## G150

## CO, INDOOR AIR QUALITY ANALYSER





### AIR QUALITY CHECK ANALYSER

### G150

CO<sub>2</sub> analyser designed to monitor CO<sub>2</sub> for all indoor air quality applications. This unit has been developed to incorporate the latest technology and specification requirerments, that provide the user with a fast, simple-to-use and accurate piece of environmental field kit.

#### **Benefits**

- Accurate CO<sub>2</sub> readings
- Quick verification of CO<sub>2</sub> levels for site audits
- Time saving with dual temperature probes
- Data logging for long term application
- Easy to read large well lit display
- Built in gas moisture removal

#### **Features**

- CO<sub>2</sub> 0-10,000 ppm
- Options for :
  - O<sub>2</sub> 0-100%
  - Dual temperature probes 0 to 50°C
  - Data storage and download
  - Humidity Sensor 0-100%

#### **Applications**

- General IAQ
- Environmental Site Audits
- HVAC System approval
- Illegal immigrant control/ detection



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### Technical Specifications ——

Battery type Li Ion  Battery life 12 Hours (10 hours with pump)  Battery life 600 Cycles  Battery charger 5v DC external power supply and internal charging circuit  Charge time 4 hours  Alternative power 5Vdc power supply   GAS RANGES  Gases Measured $CO_2$ By custom dual wavelength infra-red cell with reference channel $O_2$ (Optional) By internal electrochemical cell  Oxygen cell lifetime Approximately 3 years in air  Range $CO_2$ 0-10,000ppm $O_2$ 0-100%  Measurement Accuracy* $CO_2$ ± 1.5% of range after calibration (typically $\pm$ 10ppm at 500ppm $CO_2$ , after calibration) $O_2$ $\pm$ 1.0% of range after calibration  Response time, $T^{50}$ $CO_2$ $\leq$ 20 seconds  * plus accuracy of calibration gas used			
Battery type	G150		
Battery life 12 Hours (10 hours with pump)  Battery lifetime 600 Cycles  Battery charger 5v DC external power supply and internal charging circuit  Charge time 4 hours  Alternative power 5Vdc power supply   GAS RANGES  Gases Measured CO₂ By custom dual wavelength infra-red cell with reference channel O₂(Optional) By internal electrochemical cell  Oxygen cell lifetime Approximately 3 years in air  Range CO₂ 0-10,000ppm O₂ 0-1000  Measurement Accuracy* CO₂ ± 1.5% of range after calibration (typically ± 10ppm at 500ppm CO₂, after calibration)  O₂ ± 1.0% of range after calibration  Response time, T™0  CO₂ ≤ 20 seconds O₂ ≤ 60 seconds  * plus accuracy of calibration gas used  **CILITIES**  Temperature (Optional) x2 using optional probes, range 0°C to +50°C  Temperature accuracy ± 0.2°C  Barometric pressure 800 - 1200 mbar  RH measurement (Optional) RH Probe 0 - 100% RH non condensing  Ha accuracy ± 1.5% RH across the range  Visual and audible alarms User selectable CO₂ and O₂ alarm levels  Communications USB type B mini-connector, HID device class	POWER SUPPLY		
Battery lifetime 5v DC external power supply and internal charging circuit  Charge time 4 hours  Alternative power 5Vdc power supply  GAS RANGES  Gases Measured CO₂ By custom dual wavelength infra-red cell with reference channel O₂(Optional) By internal electrochemical cell  Oxygen cell lifetime Approximately 3 years in air  Range CO₂ 0-10,000ppm O₂ 0-100%  Measurement Accuracy* CO₂ ± 1.5% of range after calibration (typically ± 10ppm at 500ppm CO₂, after calibration)  O₂ ± 1.0% of range after calibration  Response time, T™  CO₂ ≤ 20 seconds  * plus accuracy of calibration gas used  *CILITIES  Temperature (Optional) X2 using optional probes, range 0°C to +50°C  Temperature accuracy ± 0.2°C  Barometric pressure 800 - 1200 mbar  RH measurement (Optional) RH Probe 0 - 100% RH non condensing  RH accuracy 1.5% RH across the range  Visual and audible alarms User selectable CO₂ and O₂ alarm levels  Communications USB type B mini-connector, HID device class	Battery type	Li Ion	
Battery charger Charge time Alternative power SVdc power supply  GAS RANGES  Gases Measured O₂(Optional) O₂(Optional) Example  CO₂ O₂(Optional) Sy internal electrochemical cell Oxygen cell lifetime Approximately 3 years in air  Range CO₂ O₁0,000ppm O₂ O₁0,000ppm O₂ O₁0000pm O₂ O₁0000pm O₂ O₁10,000ppm O₂ O₂ O₂	Battery life	12 Hours (10 hours with pump)	
Charge time Alternative power  SVdc power supply  GAS RANGES  Gases Measured  CO₂ D₂ Sy custom dual wavelength infra-red cell with reference channel  Co₂ O₂(Optional) By internal electrochemical cell  Oxygen cell lifetime Approximately 3 years in air  CO₂ O-1,000 ppm O₂ O-100%  Measurement Accuracy*  CO₂ ± 1.5% of range after calibration (typically ± 10ppm at 500ppm CO₂, after calibration)  O₂ ± 1.0% of range after calibration  Response time, T⁵0  CO₂ ≤ 20 seconds O₂ ≤ 60 seconds  * plus accuracy of calibration gas used  FACILITIES  Temperature (Optional) Temperature (Optional)  X² using optional probes, range 0°C to +50°C  Temperature accuracy ± 0.2°C  Barometric pressure 800 - 1200 mbar  RH measurement (Optional) RH Probe 0 - 100% RH non condensing RH accuracy ± 1.5% RH across the range Visual and audible alarms User selectable CO₂ and O₂ alarm levels Communications USB type B mini-connector, HID device class	Battery lifetime	600 Cycles	
Alternative power 5Vdc power supply  GAS RANGES  Gases Measured CO₂ By custom dual wavelength infra-red cell with reference channel  Oxygen cell lifetime Approximately 3 years in air  Range CO₂ 0-10,000ppm  O₂ 0-100%  Measurement Accuracy* CO₂ ± 1.5% of range after calibration (typically ± 10ppm at 500ppm CO₂, after calibration)  O₂ ± 1.0% of range after calibration  Response time, T⁰0 CO₂ ≤ 20 seconds  O₂ ≤ 60 seconds  * plus accuracy of calibration gas used  FACILITIES  Temperature (Optional) x2 using optional probes, range 0°C to +50°C  Temperature accuracy ± 0.2°C  Barometric pressure 800 - 1200 mbar  RH measurement (Optional) RH Probe 0 - 100% RH non condensing  RH accuracy ± 1.5% RH across the range  Visual and audible alarms User selectable CO₂ and O₂ alarm levels  Communications USB type B mini-connector, HID device class	Battery charger	5v DC external power supply and internal charging circuit	
GAS RANGES  Gases Measured  CO₂ By custom dual wavelength infra-red cell with reference channel  O₂(Optional) By internal electrochemical cell  Oxygen cell lifetime Approximately 3 years in air  Range  CO₂ 0-10,000ppm O₂ 0-1000%  CO₂ ± 1.5% of range after calibration (typically ± 10ppm at 500ppm CO₂, after calibration)  O₂ ± 1.0% of range after calibration  CO₂ 2 ≤ 20 seconds O₂ 2 ≤ 60 seconds  * plus accuracy of calibration gas used  *ACILITIES  Temperature (Optional) Temperature accuracy Barometric pressure 800 - 1200 mbar  RH measurement (Optional) RH Probe 0 - 100% RH non condensing RH accuracy ± 1.5% RH across the range  Visual and audible alarms User selectable CO₂ and O₂ alarm levels  Communications USB type B mini-connector, HID device class	Charge time	4 hours	
Gases Measured       CO₂       By custom dual wavelength infra-red cell with reference channel         Ozygen cell lifetime       Approximately 3 years in air         Range       CO₂       0-10,000ppm         O₂       0-100%         Measurement Accuracy*       CO₂       ± 1.5% of range after calibration (typically ± 10ppm at 500ppm CO₂, after calibration)         O₂       ± 1.0% of range after calibration         Response time, T⁰       CO₂       ≤ 20 seconds         * plus accuracy of calibration gas used         *ACILITIES         Temperature (Optional)       x2 using optional probes, range 0°C to +50°C         * Temperature accuracy       ± 0.2°C         Barometric pressure       800 - 1200 mbar         RH measurement (Optional)       RH Probe 0 - 100% RH non condensing         RH accuracy       ± 1.5% RH across the range         Visual and audible alarms       User selectable CO₂ and O₂ alarm levels         Communications       USB type B mini-connector, HID device class	Alternative power	5Vdc power supply	
O₂(Optional) By internal electrochemical cell  Oxygen cell lifetime Approximately 3 years in air  Range CO₂ 0-10,000ppm O₂ 0-100%  Measurement Accuracy* CO₂ ± 1.5% of range after calibration (typically ± 10ppm at 500ppm CO₂, after calibration) O₂ ± 1.0% of range after calibration  Response time, T³0 CO₂ ≤ 20 seconds O₂ ≤ 60 seconds  * plus accuracy of calibration gas used  FACILITIES  Temperature (Optional) x2 using optional probes, range 0°C to +50°C  Temperature accuracy ± 0.2°C  Barometric pressure 800 - 1200 mbar  RH measurement (Optional) RH Probe 0 - 100% RH non condensing  RH accuracy ± 1.5% RH across the range  Visual and audible alarms User selectable CO₂ and O₂ alarm levels  Communications USB type B mini-connector, HID device class	GAS RANGES		
Oxygen cell lifetime Range  CO2 0-10,000ppm O2 0-100%  Measurement Accuracy*  CO2 ± 1.5% of range after calibration (typically ± 10ppm at 500ppm CO2, after calibration)  CO2 ± 1.0% of range after calibration  Response time, T90 CO2 ± 1.0% of range after calibration  CO2 ± 1.0% of range after calibration  CO3 ± 1.0% of range after calibration  Response time, T90 CO3 ± 2.0 seconds  O2 ± 6.0 seconds  * plus accuracy of calibration gas used  **CILITIES  Temperature (Optional)	Gases Measured	CO <sub>2</sub>	By custom dual wavelength infra-red cell with reference channel
Range $CO_2$ 0-10,000ppm $O_2$ 0-100% $CO_2$ 0-100% $CO_2$ ± 1.5% of range after calibration (typically ± 10ppm at 500ppm $CO_2$ , after calibration) $CO_2$ ± 1.0% of range after calibration $CO_2$ ± 1.0% of range after calibration $CO_2$ ≤ 20 seconds $CO_2$ ≤ 20 seconds $CO_2$ ≤ 60 seconds $CO_2$		O <sub>2</sub> (Optional)	By internal electrochemical cell
Measurement Accuracy*	Oxygen cell lifetime	Approximately 3 years in air	
Measurement Accuracy* $CO_2$ $\pm 1.5\%$ of range after calibration (typically $\pm 10$ ppm at $500$ ppm $CO_2$ , after calibration) $CO_2$ $\pm 1.0\%$ of range after calibration  Response time, $T^{90}$ $CO_2$ $\leq 20$ seconds $CO_2$ $\leq 60$ seconds  * plus accuracy of calibration gas used  *ACILITIES  Temperature (Optional) x2 using optional probes, range $0^{\circ}$ C to $+50^{\circ}$ C  Temperature accuracy $\pm 0.2^{\circ}$ C  Barometric pressure $EO_2$ 800 - 1200 mbar  RH measurement (Optional) RH Probe $EO_2$ 100% RH non condensing  RH accuracy $EO_2$ $EO_2$ 1.5% RH across the range  Visual and audible alarms User selectable $EO_2$ and $EO_2$ alarm levels  Communications USB type B mini-connector, HID device class	Range	CO <sub>2</sub>	0-10,000ppm
Measurement Accuracy* $CO_2$ $\pm 1.5\%$ of range after calibration (typically $\pm 10$ ppm at $500$ ppm $CO_2$ , after calibration) $CO_2$ $\pm 1.0\%$ of range after calibration  Response time, $T^{90}$ $CO_2$ $\leq 20$ seconds $CO_2$ $\leq 60$ seconds  * plus accuracy of calibration gas used  *ACILITIES  Temperature (Optional) x2 using optional probes, range $0^{\circ}$ C to $+50^{\circ}$ C  Temperature accuracy $\pm 0.2^{\circ}$ C  Barometric pressure $EO_2$ 800 - 1200 mbar  RH measurement (Optional) RH Probe $EO_2$ 100% RH non condensing  RH accuracy $EO_2$ $EO_2$ 1.5% RH across the range  Visual and audible alarms User selectable $EO_2$ and $EO_2$ alarm levels  Communications USB type B mini-connector, HID device class		0,	0-100%
Response time, T <sup>90</sup> CO <sub>2</sub> $\leq$ 20 seconds  * plus accuracy of calibration gas used  *ACILITIES  Temperature (Optional)  x2 using optional probes, range 0°C to +50°C  Temperature accuracy $\pm$ 0.2°C  Barometric pressure  800 - 1200 mbar  RH measurement (Optional)  RH Probe 0 - 100% RH non condensing  RH accuracy $\pm$ 1.5% RH across the range  Visual and audible alarms  User selectable CO <sub>2</sub> and O <sub>2</sub> alarm levels  Communications  USB type B mini-connector, HID device class	Measurement Accuracy*	_	± 1.5% of range after calibration (typically ± 10ppm at 500ppm CO <sub>2</sub> , after
Response time, T <sup>90</sup> CO <sub>2</sub> $\leq$ 20 seconds  * plus accuracy of calibration gas used  *ACILITIES  Temperature (Optional)  x2 using optional probes, range 0°C to +50°C  Temperature accuracy $\pm$ 0.2°C  Barometric pressure  800 - 1200 mbar  RH measurement (Optional)  RH Probe 0 - 100% RH non condensing  RH accuracy $\pm$ 1.5% RH across the range  Visual and audible alarms  User selectable CO <sub>2</sub> and O <sub>2</sub> alarm levels  Communications  USB type B mini-connector, HID device class		-	calibration)
* plus accuracy of calibration gas used  *ACILITIES  Temperature (Optional) x2 using optional probes, range 0°C to +50°C  Temperature accuracy ± 0.2°C  Barometric pressure 800 - 1200 mbar  RH measurement (Optional) RH Probe 0 - 100% RH non condensing  RH accuracy ±1.5% RH across the range  Visual and audible alarms User selectable CO₂ and O₂ alarm levels  Communications USB type B mini-connector, HID device class		O <sub>2</sub>	·
* plus accuracy of calibration gas used  *ACILITIES  Temperature (Optional)			
* plus accuracy of calibration gas used  FACILITIES  Temperature (Optional)	Response time, T <sup>90</sup>	CO <sub>2</sub>	≤ 20 seconds
Temperature (Optional)  x2 using optional probes, range 0°C to +50°C  Temperature accuracy  ± 0.2°C  Barometric pressure  800 - 1200 mbar  RH measurement (Optional)  RH Probe 0 - 100% RH non condensing  RH accuracy  ±1.5% RH across the range  Visual and audible alarms  User selectable CO <sub>2</sub> and O <sub>2</sub> alarm levels  Communications  USB type B mini-connector, HID device class		O <sub>2</sub>	≤ 60 seconds
Temperature (Optional)  x2 using optional probes, range 0°C to +50°C  Temperature accuracy  ± 0.2°C  Barometric pressure  800 - 1200 mbar  RH measurement (Optional)  RH Probe 0 - 100% RH non condensing  RH accuracy  ±1.5% RH across the range  Visual and audible alarms  User selectable CO <sub>2</sub> and O <sub>2</sub> alarm levels  Communications  USB type B mini-connector, HID device class	* plus accuracy of calibration gas used		
Temperature accuracy ± 0.2°C  Barometric pressure 800 - 1200 mbar  RH measurement (Optional) RH Probe 0 - 100% RH non condensing  RH accuracy ±1.5% RH across the range  Visual and audible alarms User selectable CO <sub>2</sub> and O <sub>2</sub> alarm levels  Communications USB type B mini-connector, HID device class	FACILITIES		
Barometric pressure 800 - 1200 mbar  RH measurement (Optional) RH Probe 0 - 100% RH non condensing  RH accuracy ±1.5% RH across the range  Visual and audible alarms User selectable CO <sub>2</sub> and O <sub>2</sub> alarm levels  Communications USB type B mini-connector, HID device class	Temperature (Optional)	x2 using optional probes, range 0°C to +50°C	
RH measurement (Optional)  RH Probe 0 - 100% RH non condensing  ±1.5% RH across the range  Visual and audible alarms  User selectable CO <sub>2</sub> and O <sub>2</sub> alarm levels  Communications  USB type B mini-connector, HID device class	Temperature accuracy	± 0.2°C	
RH accuracy ±1.5% RH across the range  Visual and audible alarms User selectable CO <sub>2</sub> and O <sub>2</sub> alarm levels  Communications USB type B mini-connector, HID device class	Barometric pressure	800 - 1200 mbar	
Visual and audible alarms  User selectable CO <sub>2</sub> and O <sub>2</sub> alarm levels  Communications  USB type B mini-connector, HID device class	RH measurement (Optional)	RH Probe 0 - 100% RH non condensing	
Communications  USB type B mini-connector, HID device class	RH accuracy	±1.5% RH across the range	
	Visual and audible alarms	User selectable CO <sub>2</sub> and O <sub>2</sub> alarm levels	
Data Storage 1000 reading sets + 270 events	Communications	USB type B mini-connector, HID device class	
	Data Storage	1000 reading sets + 270 events	



# Technical Specifications ——

0450		
G150 cont'd		
PUMP		
Flow	100cc/ min typically	
ENVIRONMENTAL CONDITIONS		
Operating temperature	0°C - 50°C	
Relative humidity	0 - 95% non condensing (RH Probe 0 - 100% non condensing)	
Barometric pressure	± 500mbar from calibration pressure	
IP rating	IP40	
PHYSICAL		
Weight	495 grams	
Size	L 165mm, W 100mm, D 55mm	
Case Material	ABS/ Polypropylene with Silicone Rubber Inserts	
Keys	17 Resin capped Silicone Rubber keys	
Display	Liquid crystal display, 128 x 64 pixel With RGB LED back-light	
Gas sample filters	Built-in gas dryer tube to remove moisture User replaceable PTFE water trap filter	
CERTIFICATION		
EN 50270 :2006	Electromagnetic compatibility - Electrical apparatus for the detection and	
	measurement of combustible gases, toxic gases or oxygen	
EN 61010 -1:2010	Safety requirements for electrical equipment for measurement, control, and laboratory	
	use. Part 1: General requirements	

Note: Due to Geotech's continuous programme of improvement, this specification is subject to change without prior notice.

