Biometrics Ltd

DataLITE

WIRELESS INTERFACES, SENSORS & SYSTEMS

DATA ACQUISITION EMG MOVEMENT ANALYSIS

Biometrics Ltd

DataLITE is a range of professional wearable tech systems allowing the user to collect physiological data from a wide range of sensors while the subject is free to move in almost any environment.

Physiological parameters measured include muscle activity or EMG (electromyography), dynamic joint range of motion, muscle strength and acceleration.

Wireless Interfaces

DataLITE provides a selection of three interfaces. Each is capable of recording up to 24 analogue and 12 digital channels of data. If more is required, two or more interfaces can operate in the same environment.

EXPLORE

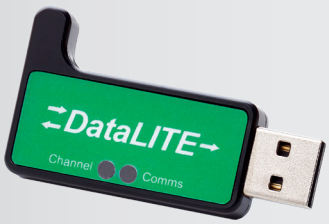
DataLITE EXPLORE is a wearable device that provides multi-channel recordings of EMG, dynamic joint movement, acceleration and other physiological parameters from a range of wireless sensors. This provides data capture & analysis both within and outside the boundaries of normal testing environments.

- Fully portable wireless data recorder
- Real-time data display as graphical traces or engineering units
- Optional real-time data acquisition & analysis to the PC

ADVANCE

DataLITE ADVANCE is a desktop unit incorporating all the same features of PIONEER with the addition of analogue outputs for each channel of wireless data. This standard analogue output is easy to interface to and provides the user with a very simple, accurate and robust way of sending data to 3rd party systems.

- 24 analogue and 12 digital sensor outputs
- Readily transfer DataLITE sensor data to 3rd party devices including camera-based motion capture systems
- Known exact latency of 100 mS delay to a 3rd party instrument
- ADVANCE may be disconnected from the PC, allowing it to be used solely as an analogue output unit. This provides a very robust, novel product which may be used independent of the PC



PIONEER

DataLITE PIONEER is the basic interface utilizing a dongle wireless transceiver to communicate between DataLITE sensors and the computer. Data is displayed and recorded directly to the PC or streamed to third party software. Data can be analyzed in the Biometrics Analysis Software or exported for analysis in other software.

- Communicates with up to 24 channels of DataLITE sensors
- A typical work environment will give up to a 30m working range
- Several DataLITE systems may be set up in the same working environment
- Available as a non-medical or certified medical device

More info: *www.biometricsltd.com/datalite*

Wireless Sensors

- Up to 16 DataLITE wireless sensors can be connected to any of the three interfaces
- Each sensor is individually battery operated offering the maximum isolation for both safety and performance
- DataLITE wireless communications uses a frequency-hopping scheme to minimize the effect of interference and multi-path signal cancellation
- Control of data sampling rate for each sensor

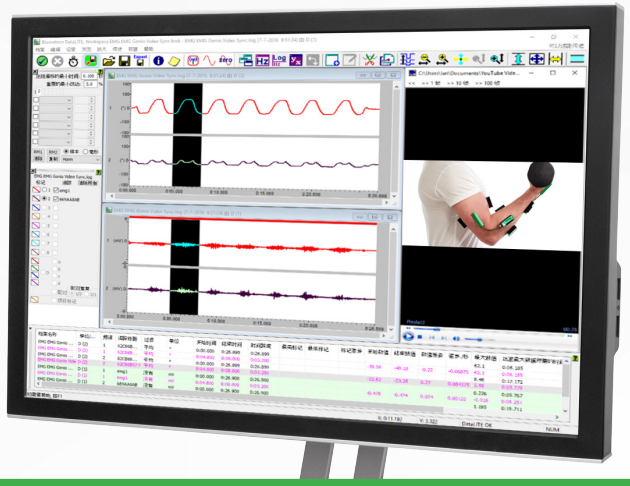
Electrogoniometers & Torsiometers

DataLITE wireless Electrogoniometers and Torsiometers are extremely robust, lightweight, flexible and can be comfortably worn undetected under clothing without hindering the actual movement of the joint.

Wireless Twin-axis Electrogoniometers are ideal for quick, simple, and accurate measurement of joint movements in multiple planes. Single-axis Torsiometers are designed for measurement of rotations in one plane e.g. forearm pronation/supination or neck axial rotation.

Contact Switches

Contact Switches plug into an Electrogoniometer and for example, by attaching the Electrogoniometer on the ankle, and the Contact Switches on the foot. It allows the researcher to co-ordinate the gait parameters with the dynamic movement of the ankle joint.



Surface EMG Sensor

The wireless surface EMG sensor provides superb quality of signal and ease of use. Small, lightweight with a bandwidth of 10-490 Hz, a built-in x1000 gain amplifier and user select-able sampling frequencies of 500Hz, 1000Hz or 2000Hz.

DataLITE EMG systems are available as 2, 4, 8 or 16 channel systems.

Accelerometer

The Accelerometer is a precision 3-axis wireless sensor to measure both dynamic acceleration (i.e. vibration) and static acceleration (i.e. gravity). With a range of ± 16G (± 156.91 m/s2), the sensor transmits data directly to the computer where it can be easily synchronized with angular data, EMG or other physiological measurements.

More info: *www.biometricsltd.com/sensors*

Hand Held Trigger Switch

The Hand Held Trigger Switch provides a very accurate method of synchronizing DataLITE with other systems, such as the Biometrics Ltd **DataLOG**, or 3rd party camera-based motion analysis systems.

Data collected using DataLITE can be very accurately synchronized with another data capture system by using the Trigger Switch. This provides timing signals that can be used to correct for small variations in start times and internal clocks between the different units used.

DataLITE Adaptor

The DataLITE Adaptor is inserted into the following devices that enables connectivity to an interface: Dynamometer, MyoMeter, Pinchmeter, ForcePlates and Load Cells. The various load/strength data collected may be synchronized real-time with other DataLITE sensors as part of a complete DataLITE system. Interfacing is effortless as all the precision calibration data is pre-programmed within the microprocessor-controlled units.

Dynamometer

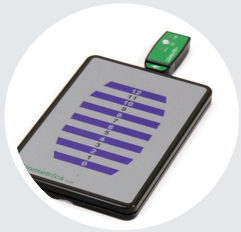
The Biometrics Dynamometer utilizes precision load cell technology to increase the sensitivity and accuracy of measurement of even very low grip strength forces. By using the industry standard design, researchers can compare with standardized normative data.

MyoMeter

The MyoMeter allows the user to quantify the force applied during Manual Muscle Testing - the evaluation of the function and strength of individual muscles and muscle groups based on effective performance of a movement in relation to the forces of gravity and manual resistance.

Pinchmeter

The unique design of the Biometrics electronic Pinchmeter has a low profile that enables the researcher to quantify pinch strength at closer to end range than any other device. Highly sensitive to accurately measure pinch strength across a wide variety of subjects.



ForcePlates

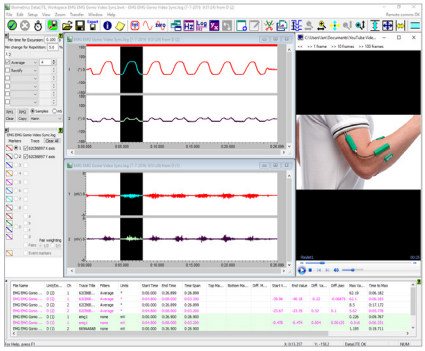
ForcePlates are focused to the needs of the researcher providing high precision, versatility and ease of use. Consisting of a sandwich of 2 uniform precision metal plates, with 4 Load Cells mounted between them, the vertical component of the total reaction force is measured independent of where it is applied over the surface of the plates.

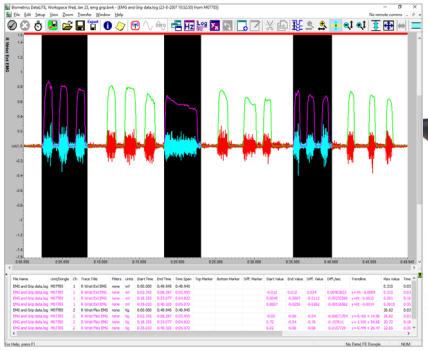
Load Cells (In-Line and S-Beam)

High precision **In-Line** range of Load Cells are used for tensile applications and may be used in any attitude. **S-Beam** range of Load Cells are designed for compression applications and may be used in-line or end mounted.

More info: *www.biometricsltd.com/sensors*

▼ *Biometrics Ltd DataLITE analysis software with video synchronization*





More info: *www.biometricsltd.com/analysis-software*

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Wireless Systems

DataLITE wireless systems range from small EMG or Electrogoniometer systems to comprehensive systems of multiple sensor variations which can be configured to suit end user requirements.

	PIONEER	EXPLORE	ADVANCE
Wireless System 0	**WS0**	**WSE0**	**WSA0**
1 x Interface 1 x Charging Adaptor 1 x Management Software 3 x Analogue & Digital Output Cables	DG2 CA2 v11 N/A	DLE1 CA2 v11 N/A	K2400 CA2 v11 R2000i

	PIONEER	EXPLORE	ADVANCE
Wireless System 1	**WS1**	**WSE1**	**WSA1**
1 x Interface 1 x Charging Adaptor 1 x Adaptor 1 x Management Software 3 x Analogue & Digital Output Cables	DG2 CA2 AD2 v11 N/A	DLE1 CA2 AD2 v11 N/A	K2400 CA2 AD2 v11 R2000i

2 Goniometer System	**WS200**	**WSE200**	**WSA200**
1 x Wireless System 0 (PIONEER, EXPLORE or ADVANCE), 2 x Goniometer (choice of size), 1 x Goniometer Tape			

2 EMG System	**WS250**	**WSE250**	**WSA250**
1 x Wireless System 0 (PIONEER, EXPLORE or ADVANCE), 2 x EMG, 1 x EMG Tape			

4 Goniometer System	**WS400**	**WSE400**	**WSA400**
1 x Wireless System 0 (PIONEER, EXPLORE or ADVANCE), 4 x Goniometer (choice of size), 1 x Goniometer Tape			

4 EMG System	**WS450**	**WSE450**	**WSA450**
1 x Wireless System 0 (PIONEER, EXPLORE or ADVANCE), 4 x EMG 1 x EMG Tape			

8 Goniometer System	**WS800**	**WSE800**	**WSA800**
1 x Wireless System 0 (PIONEER, EXPLORE or ADVANCE), 8 x Goniometer (choice of size), 1 x Goniometer Tape, 2 x Contact Switches, 1 x Analysis Software			

8 EMG System	**WS850**	**WSE850**	**WSA850**
1 x Wireless System 0 (PIONEER, EXPLORE or ADVANCE), 8 x EMG, 1 x EMG Tape, 1 x Analysis Software			

16 EMG System	**WS1650**	**WSE1650**	**WSA1650**
1 x Wireless System 0 (PIONEER, EXPLORE or ADVANCE), 16 x EMG, 1 x EMG Tape, 1 x Analysis Software, 1 x Charging Adaptor			

2 Goniometer, 2 EMG System	**WS900**	**WSE900**	**WSA900**
1 x Wireless System 0 (PIONEER, EXPLORE or ADVANCE), 2 x Goniometer (choice of size), 2 x EMG, 1 x Goniometer Tape, 1 x EMG Tape			

4 Goniometer, 4 EMG System	**WS950**	**WSE950**	**WSA950**
1 x Wireless System 0 (PIONEER, EXPLORE or ADVANCE), 4 x Goniometer (choice of size), 4 x EMG, 1 x Goniometer Tape, 1 x EMG Tape, 1 x Analysis Software			

8 Goniometer, 8 EMG System	**WS1800**	**WSE1800**	**WSA1800**
1 x Wireless System 0 (PIONEER, EXPLORE or ADVANCE), 1 x Charging Adaptor, 8 x Goniometer (choice of size), 8 x EMG, 1 x Goniometer Tape, 1 x EMG Tape, 2 x Contact Switches, 1 x Analysis Software			

More info: *www.biometricsltd.com/systems-wireless*

All DataLITE products come with a standard two-year warranty

ISO 13485:2016
EN ISO 13485:2016
Certificate no. GB05/66471

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