MACView®

ETHYLENE POSTHARVEST PORTABLE ANALYSER

The concept for guaranteed control of fruit, vegetales, bulbs, trees, plants and tuberous plants

The product

The MAC*View*®-Ethylene Postharvest Portable Analyser is an extreme sensitive ethylene measurement device suitable for measurement of ethylene in postharvest storage rooms, and scrubbers. Levels arround 1 ppb resolution can be measured.

Postharvest monitoring

Ethylene (ISO-name ethene), is a plant hormone that is produced by trees, plants, vegetables, fruit, flowers and tulip bulbs. Several cultivars of these vegetations are extremely sensitive for the presence of ethylene in air. Ethylene cause a trigger of ripening and is thus a stress-hormone that can cause irreversible damage to the stored product. Monitoring of ethylene gives information about ethylene production. This information can prevent unexpected rising of ethylene levels that are higher then the harmfull level that a product can handle.

MAC*View*®-Ethylene Postharvest Fixed Analyser version:

The MAC*View*®-Ethylene Postharvest Analyser is a helpfull instrument that helps interpreting what has happened during the storage of your valuable product.

Applications

The markets that have direct advantage of the MAC*View*®-Ethylene Postharvest Analyser are fruit producers (growers), storage facilities, distributors, flower growers, greenhouse owners and research laboratories.

How to use

Most customers that use the MAC*View*®-Ethylene Postharvest Analyser says that the value of the instrument is that you can see what happens with the product and that you got the feeling with the process. You will see things that you have never seen before and can relate the change in quality with situations that occur. The portable analyser can be used in any place or circumstances you like. It has a probe that can be inserted in a CA or ULO cell. After the measurement is started up, the measurement will be done in 5 minutes. With a simple press on a button a measurement is started. If necessarry the analyser can run in continuous mode. So every 10 minutes, samples are taken and stored in the internal memory. This portable ethylene measurement let you know where ethylen is possible threaten your quality process. For example in storage cells for fruit, the ethylene can be reduced by scrubbing out the ethylene by filters. It gives on long term a better quality of fruit. An other application is ethylene dosing for potato storage. Dosing ethylene improves the quality of potatos. In several flower types very low levels of arround 50 ppb will damage the flowers. For example, roses or phalaenopsis are very sensitive, and any increase of ethylene must be avoided.

Control panel

The MAC*View*®-Ethylene Postharvest Portable Analyser is available in 2 measurement ranges: 0-5000 ppb and 0-500 ppm. In the 0-2000 ppb version it gives the measured values in number of ppb's (parts per billion) on the display. In the 0-500 ppm version it gives a minimum value of 0.1 ppm resolution. Data is logged in the analyser, where also date and time is stored. The complete menu has a intuitive control panel.

Connection to external control systems (CA / ULO)

This portable system is not suitable for a connection with external control systems. For this purpose we have a separate analyser which could be integrated for 24 hours continuous work. In most storage facilities there are control systems for Ultra Low Oxygen (ULO), Controlled Atmosphere (CA), ventilation or circulation systems. These control systems already measure oxygen (O2), and carbon dioxide (CO2). The MAC*View*®-Ethylene Postharvest Analyser has an extended range of possibilties for interconnection with these systems. In short can the control system send some pulses for: Start ethylene measurement, start zero measurement and start calibration. The analyser is then functioning as a slave machine and send back the measured values by the analog outputs.

The MAC*View*®-Ethylene Postharvest Portable Analyser is easy to use, easy to read-out, reliable and the best alternative for ethylene measurement in Controlled Atmosphere (CA) / Ultra Low Oxygen (ULO).

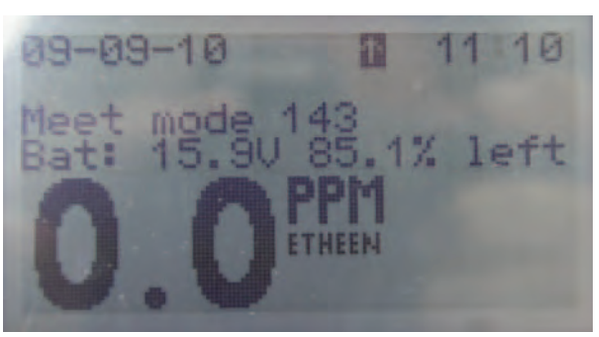
Computer / Database

Data / software

With the MAC*View*®-Ethylene Postharvest Portable Analyser data can be logged with date and time stamp. Approximately 6700 records can be logged and the internal rechargeable Lithium-Ion battery pack will work for 16 hours continuously. PC-software suitable for Windows 95, 98, Windows XP, Windows 2000 and Vista is enclosed with the analyser. The analyser and software are available in the languages: English, Dutch, German, Italian, Spanish and French. This gives a state of the art control to the system ready for immediate start!

Calibration

The MAC*View*®-Ethylene Postharvest Portable Analyser has an external option for an external low pressure gas bottle that contains calibration gas. The calibration interval can be determined by the user. With a calibration interval of 2 weeks, the calibration bottle can be used approximately 1 year.



Tests carried out by the WUR

The MAC*View*®-Ethylene Postharvest Portable Analyser is tested at important institutes in the Netherlands: The device is tested at the WUR in the Netherlands. (WUR = Wageningen University and Research). The WUR department PPO flowerbulbs and WUR department Agrotechnolgy Food Sciences Group (Postharvest Quality) tested the device. They tested our device against their GC and they concluded that the accuracy was better then the lowest accuracy they achieve with their existing GC. (Better then 10 ppb) The WUR also was looking for a good device to do research in practice at farmers locations for the measurement of very low ppb levels. It shows excellent results. The cross sensitivity is none to all common gases in normal air. For example apples emit very much arromates. None of these these aromates does have any effect on the measurement. Also variations like temperature, humidity, CO2 and O2 variations are tested and show all very good results.

With many thanks for all the tests and co-operation with the Wageningen University and Research (WUR) Netherlands.

PRAKTIJKONDERZOEK PLANT & OMGEVING WAGENINGEN UR

TECHNICAL SPECIFICATIONS

MAC*View*®-Ethylene Postharvest Portable Analyser

Type of instrument	**MAC*View*®-Ethylene Postharvest Portable Analyser, based on the electrochemcial nanogold sensor technology**
Versions available	**0-5000 ppb ethylene resolution 1 ppb max. inaccuracy ±0.3‰** **0-500 ppm resolution 0.1 ppm max. inaccuracy ±0.3 ‰**
Sample speed	**180-7200 seconds per cell (Start command by button or automatic programm)**
Inputs / outputs flow	**Combined Input1 / zero input / calibration input**
Material of housing	**Stainless steel IP62 rack mount housing**
Standards	**NEN-EN-IEC 61000-6-1 up to 4, CE**
Operation modes	**Measurements, dosing, standby, flushing or real-time measurement mode**
Signals / alarms	**ppb / ppm hysteresis adjustable on relays (programmable per function), status messages, power, failure**
Data collection	**By internal database with date time for 6700 records, software enclosed**
Service connection	**Serial RS 232 interface and RS485 interface**
Battery Pack	**Lithium-Ion (Can be charged while system is running)**
Charger	**External charger**
Supply	**110 - 230 VAC 75W**
Working temperature	**-10 + 50 degrees Celsius, relative humidity 5 - 99%, not condensed**
Software	**Included with graphs, tabels data and time, suitable for Windows 95, 98, Windows XP, Windows 2000 and Vista**
Languages	**Give up 2 languages at order: English, Dutch, German, Italian, Spanish, French**
Control panel	**Intuitive menu with graphical display and backlight**
Dimensions	**Case: W 431 x H 132 x d 273 mm, front: W 482 x H 135 d 40 mm**
Weight	**10 Kg.**
Options	**External calibration bottle for manual periodic calibration**

Sales and distribution:

EMS B.V.
Raiffeisenstraat 24
4697 CG SINT-ANNALAND
The Netherlands
www.ethyleen.com
info@ethyleen.com
Tel. +31 (0)166-657200
Fax. +31 (0)166-657210