



Array of digital laboratory Lysimeters

Central recording and control system. The array can consist of 4 to 10 weighing Lysimeters. It automatically records every 10 minutes the net weight of each carrier (flowerpot or other type of carrier). It also automatically records the amount of leaching water. Each Lysimeter has an independent tare mechanism as well as its own leveling system.

Recording of soil Parameters

- ❖ Soil Moisture Sensors, up to 3 per Lysimeter
- ❖ Moisture and soil temperature sensors, up to 3 per Lysimeter
- ❖ Soil Moisture, Temperature and Conductivity Sensors, up to 3 per Lysimeter
- ❖ Soil water potential sensors, up to 3 per Lysimeter
- ❖ Leaf temperature IR sensors, up to 2 per Lysimeter

Recording of environmental parameters

- ❖ Air temperature
- ❖ Air humidity
- ❖ PAR
- ❖ Total solar radiation
- ❖ Air movement speed
- ❖ Leaf wetness simulation
- ❖ CO₂ changes
- ❖ Barometric pressure

Scientact LYS-01 *technical characteristics*

Weighting mechanism, 4 up to 10 units

Maximum weight (pot, soil, plant, irrigation water), up to 45 kg

Platform dimensions 30 X 30cm.

Support frame made of painted steel.

Weighing surface made of AISI 304 stainless steel..

It has a load cell with protection of IP 65.

The load cell is made of stainless steel.

Combined error $\leq \pm 0.02\%$.

Temperature effect to zero 0.0017% °C.

Temperature effect on calibration, 0.0014% °C.

Temperature range -10 °C / +40 °C

It has a mechanism for leveling the weighing surface.

It has a gyroscopic leveling level.

Each position will have a mechanism for measuring the amount of leaching.



Irrigation system

It can control completely independently (method and program) up to 4 treatments

It has 4 valves controlled by the data logger

Each valve can be controlled with the following ways:

- Time based (at regular intervals and for specific time)
- Based on the measurements of the sensors
 1. Measurements of one or a combination of sensors for the start
 2. Measurements of one or a combination of sensors for termination
 3. In the above case the user determines the time of repetition of the irrigation and the duration of each repetition
- Freely programmable conditions



Data logger and control unit

It has 12 differential voltage inputs, with selected area:

- +/- 20 mV
- +/-180 mV
- +/-1.4 V
- 0 – 2.5 V

The above can be used as single inputs, to wit 24 single input channels.

It can directly measure 24 sensors, specifically resistant sensors like thermistors etc.

It can directly measure 12 potentiometer sensors.

It can measure thermocouples of type J, K and T.

It has 2 digital channels for frequencies up to 30 KHz.

It has 2 digital channels for frequencies up to 100 Hz.



Scientact LYS-01 *technical characteristics*

Data logger and control unit

It has stabilized excitation sources of 3,5 and 12 V sensors.

It has the following recording options:

- ❖ Instant measurements,
- ❖ Statistics (average, maximum, minimum, constant)
- ❖ Total
- ❖ Integral,
- ❖ Wind direction
- ❖ Vector average
- ❖ Gust of wind
- ❖ Wind rose
- ❖ Recording under conditions

Selected recording rate from 1sec to 24h

Creating virtual channels

It has a 4 MB flash memory

It has two relays for control functions.

It can be expanded and accepted with another 4 relays.

Ability to control relays with the following ways:

- ❖ By programming simple limits
- ❖ Complex conditions
- ❖ Fully configurable scripts, calculated per programmable repetition rate
- ❖ In digital events
- ❖ Manually

The control parameters can be configured without disturbing the recording process.

It has an emulator that checks the programs, the control scripts, before the recording process starts.

Power supply with internal alkaline battery (with a duration of at least 100.000 measurements).

Accepts external power supply 12 V.

In sleep mode it consumes less than 60µA.

It has a port RS-232.

Many data loggers can work together as a chain.

Dimensions 225 x 185 x 75mm.

Weight 1 Kg.



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