



MACView[®]

ETHYLENE POSTHARVEST ANALYSER

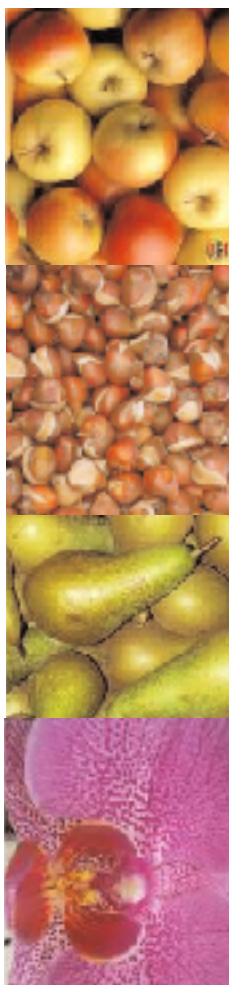
The concept for guaranteed storage of fruit, vegetables, bulbs, trees, plants and tuberous plants

The product

The MACView[®]-Ethylene Postharvest Analyser is an extreme sensitive ethylene measurement device suitable for measurement at storage rooms, scrubbers and portable field usage. Levels around 1 ppb resolution can easily be measured.

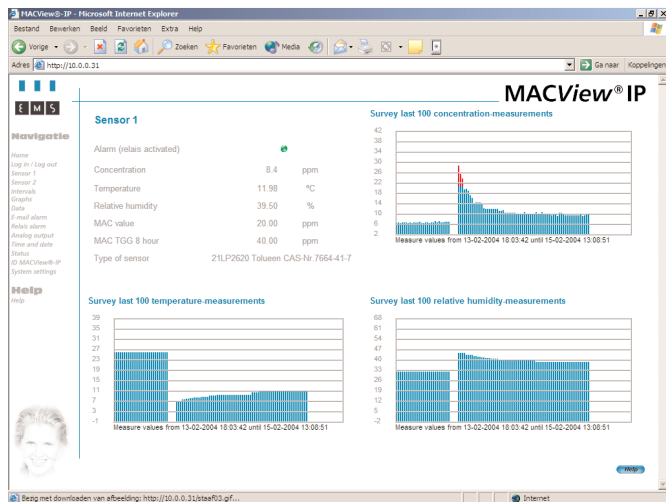
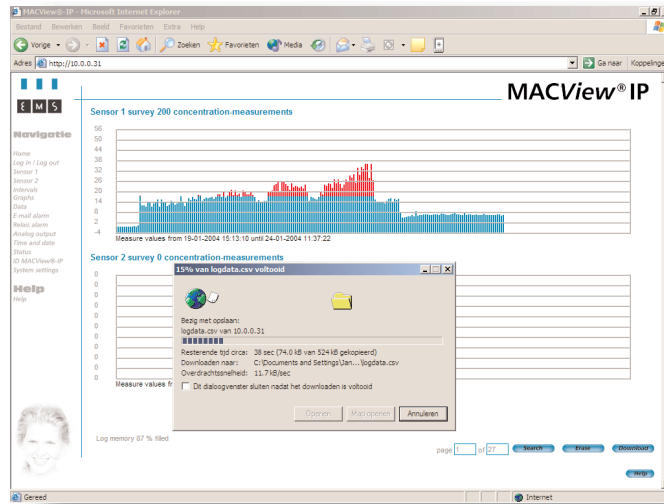
Postharvest monitoring

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 will prevent unexpected rising of ethylene levels that are higher then the harmful level that a product can handle. The MACView[®]-Ethylene Postharvest Analyser is a helpful instrument that helps interpreting what has happened during the storage of your valuable product.



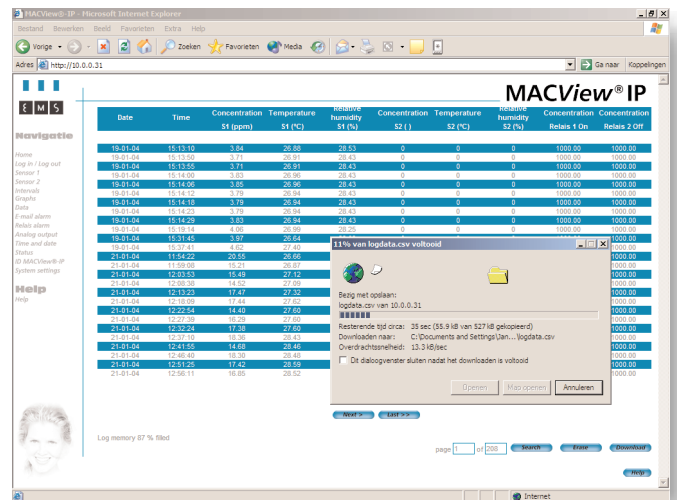
MACView®-Ethylene Postharvest Analyser screenshots:

Graphics and history



Actual status and last measured values

Ethylene values in tables and download option



Applications

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

How to use

Most customers that use the MACView®-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. To prevent rising ethylene, ventilation or scrubbing the ethylene is an important automatic coupling that can be made. Ethylene can be measured 24 hours a day and can be controlled by external (climate) computers. 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 applica-

tion is ethylene dosing for potato storage. Dosing ethylene improves the quality of potatoes. In several flower types very low levels of around 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 MACView®-Ethylene Postharvest Analyser gives the measured values in number of ppb's (parts per billion) on the display. This values can direct be compared with the maximum allowed concentrations. Data is logged in the analyser, where also date and time is stored. The complete menu has a intuitive control panel.

De MACView®-Ethylene Postharvest Analyser can be integrated to practically every climate control system, varying from greenhouse climate computers until Ultra Low Oxygen control systems for storage.



Computer / Database

Alarming

With the MACView®-Ethylene Postharvest Analyser an alarm can be send to external systems. The analyser contains as an option a TCP/IP connection with a HTML pages control interface. As output, all kinds of parameters can be selected. Relays, e-mail, scheduling alarms, alarm delay rates, alarm acceptance, logging interval etc. can be adjusted to personal settings. This gives a state of the art control to the system, even if there is no possibility for any connection of an external climate control computer.



Tests carried out by the WUR

The MACView®-Ethylene Postharvest 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 Agrotechnology 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 aromates. 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.



TECHNICAL SPECIFICATIONS

MACView®-Ethylene Postharvest Analyser

Type	MACView®-Ethylene Postharvest Analyser, based on the latest sensor technology
Type of sensors	Ethylene sensor and Actellic-detection for the detection and control possibilities to prevent damage of harmful gasses like actellic or formaline.
Interface to climate computers	4-20mA for ethylene signal, adjustable signal, potential free digital input for feedback from climate computer Choice for RS232 or RS485 connector
Material of housing	Stainless steel IP65
Standards	NEN-EN-IEC 61000-6-1 up to 4, CE
Operation modes	Measurements, dosing, standby or flushing
Signals / alarms	ppb hysteresis adjustable on relays (programmable per function) analog output 4-20mA (programmable per function), status messages, power, failure, Relais 1
Registration	Internal database with date and time for more then 6700 records, readout with enclosed software tool and cable via RS232 / RS485
Service connection	Serial RS 232 interface and RS485 interface
Supply	110 - 230 VAC 30W
Working temperature	-10 + 50 degrees Celsius, relative humidity 5 - 95%, not condensed
Software	Delivered with graphs, tabels data and time, suitable for Windows 95, 98, Windows XP, Windows 2000 and Vista
Control panel	Intuitive menu with graphical display and backlight
Dimensions	W 525 x H 250 x d 154 mm
Mounting	System can be mounted against floor or wall
Options	TCP/IP connection with internal HTML pages to control the system via networks or internet
Manufacturer	Environmental Monitoring Systems (EMS) BV

Sales and distribution:

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

