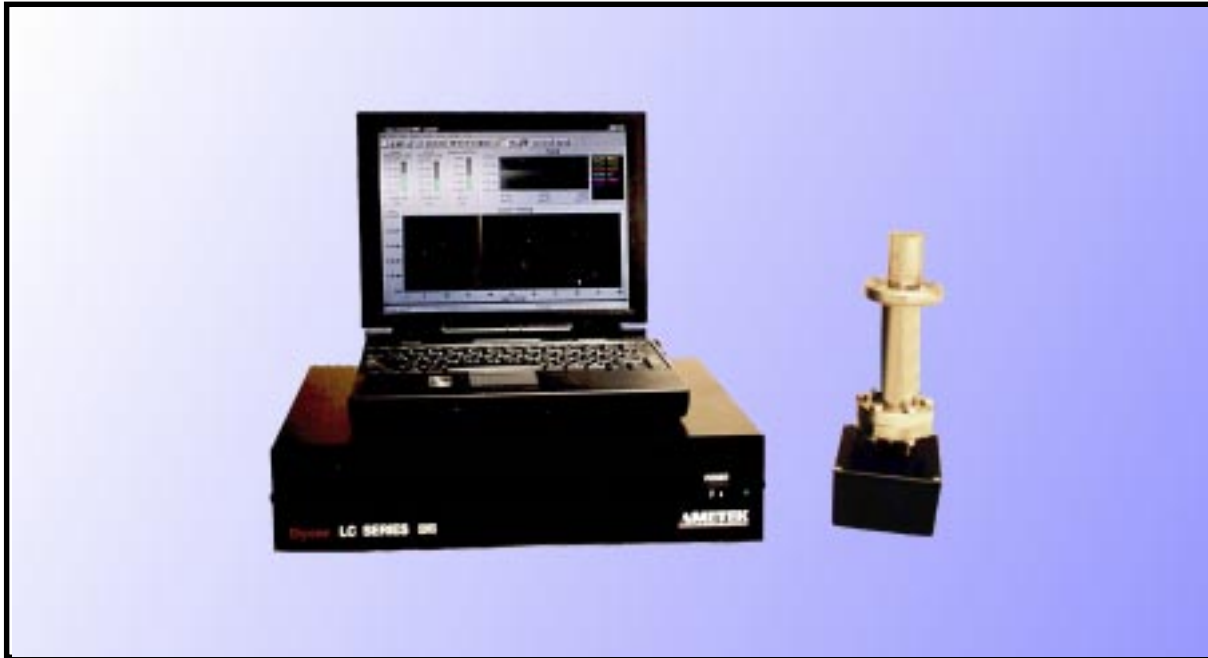


ANALYZER SOLUTIONS FOR YOUR PROCESS!



## LC-Series Residual Gas Analyzer

*Offering the most cost-effective solution for your application-specific, process monitoring needs.*

The Dycor LC-Series Residual Gas Analyzer (RGA) offers outstanding performance yet is priced to be the most cost effective RGA on the market. The LC-Series instruments are constructed from materials that are compatible with Ultra High Vacuum (UHV) systems and are designed to require the very minimum in maintenance. The versatile RGA is ideally suited for use with UHV systems and equipment monitoring of semiconductor and thin film processes in the high vacuum range. Coupled with the System 200 software (which is 32-bit, multi-threaded, and designed for use with Windows 95 and NT), the LC provides advanced features that are associated with higher priced instruments. The LC-Series RGA is clearly the best performing and most affordable analyzer solution for your application.

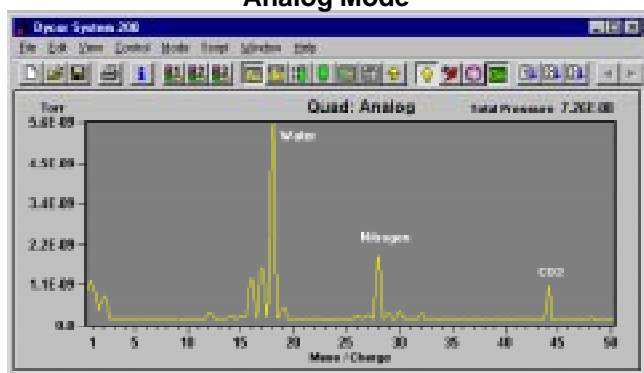
The LC-Series RGA includes Dycor's 1-100 AMU-range Dycor open ion source analyzer head with Faraday cup detector, electrometer pre-amplifier, and RF power supply with an RS-232 port for interfacing to a PC. Options include 1-200-AMU range and channel plate electron multiplier.

# SYSTEM 200 SOFTWARE FEATURES INCLUDE:

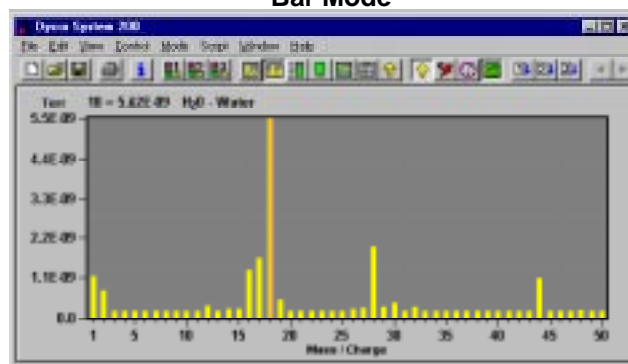
- Variety of operating modes including Analog and Bar, Meter, Annunciator, Tabular, Trend, and Leak Detection.
- Custom modes to combine display windows from other modes.
- Data that can be viewed in real time or saved to a file for later retrieval and comparison with current spectra.
- Auto-Tune capabilities to ensure high quality, repeatable data.
- Library Mode for comparison between collected sample spectra and stored library spectra. Facilitated by split-screen display
- Dynamic Data Exchange (DDE) automation for limited control by Windows applications .
- Single or continuous scan with user-defined interval.
- Alarms: Low, Low Warning, High Warning, High.

## Operating Modes

**Analog Mode**

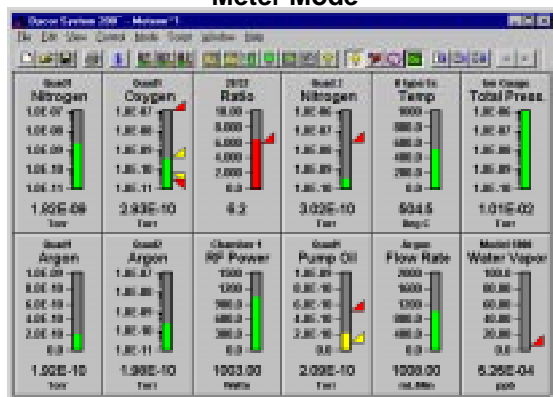


**Bar Mode**



**Analog and Bar Modes** are a means of observing constituents in the background vacuum environment by scanning across a range of masses. Total pressure is displayed in the upper right-hand corner. User-defined labels can be placed in the plot area and the vertical cursor shows exact values and positions.

**Meter Mode**



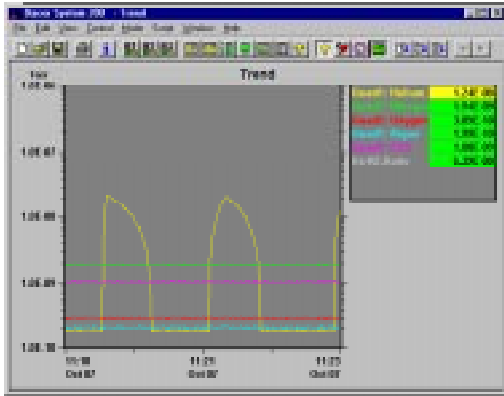
**Annunciator Mode**



**Meter Mode** simultaneously monitors partial pressures, analog inputs or total system pressure. Displayed values can be user-defined or can come directly from a device or from another display. The mass number or gas name can be displayed.

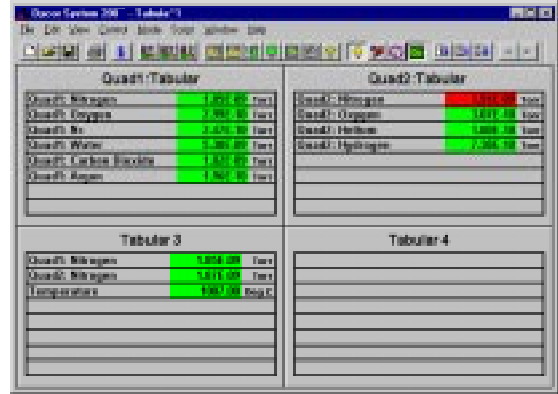
**Annunciator Mode** provides a Go/No Go visual of the instrument status using a color-coded display. Displayed values can be user-defined or come directly from a device or from another display.

### Trend Mode



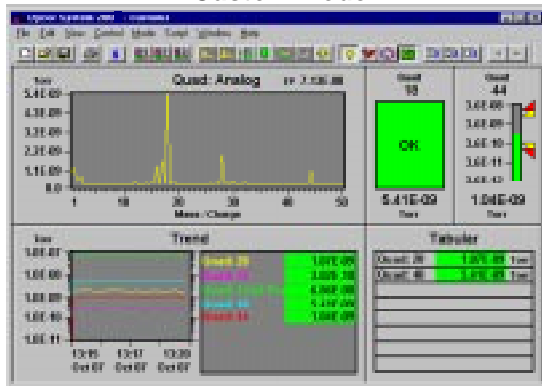
**Trend Mode** tracks partial pressures, analog inputs or total pressures over time. Vertical cursor used to display recorded values at any position in time.

### Tabular Mode



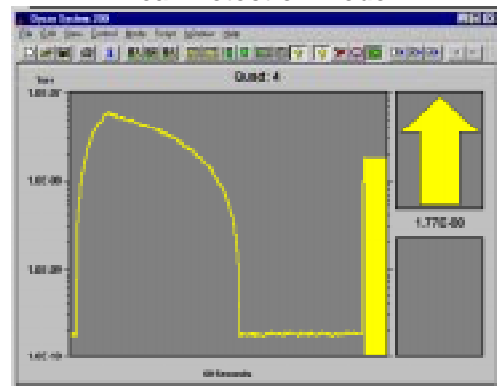
**Tabular Mode** combines the status parameters for all operating quadrupoles in a table-type format. Up to 8 channels in each of 4 panels for a total of 32 data channels displayed.

### Custom Mode



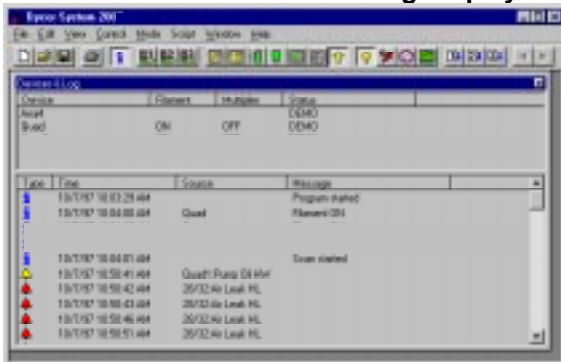
**Custom Mode** allows the user to create and save custom screens using a combination of the other display modes. An unlimited number of custom modes can be created and saved by the user.

### Leak Detection Mode



**Leak Detection Mode** checks the vacuum system for leaks when a tracer gas of known mass is applied to the vacuum system. It uses a sound board to generate a tone whose pitch changes with the level of the leak. It allows for single person leak checking. Up/down arrows show the direction of the leak (increasing/decreasing).

### Device Status and Event Log Display



The **Device Status** window lists the quadrupole, filament, and multiplier status. It indicates whether the device is offline or has had communications errors.

The **Log window** shows a scrolling event log. Events logged include program start, scan on/off, filament on/off, alarm triggers. The log is saved to a file and a new file is started each time the program starts or at midnight of each day.

### Alarms

Every data channel has low, low warning, high warning, and high alarms.

### Calibration and Auto Tune

Automatically sets RF-tune, mass position and resolution.

### Printing

Print one, some or all data displays.  
Supports color printers.

### Analog Output

One analog output and two TTL signals are provided.

## PERFORMANCE SPECIFICATIONS

### Mass Range:

1 - 100 AMU standard; 1-200 AMU optional

### Operating Pressure Range:

$10^{-4}$  Torr to ultrahigh vacuum

### Minimum Detectable Partial Pressure:

$5 \times 10^{-12}$  Torr ( $5 \times 10^{-14}$  Torr for electron multiplier units)

### Resolution:

Adjustable to constant peak width (0.5 AMU at 10% height)

### Emission Current:

0.1 to 10 mA; 50 mA to degas

### Electron Energy:

30 to 150 volts to operate; 200 volts to degas

### Ion Energy:

1 to 10 volts

### Source Sensitivity (Faraday Cup):

$2 \times 10^{-4}$  amps per Torr at detector  
(measured with nitrogen at mass 28)  
with peak width = 0.5 at 10% height and  
 $1 \times 10^{-3}$  amps emission current

### Power Requirements:

110 VAC 1 amp or 200 VAC 0.5 amp

### Stability:

*Mass stability:*  $\pm 0.1$  AMU after 30-minute warm-up;  
*Peak Height:*  $\pm 2\%$  after 30-minute warm-up.

### Minimum PC Requirements:

Pentium, 60 MHz processor  
16 MB RAM with Windows ® 95 or NT

### RS-232 Serial Communications Interface:

Isolated; baud rate selection of 1200 to 38,400  
9-pin, female D-connector

### Physical Dimensions:

Weight 14 lb. (6.3 kg.)  
Width 16 in. (40.6 cm.)  
Length 15 in. (38.1 cm.)  
Height 3.5 in. (8.9 cm.)



U.S. EN ISO 9001



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