

Technical Specification of Digital Polymerase Chain Reaction System (PCR)**Bidder Eligibility Criteria-I**

Sl. No	Bidder Eligibility Criteria-I	Complied / Not Complied	Reference Page No.
1	The bidder/OEM should have supplied at least 3 similar items to IITs, NITs, IISERs, CSIR Labs or other globally reputed R&D organizations in the last 5 years, PO copies or installation certificates along with contact details of end user need to be submitted as the proof of supply. IIT Madras reserves its right to verify the claims submitted by the bidder and the feedback from the previous customers will be part of technical evaluation.		
2	The bidder should provide local service engineer details to attend service related issues		

Technical Specifications II

SL NO	<u>Specifications</u>	Complied / Not Complied	Reference, Page No
1	System should be able to perform partitioning and amplification without the need to shift between instruments.		
2	System should have the capability to perform both qualitative and quantitative analysis		
3	System should be fully automated workflow integrated system, should complete the entire dPCR experiment without human intervention after loading the reaction mix in the instrument.		
4	System should provide Advanced multiplexing capabilities up to 5 plex.		
5	System should support Flexible sample throughput, 40 or above samples/run		
6	System should provide an absolute measure of target nucleic acid molecules with high precision and sensitivity without the use of reference genes as well as standard curves.		
7	System must offer sensitive, accurate and precise nucleic acid quantification for applications like rare DNA detection, determination of copy number variation, measure of gene expression level etc.		
8	System should support both TaqMan hydrolysis probes and EVA Green dye chemistry and should be able to provide multiplexing capabilities.		
9	System should support amplitude based multiplexing		
10	System should be supplied with a suitable mastermix for single and multiplex assays		

11	Limit of Detection should be 0.2 copies / ul		
12	Sample input volume should be 5 or 25uL		
13	A high efficiency of 98.1% with a coefficient of determination of ≥ 0.99 should be possible		
14	Dynamic range of the system should be 5 logs		
15	Should provide accessories for liquid biopsy		
16	Vendor should have all the required assays or the system should be open for third party or home brewed assays		

Partitioning and amplification specifications:

SL NO	<u>Specifications</u>	Complied / Not Complied	Reference, Page No
1	System should have a Touch-sensitive TFT-Display		
2	System should be able to generate 25000 to 30000 droplets / sample, average droplet volume from 0.24 nL to 0.9nL		
3	System should have a block temperature of 95 °C from ambient temperature		
4	Block accuracy should be ± 0.1 °C and Block uniformity should be ± 1 °C		

Reader specification:

SL NO	<u>Specifications</u>	Complied / Not Complied	Reference, Page No
1	System should LED for excitation		
2	System should simultaneously detect emission in 5 to 6 channels from 503nm to 755 nm		
3	System should simultaneously detect dyes like FAM/ SYBR Green/EVA Green/ fluorescein // Yakima Yellow®// Atto550// ROX // Cy@5//Atto700/Cy@5.5		
4	Camera pixel resolution for imaging should be 1.3 MPixel		
5	Result data should be in most common formats like 16bit TIFF grayscale, CSV spreadsheet, XML files		

Software:

SL NO	<u>Specifications</u>	Complied / Not Complied	Reference, Page No
1	System should be supplied with a licence free software with unlimited seats, downloadable to multiple systems to support data analysis		
2	Software should be able to generate publishable quality 1D, 2D, 3D graphs		
3	should supply suitable high-end data processing server, data storage server (400TB usable storage after raid 5) and workstations (3 nos) with required preloaded software along with system		
4	The software should calculate and automatically provide the thresholds to discriminate positive and negative partitions and should also allow manual setting of the thresholds.		
5	The software should provide direct access to the results with quantification of nucleic acids, as well as graphics showing 95% confidence intervals		
	Terms and Conditions		
1	The equipment must have a one-year warranty. Quote must include 2 years optional warranty for 2 years (2 nd and 3 rd) and AMC for the 4 th and 5 th year.		
2	Necessary training and installation to be provided.		

(Note: It is mandatory for the bidders to provide the compliance statement in tabular column format along with catalogue page number (comply/not comply) for the Above points with document proof as required. Failing which bidders will be technically disqualified)