



FT-NIR Composition Analysis Solutions

Food & Dairy

- Butter / Spreads
- Milk Powder
- WPC
- Mayonnaise
- Chocolate
- Minced Meat
- Single Grapes
- Potatoes
- Edible Oils
- Animal Feeds
- Flour and Milling
- Wet Forage
- Dry forage
- Animal Proteins
- Pet Food
- Aqua Feeds
- Biodiesel
- Bioethanol
- Wine and Beer
- Fruit Juices
- Formulas
- Emulsifiers
- Milk
- Soy
- Cheese

QCL FT-NIR Systems Summary

Analysis Background

FT-NIR instruments record the near infrared spectrum of a sample. Software mathematically compares the sample's spectrum to a reference set with known composition values (model). The user is presented with a complete composition analysis on the sample within 30 - 120 seconds.

Laboratory | At-Line | Production Control Room

The new Quant FT-NIR analyser, released September 2008, will revolutionise FT-NIR analysis in the industry.



Bottle spinner



Heatable liquid vial holder



Fibre Interface - Remote probes



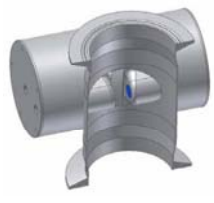
- 5 Year Preventative Maintenance Intervals - replacement of NIR source with average 10 year lifetime.
- Lowest cost of ownership in market
- Outstanding spectral performance - frequency accuracy <math>< 0.01 \text{ cm}^{-1}</math>
- New interferometer technology means signal to noise ratio of 900,000:1
- Small footprint that optimises space in laboratories and control rooms
- 2 year instrument warranty
- Lifetime warranty on interferometer scanning mechanism
- Lifetime warranty on interferometer optics against damage by moisture

In-Line | Online Process Control

QPA systems are online cells that constantly monitor processes or control dosing, drying, timings, etc. for pastes, powders, pellets and liquids. They sit in process pipework and are connected to a FT-NIR analyser housed in a cabinet via a fibre optic, communication and power conduit.

Powerful FTSW100 software can be configured to control a variety of production control systems to provide an autonomous production system ensuring the greatest possible accuracy.

Return on investment for such systems can be just weeks where large production volumes can be controlled to tighter specifications.



Cross-section of QPA butter Tefwin Cell



QPA FT-NIR analyser Cabinet rack configuration



QPA butter Tefwin Cell Installation

FT-NIR Analysis Benefits

- Measures a large sample volume so any non-uniformity is averaged out - very high analysis repeatability and accuracy
- Samples do not need any preparation so unskilled operators can achieve high quality analysis
- Analysis costs substantially less than wet chemistry
- No use of costly or toxic chemicals or processes
- Analysis time fast enough to allow real-time process trimming to increase productivity
- Simple enough to be used by any non-skilled operator
- Online systems sit in process pipework continuously monitoring process to provide constant production trends
- Online systems can be configured to control the process to tolerances not possible using human operators
- Results can be automatically exported to LIMS

- Moisture
- pH
- Dry Matter
- Salt
- Acid
- Ash
- Starch
- Sugar
- Fat
- Raw Cell Matter
- Density
- Phosphorous
- Alcohol
- Sucrose
- Solids
- Protein
- Brix
- IV
- Free Fatty Acids
- Fibre
- In Vitro
- NDF
- Lactose
- ADF
- Lactic Acid
- Acetic Acid
- Ammonium No.
- Oil A
- Oil B