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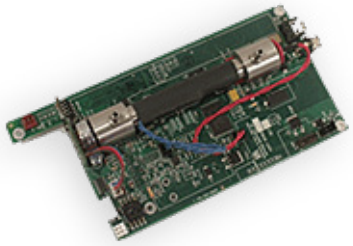
IR-510 NDIR Optical Bench



The IR-510 NDIR Optical Bench from Infrared Industries is fast responding, highly accurate, and highly reliable. It offers greater design flexibility to OEMs due to its small overall size and low power consumption and can be customized to your specifications.

The enhanced optics and electronics dramatically reduce zero drift after the initial warm-up period. Temperature and pressure compensation eliminate the major causes of span drift found in many other NDIR instruments.

The IR-510 can fit a wide variety of enclosures. The software and communications protocol are designed to make system integration simple and fast.

The command set has the flexibility to provide a variety of output configurations including pneumatic controls, printers, measurement data, and selected displays.

The system monitors and corrects for critical operating parameters that affect performance and provides real-time status of the overall integrity and quality of the gas measurement.

Portable applications can be satisfied by populating the battery slot. The IR-510 interfaces with analog outputs and to a PC for complete control, display, and graphing capability.

Recording of the output data within the bench itself allows the measurements to be replayed and analyzed at a later time.

The IR-510 also has a protected detector for accuracy and long life, integrated DC pump and solenoid drivers, graphic LCD driver, quick-clean sample cell design, and is DC powered and portable.

Product Features/Benefits

Measurement of Gases

Measure up to three gases—chosen from various gases—simultaneously with NDIR. Two auxiliary sensor inputs are also available (electrochemical, paramagnetic, or other).

Solid State Detector

Long life, rugged, insensitive to vibration. Low replacement cost.

Digitally Modulated

Solid state digitally modulated IR source utilizing no moving parts.

Imaging Optics

Eliminates the need for costly and fragile gold foil linings in the sample cells, reducing maintenance cost.

Solid State Electronics

Synchronous demodulation and automatic gain control minimize the influences of temperature and line voltage variations.

Easy Calibration

Semi-automated, requiring no tool or adjustments to make.

IR-510 NDIR OPTICAL BENCH

APPLICATIONS

- Combustion Analysis and Efficiency
- Burners and Boilers
- Commercial Ovens and Stove Emissions
- Controlled Atmospheres
- Greenhouse Gas Monitoring
- Landfill BTU Calculations
- Well Logging (CH4, C2H6)
- Automotive Emissions Testing and Motor-cycle Tuning
- Stack Gas Monitoring
- Safety Monitoring
- Food Processing
- CO2 and O2 Based Ventilation
- Hydrocarbon Monitoring
- Respiration Studies
- Hazardous Gas Detection
- Process Monitoring
- LEL Monitoring — Fuel Tanks and Gas Lines

SPECIFICATIONS

Materials
Stainless steel sample cell, sapphire windows, selected O-rings, and Teflon tubing. For corrosive sample streams, a Kynar sample cell can be provided as an option.

Output Data Interface
Digital: RS-232 (included)
Analog: 1, 5, or 10 VDC; 4-20 mA (optional module)
All available in playback mode

Host Communication
USB (adapter required), RS232

Data Refresh Rate
500 ms

Accuracy
+ or - 1% of full scale

Repeatability
+ or - 1% of full scale

Zero Drift
+ or - 1% of full scale per 24 hours

Span Drift
+ or - 1% of full scale per 24 hours

Linearity
+ or - 0.5% of full scale fitted to theoretical curve

Noise Level
Less than 1% of full scale

Warm-Up
Ready for use in less than 30 seconds; fully stabilized in 3 minutes

Temperature Range
35 to 110 degrees F (2 to 46 degrees C)

Ambient Humidity
Up to 95% relative humidity

Power
Internal Power: Rechargeable lithium ion battery pack (optional)
External Power: 10-16 VDC, less than 1A
Power Consumption: 2.9 watts average @ 12 VDC

Dimensions
6.3” x 3.5” x 1.2”

Weight
8 ounces (225 grams)

Compliance
Meets or exceeds EN 14624

Warranty
12 months standard; extended warranty available

STANDARD GASES MEASURED UNDER NDIR

Ammonia	Freon 11
Benzene	Freon 114
Butane	Hexane
Butadiene	Hydrogen Sulfide
Carbon Monoxide	Methane
Carbon Dioxide	Nitric Oxide
Carbonyl Sulfide	Nitrogen Dioxide
Dimethylethylamine	Nitrous Oxide
Ethane	Propane
Ethylene	Propylene
Ethylene Oxide	Sulphur Dioxide
Ethyl Alcohol (Ethanol)	Water Vapor
Other gases under chem cell available	

To determine compatibility of multiple gases in one multi-gas bench, contact an Infrared Industries applications engineer.

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