



# SHV- IF

According CEN Norms



## BIOMASS ASH FUSION ANALYZER



The SHV-IF 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 - CASTING POWDERS - FLUXES - GLASS

**2 samples** can be processed during a single analyze under **oxidizing** or **reducing** atmospheres **between 200°C and 1500°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.

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

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

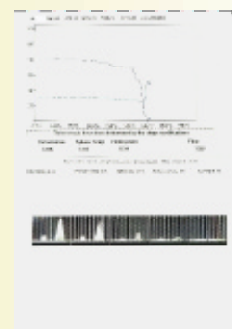
**BIOMASS ANALYZER** : ready to perform analysis with **CEN TS15404, ISO 540, DIN 51730** norms for biofuels ashes with cubic or cylindrical shapes from 3 mm x 3 mm up to 5mm x 5mm , this analyzer is also working under network.

The **BIOMASS ASH** analyzer includes the range for **COAL ASH** analyze.

**The furnace:** up to **1500°C**, peak temperature 1530°C

#### SHV-IF SPECIFICATIONS

TubularFurnace	Internal diameter22 mm220V50-60Hz 1 phase 0.4 kW
Ceramic Tube	Noporoussilico-alumina
Insulation	ceramic (1600°C referencetemperature), (no asbestos)
Heating Element	Molybdenum disilicide (1550°C surfacetemperature)
Regulation	P.I.D. / Phase angle
Atmosphere	Reducing or oxidizing (soft warecontrolled)
Camera	CCD, with RS232 interface
Flow Indicator	up to 8 Liters/ hour (recommanded flow:according CEN)
ComputerCard	Advantech
Image Card	Imagenation
Dimensional Resolution	According magnification and focus (+-2 % generally)
Temperature Resolution	1°C (S thermocouple inside the chamber, beside the samples at 1.5cm)



Precision	better than $\pm 20^{\circ}\text{C}$ on specific points.
Furnace SHV-FUR	Di men sions 22x24x38 cm Weight 11 kg
Analyzer SHV-IF	Di men sions 22x24x38 cm Weight 9kg

## 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 analyze.
- 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

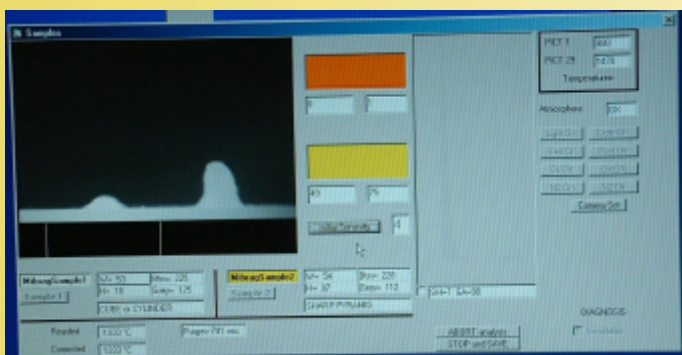
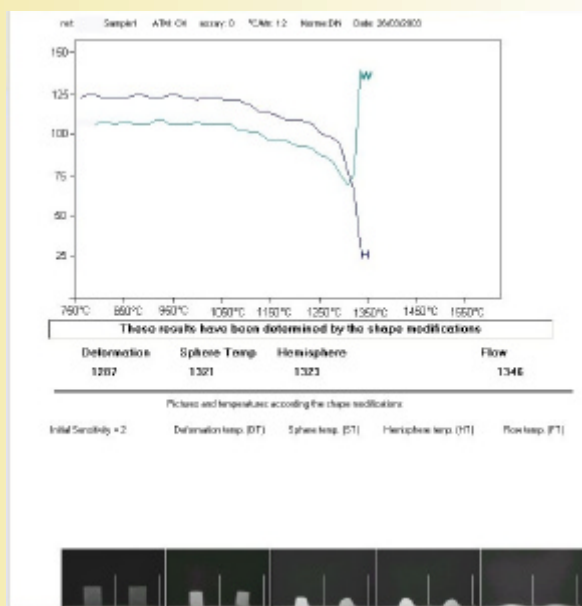
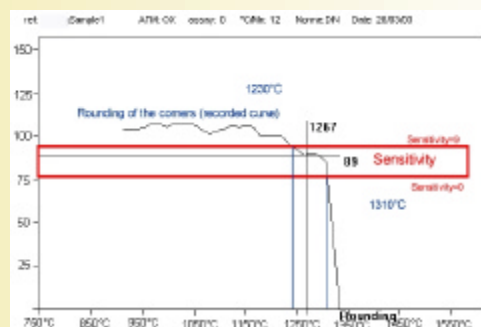
- Reference metal (Gold, Palladium, Nickel for testing temperature)
- Reference ashes (CRM ashes like GBW 011114 for ISO ) for testing atmospheres and physical dispositions in parts inside the furnace chamber.

## Implemented norms

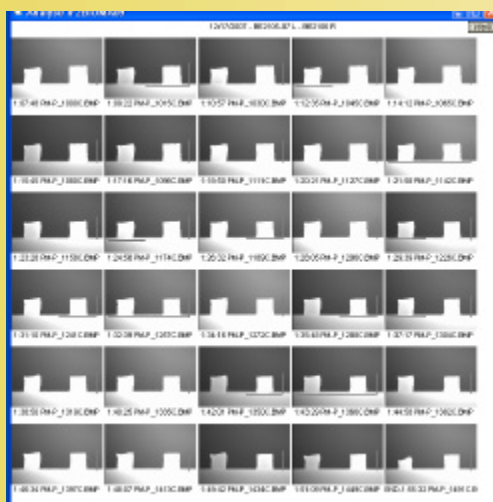
Sylab as developed 18 years ago, the first Fully Automatic Ash fusion analyzer working with image analysis. Today 90% of the coal ash fusions in France are performed with our analyzers and these analyzers are widely used in North Europe for testing Biomass products. Today with the progress in computers, in controlled cameras, image cards, we detect the specifics points on 3mm x 3mm cubic and cylindrical samples.

Implemented norms: CEN TS15404 , ISO 540, DIN 51730 .

Other norms can be implemented on request.



Reports on printer, stored pictures



**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)