



**RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:**

**Bid Receiving
PWGSC
33 City Centre Drive
Suite 480C
Mississauga
Ontario
L5B 2N5
Bid Fax: (905) 615-2095**

**REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION**

**Proposal To: Public Works and Government
Services Canada**

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

**Proposition aux: Travaux Publics et Services
Gouvernementaux Canada**

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

Title - Sujet Spectroradiometric Measurement Sys.	
Solicitation No. - N° de l'invitation 01686-170542/A	Date 2016-10-31
Client Reference No. - N° de référence du client 01686-170542	
GETS Reference No. - N° de référence de SEAG PW-\$TOR-006-7204	
File No. - N° de dossier TOR-6-39099 (006)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2016-12-12	
Time Zone Fuseau horaire Eastern Standard Time EST	
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Kim, Raquel	Buyer Id - Id de l'acheteur tor006
Telephone No. - N° de téléphone (905) 615-2073 ()	FAX No. - N° de FAX (905) 615-2060
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: DEPARTMENT OF AGRICULTURE AND AGRI-FOOD Greenhouse & Processing Crops 2585 County Road 20 Harrow Ontario NOR1G0 Canada	

Instructions: See Herein

Instructions: Voir aux présentes

Vendor/Firm Name and Address

**Raison sociale et adresse du
fournisseur/de l'entrepreneur**

Issuing Office - Bureau de distribution

Public Works and Government Services Canada
Ontario Region
33 City Centre Drive
Suite 480
Mississauga
Ontario
L5B 2N5

Delivery Required - Livraison exigée See Herein	Delivery Offered - Livraison proposée
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur	
Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date

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PART 1 - GENERAL INFORMATION

1.1 Requirement

The requirement is detailed under Article 6 of the resulting contract clauses.

1.2 Debriefings

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days from receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

1.3 Trade Agreements

The requirement is subject to the provisions of the North American Free Trade Agreement (NAFTA), and the Agreement on Internal Trade (AIT).

PART 2 - BIDDER INSTRUCTIONS

2.1 Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the *Standard Acquisition Clauses and Conditions Manual* (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The 2003 (2016-04-04) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

2.2 Submission of Bids

Bids must be submitted only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated on page 1 of the bid solicitation.

2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than 7 calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by Bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the question(s) or may request that the Bidder do so, so that the proprietary nature of the question(s) is eliminated, and the enquiry can be answered to all Bidders. Enquiries not submitted in a form that can be distributed to all Bidders may not be answered by Canada.

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2.4 Applicable Laws

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the Bidders.

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

Canada requests that Bidders provide their bid in separately bound sections as follows:

- Section I: Technical Bid (3 hard copies)
- Section II: Financial Bid (1 hard copies)
- Section III: Certifications (1 hard copy)

Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.

Canada requests that Bidders follow the format instructions described below in the preparation of their bid:

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponds to the bid solicitation.

In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process [Policy on Green Procurement](http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html>). To assist Canada in reaching its objectives, Bidders should:

- 1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and containing minimum 30% recycled content; and
- 2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

Section I: Technical Bid

In their technical bid, Bidders should explain and demonstrate how they propose to meet the requirements and how they will carry out the Work.

Section II: Financial Bid

Bidders must submit their financial bid in accordance with the Basis of Payment. The total amount of Applicable Taxes must be shown separately.

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3.1.1 Electronic Payment of Invoices – Bid

If you are willing to accept payment of invoices by Electronic Payment Instruments, complete Annex C Electronic Payment Instruments, to identify which ones are accepted.

If Annex C Electronic Payment Instruments is not completed, it will be considered as if Electronic Payment Instruments are not being accepted for payment of invoices.

Acceptance of Electronic Payment Instruments will not be considered as an evaluation criterion.

3.1.2 Exchange Rate Fluctuation

C3011T (2013-11-06) Exchange Rate Fluctuation

Section III: Certifications

Bidders must submit the certifications and additional information required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.

4.1.1 Technical Evaluation

4.1.1.1 Mandatory Technical Criteria

1. Bidders must demonstrate how they meet the mandatory criteria by providing technical literature, product brochures or the necessary documentation to support compliance.
2. Bids which fail to meet the mandatory technical criteria will be declared non-responsive.

Table 1 – Mandatory Technical Evaluation Criteria

Item Number	Mandatory Requirements	Identify where supporting documentation is located in the bid i.e. title of the document, page and paragraph numbers
M1	The new Spectroradiometer system must be able to make precise measurement of spectral irradiance and power from 280 nm to 2500 nm for sunlight inside and outside greenhouses (5 to 40°C) and artificial light sources such as, but not limited to, high pressure sodium lamp, LEDs, laser diodes, metal halide Lamps, fluorescent lamps, plasma light, and pulsed sources.	
M2	The wavelength accuracy of the new Spectroradiometer must be $\pm 0.05\%$ or better, the wavelength precision must be $\pm 0.01\%$ or better, and the dispersion must be 2.2nm/mm or better for accurate measurements of UV+Visible+IR (280 nm to 2500 nm) light.	
M3	The minimum bandwidth of the new Spectroradiometer must be 0.3 nm or better for UV+Visible (280 nm to 700 nm) light measurement.	
M4	The new Spectroradiometer system must be equipped with a controller containing all the electronics, data acquisition, monochromator, and accessory control: DC (Direct Current) Signal Detection System; Single Monochromator; General Operating Software for Windows 7; Control Cable & Power Cable; USB-RS232 Dongle; Null Modem Cable with 25-9 pin adapter; Hex Key Set, Ball-tip Screwdriver and Monochromator Slits.	
M5	The new Spectroradiometer system must be equipped with an AC (Alternating Current) Lock-In Amplification Signal Detection System, a DSP (Digital Signal Processor) Lock-in installed in controller, a Microprocessor-controlled variable speed chopper installed in the monochromator.	

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Item Number	Mandatory Requirements	Identify where supporting documentation is located in the bid i.e. title of the document, page and paragraph numbers
M6	The new Spectroradiometer system must be equipped with a UV-Enhanced Silicon (Si) High-Sensitivity Detector, includes UV Enhanced Si Detector Head and Current Mode (AC) Detector Support Module for Wavelength Range: 200 nm to 1100nm.	
M7	The new Spectroradiometer system must be equipped with a TE(Thermal Electronic)-Cooled PbS (Lead-Sulfide) High-Sensitivity Detector, includes PbS Detector Head, Voltage Mode (AC) Detector Support Module for Wavelength Range: 1000nm to 3200nm.	
M8	The new Spectroradiometer system must be equipped with a Dual Channel TE Cooler Controller to support TE Cooled Detectors installed in the Controller.	
M9	The new Spectroradiometer must be fully computer-controlled through its Windows-based (Windows 7) application software. Every function from grating turret and filter wheel rotation to detector set-up, data collection, and calibration routines must be controlled by the software and a laptop computer.	
M10	The new Spectroradiometer system must include all the necessary accessories for light source measurements – the matching and required integrating sphere, dome window, mounting support stand for the integrating sphere, quartz fiber optic and IR fiber optic for precise measurement of spectral irradiance and power from 280 nm to 2500 nm.	
M11	The new Spectroradiometer system must include a Source Spectral Analysis Software and a System Spectral Response Calibration Software compatible with the new Spectroradiometer.	

Item Number	Mandatory Requirements	Identify where supporting documentation is located in the bid i.e. title of the document, page and paragraph numbers
M12	<p>The new Spectroradiometer system must include the required Calibration Support for System Irradiance Response Calibrations by the User-AAFC for Spectral Range: 280nm to 2500nm which includes:</p> <ul style="list-style-type: none"> i. A plug-in Lamp Standard of Spectral Irradiance, NIST(National Institute of Standard and Technology)-Traceable Calibration: (W/cm²), Spectral Range 250 nm – 2500 nm @ 10 nm intervals, for Calibration use with the integrating sphere, with standard 32 mm port & dome. ii. An integrating sphere standard adaptor. iii. A precision Lamp Current Source, NIST-Traceable DC Current Calibration, Controlled Current Ramp-up and –down, Ten-Lamp Library with hours monitors, USB interface, Lamp Cable and Application Software. iv. A Hg (Mercury) Wavelength Calibration Source, Hg(Ar) (Mercury (Argon)) Spectral Line Source with Housing, Fitting Monochromator Port, Fitting Spheres via Standards Adapters and AC Power supply. 	
M13	<p>The new Spectroradiometer system must be modular, and is easily configurable and compatible for measuring the normal and diffuse spectral light transmittance of greenhouse glass and plastic glazing materials by coupling with a UV-VIS-IR source collimator (not included in this requirement) and integrating sphere, in terms of percent transmittance, optical density, absorbance, or photometric transmittance.</p>	

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4.1.2 Financial Evaluation

4.1.2.1 Mandatory Financial Criteria

1. Bidders must provide pricing in Canadian funds for the line item in Table 1. Firm Deliverables, in accordance with Annex B – Basis of Payment.
2. The price of the bid will be evaluated in Canadian dollars, Applicable Taxes excluded, FOB destination, Canadian customs duties and excise taxes included.
3. The price used in the evaluation of the bid will be the price in Table 1. Firm Deliverables.

4.2 Basis of Selection

4.2.1 Basis of Selection - Mandatory Technical Criteria

A bid must comply with the requirements of the bid solicitation and meet all mandatory technical evaluation criteria to be declared responsive. The responsive bid with the lowest evaluated price will be recommended for award of a contract.

PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION

Bidders must provide the required certifications and additional information to be awarded a contract.

The certifications provided by Bidders to Canada are subject to verification by Canada at all times. Unless specified otherwise, Canada will declare a bid non-responsive, or will declare a contractor in default if any certification made by the Bidder is found to be untrue whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Contracting Authority will render the bid non-responsive or constitute a default under the Contract.

5.1 Certifications Required with the Bid

Bidders must submit the following duly completed certifications as part of their bid.

5.1.1 Integrity Provisions - Declaration of Convicted Offences

In accordance with the *Ineligibility and Suspension Policy* (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide with its bid the required documentation, as applicable, to be given further consideration in the procurement process.

5.2 Certifications Precedent to Contract Award and Additional Information

The certifications and additional information listed below should be submitted with the bid, but may be submitted afterwards. If any of these required certifications or additional information is not completed and submitted as requested, the Contracting Authority will inform the Bidder of a time frame within which to provide the information. Failure to provide the certifications or the additional information listed below within the time frame provided will render the bid non-responsive.

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5.2.1 Integrity Provisions – Required Documentation

In accordance with the *Ineligibility and Suspension Policy* (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide the required documentation, as applicable, to be given further consideration in the procurement process.

5.2.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list available at the bottom of the page of the [Employment and Social Development Canada \(ESDC\) - Labour's website](http://www.esdc.gc.ca/en/jobs/workplace/human_rights/employment_equity/federal_contractor_program.page?&_ga=1.229006812.1158694905.1413548969) (http://www.esdc.gc.ca/en/jobs/workplace/human_rights/employment_equity/federal_contractor_program.page?&_ga=1.229006812.1158694905.1413548969).

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "FCP Limited Eligibility to Bid" list at the time of contract award.

PART 6 - RESULTING CONTRACT CLAUSES

The following clauses and conditions apply to and form part of any contract resulting from the bid solicitation.

6.1 Security Requirements

There is no security requirement applicable to the Contract.

6.2 Requirement

The Contractor must provide the items detailed under the Requirement at Annex A.

6.3 Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the *Standard Acquisition Clauses and Conditions Manual* (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

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6.3.1 General Conditions

2010A (2016-04-04) General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

6.3.2 Supplemental General Conditions

4001 (2015-04-01) Hardware Purchase, Lease and Maintenance, apply to and form part of the Contract.

6.4 Term of Contract

6.4.1 Period of the Contract

The period of the Contract is from date of Contract to April 1, 2017 inclusive.

6.4.2 Delivery Date

All the deliverables must be received on or before February 28, 2017.

6.4.3 Delivery Point

Delivery of the requirement will be made to delivery point specified at Annex A of the Contract.

6.5 Authorities

6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Raquel Kim
Title: A/Supply Specialist
Public Works and Government Services Canada
Acquisitions Branch
Directorate: Acquisitions and Compensation
Address: 33 City Centre Drive, Suite 480-C
Mississauga, Ontario L5B 2N5
Telephone: 905-615-2073
E-mail address: raquel.kim@pwgsc.gc.ca

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

6.5.2 Technical Authority

The Technical Authority for the Contract is:

Name: _____
Title: _____
Organization: _____
Address: _____
Telephone: ____-____-____

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Facsimile: _____
E-mail: _____

The Technical Authority named above is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Technical Authority, however the Technical Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

6.5.3 Contractor's Representative

Name: _____
Title: _____
Organization: _____
Address: _____
Telephone: _____
Facsimile: _____
E-mail: _____

6.6 Payment

6.6.1 Basis of Payment – Firm Lot Price

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm lot price, as specified in Annex B for a cost of \$ _____ (*insert the amount at contract award*). Customs duties are included, and Applicable Taxes are extra.

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work, unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

6.6.2 Limitation of Price

SACC Manual clause C6000C (2011-05-16) Limitation of Price

6.6.3 Single Payment

SACC Manual Clause H1000C (2008-05-12) Single Payment

6.6.4 Electronic Payment of Invoices – Contract

The Contractor accepts to be paid using any of the following Electronic Payment Instrument(s):

- a. Visa Acquisition Card;
- b. MasterCard Acquisition Card;
- c. Direct Deposit (Domestic and International);
- d. Electronic Data Interchange (EDI);
- e. Wire Transfer (International Only);
- f. Large Value Transfer System (LVTS) (Over \$25M)

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6.7 Invoicing Instructions

1. The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the invoice is completed.

2. Invoices must be distributed as follows:

a. The original and one (1) copy must be forwarded to the address shown on page 1 of the Contract for certification and payment.

b. One (1) copy must be forwarded to the Contracting Authority identified under the section entitled "Authorities" of the Contract.

6.8 Certifications and Additional Information

6.8.1 Compliance

Unless specified otherwise, the continuous compliance with the certifications provided by the Contractor in its bid or precedent to contract award, and the ongoing cooperation in providing additional information are conditions of the Contract and failure to comply will constitute the Contractor in default. Certifications are subject to verification by Canada during the entire period of the Contract.
in default as per the terms of the Contract.

6.9 Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

6.10 Priority of Documents

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- (a) the Articles of Agreement;
- (b) the supplemental general conditions 4001 (2015-04-01) Hardware Purchase, Lease and Maintenance;
- (c) the general conditions 2010A (2016-04-04) General Conditions - Goods (Medium Complexity);
- (d) Annex A, Requirement;
- (e) Annex B, Basis of Payment;
- (f) the Contractor's bid dated _____ (*insert date of bid*)

6.11 SACC Manual Clauses

B1501C (2006-06-16) Electrical Equipment

6.12 Insurance

SACC Manual clause G1005C (2016-01-28) Insurance

ANNEX A REQUIREMENT

1.0 Background

1.1 The Harrow Research and Development Centre, Agriculture and Agri-Food Canada (AAFC), Harrow, Ontario, requires a new Modular Automated Spectroradiometer System capable of performing a variety of highly accurate optical radiation measurement under computer control for source spectral analysis in the ultraviolet (UV), visible(Vis) and infrared (IR) light (280 nm (nanometer) to 2500 nm) range. The instrument must be a fully computer-controlled through Windows-based (Window 7) software to detect set-up, collect data and control calibration routines.

2.0 Technical Specifications

The New Modular Automated Spectroradiometer System must meet the following Technical Specifications in order to meet current and future requirements of the Greenhouse Research Program at the Agriculture and Agri-Food Canada, Harrow Research and Development Centre, Harrow ON.

- 2.1 The new Spectroradiometer system must be able to make precise measurement of spectral irradiance and power from 280 nm to 2500 nm for sunlight inside and outside greenhouses (5 to 40°C) and artificial light sources such as, but not limited to, high pressure sodium lamp, LEDs, laser diodes, metal halide Lamps, fluorescent lamps, plasma light, and pulsed sources.
- 2.2 The wavelength accuracy of the new Spectroradiometer must be $\pm 0.05\%$ or better, the wavelength precision must be $\pm 0.01\%$ or better, and the dispersion must be 2.2nm/mm or better for accurate measurements of UV+Visible+IR (280 nm to 2500 nm) light.
- 2.3 The minimum bandwidth of the new Spectroradiometer must be 0.3 nm or better for UV+Visible (280 nm to 700 nm) light measurement.
- 2.4. The new Spectroradiometer system must be equipped with a controller containing all the electronics, data acquisition, monochromator, and accessory control: DC (Direct Current) Signal Detection System; Single Monochromator; General Operating Software for Windows 7; Control Cable & Power Cable; USB-RS232 Dongle; Null Modem Cable with 25-9 pin adapter; Hex Key Set, Ball-tip Screwdriver and Monochromator Slits.
- 2.5 The new Spectroradiometer system must be equipped with an AC (Alternating Current) Lock-In Amplification Signal Detection System, a DSP (Digital Signal Processor) Lock-in installed in controller, a Microprocessor-controlled variable speed chopper installed in the monochromator.

- 2.6 The new Spectroradiometer system must be equipped with a UV-Enhanced Silicon (Si) High-Sensitivity Detector, includes UV Enhanced Si Detector Head and Current Mode (AC) Detector Support Module for Wavelength Range: 200 nm to 1100nm.
- 2.7 The new Spectroradiometer system must be equipped with a TE(Thermal Electronic)-Cooled PbS (Lead-Sulfide) High-Sensitivity Detector, includes PbS Detector Head, Voltage Mode (AC) Detector Support Module for Wavelength Range: 1000nm to 3200nm.
- 2.8 The new Spectroradiometer system must be equipped with a Dual Channel TE Cooler Controller to support TE Cooled Detectors installed in the Controller.
- 2.9 The new Spectroradiometer must be fully computer-controlled through its Windows-based (Windows 7) application software. Every function from grating turret and filter wheel rotation to detector set-up, data collection, and calibration routines must be controlled by the software and a laptop computer.
- 2.10 The new Spectroradiometer system must include all the necessary accessories for light source measurements – the matching and required integrating sphere, dome window, mounting support stand for the integrating sphere, quartz fiber optic and IR fiber optic for precise measurement of spectral irradiance and power from 280 nm to 2500 nm.
- 2.11 The new Spectroradiometer system must include a Source Spectral Analysis Software and a System Spectral Response Calibration Software compatible with the new Spectroradiometer.
- 2.12 The new Spectroradiometer system must include the required Calibration Support for System Irradiance Response Calibrations by the User-AAFC for Spectral Range: 280nm to 2500nm which includes:
- 2.12.1 A plug-in Lamp Standard of Spectral Irradiance, NIST(National Institute of Standard and Technology)-Traceable Calibration: (W/cm²), Spectral Range 250 nm – 2500 nm @ 10 nm intervals, for Calibration use with the integrating sphere, with standard 32 mm port & dome.
- 2.12.2 An integrating sphere standard adaptor.
- 2.12.3 A precision Lamp Current Source, NIST-Traceable DC Current Calibration, Controlled Current Ramp-up and –down, Ten-Lamp Library with hours monitors, USB interface, Lamp Cable and Application Software.
- 2.12.4 A Hg (Mercury) Wavelength Calibration Source, Hg(Ar) (Mercury (Argon)) Spectral Line Source with Housing, Fitting Monochromator Port, Fitting Spheres via Standards Adapters and AC Power supply.
- 2.13 The new Spectroradiometer system must be modular, and is easily configurable and compatible for measuring the normal and diffuse spectral light transmittance of greenhouse glass and plastic glazing materials by coupling with a UV-VIS-IR source collimator (not included in this requirement) and integrating sphere, in terms of percent transmittance, optical density, absorbance, or photometric transmittance.

3.0 Laboratory Services provided by Agriculture and Agri-Food Canada

- 3.1 AAFC will provide all necessary building services within the laboratory and greenhouse for the new equipment. This includes services such as electrical power supply or other required services.

4.0 Laboratory Computer and System Software

- 4.1 The Contractor must supply a new laboratory portable laptop computer and all necessary cables.
- 4.2 The Contractor must supply and install the required "Application and Control Software" for monitoring, controlling, data collection, data export and analysis, and archiving of information.
- 4.3 AAFC will supply and install Windows 7 operating software and Microsoft Office 2010 on the new computer. This will allow for network colour printing, data backup and the production of XL spreadsheets.

5.0 Commissioning

- 5.1 The Contractor must be responsible for all calibration, testing and commissioning of the new equipment and equipment operating software.

6.0 Deliverables

6.1 Delivery and Receiving

- 6.1.1 The Contractor must supply and deliver of one unit of the new Spectroradiometer with all required accessories including the system control and application software.
- 6.1.2 The Contractor must supply new equipment with "Standard Manufacturer's Warranty Documentation".
- 6.1.3 The new equipment must be fully commissioned and must be operating to the satisfaction of AAFC Scientific Technical Authority.

6.2 Training

- 6.2.1 The Contractor must provide a minimum of one (1) full day, with a maximum of (8) eight hours of Technical on-site training for AAFC laboratory technicians by a Factory Trained and/ or Certified Technician. It is expected that a maximum of 6 staff will attend the training.
- 6.2.2 The training location will be at the same as the delivery location of the equipment. The training date will be determined by the Technical Authority (TA) and the Contractor based on the equipment delivery, set up and commissioning.

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6.3 Support

- 6.3.1 The Contractor must provide owner's manual and replacement parts list including parts identification numbers.
- 6.3.2 The Contractor must provide their Service Department Contact Information in case of equipment malfunction or operational questions or technical support during and outside of Warranty Period.

6.4 Delivery information

- 6.4.1 All equipment must be delivered to the following address:

Agriculture and Agri-Food Canada
Harrow Research and Development Centre
2585 County Road 20
Harrow, ON N0R 1G0
Attention: Dr. Xiuming Hao
- 6.4.2 When the shipment arrives at Harrow, the AAFC receiving staff will off load the new equipment and place it inside the main Facility.
- 6.4.3 The Contractor must be responsible for the delivery, unpacking and ensuring the equipment was delivered without damage and all necessary components arrived with the shipment.

6.5 Delivery Date

- 6.5.1 All the deliverables, including the supply and delivery of one unit of the new Spectroradiometer with all required accessories must be received on or before February 28, 2017.

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ANNEX B

BASIS OF PAYMENT

Firm lot price for the New Modular Automated Spectroradiometer System, in Canadian Funds, including Canadian Customs duties, applicable taxes extra, FOB destination.

Table 1. Firm Deliverables

Item	Description	Quantity	Firm Lot Price
1	Supply, delivery, commissioning, support and on-site training of New Modular Automated Spectroradiometer System, in accordance with Annex A.	1	\$

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ANNEX C to PART 3 OF THE BID SOLICITATION

ELECTRONIC PAYMENT INSTRUMENTS

The Bidder accepts any of the following Electronic Payment Instrument(s):

- VISA Acquisition Card;
- MasterCard Acquisition Card;
- Direct Deposit (Domestic and International);
- Electronic Data Interchange (EDI);
- Wire Transfer (International Only);
- Large Value Transfer System (LVTS) (Over \$25M)