

# GEM<sup>™</sup>5000

PORTABLEGAS ANALYZER INSTRUMENTATION PATENT #8,021,612



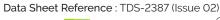


- SIX TIMES MORE ACCURATE
- ANNUAL RECOMMENDED FACTORY SERVICE
- AVAILABLE WITH GPS AND ADDITIONAL GAS DETECTION

## 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.



















#### **▼ 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

### **VKEY 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
- 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	
Guses Micusureu	7 -7	
	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)
	02	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>	$0-5\% \pm 0.3\%$ (vol) $0-60\% \pm 0.5\%$ (vol) $60-100\% \pm 1.5\%$ FS
	02	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

<sup>\*</sup> Typical accuracy after calibration as recommended in the operations manual.

#### 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
<b>Differential Pressure</b>	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. H2O 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**

В	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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<sup>\*\*</sup>Hydrogen compensated Carbon Monoxide measurement.

<sup>\*\*\*</sup>Additional ranges available, contact LANDTEC for more information.