

T-IR660 EGA interface



Reduced volume linear gas cell with 10 cm optical pathlength

Z-linear gravity cell geometry provides for gas input at the top and exhaust at the bottom ensuring constant and uniform gas flow

The reduced volume allows residence of the gas in the cell for up to 6 seconds during the analysis phase

The cell design, active gas flow, and close control of the cell and transfer line temperatures also ensure rapid cycling of the evolved gas through the cell without risk of contamination



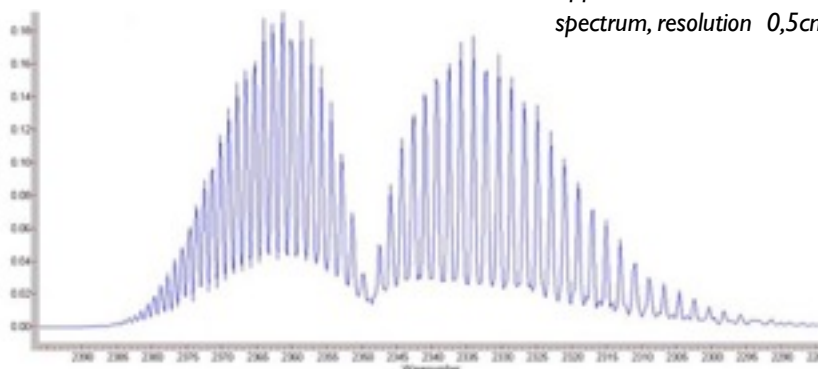
SRA T-IR660 interface enables IR analysis of the gases evolved from a TGA system using the Agilent Cary 660 FTIR spectrometer

- The system comprises of the following components:
- Specific adapter for coupling to different TGA models (gas sampling directly from the furnace)
- Thermostatted transfer line with SilcoSteel inert liner
- Linear gas cell designed to :
 - Integrate into the optical path of the Agilent Cary 660 FTIR
 - Optimise sample gas residence time
- Controller unit which handles :
 - Temperature of the cell and transfer line (24V heating system with increments of 1°C up to 350°C)
 - Flow control with mass flow controller; gas flow up to 200mL/min
- Synchronisation and automation of the FTIR analysis
- Elimination of analysed gases using a vacuum pump

Resolution and Sensitivity

Maximum resolution 0,06 cm⁻¹.

5ppm CO₂ standard spectrum, resolution 0,5cm⁻¹.



Detection limits with 10 cm cell

| Gas | DL (ppbv) |
|------------------|-----------|
| CO ₂ | 7,5 |
| CH ₄ | 30 |
| Acetilene | 45 |
| Etilene | 45 |
| N ₂ O | 15 |

| Gas | DL (ppbv) |
|-----------------|-----------|
| Alogenati | 50 |
| Solventi | 50 |
| CO | 50 |
| NO ₂ | 20 |
| SO ₂ | 35 |

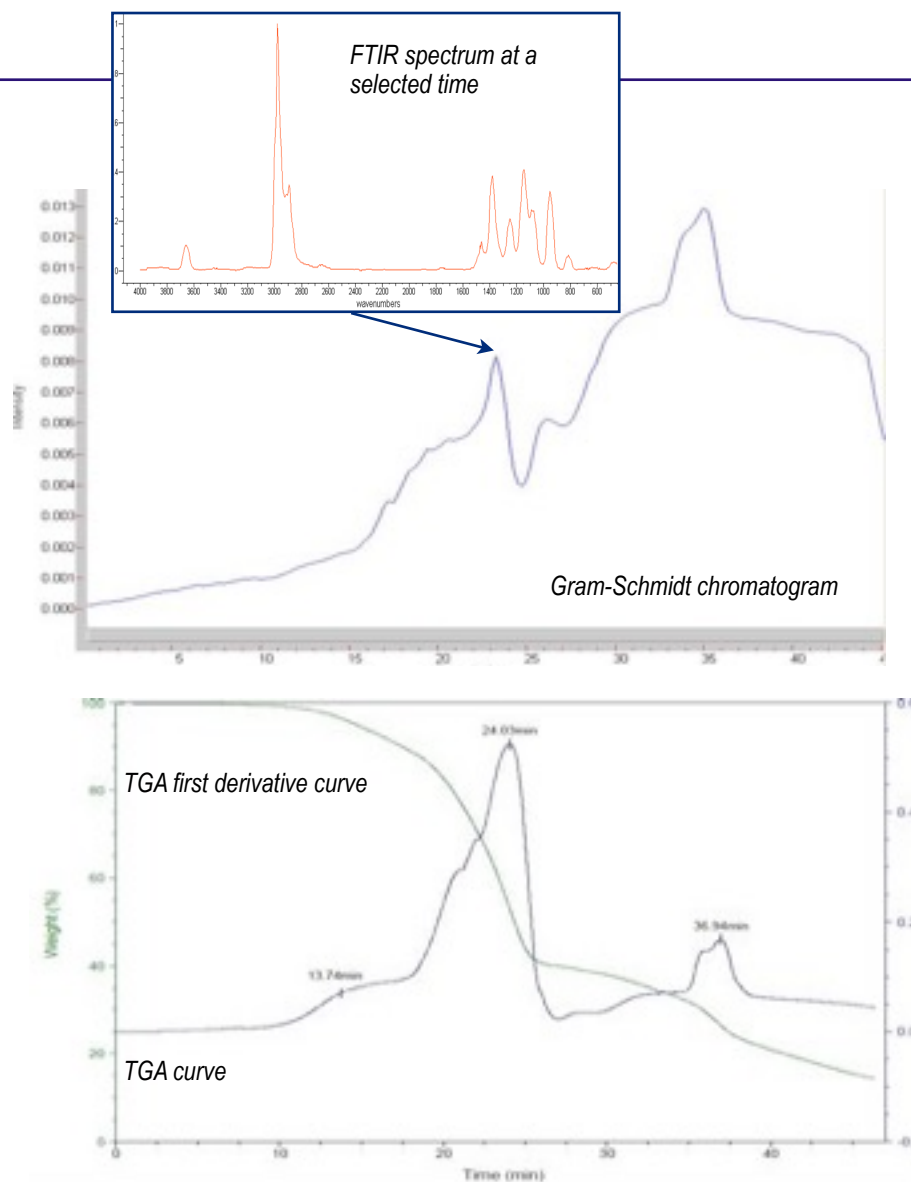
| Gas | DL (ppbv) |
|-----------------|-----------|
| NH ₃ | 25 |
| HCl | 75 |
| Etano | 30 |
| NO | 100 |

A unique characteristic of the SRA T-IR630 interface is the active gas sampling system with balanced flow.

With this solution the Gram-Schmidt chromatogram can be perfectly overlaid with the TGA first derivative curve – this proves that both analytical techniques are perfectly synchronised.

This approach also yields higher resolution data compared to passive flow systems, which means that very minor transitions can also be identified.

With a single mouse click on the chromatogram you can extract the FTIR spectrum at that time point or sum spectra over a selected time range, and this spectrum can then be searched against a spectral library.



Technical specifications

| | |
|---------------------------------|---|
| Dimensions | Controller 25.5 x 25.5 x 50.5 (cm), placed on the ground Transfer line length: 1 m |
| Weight | 16.2 Kg |
| Power sockets | Voltage 230 or 115 V ~ ± 10% Frequency 50-60 Hz ± 1% |
| Utilities | Power sockets (1 control module) Nitrogen gas resulting from the TGA |
| Consumption | Maximum 1.5 A at 230 V ~ 400 VA max |
| Environmental conditions | +5 ° C to +35 ° C Maximum relative humidity 75% non-condensing |
| Protection degree | IP (IEC 60529) 20 |
| Maximum noise level of the pump | 55 dBA |



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