



Rolls-Royce

Rolls-Royce Canada Limited
Naval Marine



CORE TECHNOLOGY // Laser Optical Particle Counter

Rolls-Royce LOPC™

Enhanced particle counting performance



simply a better particle counter...

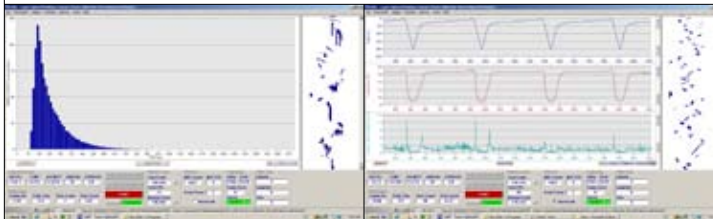
The Laser Optical Particle Counter (Rolls-Royce LOPC™) is a high-speed particle counter that is designed on an enhanced detection plane providing particle/plankton counts at higher resolutions and higher concentrations with low coincidence. This also allows the Rolls-Royce LOPC™ to be integrated into traditional collection devices such as Bongo nets (shown here) and tow bodies such as the Rolls-Royce MVP™, traveling at up to 12 knots and still providing reliable data.



Rolls-Royce LOPC™ (right)
and LOPC™ Datalogger (center)
installed in a Bongo Net

Real-time data collection and display. The Rolls-Royce LOPC™ allows for real-time collection and display through a simple yet sophisticated software interface. View and process large volumes of data faster and accurately. When data is viewed real-time, files are stored as readable ASCII for quick and easy post processing.

Various applications. The Rolls-Royce LOPC™ is highly adaptable to suit numerous sampling protocols. Ring nets, vertical profilers, tow bodies, or laboratory use grants users a wide range of options.



Detection capabilities. Standard Rolls-Royce LOPC™ resolution ranges from 100um to 35000um. Particles from 100um – 1500um (single element plankton) are binned and appended to a histogram whereas particles from 1500um – 35000um (multi-element plankton) have their shape outline displayed in real time.

Light weight and compatible. The Rolls-Royce LOPC™'s portability allows it to be integrated with towed plankton nets as well as the Rolls-Royce MVP™ and other types of commercially-available tow bodies.



Real-time collection and display of particle counter data

The standard Rolls-Royce LOPC™ (LOPC™ 660) is capable of counting particles as small as 100um and provides Shape Profiles larger than 1500um. The LOPC™ can be operated via the supplied deck unit or autonomously via user-supplied power and communications, and is available in 660m, 3400m and 6000m depth ratings.



The Rolls-Royce Lab LOPC™ consists of a deck unit and LOPC™ in a single, small-footprint package. The 3/4" flow tube is sealed within the optics chamber allowing it to be used under high-humidity conditions. Lab LOPC™ is ideally paired with the LOPC™ Lab Circulator which provides autonomous filtration, capture method and flow control.

Available Accessories		Rolls-Royce LOPC™ Capabilities	
DataLogger	Provides autonomous operation of Rolls-Royce LOPC™	Size Detection Range	0.1 mm - 35 mm
2.5X Tunnel	Accommodates a larger sample volume and can be interchanged with the standard tunnel while in the field		1.5 mm - 35 mm (shape profiles generated)
Conversion Kit	Flow tube and stand used with a standard LOPC™ allows usage in a lab setting, in essence providing a dual-use instrument	Sampling Aperture	70 mm x 70 mm [2.75" x 2.75"] (Nominal)
Deck Unit MUX	Allows integration of various surface serial data into the LOPC™ data stream	Beam Cross-Section	1 mm x 35 mm [0.0394" x 1.375"] (Nom)
LOPC-FFF	LOPC™ Free Fall Fish is tailored for usage with the Rolls-Royce MVP™ systems and is intended for vertical profiling	Coincidence Limit	~10^6 particles/m^3
BOT-Wing	Customized towed depressor for horizontal profiling	Min Tow (Flow) Rate	0.48 knots [0.25 m/s]
T-Frame	Proprietary platform used to couple the Rolls-Royce LOPC™ to a variety of ring nets	Max Tow (Flow) Rate	13.6 knots [7.0 m/s]
		Physical/Mechanical	
		Weight in Air	11.4 Kg [25 lbs]
		Weight in Water	6.0 Kg [13 lbs]
		Construction	Aluminum (anodized)
		All specifications subject to change without notice. Actual performance may change based on ship installation.	

Typical installation of the standard Rolls-Royce LOPC™ as used in the Rolls-Royce MVP™ Multi Sensor Free Fall Fish (MSFFF). LOPC™ has been specifically designed and refined to easily integrate with the MSFFF.



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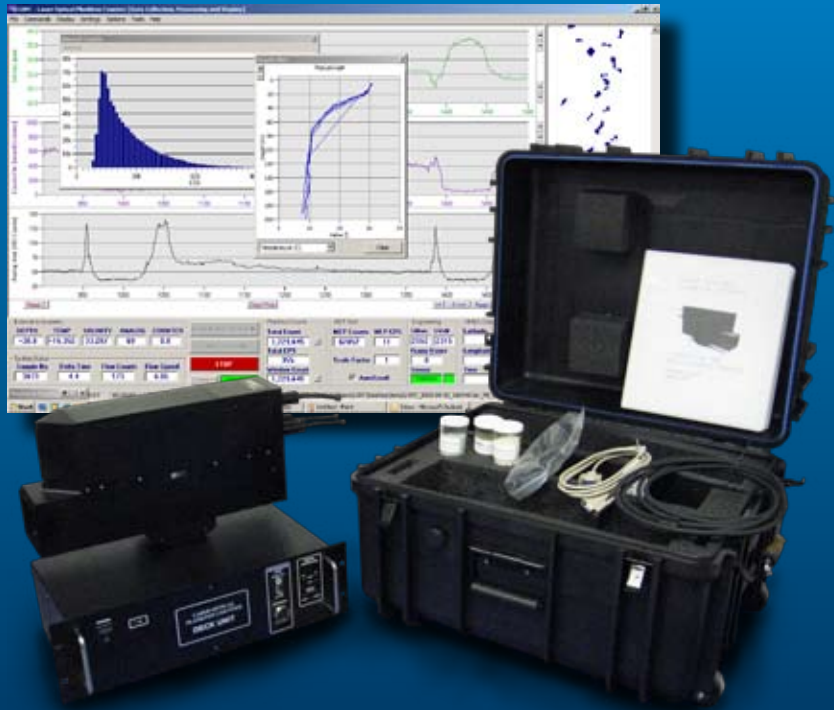
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DataLogger

2.5X Tunnel

T-Frame



Typical Rolls-Royce LOPC™ package including LOPC™ 660, LOPC™ Deck Unit, storage/transport case, cables and owner's manual. Shown at left are some of the optional add-ons available for Rolls-Royce LOPC™.

A variety of accessories are available to enhance functionality of the Rolls-Royce LOPC™. The LOPC™ becomes adaptable to suit a variety of sampling protocol and environments as a result.

Rolls-Royce Canada Limited also provides the following value-added services to LOPC™ clients:

- * Bi-yearly preventative service and maintenance scheduling
- * On-site installation and training
- * In-house, positively-pressurized clean room with Rolls-Royce Lab LOPC™ instrumentation and LOPC™ Lab Circulator available for processing a wide range of samples for clients



LOPC™ Lab Circulator