### STATE OF LOUISIANA GRAMBLING STATE UNIVERSITY GRAMBLING, LOUISIANA

A Member of the University of Louisiana System

INVITATION TO BID FOR

# IFB- 50018-240023

## NanoBrook 90Plus PALS Bundle (or equal)

ISSUING AGENCY: Grambling State University Purchasing Department

403 Main Street, Purchasing BLG Grambling, La 71245

ACTING PURCHASING DIRECTOR: Erin Walker

Telephone: 318.274.3280 (o) | [walkere@gram.edu](mailto:walkere@gram.edu) (e)

PURCHASING OFFICER: Halana Miles

Telephone: 318.274.4354 (o) | [milesh@gram.edu](mailto:milesh@gram.edu) (e)

REQUISITIONED BY: Dr. Haeyon Yang

Telephone: 318.274.3863(o) | yangh@gram.edu (e)

RELEASE DATE: 02/02/24 MANDATORY PRE-BID MEETING: N/A MANDATORY LOCATION: N/A

BID OPENING DATE: February 22, 2024

BID OPENING TIME: 2:00 p.m., Central Time

BID OPENING LOCATION: **GSU Purchasing Teleconference:**

**Number 1-917-900-1022, Conference ID: 5600581 #**

50018-240023 – NanoBrook 90Plus PALS Bundle (or equal)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Notice To Vendors This Is Not An Order.**  **It Is Merely**  **A Request For Prices** | **GRAMBLINGSTATE UNIVERSITY**  **Grambling Louisiana REQUEST FORQUOTATION**  Math & Physics  **Department** | | **DATE:**  Feb. 2, 2024 | **Date and Time by Which Quotation Must be Returned: February 22, 2024 2:00 pm** |
| **TO THE VENDOR:**  To be returned on or before date specified above to:  GRAMBLING STATE UNIVERSITY PURCHASING DEPARTMENT  Website: [**Purchasingbids@gram.edu**](mailto:Purchasingbids@gram.edu) | |
| Name and Address of Vendor (Firm or Individual)    PURCHASEREQUISITION NO. R00 BID 50018-240023 P. O. No. | | |
| **NOTE: THE UNIVERSITY RESERVE THE RIGHT TO ACCEPT OR REJECT ANY OR ALL BIDS, AND WAIVE**  **INFORMALITIES**  THIS BID IS DUE IN PURCHASING OFFICE  AS STATED ABOVE  **LATE BIDS NOT ACCEPTED** | |
| **INSTRUCTIONS TO BIDDERS:**   1. READ THEENTIRE BID, INCLUDINGALL TERMS AND CONDITIONS AND SPECIFICATIONS. 2. ALLBID PRICES MUSTBE TYPED OR WRITTEN IN INK. ANYCORRECTIONS, ERASURES OR OTHER FORMS OF ALTERATION TO UNITPRICES SHOULD BE INITIALED BY THE BIDDER. 3. THIS BID IS TO BE MANUALLYSIGNED IN INK. 4. BID PRICES SHALL INCLUDE DELIVERY OF ALL ITEMS FREIGHT ON BOARD (FOB) DESTINATION OR AS OTHERWISE PROVIDED. BIDS CONTAINING "PAYMENT IN ADVANCE" OR CASH ON DELIVERY (COD) REQUIREMENTS MAYBE REJECTED. PAYMENT IS TO BE MADE WITHIN 30 DAYS AFTER RECEIPT OF PROPERLYEXECUTED INVOICE OR DELIVERY, WHICHEVER IS LATER. 5. BIDS SUBMITTED ARE SUBJECT TO PROVISIONS OF THE LAWS OF THE STATE OF LOUISIANAINCLUDING BUT NOT LIMITED TO   L.R.S. 39 :15 51 -1736; PURCHASING RULES AND REGULATIONS; EXECUTIVE ORDERS; STANDARD TERMS AND CONDITIONS; SPECIAL CONDITIONS; AND SPECIFICATIONS LISTED IN THIS SOLICITATION.   1. THIS IS ASEALEDBID and MUSTBEEMAILEDTO THEGSUPURCHASINGDEPARTMENTVIAEMAILACCOUNT:   [**Purchasingbids@gram.edu**](mailto:Purchasingbids@gram.edu)   1. TO ASSURE CONSIDERATION OF YOUR BID, ALL BIDS AND ADDENDA SHOULD BE RETURNED IN AN ENVELOPE OR PACKAGE CLEARLY MARKED WITH THE BID NUMBER. 2. BIDS OR QUOTATIONS MAYBE CONSIDERED FOR ALLORPARTOF TOTALQUANTITIES. 3. NOTE: A COMPLETE RECORD OF ALL BIDS IS KEPT ON FILE IN THE PURCHASING DEPARTMENT SUBJECT TO THE INSPECTIONS OF ANY CITIZEN. EVE COURTESY WILL BE AFFORDED ANY CITIZEN WHO IS INTERESTED IN INVESTIGATING FOR ANY PURPOSE THE RECORD OF STATE PURCHASE COPIESOFEVALUATIONCANBEFAXEDTOYOUONLYAFTERRECEIPTOFWRITTENREQUEST.PLEASEDONOTCALL. 4. IMPORTANT: BY SIGNING THE BID, THE BIDDER CERTIFIES COMPLIANCE WITH ALL INSTRUCTIONS TO BIDDERS, TERMS, CONDITIONS AN SPECIFICATIONS, AND FURTHER CERTIFIES THAT THIS BID IS MADE WITHOUT COLLUSION OR FRAUD. THIS BID IS TO BE MANUALLY SIGNED IN INK BY PERSONAUTHORIZEDTOBINDTHEVENDOR. ALLBIDINFORMATIONSHALLBEMADEWITHBLUEINKORTYPEWRITTEN. 5. ORDER OF PRIORITY. IN THE EVENT THERE IS A CONFLICT BETWEEN THE INSTRUCTIONS TO BIDDERS OR STANDARD CONDITIONS AND THE SPECIAL CONDITIONS, THESPECIALCONDITIONS SHALLGOVERN.   **For questions regarding this bid, please contact Halana Miles at 318.274.4354** | | | | |
| **TO THEVENDOR:**  Bid Bond of 5% **will not** be required  Performance Bond of 50% **will not** be required | | **THIS QUOTATION IS SUBMITTED BY**  Name of Vendor  (Firm or Individual) Signature Name (Printed) Telephone # Fax # Email Address Title Vendor Quote #  Date Submitted | | |
| Recommended Site Visit: Not Applicable | |
| **Deadline to Receive Inquiries: February 14, 2024 @ 10:00 am** | |
| **Deadline to Respond to Inquiries: February 19, 2024** | |
| Bid Opening: February 22, 2024 at 2pm CST | |
|  | |

## Veteran-Owned and Service-Connected Disabled Veteran-Owned (Veteran Initiative) and Louisiana Initiative for Small Entrepreneurships (Hudson Initiative) Program

This procurement has been designated as suitable for Louisiana certified small entrepreneurships participation.

The State of Louisiana Veteran and Hudson Initiatives small entrepreneurship programs are designed to provide additional opportunities for Louisiana-based small entrepreneurships (sometimes referred to as LaVet’s and SE’s respectively) to participate in contracting and procurement with the state. A certified Veteran-Owned and Service-Connected Disabled Veteran- Owned small entrepreneurship (LaVet) and a Louisiana Initiative for Small Entrepreneurships (Hudson Initiative) are businesses that have been certified by the Louisiana Department of Economic Development. All eligible vendors are encouraged to become certified. Qualification requirements and online certification are available at https://smallbiz.louisianaeconomicdevelopment.com.

Bidders that are not eligible for certification are encouraged to use Veteran-Owned and Service-Connected Disabled Veteran- Owned and Hudson Initiative small entrepreneurships where sub-contracting opportunities exist.

For a good faith effort, written notification is the preferred method to inform Louisiana certified Veteran Initiative and Hudson Initiative small entrepreneurships of potential subcontracting opportunities. A current list of certified Veteran-Owned and Service-Connected Disabled Veteran-Owned and Hudson Initiative small entrepreneurships may be obtained from the Louisiana Economic Development Certification System at [https://smallbiz.louisianaeconomicdevelopment.com.](https://smallbiz.louisianaeconomicdevelopment.com/) Additionally, a current list of Hudson Initiative small entrepreneurships, which have been certified by the Louisiana Department of Economic Development and have opted to enroll in the State of Louisiana Procurement and Contract (LaPAC) Network, may be accessed from https://wwwcfprd.doa.louisiana.gov/OSP/LaPAC/vendor/srchven2.cfm. You may then determine the search criteria (i.e. alphabetized list of all certified vendors, by commodities, etc.), and select “SmallE”.

Copies of notification to at least three (or more) certified Veteran Initiative and Hudson Initiative small entrepreneurships will satisfy the notification requirements. Notification must be provided to the certified entrepreneurships by the bidder in writing no less than five working days prior to the date of bid opening. Notification must include the scope of work, location to review plans and specifications (if applicable), information about required qualifications and specifications, any bonding and insurance information and/or requirements (if applicable), and the name of a person to contact. If a certified Veteran-Owned or Service- Connected Disabled Veteran-Owned or Hudson Initiative small entrepreneurship was not selected, the bidder must certify and maintain written justification of the selection process. The state reserves the right to request confirmation of this information at any time.

In the event questions arise after an award is made relative to the bidder’s good faith efforts, the bidder will be required to provide supporting documentation to demonstrate its good faith subcontracting plan was actually followed. If it is at any time determined that the contractor did not in fact perform its good faith subcontracting plan, the contract award or the existing contract may be terminated.

Contractors will be required to report Veteran-Owned and Service-Connected Disabled Veteran-Owned and Hudson Initiative small entrepreneurship subcontractor or distributor participation and the dollar amount of each to the GSU Purchasing Department along with the Clear Lien.

The statutes (LA R.S. 39:2171 *et. seq.*) concerning the Veteran Initiative may be viewed at [www.legis.la.gov;](http://www.legis.la.gov/) and the statutes (LA R.S 39:2001 *et. seq.)* concerning the Hudson Initiative may be viewed at [www.legis.la.gov.](http://www.legis.la.gov/) The rules for the Veteran Initiative (LAC 19:VII.Chapters 11 and 15) and for the Hudson Initiative (LAC 19:VIII.Chapters 11 and 13) may be viewed at [http://www.doa.louisiana.gov/osp/se/se.htm.](http://www.doa.louisiana.gov/osp/se/se.htm)

The State requires competitive pricing, qualifications, and demonstrated competencies in the selection of contractors.

## If you are a Certified Small Entrepreneur (Hudson Initiative), Veteran Owned Small Entrepreneurs, or Service- Connected Disabled Veteran-Owned (Veteran Initiative) vendor, please state your Certification Number below.

**Certification No./Date of certification.:**

50018-240023 – NanoBrook 90Plus PALS Bundle (or equal)

# LOUISIANA UNIFORM PUBLIC WORK BID FORM

|  |  |  |
| --- | --- | --- |
| **TO:** | \_Grambling State University\_ | **BID FOR: NanoBrook 90Plus PALS Bundle (or equal)** |
|  | \_Purchasing Dept | **Bid No.**: **50018-240023** |
|  | \_GSU P.O. Box 4269.  \_Grambling, La 71245 |  |

The undersigned bidder hereby declares and represents that she/he; a) has carefully examined and understands the Bidding Documents, b) has not received, relied on, or based his bid on any verbal instructions contrary to the Bidding Documents or any addenda, c) has personally inspected and is familiar with the project site, and hereby proposes to provide all labor, materials, tools, appliances and facilities as required to perform, in a workmanlike manner, all work and services for the construction and completion of the referenced project, all in strict accordance with the Bidding Documents prepared by: **Grambling State University** and **dated**: **February 22,2024**.

Bidders must acknowledge all addenda. The Bidder acknowledges receipt of the following ADDENDA:

|  |  |  |
| --- | --- | --- |
| No. Dated: | No. Dated: | No. Dated: |
| No. Dated: | No. Dated: | No. Dated: |

**TOTAL BASE BID**: For all work required by the Bidding Documents for the **NanoBrook 90Plus PALS Bundle (or equal)** **we bid the sum of:**

**Dollars ($ )**

**NAME OF BIDDER: ADDRESS OF BIDDER:**

**FAX NO.: EMAIL ADDRESS**: **LOUISIANA CONTRACTOR’S LICENSE NUMBER: NAME OF AUTHORIZED SIGNATORY OF BIDDER: TITLE OF AUTHORIZED SIGNATORY OF BIDDER: AUTHORIZED SIGNATURE OF BIDDER \*: DATE:**

**THE FOLLOWING ITEMS ARE TO BE INCLUDED WITH THE SUBMISSION OF THIS LOUISIANA UNIFORM PUBLIC WORK BID FORM:**

\*The Unit Price Form shall be used is the contract includes unit prices. Otherwise it is not required and need not be included with the form. The number of unit prices that may be included is not limited and additional sheets may be included if needed.

**\*\*A CORPORATE RESOLUTION OR WRITTEN EVIDENCE** of the authority of the person signing the bid for the public work as prescribed by LA R.S. 38.2212(B)(5).

**BID SECURITY** in the form of a bid bond, certified check or cashier’s check as prescribed by LA R.S. 38:2218.A is attached to and made a part of this bid. If a bid bond is provided it shall be on the attached form and only on the attached form.

50018-240023 – NanoBrook 90Plus PALS Bundle (or equal)

## Definitions

1. "Alternate" means an item on the bid form that may either increase or decrease the quantity of work or change the type of work within the scope of the project, material, or equipment specified in the bidding documents, or both.
2. "Bidding documents" means the bid notice, plans and specifications, bid form, bidding instructions, addenda, special provisions, and all other written instruments prepared by or on behalf of a public entity for use by prospective bidders on a public contract.

(3)(a) "Change order" means any contract modification that includes an alteration, deviation, addition, or omission as to a preexisting public work contract, which authorizes an adjustment in the contract price, contract time, or an addition, deletion, or revision of work.

* 1. "Change order outside the scope of the contract" means a change order which alters the nature of the thing to be constructed or which is not an integral part of the project objective.
  2. "Change order within the scope of the contract" means a change order which does not alter the nature of the thing to be constructed and which is an integral part of the project objective.

(4) "Contractor" means any person or other legal entity who enters into a public contract.

(5)(a) "Emergency" means an unforeseen mischance bringing with it destruction or injury of life or property or the imminent threat of such destruction or injury or as the result of an order from any judicial body to take any immediate action which requires construction or repairs absent compliance with the formalities of this Part, where the mischance or court order will not admit of the delay incident to advertising as provided in this Part. In regard to a municipally owned public utility, an emergency shall be deemed to exist and the public entity may negotiate as provided by R.S. 38:2212(P) for the purchase of fuel for the generation of its electric power where the public entity has first advertised for bids as provided by this Part but has failed to receive more than one bid.

(b) An "extreme public emergency" means a catastrophic event which causes the loss of ability to obtain a quorum of the members necessary to certify the emergency prior to making the expenditure to acquire materials or supplies or to make repairs necessary for the protection of life, property, or continued function of the public entity.

1. "Licensed design professional" means the architect, landscape architect, or engineer who shall have the primary responsibility for the total design services performed in connection with a public works project. Such professional shall be licensed as appropriate and shall be registered under the laws of the state of Louisiana.

(7)(a) "Louisiana resident contractor", for the purposes of this Part, includes any person, partnership, association, corporation, or other legal entity and is defined as one that either:

* 1. Is an individual who has been a resident of Louisiana for two years or more immediately prior to bidding on work,
  2. Is any partnership, association, corporation, or other legal entity whose majority interest is owned by and controlled by residents of Louisiana, or
  3. For two years prior to bidding has maintained a valid Louisiana contractor's license and has operated a permanent facility in the state of Louisiana and has not had a change in ownership or control throughout those two years.

1. For the purposes of Item (a)(ii) of this Paragraph, ownership percentages shall be determined on the basis

of:

* 1. In the case of corporations, all common and preferred stock, whether voting or nonvoting, and all bonds,

debentures, warrants, or other instruments convertible into common or preferred stock.

* 1. In the case of partnerships, capital accounts together with any and all other capital advances, loans, bonds, debentures, whether or not convertible into capital accounts.

1. "Negotiate" means the process of making purchases and entering into contracts without formal advertising and public bidding with the intention of obtaining the best price and terms possible under the circumstances.
2. "Probable construction costs" means the estimate for the cost of the project as designed that is determined by the public entity or the designer.

50018-240023 – NanoBrook 90Plus PALS Bundle (or equal)

1. "Public contract" or "contract" means any contract awarded by any public entity for the making of any public works or for the purchase of any materials or supplies.
2. "Public entity" means and includes the state of Louisiana, or any agency, board, commission, department, or public corporation of the state, created by the constitution or statute or pursuant thereto, or any political subdivision of the state, including but not limited to any political subdivision as defined in Article VI Section 44 of the Constitution of Louisiana, and any public housing authority, public school board, or any public officer whether or not an officer of a public corporation or political subdivision. "Public entity" shall not include a public body or officer where the particular transaction of the public body or officer is governed by the provisions of the model procurement code.
3. "Public work" means the erection, construction, alteration, improvement, or repair of any public facility or immovable property owned, used, or leased by a public entity.
4. "Responsive bidder" means the apparent low bidder who submits the proper information or documentation as required by the bidding documents within the ten-day period
5. "Responsible bidder" means contractor or subcontractor who has an established business and who has demonstrated the capability to provide goods and services in accordance with the terms of the contract, plan, and specifications without excessive delays, extensions, cost overruns, or changes for which the contractor or subcontractor was held to be responsible, and who does not have a documented record of past projects resulting in arbitration or litigation in which such contractor or subcontractor was found to be at fault. Responsible Bidder will have a negotiable net worth, or shall be underwritten by an entity with a negotiable net worth, which is equal to or exceeds in value the total cost amount of the public contract as provided in the bid submitted by such bidder. All property comprising the negotiable net worth shall be pledged and otherwise unencumbered throughout the duration of the contract period.
6. "Written" or "in writing" means the product of any method of forming characters on paper, other materials, or viewable screen, which can be read, retrieved, and reproduced, including information that is electronically transmitted and stored.

50018-240023 – NanoBrook 90Plus PALS Bundle (or equal)

# INSTRUCTIONS TO BIDDERS

### ARTICLE 1

DEFINITIONS

* 1. The Bidding Documents include the following:
     1. Advertisement for Bids
     2. Instructions to Bidders
     3. Bid Form
     4. Bid Bond
     5. Affidavit of Compliance with LA R.S. 38
     6. General Requirements
     7. Supplementary Conditions
     8. Technical Specifications
     9. Addenda issued during bid period must be acknowledged on returned bid form
  2. Addenda are written or graphic instruments issued prior to the execution of the Contract which modify or interpret the bidding documents, including Drawings and Specifications, by additions, deletions, clarifications or corrections. Addenda will become part of the Contract Documents when the Contract is executed.

### ARTICLE 2

BIDDER'S REPRESENTATION

* 1. Each bidder by submitting a bid represents that s/he has read and understands the bidding documents.
  2. Each bidder by making a bid represents that s/he has visited the site and familiarized themselves with the local conditions under which the work is to be performed.
  3. Each bidder by submitting a bid understands they must be fully qualified under any state or local licensing law for Contractors in effect at the time and at the location of the project before submitting a bid. In the State of Louisiana; only the bids of contractors and sub-contractors duly licensed under LA R.S. 37:2150, et. seq., will be considered, if applicable. The Contractor shall be responsible for ensuring all Sub-contractors or prospective Sub-contractors are duly licensed in accordance with the statute above.
  4. Each bidder submitting a bid understands that GSU’s Public Works Policy related to contractor licensure is that a contractor’s license is required for any/all projects with an anticipated/bid cost greater than $50,000

### ARTICLE 3

BIDDING PROCEDURES

* 1. Each responsive bid package must be received by the University by the date and time stated in the Advertisement for Bid or Invitation to Bid in this Bid Packet, and include, at a minimum the following documents.
     1. Bid Form
     2. Bid Security or Bid Bond
     3. Acknowledgement of Addenda
     4. Base Bid
     5. Alternates Bid (if applicable)
     6. Signature of Bidder
     7. Name, Title, and Address of Bidder
     8. Name of Firm or Joint Venture
     9. Corporate Resolution or written evidence of the authority of the person signing the bid
     10. Louisiana’s Contractor’s License Number
     11. Unit Prices, where required, including a description for each unit
  2. The following items must be provided by the apparent lowest bidder not later than ten (10) calendar days after bid opening, however, it is strongly encouraged that these items be returned with the bid packet. If the apparent lowest bidder was not in attendance at the bid opening, the University Purchasing Department will notify apparent lowest bidder by email, if provided. This will not be the notification of award. If Bidder has not heard from the University within three (3) days, the Bidder should contact the University Purchasing Department. In no instance will the ten (10) days be waived or altered.
     1. Notarized Contractor’s Affidavit
     2. E-Verify Affidavit
     3. Past Criminal Convictions Affidavit
     4. Non-Solicitation and Unemployment Affidavit
     5. Insurance Certificate
     6. Resolution, if incorporated
  3. Once the above items from 3.1 and 3.2 have been received by the University, the University will soon thereafter provide the Bidder with three (3) executed contract originals. The following items must then be promptly returned to the University:
     1. One (1) original, fully-executed contract
     2. Payment & Performance Bond
     3. Proof of filing with the Lincoln Parish Clerk of Court
  4. Upon receipt of all of the items listed in section 3.1, 3.2 and 3.3 above, the University will issue the Purchase Order (PO) and Notice to Proceed.
  5. Bids must be prepared on the forms provided by the Owner and submitted in accordance with the Instructions to Bidders.
  6. A bid will be considered invalid if not deposited at the designated location prior to the time and date for receipt of bids indicated in the Advertisement or Invitation to bid, or prior to any extension thereof issued to the bidders.
  7. Unless otherwise provided in any supplement to these Instructions to Bidders, no bidder shall modify, withdraw or cancel his bid or any part thereof for thirty (30) days after the receipt of bids. However, written request (letter or email) for the withdrawal of a bid or any part thereof will be granted if the request is received prior to the specified time of opening. Formal bids, amendments thereto or request for withdrawal of bids or any part thereof received after time specified for bid opening will not be considered whether delayed in the mail or for any other cause whatsoever.Bids are to be sealed and will be received until the time specified and at the place specified in the advertisement for bids. It shall be the specific responsibility of the Bidders to deliver sealed bids to Grambling State University at the appointed place and prior to the announced time for the opening of bids. Late delivery of a bid for any reason including late delivery by the United States Mail shall disqualify the bid.

All copies of each bid must be received by electronic copy to [PurchasingBids@gram.edu,](mailto:PurchasingBids@gram.edu) on or before the date and time specified in the Advertisement for Bids: Bid # Bid Submission – [Bidders’ Name]. If the file size of the email submission exceeds server requirements, the email submission may be broken into smaller emails with “Part 1 of ” included at the end of each original Subject Line (e.g. ITB # Bid Submission – [Bidders’ Name] – Part 1 of 3).

**E-mail submissions are the only acceptable method of delivery.** Fax, mail, and courier delivery shall not be acceptable. Proposers e-mailing their proposals should allow sufficient time to ensure receipt of their proposal by the date and time specified. Grambling State University assumes no liability for assuring accurate/complete e-mail transmission and receipt. The responsibility solely lies with each Bidder to ensure their bid is received at the specified email address prior to the deadline for submission. Bids received after the deadline, corrupted files, and incomplete submissions will not be considered.

**Deadline for electronic emailed bid submissions shall be on February 22, 2024, at 2:00 P.M.,** **and read aloud via GSU Purchasing Teleconference: Number 1-917-900-1022, Conference ID: 5600581#**

* 1. Prior to the receipt of bids, Addenda, if any, will be mailed or delivered (hard copy or email) to each person or firm recorded by the Owner as having received the bidding documents and will be available for inspection wherever the bidding documents are kept available for that purpose. Addenda issued after receipt of bids will be mailed or delivered only to the sealed bidder.
  2. **Bids for Public Works will not be considered or accepted unless the bid is accompanied by bid security in an amount of not less than five percent (5%) of the sum of the Base Bid and any Alternates.** The bid security shall be in the form of a certified check drawn on a bank insured by the Federal Deposit Insurance Corporation, or a bid bond written by a surety company licensed to do business in Louisiana, accompanied by appropriate power of attorney and in favor of Grambling State University.
  3. All Bids and Sureties must be signed by a duly authorized person of the firm or corporation and be accompanied by legal evidence authorizing the signature as valid.Any interpretation, correction or change of the Bidding Documents will be made by Addendum. Interpretations, corrections or changes of the Bidding Documents made in any other manner will not be binding, and bidders shall not rely upon such interpretations, corrections and changes.
  4. If bidding other than as specified, an indication must be made on the bid form, stating manufacturer's name and model number(s) being submitted for bid. Detailed specifications, drawings, pictures, brochures, diagrams or any other literature or information necessary to determine the equality of the bid response must be included with the bid form.

### ARTICLE 4

EXAMINATION OF BIDDING DOCUMENTS

4.1 Each bidder shall examine the bidding documents carefully and, not later than seven days prior to the date for receipt of bids, shall make written request to the Owner for interpretation or correction of any ambiguity, inconsistency or error therein which he may discover. Any interpretation or correction will be issued as an Addendum by the Owner. Only a written interpretation or correction by Addendum shall be binding. No bidder shall rely upon any interpretation or correction given by any other method.

### ARTICLE 5

SUBSTITUTIONS

* 1. Each bidder represents that his bid is based upon the materials and equipment described in the bidding documents.

### MANUFACTURER'S NUMBERS OR TRADE NAMES:

### Where a manufacturer's product is named or specified, it is understood that "or equal" shall apply, whether stated or not. Such name and number is meant to establish the standard of quality desired and does not restrict bidders to the specific brand, make, manufacturer, or specification named; and are set forth and convey to prospective bidders the general style, type, character, and quality of product desired; and that equal products will be acceptable. Grambling State University shall be sole judge as to whether or not the material is equal to that specified.

### ARTICLE 6

REJECTION OF BIDS

* 1. The Bidder acknowledges the right of the University to reject any or all bids and to waive any informality or irregularity in any bid received. In addition, the bidder recognizes the right of the University to reject a bid if the Bidder failed to furnish any required bid security, or to submit the data required by the bidding documents, or if the bid is in any way incomplete or irregular.

### ARTICLE 7

AWARDS

* 1. Awards may not be made to any person, firm, or company in default of any contract. Said person, firm, or company shall be considered non-responsible bidders and may be reinstated and awards made to them only after they have given evidence of good faith and have satisfactorily completed their obligations.

7.2

### PUBLICIZING AWARDS

* 1. Written notice of award shall be sent to the successful bidder. In procurement over $25,000, each unsuccessful bidder shall be notified of the award provided that he/she submitted with his/her bid a self-addressed envelope requesting this information. Notice of award will be made a part of the procurement file.

### RIGHT TO PROTEST

* 1. Any person who is aggrieved in connection with the solicitation or award of a contract shall protest to the Director Purchasing. Protests with respect to a solicitation shall be submitted in writing at least two days prior to the opening of bids on all matters except housing of state agencies, their personnel, operations, equipment, or activities pursuant to R.S. 39:1643 for which such protest shall be submitted at least ten days prior to the opening of bids. Protests with respect to the award of a contract shall be submitted in writing within fourteen days after contract award.

### AUTHORITY TO RESOLVE PROTESTS:

* 1. Prior to the commencement of an action in court concerning any controversy, the Director of Purchasing or his/her designee shall have the authority, to resolve the protest of any aggrieved person concerning the solicitation or award of a contract. This authority shall be exercised in accordance with regulations.

### ARTICLE 8 PERFORMANCE BOND AND LABOR AND MATERIAL PAYMENT BOND

* 1. Performance and Payment Bonds shall be required on Public Works projects with an expected cost greater than $50,000. Performance and Payment Bonds, when required, shall be provided in an amount of 100% of the contract price. Performance and Payments Bonds shall be required by the successful bidder. Any surety bond required shall be written by a surety or insurance company currently on the U. S. Department of the Treasury Financial Management Service list of approved bonding companies which is published annually in the Federal Register. For any Public Works projects, no surety or insurance company shall write a bond which is in excess of the amount indicated as approved by the U. S. Department of the Treasury Financial Management Service list. The surety bond written for a Public Works project shall be written by a surety or insurance company that is currently licensed to do business in the State of Louisiana.
  2. The bidder shall require the attorney in fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of his power of attorney indicating the monetary limit of such power.
  3. RECORDING OF BOND AND CONTRACT
  4. The Contractor shall record the Contract and Performance Bond with the Clerk of Court in Lincoln Parish and provide the Purchasing Department with proof of filing.

### ARTICLE 9

PAYMENT

9.1 Payment will be made by Grambling State University.

9.2 The contractor will be required to provide a Clear Lien Certificate from the Lincoln Parish Clerk of Court, a process that may take an average 45 days for final payment.

### ARTICLE 10

TAXES

10.1 Applicable taxes are to be included in lump sum bid.

### ARTICLE 11

GUARANTEE

* 1. The materials and labor under this contract, as described in the specifications, shall be guaranteed by the Contractor for a period of one year from date of its acceptance against defects of materials or workmanship. Any defects which develop during this period shall be properly repaired or replaced without cost to the Owner as soon as possible.

### ACCEPTANCE

* 1. The guarantee covering materials and labor under this contract will begin the date a Notice of Acceptance is issued to the Contractor by Grambling State University.

### ARTICLE 12

CHANGES IN THE WORK

* 1. A Change Order is a written order to the Contractor signed by the Owner, issued after execution of the Contract, authorizing a Change in the Work or an adjustment in the Contract Sum or the Contract Time. The Contract Sum and the Contract Time may be changed only by Change Order. A Change Order signed by the Contractor indicates his agreement therewith, including the adjustment in the Contract Sum or the Contract Time. Any Change Order not signed by the Owner will be considered null and void.
  2. The Owner, without invalidating the Contract, may order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and the Contract Time being adjusted accordingly. All such changes in the Work shall be authorized by Change Order, and shall be performed under the applicable conditions of the Contract Documents.
  3. When the Change Order is negotiated it shall be fully documented and itemized as to cost, including material quantities, material costs, insurance, employee benefits, other related costs, profit and overhead, and will be process in accordance with LA R.S. 38:2222.

SUPPLEMENTARY CONDITIONS ARTICLE 1

CONTRACTOR

CONTRACTOR'S LICENSE

* 1. On any bid amounting to $50,000 or more, the Contractor shall certify that s/he is licensed under Act 377 of the 1976 Louisiana Regular Legislative Session and show the contractor license number and the bid number on the front portion of the envelope; except projects financed, partially or wholly, with Federal Funds, provided that any successful Bidder before signing Contract thereon, files application for a license and pays the fee as provided in this Act and complies with all terms and provisions of this Act and with the rules and regulations of the Licensing Board.
  2. A subcontractor who wishes to bid or perform commercial work where the total cost of the project including labor and materials for the following must be licensed:
     + $50,000 or more for major and specialty classifications
     + $10,000 or more for electrical, mechanical, and plumbing
     + $1 or more for hazardous

### CONTRACTOR'S AFFIDAVIT

* 1. In accordance with the Louisiana R.S. 38:2190 -2220, if the Contract is awarded to the successful Bidder, the Bidder shall, at the time of the signing of the Contract, execute the Contractor’s Affidavit included in the Contract Documents.

### INTEREST

* 1. There shall be no payment of interest on money owed.

ARTICLE 2

PAYMENTS ANDCOMPLETION

SUBSTANTIAL COMPLETION

* 1. The Owner will issue a NOTICE OF ACCEPTANCE for the Contractor to record with the Clerk of Court in Lincoln Parish.

### FINAL COMPLETION AND FINAL PAYMENT

* 1. The Contract is to provide that the contractor is not to be paid more than ninety percent (90%) of the amount of the contract upon completion of the work. The Contractor shall record the NOTICE OF ACCEPTANCE with the Lincoln Parish Clerk of Court and shall furnish a CLEAR LIEN CERTIFICATE from the Clerk of Court within forty-five days after recordation of NOTICE OF ACCEPTANCE. At that time, the remaining ten percent (10%) will be paid.

### LIQUIDATED DAMAGES

* 1. The Owner will suffer financial loss if the Project is not substantially complete on the date set forth in the CONTRACT DOCUMENTS. The Contractor (and/or Surety) shall be liable for and shall pay to the Owner Liquidated Damages for each calendar day of delay until the work is Substantially Complete.

ARTICLE 3

INSURANCE

INSURANCE: Contractor shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, his agents, representatives, employees or subcontractors. The cost of such insurance shall be included in the Contractor's bid.

A. MINIMUM SCOPE OF INSURANCE

Coverage shall be at least as broad as:

1. Insurance Services Office form number GL 0002 (Ed. 1/73) covering Comprehensive General Liability and Insurance Services Office form number GL 0404 covering Broad Form Comprehensive General Liability; or Insurance Services Office Commercial General Liability coverage ("occurrence" form CG 0001). "Claims Made" form is unacceptable. The "occurrence form" shall not have a "sunset clause."

2. Insurance Services Office form number CA 0001 (Ed. 1/78) covering Automobile Liability and endorsement CA 0025 or CA 0001 12 90. The policy shall provide coverage for owned, hired, and non-owned coverage. If an automobile is to be utilized in the execution of this contract, and the vendor/contractor does not own a vehicle, then proof of hired and non-owned coverage is sufficient.

3. Workers' Compensation insurance as required by the Labor Code of the State of Louisiana, including Employers Liability insurance.

B. MINIMUM LIMITS OF INSURANCE

Contractor shall maintain limits no less than:

1. Commercial General Liability: $1,000,000 combined single limit per occurrence for bodily injury, personal injury and property damage.

2. Automobile Liability: $1,000,000 combined single limit per accident, for bodily injury and property damage.

3. Workers Compensation and Employers Liability: Workers' Compensation limits as required by the Labor Code of the State of Louisiana and Employers Liability coverage.

C. BUILDER’S RISK COVERAGE

A General Contractor shall purchase and maintain property insurance upon the entire work included in the contract for an amount equal to the greater of the full-completed value or the amount of the construction contract including any amendments thereto. The general contractor’s policy shall provide “ALL RISK” Builder’s Risk Insurance (extended to include the perils of wind, collapse, vandalism/malicious mischief, and theft, including theft of materials whether or not attached to any structure.) The “ALL RISK” Builder’s Risk Insurance must also cover architects’ and engineers’ fees that may be necessary to provide plans and specifications and supervision of work for the repair and/or replacement of property damage caused by a covered peril not to exceed 10% of the cost of those repair and/or replacements.

Flood coverage shall be provided by the Contractor on the first floor and below for projects North of the Interstate Corridor beginning at the Texas-Louisiana border at Interstate 10 East to the Baton Rouge junction of Interstate 12, East to Slidell junction with Interstate 10 to Louisiana-Mississippi border. Flood sub-limit shall equal an amount no lower than ten percent (10%) of the total contract cost per occurrence. Coverage for roofing projects shall not require flood coverage.

On projects South of this corridor, flood coverage shall be provided by the State of Louisiana, as the owner, through the National Flood Insurance Program (NFIP). The Contractor will be liable for the $5,000 deductible on the NFIP policy from the Notice to Proceed date through the Notice of Final Acceptance date of the project.

A specialty contractor shall purchase and maintain property insurance upon the system to be installed for an amount equal to the greater of the full-completed value or the amount of the contract including any amendments thereto. The specialty contractor may provide an installation floater with the same coverage as the “ALL RISK” Builder’s Risk Insurance policy.

The policy must include the interest of the Owner, Contractor and Subcontractors as their interest may appear. The contractor has the right to purchase coverage or self-insure any exposures not required by the bid specifications, but shall be held liable for all losses, deductibles, self-insurance for coverages not required.

Policies insuring projects involving additions, alterations or repairs to existing buildings or structures must include and endorsement providing the following:

In the event of a disagreement regarding a loss covered by this policy which may also be covered by the State of Louisiana policy of self-insurance or any commercial property insurance policy purchased by the State of Louisiana, Office of Risk Management (ORM) covering in excess of the State of Louisiana, policy of self-insurance, this company agrees to follow the following procedure to establish coverage and/or the amount of loss:

Any party to a loss may make written demand for an appraisal of the matter in disagreement. Within 20 days of receipt of written demand, this company and either ORM or its commercial insurance company shall each select a competent and impartial appraiser and notify the other of the appraiser selected. The two appraisers will select a competent and impartial umpire. The appraisers will then identify the policy or policies under which the loss is insured and, if necessary, state separately the value of the property and the amount of the loss that must be borne by each policy. If the two appraisers fail to agree, they shall submit their differences to the umpire. A written decision by any two shall determine the policy or policies and the amount of the loss. Each insurance company (or ORM) agree that the decision of the appraisers and the umpire if involved, will be binding and final and that neither party will resort to litigation. Each of the two parties shall pay its chosen appraiser and bear the cost of the umpire equally.

D. DEDUCTIBLES AND SELF-INSURED RETENTIONS

Any deductibles or self-insured retentions must be declared to and approved by the Agency. At the option of the Agency, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the Agency, its officers, officials, employees and volunteers; or the Contractor shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.

E. OTHER INSURANCE PROVISIONS

The policies are to contain, or be endorsed to contain, the following provisions:

1. General Liability and Automobile Liability Coverage

a. The Agency, its officers, officials, employees, Boards and Commissions and volunteers are to be added as "additional insured" as respects liability arising out of activities performed by or on behalf of the Contractor; products and completed operations of the Contractor, premises owned, occupied or used by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to the Agency, its officers, officials, employees or volunteers. It is understood that the business auto policy under "Who is an insured" automatically provides liability coverage in favor of Grambling State University and the State of Louisiana.

b. Any failure to comply with reporting provisions of the policy shall not affect coverage provided to the Agency, its officers, officials, and employees, Boards and Commissions or volunteers.

c. The Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

2. Workers' Compensation and Employers Liability Coverage

The insurer shall agree to waive all rights of subrogation against the Agency, its officers, officials, employees and volunteers for losses arising from work performed by the Contractor for the Agency.

3. All Coverage

Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, canceled by either party, or reduced in coverage or in limits except after thirty (30) days' prior written notice by certified mail, return receipt requested, has been given to the Agency.

F. ACCEPTABILITY OF INSURERS

Insurance is to be placed with insurers with an A.M. Best's rating of “A- VI or higher”. This requirement will be waived for workers' compensation coverage only for those contractors whose workers' compensation coverage is placed with companies who participate in the State of Louisiana Workers' Compensation Assigned Risk Pool or the Louisiana Workers' Compensation Corporation.

G. VERIFICATION OF COVERAGE

Contractor shall furnish the Agency with certificates of insurance affecting coverage required by this clause. The certificates for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. The certificates are to be received and approved by Grambling State University before work commences. Grambling State University reserves the right to require complete, certified copies of all required insurance policies, at any time.

H. SUBCONTRACTORS

Contractor shall include all subcontractors as insured under its policies or shall furnish separate certificates for each subcontractor. All coverage for subcontractors shall be subject to all of the requirements stated herein.

ARTICLE 4

QUALITY

STANDARD OF QUALITY

1.1 Where catalog numbers and/or manufacturer's names are referred to in the specifications, they are used for the purpose of conveying to the prospective bidders the type and design of equipment, or supplies desired; but it shall be understood that bidders may submit on other makes in lieu of that mentioned, providing such other item is similar in design and equal in quality. It is not expected that the items of all manufacturers shall conform exactly to every detail and dimension mentioned in the specifications; but the essential features of the items mentioned shall be provided in the items to be furnished.

DIVISION 1 GENERAL REQUIREMENTS

A. **SUMMARY OF THE WORK:** Grambling State University is soliciting bids to provide: **NanoBrook 90Plus PALS Bundle (or equal) for Dept. of Mathematics and Physics.**

B. LAWS, RULES AND REGULATIONS

1. Contractor shall comply with all applicable federal, state, local and University laws, ordinances, rules and regulations and shall: furnish and pay for all required permits, licenses and bonds; pay all charges and fees, and give all notices necessary and incidental to the due and lawful work required under this project.

C. ALTERNATES

1. Base Bid

D. SITE INSPECTIONS AND PROJECT MEETINGS

1. Site Inspections (Not Applicable)

Each bidder by making a bid represents that s/he has visited the site and familiarized themselves with the local conditions under which the work is to be performed.

2. Pre Work Conference (Not Applicable)

Prior to the Contractor beginning any work on this project, the University will conduct a Pre Work Conference to review and approve the Contractor's work schedule and inform the Contractor of any special conditions, controls and regulations that apply to the project.

E. TEMPORARY FACILITIES AND CONTROLS

1. Safety Conditions

The Contractor shall post adequate warning signs and maintain safety lights as required to warn persons of hazardous conditions.

2. Security

The Contractor shall be responsible for security of his equipment, materials, etc., at the project site for the duration of the contract.

F. MATERIAL AND EQUIPMENT

1. Transportation and Handling

The Contractor shall provide for all transportation and handling required for the work on this project.

2. Storage and Protection

The Contractor shall be responsible for storage and protection of equipment and materials. The Contractor shall Protect all property of the Owner, and shall repair same, if damaged.

**INDEMNIFICATION AGREEMENT**

The\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(Contractor) agrees to protect, defend, indemnify, save, and hold harmless the State of Louisiana, all State Departments, Agencies, Boards and Commissions, its officers, agents, servants and employees, including volunteers, from and against any and all claims, demands, expense and liability arising out of injury or death to any person or the damage, loss or destruction of any property which may occur or in any way grow out of any act or omission of\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(Contractor), its agents, servants, and employees, or any and all costs, expense and/or attorney fees incurred by

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(Contractor) as a result of any claim, demands, and/or causes of action except those claims, demands, and/or causes of action arising out of the negligence of the State of Louisiana, all State Departments, Agencies, Boards, Commissions, its agents, representatives, and/or employee\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (Contractor) agrees to investigate, handle, respond to, provide defense for and defend any such claims, demand, or suit at its sole expense and agrees to bear all other costs and expenses related thereto, even if it (claims, etc.) is groundless, false or fraudulent.

Accepted by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Company Name

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Title

Date Accepted \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Is Certificate of Insurance Attached? \_\_\_\_\_\_\_\_\_ Yes \_\_\_\_\_\_\_\_No

Contract No.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ For Grambling State University

Purpose of Contract: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Grambling State University**

**GRAMBLING, LOUISIANA**

**BID SUBMISSION SHEET**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ITEM** | **QTY** | **DESCRIPTION** | **UNIT PRICE** | **EXTENDED PRICE** |
| 1 | 1 | NanoBrook 90Plus PALS Bundle #C1003384, or equal - includes the 90Plus PALS Submicron Particle Sizer (DLS) and Zeta Potential (PALS & ELS) Analyzer, a nominal 40mW @ 640nm temperature controlled semiconductor laser, and Particle Solutions software.  This bundle also includes:  •BI-SREL electrode assembly for all organic solvents and aqueous solutions  •BI-ZR5 (44 ± 8 MV) zeta potential verification material  •(3) BI-SCP 100 plastic cells/caps  •BI-ELECCK electrode cleaning kit  •BI-SCGO Box of 10 open glass square cells for use with BI-SREL electrode.  •BI-SVK92 (92 ± 3 nm) particle size reference standard |  |  |
| 2 | 1 | BI-COMP #C1000976, or equal |  |  |
| 3 | 1 | BI-OSIT, Onsite Installation and Training |  |  |
| 4 | 1 | BI-CC, Condensation Control Facility #C1003132, or equal |  |  |
| 5 | 1 | Shipping Charge |  |  |
| 6 | N/A | Educational Discount |  |  |
|  |  | **Total Bid Price** |  |  |

**SPECIFICATIONS OF PARTICLE ANALYZER FOR BIDDING:**

1. The instrument must have capability to measure size and distribution of sizes of

particles suspended in various solutions including water, alcohol, toluene, acetone,

and any other liquids through the capability to add the liquids of interest.

1. The measurement technique must be based on dynamic light scattering (DLS).
2. The time of measurement must be within 10 seconds or less.
3. The minimum size of particle to be measured should be a diameter of 0.3 nanometer.
4. The instrument must have the capability to measure Zeta potential of particles. It should

provide options to measure Zeta potential by Phase Analysis Light Scattering (PALS)

and Electrophoretic Light Scattering (ELS) based techniques.

1. The instrument must include at least two sets insertable for Zeta potential measurements

so that it can be inserted to a regular cuvette of 10 mm.

1. The instrument must have capability to measure a temperature range from zero degree

Celsius to 80 degrees Celsius or wider range.

1. The instrument must have a way to purge the measurement volume to prevent the

condensation on the surface of cuvette during measurements at low temperature such as

temperature near freezing point of water.

1. The instrument must include electrode cleaning kit.
2. On-site Installation and Training must be included.

1. All necessary accessories, including standard reference samples should be included to

check the full functionality of the instrument on site.

**Rapid, Reliable, and Accurate Particle Sizing & Advanced Zeta Potential Analysis**

The Brookhaven NanoBrook 90Plus PALS combines the particle sizing capabilities of our 90Plus with the highly sensitive zeta potential measurements of our ZetaPALS instrument into one capable package. It employs Dynamic Light Scattering (DLS) for size determination and Phase Analysis Light Scattering (PALS) for surface charge evaluation of nanoparticles and other nanomaterials.

This instrument allows for rapid measurement of both size and zeta potential, and provides additional information on multimodal distributions in surface charge for polydisperse samples using our standard electrophoretic light scattering (ELS). Unlike ELS, PALS is not limited to low conductivity aqueous solvents and is sensitive enough to provide reliable measurements of zeta potential for very low mobility samples. This includes those dispersed in high conductivity solvents and in many common organic solvents.

The NanoBrook 90Plus PALS offers results in a variety of useful formats. For routine determinations, an average or effective diameter, and a measure of distribution width or polydispersity, are sufficient for many applications. This same information can be represented as a lognormal distribution, allowing the user to visualize the size distribution and to interpolate both cumulative and differential results. For more complex samples, a multimodal distribution can be produced as well.

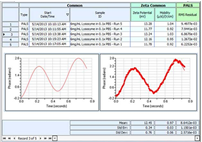
**Principles of Operation**

The 90Plus PALS can be used to characterize aggregated particles as part of a standard quality control process. This NanoBrook can effectively determine the size of primary particles and agglomerates. Additionally, the aggregation of nanoparticles and other colloidal particles is easily monitored by DLS.

The NanoBrook 90Plus PALS utilizes Phase Analysis Light Scattering (PALS) to determine the electrophoretic mobility of charged, colloidal suspensions. The PALS technique does not require the application of large fields which may result in unwanted sample heating or degradation. During a PALS measurement, the particles only need to move a fraction of their own diameter to yield good results. In salt concentrations up to 3 M and with electric fields as low as 1-2 V/cm, enough movement is induced to get quality results.

**Simple, Clear Presentation**

The figure to the right shows the results obtained using a NanoBrook 90Plus PALS instrument. The excellent agreement of the five runs in this experiment is obvious as is the match of experimental curve (bold) and it’s fitted version (thin). With our Particle Solutions data acquisition and analysis software, users can easily produce a customized report, or select from one of a number of pre-designed templates.



|  |  |
| --- | --- |
| **Key Features & Specifications** | |
| **Size Range** | 1 nm to 10 μm diameter\* |
| **Mobility Range** | 10-11 to 10-7 m2 /V•s |
| **Zeta Potential Range** | -500 mV to 500 mV\* |
| **Maximum Sample Conductivity** | 220 mS/cm\* |
| **Concentration Range** | 2 ppm to 50 mg/mL\* |
| **Technique** | **Sizing:** Dynamic Light Scattering, DLS  **Zeta Potential:** Brookhaven’s “True PALS” Phase Analysis Light Scattering, Electrophoretic Light Scattering (ELS) |
| **Algorithms and Models** | NNLS, Contin, Cumulants, Lognormal |
| **Correlator** | Brookhaven’s TurboCorr, multi-τ, research grade with 510 hardware channels, 100% efficiency, real-time operation over the entire delay-time range. |
| **Detection Angles** | 15° & 90° |
| **Test Standards** | Conforms to ISO13321 and ISO22412 |