

MEPNN Supplier Scouting Opportunity Synopsis

Section 1: General Information

Scouting Number	2025-222
Item to be Scouted	Submersible pCO2 Sensors
Days to be scouted	15
Response Due By	07/17/2025
Description	The National Oceanic and Atmospheric Administration (NOAA), Oceanic and Atmospheric Research (OAR), Great Lakes Environmental Research Laboratory (GLERL) is a multidisciplinary environmental research laboratory

Section 2: Technical Information

Type of supplier being sought	Manufacturer
Reason	collect and monitor the CO2 and acidification levels of the Great Lakes and provide data for HAB analysis. As atmospheric CO2 increases, the availability of dissolved inorganic carbon (DIC) is shifting within aquatic systems causing the pH to drop. Due to the multi-faceted nature of the DIC system, the GLERL requires a submersible pCO2 sensor like the Pro-Oceanus Mini CO2 in order to document the impacts or potential shifts in phytoplankton species composition and abundance.
Describe the manufacturing processes (elaborate to provide as much detail as possible)	Assembly (Plastic and/or metal), Electronic Assembly
Provide dimensions / size / tolerances / performance specifications for the item	Any offered alternatives must be fully compatible (form, fit, and function) with Michigan systems, without the need to modify the product or existing network. The Mini CO2 instrument uses infrared detection to measure the partial pressure of CO2 gas dissolved in liquids with a range from 0-1000 ppm up to 0-100%. The instruments are compact, lightweight, plug and play sensors; and measure total dissolved gas pressure (TDGP). The housing is rated to 6000 dbar of hydrostatic pressure, and is resistant to most corrosive liquids. Sensor Performance: CO2 Measurement Ranges: 0-2000 ppm CO2, by volume; 0-5000 ppm; 0-1% (10,000 ppm); 0-100% Total Dissolved Gas Pressure: 0-2 bar Accuracy: pCO2: $\pm$ 2% of max range TDGP: $\pm$ 1% Equilibration rate (t63): 3 minutes Resolution: 0.1% of max range Physical Specifications: Length: 28 cm (11 in) Diameter: 5.3 cm (2.1 in) Weight - Air: 0.53 kg (1.2 lbs) Weight - Water: -0.06 kg (-0.1 lbs) Housing Material: Acetal Plastic / Titanium Depth Rating: 0 - 600 m (Plastic); Up to 6000 m (Titanium) Water Temperature: 0° to 40° C Electrical: Input voltage: digital: 7 - 24 VDC; analog: 12 - 24 VDC Power consumption: 85 mW (7 mA @ 12 V) Data output: digital: RS-232, ASCII CSV; analog: 0-5 V or 4-20mA Sample rate: 2 seconds (variable rate with logger/controller) Optional Accessories: Titanium housings: Rated up to 6000 m depth Internal battery power External battery pack: 19, 76 or 134 Amp-hour capacity Water-pumped head: Reduce biofouling and improve response rate Mooring cage or frame with instrument brackets Pigtail Cables with Locking Sleeves: 5, 10, 25, 50 meters, or longer

Applications:

Aquaculture monitoring of dissolved CO₂ for fish and shellfish health
Coastal zone CO₂ fluxes
Algae to fuel bioreactor feedback control
Groundwater and well water monitoring
Carbon budget studies for lakes and rivers
Carbon capture storage monitoring of aquifer and surface water levels of pCO₂
Wastewater greenhouse gas emissions
Ocean glider and profiler missions

The CO₂-Pro™ CV instrument measures the partial pressure of CO₂ gas dissolved in water using infrared detection. Standard ranges from 0-600 ppm up to 0-10,000 ppm as well as custom ranges are available that cover the full spectrum of pCO₂ needed for accurate measurement of ocean, coastal, riverine, and lake CO₂ levels. Sensor Performance:

Accuracy

CO₂ concentration $\pm 0.5\%$

Resolution

CO₂ concentration 0.01 ppm

Zero drift automatic zero compensation

Equilibration time (t₆₃) 50 seconds (with pumped head)

Standard range 0-600 μ atm

0 - 1000 μ atm

0 - 2000 μ atm

*other ranges available

Physical:

Length 38 cm (15 in)

Diameter 10 cm (4 in)

Weight Air: 2.8 kg (6.2 lbs)

Water: 0 kg

Housing Acetal Plastic or Titanium

Depth 0-600 meters (Plastic)

0-2000 meters

0-4000 meters

0-6000 meters

(Titanium)

Water Temperature 0° to 30° C (Standard)

-2° to 20° C (Arctic)

15° to 40° C (Tropical)

Electrical:

Input voltage 10 - 18 VDC

Power consumption 3 W (9 W during warmup)

w/Optional Water Pump 4 W (10 W during warmup)

Data output RS-232, ASCII format, 0-5 V or 4-20mA optional

Sample rate 1 second (variable rate with logger/controller)

Optional Accessories:

Water-Pumped Interface Head

Reduces biofouling and improves response rate

Internal Battery Power

External Battery Pack

76, 134, or 247 Amp-hour capacity

Seabird Water Pump with cable

5P (Plastic) or 5T (Titanium)

Mooring cage or frame with instrument brackets

Pigtail Cables with Locking Sleeve

5, 10, 25, or 50 meters

List required materials needed to make the product, including materials of product components	Unknown except as provided on attached specs sheet. Includes but is not limited to Non-Dispersive Infrared (NDIR) Detector, Gas-Permeable Membrane, Oil-Resistant Interface, Antifouling Protection)
Are there applicable certification requirements?	No
Are there applicable regulations?	No
Are there any other standards, requirements, etc.?	No
Additional Technical Comments	The required sensors must have the highest accuracy rate with the fastest transmission required for pCO2 needed to ensure data reliability and timeliness. Pro-Oceanus sensors are utilized throughout NOAA and any offered alternatives must be fully compatible (form, fit, and function) with existing systems, without the need to modify the product or existing network.

Section 4: Business Information

Estimated potential business volume	One-time purchase
Estimated target price / unit cost information (if unavailable explain)	\$9,000.00 each for Mini CO2 equivalent sensor (quantity 2 required); \$1,880.00 total for accessories. \$20,250.00 for CO2-Pro CV equivalent sensor (quantity 1 required); \$5,320.00 total for accessories.
When is it needed by?	Estimate award of contract no later than end of current fiscal year (by 09/30/2025), with delivery required by 60 days after date of award.
Describe packaging requirements	Best available. Delivered undamaged. Specifics discussed in negotiation.
Where will this item be shipped?	Muskegon, MI

Additional Comments

Is there other information you would like to include?	This is a Simplified Acquisition, which has a shorter lead time to completion than an action over \$250,000.00. It is expected that this requirement will be awarded within the next 30-60 days, and any timely scouting (requested completed within 15 days from submission) would be appreciated to align with Simplified Acquisition requirements for posting and the Buy American Act Waiver process. Department of Commerce Point of Contact: Marcelle Loveday, Director, Acquisition Policy & Workforce, Office of Acquisition Management, 202-941-7641, MLoveday@doc.gov.
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CO₂-Pro™ CV

CO₂-PRO™ CV SUBMERSIBLE PCO₂ SENSOR

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With industry-leading pCO₂ accuracy and stability for submersible instruments, the CO₂-Pro™ CV is the sensor of choice for most applications. Labelled the CV for Compact Version of our flagship CO₂-Pro™ instrument, the Pro-CV can be deployed up to 6000 meters depth, ideal for carbon capture storage monitoring and deep ocean CO₂ fluxes.

The small size of the CO₂-Pro™ CV means it is easily transported and deployed in the field. When combined with our anti-fouling features and options, the instrument can perform in even the most biologically active rivers and lakes for extended periods of time. An internal zeroing feature provides a stable long-term baseline to ensure accurate measurements. A flow-through adapter is also available for simple integration into many systems. The CO₂-Pro™ CV is factory calibrated using WMO traceable standard gases. In addition, detector temperature stabilization and measurement of gas steam pressure and humidity provide accuracy unparalleled by small submersible pCO₂ instrument.



FEATURES

- Fast response and high accuracy
- Long-term stable data for deployments of a year or longer
- Resistant to biofouling
- Real-time data output
- Large selection of concentration ranges
- External battery power available
- Internal data logger and controller with 2GB flash memory

PCO₂ SENSOR APPLICATIONS

- Ocean acidification
- Long-term ocean pCO₂ monitoring
- Deep ocean studies
- Shipboard flow-through pCO₂ measurements
- Coastal zone CO₂ fluxes

PRO
OCEANUS

Dissolved Gas Sensors

CO₂-Pro™ CV

SENSOR SPECIFICATIONS

Sensor Performance

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Resolution

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automatic zero compensation

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SBE 5T Water Pump



Pigtail Cable with Locking Sleeve



CO₂-Pro™ CV water pumped head



Instrument and Battery Mooring Bracket