

Real Time PCR Technical Tender Specifications

1. The instrument should be a validated platform to perform Real-time PCR analysis using in-built Peltier based PCR machine for forensic applications. The supplier should enclose documentary support of the same.
2. The instrument must provide specialized application specific software for data collection and analysis of fluorescence data for the applications like absolute quantitation, relative quantitation, allelic discrimination/SNP (Single Nucleotide Polymorphism) detection and plus/minus assays that utilize internal positive controls.
3. The system must preferably have a tungsten-halogen lamp or LED or laser for excitation of fluorescent dyes. The excitation source should have the capability to excite broad range of fluorophores (far red dyes). The excitation source should be user replaceable.
4. The fluorescence detection should be performed using self-calibrating cooled charge coupled device (CCD) camera/photo multiplier tube. The optical system must utilize multiple filter sets to enable multiple wavelength detection.
5. The instrument software should utilize a multi-componenting algorithm to provide precise de-convolution of multiple dye signals, to enable the simultaneous detection of multiple fluorophores (multiplexing) with reduced crosstalk.
6. The system should provide minimum five excitation and five emission broadband pass filters. The system should be flexible enough to accept future dyes without any hardware changes with respect to filters and detector.
7. The instrument should provide an upgrade path to perform fast thermal cycling when needed. The system should use Universal Thermal Cycling Conditions.
8. In order to minimize cost and time, the vender should be able to provide optimized and validated readymade TaqMan based kits to determine the amount of human and /or male DNA that is contained within a forensic and/or database sample.
9. The system should have mechanism to avoid reaction mixture evaporation.
10. The suppliers while installing the system should demonstrate the ability of the system to distinguish a two fold amplification of template copies (RNaseP verification plate) with a high degree of confidence.
11. The instrument must be supplied with a dedicated system compatible notebook running the Windows XP Operating System for data analysis.

12. The instrument must support two homogeneous reaction chemistries, the fluorogenic 5' nuclease assay using TaqMan probes and the SYBR Green 1 double stranded DNA binding dye chemistry.
13. The instrument must be provided with a warranty for a period of one year from the date of installation. A factory trained service engineer must be available in station to perform installation and all repairs.
14. The vendor must be able to supply all the necessary consumables to determine the amount of human and/or male DNA that is contained within a forensic and /or database sample.
15. The vendor must provide comprehensive assay design and development guidelines for real-time quantitative PCR and SNP genotyping assays.
16. The vendor must be able to offer Telephonic Support and Field Applications / Service Support to help solve chemistry and instrumentation problems encountered with real-time quantitative PCR and SNP genotyping. A documentary evidence towards these credentials must be enclosed.
17. The vendor should provide service network details in Hyderabad. Also to confirm
18. Attending service within 48 hours from instrument breakdown.
19. All the vendors must clearly document the compliance of detailed specifications as required by the tender in their quotations highlighting clearly the specifications in their brochures/catalogues.
20. Pre-installation requisites regarding electrical power, environmental conditions, layout diagram of the equipment along with the list of users of the quoted model in India and abroad are to be provided along with the technical bid.
21. The participating / bidding firms shall provide an undertaking through their principals for the uninterrupted supply of accessories / spare parts for the quoted model and to provide after sales service by qualified and trained expert engineers of the firms for a minimum period of 10 years excluding the warranty period.
22. The participating / bidding firms shall arrange demonstration of the quoted model and /or collect samples from the Laboratory for analysis by the quoted model and submit the results to the Laboratory before the technical evaluation as per the time frame fixed by the Laboratory.
23. Manual for operation and maintenance of the instrument to be supplied in hard copy and soft copy.
24. The vendor shall be ISO 9001 certified or equivalent firm.
25. The vendor shall clearly specify terms and conditions of Annual Maintenance Contract (AMC).