BLS780 Ballistometer

BLS780 Ballistometer: to measure increases and decreases of firmness and elasticity within the skin.

General Information

Principal benefits

- Works at any angle, non-gravity dependent
- Measures small, inaccessible test sites
- Tests for different materials
- Consistency with probe arm
- Bespoke software with automated analysis
- Lightweight and easy to transport

Applications & Claims

- Anti-ageing product claims
- Cellulite related claims
- Evaluation of medical conditions; Schleraderma and Oedema
- Quality of wound formation

Overview

The BLS780 is based upon the traditional ballistometric principle by impacting an object at a constant force. This measures its firmness by indentation and dynamic resilience by the degree of rebound. The innovation in the Ballistometer arises from the inclusion of a torsional wire mechanism, which makes the instrument non-gravity dependent.

The unique design of the Ballistometer allows the user to define the amount of energy put into the skin so that different layers may be studied. These measurements are complementary to existing products such as the DTM310 Dermal Torque Meter, extending our range of biomechanical instruments.

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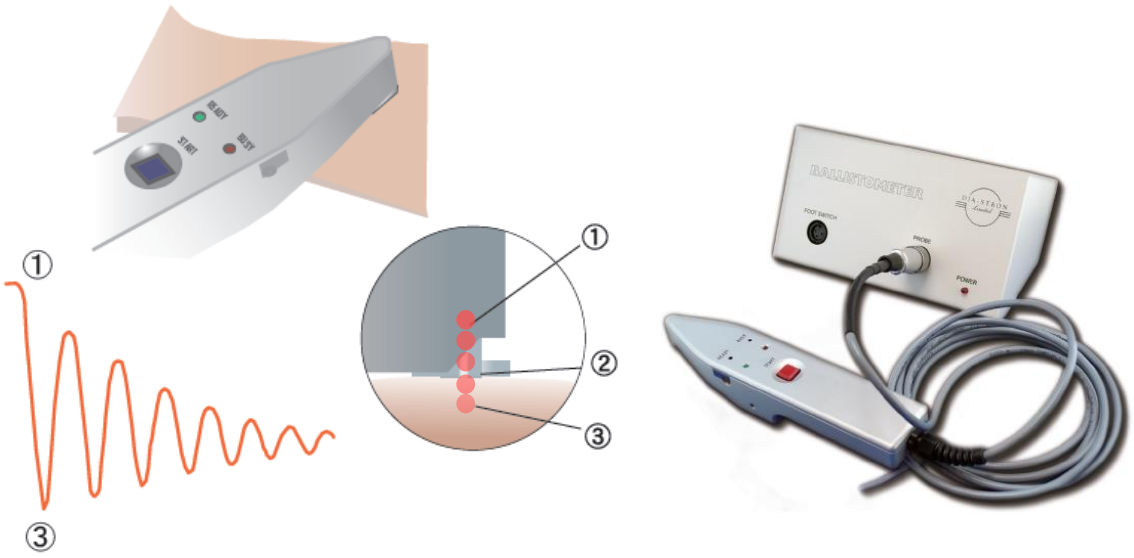
Measurement Principle

The Ballistometer consists of a slim line probe only 25cm long and a small control unit connected to a PC serial port.

The probe contains a rigid low mass arm suspended at its balance point on a torsion wire. A ruby tipped stylus is fixed to one end. The arm is activated by a solenoid that elevates the probe tip from the test surface. On release, the arm oscillates around its balance position and the stylus bounces repeatedly on the test site before coming to rest. The position of the arm is monitored by an optical sensor and the positional data transmitted to the PC via the control unit.



The two main factors that influence the data are the impact force and the dynamic properties of the test site. The user can control the impact force of the stylus using a mechanical switch that is recessed into the Ballistometer probe. At any one setting the elevation and release of the arm generates a constant amount of kinetic energy so that the data is influenced only by the nature of the test site.

The Torsional Ballistometer has been used in applications to measure skin anti-ageing products, cellulite, in the evaluation of medical conditions such as Schleraderma and oedema, and the quality of wound formation.

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Specifications

Control unit

Net weight	2kg
Total weight with packaging	3kg
Control unit width	230mm
Control unit height	100mm
Control unit depth	120mm

Measurement probe

Probe length	250mm
Probe height	40mm
Probe width	50mm
Stylus energy storage adjustment	Manual

General specifications

Power	10W
Voltage Universal input	90-260V 47-63Hz
Socket(s)	1
Computer connection	USB

Content

BLS780 Probe
BLS780 Control Unit
USB Interface Cable
Power Supply
MApp Software (Windows compatible)

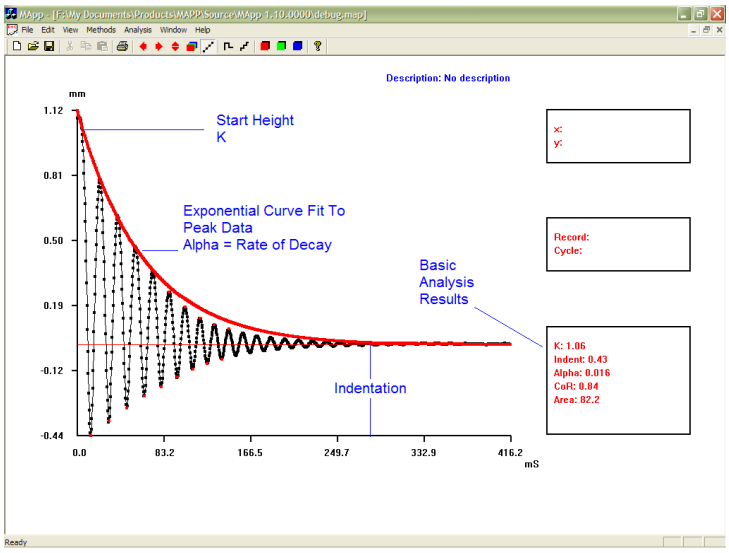
Options

- Foot pedal to initiate the acquisition
- Parallel Support Arm

Control & Analysis software

The Ballistometer is supplied with Windows software to control the instrument, to display the acquired data and to run the data analysis. The following relevant parameters are calculated:

- Indentation: the peak penetration depth of the probe tip beneath the skin level (skin datum)
- K: the start height of the probe tip above the skin surface. This is related to the energy stored in the torsion wire
- Alpha: the rate of energy damping. Large values indicate energy absorbent (in-elastic) samples
- Coefficient of Restitution – CoR: a high value indicates a highly elastic sample
- Area: the area between the bounce profile and the skin zero datum



The user can view the graphical display and the numerical parameters are calculated automatically and displayed on the screen. The analysed parameters and raw data can be exported into tab delimited text files.

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