



InfraLab Meat Analyzer



At-Line NIR Meat Process Measurements

- ▶ Fat
- ▶ Moisture
- ▶ Protein
- ▶ Collagen
- ▶ Collagen/Protein Ratio

- ▶ Achieve Consistent Quality
- ▶ Optimize Batch Fat Values
- ▶ Reduce Lean Giveaway
- ▶ Replace Laboratory Testing
- ▶ Ensure Supply Chain Satisfaction

NDC and the Meat Further Processing Industry

Achieving right-first-time production through reliable fat, protein and moisture measurements...

NDC Infrared Engineering has over 40 years' experience in the design, development and manufacture of process instrumentation developed specifically to meet the exacting requirements of the foods industry.

Our Applications Engineering team has in-depth knowledge of the physical and chemical attributes of food products, the measurement and control requirements in the process, and the many analytical methods used in quality assurance systems.

Assuring and Controlling Quality

During the further processing of meat products there is a need to monitor and control the fat and also the protein and moisture content to ensure consistent quality and to meet product specifications. This applies in particular to the manufacture of burger patties, supermarket ground meat portions and bulk sausage production.

Validating to the Laboratory

The InfraLab, while delivered precalibrated, uses NIR technology, and therefore like other secondary correlative techniques, requires validation against appropriate chemical analysis methods. The many methods used around the world include:

- ▶ **Crude Fat: AOAC 960.39 or 991.26 or ISO 1444**
- ▶ **Total Fat: ISO 1443**
- ▶ **Moisture: AOAC 950.46B or ISO1442**
- ▶ **Protein: AOAC 992.15 or ISO937**
- ▶ **Hydroxyproline (Collagen): AOAC 990.26 or ISO3496**

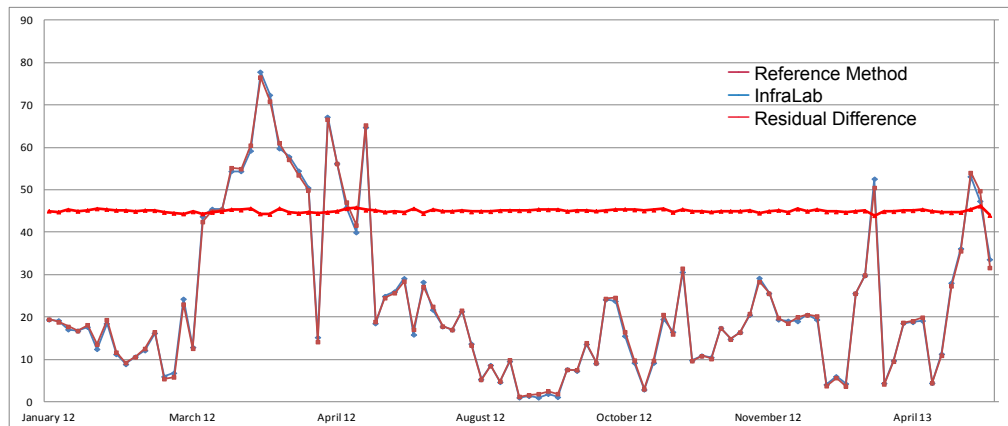
The transfer of measurements in-house to the InfraLab enables rapid local analysis which agrees statistically with the accredited laboratory method.

The InfraLab e-Series Meat Analyzer

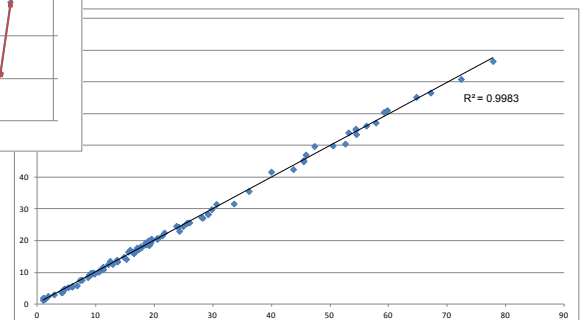
has been developed and designed specifically to replace laboratory methods in meat processing. Requiring no special skills in routine use, it enables production operators to analyze samples rapidly to ensure that the content of the key meat constituents - fat, moisture, protein or collagen - meet specified values.

As part of its extensive development program, InfraLab has been independently tested in world-class laboratories to prove the veracity of results against accredited methods.

Performance, convenience, ease of use, and NDC's global customer support infrastructure, make InfraLab the analyzer of choice for meat processors worldwide.



InfraLab long-term stability: comparison to lab data over 18 months



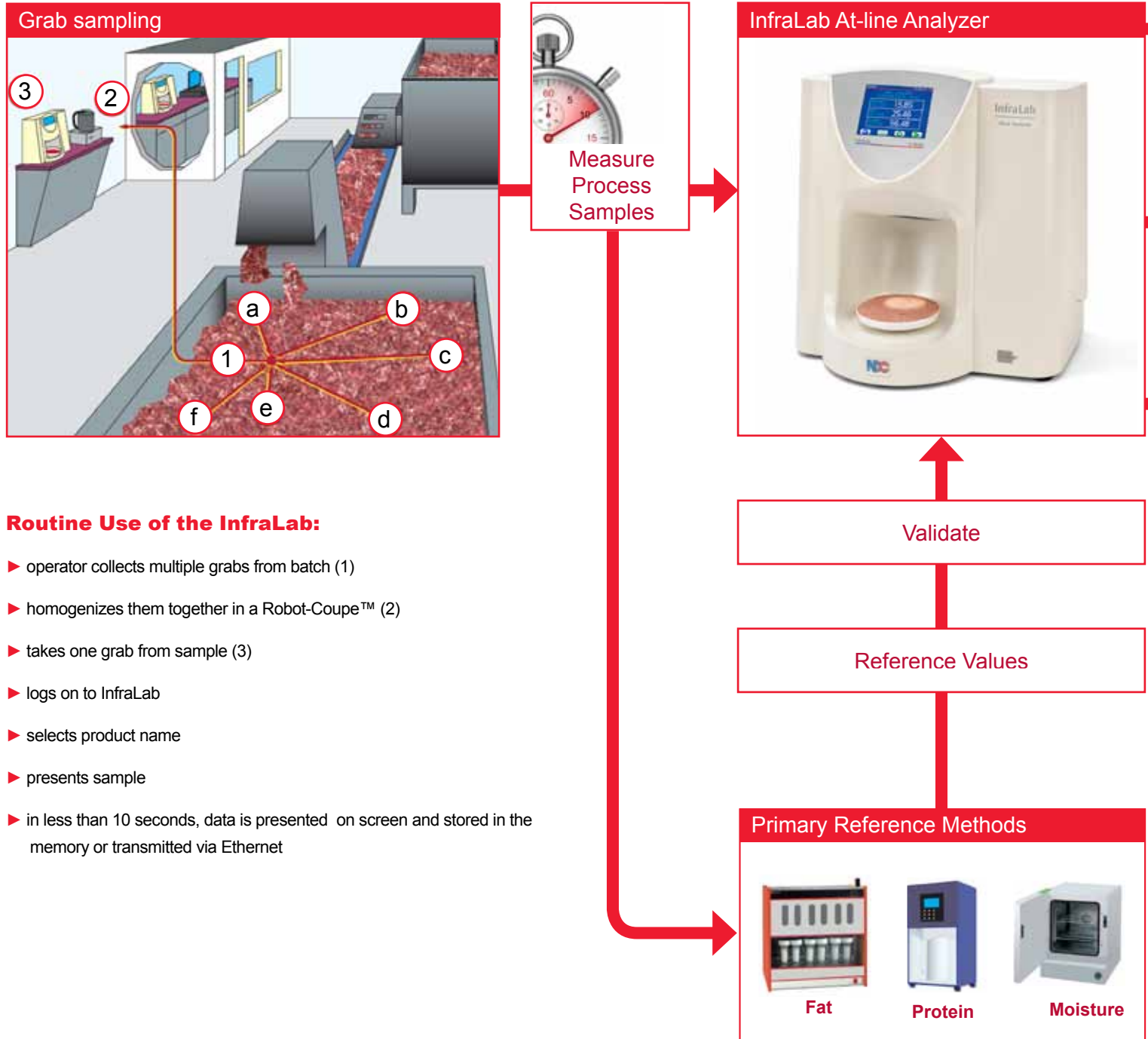
The InfraLab is designed for ultimate long-term stability. Users can test and prove the stability themselves using the external Reference Standard. However, the InfraLab automatically monitors and manages its opto-electronic stability, insuring its measurement capability in the process environment and remaining completely uninfluenced by product and ambient changes in the process area such as temperature, relative humidity and factory lighting.

Achieving Consistent Product Quality...

InfraLab: the at-line replacement for lab methods

Saving time and testing costs

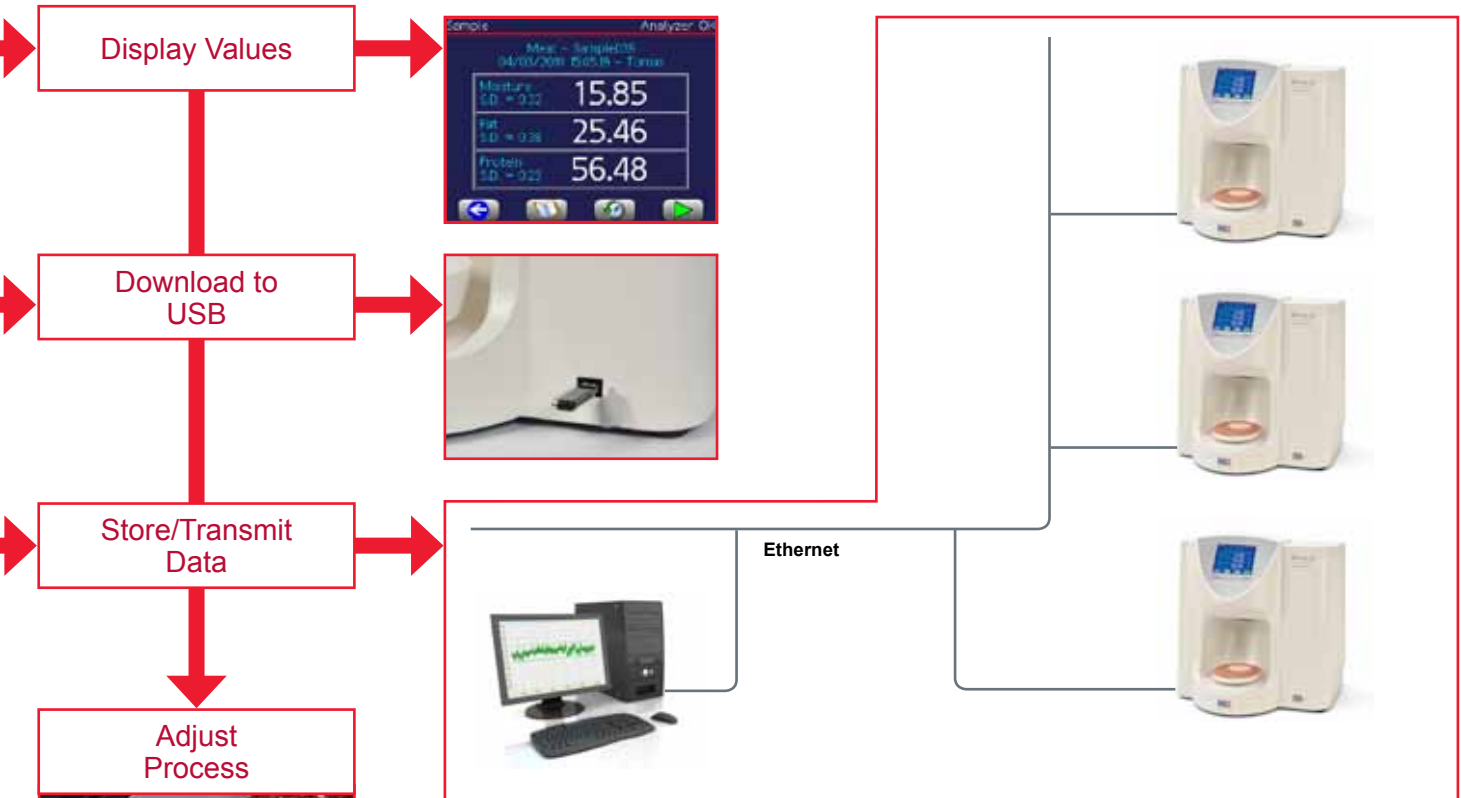
InfraLab delivers reliable results, fast...



through improved process visibility...

Robust, accurate, easy-to-use

InfraLab can be used as a standalone device, linked to a PC or networked to management systems....



Communications and Networking, including LIMS:

Though fully functional as a standalone device, InfraLab is Ethernet enabled, making integration into factory and LIMS networks straightforward. InfraLab Manager software allows communication with a single or multiple InfraLab analyzers on the same network from a single PC.

InfraLab Manager Software

features useful tools to display and manage measurement data from one or more InfraLab analyzers. Functions include:

- ▶ Data display - presents data on your PC just as the operator sees it in the production area or lab
- ▶ History tool - displays historical data by time, user, product or constituent
- ▶ Line-fit tool - enables measurements to be accurately adjusted to agree with the reference method
- ▶ Network access - connect to one or more analyzers on your factor network to access data and more



Technical Overview

With its user-friendly design, the fully featured InfraLab meets the most exacting requirements...

Measurements				
Range	2 to 60%	9 to 23%	30 to 75%	1 to 8%
Product	Fat	Protein	Moisture	Collagen
Beef	■	■	■	■
Pork	■	■	■	■
Poultry	■	■	■	■
Lamb	■	■	■	■

InfraLab Meat Analyzer Key Features:

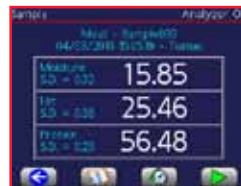
- ▶ Measurement time of less than 10 seconds
- ▶ Easy-to-use quarter VGA color touchscreen with multilingual interface
- ▶ Ergonomic hygienic design
- ▶ User pass code protection with configurable permission levels for up to 200 users
- ▶ USB ports for data download to memory stick and barcode reader and printer connection
- ▶ Automatic integral window contamination monitor
- ▶ Internal (automatic) and external (manual) Reference Standards
- ▶ Internal memory capacity for up to 200 product definitions and 10,000 sample files
- ▶ History audit log (time & date) of calibration records and Reference Standard Values
- ▶ "InfraLab Manager" PC Software for data management and enhanced functionality
- ▶ Rugged, unbreakable sample bowl



Bar Code Reader (option)



Reference Standard (option)



1/4 VGA Color Display



USB Memory Stick

InfraLab Technical Specifications:

Weight and Dimensions

Weight: 12 kg (26.5 lbs)
Size: 490 mm (19.3 in) high x 470 mm (18.5 in) wide x 348 mm (13.7 in) deep

Measurements

Single Component: Fat only
Multi-component: Fat, Protein & Moisture (Collagen or Collagen/protein ratio optional). For other applications, please consult our Applications Technical Support Group.

Sampling Period and Measurement Speed

Sampling Period: User-configurable, typically 10 seconds
Measurement Speed: 133 Hz equivalent to one complete measurement every 7.5 milliseconds

Sample Preparation

Samples must be homogenized in a Robot-Coupe™ or similar prior to measurement. See separate guidelines for details.

Sample Size

145 mm/5.7 in diameter bowl, with a depth of 13 mm/0.5 in

Sample Presentation

Homogenized samples are simply pressed into the bowl, while insuring that the whole of the bottom of the sample bowl is completely covered by product

Storage, Safety, Environmental and Electrical

Power Supply: 80-265VAC, 50/60Hz
Power Consumption: 50 Watts
Pollution Degree: Degree 1
Ambient Temperature Range:
Storage -20 to +70°C, Operation 0 to 50°C
Humidity: 80% max. (non-condensing) over full operating temperature range

Connectors:

2 x USB (one front for memory stick, one rear for barcode reader); 1 x Ethernet Port; 1 x IEC Mains Socket

Sealing

The InfraLab Housing is constructed from tough Polyurethane and sealed to IP65 [NEMA 4 Equivalent] (excluding rear connector panel)

Maintenance

Other than simple cleaning, the InfraLab requires no routine maintenance, nor does it require any routine re-calibration.



Company overview

Combining industry-best performance and reliability with a global support structure

NDC, headquartered in Irwindale, California, USA, develops and manufactures measurement and control systems for a wide range of industrial applications, supporting its global customer base through its three centers of excellence:

- ▶ USA (for measurement and control systems for the web industries)
- ▶ UK (for infrared gauging and applications development)
- ▶ Belgium (for metal industry gauging systems)

There are also direct sales and customer support operations in China, Japan, Germany, France, Italy, Singapore and India, and distribution in over 60 countries.

The company's global client base features some of the world's most successful manufacturers, who rely on NDC to ensure that their product quality and performance meet the stringent standards demanded by their customers.

NDC has two key product groups:

NDC Systems: for the converting, extrusion, calendering, metals and nonwovens industries, delivering real-time measurement and control of key product parameters such as product thickness, coating thickness, basis weight, width, flatness and edge shape.

NDC Sensors: on-line gauges and at-line analyzers for the measurement of moisture and other key product constituents in the food, chemical, pharmaceutical, mineral, bulk materials and tobacco industries.

NDC is part of Spectris plc, the leading supplier of productivity-enhancing instrumentation and controls.



NDC is represented in over 60 countries worldwide. ISO9001:2008 www.ndc.com

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Document Number: PB-01-14346-01 2013-04 InfraLab Meat Applications Brochure - English
Date of Issue: April 2013
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