REALtimeINSTRUMENTS

AshScan™ is typically more accurate than conventional laboratory analysis of samples. Why?

- Discrete sampling only provides a "snapshot" of coal quality, and does not show any short term variations
- Recent advances in technology pioneered by RTI have significantly improved the performance of dual energy Ash Analysers

AshScan™'s many practical design features make it by far the simplest Online Ash Analyser to install, calibrate and operate.

AshScan™ Online Coal Ash Analyser

Continuous real-time analysis of all coal, not just a sample

- Real-time data means REAL control
- Reliable, accurate data
- Low cost of ownership
- Reduced analysis costs

a division of

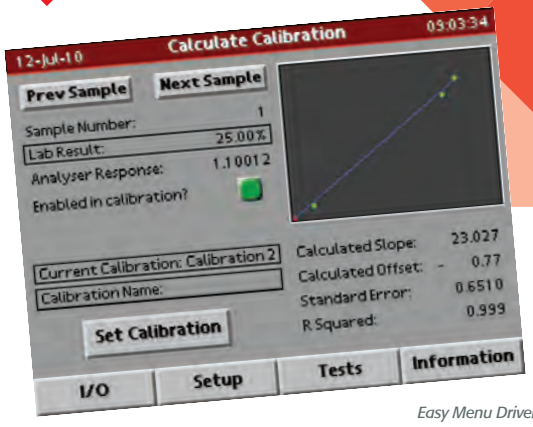
Realtime Group Limited
solutions for today and tomorrow

Features and Benefits.

AshScan™ provides instantaneous, continuous, on-belt Ash-in-coal data for real-time control of plant operations.

- **Rapid Return on Investment** through reduced laboratory analysis, and optimisation of plant operation in real time
- **SAFE:** Source can be switched ON/OFF, and source holder removed, all from the walkway while the belt is running. ***Belt shut down not required***
- Suited for **all coal types**
- Multiple stored Calibrations for **multi-seam operations**
- **Fast response**
- **Automatic bed depth correction**
- **3G interface** for comprehensive remote diagnostics by RTI engineers, independent of client IT infrastructure. ***RTI engineers can remotely calibrate the AshScan™ for you***
- **Rugged and reliable** for harsh mining conditions, with **low ongoing maintenance**
- All standard communications protocols supported. ***Seamless, hassle-free plant integration***
- Easy **menu driven touchscreen** HMI for setup, calibration, and viewing results
  - **Can be fully calibrated at the HMI**
  - No laptop connection required
  - Step by step setup virtually eliminates "set up error" - a major reason for poor performance in other Analysers
  - Automatic diagnosis software for verification of instrument setup and stability as well as static calibration verification

Source Holder Access



Easy Menu Driven Touchscreen

Is AshScan™ the best choice for my application?

RTI manufacture a range of Analysers to cover most operational needs, including the **AshScan™ Duo** Ash + Moisture Analyser, **GammaScan™** natural gamma Ash Analyser, and the **AllScan™** Elemental Analyser. **The right choice depends on *your* application**, so contact us now to discuss your Ash Analysis needs.

Working Principle.

DUAL Energy Transmission ("DUET", also called "LET" = Low Energy Transmission) is a proven technology for measuring Coal Ash.

Ash consists mainly of oxides of metallic elements like Si, Fe, Al and Ca. **AshScan**™ measures the combined total of these elements present in the coal, and this correlates directly to the total Ash.

Two radioactive sources are used:

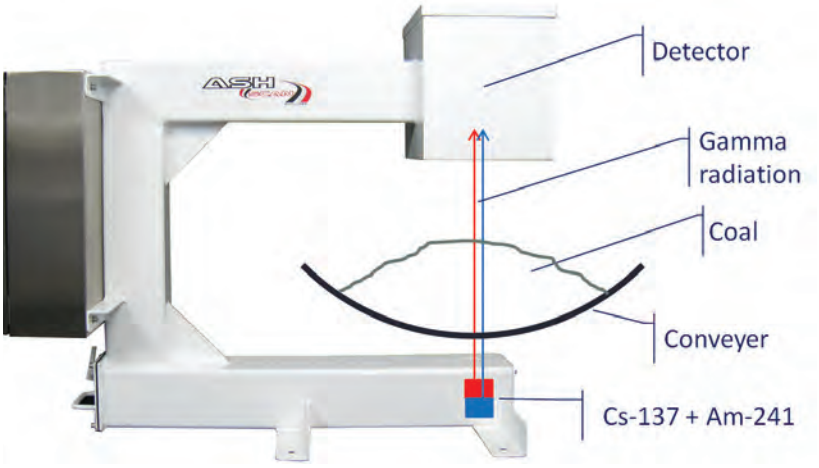
1. Am-241 : low energy gamma radiation.

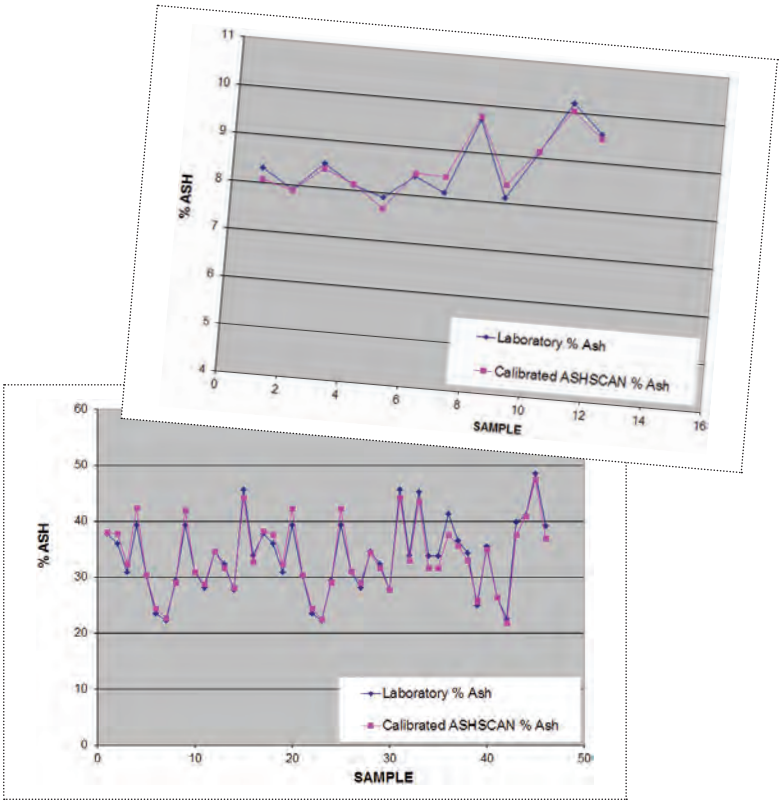
   Absorption of Am-241 gamma rays selectively occurs due to the presence of the major ash-forming elements (Si, Fe, Al, Ca) **and** the bed depth of the coal.

2. Cs-137 : high energy gamma radiation.

   Absorption of Cs-137 gamma rays will be due **only** to the bed depth of the coal. This allows the Am-241 measurement to be normalised for bed depth.

The normalised Am-241 absorption is then correlated to total Ash content by calibrating against laboratory reported ash sample results.





AshScan™: Online Coal Ash Analyser

Specifications.

Operational

Principle of Operation	"Dual Energy Transmission". Also referred to as "Low Energy Transmission" (or "LET")
Sources	Cs-137 and Am-241
Conveyer width	Up to 1400mm as standard (larger belts accomodated depending on application)
Belt Speed	No Limit
Bed Depth Range	Best suited to 50 – 350 mm (application dependant)
Ash Range	0 – 100%
Weight	typically 90kg, fully assembled
Measurement time	Continuous instantaneous readout of rolling average over "x" seconds, where "x" is typically 10, but adjustable up/down for higher precision or faster response, respectively

Expected Precision

Note: Precision may be affected by steel cord belts.

Ash in typical raw coal	typically ± 0.9% (1SD) dependant on range.
Ash in typical washed coal	typically ± 0.6% (1SD) dependant on range.
Ash in pulverised coal (single seam)	typically ± 0.3% (1SD) dependant on range.

Environmental

Humidity	5% – 95% RH non condensing
Operating temperature	0 – 45°C
IP Protection Rating	IP66 Stainless steel. Optional Sunshade for Control Cabinet

Control and Communications

At-Instrument Control	Touchscreen HMI, no laptop connection required. HMI provides access to all functions via a simple menu structure. Includes diagnostics, setup, calibration, instantaneous Ash readout, Ash trend data in graphical and tabular format.
Outputs (Standard)	4-20mA Instantaneous Ash 4-20mA Tons-weighted Ash High and Low Ash Alarm Relay AshScan can be supplied with any standard communication protocol such as Ethernet, Modbus, and others
Inputs (Standard)	Conveyer Running (digital) Tons weighted reset (digital)
Data Storage	Removable CF card can store typically up to 3 months of data
Remote 3G Diagnostics	3G modem supplied standard. Access is via a secure web page and allows complete diagnostics by RTI Engineers.

Utility Requirements

Power	110-240 VAC 50/60Hz single phase, 500W
Communications Cabling	Standard cabling depending on choice of protocol (no specialised cabling required)

Locations.

AMERICAS | ASIA | EUROPE | OCEANIA | AFRICA | MIDDLE EAST

South Africa Namibia Zimbabwe Botswana Mozambique

Local Representative

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