

## Description

The IR Plethysmographs use an infrared photoelectric sensor to detect changes in tissue blood volume. The MLT1020PPG features a velcro strap, the MLT1020FC has a spring clip suitable for readings from a finger or toe and the MLT1020EC features an ear clip.

The IR Plethysmographs can be connected to the ML110 Bridge Amp, ML112 Quad Bridge Amp, ML142 GP Amp, or directly to a Pod port of a PowerLab.



*MLT1020EC*

*MLT1020FC*



*MLT1020PPG*

## Operation

The velcro strap and finger clip models use reflected infrared light, and work best where the light can reflect from the bone beneath the tissue. They are especially good for the finger or forehead (directly over the centre of the eyebrow is an excellent location). The ear clip, on the other hand, uses infrared light transmitted through the tissue, and so works best on fleshy areas such as the earlobe. The amplitude of the signal depends primarily on the volume of blood in the capillary bed directly beneath the sensor, so it may be necessary to move the sensor around to find the best signal.

The clips should attach to fleshy areas with no problems. When using the model with the Velcro strap to attach to a finger or toe, take care that the strap is firm, but not so tight as to restrict blood flow. If you are taking measurements where the Velcro strap is too short to be useful (such as from the leg or head), then you can lightly wrap an elastic bandage around the sensor and body part to hold the sensor in place.

Ambient light may affect the output: if it does, a covering of black, opaque material over the sensor and location should remove such interference.

## Note

The IR Plethysmographs are normally used with AC coupling in the Input Amplifier dialog box (in Chart software) turned on.

## Applications

The IR Plethysmographs can be used to record changes in blood volume as the arterial pulse expands and contracts the microvasculature.

**WARRANTY:** ADInstruments PowerLab Systems, Front-end and Pod Signal Conditioners are warranted against defects in materials and workmanship for a period of 3 years from the date of purchase. Transducers are covered by a 12 month warranty. 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 PowerLab authorized distributor or one of the offices listed below.

## Caution

- Do not immerse the device in fluids.
- Do not handle the device by its cable.

## Specifications

Excitation:	6 to 9 V DC
Output:	5 to 50 mV (typical finger application at rest)
Output impedance:	1 k $\Omega$ nominal
Sensor size:	15 x 15 x 6.3 mm (0.59" x 0.59" x 0.25")
Weight:	28 g
Connector:	8-pin DIN

All specifications were tested at the time of printing and are subject to change.

## Ordering Information

MLT1020EC IR Plethysmograph - Ear Clip  
MLT1020FC IR Plethysmograph - Finger Clip  
MLT1020PPG IR Plethysmograph - Velcro Strap

For use with:  
ML110 Bridge Amp  
ML112 Quad Bridge Amp  
ML142 GP Amp

Note: Unsuitable for use with the ML118 Quad Bridge or ML119 Octal Bridge Amp

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