm) and Guard columns (4 x 50 mm) for the separation of anions like fluoride, chlorite, chloride, chlorate, bromide, bromate, nitrite, nitrate, phosphate, sulfate, organic acids, oxy anions etc. |
| 2 | Cation column and guard column | Anion (4 x 250 mm) and Guard columns (4 x 50 mm) for the separation of cations like alkali-alkali earth metals, amines, ammonium etc. |
| 3 | Suppressors unit | Membrane or resin based self regenerating suppressor for both anions and aations using only de-ionized water for regeneration. |
| 4 | Digital and analog signal range | 0-15,000 µS or better;  Temp: 7 degree above ambient to 60 degree or better. |

**Software:**

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| **S. No** | **Specifications** | **Descriptions** |
| 1 | Fully System Control Chromatography Management Software | Chromatography Management Software should supports Windows XP or Vista with automated procedure wizards, system smart startup and shutdown, system wellness and predictive performance, multivendor automation support of 3rd party, customized reporting (unlimited report workbooks automated system qualification (detailed comprehensive qualification reports). |

**Optional and data acquisition**

1. Analytical columns with guard Columns for cyanide, sulphide etc., and mono and disaccharides application should be quoted along with necessary conventional working electrodes.
2. PTFE disposable electrodes should also be quoted for carbohydrates applications for high sensitivity.
3. The system should be supplied with a branded PC and printer having USB high speed communication protocol, preloaded with the software.
4. Installation and commissioning of instrument should be carried out at site.
5. Minimum 3 years warranty with 1 or 2 year free service will be preferred
6. A service center must be available in Chennai for service engineers to attend to the instrument for maintenance or troubleshooting.
7. On-site training for the operation of the hardware and software systems should be included.