



**BRETBY
GAMMATECH**

The Ash Probe



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The MkII Ash Probe is a hand portable instrument for measuring the ash content of piles, wagons or trucks of coal. It provides the user with quick and accurate ash readings within seconds. **It contains no radioactive sources.**

General Description

The Ash Probe comprises two parts: the Probe and the Display Unit.

The newly upgraded Display Unit is now housed in a lightweight carry case incorporating a convenient shoulder carry strap and removable lid for ease of use. (Original hand carry case model available to order).

The probe has undergone an internal upgrade and now incorporates more shock absorbing material to increase robustness. It is provided in a padded shoulder carry bag.

The ash measurement is obtained by inserting the probe into the coal and operating the Display Unit. An ash reading is displayed, the precision of which improves with measurement time. The desired precision is user selectable from four values ranging between 0.25% and 1% ash. The measurement times out once the required precision has been reached.

In order to obtain a measurement for the whole pile the Ash Probe is used at several locations around the pile. Up to 72 readings per pile can be made. Both the individual readings and the pile average ash can be displayed along with the standard error for the pile. Results from up to 72 piles can be displayed and stored.

Calibration is readily achieved by the customer using the supplied sample gathering equipment. The Display Unit can store up to nine separate calibrations for different coal types.



Ash Probe.

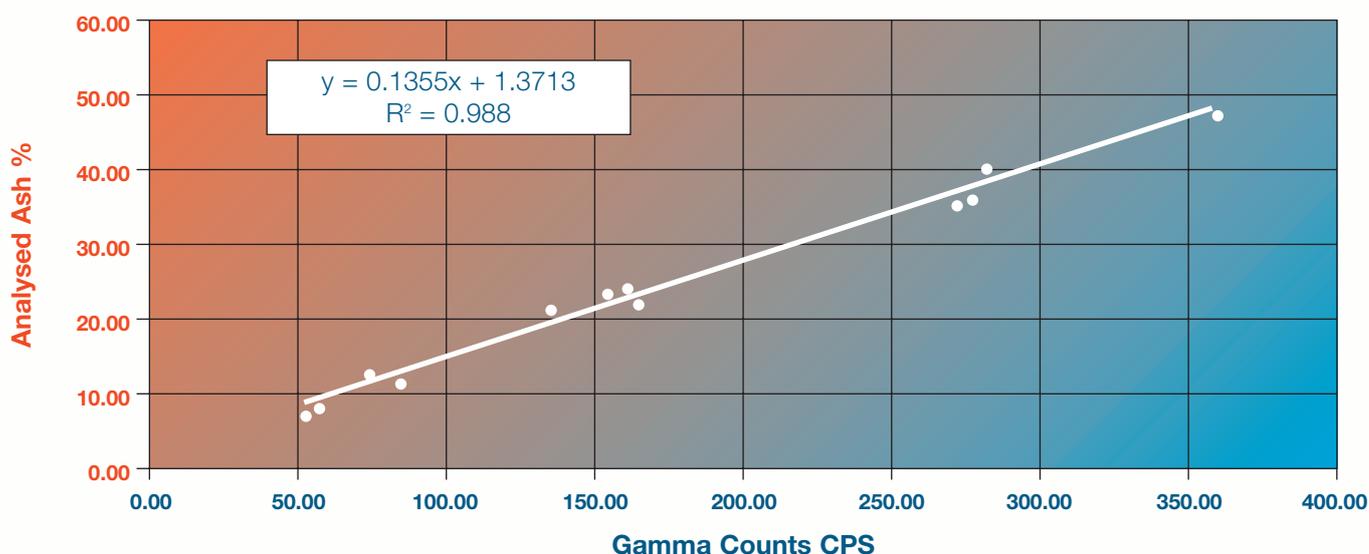
Main Features

- Simple to use
- Hand portable
- Accurate results within seconds
- Provides average ashes from up to 72 measurements per pile
- Stores the ash content for up to 72 piles
- Easy to calibrate
- Can store 9 different calibrations
- Internal rechargeable battery
- Can download data to a PC (using Hyper Terminal)



Probe and Display Unit with calibration equipment.

Typical Ash Probe Calibration



Accuracy

Tests on a wide range of coals from over fifteen different countries on five continents have shown that the Ash Probe can provide the ash content to closer than 1% ash (1σ). In some cases better than 0.5% (1σ) accuracy has been achieved with high-grade anthracite.

Applications

The Ash Probe is currently being used by customers around the world to provide quick testing for the ash content of:

- Run of mine (ROM) coal
- Washed product (smalls, peas, beans, duff, singles, doubles etc)
- Screened coal (dry fines, PSF etc)
- Slurry
- Blended products
- Final product (e.g. composite ash pile)
- Discard
- Unknown coals prior to blending
- Rail or truck coal deliveries to blending plants
- Rail or truck coal deliveries to power stations
- Rail or truck coal deliveries to coking plants

Benefits

- Much quicker than conventional sampling and analysis
- More information on ash and ash variability
- Can blend more accurately, leading to a premium product
- Can dispatch more quickly, reducing train standing time
- Can increase saleable tonnage, leading to increased revenue
- Can reduce discard, leading to reduced costs
- Reduced sampling effort, leading to reduced costs
- Can reject inferior coal deliveries or negotiate lower price



Ash Probe in use.

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Specifications

Principle of operation:	Natural gamma (no radioactive sources)
Power:	12V internal rechargeable battery
Battery life between charges:	up to 20 hours continuous operation
Charger:	110- 240VAC 50-60Hz input 13.8V, 0.3A output
Operational Temperature range:	-10 to +35°C
Probe Weight:	4kg
Probe dimensions (overall):	760mm long x 52mm diameter
Display Unit Weight (with lid):	4kg
Display Unit Weight (without lid):	3.5kg
Display Unit Dimensions (overall) with lid:	310mm x 230mm x 220mm
Display Unit Dimensions (overall) without lid:	310mm x 230mm x 160mm
Display type:	4 row 40 character LCD
Keyboard:	QWERTY (membrane type)
Probe-Display Unit cable length:	3m (longer if required)
Protection (lid closed):	IP65
Accuracy:	Better than 1% achieved*
Precision (user selectable):	0.25%, 0.50%, 0.75% or 1.0% ash
Measurement time:	Depends upon selected precision
Minimum measurement time:	60 seconds
Maximum measurement (user definable):	300, 400, 500 or 600 seconds
No of stored Calibrations:	up to 9
No of measurements per pile:	up to 72
No of piles:	up to 72
Computer Interface	Serial data port (Hyper Terminal)

**Performance in practice will depend upon operational circumstances*

Specifications are subject to change without notice.

