



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY

MATERIALS MANAGEMENT DIVISION

Powai, Mumbai - 400076

Technical Specifications of Nanoparticle Tracking Analysis (NTA)

RFx No. 6100001117 (Reference No. 1000021003)

NTA for the measurement of nanoparticle size and its concentration and to be able to record individual particle motion.

Technical specifications:

1. Nanoparticle size range: 10 nm to 1000 nm or better
2. Particle concentration: $5 \times 10^6 - 1 \times 10^8$ particles/mL or better
3. Size measurement: Accuracy (± 5 nm) and reproducibility (± 2 nm)
4. Operating temperature range: 10 °C to 50 °C.
5. Sample volume: 750 μ L or less
6. Solvents which can be used for nanoparticle dispersion: Water, other non-corrosive solvents.
7. Wide wavelength ranges of laser beams (with two lasers, if required) should be available, covering at least the range 445 to 635 nm or more, if possible.
8. Narrow laser beam width and thickness are required.
9. Highly sensitive CMOS camera (wide pixel range) with optimum resolution and fast data acquisition required.
10. High recording frequency of particle motion by the camera, at least 30 frames per second or more, if possible.
11. Different standard nanoparticle solutions for calibration are to be supplied.
12. A computer with the necessary software is to be supplied, to obtain the result in different file formats and as video files. Also, a suitable UPS for the NTA instrument is to be supplied.
13. A warranty of at least three years is required, and during the warranty period, the instrument should be verified/calibrated by an instrument/technical expert using standard materials once a year.
14. AMC for two years, beyond the warranty of three years.