

**DIGITAL PCR – 1No.****Doc. No: ST/12/DPCR/2016-17/05****Proposed Application:**

Absolute nucleic acid quantification, gene expression and miRNA analyses, Quantification of NGS sequencing libraries, determination of copy number variation (CVN), single cell analysis, pathogen detection.

**Features :**

- System should provide an absolute measure of target DNA molecules with unrivalled precision and sensitivity without the use of standards and standard curves.
- System should be capable of analyzing 96 samples at a time.
- System should be able to detect and quantify one copy of target sequence.
- System should support multiplexing experiments with probe as well as dye base chemistry.
- Should be able to detect atleast 2 colors from a single partition.

**Specifications:**

Sample Detection	:	CMOS/Multi-pixel photon counter
Sample Illumination	:	Light emitting diodes (LED)
Starting sample size	:	20µl or better
Detection channels	:	FAM/SYBR Green, HEX/VIC
Droplets (reaction wells)		
Per sample	:	approx. 20,000
Linear dynamic range	:	5 orders of magnitude/ 5 logs
Precision	:	± 10%

**Software :**

- Should have robust data analysis algorithms, user friendly and capable of performing gene expression analyses, fold expression analyses, copy number analyses.
- Remote monitoring set up preferable.

- Data analysis software provided with the system should support offline data analysis
- System software should be capable of absolute quantification, rare mutation and sequences detection, SNP detection, copy number variation, gene expression analysis, single gene expression, NGS validation and library quantification.
- Should provide concentration analysis for each sample
- Software should have copy number variation, Absolute quantification & Rare event analysis modes

**Essential :**

- Suitable on-line UPS that can give at least one hour backup to the system is required.
- Three years comprehensive warranty followed by two years non-comprehensive warranty should be offered free of cost.
- An additional analysis work station computer, installed with a data analyses software should be provided (branded computer with latest configuration with 4GB RAM and having licensed windows operating system) along with a multifunction laser printer (print, copy, scan) and printing capability of 10-15pages per minute.
- Compatible reagents for running atleast 1000 samples should be supplied free of cost along with the system.
- During installation supplier should provide an installation kit using which a 2-fold serial dilution for a single copy gene could be demonstrated with over 99% confidence level.

**NOTE :**

- # All the above features must be supported by product/technical brochures, highlighting the requirement.
- # The offer should be complete with all necessary and Essential Accessories.
- # The supplier should be able to supply all the reagents and consumables for the operation of the system for a minimum period of 5years.