

# PORTABLE INFRARED GAS ANALYZER

## SB1000

### FEATURES

- Self contained Single Beam Infrared gas analyzer bench
- Huge range of gases unmatched by other analyzers
- Dual Gas Electrochemical or Oxygen Sensor versions
- Span and zero adjustments via external potentiometer
- Specially designed to meet customized demand
- Single AC power supply and/or battery operation
- Analogue output 0-10 V
- Optional linear board with 4-20 mA output
- Highly reliable, proven design
- Free from poisoning



The new SB1000 are low cost, self-contained portable analyzers that utilize single beam infrared technology for a wide range of gases, ranges, and applications. The on-board electronics handle most of the work, leaving final calibration and display options open for ease of integration. For operation, the units requires a modest flow (dependant on cell size and required response time) of dust-free, dry sample gas.

The single beam infrared technology gives high selectivity and excellent sensitivity and repeatability - versatility unmatched by other units. Full-scale measurement ranges are typically available from 0-1% up to 0-100% volume. One optional internal electrochemical sensor for Oxygen, Hydrogen Sulfide, or another toxic gas in PPM levels can also be installed in any unit. These single gas analyzers then become dual gas analyzers. The resolution and accuracy is about 1% resolution of full scale for any of the sensors in these analyzers.

Each portable SB1000 comes with built-in sample pump, digital display, operation manual, power cable, and rechargeable batteries. These units can remain AC powered continuously.

The SB2000 is the wall mounted version of the SB1000 available for the same gases and ranges. Specialized advanced analyzers are also available that offer additional capabilities if more is required than these units can provide. This includes multi-channel infrared analyzers all in one enclosure, low PPM detection of infrared gases, and/or 0.1% resolution of full scale.



## CEA Instruments, Inc.

*"EXPERTS IN TOXIC GAS DETECTION"*

# SB1000 SPECIFICATIONS

Criteria	Single Beam Infrared Optics
Measurement Technique	Non-dispersive infrared absorption with solid state detector
Measurement Range	Up to 100% for gases and saturation concentrations for vapours
Resolution	0.5% fsd
Repeatability	+/- 1.0% fsd
Noise	0.5% fsd
Zero Stability	2.0% fsd over 24 hrs
Span Stability	0.5% fsd over 24 hrs
Temperature effect on Zero	+/- 0.25% fsd per 1 degree centigrade
Temperature effect on Span	+/- 0.25% fsd per 1 degree centigrade
Response Time	Typically 4 seconds to T90 dependant on cell size
Flow Rate	Typically 0.2 to 1 litre per minute with sample pump
Connections	240/220/110 VAC 50/60Hz Gas entries on front 0-10V analogue output - 1/4" jack
Dimensions	10H x 25W x 27D cm

		Minimum Range Available		Lowest Detection Limit	
GAS	Symbol	SB Single Beam Technology	ECC Chemical Cell	SB	ECC
Carbon Dioxide	CO2	2000ppm		10ppm	
Carbon Monoxide	CO	5000ppm	50ppm	50ppm	1ppm
Sulphur Dioxide	SO2	1.0%	50ppm	100ppm	1ppm
Sulphur Hexafluoride	SF6	1000ppm		10ppm	
Nitric Oxide	NO	2%	50ppm	200ppm	1ppm
Nitrous Oxide	N2O	2000ppm		10ppm	
Ammonia	NH3	2.0%		200ppm	
Methane	CH4	1.0%		100ppm	
Ethane	C2H6	1.0%		100ppm	
Propane	C3H8	1.0%		100ppm	
Butane	C4H10	0.5%		50ppm	
Pentane	C5H12	0.5%		50ppm	
Hexane	C6H14	0.5%		50ppm	
Heptane	C7H16	2.0%		200ppm	
Freons	-	2.0%		200ppm	
Oxygen			100ppm		1ppm
Hydrogen	H2		50ppm		1ppm
Hydrogen Sulphide	H2S		50ppm		1ppm

**Note: All ranges above are minimum, Maximum ranges for all SB variants are 100% unless pressure or temperature restricted.**  
**Lowest detectable limit for any range is 0.5% fsd or otherwise stated.**  
**Only 1 IR SB Bench and 1 ECC per analyser**

Note: Max H2S range is: 2000ppm

(Specifications subject to change without notice.)



## CEA Instruments, Inc.

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# WALL MOUNTED INFRARED GAS ANALYZER

## SB2000

### FEATURES

- Self contained Single Beam Infrared gas analyzer bench
- Huge range of gases unmatched by other analyzers
- Dual Gas Electrochemical or Oxygen Sensor versions
- All functions set by remote PC link
- Specially designed to meet customized demand
- Single AC power supply or 24 VDC input
- Analogue output 4-20 mA and Alarms
- Automatic zero function with 6 months calibration cycle
- Highly reliable, proven design
- Free from poisoning



The new SB2000 are low cost, self-contained wall mounted analyzers that utilize single beam infrared technology for a wide range of gases, ranges, and applications. The on-board electronics handle most of the work, leaving final calibration and display options open for ease of integration. For operation, the units requires a modest flow (dependant on cell size and required response time) of dust-free, dry sample gas.

The single beam infrared technology gives high selectivity and excellent sensitivity and repeatability - versatility unmatched by other units. Full-scale measurement ranges are typically available from 0-1% up to 0-100% volume. One optional internal electrochemical sensor for Oxygen, Hydrogen Sulfide, or another toxic gas in PPM levels can also be installed in any unit. These single gas analyzers then become dual gas analyzers. The resolution and accuracy is about 1% resolution of full scale for any of the sensors in these analyzers.

Each wall mounted SB2000 comes with built-in sample pump, digital display, and operation manual. These units are available either as a panel-mounted version or in a splash proof box and require either AC or 24 VDC power.

The SB1000 is the portable version of the SB2000 available for the same gases and ranges. Specialized advanced analyzers are also available that offer additional capabilities if more is required than these units can provide. This includes multi-channel infrared analyzers all in one enclosure, low PPM detection of infrared gases, and/or 0.1% resolution of full scale.



## CEA Instruments, Inc.

*"EXPERTS IN TOXIC GAS DETECTION"*

# SB2000 SPECIFICATIONS

Criteria	SINGLE Beam Infrared Optics
Measurement Technique	Non-dispersive infrared absorption with solid state detector
Measurement Range	Up to 100% for gases and saturation concentrations for vapours
Resolution	1% fsd
Repeatability	+/- 0.5% fsd
Noise	0.5% fsd
Zero Stability	Negligible drift with auto zero function
Span Stability	0.5% fsd over 90 days
Temperature effect on Zero	+/- 0.25% fsd per 1 degree centigrade
Temperature effect on Span	+/- 0.25% fsd per 1 degree centigrade
Response Time	Typically 4 seconds to T90 dependant on cell size
Flow Rate	Typically 0.2 to 1 litre per minute with sample pump
Connections	240/220/110 VAC 50/60Hz: 24DC Gas entries on front 4-20mA analogue output RS232/485 for system set up Relay outputs: 1A 240V

		Minimum Range Available		Lowest Detection Limit	
GAS	Symbol	SB Single Beam Technology	ECC Chemical Cell	SB	ECC
Carbon Dioxide	CO2	2000ppm		10ppm	
Carbon Monoxide	CO	5000ppm	50ppm	50ppm	1ppm
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Sulphur Hexafluoride	SF6	1000ppm		10ppm	
Nitric Oxide	NO	2%	50ppm	200ppm	1ppm
Nitrous Oxide	N2O	2000ppm		10ppm	
Ammonia	NH3	2.0%		200ppm	
Methane	CH4	1.0%		100ppm	
Ethane	C2H6	1.0%		100ppm	
Propane	C3H8	1.0%		100ppm	
Butane	C4H10	0.5%		50ppm	
Pentane	C6H12	0.6%		50ppm	
Hexane	C6H14	0.5%		50ppm	
Heptane	C7H16	2.0%		200ppm	
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Oxygen			100ppm		1ppm
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## SB1000 & SB2000 PRICE LIST

### **SB1000 PORTABLE BATTERY GAS ANALYZER**

Single gas and Dual gas monitors utilizing the latest Single Beam Infrared Technology and/or Electrochemical Sensors with digital display, built-in air pump, manual span and auto-zero controls, rechargeable battery, battery charger / AC power supply (Specify Power and Plug), operation manual, and carrying case. Optional 4-20 mA or 0-1 VDC outputs are available.

<b><u>PART #</u></b>	<b><u>DESCRIPTION</u></b>	<b><u>PRICE</u></b>
SB1000	Single gas with Single Beam Infrared Technology	\$ 4095.00
SB1100	Dual gas with Electrochemical Oxygen Sensor Added	\$ 4595.00
SB1150	Dual gas with Electrochemical Toxic Sensor Added	\$ 4995.00
SB1160	Single gas with only Electrochemical Oxygen or Toxic Sensor	\$ 4095.00
SB1-OP-MA	Optional 4-20 mA Output	\$ 150.00
SB1-OP-1V	Optional 0-1 VDC Analog Output	\$ 150.00
	• CARBON DIOXIDE LOW FULL SCALE RANGES OF 0-2000 OR 0-5000 PPM	ADD \$495.00
	• CARBON MONOXIDE LOW FULL SCALE RANGE OF 0-5% VOLUME	ADD \$495.00
	• METHANE LOW FULL SCALE RANGE OF 0-1% VOLUME	ADD \$495.00
	• AMMONIA IN ALL FULL SCALE RANGES	ADD \$495.00

### **SB2000 WALL MOUNTED GAS ANALYZER**

Single gas and Dual gas monitors utilizing the latest Single Beam Infrared Technology and/or Electrochemical Sensors with digital display, built-in air pump, 4-20 mA output, manual span and auto-zero controls, operation manual, and standard in an IP54 Panel Mounted Enclosure (unless a Splash Proof Box is specified and specially ordered). (Specify Power)

<b><u>PART #</u></b>	<b><u>DESCRIPTION</u></b>	<b><u>PRICE</u></b>
SB2000	Single gas with Single Beam Infrared Technology	\$ 4195.00
SB2100	Dual gas with Electrochemical Oxygen Sensor Added	\$ 4595.00
SB2150	Dual gas with Electrochemical Toxic Sensor Added	\$ 4795.00
SB2200	Single gas with only Electrochemical Oxygen or Toxic Sensor	\$ 4095.00
SB2-OP-1V	Optional 0-1 VDC Analog Output	\$ 150.00
	• CARBON DIOXIDE LOW FULL SCALE RANGES OF 0-2% VOLUME AND LESS	ADD \$395.00
	• METHANE LOW FULL SCALE RANGE OF 0-1% VOLUME	ADD \$395.00
	• AMMONIA IN ALL FULL SCALE RANGES	ADD \$395.00
	• HYDROGEN SULFIDE SPECIAL HIGH RANGE OF 0-5000 PPM	ADD \$595.00