



## Moored Robotic Cartridge Sampling Instrument

### Application:

The Robotic Cartridge Sampling Instrument (RoCSI), is a biomolecular sampler that collects and preserves particulate samples onto 0.22 µm or 0.45 µm Sterivex™ filter cartridges. RoCSI features high sample count capabilities in a compact, 6,000 m rated instrument.

Cartridges are stored on a continuous sample chain and are rotated into position for sampling or injecting preservative. The compact size and user-defined sample capacity make the RoCSI ideal for vehicle integration, mooring systems, buoy installations, bottom landers and ship-board applications.

### Features:

Suitable for collecting genetic material, environmental DNA (eDNA), fine particulates and sampling for biosecurity monitoring. Programmable supervised sampling (pressure and flow rate) processes samples. Automated cleaning of intake fluid path mitigates contamination.

### Moored Configuration:

The moored configuration provides power and protection for the RoCSI when attached to a mooring. Components include a 316SS frame (titanium option also available), cartridge hopper for containment of sample chain, reagent storage box, and deep-rated titanium battery housing containing 16 user replaceable “D” cell alkaline batteries.

- ▼ Number of samples: up to 48 cartridge sample chain
- ▼ Depth rating: 6,000 m
- ▼ Battery: 16 user replaceable “D” cell alkaline batteries.
- ▼ In situ sample stabilization
- ▼ Frame: 316 stainless steel (titanium option available)
- ▼ For more information about this sampler see the [RoCSI](#) pages at [mclanelabs.com](#).

### Selected References:

- ▼ Technology transfer from the National Oceanography Centre to McLane Research Laboratories, Inc.
- ▼ National Oceanography Centre annual report, p. 24-25; p.36.
- ▼ 3400 m depth deployment in AutoSub6000 on the iMirabilis expedition for EU Horizon 2020 project iAtlantic.
- ▼ Surface RoCSI measures DNA from microbes across the western N Atlantic (Bermuda and along the US coast) - ISME Journal article.
- ▼ 12 August 2022: RRS James Cook JC237- both submersible (in Autosub 5, with NERC Project CLASS and EU project
- ▼ (iAtlantic) and benchtop (part of EU Horizon 2020 project AtlantECO).

*Patents: Robidart, J, J Wyatt, R Brown (2021) Autosampler device and method for autosampling. UK Patent Application 2105092.7*

## Moored RoCSI Specifications

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**DIMENSIONS  
(MOORED MODEL):**

Height: 91.44 cm (36 in)  
Width: 49.53 cm (19.5 in)  
Length: 64.77 cm (25.5 in)

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**WEIGHT (APPROX):**

In air: ~ 45 kg (100 lbs)

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**SAMPLE COLLECTION:**

Number of samples: Up to 48 cartridge sample chain  
Filter holder material: 0.22 µm or 0.45 µm Sterivex™ filter cartridges

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**CONTROLLER:**

Pressure housing material: Titanium  
Communications: USB to a Windows® interface or RS-232 (for adaptive sampling)

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**OPERATIONS:**

Maximum depth: 6,000 m  
Power: 16 user replaceable “D” cell alkaline batteries.

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**PUMP**

Peristaltic pump

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**FRAME:**

Material: In-line type 316 electropolished stainless steel weldment (titanium frame option available).