

European product



# IF 2000G

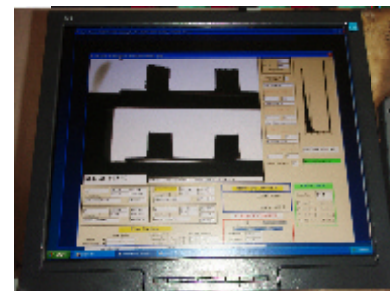
## Designed for COFIRING PLANTS



### 4 x COAL or 4 x BIOMASS ASHES



The IF 2000G is an automatic instrument for the determination of the ash fusion points by the mean of image analysis. This determination uses the most modern technology for monitoring, computing, storing results and curves obtained during the test according with your specifications. Once the



sample introduced into the furnace, the operator is free until the end of the analyze. The results and the curves are automatically stored in a DATA BASE and printed. You get a paper report with the pictures of the points, the fusion curves and a digital fusion movie with a resolution of 4°C is automatically stored

### BIOMASS ASH - COAL ASH - RDF Fuels - DIRECT COFIRING

**COAL ASH ANALYSER** : 4 coal ash samples molded as pyramids or truncated pyramids can be processed during a single analyze under oxidizing or reducing atmosphere between 200°C and 1550°C. The analyzer recognizes the fusion points and stores the pictures of the samples in process (in the selected range of interesting temperature.)

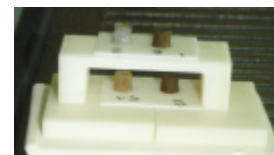
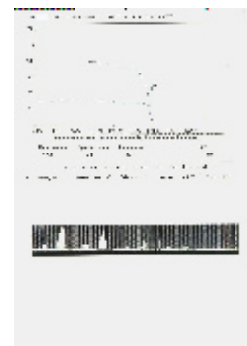
The pictures of the particular points (Initial, Shrink, Sphere, Hemisphere, fluid) are stored and automatically printed with the recorded width, height, rounding and temperature ramps.

The analyzer automatically recognizes the shape (cylinder, pyramid, truncated pyramid or wire), and compute the corners or the tip according the initial shape and form factors.

The stored pictures (5°C interval) can be used to make fusion movies.

Curves, points and temperature ramps are printed and stored in the data base.

**BIOMASS ASH ANALYZER**: ready to perform analysis with CEN, ISO norms for biofuels with cubic or cylindrical shapes from 3 mm x 3 mm with 4 samples simultaneously.



### THE BEST CHOICE for COFIRING PLANTS

#### IF 2000G SPECIFICATIONS

Tubular Furnace	Internal diameter 40mm 220V 50-60Hz 1 phase 3 kW
Ceramic Tube	No porous recrystallised alumina
Insulation	ceramic (1700°C reference temperature), (no asbestos)
Heating Elements	Lanthanum chromite (1750°C surface temperature)
Regulation	P.I.D. / static relay
Atmosphere	Reducing or oxidizing (software controlled)-
Camera	CCD, with RS232 interface
Flow Indicator	up to 120l/hour (recommended flow: 60l/hour)
Reducing Gas	CO <sub>2</sub> /H <sub>2</sub> or CO/CO <sub>2</sub> or CO + CO <sub>2</sub> or H <sub>2</sub> + CO <sub>2</sub> (mixed by the Analyzer)

Oxydizing Gas	Compressed Air
Dimensional Resolution	According magnification and focus (+-2 % generally)
Temperature Resolution	1°C (S ther mo cou ple inside the chamber, beside the samples)
Precision	better than +- 20°C on specific points.

## PRECISION

Because of particular factors influencing this fusion test, the reproducibility is generally better than precision in results.

- Parameters :
- Sample preparation (Ashing and grinding)
  - Interface forces between the sample and the tray at the end of the analysis.
  - Quality in reducing or oxidizing atmosphere.
  - Speed of the gases on samples (cooling effect).
  - Relative position between the samples and the thermocouple.
  - Precision in the temperature ramp according the norm in use.



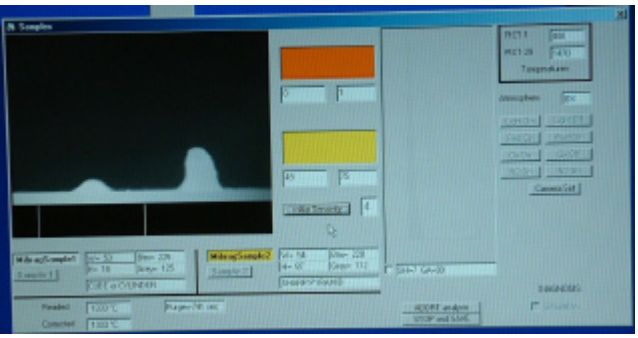
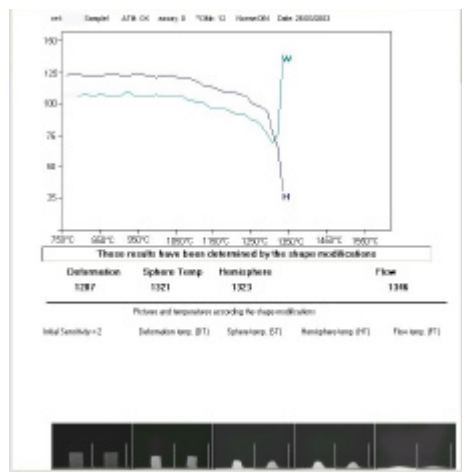
This new configuration in analyzer allows you to use or/and

- *Reference metal (Gold, Palladium, Nickel for testing temperature)*
- *Reference ashes (CRM ashes like GBW 011114 for ISO or RM VS7-001 for ASTM) for testing at atmospheres and physical dispositions in parts inside the furnace chamber.*

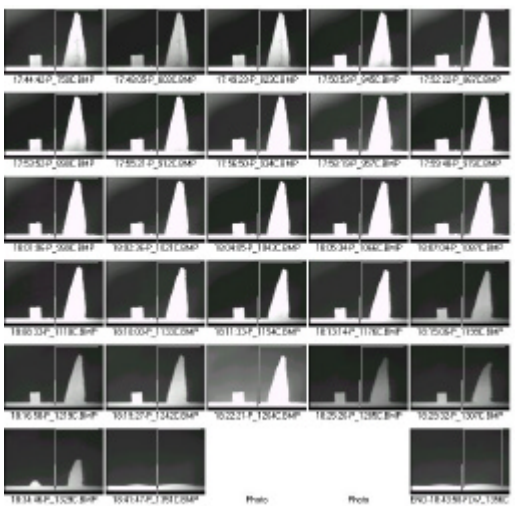
## Implemented norms

Sylabas developed 15 years ago, the first Fully Automatic Ash fusion analyzer working with image analysis. In Europe, the main Bio-

mass labs are equipped with our analyzers. Today with the progress in computers, in controlled cameras, image cards, we detect the specific points on 3mm x 3mm cubic and cylindrical samples.



Re ports on printer, stored pictures



Implemented norms: ASTM, ISO, CEN, AFNOR, BRITISH.

**Your Local DEALER:**  
 SYLAB: France, Belgium  
 HRT Labortechnik : Germany  
 ACOVEX: Finland, Sweden, Denmark, Norway, Baltic St.  
 FKV: Italia  
 RJM SYSTEMS: South Africa  
 ACE INSTR. , LABLINE : India  
 ELITE Ltd: UK, Pakistan  
 DSA INSTR. , SANWAVE Co.,LTD: China  
 Other Countries: contact Sylab (Sylab@Sylab.fr)

Other norms can be implemented on request.