



Model 730 Full Stream Elemental Analyzer



- Patented design includes Nuclear Belt Scale
- No uniform belt-loading required
- No belt speed restrictions

The ETI Model 730 Full Stream Analyzer is an Online Bulk Material Analyzer using prompt-gamma neutron activation analysis (PGNAA) and a Nuclear Belt Scale to determine the elemental composition of material as it passes through the device's analysis zone on a conveyor belt.

The FSEA uses no-contact non-destructive PGNAA 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.

The analyzer's real-time measurement and reporting allows plant operators to react to and correct chemistry problems, enables quarry managers to build consistent stockpiles of material, and can generate reports on material quality for batches, stockpiles, or particular time periods.

Typically installed after the quarry crusher and before the Raw Mill, the FSEA allows operators to maintain tight control over cement chemistry before the raw material reaches the kiln.

Analyzer data is used by automated plant systems to control additive feeders, thereby maintaining proper chemistry. The analyzer is critical in controlling the quality and consistency of the clinker product.

Cement Specific Properties Reported:

- | | |
|---------------------|----------------------------------|
| • C ₃ S | • SiO ₂ |
| • C ₂ S | • Al ₂ O ₃ |
| • C ₃ A | • Fe ₂ O ₃ |
| • C ₄ AF | • CaO |
| • CaCO ₃ | • MgO |
| • LOI | • SO ₃ |
| • LSF | • K ₂ O |
| • SR | • Na ₂ O |
| • AR | • TiO ₂ |
| • Moisture | • MnO ₂ |
| | • Cl |

Other Properties Reported:

- | | |
|-------|-------|
| • C | • Gd |
| • N | • Se |
| • S | • Ni |
| • As | • Cu |
| • Bi | • Zn |
| • BaO | • P |
| • Hg | • SrO |

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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
Guaranteed Warranty

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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°		