

NFL Requirement as per NIT

Sr. No.	Description of Material	Qty.	UOM
I	Hydrodynamic Particle Size and Zeta Potential Analyser. Detailed Specifications as per Annexure	1	Number



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Annexure

**Technical specifications of Hydrodynamic size and Zeta Potential Analyser
for Nano Particles**

Sr. No	Parameters	Vendor's Comments
	Hydrodynamic Particle size and Zeta Potential Analyser -01 Nos.	
1	The instrument should be able to perform hydrodynamic particle size, zeta potential & Molecular Weight analysis in a single measurement. The system should use Dynamic light scattering for the measurement of size & Electrophoretic mobility for the measurement of zeta potential. There should be a provision for Automated size and zeta potential Measurement as a function of pH or additive concentration.	
2	Source Laser: 630-660 nm, Laser Power should be 4mW or higher Laser Safety: The laser safety should be complaint with class 1 safety.	
3	Detector: The system should use High resolution Avalanche Photo Diode detector	
4	Temperature Control Range - 0°C to 90°C or better	
5	Measurement/Scattering Angles- The instrument should have ability to measure particle size using forward scatter, side scatter and back scatter angles(i.e. minimum three) or better	
6	Size range : 0.4nm - 9.0 µm or better Minimum sample volume : 50µl or less Concentration range: 0.2mg/ml to 40% wt/vol of protein or better Accuracy: Better than ± 2 % on NIST traceable standards Repeatability: Better than ± 2 % on NIST traceable standards	
7	Zeta potential range: +/- 500mV or better Mobility range: +/-20µm.cm/V.s or better Sample Conductivity Range: 200mS/cm or better Size of particles measurable: 4nm to 100 microns or better Accuracy: ±10% or better Repeatability: ±3% or better Separate measurement should not be required to measure the sign and charge of the zeta potential.	
8	Cuvette Type: Disposable, reusable and organic solvent compatible	

9	Molecular-weight range: 1000 Da – 20 MDa or better	
10	An Autotitrator to help automating Zeta Potential with pH titration & Zeta potential with Ionic Concentration must be quoted along with the instrument.	
11	Computer: i-5 processor with 8GB RAM, mouse, keyboard and Laserjet Printer	
12	Software <ul style="list-style-type: none"> • The software must be compatible with Windows 10 operating systems or later. • The instrument should be completely controlled by computer through 2oftware • Data export must be available to word processing packages or spreadsheets • Access to all measured data including correlation functions, fitted data points, residuals and all experimental parameters must be available and stored for subsequent examination and recalculation. • The software upgradation should be free for life time. • NFL should have able to install and complete access to the software 	
13	<ul style="list-style-type: none"> • Standard – 1 No 50-80 nm NIST traceable standard • Standard – 1 No Zeta potential reference material 	
14	Spare: <ul style="list-style-type: none"> • 1000 Nos of disposable cell for Particle Size • 100 Nos of Re –usable type cuvettes, electrodes for for Zeta Potential 	
	NOTE: <ul style="list-style-type: none"> • Bidder may submit certificate of OEM regarding their permanent service facilities in India for technical support and spare part supply for minimum 07 years. • Bidder may indicate complete address of their establishments in India with their contact person name, address and phone nos. etc. on its letter head pad. • Catalogue copy of the quoted model should be provided with offer and available on OEM website for download • Installation and demonstration free of cost at NFL Nangal • Warranty:- Five(5) Years from date of successfully installation at our site. All the parts of the instrument including hardware and software should be covered within warranty. During warranty period (five years) Service personnel of the party shall visit NFL Naya Nangal site for calibration (if any) & preventive maintenance of the complete system once in a year for trouble free operation. In addition to this, the party will depute their expert engineer if required whenever there 	

is any failure or erratic behaviour of the instrument within 48 hours from information given to you.

During Warranty period, cost of genuine spares (hardware and software) shall be in Vendor scope. Party shall maintain the required inventory to meet the exigency for smooth, trouble free and uninterrupted operation of the complete instrument.

Expenditure for site visit like fare, boarding & lodging charges, local travel etc. shall be borne by the bidder/party.

- Leaflet/Catalogue having all technical specifications of the offered model should be provided with the quotation.
- Guarantee/Warranty certificate having parties invoice no. and our PO no. to be submitted at the time of commissioning of the instrument.
- Operation and service manual/Technical Manual to be supplied with instrument. Instrument should be supplied with all standard accessories and spares for ready to use.
- Any other accessories needed for successful running of the instrument which is not mentioned above should be supplied with the instrument

Technical Specifications are provided as per Performa given in Annexure. Comments should be provided as comply or deviation as shown in annexure under vendor's comment column

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