INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
MATERIALS MANAGEMENT DIVISION
Powai, Mumbai 400076.

PR No. 1000053937 **RFx. No. 6100002770**

Corrigendum- I

Revised Technical Specifications of Polymerase chain Reaction Machine (Multi-Block/Gradient/Droplet Digital/Real Time) (Qty. 1)

Please note that, technical specifications are revised.

Sr. No	Item Description	Detailed Technical Specification	Technical Compliance (Yes / No)	Additional Information (if any)
1.		**Purpose:** Absolute quantification for Copy Number Variations		
2.		I. Table-top modular/integrated system with latest state of the art technology and upgradable modalities in terms of automation and multiplexing capabilities, complying with norms of respective instrument placements in pre-amplification, amplification and post-amplification areas as recommended by accrediting agencies and complying with MIQE guidelines. The system must be equipped with advanced partitioning technology of Droplet/ Chip based/ micro plate PCR quantitation Complete, ready to use setup should be quoted and supplied, with Data analysis Software and all essential accessories or equivalent hardware setup.		

3		**System should be able to:** I. Detect rare DNA target copies with high sensitivity II. Determine SNP mutation with high sensitivity III. Perform absolute quantification of nucleic acids with high precision and sensitivity without the use of reference genes, standard curves. IV. Determine copy number variation with high accuracy V. Measure gene expression level with high precision. Perform NGS Validation and library quantification.		
4		**Sample Partitioning agent/ Droplet Generator:** I. System should be based on water-oil emulsion droplet technology with microfluidics/ Chip based/ micro plate PCR quantitation II. System should be able to generate around 20000 uniform nanoliter droplets/ partition per sample irrespective of samples being run (1-96). III. Total reaction volume needed: 25 microliter or less, for consistent partition number (20,000 or more). IV. Sample capacity: minimum of 8 samples to maximum 96 samples per run for sample partitioning – without compromising on the number of partitions (~20,000). V. Droplet generator/ partitioning instrument should be ready to use system, supplied with all standard and essential accessories, attachments, etc.		
5		**Droplet / *Partition* Reader:** I. Suitable for counting data from each droplet/partition at a time and segregating PCR positive and PCR negative droplets.		

		II. Reading capacity: System should be capable of reading and analyzing 1 to 96 samples in a single run. III. 12 target multiplexing in a single well. IV. The equipment must be able to read and analyse multiplexing at least 12 targets/well with probe based chemistry. V. Sample Illumination/Detection method: System should use atleast three or more independent light emitting diodes for illumination and differentially detect emission using two filtered multipixel photon counter. VI. Two channel detection for FAM (Evagreen) and HEX (Vic) dyes. VII. The equipment must be able to read and analyse multiplexing upto 12 targets/well with probe (FAM/HEX) based chemistry, as well as must be capable of performing multiplexing even with dye (Evagreen) based chemistry. VIII. Gradient enabled 96 deep-well PCR which can be used as a standalone PCR machine and having gradient range of 30-100°C with temperature differential range of 1-24°C IX. Instrument with graphical touch screen and display should be provided. X. In case, not a part of workflow, a standalone, gradient enabled thermal cycler must be provided where the assay optimizations can be performed at cheaper running costs. XI. Plate Sealer suitable for sealing 96 well plate using heat-based sealing, along with support block, sealing frame and power chord. The plate sealer must be compatible with any 96 and 384 plates, where the plate sealing can be performed for digital PCR workflow, RT-PCR as well as sequencing purpose; to ensure no cross contamination or aerosol based contamination.		

6		**Software:** I. Software packages for Digital PCR data capturing and analysis, which should include features that: Provide total number of droplet counts per sample, fraction of negative droplets for each sample to fit to a Poisson algorithm, II. Computes Absolute quantitation (copies/µl) for each sample III. Performs copy number variation analysis, IV. Calculates fractional abundance of mutant target in wild-type background for mutation detection, V. Allow setting automatic/manual threshold values for entire sample plate or for individual samples, VI. Options for merging results from replicate wells, VII. Graphical and tabular representation of data, data acquisition and analysis, report generation, export results, etc. VIII. Software package used for digital PCR system should be latest one to be freely used in different computer system IX. The software should not require manual setting of exposure & camera gain for the optics bench during or after run set up to avoid inter/intra run variations, subjective data analysis and automated data interpretation without manual intervention. The reader must be able to read, analyse and represent fluorescence data from each single droplet/partition individually, during the data capture step		
7		**Computer:** I. Latest available and manufacturer's recommended high configuration computer workstations should be provided for control, acquisition+analysis, etc. Computer system should be inclusive of all required hardware, drivers, adequate storage and RAM modules, etc.		

		II. Computer system should have sufficient memory to store at least 1000 previous runs data Consumables required for installation and starter kit to run the instrument must be provided.		
8		**Mandatory parameters:** I. Flexibility to take Time-breaks during workflow; droplet generation to PCR-Readouts II. Thermal cycler with gradient feature to be available in the system to run samples with different annealing temperatures and for easy assay optimizations, to incur lower sample running cost, save time and provide wider flexibility. III. The instrument/technology must have and option of recovering the samples after thermal cycling for any other downstream applications like NGS. IV. No Special temperature window for instrument operation V. Flexibility to use small (8) or high (96) number of samples throughput without wasting consumables and compromising on partition number(~20,000 or more) . VI. System must not require manual setting of exposure & camera gain for the optics during/after run set up to avoid run to run variations, subjective data analysis and automated data interpretation without manual intervention. VII. The system should not have any recurring annual calibration requirement. If the requirement exists, the total price for the same for minimum 5 years must be included. VIII. The system must not have a dead volume of more than 10% to ensure utmost sensitivity and data reproducibility. IX. The system must have option to perform QC after each step of digital PCR run. X. The system must have an option of performing PQ (performance qualification) using commercial kit, self as well as 3rd		

		party, to ensure instrument performance whenever required The system must have an option to upgrade in terms of automation and high throughput (in terms of multiplexing capability) in future, without the need to change the entire machine.		
9		**Documents for regulatory compliance** I. Quality System and Electrical & Laboratory Equipment compliance II. CE/ISO Certification		
10		**After sales support/ service / application support:** Should be provided and Local Engineer will be available within 48 hours if required.		
11		**Training** should be provided and Application Training/support should be provided whenever needed.		
12		**Others** Spares: the supplier of the instrument must confirm in writing that the spares for the entire instrument will be available for a period of at least ten years after the installation of the instrument.		
13		**Warranty- 3 years**		

Bid submission end date is revised as follows-

Sr.No.	Online RFx Clause	Previous Clause	Changed Clause
1	Bid Submission End Date/Date & Time of Submission (Online RFx Clause)	11.03.2026 at 13:00	18.03.2026 at 13:00
2	Bid Opening Date & Time (Online RFx Clause)	11.03.2026 at 16:00	18.03.2026 at 16:00

Asst. Registrar (MM)

VSS 11/03/26

11.03.2026