QED™ GEM® PRO

LANDFILL GAS ANALYZER

PROFESSIONAL LANDFILL GAS MANAGEMENT WITH INTELLIGENT MODULAR DESIGN

QED GEM instruments are designed to stay in the field and on the job longer. Featuring QED's unique PRO Series intelligent modular architecture, GEM PRO users can replace or add gas modules in the field. A high-definition touch screen display makes user interface easier, reducing fatigue and potential errors.

FEATURES

- Pre-calibrated sensor modules
- Select from 1 to 7 gases measured
- 8-10 hours battery life under normal use
- Records static, differential and system pressures
- Calculates gas flow and heat value
- Live addition of well IDs in the field
- GPS location recording and tagging
- Hydrogen compensated CO measurement
- Field replaceable battery pack
- Utilizes GAMSoft software
- Zone 1 hazardous area certification
- 3-year warranty

BENEFITS

- Eliminates the need for back-to-base calibration or annual service
- Sensor modules have individual calibration certificates, keeping you in compliance
- Configuration can be changed by user in the field, making it easy to match changing monitoring requirements without factory service
- Eliminates downtime for battery charging, increasing your productivity
- Accurate balancing of gas field with maximized LFG output from site

QED Environmental Systems Inc.
2355 Bishop Circle West Dexter, MI 48130, USA

info@qedenv.com 800.624.2026 734.995.2547

WWW.QEDENV.COM

sales@qedenv.co.uk +44 (0) 333 800 0088

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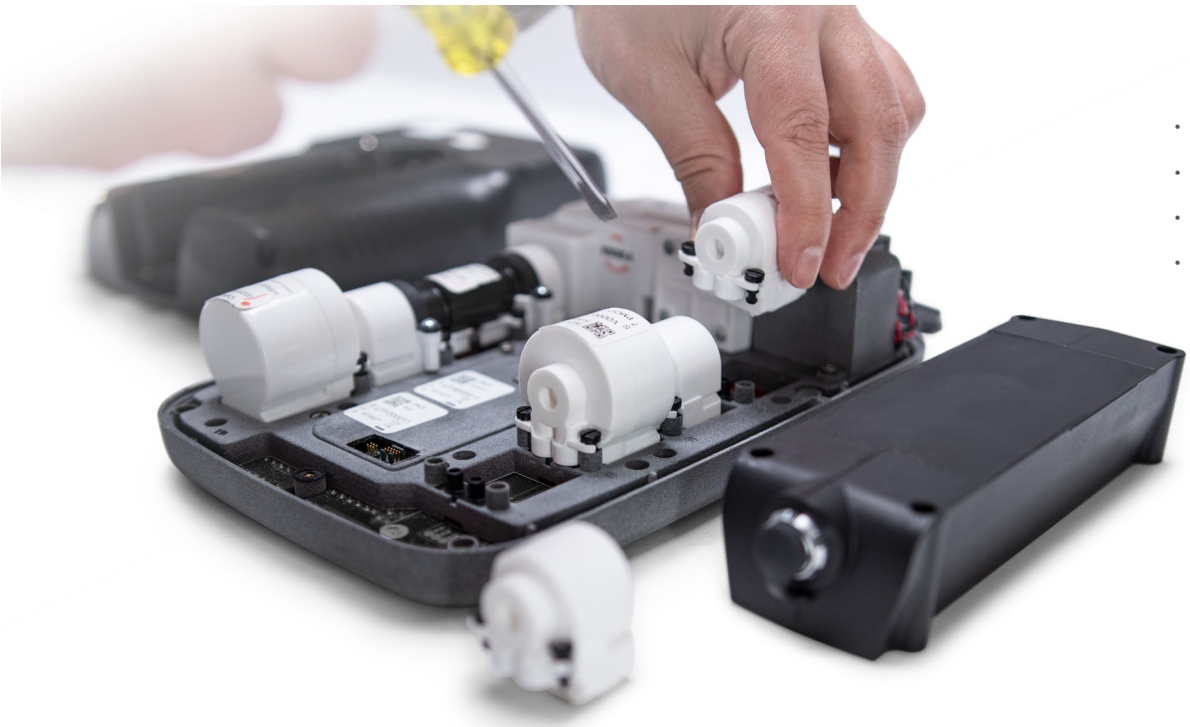
GEM® PRO

Intelligent, factory calibrated and user replaceable modules for the measurement of gas or pressure



- Completely configurable
- Completely scalable
- Completely user-upgradeable
- Completely user-maintainable

GEM PRO instruments with modular architecture give users complete control of instrument

- Gas and pressure modules are designed to be serviced by the customer, and fully supported with factory inventory
- Pre-calibrated replacement modules come from QED ready to be installed
- Replacement gas cells arrive with a certificate of calibration, maintaining compliance
- The GEM PRO can be converted to any other configuration (up to seven gases) in the field
- Affinity wireless communications module allows for Bluetooth connection between the GEM PRO and temperature probe and anemometer
- Long battery life and field swappable battery capability means less interruption for recharging with optional spare battery pack

GAMSoft™ Control and Compliance Software

GAMSoft is a single software package which manages data collection and reporting

- Proprietary gas extraction management software
- Report generation for compliance
- Upload existing field data to new software to speed up adoption
- Interfaces with GEM PRO via WIFI or Bluetooth for fast and secure data updates
- Secure data stream uploads to customer database and allows enterprise specific security protocols to be applied as required by users
- Over the air firmware updates support keeping the new GEM PRO in the field where it belongs
- Manage instrument module configuration

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TECHNICAL SPECIFICATIONS

POWER SUPPLY						
Battery Type	Rechargeable nickel metal hydride battery pack (user replaceable in Zone 1 hazardous areas)					
Battery Life	Typical use 8-10 hours from full charge					
Battery Charger	Battery charger power 100-240V AC, Battery packs can be charged separately from the instrument					
Charge Time	Approximately 3 hours from complete discharge to full charge					
GAS RANGES						
Gases measured	**Gas**	**Sensor**	**Range**	**Typical Accuracy***	**Resolution**	**T90**
	CH4	NDIR	0- 100%	± 0.5% (0-70%) Volume	0.1%	≤ 10 seconds
				± 1.5% (70-100%) Volume		
	CH4 & CO2	Dual NDIR	0- 100%	± 0.5% (0-70%) Volume		
				± 1.5% (70-100%) Volume		
			0- 100%	± 0.5% (0-60%) Volume		
				± 1.5% (60-100%) Volume		
	O2	Electrochemical Cell	0- 21%	± 0.3% Volume	0.1%	≤ 20 seconds
	H2S		0- 50 ppm	± 1.5% range	0.1 ppm	≤ 30 seconds
	H2S		0- 200 ppm	± 2.0% range	1 ppm	
	H2S		0- 500 ppm	± 2.0% range	1 ppm	
	H2S		0- 1,000 ppm	± 2.0% range	1 ppm	
	H2S		0- 5,000 ppm	± 2.0% range	1 ppm	
	H2S		0- 10,000 ppm	± 5.0% range	2 ppm	
	H2S		0- 40,000 ppm	± 5.0% range	5 ppm	
	CO		0- 500 ppm	± 2.0% range	1 ppm	
	CO		0- 1,000 ppm	± 2.0% range	1 ppm	
	CO		0- 2,000 ppm	± 2.0% range	1 ppm	
	CO(H2)**		0- 2,000 ppm	± 1.0% range	1 ppm	
	H2		0- 1,000 ppm	± 2.5% range	1 ppm	≤ 90 seconds
	NH3		0- 1,000 ppm	± 10.0% range	1 ppm	
***Typical Accuracy**	All accuracies quoted are after calibration plus accuracy of calibration gas used					
****Hydrogen compensated carbon monoxide**	Hydrogen cross gas effect on carbon monoxide approximately 1% Do not use where hydrogen is in excess of 10,000ppm					

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TECHNICAL SPECIFICATIONS CONTINUED

PUMP		
Flow	550ml/min typically	
Flow Fail Point	-100 to-375 mbar vacuum- user settable	
Maximum Vacuum Restart	-375 mbar approximately with flow rate of approx 200 ml/min	
FACILITIES		
Temperature measurement / accuracy *	-10°C to 100°C (14°F to 212 °F) with optional probe / ±0.5°C (1°F)	
Flow (anemometer) accuracy *	0.7 to 40 m/s / ±1.0% full scale plus ±3.0% reading	
Alarms and targets	User defined alarm and target levels through GAMSoft	
Communications	WIFI or Bluetooth to GAMSoft and Affinity	
Relative pressure measurement / accuracy	±500 mbar / ±4 mbar to ±15 mbar max (should be zeroed before reading)	
Barometric pressure measurement / accuracy	500 to 1500 mbar / ±5 mbar accuracy	
GPS sensor	Location and positioning	
Memory	2,000 IDs, 4,000 readings	
ENVIRONMENT CONDITIONS		
Ambient Range	700 to 1200 mbar /-10º C to +45º C (15° F to 120°F)	
Relative Humidity	0-95% non-condensing	
IP rating	IP65	
PHYSICAL		
Case material	High impact ABS composite with rubber over-molding	260 x 170 x 65mm / 1.9 kg
Display	HD 5” touchscreen LCD (1280 x 720 pixels)	
Gas sample filters	Internal user changeable 2.0µm PTFE moisture and dust filter	
AFFINITY WIRELESS COMMUNICATOR		
Case Material	High impact ABS composite (124 x 74 x 30mm)	
Ambient Range	-10°C to +50°C	
Relative Humidity	0- 95% non-condensing	
IP Rating	IP65	
Commmunications	Bluetooth to PRO Series	
Compatible with	Temperature probe, Anemometer	
Battery Type	Only use 2 x AA Type Energizer L91 batteries	
Battery Life	Approx. 10 days, based on 8-hours per day	
UKEX / ATEX / IECEx	Ex ib IIA T1 Gb (Ta =-10°C to +50°C)	
North America	CLASS 1, ZONE 1, AEx ib IIA T1 (Ta =-10°C to +50°C)	
CERTIFICATION RATING		
UKEX / ATEX / IECEx	Ex ib IIA T1 Gb (Ta =-10°C to +45°C)	
SGS	CLASS 1, ZONE 1, AEx ib IIA T1 (Ta=-10°C to +45°C) (USA) CLASS 1, ZONE 1, Ex ib IIA T1 (Ta=-10°C to +45°C) (Canada)	

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