

### Sole Source Justification

Sunset Laboratory Inc. produces and sells high quality instruments for quantifying elemental and organic carbon collected on filters. The project entitled *Cookstove Air Pollution: Emission Profiles and Subclinical Effects of Exposure* will investigate the impact of biomass cookstoves on acute health markers through controlled human exposure experiments. Quantifying concentrations of elemental and organic carbon requires specialized instrumentation.

Sunset Laboratory Inc. sells instrumentation that is well suited to this purpose, specifically the Laboratory Carbon Aerosol Analyzer. Sunset Laboratory is an industry leader in the design and production of instruments for quantifying elemental and organic carbon samples on filters. Sunset Laboratory has been working in the field for more than 30 years and is known for producing high quality and reliable equipment.

The Laboratory Carbon Aerosol Analyzer from Sunset Laboratory Inc is the only instrument available in the marketplace meeting the following research requirements for our project:

- CRITICAL  
SPECS
- Configurable to run multiple thermal optical transmittance measurement methods including NIOSH Method 5040, EPA STN, EUSSAR-2 and the IMPROVE method.
  - High precision readings and detection limits of  $<0.5\mu\text{gC}/\text{cm}^2$ .
  - Ability to measure filters which span several orders of magnitude of concentration.
  - Built-in and automatically controlled oven temperature.
  - Built-in ignitor for flame ionization detector.
  - System with a low carrier gas dead volume to reduce calibration gas usage.
  - Included user software including data analysis.
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Only the Sunset Laboratory Inc. instrument meets the specifications stated above. Therefore, we would like to proceed with an intent to sole source the Sunset Laboratory Inc. Laboratory Carbon Aerosol Analyzer.

**Conflict of Interest Statement:** There is no known real or potential Conflict of Interest with the University, Department, or the Requestor in recommending this product and as a Sole Source procurement. I have no conflict of interest in the selection of this sole source vendor. I will receive no personal or financial benefit from this purchase.



Sunset Laboratory Inc.

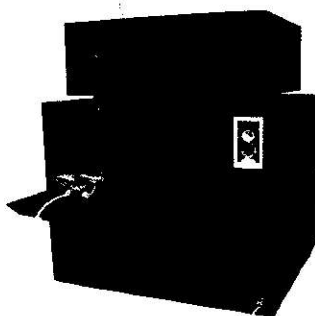
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**OCEC LAB INSTRUMENT**

**BY**

**THERMAL\OPTICAL METHOD**

**MODEL 5L**



**SUNSET LABORATORY INC.  
TIGARD, OREGON**

**PRESENTED TO:**

Colorado State University

**Quote #**

**Sunset Laboratory Inc.** is pleased to present the following quotation for the construction, installation and training involved for a Thermal/Optical Carbonaceous Aerosol Analyzer. This Instrument is as described in the article:

**Elemental Carbon-Based Method for Monitoring Occupational Exposure to Particulate Diesel Exhaust; M. E. Birch and R. A. Cary, Aerosol Science and Technology, 25:221-241, October, 1996.**

The instrument is a Lab-based OCEC carbon aerosol analyzer for measuring OC/EC/TC deposited on filters. It is capable of performing the NIOSH 5040 method, IMPROVE-A, EUSAAR2, and custom user-defined protocols for the analysis method. There are two optical versions available: a **Transmission-only (TOT)** configuration; or a **Dual-Optics Transmission/Reflectance (TOT and TOR)** version. Analytical results are reported in units of micrograms of carbon per square centimeter ( $\mu\text{g C} / \text{cm}^2$ ) for OC, EC, and TC.

## **I. BASE INSTRUMENT COMPONENTS**

**The main components of the Sunset Laboratory OCEC Analyzer are as follows:**

1. Quartz Sample Oven; includes separate integrated oxidizer bed, laser-diode (5-6 mW meeting international safety standards) and photodetector unit. The base unit is configured for Transmittance (TOT) only. (concurrent Reflectance is available as an option – see quote below)
2. Temperature stabilized Diode Laser optical system ( $660 \pm 5 \text{ nm}$ )
3. FID/Methanator Oven Unit; includes FID, HV Power and Methanator tube
4. Electronic Flow control system for computer controlled flow of all gases
5. Single board Integrated Electronics System with 16-bit Analog/Digital Conversion Interface and embedded CPU Controller
6. One set of operator, service and maintenance manuals shall be included
7. Controlling Computer with Windows 7 or 8

**Spare parts and supplies for consumables to be included with the instrument:**

1. Heater-coils – Qty 3 (one for each oven)
2. Spare Methanator tube – Qty 1
3. Spare Quartz-Oven – Qty 1
4. Spare Sample Boats – Qty 2
5. 100 feet of pre-cleaned 1/8 inch o.d copper tubing for carrier gas lines.  
(Additional lengths may be purchased if needed.)

## **Operations Computer Provided with the OCEC Instrument**

A PC-type computer with Microsoft Windows 7 or 8 is used for operation of the instrument. Warranty on the computer through Sunset Laboratory shall be for 90 days

only, from the date of installation. Any repairs or damage after this warranty period shall be the responsibility of the purchaser through the computer manufacturer.

Warranties from computer manufacturers may or may not be transferable for International users or may have additional limitations (Check with the manufacturer for details). Sunset Laboratory may be able to provide additional details.

### **Operations and Calculation Software**

The software for both instrument operation and calculations are designed to run on the included computer used for control and data acquisition. This software is included with the base instrument.

1. Instrument Operation Application - controls the instrument operation and data collection during sample analysis; saves the raw data for calculations later.
2. Calculation Application - uses the raw data produced from the instrument and calculates organic, elemental, and total carbon, and creates a spreadsheet-usable reduced data file of the results and optional prints the individual analysis report.

## **III. INSTALLATION AND TRAINING**

Normally, installation and training are performed by Sunset Laboratory trained personnel at final customer site. This is to assure proper operation and calibration. Setup and Training will include an additional expense fee for transportation and housing. Normally, installation is expected to take up to two days.

Sunset Laboratory offers training at their facilities for distributor personnel or clients free of charge. All travel costs, however, are the responsibility of the distributor or client.

## VII. QUOTATION

### **Option 1:**

**Thermal-Optical (TO-T) OCEC Instrument price:**

Capable of performing 'NIOSH Method 5040', 'STN', 'NIST-EPA', 'EUSAAR2' and 'IMPROVE' temperature protocols, or user-designed temperature analysis protocols with Transmittance-based optical correction (TOT).

### **Additional costs:**

Installation (Travel and housing costs)  
Shipping FOB from Portland, OR:

**Bid shall be good for 6 months from this date. Delivery and installation shall be within 3 months after final order has been received.**

## Colorado State University Standard Solicitations Language

Colorado State University Procurement Department is located at 555 South Howes Street, Rm 108,  
MS# 6010, Fort Collins, CO 80523-6010

EMAILING NOTE: Responses to this Proposed Sole Source must be received by Email to the listed Purchasing Agent by the closure of the solicitation. Please do a "read receipt" on your email to assure receipt of your response email at CSU.

ADDENDUM/MODIFICATIONS NOTE: Any modifications or addendums to this solicitation issued will be posted at this same site. Vendors will not be notified directly. It is the vendor's responsibility to monitor the solicitation to see if any modifications have been issued. Failure to retrieve such modifications and include them in your proposal response may result in disqualification of your response.

COOPERATIVE USE: Any price agreement from this solicitation may be extended to other Cities, Counties, Institutions of Higher Education, and school districts or other political subdivisions within the State of Colorado, providing they are willing to order against the Agreement in accordance with the prices, services and terms and conditions of the Agreement.

Extension is limited to the prices, services and terms contained in the University's Agreement, except where applicable, additional terms and conditions may be negotiated with such other entities within the State of Colorado as agreed to by those parties.

Rebates, credits, and other incentives (if any) available to the University will not be extended to the Cities, Counties, and school districts and the other political subdivisions. Any rebates, credits and/or agreements with incentives generated from Cities, Counties, and school districts and other political subdivisions within the State of Colorado shall be provided to Colorado State University as set forth in the Agreement.

LIMITED COMPETITION: Because of limited competition expected from RMEP vendors on this solicitation, the procuring agency intends to use both RMEP and other methods of notification to make the specifications available to vendors through additional means.

### SOLE SOURCE SOLICITATIONS STANDARD LANGUAGE

Colorado State University intends to sole source one of the items or system described on a quote purchase. See attached PDF specifications and department justification for new systems only (unless otherwise indicated) for comparison to exact equal or better market systems.

Interested parties may provide a challenge quote on any exact equal or better systems your company can supply. All vendors must be authorized factory distributors of these goods.

Interested parties may submit challenge quotes **by Email** to purchasing agent by listed closure of solicitation to: [kathi.lafollette@colostate.edu](mailto:kathi.lafollette@colostate.edu).

RESPONSES TO THIS INTENT TO SOLE SOURCE MUST INCLUDE THE FOLLOWING:

1. A detailed response to specifications and features of the quoted equipment in a matching point-by-point list. Pay particular attention to the Department Sole Source Justification requirements. Documents or literature, comparative descriptions of features and functions, which can be evaluated by CSU personnel to determine exact equivalence or better are required.
2. Colorado State University will be the sole judge of equivalence, and the selection is final.
3. All questions pertaining to this Sole Source must be submitted by EMAIL to the Purchasing Agent listed.
4. Failure to respond as instructed will result in disqualification.

END