



## GREENLINE 4000

Hand-held industrial combustion gas analyzer with 4 sensors

GreenLine 4000 is a flue gas analyzer that measures up to 4 gases: O<sub>2</sub>, CO, NO, SO<sub>2</sub> (pollution measurement) or C<sub>x</sub>H<sub>y</sub>. It accepts up to 10 different preloaded fuels. Further fuels can be added using GasConfig PC software.

## Description

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Several flue gas sampling probes are available, with different lengths and shapes, in order to meet all the requirements of the various applications. The sampling probe is connected to the instrument using a single or dual hose through a water trap and a suspended particle line filter.

GreenLine 4000 provides various additional functionalities available in option to enable comprehensive combustion gas analyses:

- Air and boiler surface temperature measurements, using specific probes
- Draft measurement
- Smoke index measurement, using the optional external hand pump
- Gas leak detection and location
- Ionization flame tester
- Gas velocity, using a Pitot tube adapted to the stack diameter and connected to the differential pressure ports
- CO ambient monitoring with sound and visual alarm, using an external probe
- Automatic CO sensor internal protection from high CO level by extension of the measuring range up to 10% CO

With gas and air temperature measurements combined to gas analysis, GreenLine 4000 will calculate the boiler efficiency, excess air and CO<sub>2</sub> concentration.

### Key features:

- Accepts **up to 4 gas sensors** in different ranges, from the basic O<sub>2</sub>, CO, NO, SO<sub>2</sub> or C<sub>x</sub>H<sub>y</sub>
- Measures up to 10 different fuels in standard. Other fuels can be added using GasConfig software
- Can store up to **250 analyses**
- DBGas 2004 software package allows the operator to easily manage all of the data & analysis information

## Specifications

Measured parameter	Range	Resolution	GreenLine 4000
O <sub>2</sub>	From 0 to 25% vol.	0.1%	EC
CO	From 0 to 8000 ppm	1 ppm	EC
CO	From 0 to 20000 ppm	1 ppm	EC
CO LOW	From 0 to 500 ppm	0.1 ppm	EC
CO	From 0 to 10%	0.01%	EC
CO <sub>2</sub>	From 0 to 99.9%	0.1%	Calc
NO	From 0 to 4000 ppm	1 ppm	EC
NO LOW	From 0 to 500 ppm	0.1 ppm	EC
NO <sub>x</sub>	From 0 to 4000 ppm	1 ppm	Calc
NO <sub>2</sub>	From 0 to 1000 ppm	1 ppm	EC
NO <sub>2</sub> LOW	From 0 to 100 ppm	0.1 ppm	EC
SO <sub>2</sub>	From 0 to 4000 ppm	1 ppm	EC
SO <sub>2</sub> LOW	From 0 to 500 ppm	0.1 ppm	EC
C <sub>x</sub> H <sub>y</sub>	From 0 to 5%	0.01%	Pellistore
Efficiency	From 1 to 99.9%	0.1%	Calc
Excess air	From 1 to infinite	0.01%	Calc
Delta P	±100 hPa	0.01 hPa	✓
T <sub>air</sub> /T <sub>gas</sub>	-10...100°C / 0...1000°C	0.1°C	Pt100 / T <sub>c</sub> K Calc

## Further features

Zero calibration	Automatic calibration procedure at instrument power-on. Fresh air inlet with electrovalve and separate pneumatic circuit
Self-diagnosis	Sensor efficiency test with diagnostic page
Ambiant CO monitoring	With an external probe
Gas level alarms	Programmable from PC with GasConfig software
Sampling pump	1.4 l/min - 100 mbar
Smoke measurement	Using the external manual pump
Printer	24 columns with 58 mm paper roll Autonomy: 40 reports with full battery

## General specifications

Size	115 x 90 x 330 mm
Weight	1.1 kg with battery and printer
Power supply	110/230 VAC (50/60 Hz)
Battery	Type: Rechargeable 7.2 Ah Battery life: 10 hours continuous use Charging time: 3 h at 90%
Communication ports	USB
Internal test memory	Up to 250 complete analysis data points structured by boiler

## Environmental specifications

Operating reference range	From -5°C to +45°C (up to 50°C for short time)
Storage temperature limits	From -20 to +60°C (3 months max. at temperatures exceeding the operational limits)

# Models and accessories

## Instrument:

**Ordering code structure: 7826 - A - B - CC - D - EEE - F - GGGGG - H / X**

*Please select the required options from tables A, B... below to define the right device reference.*

### **7826                      GreenLine 4000**

Standard delivery includes:

- Base unit with 2 sensors (O<sub>2</sub> + CO)
- Li-ION battery + charger module
- Draft and differential pressure measurement
- Internal impact printer
- Data memory & real time clock
- Configuration software GasConfig
- Data management software DBGas2004 Lite version
- USB adapter
- Leak test pressure decay program
- Factory test report
- Instruction manual
- Warranty: 1 year

#### **Table A - Sensor n°1**

1                      O<sub>2</sub> (0 - 25%)

#### **Table B - Sensor n°2**

2H                      CO (0 - 8,000 ppm) H<sub>2</sub> compensated + Dilution system

2X                      CO (0 - 20,000 ppm)

2Y                      CO (0 - 10%)

2LO                      CO (0 - 500 ppm / res. 0.1 ppm) + Dilution system

#### **Table C - Sensor n°3 and n°4 (2 choices mandatory)**

0                      None

4                      NO (0 - 4,000 ppm / res. 1 ppm) & NO<sub>x</sub> calculation (*sensor n°3 only*)

4LO                      NO (0 - 500 ppm / res. 0.1 ppm) & NO<sub>x</sub> calculation (*sensor n°3 only*)

5                      NO<sub>2</sub> (0 - 1000 ppm) (*sensor n°4 only*)

5LO                      NO<sub>2</sub> (0 - 100 ppm) (*sensor n°4 only*)

6                      SO<sub>2</sub> (0 - 4000 ppm) (*sensor n°4 only*)

6LO SO<sub>2</sub> (0 - 500 ppm) (*sensor n°4 only*)

8 C<sub>x</sub>H<sub>y</sub> (0 - 5%) (*sensor n°4 only*)

**Table D - Sample probes - including water trap and line filter (1 choice only)**

0 None

3 300 mm sampling dual hose probe BB610046 (Gas + Draft) - max 800°C

5D 750 mm sampling dual hose probe BB610080 (Gas + Draft) - max 800°C

F Sintered filter mounted on top of the probe, Ø8 mm - max 800°C

**Table E - Options (1 and 6 mandatory)**

1 Built-in impact printer

2H Kit for differential pressure measurement (double hose)

3 Leak test kit (pump + hose + adapters)

6 Electrovalve for autozero quick start-up

**Table F - Mains adapter / Charger (1 choice only)**

1 115 V (50/60 Hz) - USA plug

3 230 V (50/60 Hz) - UK plug

4 230 V (50/60 Hz) - European plug

5 100 V (50/60 Hz) - USA / Japan plug

**Table G - Accessories**

0 None

1 DBGas 2004 standard software

3 ABS rigid carrying case

3V Vinyl carrying case with shoulder strap

5 Pt100 remote air temperature sensor with 2 m cable and positioning cone

B Manual pump for smoke index measurements + 40 filters + table

E 300 mm Pitot probe for gas velocity measurement (BB610032)

**Table H - Calibration certificate**

1 Factory certificate (gas + pressure + temperature)

**Table X - Customization**

INTL English language - manual in English - English keyboard

USA English language - manual in English - English keyboard

FR French language - manual in French - French keyboard

HOL	Dutch language - manual in English - English keyboard
POL	Polish language - manual in English - English keyboard
SPA	Spanish language - manual in English - English keyboard
UK	English language - manual in English - English Kkeyboard

## Accessories:

### Probes and sensors:

BB610046	300 mm sampling dual hose probe BB610046 (Gas + Draft) - max 800°C
BB610080	750 mm sampling dual hose probe BB610080 (Gas + Draft) - max 800°C
BB830018	Pt100 remote air temperature sensor, with 2 m cable and positioning cone
BB830025	External probe for natural boiler draft (200 Pa)
BB610032	300 mm Pitot probe for gas velocity measurement
BB610033	700 mm Pitot probe for gas velocity measurement
BB610034	1000 mm Pitot probe for gas velocity measurement
F2132100	130 mm air TC K-type probe
F2137100	130 mm contact TC K-type probe
F2139000	Pipe Velcro TC K-type probe
F2139100	Tc K-type clamp temperature probe
F2139200	Pt100 clamp temperature probe
BB610057	3 m extension for dual hose probe and Tc
BB610103	6 m extension for dual hose probe and Tc

### Test tools and miscellaneous:

EE300088	Single hose pressure probe and burner hose kit
EE300248	Kit for detecting leaks in gas networks (pump + hose + adapters)
F7828000	Manual pump for smoke index measurements + 40 filters + table

### Software and connectors:

BB260166	DBGas 2004 standard software
EE700476	USB adaptator cable

### Transport cases and protections:

BB880028	ABS rigid carrying case
BB880043	Vinyl carrying case with shoulder strap
EE880047	Rubber holster with magnetic support

**Consumable parts:**

EE340005	Printer paper roll - <i>Minimum order of 10 pcs</i>
EE490002	Printer ribbon - <i>Minimum order of 3 pcs</i>
EE650011	Filter for soot (40 pieces per pack)
EE650074	Filter cartridge for EE650076 / EE 650082 water trap + filter - <i>Minimum order of 10 pcs</i>