Specifications for real-time PCR thermocycler

1. Should have a **block of 96 x 0.2 ml tubes or plate to run typical 0.2ml tubes, strips, and plates.**
2. Detection of at least 3 different fluorescent reporters in the same tube.
3. Should be capable of detecting FAM/SYBR Green, and VIC, HEX, TET, CAL Fluor Gold 540 etc.
4. Minimum ramping speed: 5 ^{O}C per sec with an **average ramp rate of 3.3** ^{O}C **/Sec.**
5. Should have **6 Peltier Cooling & Heating for uniform temp control**
6. **Excitation –Emission range: 450- 580nm**
7. No internal reference dye should be required. True **2-5 Color Multiplexing with use of 2 different flourophores without the need of addition of any internal reference dye**.
8. Should have 3 filtered LEDs as an excitation source with 3 filtered Photodiodes for detection.
9. Dynamic range of 9 orders.
10. Temperature range 25– 100 ^{O}C with accuracy of ±0.2 ^{O}C and **uniformity of ±0.4** ^{O}**C within 10 sec of arrival at 90** ^{O}**C**
11. Sample volume should be 1-50μl
12. The system should be factory calibrated
13. The system must have HRM platform with all original software (without any additional cost) and consumables
14. Should be capable to perform automatic allelic discrimination by end point fluorescence or threshold cycle.
15. Should be capable to perform Gene expression analysis by relative quantity (ΔCt) or normalized expression (ΔCt).
16. Comparison of upto 5000 Ct values from different data files should be possible
17. **Should be licensed for all Research applications.**
18. **System should be compliant with the MIQE Guidelines**
19. Software should be compatible with Microsoft windows 8 onwards
20. Software should be capable to import and analyze data from any real time PCR platform.
21. Should be provided with compatible power back up (minimum 2Kva online UPS), PC with minimum i5 processor and original windows 10 operating system, 4GB RAM, original softwares.
22. Should have minimum 2 years warranty and 5 years annual maintenance contract
23. Optional: Should have a gradient capacity with **Dynamic ramping.**