

INL191 Blood FlowMeter (LCC)

Instruments

Description

The INL191 Blood FlowMeter is a single channel laser Doppler flow meter for continuous monitoring of blood flow in microvascular beds. There is a range of surface and needle probes available from ADInstruments which are suitable for different applications. The different probes are automatically recognized by the flow meter after calibration, with parameters automatically stored and recalled when the same probe is connected. The INL191 is LabChart compatible, which can interface directly (USB connection) with LabChart after its device enabler add-on software is installed. Alternatively, analog recording is also supported via two BNC connections to a PowerLab data acquisition system.



CE

Operation

The fiber optic probe illuminates a small area of tissue. Light penetrates the tissue (usually about a cubic millimeter) and a small percentage is back-scattered into the optic fibre. The direction and rate of blood flow through the capillaries in the tissue causes a Doppler shift in the returned light. The change in laser frequency is detected by the instrument and produces an output signal that is proportional to the changing direction and velocity of the blood cells.

The strength of the signal is dependent on several factors, including the degree of vascularization of the tissue. Signal strength can vary with position of the probe and the tissue type. Changes in the signal level correspond to relative changes in blood flow through the sampled volume.

Relative changes in the signal are due to effects such as local vasodilation or vasoconstriction and so this method is often applied in pharmacological studies where more invasive methods are unsuitable.

Applications

The INL191 Blood FlowMeter can be used for the evaluation of vasoactive drugs on microcirculation, monitoring peripheral circulation and monitoring exposed animal tissue microcirculation.

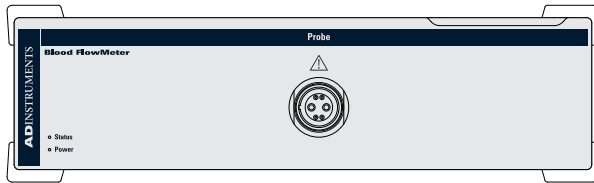
Specifications

Outputs:	Digital (USB) Analog (2BNC)
Mode of Operation:	Continuous Laser Doppler Flowmetry
Primary Measurement:	Microvascular blood perfusion (Relative Red Blood Cell flux)
LDF Units:	Relative units (0–5000 Blood Perfusion Units corresponding to 0-5 V output)
BSC Units:	Relative units (0–100% corresponding to 0-5 V output)
Laser Type:	Semiconductor laser diode (temperature stabilized)
Laser Classification:	Class 1 Laser (as per 21 CFR 1040-10 and 1040-11)
Laser Wavelength:	830 ± 10 nm
Laser Power:	<0.5 mW from probe
Doppler Signal Bandwidth:	16 kHz
Linearity:	Up to 0.35% moving scatters by volume
Flow Response Time:	<0.2 s
Reading Stability:	5% (measured with standard motility solution)
Zeroing:	Automatic, controlled
Flux Calibration:	Factory or user calibrated using a motility standard (concentration of latex spheres undergoing Brownian Motion)
Operating Temperature:	5 to 35°C
Operating Humidity	0-70% (non-condensing)
Weight :	2.5 kg
Dimensions (W x H x D):	240 x 70 x 260 mm (9.45" x 2.7" x 10.2")
Cable Length:	1.8 m
External Power Supply:	Universal 100 to 240 V, 1.3A, 50/60 Hz

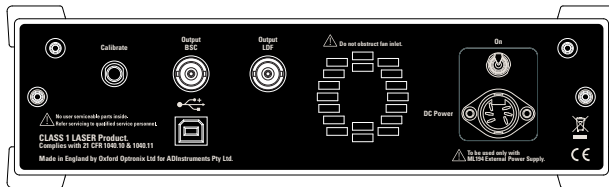
Caution

Read “Statement of Intended Use” on our website or in “Getting Started with PowerLab” before use.

Front and Back Panels



Front panel



Back panel

Ordering Information

INL191 Blood FlowMeter

Includes:

- Universal power supply
- Blood FlowMeter Owner's Guide
- 2 x BNC - BNC cables
- USB Cable
- Device enabler software

For use with:

MNP100XP	Standard Needle Probe
MNP100XP-3/10	Short Needle Probe
MNP110XP	Fine Needle Probe
MNP150XP	Bent Tip Needle Probe
MSP100XP	Standard Surface Probe
MSP110XP	Digit Probe
MSP300XP	Miniature Surface Probe (suturable)
MSP310XP	Miniature Surface Probe (non-suturable)

NB: Laser Doppler probes are sold separately.



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ISO 9001:2008 Certified Quality Management System

WARRANTY: ADInstruments PowerLab data acquisition units (Product Number Prefix: PL), Front-end Signal Conditioners (Product Number Prefix: FE) are warranted against defects in materials and workmanship for a period of 5 years from the date of purchase. Other PowerLab data acquisition units and ADInstruments manufactured Front-end and Pod Signal Conditioners, and Instruments are warranted of a period of 3 years from the date of purchase. Third party products are covered by the manufacturer's warranty. Warranties are void if the product has been damaged due to negligence. Consumables and electrodes are not covered by a warranty. All questions regarding service and warranty should be directed to your nearest ADInstruments representative.