

Specifications for bench-top Next Generation Sequencing system

1. System should be an integrated setup capable of performing template DNA amplification and sequencing and it should occupy minimal lab space.
2. The sequencing workflow should allow fully automated, walk-away operation, without user intervention and support unattended operation for at least 600 sequencing cycles and data output of minimum 15 Gb with minimum 400 bp to 10,000 bp read length in the same run.
3. The sequencing chemistry should be robust and globally proven, demonstrated with around 5000 peer reviewed publications.
4. The sequencing chemistry should follow Ion, SMRT or sequencing by synthesis technology. The chemistry should allow highly accurate sequencing through homopolymeric regions (atleast 20 bases).
5. System should be able to address multiple applications like targeted resequencing, 16s metagenomics, bacterial and viral genome sequencing, clone checking, gene expression.
6. Sequence output should generate accurate base calls and high error free raw data with greater than 80% data over Q30.
7. Clonal amplification of DNA template should be fully automated.
8. The system should be offered with integrated paired-end fluidics on the instrument, supported with fully automated paired-end chemistry, without user intervention.
9. System should offer the user-friendly sequencing experience, such as, intuitive touch screen user interface, RFID tracking and pre-mixed/pre-filled integrated reagent cartridge for minimal user intervention.
10. The system should come with an option of cloud based server for data storage, sharing and analysis. In addition, there should also be an option of a deployment of an onsite server, for the same functions.
11. The system must have more than 25 installations in India, and come up with a warranty of minimum 1 year.

12. System may be offered with an optional full coverage for parts and labor, reagent replacement, technical support, on-site response and advanced training.