

## **IR Plethysmographs**

### *Transducer Series*

---

#### **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 MLT1060EC features an ear clip.

The IR Plethysmographs can be connected to any current ADInstruments Bridge Amp or directly to a Pod port of a PowerLab.



*MLT1060EC*

*MLT1020F*



*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 LabChart software) turned on.

#### **Application**

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

### **Caution**

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

- Do not use with Electrocautery devices.
- 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
Wavelength:	950 nm
Sensor size:	15 x 15 x 6.3 mm (0.6" x 0.6" 0.24")
Weight:	8 g
Connector:	8-pin DIN

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

### **Ordering Information:**

MLT1060EC IR Plethysmograph - Ear Clip II  
MLT1020FC IR Plethysmograph - Finger Clip  
MLT1020PPG IR Plethysmograph - Velcro Strap

For use with:

Any current ADInstruments Bridge Amp.

Any ADInstruments Bridge Amp (except the obsolete ML118 and ML119) or any PowerLab with a pod port.