



# GEM™ 5000

PORTABLE GAS  
ANALYZER  
INSTRUMENTATION

PATENT #8,021,612

- ▼ SIX TIMES MORE ACCURATE
- ▼ ANNUAL RECOMMENDED FACTORY SERVICE
- ▼ AVAILABLE WITH GPS AND ADDITIONAL GAS DETECTION

## THE NEXT GENERATION OF GEM™ INSTRUMENT

The GEM™ 5000 is designed specifically for use on landfills to monitor Landfill Gas (LFG) Collection & Control Systems. The GEM™ 5000 samples and analyzes the methane, carbon dioxide and oxygen content of landfill gas with options for additional analysis.



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## ▼ FEATURES

- ◆ Measures % CH<sub>4</sub>, CO<sub>2</sub> and O<sub>2</sub> Volume, static pressure and differential pressure
- ◆ Calculates balance gas, flow (SCFM) and calorific value
- ◆ CO and H<sub>2</sub>S (on Plus models only)
- ◆ High Accuracy and Fast Response Time
- ◆ Lighter and More Compact
- ◆ Certified intrinsically safe for landfill use
- ◆ Annual recommended factory service
- ◆ Calibrated to ISO/IEC 17025
- ◆ 3 year warranty with optional service plan

## ▼ APPLICATIONS

- ◆ Landfill Gas Collection & Control Systems
- ◆ Environmental Compliance
- ◆ Landfill Gas to Energy
- ◆ Subsurface Migration Probes

## ▼ KEY BENEFITS

- ◆ Designed specifically for use on landfills to monitor landfill gas (LFG) extraction systems, flares, and migration control systems
- ◆ No need to take more than one instrument to site
- ◆ Can be used for monitoring subsurface migration probes and for measuring gas composition, pressure and flow in gas extraction systems
- ◆ The user is able to set up comments and questions to record information at site and at each sample point
- ◆ Ensures consistent collection of data for better analysis
- ◆ Streamlined user experience reduces operational times

## ▼ TECHNICAL SPECIFICATION

### GAS RANGES

Gases Measured	CH <sub>4</sub>	By dual wavelength infrared cell with reference channel		
	CO <sub>2</sub>	By dual wavelength infrared cell with reference channel		
	O <sub>2</sub>	By internal electrochemical cell		
	CO	By internal electrochemical cell		
	H <sub>2</sub> S	By internal electrochemical cell		
Ranges	CH <sub>4</sub>	0-100% (vol)		
	CO <sub>2</sub>	0-100% (vol)		
	O <sub>2</sub>	0-25% (vol)		
	CO	0-2000ppm***		
	H <sub>2</sub> S	0-500ppm***		
Gas Accuracy*	CH <sub>4</sub>	0-5% ± 0.3% (vol)	0-70% ± 0.5% (vol)	70-100% ± 1.5% FS
	CO <sub>2</sub>	0-5% ± 0.3% (vol)	0-60% ± 0.5% (vol)	60-100% ± 1.5% FS
	O <sub>2</sub>	0-25% ± 1.0% (vol)		
	CO(H <sub>2</sub> )**	0-2000ppm ± 2.0% FS		
	H <sub>2</sub> S	0-500ppm ± 2.0% FS		

\* Typical accuracy after calibration as recommended in the operations manual.

\*\*Hydrogen compensated Carbon Monoxide measurement.

\*\*\*Additional ranges available, contact LANDTEC for more information.

### OTHER PARAMETERS

	Unit	Resolution	Comments
Energy	BTU/hr	1000 BTU/hr	Calculated from specific parameters
Static Pressure	in. H <sub>2</sub> O	0.01 in. H <sub>2</sub> O	Direct Measurement
Differential Pressure	in. H <sub>2</sub> O	0.001 in. H <sub>2</sub> O	Direct Measurement
Temperature Accuracy	°F	0.1	±1 (Range -58°F to 482°F)

Important Note: The information in this document is correct at the time of generation. We do, however, reserve the right to change the specification without prior notice as a result of continuing development.

### PUMP

Flow	Typically 550cc/min
Flow with 80 in. H <sub>2</sub> O vacuum	Approximately 80cc/min

### ENVIRONMENTAL CONDITIONS

Operating Temperature Range	14°F – 122°F (-10°C to +50°C)
Operating Pressure	-100 in. H <sub>2</sub> O, +100 in. H <sub>2</sub> O (-250mbar, +250mbar)
Relative Humidity	0-95% non condensing
Barometric Pressure	± 14.7 in.Hg (±500mbar) from calibration pressure
Barometric Pressure Accuracy	± 1% typically

### POWER SUPPLY

Battery Life	Typical use 8 hours from fully charged
Charge Time	Approximately 4 hours from complete discharge

### CERTIFICATION RATING

ATEX	II 2G Ex ib IIA T1 Gb (Ta= -10°C to +50°C)
ISO17025	ISO/IEC17025:2005 Accreditation #66916
CSA	Ex ib IIA T1 (Ta= -10°C to +50°C) (Canada), AEx ib IIA T1 (Ta= -10°C to +50°C) USA



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