

October 6, 2009

Dear Prospective Offeror:

REQUEST FOR PROPOSAL (RFP) NO. 112502, ADDENDUM 1
LASER CEILOMETERS
RECOVERY ACT

Addendum No. 1 to the subject RFP that was issued on September 23, 2009:

1. provides responses to questions for clarifications
2. option to procure two additional ceilometers as noted in the updated RFP and Technical Specifications, dated 10/6/2009, and
3. updated General Provisions for Commercial Goods and Services, titled Form A-409.2-CI, and is viewable at <http://www.pnl.gov/contracts/documents/> as updated in the RFP.

Except as provided herein, all terms and conditions of the referenced RFP remain unchanged and in full force and effect, including the due date of Wednesday, October 7, 2009, 4:00 pm, Pacific Time.

Offerors shall acknowledge receipt of this Addendum in accordance with the RFP section entitled "Amendments to RFP."

Sincerely,



Linda Deal
Contracts Specialist



Response to Requests for Clarification
RFP 112502 Laser Ceilometers

1) QUESTION: RFP 112502 - In the environmental specifications we see a specified temperature range between -40 and + 60 C degrees. Would you please clarify if this parameter is a show stopper?

RESPONSE: Specifications are based upon current Atmospheric Radiation Measurement (ARM) Climate Research Facility (ACRF) requirements. Ambient temperatures of -40 C are regularly experienced at the ACRF site in Barrow, AK and +50 C has been measured at the sites in Darwin, Australia and Niamey, Niger.

2) QUESTION: There's a bit of uncertainty on our end regarding the RFP requesting "laser ceilometers" because our "ceilometers" not only comply with ceilometer specs but also go beyond the capabilities offered by a standard ceilometer. The concern is that if the budget is set for standard ceilometers, our proposal will be way beyond the defined budget for the project.

RESPONSE: Most modern ceilometers exceed the specifications of those currently operated by ARM, including higher-range lasers and the capability of measuring aerosol properties. The winning bid will be based upon technical terms and price.

Review the section titled, "Alternate Proposals," page 6 of 8 of the RFP. In summary, alternate proposals are accepted if you are unable to submit a proposal responsive to the requirements and believe you have a product, which may otherwise be acceptable.

3) QUESTION: Please state if sales tax applies? Who would be the actual purchaser of equipment? Battelle or DOE? Since sales tax may vary according to state I think we'll have to leave that as an option once the place of delivery is defined.

RESPONSE: This procurement is for the Pacific Northwest National Laboratory (PNNL), which is operated by Battelle Memorial Institute for the U.S. Department of Energy (DOE). The procurement is exempt from Washington state sales tax. The certificate is viewable at <http://www.pnl.gov/contracts/documents/letters/1v03e010.pdf>.

<p>CONTRACT REPRESENTATIVE Linda Deal MSIN: K9-15 Battelle Boulevard P.O. Box 999 RICHLAND, OK 99352-0999</p> <p>Tel: 509/371-7603 Fax: 509/375-3818 E-mail: linda.deal@pnl.gov</p>	<p>SHIP TO: PO #TBD 309600 EW 28 BATTELLE FOR THE USDOE Billings, OK 74630 United States</p>
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THE REQUIREMENTS IDENTIFIED HEREIN WILL BE FUNDED BY THE AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009. (RECOVERY ACT)

This is a request for proposal for Five (5) Laser Ceilometers with the option to procure two (2) additional laser ceilometers. Proposals should be initially submitted on the most favorable price and technical terms which can be offered because of the possibility that award will be made without discussion of proposal received.

Submit all offers on the form below showing unit and total prices for meeting the stated required delivery date. If unable to meet stated date, offer best delivery date.

LINE ITEMS

Line	Qty	U/M	Description	Unit Price	Total Price
1	5	EA	Laser Ceilometers		
2	2	EA	Optional - Laser Ceilometers		

OPTION

The option to purchase two (2) additional units shall be included in the quoted price and valid through 1/30/2009.

BATTELLE CONTRACTS REPRESENTATIVE

The Battelle Contracts Representative, Linda Deal, is the sole point of contact for any communications or questions regarding this acquisition.

PRICING INFORMATION

- [] A. Prices proposed herein are substantiated with enclosed copy of published price lists and/or catalog price sheets including conditions of any available discounts and are not more than those offered our most favored purchasers for similar quantities under like conditions.

- [] B. Published price list and/or catalog price sheets are not available. The prices proposed herein are not more than those offered our most favored purchasers including the United States Government for similar quantities under like conditions. If checked, include copies of recent invoices, sales slips, etc., for similar quantities of like material or services to at least two (2) other firms for verification.

Signed _____

Date _____

SUBMISSION OF PROPOSALS

Proposals should be prepared simply and economically, and provide a straightforward, concise delineation of the information required to be furnished. Emphasis should be on completeness and clarity. Elaborate brochures or other presentations are neither required nor desired.

Each proposal submitted should include:

1. A statement of acceptance of the conditions referenced in the General Provisions below.
2. Completed Commercial Representations and Certifications found at http://www.pnl.gov/contracts/documents/forms/representations_certifications_ci.pdf
3. A price offer with all information requested herein.
4. A Technical Proposal, prepared in a manner consistent with the attached Specification dated 10/6/2009. The Technical Proposal shall definitively indicate compliance, paragraph by paragraph, with the requirements outlined in the Specification and shall be supported by cross-referenced documentation as necessary.

The NAICS code for section 2(a)(1) is 334519

- The size standard for section 2(a)(2) is 500 employees

Proposals are preferred to be electronically submitted to linda.deal@pnl.gov. Transmittals containing proposals should include "Proposal to RFP No. 112502" in the subject line. Proposals must be received by Battelle no later than Wednesday, October 7, 2009.

Proposals may also be submitted via facsimile at the number above or by hard copy the address above. Correspondence must include "Proposal to RFP No. 112502." Proposals submitted by overnight mail must be mailed to

Battelle, Pacific Northwest Division
6th Street Warehouse
790 6th Street
ATTN: Linda Deal, K9-15
Richland, WA 99354

PERFORMANCE SCHEDULE

Contractor shall provide a performance schedule identifying major production milestones and deliverables to accomplish the requirements of this contract. Contractor shall submit the performance schedule to the Battelle Contracts Representative not later than ten days following contract award and provide written, electronic status reports by the 15th of each succeeding month. If at any time the Contractor has reason to believe that a production milestone or delivery date may not be met, Contractor shall immediately notify the Battelle Contracts Representative in writing, outlining the milestone or delivery date in jeopardy, the reasons, and steps the Contractor will take to recover the schedule in order to meet delivery requirements.

GENERAL PROVISIONS

Each proposal submitted shall include a statement of acceptance of the conditions referenced below. The conditions may be viewed as at <http://www.pnl.gov/contracts/documents/generalprovisions.asp>:

- Commercial Terms and Conditions, titled Form A-409.2-CI
- General Provisions Supplement - American Recovery and Reinvestment Act of 2009 titled Form A-409-ARRA-Suppl

RECOVERY ACT REQUIREMENTS

The following Recovery Act forms will be applicable to the successful offeror and may be viewed at <http://www.pnl.gov/contracts/documents/>

- Reporting Requirements (Form A-409-ARRA-Reporting)
- Monthly Contract Cost-to-Date Estimate (Form A-409-ARRA-Accrual)

EXPLANATION TO PROSPECTIVE OFFERORS

Any prospective offeror desiring an explanation or interpretation of the RFP must request it in writing soon enough to allow a reply to reach all prospective offerors before the submission of their offers. Oral explanations or instruction given before the award of the contract will not be binding. Any information given to a prospective offeror concerning the RFP will be furnished promptly to all other prospective offerors as an amendment of the solicitation, if that information is necessary in submitting offers or if the lack of it would be prejudicial to any other prospective offeror.

PROPOSAL DUE DATE AND VALIDITY PERIOD

Proposals shall be delivered to Battelle on or before the proposal due date and shall be valid for a minimum of 60 days.

AMENDMENTS TO RFP

If this RFP is amended, all provisions which are not modified remain unchanged.

Offerors shall acknowledge receipt of any amendment of this RFP (a) by signing and returning the form provided for such purpose; (b) by stating in its proposal that the amendment (date and number) was received and considered in formulating the proposal; or (c) by letter or E-mail. Battelle must receive the acknowledgement by the time specified for receipt of proposals.

SUBMISSION, MODIFICATION, REVISION, AND WITHDRAWAL OF PROPOSALS (CL 605, OCT 2007)

1. Offerors are responsible for submitting proposals, and any modifications or revisions, so as to reach the Battelle office designated in the solicitation by the time specified in the solicitation. If no time is specified in the solicitation, the time for receipt is 4:00 p.m., local time, for the designated Battelle office on the date that proposal or revision is due.
2. Any proposal, modification, or revision received at the Battelle office designated in the solicitation after the exact time specified for receipt of offers is "late" and will not be considered unless it is received before award is made, the Battelle Contracts Representative determines that accepting the late offer would not unduly delay the acquisition; and--
 - A. If it was transmitted through an electronic commerce method authorized by the solicitation, it was received at the initial point of entry to the Battelle, Pacific Northwest Division, infrastructure not later than 5:00 p.m. one working day prior to the date specified for receipt of proposals; or
 - B. There is acceptable evidence to establish that it was received at the Battelle site designated for receipt of offers and was under Battelle's control prior to the time set for receipt of offers; or
 - C. It is the only proposal received.
3. However, a late modification of an otherwise successful proposal that makes its terms more favorable to the Battelle, will be considered at any time it is received and may be accepted.
 - A. Acceptable evidence to establish the time of receipt at the Battelle site includes the time/date stamp of that installation on the proposal wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Battelle personnel.

- B. If an emergency or unanticipated event interrupts normal Battelle processes so that proposals cannot be received at the office designated for receipt of proposals by the exact time specified in the solicitation, and urgent Battelle requirements preclude amendment of the solicitation, the time specified for receipt of proposals will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal Battelle processes resume.
 - C. Proposals may be withdrawn by written notice received at any time before award. Oral proposals in response to oral solicitations may be withdrawn orally. If the solicitation authorizes facsimile proposals, proposals may be withdrawn via facsimile received at any time before award. Proposals may be withdrawn in person by an offeror or an authorized representative, if the identity of the person requesting withdrawal is established and the person signs a receipt for the proposal before award.
 - D. Unless otherwise specified in the solicitation, the offeror may propose to provide any item or combination of items.
 - E. Offerors shall submit proposals in response to this solicitation in English and in U.S. dollars unless otherwise permitted by the solicitation.
 - F. Offerors may submit modifications to their proposals at any time before the solicitation closing date and time, and may submit modifications in response to an amendment, or to correct a mistake at any time before award.
 - G. Offerors may submit revised proposals only if requested or allowed by the Battelle Contracts Representative.
 - H. Proposals may be withdrawn at any time before award. Withdrawals are effective upon receipt of notice by the Battelle Contracts Representative
4. Offer expiration date. Proposals in response to this solicitation will be valid for the number of days specified on the solicitation cover sheet (unless a different period is proposed by the offeror).
5. Restriction on disclosure and use of data. Offerors that include in their proposals data that they do not want disclosed to the public for any purpose, or used by Battelle except for evaluation purposes, shall--
- A. Mark the title page with the following legend:

This proposal includes data that shall not be disclosed outside Battelle and shall not be duplicated, used, or disclosed--in whole or in part--for any purpose other than to evaluate this proposal. If, however, a contract is awarded to this offeror as a result of--or in connection with--the submission of this data, Battelle shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit Battelle's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in sheets [*insert numbers or other identification of sheets*]; and
 - B. Mark each sheet of data it wishes to restrict with the following legend:

Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this proposal.

TREATMENT OF PROPOSAL DATA

- A. Although not specifically requested by the RFP, the proposal may include technical data and other data, including trade secrets and/or privileged or confidential commercial or financial information, which the Offeror does not want disclosed to the public or used by PNNL or the Government for any purpose other than proposal evaluation. To protect such data, the Offeror will specifically identify each page including each line or paragraph thereof containing the data to be protected and mark the cover sheet of the proposal with the following notice:

NOTICE

The data contained in pages _____ of this proposal have been submitted in confidence and contain trade secrets and/or privileged or confidential commercial or financial information, and such data shall be used or disclosed only for evaluation purposes. PNNL and the Government shall have the right to use or disclose the data herein to the extent provided in the contract. This restriction does not limit PNNL's and the Government's right to use or disclose data obtained without restriction from any source, including the Offeror.

Reference to this notice on the cover sheet should be placed on each page to which the notice applies. PNNL assumes no liability for disclosure or use of unmarked data and may use or disclose such data for any purpose.

- B. Should a contract be awarded based on a proposal, it is policy, in consideration of the award, to obtain unlimited rights for the Government in technical data contained in the proposal unless the prospective contractor marks those portions of the technical information that he asserts as "proprietary data," or specifies those portions of such technical data that are not directly related to or will not be utilized in the work to be funded under this subcontract. "Proprietary data" are defined as technical data which embody trade secrets developed at private expense, such as design procedures or techniques, chemical composition of materials, or manufacturing methods, processes, or treatments, including minor modifications thereof, provided that such data: (1) are not generally known or available from other sources without obligation concerning their confidentiality; (2) have not been made available by the owner to others without obligation concerning their confidentiality; and (3) are not already available to the Government without obligation concerning their confidentiality. An Offeror who receives a contract award shall mark the data identified as proprietary by specifying the appropriate proposal page number to be inserted in the Rights to Proposal Data clause below. Subject to the concurrence of PNNL, information unrelated to the subject may be deleted from the proposal by the Offeror. The responsibility, however, of identifying technical data as proprietary or deleting it as unrelated rests with the Offeror.
- C. The following clause shall be included in any contract based on a proposal. This clause is intended to apply only to technical data and not to other data, such as privileged or confidential commercial or financial information

RIGHTS TO PROPOSAL DATA

Except for technical data contained on pages _____ of the contractor's proposal dated _____, which are asserted by the Contractor as being proprietary data, it is agreed that as a condition of the award of this contract, notwithstanding the provisions of any notice appearing on the proposal, the Government shall have the right to use, duplicate, and disclose and have others do so for any purpose whatsoever, the technical data contained in the proposal upon which this contract is based.

ANTI-KICKBACK PROCEDURES (CL 398 - JUL 1995)

A. Definitions

"Kickback," as used in this clause, means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided, directly or indirectly, to Battelle, Battelle employees, subcontractor, or subcontractor employees for the purpose of improperly obtaining or rewarding favorable treatment in connection with a prime contract or in connection with a subcontract relating to a prime contract.

"Person," as used in this clause, means a corporation, partnership, business association of any kind, trust, joint-stock company, or individual.

"Prime contract," as used in this clause, means a contract or contractual action entered into by Battelle for the purpose of obtaining supplies, materials, equipment, or services of any kind.

"Prime Contractor," as used in this clause, means a person who has entered into a prime contract with Battelle.

"Prime Contractor employee," as used in this clause, means any officer, partner, employee, or agent of a prime Contractor.

"Subcontract," as used in this clause, means a contract or contractual action entered into by Battelle or a subcontractor for the purpose of obtaining supplies, materials, equipment, or services of any kind under a prime contract.

"Subcontractor," as used in this clause, (1) means any person, other than Battelle, who offers to furnish or furnishes any supplies, materials, equipment, or services of any kind under a prime contract or a subcontract entered into in connection with such prime contract, and (2) includes any person who offers to furnish or furnishes general supplies to Battelle or a higher tier subcontractor.

"Subcontractor employee," as used in this clause, means any officer, partner, employee, or agent of a subcontractor.

- B. The Anti-Kickback Act of 1986** (41 U.S.C. 51-58) (the Act), prohibits any person from -
1. Providing or attempting to provide or offering to provide any kickback;
 2. Soliciting, accepting, or attempting to accept any kickback; or
 3. Including, directly or indirectly, the amount of any kickback in the contract price charged by a prime contractor to the United States or in the contract price charged by a subcontractor to a prime contractor or higher tier subcontractor.
- C.**
1. When the Contractor has reasonable grounds to believe that a violation described in paragraph B of this clause may have occurred, the Contractor shall promptly report to the Battelle Contracts Representative in writing the possible violation. Such reports shall be made to the inspector general of Battelle, and Battelle shall forward such reports to DOE, or the Department of Justice.
 2. The Contractor shall cooperate fully with any Federal agency investigating a possible violation described in paragraph B of this clause.
 3. The Battelle Contracts Representative may (i) offset the amount of kickback against any monies owed by Battelle under the prime contract and/or (ii) direct that the prime Contractor withhold from sums owed a subcontractor under the prime contract, the amount of the kickback. The Battelle Contracts Representative may order that monies withheld under subdivision C.3.(ii) of this clause be paid over to DOE unless Battelle has already offset those monies under subdivision C.3.(i) of this clause. In either case, the Prime Contractor shall notify the Battelle Contracts Representative when the monies are withheld.
 4. The Contractor agrees to incorporate the substance of this clause, including this subparagraph C.4, in all subcontracts under this contract which exceed \$100,000.

BID AND PROPOSAL COSTS

Battelle is not obligated to pay any cost incurred in the preparation and submission of a proposal, nor to enter into a contract or any other arrangement with any Offeror.

ALTERNATE PROPOSALS

Battelle is inviting proposals in full accordance with the attached specifications or description. In the event that offeror is unable to submit a proposal responsive to this requirement and offeror believes they have an item(s) which may otherwise be acceptable, offerors are invited to submit a proposal for Battelle's consideration, stating item by item each incidence of noncompliance. Offerors are hereby advised that Battelle shall not be obligated to evaluate this proposal, but if acceptable, this Solicitation will either be canceled and reissued or revised to incorporate any appropriate changes. In the event offeror chooses not to submit a proposal, a short note of explanation would be appreciated.

TYPE OF CONTRACT

Battelle contemplates awarding a fixed price contract for this request.

TECHNICAL SPECIFICATIONS

The enclosed Technical Specification outlines the requirements for this solicitation.

PROMPT PAYMENT DISCOUNTS

In addition to normal payment terms, please advise amount and details of other cash discounts or savings available to Battelle for more expeditious or favorable methods of payment or for other reasons.

AUTHORIZED NEGOTIATORS

If a negotiation meeting is held, the Offeror shall designate as its negotiator a person who is authorized to make legally binding commitments without further review or approval. If, for any reason, it is impractical for the Offeror to be represented at a negotiation meeting by other than a person fully authorized to act in its behalf, Battelle shall be notified sufficiently in advance to allow a decision to be made whether the negotiations should proceed as scheduled or be postponed. The Offeror's notice, if originally given orally, shall be confirmed in writing.

CONTRACT AWARD

a) Battelle may evaluate proposals received in response to this solicitation without discussion. Contract award, if any, will be made to the responsive, responsible offeror whose evaluated proposal will be most advantageous to Battelle, considering only price and any price-related factors specified elsewhere in the solicitation, or

(b) Battelle may reject any or all proposals, and waive informalities or minor irregularities in proposals received, or

(c) Battelle may accept any item or combination of items, unless doing so is precluded by a restrictive limitation in the solicitation or the proposal, or

(d) Battelle may reject a proposal as non-responsive if the prices proposed are materially unbalanced between line items or sub-line items. A proposal is materially unbalanced when it is based on prices significantly less than prices for some items and prices which are significantly overstated in relation to prices for other items, and if there is a reasonable doubt that the proposal will result in the lowest overall price to Battelle even though it may be the low evaluated proposal, or if it is so unbalanced as to be tantamount to allowing an advance payment.

We offer to sell the above items (or alternate items as specified) at the prices indicated, on the terms and conditions stated and the referenced general provisions which will be a part of any resulting order.		F.O.B. DESTINATION	
		Delivery Date at F.O.B. Point April 29, 2010	
		Terms of Payment PNNL standard payment terms are N30 payment terms, if prompt payment discounts are available, please state	
Firm Name	Offer Date	Weight	Recommended Carrier
Dimensions	Number of Boxes	Origin Zip Code	
Telephone No.	Fax No.	Email Address	
Name/Title	Signature		

Technical Specifications

RFP No. 112502
10/6/2009

Laser Ceilometer

1. Introduction and Overview

The U.S. Department of Energy's Atmospheric Radiation Measurement (ARM) Program currently operates a total of eleven laser ceilometers at its fixed sites (in Oklahoma, Alaska, Australia, Papua New Guinea, and the Republic of Nauru) and its mobile facility. Initially, a Belfort 7013C Laser Ceilometer was deployed at the ARM Climate Research Facility (ACRF) Southern Great Plains site in 1994 and was replaced with a Vaisala CT25K Ceilometer (VCEIL) in 2000. Meanwhile, additional VCEILs were gradually deployed at all other ACRF locations between 1996 and 2004.

The VCEIL is a self-contained, ground-based, active, remote-sensing device designed to measure cloud-base height at up to three levels (with a maximum vertical range of 7600 m) and potential backscatter signals by aerosols. The ceilometer transmits near-infrared pulses of light, and the receiver detects the light scattered back by clouds, precipitation, and aerosols.

Improved techniques for measuring cloud properties and the ability to support these observation systems beyond 2010 are critically important to understand and improve the performance of global climate models. The model CT25K used at the ACRF sites was discontinued by Vaisala in 2007 (and replaced by a newer model) and the ceilometers are approaching the end of their supportable lifetime, with repairs getting increasingly more expensive because of decreasing availability of parts.

The following technical specifications outline the minimum requirements necessary to meet ARM's science goals in replacing the aging VCEILs with instruments that have additional capabilities and improved algorithms in order to continue the primary measurements provided by the laser ceilometer.

2. Operational Specifications

- 2.1. **Primary measurements:** cloud base heights (up to three layers), backscatter profile, and vertical visibility
- 2.2. **Secondary measurements:** height of planetary boundary layer, sky condition, cloud amount, and system status and diagnostics
- 2.3. **Measurement principle:** optical (LIDAR)
- 2.4. **Range:** 0 – \geq 7.5 km
- 2.5. **Vertical resolution:** 5 m
- 2.6. **Temporal resolution:** 5 – 120 s, programmable
- 2.7. **Accuracy:** \pm 5 m (against reflector)
- 2.8. **Laser:** InGaAs diode or Nd:YAG solid-state

Technical Specifications

RFP No. 112502

10/6/2009

3. Software and Data Specifications

3.1. Software

The software shall operate on a computer running on either Windows XP or Linux operating system. ARM will configure and customize the operating system to conform with ACRF operational and cyber security requirements.

The operating software shall have a graphical interface displaying real-time data and basic status checks for the purpose of monitoring operations and diagnosing potential problems. It is desirable to have at least one hour of real-time data of important variables displayed on the screen.

The software shall provide data acquisition, storage, and file management capabilities. It shall provide a user interface to the instrument for maintenance and diagnostic communication.

Upon starting, the software shall automatically enter a desired mode of operations, so that no manual upload of configuration files are required. The software shall be able to self-start as a task upon reboot of the computer without user intervention (e.g. after an unanticipated power failure). It is desirable that the instrument have a remote restart command capability that can be communicated from the ACRF computing environment via the control interface.

3.2. Data

The output data format shall be either hexadecimal, ASCII, or NetCDF. It is a desirable that the data can emulate or is very similar to the format of the current VCEIL to facilitate the transition from and minimize changes to the existing ARM data ingest software.

The data shall be written to hourly output files. Hourly files are important to be able to monitor data quality and to diagnose malfunctions in a timely manner. The output files shall be stored in a user-selectable directory that will allow them to be transferred via Internet by ftp/sftp.

3.3. Computer

The instrument and software shall communicate with a commercially available computer that can be easily replaced in the field. The computer shall interface with the instrument via RS232, RS422, RS485, modem, or Ethernet. The computer shall not require any custom features (such as custom components, custom PCI configurations, or cards). The computer will be provided by ACRF for integration with the instrument.

Technical Specifications

RFP No. 112502

10/6/2009

4. Environmental Specifications

4.1. Temperature: -40 – +60 C

4.2. Humidity: 0 – 100 %

4.3. Wind: 55 m/s

4.4. Altitude: 0 – 4000 m MSL

5. Mechanical Specifications

5.1. Size and weight

The vendor shall provide the instrument's dimensions and weight. Portability is desired since the instruments will be operating in locations with limited personnel assistance (two people at the most).

5.2. Hardware

The ceilometer shall be supplied with a mounting stand or pedestal, radiation shield, automatic window blower/heater, solar protection of the window, and power and data cables (at least 30 m in length). The ceilometer shall have a modular design that allows for field replacement of components, including the laser and receiver. It shall be painted/coated to prevent corrosion at the installation site (i.e. blowing ice/snow, hail, sea spray, etc.)

5.3. Packaging: The ceilometer shall be delivered in a thermoplastic case or reusable wood crate suitable for shipping to very remote locations all over the world.

6. Electrical Requirements

6.1. Power supply: 115 or 230 VAC, $\pm 10\%$

6.2. Power frequency: 50 – 60 Hz

6.3. Power consumption: ≤ 500 W maximum, with heating

7. Site Installation

Mounting requirements shall meet all local building codes or minimum U.S. building codes for such an installation, whichever is more stringent. The vendor shall supply detailed installation instructions and drawings, a mounting stand or pedestal, and power and data cables. It is desired that the mounting is compatible with the current VCEIL concrete foundations and electrical connections.

8. Safety

8.1. Optical: Class 1M, EN 60825-1

8.2. Electrical: EN 60950

8.3. Electromagnetic: Class B, EN 61326

8.4. Environmental: ISO 10109-11

8.5. Vibration: IEC 60086-2-6

Technical Specifications

RFP No. 112502
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9. Documentation

9.1. Drawings

Detailed schematics and assembly drawings shall be provided as well as wiring diagrams.

9.2. Operations manual

A manual shall be provided describing the installation, operation, maintenance, and repair of the hardware as well as the theory of operation. Detailed procedures shall be provided for operations to be conducted in the field. The manual shall include a list of parts and requirements for replacement and technical specifications of electronic components.

9.3. Software manual

A manual shall be provided describing the installation, operation, and maintenance of the software. It shall describe the format and interpretation of the data. The manual shall show the organization of the software modules, data flow, file structure, interfaces, etc. The vendor shall provide all algorithms needed for recalibration and reprocessing of the data.

10. Instrument Support

10.1. Reliability

The vendor shall give an indication of the reliability of the instrument either through engineering analysis or historical data, e.g. mean time between failures.

10.2. Service

The vendor shall provide service and support of the instrument and software. The vendor shall list the user-replaceable items and recommended spare parts. The vendor shall provide an estimated mean time to repair.

10.3. Warranty

The instrument shall have a warranty of at least 1 year.

11. Deliverables

Five (5) laser ceilometers, with the option to purchase two additional ceilometers - each with installation hardware, data acquisition and visualization software, operations and maintenance manual, and calibration certificate - packed in containers suitable for shipping to the ACRF Southern Great Plains, Tropical Western Pacific, North Slope of Alaska, and Mobile Facility sites.