





## Performance

The N.I.R.A. analytical instrumentation line, is the result of synergy of two excellent technologies based on tradition account and recent discover.

### Analytical process "technology":

- Consolidated tradition based on 30 years of experience
- Proved reliability of the components
- Membrane, sampling valves, without moving parts, which guarantee years of free trouble working
- Continuous checking of pressure and gas flows by digital reading
- FID gasproof detector
- Heated transfert line
- Heated sampling pump
- Heated fibre glass filter
- Reduced dimension for utilising in field

### "PC embedded" technology:

- PC core-module utilization
- Graphic view of analytical process by different animation phases
- Continuous evidence and test of operative parameters
- Higher and accurate elaboration processing
- Chromatogram real time display with higher graphic quality
- Database establishment
- Graphic and numeric re-elaboration
- Historic data recording and record of irregularities, if any
- Auto diagnostic

## Operative principle

The transportable automatic analyser N.I.R.A. Mercury 901, identifies by only one sampling the Methane and Non-Methane Hydrocarbons or their Totals (Met./NMHC-THC), through a chromatographic separation and FID detector, in agreement with the actual standards.

Mercury 901 has a pump with heated head which intakes the sample from drawing point and through the heated line with fibre glass filter, send it to the analyser.

An electronic sensor checks the line showing irregularities, if any (filter occlusion or line breaking).

The membrane sampling valve, draws automatically a known and reproducible volume of sample, taken to atmospheric temperature to guarantee reproducible sampling which are not influenced by pressure or range changes. The Methane, separated from the Analytes, is sent to FID detector; after the carrier gas back-flush, the remaining hydrocarbons are sent to FID detector, where they produce a unique signal. So the analyser finds NMHC separated from Methane, or THC.

A shorter analytic cycle then, allows the determination of THC only.

The analysed data are referred to standard calibration mixture.

### System configuration, provides the following laying:

- Temperature (chamber and line)
- Pressure and flow gas
- Measurement range
- Calibration
- Video display modality
- Concentration alarms

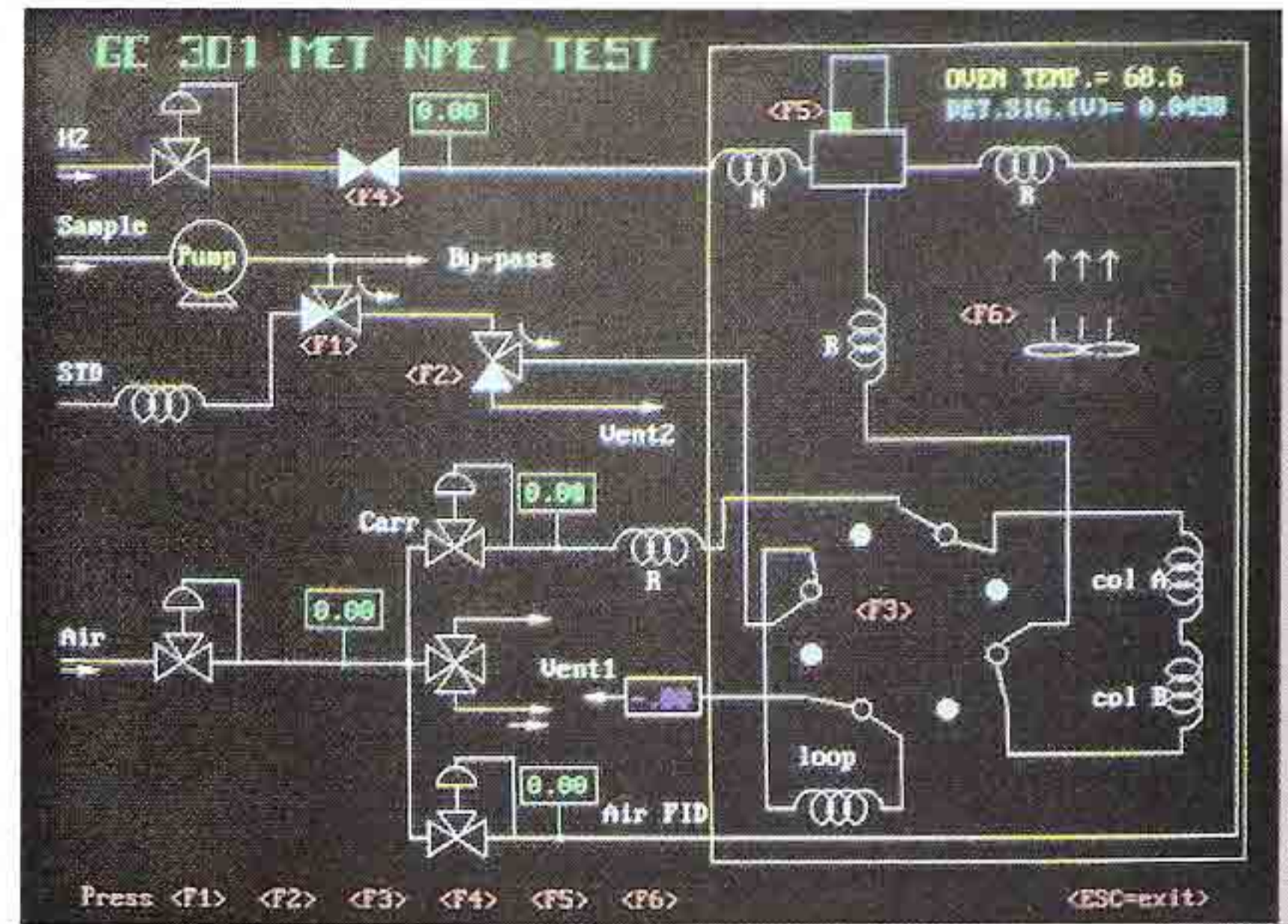
### Operative sequences, are managed by software:

- FID check and management
- Temperatura check
- Data collection
- Data handling
- Data transmission and printing
- Checking alarms

### Analytical results:

- Chromatogram elaboration
- Area integration, method
- Graphic showing by colour LDC display
- Data presentation: 0-10V, power 4-20mA, serial RS232, printing

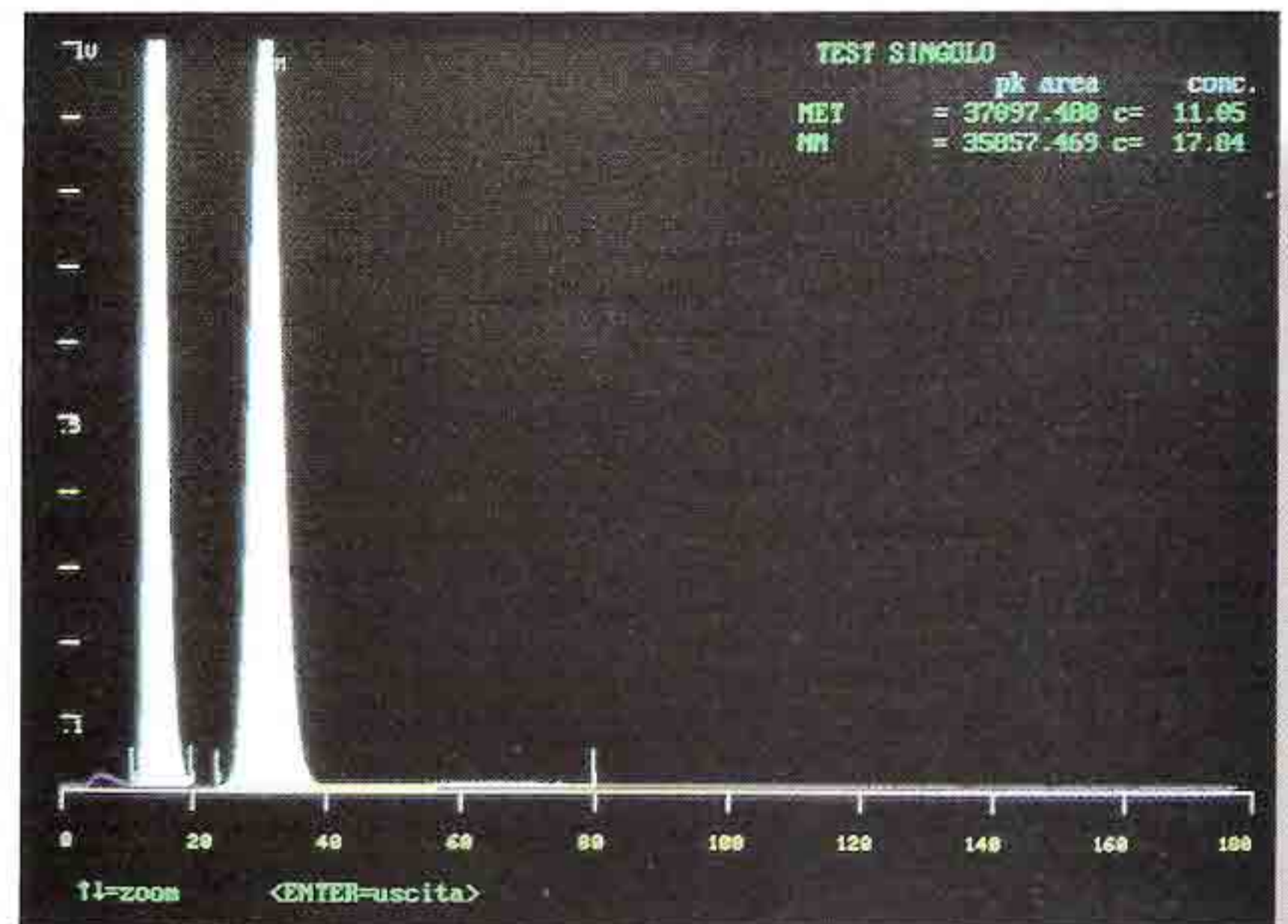
The "PC embedded" supervises to all the analytic cycle phases, chromatographic view, data processing and read in, graphic interface based on colour LDC (TFT) screen.



a)

### Electronic processing

- operative sequences
- checking of pressure and gas flows
- calibration and standardisation
- lighting flame and its checking
- full scale values
- instrumental configuration
- helps on line
- remote control by modem



b)

### a) - Diagnostic without manual

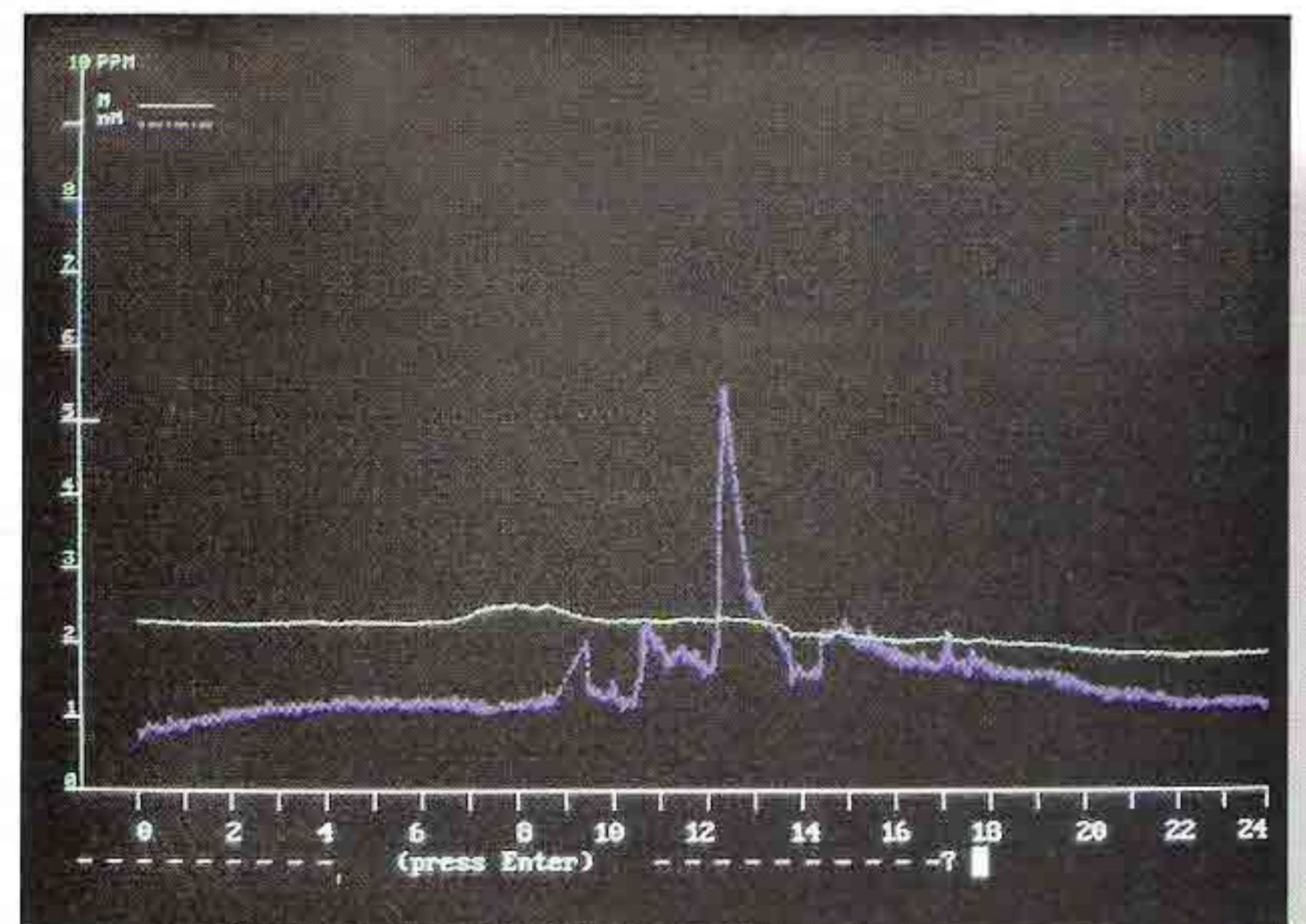
Animated visual of the analytic circuit and every internal parameters, pressures, flow rate, temperature

### b) - Chromatogram graphic display

Area integration and re-calculation peaks, analytic data handling

### c) - Measurements trend

Graphic display of the measurements trend, historic values and irregularities, if any



c)



## Technical specification MERCURY 901

DETECTION SYSTEM	Flame ionisation (FID)
MEASUREMENT RANGE	30-100-300-1000-10000 mg/m <sup>3</sup>
COMPLETED ANALYTICAL CYCLE TIME	120 sec.
SHORTER ANALYTICAL CYCLE TIME	5 sec.
NOISE	0.1% F.S.
MINIMUM DETECTABLE	0.2% F.S.
ACCURACY	± 1% F.S.
LINEARITY	± 1% F.S.
REPEATABILITY	<1% F.S.
WORKING TEMPERATURE	10°-40° C
FID TEMPERATURE	200° C
HYDROGEN CONSUMPTION (electronic check)	30 ml/min.
HYDROGEN, MINIMUM PRESSURE	2 bar
FID AIR CONSUMPTION (electronic check)	250 ml/min.
CARRIER AIR CONSUMPTION (electronic check)	50 ml/min.
SERVO-AIR PRESSURE	4 bar
ANALOGICAL OUTLETS	V, mA, printing
SERIALS OUTLETS (other ranges as option)	RS232
DATA PRINTING	Centronix PC compatible
DISPLAY (TFT colour)	VGA 640x480 display 6 inc.
MEASUREMENTS DISPLAY	ppm, mg/Nm <sup>3</sup> , to be selected
INTERNAL MEASUREMENTS CONSOLIDATION	>3 working months
REAL TIME CHROMATOGRAM GRAPHIC DISPLAY	to be selected
MEASUREMENT TREND GRAPHIC DISPLAY	to be selected
CONSOLIDATED MEASUREMENT EDITING	numerical system on printing numerical system on screen graphic system on screen
DATA TRANSFER (RLAN)	pre-installed, s/w - interface
DATA BASE FILEING	EXCEL compatible
AUTODIAGNOSTIC	power wantage gas pressure wantage detector flame off out of temperature
POWER	220 VCA, 500 VA
DIMENSIONS	w260 x h340 x d500
WEIGHT	15 Kg.

The instruments needs hydrogen, chromatographic air and standard gas

**Bottles carrier basket with wheels:**

**as optional**

**heated drawing line (measurement has to be indicated):**

**as options**



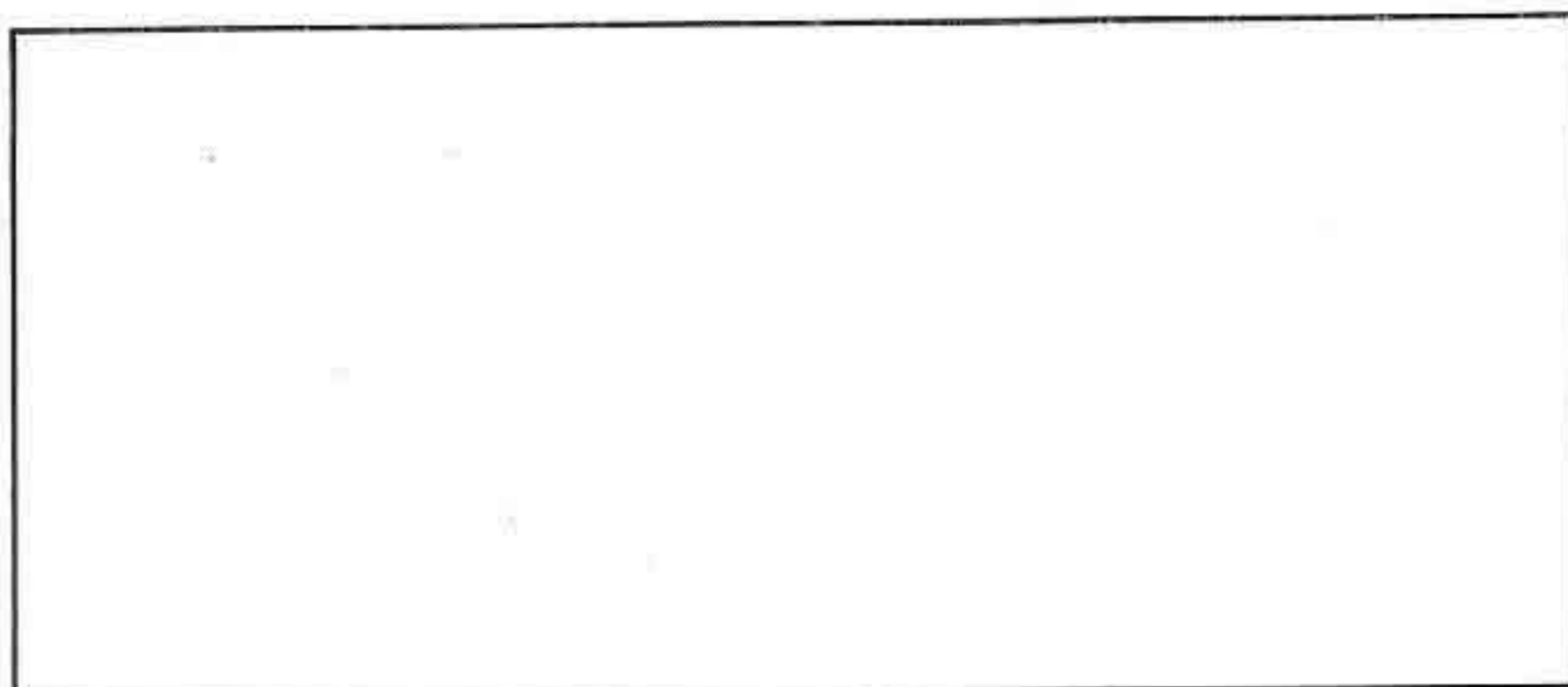
**NEW INSTRUMENTS and RESEARCH for ANALYSIS s.r.l.**

Head Office: Via Locatelli, 113 - 20046 Biassono (MI) Italy

Tel.: +39 039.24.97.856 - Fax: +39 039.24.90.049

<http://www.nirainstruments.it>

e-mail: sales@nirainstruments



Local distributor and service