

Online measurement of Biomass and RDF

With the inherent variability in biomass fuel quality, achieving stable and efficient operations requires real-time insights into key fuel parameters. That's why we're introducing **BoilerControl**, our advanced solution to track the critical metrics on-line. NIR (Near-Infrared) technology revolutionizes biomass measurement by providing **fast, accurate, and non-destructive analysis** of biomass. Near-Infrared (NIR) technology uses light in the near-infrared spectrum to analyze the chemical composition of materials.

Unlike classic measurement technologies, NIR allows measurement with a moisture range from 0 to 70%+, non-depending on the density and accepting heterogeneous biomass without technical failure.

One system will determine in parallel:

- **Moisture Content:** Excess moisture reduces energy output and combustion efficiency. By accurately measuring and managing moisture levels, BoilerControl helps you optimize power generation.
- **Ash Content:** High ash levels lead to increased equipment wear and higher waste disposal costs. Monitoring ash content with BoilerControl can help reduce maintenance expenses and extend equipment lifespan.
- **Calorific Value:** A consistent heat rate is essential for reliable energy production, and calorific value is a key indicator. Maintaining optimal calorific value allows you to maximize both fuel efficiency and power output.



EnergyTracker

In addition to Online measurement, APOS software solution and interfaces can help you in your reporting process. The EnergyTracker determines the volume, mass and calorific value of the fuel fed to the boiler in real time.

The primary energy supplied and the amount of CO2 emissions are calculated from the mass flow using the measured values from the APOS BoilerControl. The generated data is saved as hourly and daily values and can be exported as a CSV for further processing or as a PDF for transmission to authorities.

Specification Measurement System

Wavelength used	950nm – 1690nm
Measurement interval	> 60 raw values/minute
Number of probes	1 – 2
Repeat accuracy	< 0.5% - standard deviation points

Central Spectrometer Unit (CSU)

Form factor	400mm x 500mm x 250mm (WxHxD)
Weight	25kg // 55.1lb
Electrical protection class	IP 54
Ambient temperature	Unheated, cooled +5°C to 50°C // 41°F to 122°F Heated, cooled -20°C to 50°C // -4°F to 122°F
Relative air humidity	Max. 80 %, non condensing
Interfaces	Ethernet
Power Supply	230V AC // 120V AC

Contact Probe

Form factor	Diameter 165mm // 6.5in, Length 178mm // 7in
Weight	4.5kg, 9.9lb
Measurement window	sapphire glass, 17,25mm // 0.67in diameter
Electrical protection class	IP 65
Ambient temperature	-20°C to 60°C // -4°F to 140°F
Flange Type	DN50 PN10-16s
Data transfer	RS 485 and fiber optic cable
Light sources	2 x max. 5 W
Expected life time	Approx. 5,000h per bulb, two bulbs installed
Power supply	24V DC // 400mA

APOS ATP Terminal

Touch screen	7" Screen, 800x480 Pixel
Protection class	IP64
Ambient temperature	-10 °C to +50 °C
Relative air humidity	max. 80% non condensing
Interface	Ethernet

