



Portable Gas Analyzer
Model:pGas4820 (TDLAs NIR Spectroscopy)

Portable Industry Gas Analyzer

Ref: H-LGA4820_VOCs_IntE

Version:2005-02-03

Date:October 26, 2005

Information: http://www.fullsense.com/Products/Gas/Portable/H-LGA4820_VOC_DS_E.pdf

- High selectivity from gases mixture is expected, None of interferences of water vapor
- More gases detection is supported
- Dissolved gas detect is supported with DGA software
- Intelligent Analysis Based on Powerful CPU
- Rapid Test in Seconds
- Sub-ppm or ppm detection of over 120 gases
- 100 frame Data log
- LCD 8x20 Display, Backlight Available
- RS232/485 Communication
- Full Function Keypad Operation
- Memo Driven Software, Easy to use; easy to train new operators
- Lightweight and easily portable
- Long life sensor designed
- Free of maintenance
- Versatile and up-gradable to suit your needs(Spectral Scanning upgrade permits collection of spectral fingerprint of unknowns, for further in-depth analysis and identification)
- ISO 14000 / ISO 14001 ENVIRONMENTAL MANAGEMENT Analyzer

Special designed for gas detection in complex background mixture. L22 is cling to sensitive to more inorganic gases, L23 is trended to be more sensitive to organic gases. Both can detect most gases however.

Applications:

- Industry gas analysis.
- Leak Detection for process maintenance
- Groundwater and soil contamination assessment
- Tanker loading emissions monitoring
- Occupational hygiene analysis
- Detection of leaks from storage facilities
- Vehicle emissions
- Stack Emissions Monitoring
- Odor investigations and Effluvium Detect
- Assessment and quantification of indoor air quality
- Indoor Air Quality Studies
- Occupational Air Quality
- Light hydrocarbons and combustion products
- Industrial Hygiene, Real-time detection of vapors in job environments promotes safe work habits.
- Waste Anesthetic Gases. Service technicians can identify leaks on anesthetic delivery systems by using the
- Emergency Response Analysis
- Fume Hood/Tracer Gas Analysis
When the handling of toxic substances is performed in fume hoods, worker safety can be jeopardized. The
- Air contaminants detection of scuba diving tank, nuke.
- Air contaminants detection of aerostat.
- War fairs, chemical agents, bio agents detection
- Public safety monitor, explosive and hazardous materials detection



Instrumental Functions

- 2x16 LCD Display, with backlight
- RS232/RS485 serial port. Supporting STIMcom / Modbus communication, and printer; USB support in new version
- Non-volatile memory supported data store and read out, or output to computer
- Built-in Sampling pump included, and suitable sample pre-process assembly
- Built-in alarm include LED flash, LCD indication, and Beep; Alarm limit setup supported, default to TWIN standard
- System diagnostic
 - Protection against accidental turn-off
 - Over-range protection for all installed sensors
- User complete calibration, zero-adjust and essential data setup support
- Interfering gas compensation select
- Basal humidity and temperature detected for compensation and controlled for normal test. Over limit alarm support
- Rechargeable batteries to provide 10 hours of continuous operation
- 12-15 V DC charger. Local AC to DC adapter supported
- Basal intrinsically safe system, except parts of pump and heater. Special order for class 1 div. 1, groups a, b, c and d and class 2 div. 1, groups e, f and g for use in hazardous areas recommended.

Specifications

Electronic unit: BD5, ADC resolution: 1ppm

Protection against electromagnetic and radio frequencies interference

Maintenance interval: Recommended every 3 months (no consumables needed)

Calibration: In situ with flow through cell, or in separate calibration device,

Identification set by high pure gas only.

Storage or standby would not decay the system. Long life supported.

Detector Type	Single beam near infrared spectrophotometer
Optics	Bandwidth: 0.1 to 0.001nm; Refer to Laser list
Dynamic range:	General 1000 to 100000 :1
Accuracy:	2% of reading or LDL whichever is great
Pump Flow Rate	1-15 liters/ minute
Analysis Time	1-20s;
Alarms	User Definable
Readout	2 line x 16 character LCD
Start up:	3mins
Response Time	T90:1-10 seconds to 90% of final reading
Optical Path length (OPL)	OPL1: 0.5m to 1.00m OPL10: 10m
Sample Cell Volume	1.0 liters
Instrument span drift:	< 4% of measuring range between maintenance intervals
Instrument zero drift:	Negligible (<2% of measuring range between maintenance intervals)
Sampling pressure:	Atmosphere \pm 20% (Standard sampling condition)
Sampling temperature:	-10 °C to 50 °C(Standard sampling condition)
Battery	Internal, rechargeable NiCd. 12V nominal; 2 Ah Capacity. Recharge time 4 to 8 hours Continuous running time: >24Hr/ each charge; Standby time: 7 days
Output	0-2.5Vdc, Serial RS232 or RS485
Dimensions	Analyzer: 98W×180H×35T (mm) Sensor: 500mm x \varnothing 50mm;Mass 1 kg
Intrinsic Safety	User specified models are certified for CENELEC, Groups IIC, Zone 1 and 2

Certifications ETL (Class I, Div 1, Groups B, C, & D, Temperature Class T4; ETL-C (Class I, Div. 1, Groups, B, C, & D, Temperature Class T4); CENELEC (EEx ib d IIB + H2 T4)

Environment Requirements:

Environmental Humidity:

Operating:0 to 100% RH, non-condensing

Storage:0 to 90% RH, non-condensing

Environmental Temperature Range:

N:Operating -10 °C to 50 °C

N:Storage -40 °C to 70 °C

H-LGA4820-VOCs Series Products

Model	Professional	Specifications	Application
L22-06M	Industry Organic Vapor	Defined by industry	Industry Gas Analysis
L23-06M	Analyzer	10ppm-10% Vol; LDL<10ppm for most gases 1 specified gases calibration in plant;	
L22-10M	Toxic Organic Vapor	0.01-100ppm	Environ analysis
L23-10M	Analyzer	LDL<0.1ppm for most gases; 1 specified gases calibration in plant;	Safety protection Gas leakage detector; Environ monitoring

*for difficulty to keep standard gases for rare contaminants. Only calibrations sum gases would be verified for the special instruments. If user has more requirements, it would be extra charged.

Gas Sensitive Information

Gases	Molecule	L22	L23
Acetylene	C ₂ H ₂	m	m
Allene	CH ₂ CCH ₂	m	m
Ammonia	NH ₃	m	m
Benzene		m-	m-
Butadiyne	C ₄ H ₂	w	w
Butene	CH ₂ CHCH ₂ CH ₃	m	m
Carbon dioxide	CO ₂	m	m
Carbon disulfide	CS ₂	w	w
Carbon monoxide	CO	m	m
Carbon tetrachloride	CCl ₄	w-	w-
Carbonyl fluoride	COF ₂		
Carbonyl sulfide	COS	m	m
Chlorine nitrate	ClONO ₂		
Chlorine oxide	ClO		
Chlorosulfonyl isocyanate(CSI)	ClSO ₂ NCO	w	w
Cyanogene	C ₂ N ₂	w	w
Cyclopropane	C ₃ H ₆	m	m
Dimethyl sulfide (DMS)	H ₃ CSCH ₃	m	m
Dimethyl sulfoxide (DMSO)	H ₃ CSOCH ₃		
Ethane	CH ₃ CH ₃	m	m
Ethylene	C ₂ H ₄	m	m
Formaldehyde	H ₂ CO	w	w
Formic acid	HCO ₂ H		
Hydrazine	N ₂ H ₄	m	m
Hydrogen	H ₂		
Hydrogen bromide	HBr	m	m
Hydrogen chloride	HCl	m	m
Hydrogen cyanide	HCN	m	m
Hydrogen fluoride	HF		
Hydrogen iodide	HI	m	m
Hydrogen peroxide	H ₂ O ₂		
Hydrogen sulfide	H ₂ S	m	m

Hydroperoxy radical	HO ₂		
Hypobromous acid	HOBr		
Hypochlorous acid	HOCl		
Isobutene	CH ₃ CCCH ₂	m	m
Methane	CH ₄	m	m
Methanesulfonyl chloride	CH ₃ SO ₂ Cl		
Methanol	CH ₃ OH	m	m
Methylamine	CH ₃ NH ₂	m	m
Methyl chloride	CH ₃ Cl		
Methyl fluorine	CH ₃ F	m	m
Methyl mercaptan	CH ₃ SH	m	m
Nitric acid	HNO ₃	m	m
Nitric oxide	NO	m	m
Nitrogen	N ₂		
Nitrogen dioxide	NO ₂	W-	W-
Nitrogen oxide cation	NO ⁺		
Nitrous oxide	N ₂ O	w	w
Oxygen	O		
Oxygen	O ₂	W-	W-
Ozone	O ₃	w-	w-
Phosgene	PH ₃		
Phosphine	PH ₃	m	w
Propane	C ₃ H ₈	m	m
Propylene	C ₃ H ₆	m	m
Propyne	CH ₃ C ₂ H	m	m
Sulfur dioxide	SO ₂	w	w
Sulfur hexafluoride	SF ₆	w	w
Sulfuryl chloride	SO ₂ Cl ₂		
Sulfuryl fluoride	SO ₂ F ₂		
Thiophosphoryl chloride	SPCl ₃		
Water	H ₂ O	M+	M+

* m: middle strong absorption, LDL might between 0.1-10ppm for 06M sensor, 0.01-1ppm for 10M sensor,

* w: weak absorption; LDL might between 1-100ppm for 06M sensor, 0.1-10ppm for 10M sensor,

* - means more weaker than usual

BigDipper Technochem Institute

Call: 010-8264.0226; 8264.0225; 8911.1814;

Fax: 010-8264.0221;

P.o.Box 603 BDTI Beijing, China 100080

Web: <http://www.fullsense.com>