

OEM PRODUCTS

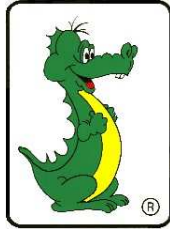
INFRA-QUEEN BENCH

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INFRA-QUEEN BENCH

OIML R99-2008 – Class 00

Cell in Class 00 for exhaust gas analysis

The new cell of gas analysis Infra-00 currently represents an evolution of that one in use in all the range of analyzers INFRAGAS. Thanks to a multiple sensor NDIR equipped with optical filters, that isolate the wavelength of CO, CO₂ and HC is possible to measure selectively three gases of interest.

Using an emitter and a last generation infrared sensor it's possible a remarkable increment of the performances in terms of precision of measure, such to satisfy requirement of the cells of analysis from norms **OIML R99-2008 - Class 00**.

The remarkable reduction of the dimensions and the weight renders transportable and manageable the cell easy.

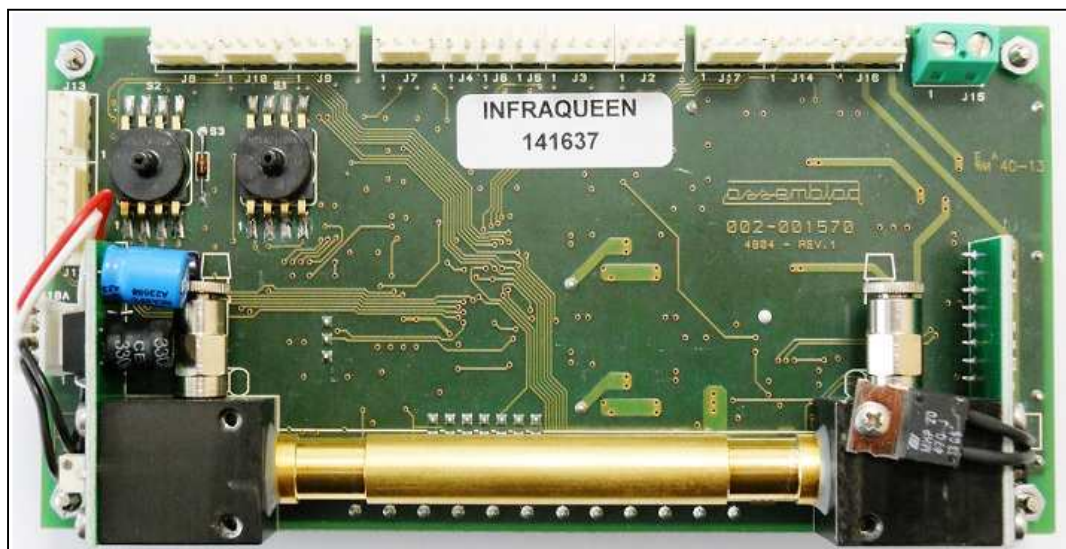


Fig. 01 – Infra-Queen bench - top view

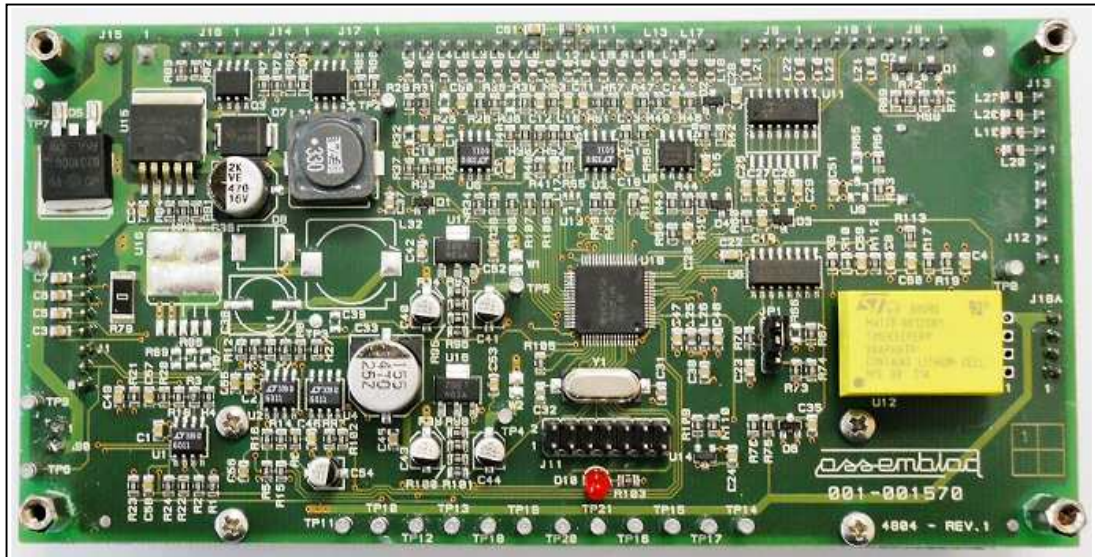


Fig. 02 – Infra-Queen bench - bottom view

Applications

The Infra-00 cell can be used in order to realize a stand-alone analyzer to use in systems of analysis and diagnosis of exhaust gas for vehicles and motorcycle, to perform the analyzer, the cell can be connected to an other board or PC and integrated with the following components:

- Display
- Printer
- Keyboard
- Power source
- Gas Pump

The Infra-00 cell connected to a PC and equipped with the pneumatic components constitutes a complete gas analyzer.

Components and principle of operation

The cell is constituted from the following fundamental components:

- The analysis bench.
- The IR emitter board.
- The IR receiver board .
- The control electronics on the cell board.
- The pressure and temperature sensors.

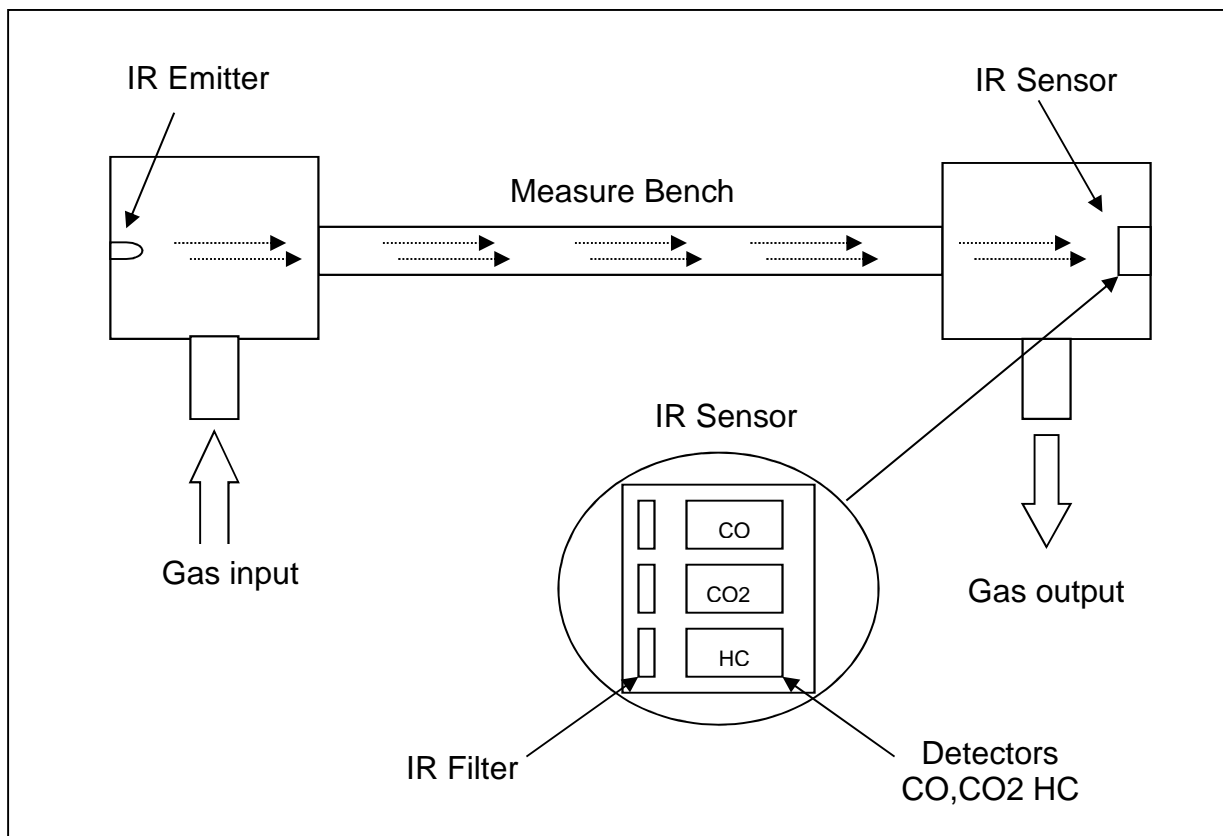


Fig. 03 – Infra-Queen bench - diagram of operation

The infrared emission, electronically modulated, crosses the bench of measure in which the mixture under analysis is present. The attenuation of the luminous beam, for the presence of gases, is found from the sensor so as to calculate the CO, CO₂ and HC concentrations.

Every detector has a pass band filter that isolates the specific frequencies of three gases examines and produces an electrical signal that it depends from the luminous absorption of the gaseous mixture (Fig.04).

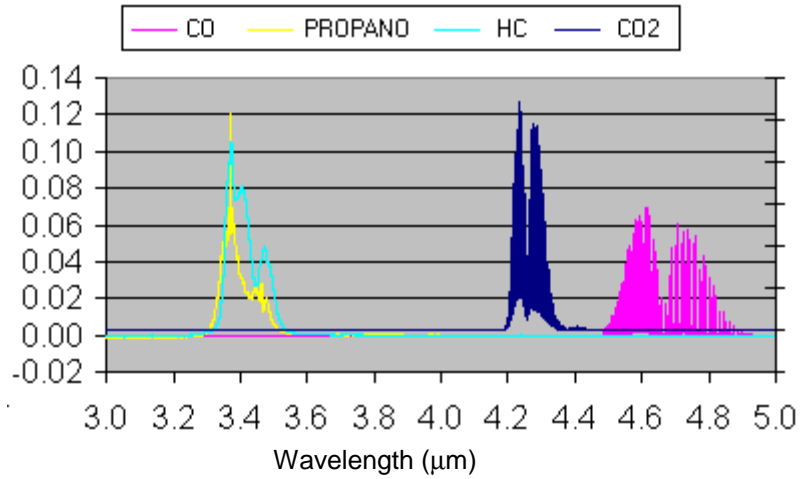


Fig. 04 - Spectrum of absorption of CO, PROPANE, HC and CO2

It's expected an heating of the receiver to increase the precision and stability of the measures.

The cell board is constituted from an inner local power source in order to generate the stabilized tensions of which it needs the system and through driver MOSFET open-drain it is possible to drive one pump and two electro-valves.

On the cell board a temperature sensor and two pressure sensors are available, one connected with the tube of income of the pump, the other to the connection of income or that one of bench out in order to find of the internal pressure. With these sensors is possible to carry out one diagnosis about the correct operation of the cell and the pneumatic circuit.

Two RS232 are present, they are predisposed for the service programs, firmware upgrade, communication with a PC, display board or other devices.

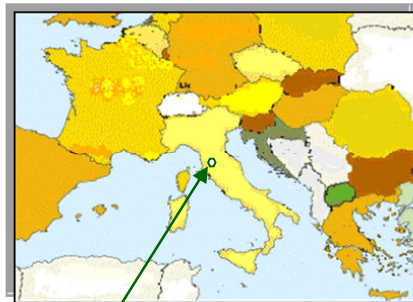
Specification

INFRA-QUEEN Bench – OIML R99-2008 Class 00

Measured gases and Range	CO: 0 ÷ 10 vol% HC: 0 ÷ 15000 ppm (exane equivalent) CO2: 0 ÷ 20 vol% O2: 0 ÷ 25 vol% (external electrochemical cell) NOx: 0 ÷ 5000 ppm (option external electrochemical cell) Cocorr.: 0 ÷ 10 vol% Lambda factor: 0,5 ÷ 1,5
Principle of Measure	CO, HC, CO2: NDIR O2, NOx: electrochemical sensors
Tolerance of Measure	CO: ± 0.02 %vol Absolute; ± 3% relative HC: ± 4 ppm vol Absolute; ± 5% relative CO2: ± 0.3 %vol Absolute; ± 4% relative O2: ± 0.1 %vol Absolute; ± 5% relative NOx: ± 5% relative (option)
Resolution	CO: 0.001 %vol HC: 1 ppm vol CO2: 0.01 %vol O2: 0.01 %vol NOx: 1 ppm vol (option) Cocorr.: 0.001 %vol Lambda factor: 0,001
Warm-Up Time	about 2 min.
Operating Conditions	Temperature: from 0 to + 40°C, R.H. ≤ 90% Atmospheric pressure: from 80 kPa to 106 kPa
Weight and Dimensions	height: 4 cm. width: 7,5 cm. length: 15 cm. weight: 170 g.
Power supply	9 - 16 Vcc 7 W
Serial out	Two serial lines RS232

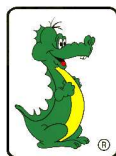
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