



## GREENLINE 8000

Hand-held industrial combustion and  
emission gas analyzer with 9 EC  
sensors and 3 IR sensors

GreenLine 8000 industrial gas analyzer can measure up to 9 gases: O<sub>2</sub>, CO, NO, NO<sub>2</sub>, SO, C<sub>x</sub>H<sub>y</sub>, H<sub>2</sub>S with electrochemical sensors and CO<sub>2</sub>, C<sub>x</sub>H<sub>y</sub> and CO with NDIR sensors. It accepts up to 10 different preloaded fuels. Further fuels can be added using GasConfig PC software.

## Description

GreenLine 8000 industrial gas analyzer can measure up to 9 gases: O<sub>2</sub>, CO, NO, NO<sub>2</sub>, SO, C<sub>x</sub>H<sub>y</sub>, H<sub>2</sub>S with electrochemical sensors and CO<sub>2</sub>, C<sub>x</sub>H<sub>y</sub> and CO with NDIR sensors. It accepts up to 10 different preloaded fuels. Further fuels can be added using GasConfig PC software.

The gas analyzer is made of two parts communicating through Bluetooth protocol: the Main Control Unit (MCU) and the Remote Control Unit (RCU). The MCU takes in charge gas analysis while the RCU is used to display the measured data, store the analysis in its internal memory, print out any data using the built-in impact printer and transfer data to computer.

Several flue gas sampling probes are available, with different lengths, shapes and maximum operating temperatures, in order to meet all the requirements of various applications. An **optional heated industrial gas probe with heated hose** is recommended for long-term high temperature measurements to dry the flue gas and avoid dilution of NO<sub>2</sub> and SO<sub>2</sub>. A sintered pre-filter is suggested for severe and heavy applications.

GreenLine 8000 is equipped in standard with a **built-in water trap** that drains condensation moisture periodically out of the system with a peristaltic pump. An **internal gas conditioning system with cooler** prevents from gas dilution and water condensation along the hose caused by the temperature gap between the stack and the ambient temperature.

GreenLine 8000 with **LBH option** allows **total mass emissions** to be continuously calculated.

GreenLine 8000 provides various additional functionalities available in standard or in option to enable comprehensive combustion gas analysis:

- Flow measurement: Measuring the flow of gas extracted from the boiler and adjusting the pump in order to obtain a constant sampling volume
- Differential pressure measurement: Measuring pressure at the burner and checking stack draft
- Two 4-20 mA inputs
- Smoke index measurement: Checking the presence of soot in gas pipes behind the heat exchanger, with a manual smoke pump, smoke index reference table and paper filter.
- Gas velocity measurement, using a Pitot tube
- Gas leak detection, using a leak test kit

## Key features:

- Accepts **up to 9 gas sensors** in different ranges, from the basic O<sub>2</sub>, CO and NO to NO<sub>x</sub>, SO<sub>2</sub> and C<sub>x</sub>H<sub>y</sub>, either electrochemical or NDIR sensors.
- Measures up to 10 different fuels in standard. Other fuels can be added using GasConfig software.
- Can store up to **9,000 analyzis**
- DBGas 2004 software allows the operator to easily manage all of the data & analysis information.

## Specifications

Measured parameter	Range	Resolution	GreenLine 8000
O2	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	From 0 to 2500 ppm	1 ppm	NDIR
CO LOW	From 0 to 500 ppm	0.1 ppm	EC
CO	From 0 to 10%	0.01%	EC
CO2	From 0 to 99.9%	0.1%	Calc
CO2	From 0 to 20%	0.01%	NDIR
NO	From 0 to 4000 ppm	1 ppm	EC
NO LOW	From 0 to 500 ppm	0.1 ppm	EC
NOx	From 0 to 4000 ppm	1 ppm	Calc
NO2	From 0 to 1000 ppm	1 ppm	EC
NO2 LOW	From 0 to 100 ppm	0.1 ppm	EC
SO2	From 0 to 4000 ppm	1 ppm	EC
CxHy	From 0 to 5%	0.01%	Pellistore
CxHy	From 0 to 50000 ppm	1 ppm	NDIR
H2S	From 0 to 1000 ppm	1 ppm	EC
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	✓
Tair/Tgas	-10...100°C / 0...1000°C	0.1°C	Pt100 / Tc 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
Gas level alarms	Programmable from PC with GasConfig software
Sampling pump	2.2 l/min - 220 mbar with electronic flow controller
Smoke measurement	Using the heated probe or the optional external

	manual pump. Index memory store and printout capability as standard
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## General specifications

Size	MCU: 455 x 205 x 365 mm RCU: 115 x 90 x 330 mm
Weight	MCU: 10 kg RCU: 0.9 kg
Power supply	110 / 230 VAC (50/60 Hz)
Battery	Type: Rechargeable 7.2 Ah Battery life: 10 hours continuous use
Communication ports	RS 232 Bluetooth
Internal test memory	Up to 9,000 complete analysis data points structured by Tags

## 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: 7848 - A - B - C - D - E - F - G - H - L - M - NNNNN - P / X**

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

**7848WL          GreenLine 8000 Wireless (Bluetooth MCU/RCU)**

Standard delivery includes:

- Base unit with 3 sensors (O<sub>2</sub> + CO + NO/NO<sub>x</sub>)
- Remote module with MCU/RCU wireless / bluetooth communication
- Draft and differential pressure measurement
- Memory of 9,000 values
- Internal impact printer
- Battery charger module
- Data management software DBGas2004 standard version
- USB adapter
- Instruction manual
- Factory test report
- Warranty: 1 year

OR

**7848WLLBH      GreenLine 8000 Wireless (Bluetooth MCU/RCU)**

+ Ability to calculate total mass emission (requires industrial probe ref. 7852 with option 2LBH in table B)

**Table A - SENSOR No. 1**

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

**Table B - SENSOR No. 2**

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

2X                CO (0 - 20,000 ppm)

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

**Table C - SENSOR No. 3**

4                  NO (0 - 4,000 ppm / res. 1 ppm) & NO<sub>x</sub> calculation

4LO              NO (0 - 500 ppm / res. 0.1 ppm) & NO<sub>x</sub> calculation

**Table D - SENSOR No. 4**

0                  None

5                  NO<sub>2</sub> (0 - 1,000 ppm)

5LO NO<sub>2</sub> (0 - 100 ppm)

8 C<sub>x</sub>H<sub>y</sub> (0 - 5%)

**Table E - SENSOR No. 5**

0 None

6 SO<sub>2</sub> (0 - 4,000 ppm)

8 C<sub>x</sub>H<sub>y</sub> (0 - 5%)

**Table F - SENSOR No. 6**

0 None

7 CO% (0 - 10%)

8 C<sub>x</sub>H<sub>y</sub> (0 - 5%)

9 H<sub>2</sub>S (0 - 1,000 ppm)

**Table G - SENSOR No. 7**

0 None

A CO<sub>2</sub>% (0 - 20%) NDIR sensor

**Table H - SENSORS No. 8 and No. 9** (*requires CO<sub>2</sub>% IR in table G, 2 choices mandatory*)

0 None

B C<sub>x</sub>H<sub>y</sub> (0 - 50,000 ppm) NDIR sensor

E CO% (0 - 15%) NDIR sensor

F CO% (0 - 2,500 ppm) NDIR sensor

**Table L - Sample probes (1 choice only)**

0 None

1 Ø8 / 300 mm gas + draft probe (dual hose)

2P Ø10 / 750 mm gas + draft probe (dual hose) removable tip

3P Ø10 / 1500 mm gas + draft probe (dual hose) removable tip

2SP Ø10 / 750 mm heated\* gas + draft probe (dual hose) removable tip

3SP Ø10 / 1500 mm heated\* gas + draft probe (dual hose) removable tip

F10 Sintered filter for 2, 3, S & P probes Ø10 mm

\* Heated gas probe used for smoke index measurement

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

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

2 230 V (50/60 Hz) - Schuko 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 N - Accessories**

0	None
2	300 mm Pitot tube
3	750 mm Pitot tube
4	Pt100 remote air sensor + positioning cone (with 2 m cable)

**Table P - Calibration certificate**

1	Factory certificate (gas + pressure + temperature)
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**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 Keyboard

**Industrial probe for GreenLine 8000:**

**Ordering code structure: 7852 - A - B - C - O - E - F**

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

**7852 Industrial probe for GreenLine 8000**

For long term measurement of NO<sub>2</sub> / SO<sub>2</sub>

**Table A - Probe handle**

2	Heated handle probe with pneumatic connector
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**Table B - Probe tip**

2	Ø8 / 750 mm tip (max. 800°C)
3	Ø8 / 1500 mm tip (max. 800°C)
8	Ø35 / 750 mm tip (max. 800°C) with built-in Pitot type S tube
F	Sinterized filter mounted on top of probe Ø8 mm

**Table C - Probe hose**



4	Heated hose 2 m - power supply 230 VAC
4A	Heated hose 2 m - power supply 115 VAC
5	Heated hose 3 m - power supply 230 VAC
5A	Heated hose 3 m - power supply 115 VAC

#### **Table E - Fixing**

0	None
2	Fixing flange

#### **Table F - Probe bag**

0	None
1	Probe carrying bag with shoulder strap

## Accessories:

### **Probes and sensors:**

BB830006	Pt100 remote air sensor + positioning cone (with 2 m cable)
BB830025	External probe for natural boiler draft (200 Pa)
BB610032	Pitot tube 300 mm
BB610033	Pitot tube 800 mm
BB610034	Pitot tube 1000 mm
EE610106	Ø8 / 300 mm tip (max. 800°C)
EE610105	Ø8 / 750 mm tip (max. 800°C)
EE610015	Ø8 / 1000 mm tip (max. 800°C)
EE610104	Ø8 / 1500 mm tip (max. 800°C)
EE610098	Ø10 / 300 mm tip (P option)
EE610102	Ø10 / 750 mm tip (P option)
EE610029	Ø10 / 1000 mm tip (P or SP option)
EE610100	Ø10 / 1500 mm tip (P option)
BB610058	Ø8 / 300 mm gas or draft probe (dual hose)
BB610066	Ø10 / 750 mm gas + draft probe (dual hose) removable tip
BB610067	Ø10 / 1500 mm gas + draft probe (dual hose) removable tip
BB610068	Ø10 / 750 mm heated gas + draft probe (dual hose) removable tip
BB610069	Ø10 / 1500 mm heated gas + draft probe (dual hose) removable tip
F2132100	130 mm air TC K-type probe

F2137100	130 mm contact TC K-type probe
F2139000	Pipe Velcro TC K-type probe
Consult us	3 m extension for dual hose probe and Tc
Consult us	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
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**Consumable parts:**

EE340005	Printer paper roll - <i>Minimum order of 10 pcs</i>
EE490002	Printer ribbon - <i>Minimum order of 3 pcs</i>
EE650072	Line and autozero filter cartridge - <i>Minimum order of 10 pcs</i>
EE650073	NOx / SOx filter cartridge - <i>Minimum order of 10 pcs</i>
EE650074	Filter cartridge for EE650076 / EE 650082 water trap + filter <i>Minimum order of 10 pcs</i>
EE650091	Quartz filter for heated head probe - <i>Minimum order of 3 pcs</i>
EE650099	Sintered filter for Ø10 mm tip
EE650100	Sintered filter for Ø8 mm tip

**Packing information:**

Size: Main Control Unit: 455 x 205 x 365 mm  
Hand-Held Remote Control Unit: 115 x 90 x 330 mm

Weight: Main Control Unit: 10 kg  
Hand-Held Remote Control Unit: 0.9 kg