



# Trace Analyzer for water

Powered by German Hardware

## GreenMon Online-Analyser

The GreenMon is a fully automatic,  
wet-chemical multichannel online analyser.

It detects trace concentrations in fluids.

The operating interface is especially user-friendly.

### Features:

- New photometer technology with high stability allows trustworthy measurements at low trace levels
- Many functions are included in the standard version, eg. Cyclical self-calibration and dilution processes
- RS-232/RS-485, LAN, CAN-bus
- Intelligent event handling via SMS, Fax or E-Mail
- Communication via TCP/IP over LAN, (optional W-LAN, GSM, GPRS and UMTS)
- Comprehensive software products are offered for archiving (SQL database), programming, visualization and real-time representation
- Administration of operation and analysis data in a MYSQL databank with data interface for integration, interrogation and further analysis of the data
- Use of wet chemical methods (Ionometry, Colorimetry, ...)
- Fully automatic operation with self-monitoring
- Compact user-friendly construction with minimal maintenance expenditure
- Actuation and control (PID) of metering pumps, metering units, valves, analog and digital, PLC functionality
- Implementation of PCS functions e.g. connection of external sensors and control via external actuators and calculation of complex parameters
- SCADA option with Remote Display and Operation from a PC via cable, Intranet, Internet, GPRS or UMTS
- Easy maintenance due clear and easy setup and easy reachable parts.
- Color TFT touch Display with good readability

**GreenWorks Co., Ltd.**  
11F, No.1-23, Kuojian Rd.  
80672 Kaohsiung City  
Taiwan, R.O.C.

### Asia's Competence Center

Phone: +886 7 841 3105  
Fax: +886 7 811 8391  
E-mail: [greenworks33@gmail.com](mailto:greenworks33@gmail.com)  
Web: [www.green-works.com.tw](http://www.green-works.com.tw)





# GreenMon Fluoride ISE

following U.S. EPA 430.2C  
following TW EPA NIEA W413.52A

## GreenMon Fluoride ISE

Full automatic online analyzer for measuring medium concentrations in fluids according to wet chemical methods  
The Ionometric Fluoride version of the GreenMon system comprises the following equipment:  
Analyzer unit, control and measurement electronics in metal cabinet  
Number of probe channels: 1 (optional up to 6 Channels on request)

**Procedure :** Fluoride (following EPA Taiwan, NIEA W413.52A method)  
Range: 0 - 1 ppm to 0 - 1000 ppm (higher concentration with Dilution)

A Buffer (designed for the specific sample conditions) is added to the sample to adjust the pH and the Ion Strength.  
The Concentration is then measured with an Ion Selective Electrode on the basis of Lanthane fluoride crystal.  
Due to the adjustment of the pH the interference of OH-ions are eliminated.

### Typical performance data using aqueous standards:

**Test conditions: range 0 – 100,0 mg/L**

Minimal measuring time (at 20°F)

Interferences

Measurement accuracy

approx. 10 min

complexed fluoride are measured not completely,

Solid fluorides of the alkaline and earth metals group are not measured

± 5 % of range

### System description GreenMon:

- Optimal dilution rate programmable
- Integrated PC with Linux-based operating system
- Graphical user interface with interactive touch screen operation
- Full network capability via direct LAN connection
- All standard communications interfaces are supported CAN-Bus, LAN, Modem and RS232 or RS485
- Protocols Modbus TCP and Modbus serial, other on request
- (Profibus DP optional)
- Connection of additional sensors (e.g. pH, conductivity, O<sub>2</sub>, Turbidity, ISA spectrometer or other) is optional via the CAN-Bus §

**Modem:** The following modem types are optional available: UMTS, ISDN or Analog modem.

### Technical Details:

Power 110/220 VAC or 24V DC

Protection classification: IP 54 (optional IP65)

Dimensions (HxWxD): Analyzer cabinet: 800 x 600 x 350 mm

Optional: Reagent cabinet 350 x 600 x 400 mm

Optional if < 2 channels: Electronic cabinet 350 x 600 x 350 mm

Cabinet material: Aluminum or carbon steel (powder coated), optional SS 316

Sample pressure: 0 bar (max 0.05 bar overpressure)

Sample temperature: 10 ... 35°C

Sample flow rate: 2... 10 l/h, no suspended solids

Environmental temperature: 15 ... 35°C

Operating system: Embedded Linux

Power consumption (average): 45W

### Measurement, control inputs and digital outputs, Interfaces:

1x Ethernet (incl. MOD Bus)

1x RS232 or RS485 (incl. MOD Bus)

1x CAN bus (for connecting further GreenMon system modules for sensors and actuators)

1x modem slot for UMTS, ISDN or analog modem (modem optional)

### Actuators:

2x current output 4 - 20mA alternatively 0 - 10V

2x relays for alarm function

**GreenWorks Co., Ltd.**  
11F, No.1-23, Kuojian Rd.  
80672 Kaohsiung City  
Taiwan, R.O.C.

### Asia's Competence Center

Phone: +886 7 841 3105

Fax: +886 7 811 8391

E-mail: greenworks33@gmail.com

Web: www.green-works.com.tw

