



State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Solicitation

NUMBER

7713014

PAGE

1

ADDRESS CORRESPONDENCE TO ATTENTION OF:

ALAN CUMMINGS
304-558-2402

RFQ COPY

TYPE NAME/ADDRESS HERE

Shimadzu Scientific Instruments, Inc.
7102 Riverwood Drive
Columbia, MD 21046

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DIVISION OF HIGHWAYS
MCS&T DIVISION

190 DRY BRANCH DRIVE
CHARLESTON WV
25306

304-558-9892

DATE PRINTED

01/31/2013

BID OPENING DATE:

02/20/2013

BID OPENING TIME 1:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	EA		493-35	\$117,644.00	\$83,082.80
ICAP 6300 DUO VIEW ICF-OES SPECTROMETER/OR EQUAL						
THE WEST VIRGINIA STATE PURCHASING DIVISION FOR THE AGENCY, THE WEST VIRGINIA DIVISION OF HIGHWAYS, IS SOLICITING BIDS TO PROVIDE THE AGENCY WITH A ICAP 6300 DUO VIEW ICF SPECTROMETER, OR EQUAL PER THE ATTACHED SPECIFICATIONS.						
***** THIS IS THE END OF RFQ 7713014 ***** TOTAL:						\$83,584.57
02/13/13 09:25:42 AM West Virginia Purchasing Division						
SIGNATURE <i>Alan J. Cummings</i> TELEPHONE 41-381-1227 DATE 2/5/13						
TITLE Field Sales Engineer		FEIN 52-1035956		ADDRESS CHANGES TO BE NOTED ABOVE		

WHEN RESPONDING TO SOLICITATION, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

CERTIFICATION AND SIGNATURE PAGE

By signing below, I certify that I have reviewed this Solicitation in its entirety; understand the requirements, terms and conditions, and other information contained herein; that I am submitting this bid or proposal for review and consideration; that I am authorized by the bidder to execute this bid or any documents related thereto on bidder's behalf; that I am authorized to bind the bidder in a contractual relationship; and that to the best of my knowledge, the bidder has properly registered with any State agency that may require registration.

Shimadzu Scientific Instruments Inc.
(Company)

Jackie Pucum
(Authorized Signature)

Sr. Office Administrator
(Representative Name, Title)

800-388-6996 410-290-9140
(Phone Number) (Fax Number)

2-7-2013
(Date)

EXHIBIT A

PRICING PAGE
RFQ#: 77-13-014

Item Number	Quantity	Unit of Measure	Description	"Or Equal" Make/Model	Total
1	1	each	DUO VIEW ICP-OES	Shimadzu ICPE-9000	\$83,584,57



Shimadzu Scientific Instruments

7102 Riverwood Drive
Columbia, MD 21046

Toll Free: 1.800.388.6996
Fax: 410.290.9140
www.ssi.shimadzu.com

February 5, 2013

Alan Cummings
State of West Virginia Purchasing Division
2019 Washington Street, E.
Charleston, WV 25305
RE: RFQ 7713014

Dear Alan,

Shimadzu appreciates this opportunity to earn your business. By choosing Shimadzu, The West Virginia Division of Highways can look forward to having a comprehensive team and the tools necessary to be completely successful in your laboratory. Feel comfortable knowing you are investing in a technology leader that will make you successful with today and future analytical needs.

Please note that no autosampler was mentioned on the bid specifications, so I have optioned both of our autosampler options on my bid proposal.

Thank you in advance for reviewing this proposal in its entirety. If you have any follow-up questions, I am happy to answer them.

Best regards,

A handwritten signature in black ink, appearing to read 'Heather Juzwa'.

Heather Juzwa
Field Sales Engineer



QUOTATION

Number: SSI-51963-WK8M Rev. 1

QUOTE DESCRIPTION:

RFQ 7713014 - ICP-OES Spectrometer for ASTM E350, ASTM C114, ASTM C311, and ASTM D632.

Alan Cummings

State of West Virginia

2019 Washington Street, E.,

Charleston, WV 25305

Phone: (304) 558-2402

Fax:

E-mail: Alan.W.Cummings@wv.gov

Effective Date	10/31/2012	Proposed Ship Date	30 Days/ARO
Expiration Date	5/20/2013	FOB	DESTINATION
Ship Method	BEST WAY	Shipping Terms	PREPAID & ADD
Inco Terms			

PLEASE SEE ATTACHED TERMS AND CONDITIONS

For questions or modifications about this quote, please contact your sales representative. If you are a tax exempt customer, please contact Customer Service and send a copy of your exemption certificate in with your order. The exemption certificate can also be faxed to 410-381-1222

Salesperson:

Heather Juzwa

MAT Regional Office

Phone:

(800) 388-6996 Ext. 1673

7102 Riverwood Drive

E-mail:

hljuzwa@SHIMADZU.com

Columbia, MD 21046-2502

ADDITIONAL INFORMATION:

THANK YOU FOR YOUR INTEREST IN SHIMADZU SCIENTIFIC INSTRUMENTS

Authorization Signature

Date: 2/8/2013

For Order Placement:

Reference Quotation Number on Purchase Order

Shimadzu Scientific Instruments

7102 Riverwood Drive

Columbia MD 21046

Toll Free: 800-477-1227

Phone: 410-381-1227

Fax: 410-381-6781

E-mail: customer.service@shimadzu.com

Int'l Fax 410-309-6130

Int'l Email icsc@shimadzu.com

Line #	Product Number	Product Name	Qty	List Price	Ext'd Price
Primary					
3	220-95324-51	ICPE-9000 DUAL VIEW	1	\$92,420.00	\$64,694.00
ICPE-9000 Simultaneous Emission Spectrometer with Dual View					
ICPE-9000 is a high throughput simultaneous inductively coupled plasma emission spectrometer. The ICP utilizes an Echelle grating system under vacuum conditions with a large 1" x 1" liquid cooled CCD detector. Vacuum conditions of the optical bench allows determinations in the vacuum UV region for elements like Phosphorous and Sulfur. The 1 mega pixel CCD enables better sensitivity as more light can be focused onto the detector. The ICPE-9000 uses a vertical mini torch with an axial or radial view, controlled electronically by PC. The mini torch reduces Argon consumption up to 40% with no sacrifice of sensitivity. Vertically mounted torches are not susceptible to clogging or buildup as conventional horizontally mounted torches. ICPEsolution software features easy to use software which includes a method development assistant, automatic correction for overlapping wavelengths, and a wavelength data base with 110,000 emission lines. Package includes ICPE-9000 instrument, ICPEsolution software (P/N 211-44263-92), Radial View Unit (211-86200-91), CCD Cooling Water valve kit and crossover cable.					
4	044-01809-07	CA-1114A-1 Cooling Water Circulator for AA or ICP	1	\$4,800.00	\$3,360.00
5	211-86152-91	COOLING WATER VALVE KIT FOR PLASMA STAND	1	\$800.00	\$560.00
Cooling water valve kit for plasma stand					
6	205-07778-02	HYDROFLUORIC ACID CHAMBER ASSY	1	\$1,700.00	\$1,190.00
7	046-00092-14	NEBULIZER, HYDROFLUORIC ACID AR30-1-CPIS	1	\$2,244.00	\$1,570.80
Nebulizer, Hydrofluoric acid AR30-1-CPIS					
8	046-00092-12	NEBULIZER, SEA SPRAY HIGH SOLIDS TYPE FOR ICPE-9000	1	\$850.00	\$595.00
SeaSpray High Solids Nebulizer for ICPE-9000					
SeaSpray with EzyFit uptake=2ml/min with 1,500mm tubing.					
9	204-19281-00	WATER BUBBLER	1	\$760.00	\$532.00
Water Bubbler					
Used to prevent blockages in the nebulizer when analyzing samples containing large amounts of sodium or salts.					
10	205-09627-01	DE-MOUNTABLE TORCH FOR HYDROFLUORIC ACID	1	\$6,200.00	\$4,340.00
De-mountable torch					
For use with Hydrofluoric Acid					
11	204-74323-00	TORCH, HIGH CONCENTRATION SALT SAMPLE	1	\$700.00	\$490.00
Torch, High concentration salt sample					
Used when introducing an undiluted solution of a salt containing sample, where the salts content is in % order.					
12	211-43740-00	ORIFICE ASSY FOR ICPE-9000 STANDARD TORCH	1	\$230.00	\$161.00
Orifice Assembly					
13	211-84175-00	CONNECT PIPE HFS	1	\$410.00	\$287.00
Connect pipe HFS					
For use with Hydrofluoric Acid					
14	211-86140-91	Drain Kit for Straight Spray Chamber, Organic Solvents & HF Acid	1	\$1,370.00	\$959.00
Drain Kit for use with organic solvent samples and hydrofluoric acid samples on the straight or Scott type spray chamber					
15	220-95357-04	ICP Setup Standards	1	\$320.00	\$288.00



QUOTATION

Number: SSI-51963-WK8M Rev. 1

Line #	Product Number	Product Name	Qty	List Price	Ext'd Price
Solutions used to set up and install the ICP spectrophotometer.					
Package contains one each of 100mL volume of: 5ppm Lead (Pb), 5mm Lithium (Li) and 5 ppm Phosphorus (P) in HNO3 and 10ppm of Aluminum (Al) and 10 ppm jBarium (Ba) in HNO3.					
16	220-95357-03	ICP & AA MULTIELEMENT STANDARDS IN 50 ML BOTTLE w/ HNO3-CONTAINS	1	\$250.00	\$225.00
Package contains one 50 mL bottle of 100 ppm of 26 elements. The elements include: Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni K, Se, Si, Ag, Na, Ti, V, and Zn.					
17	220-95248-02	Regulator, Argon or Nitrogen, CGA-580	1	\$400.00	\$360.00
Regulator, Argon, AA					
Pressure Regulator for AA systems with 1/4 inch barbed nipple, for Argon.					
18	211-44280-91	QAQC SOFTWARE PACKAGE	1	\$1,500.00	\$1,050.00
QAQC software package					
Used for accuracy management. Software includes features needed by environmental laboratories such as spike and recovery calculation systems.					
19	220-97318-10	STANDARD WORKSTATION PC (DELL T3500-W3503)	1	\$2,210.00	\$1,989.00
STANDARD WORKSTATION PC (DELL T3500-W3503) Shimadzu Standard Workstation Mini tower PC with Intel® Core 2 Duo™ processor (2.40GHz/13337MHz/4MB L2 cache).					
20	220-97321-10	DELL G2410, 24 INCH WIDESCREEN, FLAT PANEL	1	\$480.00	\$432.00
24" Widescreen LCD display, resolution to 1920 x 1080, contrast ratio (typical): 1000:1. Brightness (typical): 250 cd/m2, 0.277 mm pixel pitch.					
Limited warranty: Three years Advanced Portable Exchange through Dell.					
21	I&F	INSTALLATION AND CUSTOMER FAMILIARIZATION	1	\$0.00	\$0.00
22	1YW	1 YEAR WARRANTY	1	\$0.00	\$0.00
23	BALANCE_OFFER	YOU MAY ADD A SHIMADZU BALANCE TO THIS ORDER AT 40% DISCOUNT. ASK FOR DETAILS	1	\$0.00	\$0.00
YOU MAY ADD A SHIMADZU BALANCE TO THIS ORDER AT 40% DISCOUNT. ASK FOR DETAILS					

NOTE: Taxes are not included in the quoted amount

Total List Price	\$117,644.00
Total Line Item Discounts	\$34,561.20
Subtotal	\$83,082.80
Estimated Freight Amount	\$501.77
Total Amount	\$83,584.57

Quote Options

Line #	Product Number	Product Name	Qty	List Price	Ext'd Price
Primary - Options					
1	206-50100-30	ASC-6100F AUTO SAMPLER	1	\$4,200.00	\$2,940.00
ASC-6100F Flame Auto Sampler					
ASC-6100F Flame Auto Sampler for use with ICPE-9000 or AA-6300. Rack contains 60 samples positions and 8 reagent positions.					
2	220-95338-01	CETAC ASX-520 AUTOSAMPLER IF ICP, 4 X 60 X 14 ML	1	\$8,500.00	\$7,650.00
CETAC ASX-520 Autosampler for ICP, 4 x 60 x 14mL					
CETAC ASX-520 Autosampler with 4 racks of 60 vials with 14 mL volumes. Also included is Software for operating the Shimadzu ICPE-9000 with control of ASX-520.					



QUOTATION

Number: SSI-51963-WK8M Rev. 1

Terms and Conditions

Shimadzu Scientific Instruments, Inc. - GENERAL TERMS AND CONDITIONS OF SALE

SALES AGREEMENT

The sales agreement ("Sales Agreement"), as referenced hereinbelow, shall mean and refer to these General Terms and Conditions of Sale ("General Terms and Conditions of Sale"), together with such other documents concerning the purchase of equipment and/or Products designed and/or manufactured by Shimadzu Scientific Instruments, Inc. ("Products"), which documents have been or will be executed by and between Shimadzu Scientific Instruments, Inc. ("SSI") and the individual or entity identified therein as the purchaser of said Products ("Buyer"). The documents that comprise the Sales Agreement may include, but are not limited to: these General Terms and Conditions of Sale; price quote provided by SSI; purchase order issued by Buyer as modified and accepted by SSI; bill of sale for Products; bill of lading issued for the shipment of Products; and product invoice. All Products shall be for research use only and not for use in the diagnosis of disease or other conditions, including a determination of the state of health, in order to cure, mitigate, treat or prevent disease or its sequelae ("Diagnostic Purposes").

PRICES

The prices set forth in the Sales Agreement:

(i) are SSI's domestic prices based upon manufacture of the quality and type of Product(s) ordered for shipment to and end use within the United States and Canada only - all Products shipped for end use outside the United States and Canada shall be subject to SSI's international pricing; (ii) are subject to revision when interruption, engineering changes or changes in quantity or quality are re-caused or requested by Buyer; and (iii) unless otherwise specified, do not include warranty service or installation outside the United States and Canada. Errors in Product pricing or related terms by SSI which may, in SSI's sole discretion, be deemed clerical errors are subject to correction by SSI at any time.

SPECIFICATIONS

Weights and dimensions set forth in Product related sales literature ("Sales Literature") are not guaranteed unless previously certified in writing. SSI may, without affecting the obligations under the Sales Agreement, make what SSI regards in its sole discretion as minor changes to the specifications of the Product or Products delivered under the Sales Agreement from those contained in Sales Literature.

TERMS OF PRODUCT USE

Buyer represents and warrants that the Products have not been purchased for Diagnostic Purposes and that the Buyer will not at any time use the Products for Diagnostic Purposes. The Buyer acknowledges that use of the Product for Diagnostic

Purposes is cause for Termination of this Agreement, as set forth in the "Contingencies; Force Majeure" section below.

TERMS OF PAYMENT

Subject to credit approval by SSI, terms of payment on the Sales Agreement are net thirty (30) days from date of the invoice unless otherwise specifically stated on the invoice. Invoices are payable at par on date due at any place of collection designated by SSI in funds bankable at par. Payment made beyond terms will be subject to simple interest of 1 - 1/2% per month on the outstanding balance. All orders are accepted and SSI's obligation to make deliveries are subject to SSI's right to either: (i) require Buyer to make payment of all or any part of the purchase price in advance of delivery of Product(s), or (ii) make shipment of Product(s) to Buyer payable C.O.D.

If Buyer fails to make advance payment when requested to do so by SSI or if Buyer is or becomes delinquent in the payment of any sum of any kind due SSI or refuses to accept C.O.D. shipments (whether or not arising out of the Sales Agreement), then SSI shall have the right, in addition to any other remedy to which it may be entitled in law or in equity, to cancel the Sales Agreement, refuse to make further deliveries, and declare immediately due and payable all unpaid amounts for Products and services previously delivered to or performed for Buyer. Each shipment shall be considered a separate and independent transaction and payment therefor shall be made accordingly. Buyer must notify SSI within fifteen (15) days from the invoice date if Buyer has not received the Product(s).

REPOSSESSION

In the event of nonpayment, either of the entire purchase price or a portion thereof, Buyer expressly consents to the right of SSI to reclaim by repossession of any and all Products delivered to Buyer pursuant to the Sales Agreement for which payment has not been made within (90) days of invoice. In the event that SSI elects to exercise its right to reclaim Products by repossessing the same, said election shall be deemed to be in the alternative and not to the exclusion of any other remedy to which SSI may be entitled, at law or in equity. To the extent that SSI successfully reclaims Products, it shall credit Buyer's account for the value of the same, as determined by SSI in its sole discretion. No Products may be reclaimed by repossession unless and until Buyer is provided with prior notice of SSI's intention to elect such remedy. Such notice shall state the date, time and location that Products shall be available for repossession. Such notice shall also provide Buyer with a final opportunity to cure the default of nonpayment within five (5) days of notice to avoid the execution of the remedy of repossession. The costs of repossession, including legal fees and costs of collection, shall be added to Buyer's account.

SECURITY INTEREST

In addition to any other remedies hereunder or otherwise provided at law or in equity, SSI shall have the right, and Buyer hereby grants SSI the right, without further notice to or consent from Buyer, to secure any and all payment obligations of Buyer by recordation of a security interest in the Products that are the subject of the Sales Agreement. Said security interest shall be in the form of a UCC Financing Statement (UCC Form 1) or other form prescribed by contract or applicable law. No UCC Financing Statement recorded for the benefit of SSI will be released unless and until all financial obligations to SSI incurred by Buyer with respect to the Products have been fully satisfied.

SHIPMENTS

(i) The cost of packaging for domestic shipments is included in the quoted price unless otherwise provided. For international shipments or where special packaging is specified or necessary, a charge will be made to cover such expense. (ii) For shipments to and from places within the United States, all shipments, unless otherwise agreed in writing, shall be FOB point of shipment and title and risk of loss or damage shall pass to Buyer at the point of shipment. The cost of transportation and insurance (if requested by Buyer) shall be borne by Buyer. (iii) For shipments from the United States to ports or places outside the United States all shipments are, unless otherwise agreed in writing, FOB Columbia, MD. SSI's obligation to affect shipment of the Products purchased by Buyer shall be fully discharged, and beneficial ownership, legal title and all risk of loss or damage shall pass to Buyer when the Products are made available for shipment to a carrier at the designated FOB location. If shipped FOB Destination, upon arrival Buyer shall be entitled to conduct a reasonable investigation of the Products purchased by it, but all claims for losses due to loss or damage to Products while in transit shall be waived unless made immediately in writing by Buyer to SSI, but not more than (30) thirty days after arrival. If Buyer shall fail or refuse to accept delivery of any of the Products for unverifiable claims for loss or damage to Products occurring while in transit, all sums paid on deposit shall be retained by SSI as liquidated damages, provided, however, that SSI may recover in full its actual damage from Buyer in the event that actual damages exceed the amount retained as liquidated damages. (iv) All claims for damage or loss of insured shipments shall be immediately communicated, when possible, to SSI at

Shimadzu Scientific Instruments, Inc. 7102 Riverwood Drive, Columbia, Maryland 21046-2502 Attn: Customer Service Phone: (410) 381-1227.

Buyer shall immediately notify delivering carrier of loss or damage to the shipment and SSI will cooperate with Buyer in the adjustment of all claims. Buyer agrees to permit SSI or SSI's representative to inspect damaged Products.

TERMINATION

Upon any termination or cancellation of the Sales Agreement by Buyer (if otherwise specifically permitted by the terms of the Sales Agreement), either in whole or in part, Buyer agrees to promptly pay appropriate termination or cancellation charges invoiced by SSI. At SSI's sole discretion, the termination charge shall be not less than twenty percent (20%) of the total amount of the Sales Agreement.

RETURNED PRODUCTS

All returns must be pre-authorized by SSI and a Return Goods Authorization ("RGA") number must appear on the face of the package. Returned Products will be subject to a restocking charge. If deemed appropriate at SSI's sole discretion, the restocking charge shall be not less than twenty percent (20%) of the total amount of the Sales Agreement.

ALLOCATION OF PRODUCTS

If SSI is unable for any reason to supply the total demands for Products specified in Buyer's order, SSI may allocate its viable supply among any or all buyers, including Buyer, on such basis as SSI may deem fair and practical, without liability for any failure of performance which may result therefrom.

DELIVERY

The scheduled shipping or delivery date shown on the face hereof is SSI's best estimate of the time the Product order will be shipped and SSI assumes no liability for loss, general damages, or special or consequential damages due to delays.

TAXES AND OTHER CHARGES

All taxes on Products, goods and/or services sold under the Sales Agreement, including but not limited to federal, state and local excise, sales or use taxes, shall be borne solely by Buyer. Buyer shall be obligated to pay all taxes set forth on invoices, in accordance with the terms of payment, provided that SSI shall not invoice taxes when within 30 days of placing the order, Buyer has furnished SSI with written proof of exemption from tax in the form of a certificate of exemption or an equivalent document which Buyer represents and warrants is properly completed and validly executed. If, notwithstanding the foregoing, any taxing authority attempts to assess taxes, Buyer shall indemnify and hold harmless SSI from any loss, damage, claim or cause of action, including, but not limited to, tax, interest, penalties and professional fees, related to such attempted assessment and shall make payment to SSI for any such costs paid by SSI and invoiced to Buyer in accordance with the terms of payment.

PATENTS

SSI shall defend any suit or proceeding brought against Buyer so far as based upon an assertion that any Product furnished under the Sales Agreement constitutes a direct infringement of any United States patent having a claim of claims covering solely the Product itself, if notified promptly in writing and given authority, information and assistance (at SSI's expense) for the defense of same, and SSI shall pay all damages and costs awarded therein against Buyer. In the event said Product in such suit is held to constitute infringement and the use of said Product is enjoined, SSI shall, at its own option and at its own expense, either:

(i) procure for Buyer the right to continue using said Product, (ii) replace the same with a non-infringing Product, (iii) modify it so it becomes non-infringing, or (iv) remove said Product and refund the purchase price and transportation costs thereof. The foregoing obligations of SSI shall not apply to any infringement claim based upon: (i) any use of any Product sold hereunder in any process or in conjunction with any other product, (ii) any Product manufactured to Buyer's design or any Product having a design arising from SSI's compliance with Buyer's specifications; or (iii) use of any Product sold hereunder, if the Product has been modified or customized by Buyer.

The foregoing sets forth the entire liability of SSI for patent infringement by said Product. If any suit or proceeding is brought against SSI based on claims that the goods manufactured by SSI in compliance with Buyer's specifications and supplied to Buyer directly infringe any fully issued United States patent, then the patent indemnity obligations herein stated with respect to SSI shall reciprocally apply with respect to Buyer.

WARRANTY

Subject to the exceptions and upon the conditions stated below, SSI warrants that the Products sold under the Sales Agreement shall be free from defects in workmanship and materials for one year after shipment of the Products to the original Buyer by SSI (the "Warranty"), and if any such Products should prove to be defective within such one year period, SSI's sole liability (and Buyer's sole and exclusive remedy) shall be, at its option, either (i) to correct by repair or, at SSI election, by replacement with equivalent product any such defective Product, provided that investigation and factory inspection discloses that such defect developed under normal and proper use, or (ii) to refund the purchase price. The exceptions and conditions mentioned above are as follows:

(i) Components or accessories manufactured by SSI which by their nature are not intended to and will not function for one year are warranted only to give reasonable service for a reasonable time; what constitutes reasonable time and reasonable service shall be determined solely by SSI. A complete list of such components and accessories is maintained at the factory; (ii) SSI makes no warranty with respect to components or accessories not manufactured by it, in the event of defect in any such component or accessory SSI will give reasonable assistance to Buyer in obtaining from the respective manufacturer whatever adjustment is authorized by the manufacturer's own warranty;

(iii) any Product claimed to be defective must, if required by SSI, be returned to the factory, transportation charges prepaid, and will be returned to Buyer with transportation charges collect unless the Product is found to be defective, in which case SSI will pay all transportation charges; (iv) if the Product is a reagent or the like, it is warranted only to conform to the quantity and content and for the period (but not in excess of one year) stated on the label at the time of delivery; (v) SSI may from time to time produce a special printed warranty with respect to a certain Product, and where applicable, such warranty shall be deemed incorporated herein by reference;

(vi) SSI shall be released from all obligations under all warranties, whether expressed or implied, if any Product covered hereby is repaired or modified by persons other than its own authorized service personnel unless such repair by others is made with the written consent of SSI; and (vii) SSI's obligations pursuant to all warranties, either express or implied, shall be expressly conditioned upon payment in full by Buyer for the Products covered by the warranties. In the event of non-payment, whether for the entire purchase price or a part thereof, SSI shall be released from all obligations under all warranties, either express or implied.

IT IS EXPRESSLY AGREED THAT THIS WARRANTY SHALL BE IN LIEU OF ALL WARRANTIES OR WARRANTY OF ANY NATURE WHATSOEVER, WHETHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION WARRANTIES OF FITNESS AND MERCHANTABILITY, AND THAT NEITHER BUYER NOR SSI SHALL HAVE ANY LIABILITY FOR SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY KIND OR CAUSE WHATSOEVER, INCLUDING, BUT NOT LIMITED TO LOSS OF USE, LOSS OF DATA, LOSS OF PRODUCTIVITY, LOSS OF BUSINESS, LOSS OF PROFIT, LOSS OF PLANT, EQUIPMENT OR PRODUCTION. THE LIMITATION OF LIABILITY FOR SUCH DAMAGES SHALL BE APPLICABLE EVEN IF SSI HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, ARISING OUT OF THE MANUFACTURE, USE, SALE, HANDLING, REPAIR, MAINTENANCE OR REPLACEMENT OF ANY OF THE PRODUCTS SOLD UNDER THE SALES AGREEMENT.

If an SSI Special Warranty (covering a designated item or items) is contained in the manual or is otherwise shipped with such designated item or items, the terms and conditions specified therein are incorporated herein by reference and shall supplement the foregoing warranty. In the event of a conflict between the terms and conditions specified herein and those specified in such Special Warranty, the terms and conditions specified herein shall control. SSI's warranties made in connection with this sale shall not be effective if SSI has determined, in its sole discretion, that Buyer has misused the Products in any manner, has failed to use the Products in accordance with industry standards and practices, or has failed to use the Products in accordance with instructions, if any, furnished by SSI.

Representations and warranties made by any person, including dealers and representatives of SSI, which are inconsistent or in conflict with the terms of this warranty, shall not be binding upon SSI unless expressly assumed in a writing that is approved and signed by an authorized officer of SSI. By signing the Sales Agreement, the Buyer specifically acknowledges that no representations or warranties were made by any person, including dealers and representatives of SSI, that the Product may be used for Diagnostic Purposes.

CONTINGENCIES; FORCE MAJEURE

SSI shall be entitled to cancel or rescind the Sales Agreement, without liability for loss or damage resulting therefrom, if: (i) any Product covered by the Sales Agreement is purchased for end use outside the United States or Canada; (ii) the Buyer breaches any of its representations or warranties found in this Agreement; or (iii) the performance of SSI's obligations under the Sales Agreement is in any way adversely affected by the occurrence of any contingency beyond the control of either SSI or SSI's suppliers, including but not limited to: (a) war (whether an actual declaration thereof is made or not), sabotage, insurrection, riot, act of a public enemy, or other act of civil disobedience; (b) failure or delay in transportation; (c) act of any government, government agency or subdivision of any government, or any judicial action affecting the terms of the Sales Agreement; (d) labor dispute, shortage of labor, fuel, raw material or technical or yield failure where SSI has exercised ordinary care in the prevention thereof; and (e) accident, fire, explosion, flood, storm or other act of God.

U.S. GOVERNMENT CONTRACTS

If the Products to be furnished under the Sales Agreement are to be used in the performance of a U.S. Government contract or subcontract, and a U.S. Government contract number shall appear on Buyer's order, those clauses of the applicable U.S. Government procurement regulations that are required to be included in U.S. Government contracts and subcontracts shall be incorporated herein by reference, including, without limitation, the Federal Acquisition Regulations and the Fair Labor Standards Act of 1938, as amended.

INDEMNIFICATION: Buyer shall at its own expense apply for and obtain any permits and inspections required for the installation and/or use of the Products. SSI makes no promise or representation that the Products or related services will conform to any federal, state or local laws, ordinances, regulations, codes or standards, except as particularly specified and agreed upon in writing by an authorized representative of SSI. SSI's Products are not for use in or with any nuclear facility unless specifically so stated by SSI in writing. SSI's Products are not for use for Diagnostic Purposes. SSI shall not be responsible for any losses or damages sustained by Buyer or any other person as a result of improper installation or misapplication of the Products. Buyer shall defend, indemnify and hold harmless SSI and its agents and employees against any loss, damage, claim, suit, liability, judgment or expense (including, without limitation, attorney's fees) arising out of or in connection with any injury, disease or death of persons (including, without limitation, Buyer's employees and agents) or damage to or loss of any property or the environment, or violation of any applicable laws or regulations resulting from or in connection with the sale, transportation, installation, use, or repair of the Products by Buyer or of the information, designs, services or other work supplied to Buyer, whether caused by the concurrent and/or contributory negligence of Buyer, SSI, or any of their agents, employees or suppliers. The obligations, indemnities and covenants contained in this paragraph shall survive the consummation or termination of this transaction.

CONFIDENTIAL INFORMATION

Except as required by law, neither party shall use (except for purposes connected with the performance of its obligations hereunder), divulge or communicate to any third party any information of the other it reasonably knows to be confidential.

FDA REQUIREMENTS

If any Product sold by SSI to Buyer is subject to regulation by the Food and Drug Administration as a device, then as to any such Product, sale and delivery is contingent upon successful completion and processing of a 510(k) notice. If such a 510(k) notice cannot be obtained by SSI, SSI shall have no obligation to deliver the Product.

COMPLIANCE WITH LAWS

Buyer agrees to comply fully with all federal, state, county and local laws, rules and regulations concerning the purchase, sale and use of Products. Without limiting the foregoing, Buyer agrees to comply with any the Export Administration Regulations; Federal Food, Drug & Cosmetics Act; the International Traffic in Arms Regulations of the United States; and the Foreign Corrupt Practices Act of the United States in so far as they apply to the sale of Products. To the extent the Products require license for export, the Products are licensed by the United States for delivery to the ultimate destination as shown on the shipment/invoice address and any contrary diversion may be prohibited by law.

APPLICABLE LAW, JURISDICTION VENUE

The Sales Agreement is made and entered into, and shall be governed, enforced and interpreted in accordance with the laws of the State of Maryland. The Buyer hereby expressly consents to the jurisdiction of the courts of the State of Maryland with regard to all issues and questions of law or fact pertaining to the Sales Agreement. In the event that either party commences litigation to enforce the Sales Agreement, said litigation shall be brought in the courts of Howard County, Maryland. The prevailing party to any such action shall be entitled to an award of all costs and attorney's fees actually incurred.

GENERAL PROVISIONS

The rights and obligations under these General Terms and Conditions of Sale will inure to the benefit of, and be binding upon the parties hereto and their respective heirs, administrators, executors, personal representatives, successors and permitted assigns. No action, failure of action or delay by either party will constitute a waiver of any of its rights or remedies under these General Terms and Conditions of Sale. SSI and Buyer are not, and will not be, joint venturers, partners, agents, servants, or employees or fiduciaries of the other, and do not have the power to bind or obligate the other. The waiver of a breach of any provision does not constitute a waiver of a subsequent breach of the same or different provision. If any of the terms of these General Terms and Conditions of Sale or the Sales Agreement are subsequently or are now illegal, they will be severed without affecting the remaining terms. The section headings are for reference only and will not be considered controlling as to the content and/or interpretation of any section.

ENTIRE AGREEMENT

These General Terms and Conditions of Sale, together with the Sales Agreement, and any attachments, exhibits and supplements specifically referred to in the Sales Agreement, are intended by the parties as a complete and exclusive statement of the terms of their agreement, and supersede all prior agreements, written or oral. No course of prior dealings between the parties and no usage of the trade may be used by Buyer to supplement or explain any term used herein.

END GENERAL TERMS AND CONDITIONS OF SALE

This document contains the number of pages indicated, including all attachments. Authorized signature required on quotation pages

SSI-51963-WK8M Rev. 1

Authorization Signature

Date: 2/8/2013

SPECIFIC BID RESPONSE – 7713005 – ICP-OES SPECTROMETER

3.1.1 iCap 6300 Duo View ICP-OES Spectrometer, or equivalent

3.1.1.1 The Spectrometer must be capable of conducting chemical analysis on samples of plain carbon and low alloy steel, as noted in ASTM E350 Standard, as well as analyzing samples of cements, as noted in ASTM C114, fly ash, as noted in ASTM C311, and road salt, as noted in ASTM D632.

MEETS: The Shimadzu ICPE-9000 is able to perform all of these ASTM methods.

3.1.1.2 The Spectrometer must be capable of simultaneously analyzing required elements with detection limits of less than 1 ppb, and must include duo plasma viewing system providing both axial and radial torch views from a single configuration.

MEETS: The Shimadzu ICPE-9000 has a dual view plasma and can achieve detection limits of less than 1 ppb. Please see the enclosed detection limit table and the period table on page 4 of the brochure.

3.1.1.3 The Spectrometer must be a compact bench mounted unit with dimensions no greater than 840mm (w) x 750mm (d) x 590mm (h), and the system must be supplied complete with the software that allows analyst to add wavelengths, create methods, analyze samples and post-process the data while the spectrometer is acquiring data, and be compatible with Windows XP and Windows 7 operating systems.

EXCEPTION: The Shimadzu ICPE-9000 has no moving parts and is an Echelle polychromator. Because there are no moving parts, the footprint is larger than the iCap 6300. Namely, it is 1350 mm (w) x 760 mm (d) x 830 mm (h).

MEETS: The Shimadzu ICP software is very wizard driven and thus user friendly. It is able to do all things listed in the bid specification. In addition, the software has a Method Development Wizard which helps the user select the best wavelengths and minimize interferences. The software is Windows 7 32 bit compatible and XP compatible.

3.1.1.4 The Spectrometer must be suitable for 200 – 240v: 50/26Hz operation from a single phase 32A/20A supply.

MEETS: The Shimadzu ICPE-9000 has a 30 amp single phase 200, 220, 230 or 240 volt supply.

3.1.1.5 The Spectrometer must employ a water cooled RF generator with safety interlocks throughout the system providing safe shut down of the generator without damage to the instrument in the event of power failure. In addition, all failure events must be recorded to an electronic journal.

MEETS

3.1.1.6 The Spectrometer must employ a triple stage cooled Charge Injection Device (CID) detector, cooled to -45°C with solid state electronics to ensure high contrast/low noise imaging and quantification of all wavelengths in the analytical range without blooming. The CID must be photoactive over the whole surface area to enable continuous wavelength coverage and must contain a minimum of 540 x 540 pixels.

EXCEPTION: The Shimadzu ICPE-9000 utilizes a cooled CCD detector with almost 5 times the number of pixels at over 1,000,000. CCD's inherently have better Quantum Efficiency (QE). QE is how many electrons are produced for each photon. CCD's are 10-20% better than CID's because wires on CID's cover some of the photoactive surface.

The Shimadzu ICPE-9000 is thermally stabilized at 38°C, which reduces wavelength drift due to changing room temperature.

In addition, CID detectors need to be mapped and have inherently less wavelength coverage. The Shimadzu ICPE-9000 has over 110,000 wavelengths databased. Therefore, the user can do back and retrieve wavelength information, even if a particular element was not selected in the initial method setup.

Shimadzu's CCD uses a two side method of the detector for collecting light on the backside while eliminating blooming on the front side with special drains. The design permits maximum sensitivity while preventing blooming.

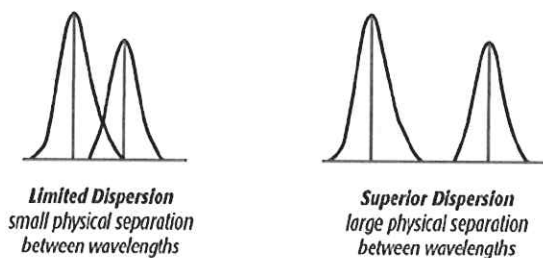
Furthermore, Thermo is the only company that utilizes CID detectors. All others on the market employ CCD detectors. Because of the CCD competition, advances are being

made to CCD detectors, while CID detectors still need mapped and have not kept up with technology because there is no competition.

ADDITIONAL SHIMADZU ADVANTAGES FOR CONSIDERATION

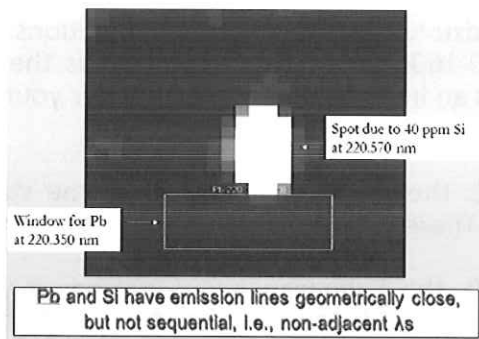
VIEW TECHNOLOGY: Unlike the iCap, the Shimadzu ICPE-9000 comes standard with an axial view (not radial view) configuration with optional dual view. Axial views provide detection limits that are 5-10 times better than radial view instruments.

WAVELENGTH RESOLUTION: The Shimadzu ICPE-9000 has 140% better resolution with a specification of 5 picometers and typical specification of 4.2 picometers, or 167% better. Better resolution means less spectral interferences from neighboring lines with superior dispersion. Please see figure below.

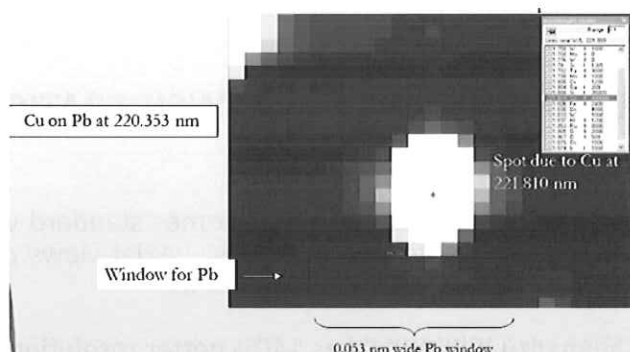


WAVE ORDER RESOLUTION: The Shimadzu ICPE-9000 has a large 1" by 1" detector, which eliminates false order overlaps. CID detectors do suffer from overlapping lines between elements from a different order. Please see below for examples, taken from a publication by Test America, one of the leading environmental testing laboratories (<https://doecap.oro.doe.gov/EDS/Readings/207%20Larry%20Penfold-Optical%20ICP%202011.ppt>).

1) In the example below, Si cause high false readings on Pb.



2) The next example Cu caused false high reading on Pb



Other examples show Si false high reading on Se, Mo false high reading on Pb, and Co false high reading on Ni.

ARGON QUALITY: Unlike the iCap, the Shimadzu ICPE-9000 can use less expensive, lower purity (99.95% versus 99.998%) and still perform to specifications.

ARGON NEBULIZER and AUXILIARY GAS FLOWS: Unlike the iCap 6300, the Shimadzu ICPE-9000 Argon nebulizer gas and Argon auxiliary gas flows are computer controlled at 0.01 L/min and 0.05 L/min respectively, which improves optimization. These are convenient features that Thermo only offers in their higher end iCap 6500 spectrometer.

ARGON CONSUMPTION: The Shimadzu ICPE-9000 utilizes a mini-torch, which requires about half the Argon than any other instrument on the market, including the iCap 6300. This mini-torch has no sacrifice in sensitivity.

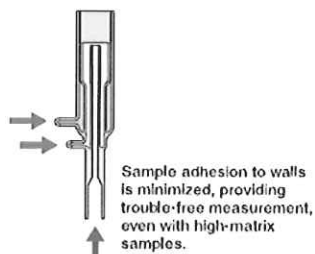
VACUUM SPECTROMETER: Unlike the iCap 6300, the Shimadzu ICPE-9000 is a vacuum-based spectrometer. This also reduced the cost of ownership. The vacuum comes equipped with a Pirani gauge so that the exact pressure is known and the user is alerted when the measurement can begin. The vacuum only turns on when it is needed and shuts off automatically. Furthermore, a vacuum based instrument has much better reproducibility for lighter elements like P, K, and S, which absorb air and provide poor reproducibility on purged benches.

RF POWER: Unlike the iCap 6300, the Shimadzu ICPE-9000 has no RF limitations on the higher end. The instrument can achieve 800-1600 (not 1350) Watts across the entire wavelength range in dual view. This becomes an important consideration for your ASTM methods, which will have organic matrices.

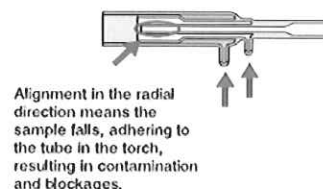
WAVELENGTH RANGE: Unlike the iCap 6300, the Shimadzu ICPE-9000 come standard with the ability to measure K at 766.490 nm. There is no optional extension required.

TORCH ORIENTATION: Unlike the iCap 6300, the Shimadzu ICPE-9000 has a vertical configuration for axial view, which permits higher solids to be analyzed without affecting the auxiliary and plasma gases. Please see the figure below.

Vertical Orientation ICPE-9000



Radial Orientation Conventional device



SUPPORT: A factory-trained Service Engineer install your equipment and provide basic familiarization. In addition to this, Shimadzu's approach to training is unique in the industry. We will show you how to run *your* samples, and spend the necessary time to train your analysts. This training is available as many hours as needed for all users to feel comfortable using the instrument. In addition, future re-trainings can be scheduled as new analysts join the team. We also offer free telephone technical support for the lifetime of the instrument and regardless of service contract coverage.

ICPE-9000

Top 10 Reasons to Buy a Shimadzu ICPE-9000

1. **Mini-torch**, low gas flow, can save up to 50% of the cost of operation compared to conventional ICPs.
2. **Vacuum Spectrometer** reduces startup time, saves money as no purge gas is required, and provides long-term stability.
3. **Method Development Assistant** software automatically selects the appropriate wavelength for samples from a database of 110,000 wavelengths, selects ideal conditions based on physical, ionization and spectral interferences, and selects the appropriate background correction.
4. **Method Diagnostic Assistant** software automatically corrects for interferences based on a post-run analysis, saving the analyst time.
5. **Large-scale CCD** (1 inch x 1 inch) has over 1 million pixels for all wavelengths. Many competitors have between 70,000 and 256,000 pixels, a range 4 to 14 times less than the ICPE-9000, which means some wavelength and wave orders are not available.
6. **Dual View** allows an increased linear dynamic range by viewing the plasma in both axial (standard) and radial (optional) views in the same sample run for improved productivity.
7. **Vertical-torch** design reduces downtime by minimizing blockage and contamination when analyzing high-matrix samples.
8. **Semi-Quantitative Mode** allows unknown samples to be analyzed without standards. The results give an identification of the elements in the unknown plus an approximated concentration, thus making method development easy.
9. **Automatic Wavelength Calibration** at 20 different wavelengths. Competitive instruments require external sources which can burn out, become mis-aligned, and require maintenance.
10. Knowing you are getting over **130 years of experience** by purchasing from Shimadzu.

Shimadzu Multi-type ICP Emission Spectrometer

ICPE-9000

Pre Installation Requirements

SHIMADZU CORPORATION
KYOTO JAPAN

ANALYTICAL & MEASURING INSTRUMENTS DIVISION

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Carefully consider the location and configuration of peripheral equipment by referring to the following guidelines, before installing a Shimadzu ICPE-9000 Multitype ICP Emission Spectrometer system.

1 Locating the System

1.1 Temperature and Humidity of Installation Site

The installation site should be air conditioned and meet the following conditions.

- A. Set the room temperature between 18°C and 28°C. Keep room temperature variations within $\pm 2^\circ\text{C}$ an hour.
- B. Position instruments where they are not exposed to drafts or air flow from the air conditioning system.
- C. Position instruments where they are not exposed to direct sunlight.
- D. Keep humidity between 20% and 70% throughout the year.

Note: The ICPE-9000 system generates about 2,400 kcal/h of heat when in the 1.2 kW high frequency output mode.

- Approximately 600 kcal/h from the plasma stand into the exhaust duct
- Approximately 900 kcal/h from the high frequency power supply exhaust port
- Approximately 600 kcal/h into the waste tap water used as coolant inside the plasma stand
- Approximately 300 kcal/h from other parts of the ICPE-9000 system (including the vacuum pump)

If a water coolant circulation system (optional) is used to circulate coolant water inside the plasma stand, then approximately 1000 kcal/h is generated from the coolant recirculation system. Approximately 700 kcal/h is also generated from the CCD detector coolant water recirculation system (optional).

1.2 Minimum Doorway Clearance for Transporting

Transporting the ICPE-9000 spectrometer requires a minimum clearance width of 780 mm. However, transporting the system through openings 780 to 870 mm wide requires that a portion of the spectrometer be removed by a Shimadzu service technician.

2 Power Supply

2.1 Main Spectrometer Unit

Provide a 30 amp single phase 200, 220, 230 or 240 volt supply (50 or 60 Hz) to near the back panel of the spectrometer. Maximum allowable voltage fluctuation is $\pm 10\%$ (but, not to exceed 250 V). A 6 kVA capacity voltage stabilizer with output voltage

precision within $\pm 5\%$ is required for power supplies that vary by more than $\pm 10\%$. For more details, contact your Shimadzu representative.

2.2 Data Processing Equipment

The PC used for data processing with the ICPE-9000 must satisfy the following specifications.

1) CPU	Intel® Celeron D300 2.66GHz min. or equivalent
2) RAM	768MB min.
3) HDD	80GB min.
4) FDD	3.5", 1 min.
5) CD-ROM	1 min.
6) Display	Resolution of 1,280 × 1,024 dots min.
7) OS	Windows XP
8) LAN interface	100BASE-T
9) Mouse	
10) Printer	Page printer compatible with Windows XP

3 Ground

Ground resistance must be 30 ohms or less, but if possible, provide an independent ground with a resistance of 10 ohms or less. Measure the resistance value using a Kohlrausch bridge or other such means. This spectrometer uses large amounts of power to generate high frequency waves. Therefore, it requires an independent ground with as little ground resistance as possible. If the distance from the instrument to ground is too far, it will increase the chance of generating noise. Therefore, keep the ground wire length as short as possible.

4 Table

Provide a table that is more than strong enough to support the main ICPE-9000 spectrometer, which weighs 270 kg. The exterior dimensions are shown in Figure 1 – Exterior of Model ICPE-9000.

5 Space Around the Spectrometer

Space must be provided around the instrument to ensure performance is maintained and allow access for servicing. Provide the space indicated in Figure 2 – Clearance Requirements Around the ICPE-9000 Spectrometer

6 Argon Gas and Associated Plumbing

Provide an argon gas supply, with a purity of at least 99.95%.

450 ±10 kPa of pressure is required at the instrument inlet port.

6.1 Argon Gas Consumption

For a standard configuration, the amount of argon gas consumed for analysis is 0.74 m³/h.

Note: A gas cylinder with an internal volume of 45 liters and filled to 15 MPa would provide 6 m³ of gas, which would allow approximately 8 hours of operation.

6.2 Precautions for Locating Argon Gas Cylinders Outdoors

Use either copper or stainless steel tubing for plumbing. A plumbing example is shown in Figure 4.

6.3 Precautions for Locating Argon Gas Cylinders Indoors

The tubing length from the cylinder to the gas inlet port on the instrument should be 5 meters or less. A plumbing example is shown in Figure 5.

Be sure to secure the argon gas cylinder to prevent it from tipping over.

6.4 Precautions for Plumbing the Argon Gas

Use clean copper or stainless steel tubing for plumbing the gas.

Protect tubing from oil or other contaminants.

Thoroughly flush the tubing after preparing the plumbing to remove any debris or dust from inside the tubing. Then connect the tubing to the instrument.

7 Local Ventilation Equipment

Ventilate the exhaust gases from the plasma stand and high frequency power supply to the outdoors.

Figure 3 illustrates one example of ducting work.

- A. Use oxidation resistant materials for the plasma stand ventilation system (exhaust ducting, hood, fan, etc.) that are appropriate for acids from samples.
- B. An exhaust flow capacity of 2.5 m³/min is required for plasma stand exhaust ducting (118 mm inner diameter). Include a damper in the plasma stand exhaust ventilation system.
- C. An exhaust flow capacity of at least 6 m³/min is required for high frequency power supply exhaust ducting (287 mm × 187 mm).
Include a damper in the high frequency power supply exhaust ventilation system.

8 Coolant Water

The ICPE-9000 spectrometer requires coolant water for the plasma stand and coolant water for the CCD detector.

8.1 Plasma Stand Coolant Water

Provide the following options according to operating conditions.

Operating Conditions		Required Options	Specifications of Option, etc.
Public Water Supply Water Temp: 5 to 30°C Water Volume: Min. 1 L/min min. Water Pressure: See below	Each round trip coolant water hose length is 10 meters or less.	Public Water System Connection Kit (P/N211-86153-91)	(1) For unthreaded 13 mm nominal diameter faucet connections. If not applicable, provide connection hardware for 12 mm ID, 18 mm OD Tetron braided hose. (2) Includes pressure reducer and filter
	Coolant water hose exceeds length above	Public Water System Connection Kit (P/N211-86153-91) Coolant water supply and drain hoses (P/N 018-31506)	(1) See above regarding public water system connection kit (2) Tetron braided hose with 9 mm ID and 15 mm OD is used for coolant water supply and drain hoses. (3) Order total length of coolant water supply and drain hoses in meter increments.
If Using a Coolant Water Recirculation System	If connecting only the ICPE-9000 system	CA-1112 Cooler (P/N044-01809-03) Plasma Stand Coolant Water Valve Kit (P/N 211-86152-91)	(1) Provide a 100 V AC (50 or 60 Hz) 15 A power supply for the CA-1112 cooler by step-down transformer.
	If connecting a UAG-1 ultrasonic nebulizer to the ICPE-9000 system	CA-1112 Cooler (P/N044-01809-03) Plasma stand coolant valve kit, shared with UAG nebulizer (P/N211-86152-92)	(1) See above regarding power supply for CA-1112 cooler. (2) If a UAG-1 ultrasonic nebulizer is used, use it with a high frequency output of 1.2 kW or less.

Note: The approximate relationship between coolant water pressure and flow rate for the ICPE-9000 spectrometer is indicated below.

Water Pressure (kPa)	Flow Rate (L/min)
100	1.08
150	1.33
200	1.62
250	1.87

8.2 CCD Detector Coolant Water

The CCD detector requires a coolant recirculation system and coolant tubing with the following specifications.

Provide the coolant recirculation system (optional) and valve kit with coolant tubing (optional) indicated below. Provide AC100V (50/60Hz) 15A for NCB1200 Cooler power supply.

Coolant Recirculation System	NCB1200 Cooler, Special (P/N 044-01910-01)
Valve Kit with Coolant Tubing	CCD Coolant Water Valve Kit (P/N 211-86150-91)

To prevent condensation inside the CCD detector, the valve kit with coolant tubing (optional) only sends coolant water to the spectrometer while receiving a send-water signal from the spectrometer.

<Specifications for the Coolant Recirculation System (Optional) and Send-Water Signal>

Coolant Recirculation System	Temp. Setting Range: 0°C to Ambient (Std. Operating Temp is 10°C) Temp. Control Precision: Max. $\pm 0.1^{\circ}\text{C}$ Cooling Capacity: Min. 200 W (given a 10°C liquid temperature) Pump Capacity: Max. pump head of 2.1 m or more (50 Hz), or 2.4 m or more (60 Hz) Power: AC100V (50/60Hz) 15A
Coolant Tubing	Tetron Braided Hose, 9 mm I.D. and 15 mm O.D.
Send-Water Signal	24 VDC, 0.5 A (output from ICPE-9000) Connector Housing for Send-Water Signal Output: TYCO ELECTRONICS, Model 172157-1 No. 1 Pin: +24 V No. 2 Pin: Ground Located on back side of spectrometer. Connector Contacts for Send-Water Output Signal: TYCO ELECTRONICS, Model 170366-1

9 Dust

The ICPE-9000 spectrometer uses high voltages and tiny electrical currents. Therefore, dust can cause it to malfunction.

Implement dust-prevention measures in the doors and windows of the room where the system is installed to prevent dust.

10 Vibration

Do not install the system where there is large amounts of vibration.

11 Liquid Waste Tank

Approximately 1 mL/min of sample solution is discharged from the plasma stand sample injection area when plasma is emitted. Therefore, provide a liquid waste tank that is resistant to corruptions. An alternative is to use the optional liquid waste tank.

Liquid Waste Tank	Square Hand-Held Bottle, 10 L (P/N 210-15534)
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Place the liquid waste tank as near the plasma stand as possible.

Tubing (2 m) from the sample injection area to the liquid waste tank is included.

After operating the instrument, close the cap of the liquid waste tank or remove the waste liquid promptly. If waste liquid is left for long time with the cap open, off-gassing could cause corrosion in the surrounding areas.

12 Using the High Frequency Equipment

Observe applicable regulations for the country where it is used. The 27.12 MHz magnetic field leakage at 1 meter from the side of the instrument is 1 V/m or less.

13 Room Lighting and Lighting Fixtures

This system is operated via a (computer) video display terminal (VDT). The same considerations are required with respect to lighting for the health of analytical operators as are considered for general office equipment.

- 1) Avoid large differences between light and dark areas inside rooms and prevent glare.
- 2) Adjust the vertical illuminance and horizontal illuminance levels on documents and keyboards to appropriate levels.
Guidelines:
 - (1) Vertical illuminance should be 500 lux or less
 - (2) Horizontal illuminance should be between 300 and 700 lux
- 3) Cover bright windows with blinds, curtains or other coverings, and adjust the brightness as necessary.
- 4) The operator's field of vision should be free from bright light fixtures, windows, wall surfaces, or flashing lights and such lights should be kept from reflecting on the display screen.

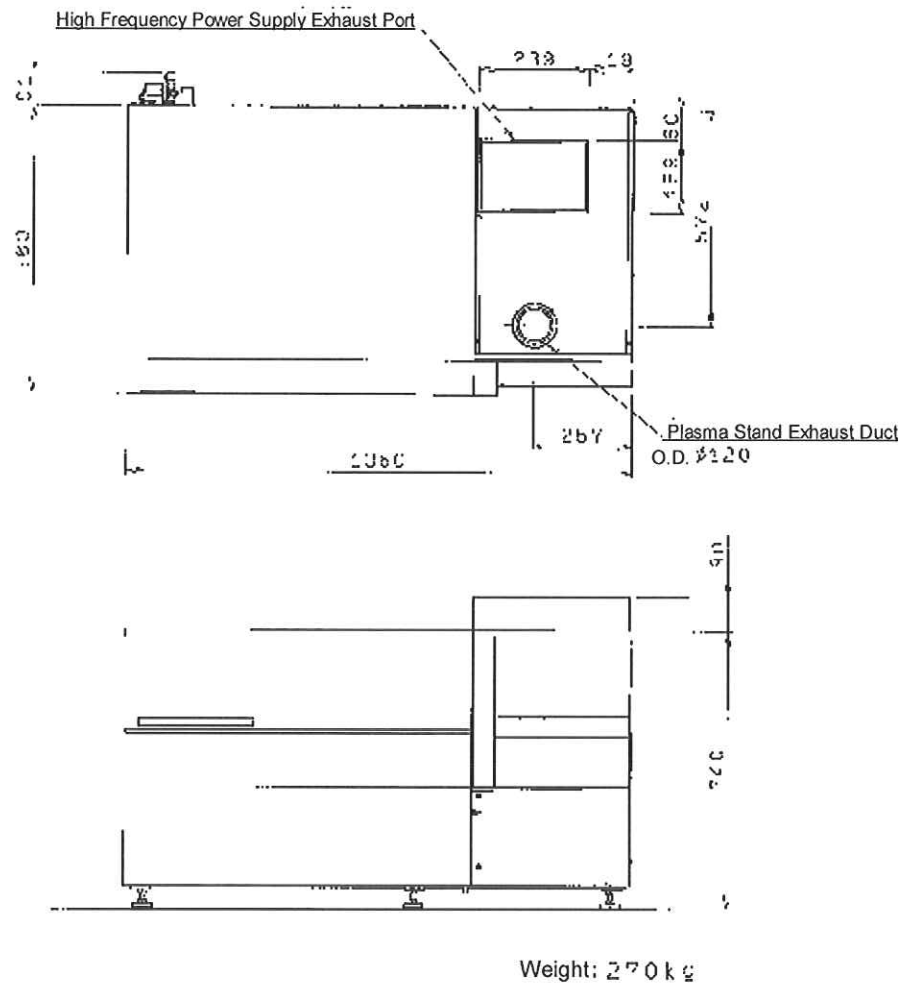


Figure 1 Exterior of Model ICPE-9000

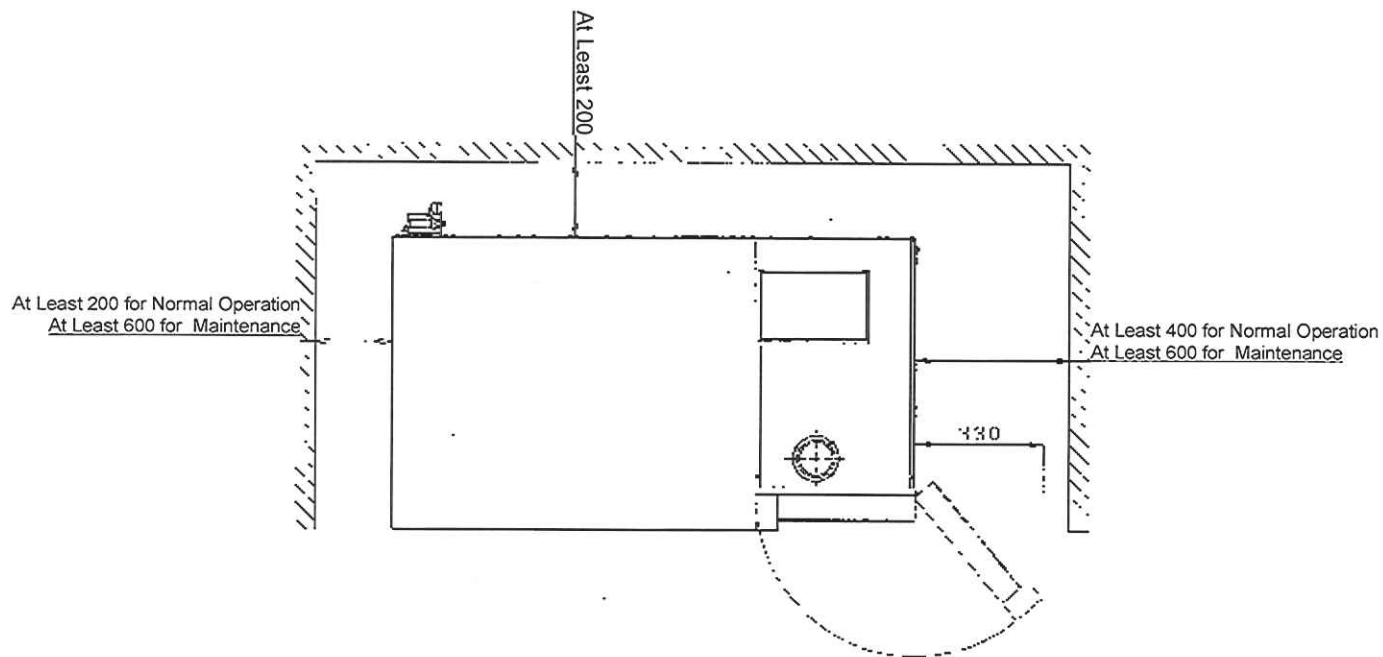
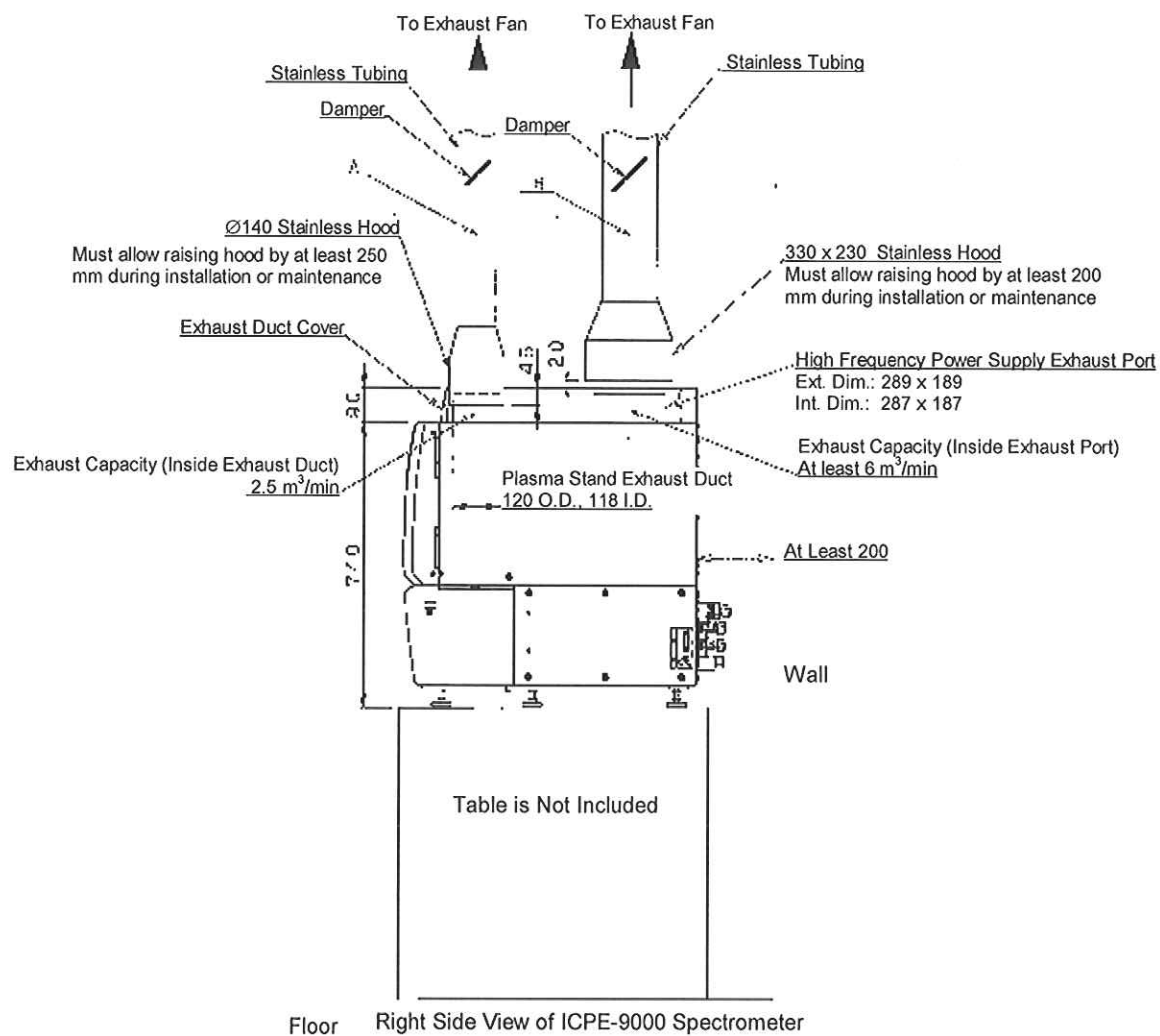
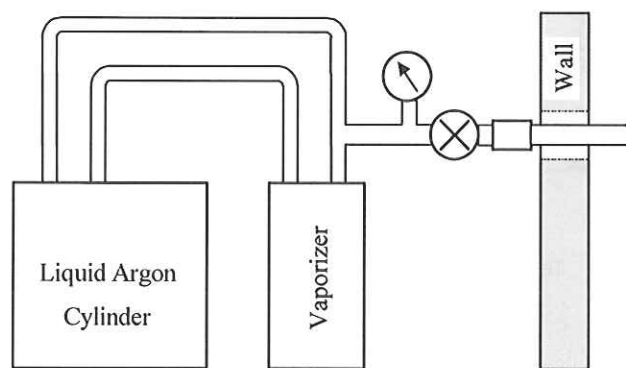
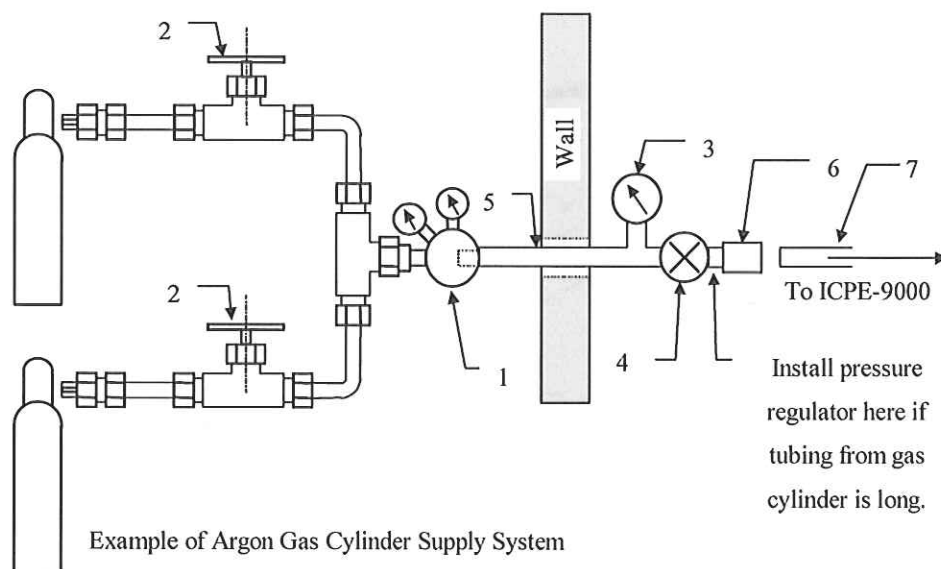


Figure 2 Clearance Requirements Around the ICPE-9000



For the configuration example above, provide 3.5 m³/min exhaust capacity for section A and 8.5 m³/min exhaust capacity for section B.

Figure 3 Example of Ducting Work



Example of Liquid Argon Cylinder Supply System

- (1) Pressure Regulator for Argon (argon supply pressure at instrument is 450 ± 10 kPa (4.5 ± 0.1 kg/cm²))
 - (2) Main Valve (made of BS, BC or SUS)
 - (3) Pressure Gauge 1000 kPa Max. Pressure
 - (4) Stop Valve (made of same material as 2)
 - (5) Tubing Copper Tubing Cut 1 - 1/2 H or annealed. 12 mm O.D. x 10 mm I.D.
 - (6) R1/4 Joint for 1/4-inch O.D. Plastic Tubing (Shimadzu P/N 035-65503)
 - (7) 5 m of 1/4-inch O.D. Polypropylene Tubing (Shimadzu P/N 016-43505)
- Items (1) through (5) are not included with ICPE-9000. To be provided by the customer.

Figure 4 ICP Argon Gas Plumbing (Example of gas cylinder located outside the room)

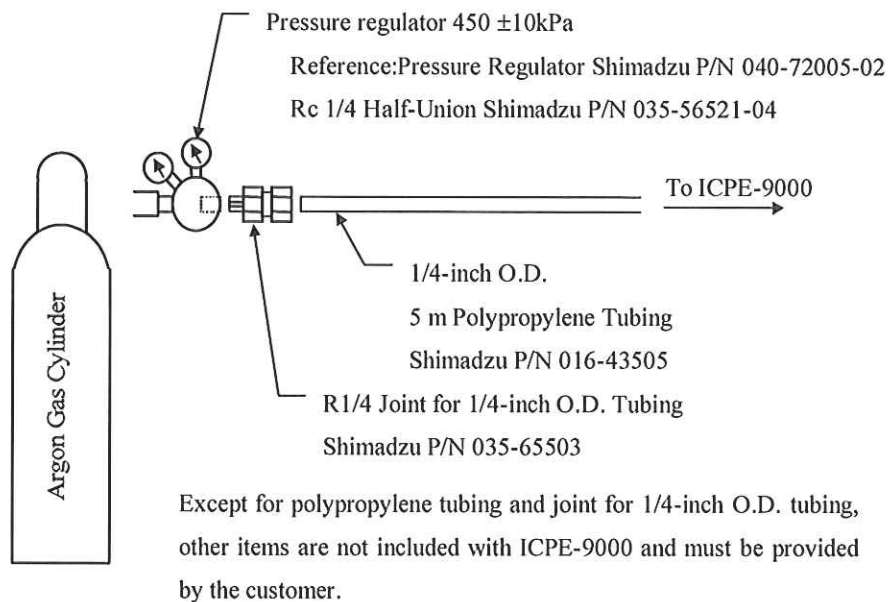


Figure 5 ICP Argon Gas Plumbing (Example of gas cylinder located indoors)

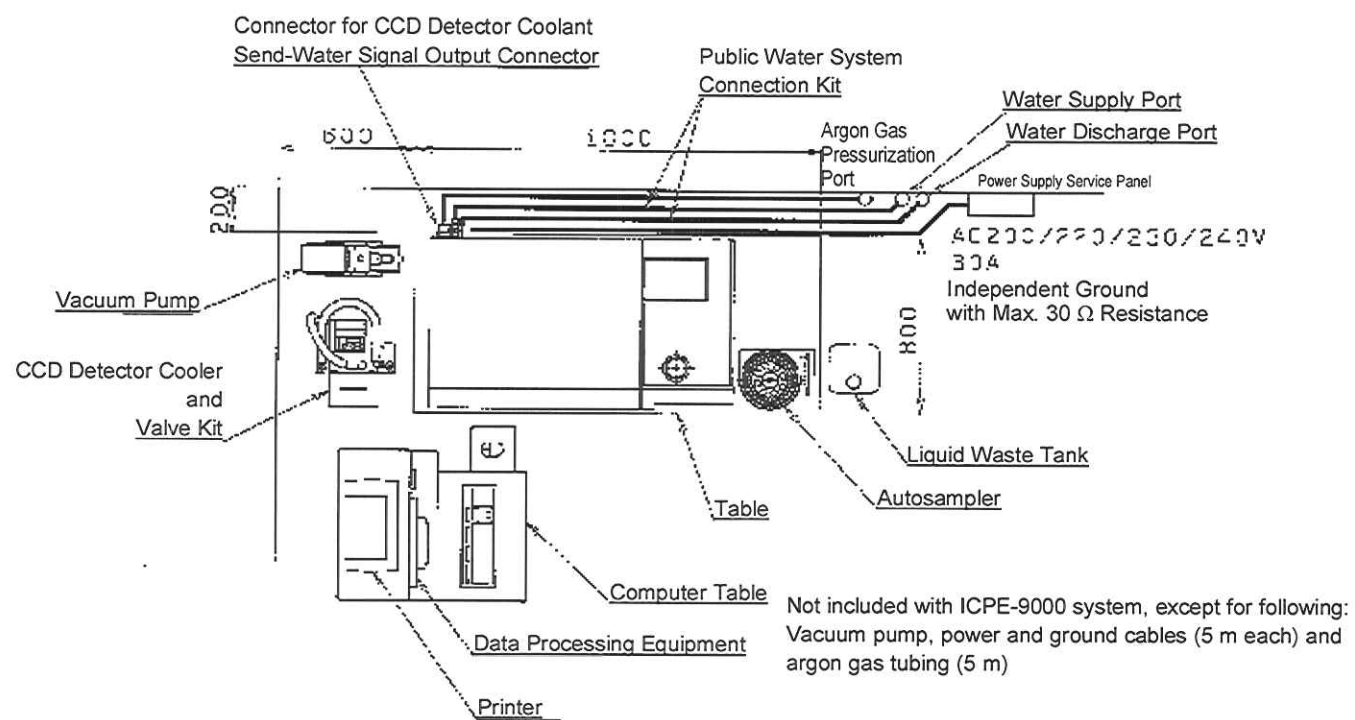


Figure 6 Example of Standard ICPE-9000 Configuration

State of West Virginia

VENDOR PREFERENCE CERTIFICATE

Certification and application* is hereby made for Preference in accordance with *West Virginia Code*, §5A-3-37. (Does not apply to construction contracts). *West Virginia Code*, §5A-3-37, provides an opportunity for qualifying vendors to request (at the time of bid) preference for their residency status. Such preference is an evaluation method only and will be applied only to the cost bid in accordance with the *West Virginia Code*. This certificate for application is to be used to request such preference. The Purchasing Division will make the determination of the Resident Vendor Preference, if applicable.

1. Application is made for 2.5% resident vendor preference for the reason checked:
☐ Bidder is an individual resident vendor and has resided continuously in West Virginia for four (4) years immediately preceding the date of this certification; or,
☐ Bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or 80% of the ownership interest of Bidder is held by another individual, partnership, association or corporation resident vendor who has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or,
☐ Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; or,
2. Application is made for 2.5% resident vendor preference for the reason checked:
☐ Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,
3. Application is made for 2.5% resident vendor preference for the reason checked:
☐ Bidder is a nonresident vendor employing a minimum of one hundred state residents or is a nonresident vendor with an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia employing a minimum of one hundred state residents who certifies that, during the life of the contract, on average at least 75% of the employees or Bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,
4. Application is made for 5% resident vendor preference for the reason checked:
☐ Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; or,
5. Application is made for 3.5% resident vendor preference who is a veteran for the reason checked:
☐ Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; or,
6. Application is made for 3.5% resident vendor preference who is a veteran for the reason checked:
☐ Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.
7. Application is made for preference as a non-resident small, women- and minority-owned business, in accordance with *West Virginia Code* §5A-3-59 and *West Virginia Code of State Rules*.
☐ Bidder has been or expects to be approved prior to contract award by the Purchasing Division as a certified small, women- and minority-owned business.

Bidder understands if the Secretary of Revenue determines that a Bidder receiving preference has failed to continue to meet the requirements for such preference, the Secretary may order the Director of Purchasing to: (a) reject the bid; or (b) assess a penalty against such Bidder in an amount not to exceed 5% of the bid amount and that such penalty will be paid to the contracting agency or deducted from any unpaid balance on the contract or purchase order.

By submission of this certificate, Bidder agrees to disclose any reasonably requested information to the Purchasing Division and authorizes the Department of Revenue to disclose to the Director of Purchasing appropriate information verifying that Bidder has paid the required business taxes, provided that such information does not contain the amounts of taxes paid nor any other information deemed by the Tax Commissioner to be confidential.

Under penalty of law for false swearing (*West Virginia Code*, §61-5-3), Bidder hereby certifies that this certificate is true and accurate in all respects; and that if a contract is issued to Bidder and if anything contained within this certificate changes during the term of the contract, Bidder will notify the Purchasing Division in writing immediately.

Bidder: _____ Signed: _____

Date: _____ Title: _____

RFQ No. _____

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

MANDATE: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (W. Va. Code §61-5-3) that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: _____

Authorized Signature: _____ Date: _____

State of MARYLAND

County of BALTIMORE, to-wit:

Taken, subscribed, and sworn to before me this February day of 2013.

My Commission expires March 14, 2013.

AFFIX SEAL HERE

NOTARY PUBLIC

Jackie Purnell
Purchasing Affidavit (Revised 07/01/2012)

NOTE:

Vendor and Notary's date must be the same.

Notary required to AFFIX SEAL on Purchasing Affidavit.