

DATA SHEET

SI-CA 230



Gas Analyzer for Emissions Monitoring of Boiler, Engine, & Other Combustion Applications

Accurate / Reliable / Robust / Innovative



Up to Six Gas Sensors. Can include O_2 , CO, NO, Low NO, NO $_2$, Low NO $_2$, SO $_2$, Low SO $_2$, H $_2$ S, and CxHy



CO Dilution auto-range with measurements to 50,000 ppm



Large Color Touch Screen



Total NOx & Low NOx Capable



iOS and Android Mobile Apps for Real-Time Display & Control



Field Replaceable Pre-Calibrated Sensors



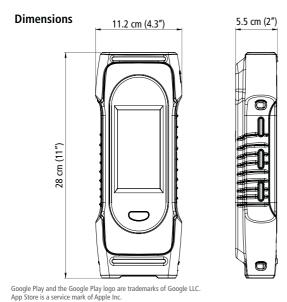
Note: Phone not included





- Ergonomic, light weight, & durable design
- Data management with automatic logging & report creation
- Predictive maintenance with estimated sensor life & calibration reminders
- · One touch pump On/Off with purge
- · PC software with wireless and USB connectivity
- · Auto pump cut-off for high CO levels
- Graphical data display
- · Customizable gas analysis screen
- Sample conditioning unit for low NOx & high moisture applications

- Stack gas velocity with Pitot tube
- Draft & differential pressure measurements
- Emissions values adjusted for reference O,
- CO & CO, monitoring of ambient air
- · Hose extensions for tall & difficult to reach stacks
- · Wireless printer
- · Protective rubber holster
- · Maintenance contracts and extended warranties available





Apps and software

- · Free apps for iOS & Android mobile devices
- PC software with USB & wireless connectivity
- Fast, easy wireless connection
- Remote live view of combustion analysis data as list or graph



Download app

- · Remote control to change settings
- Data saving, including automatic logging
- · Report creation in PDF, CSV (for Excel) and XML formats
- Databases for customers, operators, & equipment



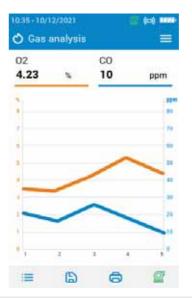
Graph view



Data view

Example of analyzer screens







Si-CA 230 kit content

- Si-CA 230 analyzer
- 0, & CO gas sensors (other gas sensors available, see . USB cable optional accessories)
- CO Dilution Auto-Range to 50,000 ppm
- · Protective rubber holster
- 300 mm flue gas probe with 3 m dual hose (other probe lengths available)
- · Water trap with filter
- AC power supply / charger
- Mobile app & PC software
- · Internal wireless communication module
- Carrying case
- Quick Start Guide
- Calibration certificate





GIMATEG VENTA Y ALQUILER = 02+CO+NO+NO2+SO2

Parameter specifications

O₂ Electrochemical 0 to 25% 0.01% ±0.2% vol T _{sol} < 30 s	Parameter	Sensor	Measuring range	Resolution	Accuracy ⁽¹⁾	Response time
Electrochemical 10 to 10,000 ppm 1 ppm 25% rdg up to 2000 ppm T _{tot} < 40 s 10% rdg > 2000 ppm T _{tot} < 40 s 10% rdg > 2000 ppm T _{tot} < 40 s 10% rdg > 2000 ppm T _{tot} < 40 s 10% rdg > 2000 ppm T _{tot} < 40 s 10% rdg > 100 ppm T _{tot} < 40 s 10% rdg 10%	02	Electrochemical	0 to 25%	0.01%	±0.2% vol	$T_{90} < 30 \text{ s}$
CO₂ Calculated 0 to 99.9% 0.1%	CO (H ₂ comp.)	Electrochemical	0 to 10,000 ppm	1 ppm	±5% rdg up to 2000 ppm	$T_{90} < 40 \text{ s}$
NO Electrochemical 0 to 5000 ppm 1 ppm ±5 ppm < 100 ppm ±5 % rdg > 100 ppm ±5 % rdg > 100 ppm 1 m ±5 % rdg > 30 p	CO (with dilution)	Electrochemical	100 to 50,000 ppm	1 ppm	±10% rdg	$T_{90} < 40 \text{ s}$
Low NO Electrochemical 0 to 3000 ppm 0.1 ppm ±1.5 ppm < 30 ppm 5.8 v < 40 s NO₂ Electrochemical 0 to 1000 ppm 1 ppm ±1.5 ppm < 30 ppm ±5.8 v dg > 100 ppm 1 v < 60 s Low NO₂ Electrochemical 0 to 1000 ppm 0.1 ppm ±5.8 v dg > 100 ppm ±5.8 v dg > 100 ppm ±5.8 v dg > 100 ppm 1 v < 60 s NOX Calculated 0 to 7500 ppm 1 ppm	CO ₂	Calculated	0 to 99.9%	0.1%	-	-
Second Color Col	NO	Electrochemical	0 to 5000 ppm	1 ppm		T ₉₀ < 40 s
Low NO ₂ Electrochemical 0 to 100 ppm 0.1 ppm ±1.5 ppm < 30 ppm ±5% rdg > 100 ppm T ₆₀ < 60 s NO ₃ Calculated 0 to 7500 ppm 1 ppm	Low NO	Electrochemical	0 to 300 ppm	0.1 ppm		T ₉₀ < 40 s
NOx	NO ₂	Electrochemical	0 to 1000 ppm	1 ppm		T ₆₀ < 60 s
Low NOx Calculated 0 to 450 ppm 0.1 ppm - 50₂ Electrochemical 0 to 5000 ppm 1 ppm ±5 ppm < 100 ppm ±5% rdg > 100 ppm T ₆₀ < 30 s Low SO₂ Electrochemical 0 to 100 ppm 0.1 ppm ±1.5 ppm < 30 ppm ±5% rdg > 30 ppm T ₆₀ < 30 s CxHy (HC) Pellistor 0 to 5% 0.01% ± 5% full scale T ₉₀ < 40 s H₂S Electrochemical 0 to 500 ppm 0.1 ppm ±5 ppm < 100 ppm ±5% rdg > 100 ppm T ₆₀ < 35 s Flue temperature TcK -4 to 2282 °F -20 to 1250 °C 0.1 °C 0.1 °C ±3.6 °F or ±0.5% rdg ⁽²⁾ ±2 °C or ±0.5% rdg ⁽²⁾ - Air temperature NTC or TcK -4 to 2488 °F -20 to 120 °C 0.1 °F 0.1 °C ±3.6 °F ±2 °C or ±0.5% rdg ⁽²⁾ - Differential temperature Calculated 0 to 2282 °F 0 to 1250 °C 0.1 °C ±3.6 °F ±2 °C - Pressure/Draft Semiconductor -80 to 80 inH ₂ O 0 to 1250 °C 0.1 °C - - Pressure/Draft Semiconductor 500 Pa 0.1 Pa ±0.5 Pa < 10 Pa ±1% rdg ±0.03 mbar -	Low NO ₂	Electrochemical	0 to 100 ppm	0.1 ppm		T ₆₀ < 60 s
Electrochemical 0 to 5000 ppm 1 ppm \(\pmath{\pmat	NOx	Calculated	0 to 7500 ppm	1 ppm	-	-
Low SO2	Low NOx	Calculated	0 to 450 ppm	0.1 ppm	-	
CxHy (HC) Pellistor 0 to 5% 0.01% ±5% rdg > 30 ppm 1.6 < 50 s	SO ₂	Electrochemical	0 to 5000 ppm	1 ppm		T ₆₀ < 30 s
H₂S Electrochemical 0 to 500 ppm 0.1 ppm ±5 ppm < 100 ppm ±5% rdg > 100 ppm ±5% rdg > 100 ppm T ₆₀ < 35 s Flue temperature TcK -4 to 2282 °F -20 to 1250 °C 0.1 °F ±3.6 °F or ±0.5% rdg (2) ±2 °C or ±0.5% rdg (2) - Air temperature NTC or TcK -4 to 248 °F -20 to 120 °C 0.1 °F ±3.6 °F ±2 °C - Differential temperature Calculated 0 to 2282 °F 0.1 °C 0.1 °F 0.1 °C - Pressure/Draft Semiconductor -80 to 80 inH₂,0 -200 mbar 0.001 inH₂,0 ±1% rdg ±0.012 inH₂,0 ±1% rdg ±0.03 mbar - High accuracy draft Semiconductor 500 Pa 0.1 Pa ±0.5 Pa < 10 Pa ±3 Pa up to 150 Pa ±1% rdg ±1.5 Pa > 150 Pa Excess air Calculated 0 to 999% 1% - - Efficiency Calculated 0 to 100% (Gross/HIV) 0.1% - -	Low SO ₂	Electrochemical	0 to 100 ppm	0.1 ppm		$T_{60} < 30 \text{ s}$
Flue temperature TcK -4 to 2282 °F -20 to 1250 °C 0.1 °C ±3.6 °F or ±0.5% rdg ⁽²⁾ -	СхНу (НС)	Pellistor	0 to 5%	0.01%	± 5% full scale	T ₉₀ < 40 s
Flue temperature	H ₂ S	Electrochemical	0 to 500 ppm	0.1 ppm		T ₆₀ < 35 s
Air temperature NTC or Tck -20 to 120 °C 0.1 °C ±2 °C	Flue temperature	TcK			_	-
Differential temperature Calculated 0 to 1250 °C 0.1 °C - - - Pressure/Draft Semiconductor -80 to 80 inH₂O -200 to 200 mbar 0.001 inH₂O 0.01 mbar ±1% rdg ±0.012 inH₂O ±1% rdg ±0.03 mbar - High accuracy draft Semiconductor 500 Pa 0.1 Pa ±0.5 Pa < 10 Pa ±3 Pa up to 150 Pa ±1% rdg ±1.5 Pa > 150 Pa Excess air Calculated 0 to 999% 1% - - Efficiency Calculated 0 to 100% (Gross/ HIV(³)) 0.1% - -	Air temperature	NTC or TcK				-
High accuracy draft Semiconductor -200 to 200 mbar 0.01 mbar ±1% rdg ±0.03 mbar = 10.5 Pa < 10 Pa ±3 Pa up to 150 Pa ±1% rdg ±1.5 Pa > 150 Pa = 10.5 Pa = 10.5 Pa ±1% rdg ±1.5 Pa > 150 Pa = 10.5 Pa =	Differential temperature	Calculated				-
High accuracy draft Semiconductor 500 Pa 0.1 Pa ±3 Pa up to 150 Pa ±1% rdg ±1.5 Pa > 150 Pa Excess air Calculated 0 to 999% 1% - - Efficiency Calculated 0 to 100% (Gross/HHV ⁽³⁾) 0.1% - -	Pressure/Draft	Semiconductor				-
Efficiency Calculated 0 to 100% (Gross/ HHV ⁽³⁾) 0.1% -	High accuracy draft	Semiconductor	500 Pa	0.1 Pa	±3 Pa up to 150 Pa	
Efficiency Calculated HHV ⁽³⁾)	Excess air	Calculated	0 to 999%	1%	-	-
[##: 1250/ Nat/UN///\] 0.4.0/	Efficiency	Calculated	,	0.1%	-	-
Efficiency (condensation) Calculated 0 to 125% (Net/LHV*) 0.1% -	Efficiency (condensation)	Calculated	0 to 125% (Net/LHV ⁽⁴⁾)	0.1%	-	-
Stack Gas velocity Calculated 0 to 19,500 fpm 0 to 99 m/s 1 fpm 0.1 m/s -	Stack Gas velocity	Calculated			-	

⁽¹⁾ All accuracies indicated in this document were stated in laboratory conditions at 68 °F (20 °C) and can be guaranteed for measurements carried out in the same conditions.

⁽²⁾Accuracy given for the analyzer only.
⁽³⁾For Higher Heating Value / ⁽⁴⁾For Lower Heating Value

General features

Dimensions	11 x 4.3 x 2" (28 x 11.2 x 5.5 cm)			
Weight	30 oz (825 g)			
Display	Color Touch Screen with Graphing; Size: 480 x 272 pixels			
Keypad	1 On-Off key			
Material	ABS-PC			
Protection	IP42			
Connection	Wireless: class 2 range, range frequency from 2402 MHz to 2480 MHz with a transmit power of 1 dBm. Range up to 50 ft (15 m), depending on smartphone radio strength. Minimum required versions: Android 5.0, iOS 12.4, BLE 4.0 USB			
Power supply	Rechargeable battery, USB power supply Li-Ion 5100 mA/h 3.6 V battery / Power supply voltage of the mains unit: 100-240 Vac, 50-60 Hz Mains unit: 5 Vdc/2A			
Battery	Battery life > 8 h; Charging time: Fully charge: < 6.5 h; 50%: < 2.5 h			
Memory	Internal memory up to 2,000 tests			
Environmental conditions of use	Temperature: from 23 to 113 °F (-5 to 45 °C), Hygrometry: in non-condensing conditions (< 85% RH) Maximum altitude: 6561' (2000 m)			
Storage temperature	From -4 to 122 °F (-20 to 50 °C)			
Languages	English, French, German, Spanish, Italian, Portuguese, Chinese			

Regulations

European Union Directives

EN 50379-1 and EN 50379-2; UNI 7129; UNI 11137; UNI 10389; UNI 10845; UL & cUL Certification; BS 7967:2015; BS EN 50543:2011; UNE 60670-10; ES.02173.ES

2014/53/EU (RED); 2015/863 EU (RoHS 3)



CONSULTE A.-

