



## Model 730 Full Stream Elemental Analyzer



The ETI Model 730 is an Online Bulk Material Analyzer utilizing prompt-gamma neutron activation (PGNA) elemental analysis combined with a Dual-Gamma Ash Analyzer.

The FSEA utilizes no-contact non-destructive technology to measure the elemental content of 100% of the material in real time while it is in motion on the conveyor. The device provides analytical data to operators and plant control systems on a minute-by-minute basis for use in sorting and blending operations. Use of the FSEA on a plant bunker feed belt allows for boiler operation adjustments to reduce fouling and slagging and to make improvements in long-term heat rate.

The analyzer's real-time measurement and reporting allows plant operators to react to and correct quality problems. All measurements are made every minute, making it useful in on-line process and control applications.

### PGNAA Instrument Properties Reported:

- |                           |             |
|---------------------------|-------------|
| • $\text{SiO}_2$          | • S         |
| • $\text{Al}_2\text{O}_3$ | • As        |
| • $\text{Fe}_2\text{O}_3$ | • Bi        |
| • CaO                     | • BaO       |
| • MgO                     | • Hg        |
| • $\text{SO}_3$           | • Gd        |
| • $\text{K}_2\text{O}$    | • Se        |
| • $\text{Na}_2\text{O}$   | • Ni        |
| • $\text{TiO}_2$          | • Cu        |
| • $\text{MnO}_2$          | • Zn        |
| • Cl                      | • P         |
| • C                       | • SrO       |
| • N                       | • B/A Ratio |

### Ash Instrument Properties Reported:

- Ash
- Heating Value
- Moisture
- Density (weight)

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## SERVICES

ETI offers flexible service contracts for all analyzer customers. Coverage includes radiation safety surveys, leak testing, calibration of all electronics and nucleonics, cleaning, and routine software/hardware maintenance

Technical Support  
Installation and Setup  
Maintenance  
Application Support  
Hardware Support

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## Design Features

- Variable housing configurations to accommodate belt sizes of 600-2000 mm (24-78 inches), including some steel corded belts.
- One to two NaI detectors.
- Superior weight/percent accuracy through the use of an integrated Nuclear Belt Scale. No reliance on third-party mechanical scales.
- Uniform belt loading not required. No belt speed requirements.
- Remote client software interface provided for use on user workstations.
- 6 second analysis times averaged every minute.
- Plant connectivity through direct SQL connection, analog (4-20mA) and digital I/O, and modbus.
- Conditioned power provided through integrated battery backup system to accommodate fluctuating plant power quality/availability.
- Automatic software compensation for electronic drift, source decay, and temperature variations.

## Technical Specifications

Performance			
Accuracy:	0.3-1.0 wt. % (typ) for washed or raw materials		
Response Time:	60 seconds (typ)		
Belt Width:	24-72 inches (600-1800mm)		
Material Depth	4-16 in (100-406 mm) depending on material density		
System Inputs/Outputs			
Analog:	Eight (8) isolated 0-20mA or 4-20 mA analog outputs		
Digital:	Four (4) 24 VDC digital outputs Four (4) 24 VDC digital inputs		
Environmental Conditions			
Operating Temperature:	Analyzer: -22°-122°F (-30-50°C)		
	Enclosure: 40°-120°F (5-40°C)		
Humidity:	Analyzer: 0-100%		
	Enclosure: 0-90%, non-condensing		
Environment:	Class II, Div.1 group F (G optionally available). All units are protected against dust and moisture (NEMA 4).		
Electrical Requirements	120/240 VAC, 50/60 Hz, 100 A		
Physical Specifications:			
Belt Size:	24"-36" (600-900mm)	36"-54" (900-1400mm)	54"-72" (1400-1800mm)
Length:	60.50" (1537mm)	78.50" (1994mm)	78.50" (1994mm)
Width:	48.50" (1232mm)	69.50" (1765mm)	93.50" (2375mm)
Height:	64.50" (1638mm)	70.13" (1781mm)	75.13" (1908mm)
Shipping Weight:	11,333 lbs (5,141 kg)	14,300 lbs (6,500 kg)	17,177 lbs (7,791 kg)
Troughing Angle:	35°		