

LT Industries ParaFuel™ NIR Fuel Ethanol Analyzer



ParaFuel™ systems from LT Industries help you get quick and easy measurements of properties in Ethanol made from corn, cellulosic, or other feed stocks and processes. LT-NIR analysis of Ethanol takes only seconds. Whether your need is for an online or a desktop analyzer, LT Industries has the solution. Below are some of the properties the ParaFuel and PetroScan systems can do for you in the lab and in-process.

Easy to use, easy to own

Make fussy sampling procedures a thing of the past. Simply dip the probe into a sample and hit "Enter" on the controlling computer. The **ParaFuel** provides your analytical results in seconds.

ParaFuel's full networking capability allows data to be accessed wherever needed. **OpCon-II** user interface provides customized screens, result reporting, and data-logging. **LTBus** software allows the system to interface with plant DCS, PLC, or other computer systems using Modbus, 4-20 mA, and other protocols.

Laboratory analyzer upgradeable to online

Start with a laboratory/bench top analyzer and upgrade to online when the time is right. Helps to control capital spending and upgrade can be done in phases to fit your budget.

Available Options:

- **On-Line Integration** – With sampling points directly in the process get real time automated results. Use them to control your process to balance other inputs, insure complete reactions, and increase yield of ASTM approved product.
- **Multiplexer** – Allows for multipoint measurement with one analyzer. Up to 20 channels allows for unsurpassed value per measurement point.
- **On-site application** – LT personnel will visit your facility, install and commission the instrument, develop the analytical models and provide training your staff.
- **Remote Diagnosis** – Provides a wide range of support options via remote connection including calibration model maintenance, preventative maintenance, and service support. Connection is by phone or internet.

Measurements in Ethanol Using the ParaFuel™ Ethanol Analyzer

The ParaFuel Ethanol analyzer measures properties of finished product, raw materials, recovered production materials, as well as analysis of in process parameters for greater process control, higher efficiency, improved throughput, and profitability. One online analyzer equipped with a sequential multiplexer can measure all these points in your process in real time. Results are provided directly to your DCS or Process controller and measurements are automated.

All these properties and more can be measured within seconds in the lab with a ParaFuel Ethanol Analyzer, or online using the PetroScan.

Selected Properties in Ethanol Manufacturing	
Acetic acid	Gum
Arabinose	Lactic acid
Ash	Methanol
Biomass	Moisture
Brix	pH
Butanediol	pHe
Denaturant	Protein
Dextrins	Purity
Ethanol	Starch
Fiber	un-dissolved solids
Galactose	Xylan
Glucose	Xylose



Analyzer Specifications:

Reliability:	Designed for twenty-four hour operations without shut-down.
Spectral range:	1200 – 2400 nm (other ranges available from 400 – 2400 nm)
Scanning speed:	5 scans per second
Spectral addition:	Scans may be added under computer control
Measurement modes:	Reflectance, Transmittance, Transflectance
Data interval:	1 nm (1200 points over the spectral range)
Bandwidth:	10 nm
Photometric range:	5 Absorbance Units
Wavelength repeatability:	0.01 nm
Stray light:	0.1% or better
Light geometry:	Optimized for minimum specular reflectance and maximal S/N
Auxiliary port:	Computer controlled for alternative sampling
Possible signal output:	Multiple 4-20 mA, multiple voltages, MODBUS, and more
Power:	120V, 3.5 Amp, 60Hz or 220V, 1.8 Amp, 50 Hz
Power transients:	Filtered
Dimensions:	12" x 15" x 13" (HWD), 30.5 cm x 39.7 cm x 34.9 cm (HWD)