InfraLab™

e-Series

Food Analyzer

- At-Line
- Quality Assurance
- Laboratory
- Quality Control

InfraLab

- e-Series -

The Measure of Quality™

Quality in Foods Processing

NDC & the Foods Industry

NDC Infrared Engineering has over 40 years of experience in the design 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.

The InfraLab e-Series Foods Analyzer - the 5th generation of InfraLab - is designed for use in a wide range of food manufacturing processes for analyzing samples rapidly to ensure that the content of key constituents such as moisture, fat, oil and protein meets specified values.

Performance, convenience and ease-of-use make InfraLab the analyzer of choice for food manufacturers worldwide.

Assuring and Controlling Quality

Foods Manufacturers ensure consistent quality through the measurement and control of key product constituents such as Moisture, Fat, Oil and Protein.

These constituents significantly influence product attributes such as taste, texture, shelf-life, nutritional value and, importantly, consumer perception.

A Primary Reference Method is selected by the QC Laboratory to be the ultimate measurement for each constituent. Such methods include:

- Karl Fischer Titration (Moisture)
- Gravimetric Oven (Moisture/Volatiles)
- Soxhlet (Free Fat)
- Werner Schmidt (Total Fat)
- Weibull Stoldt (Total Fat)
- Kjeldahl (Protein)

However, the QC Lab Method cannot provide the volume or frequency of results to enable the production manager to analyze and improve process performance. While providing highly precise data, the QC lab can only provide a historical snapshot of process capability.

The InfraLab e-Series

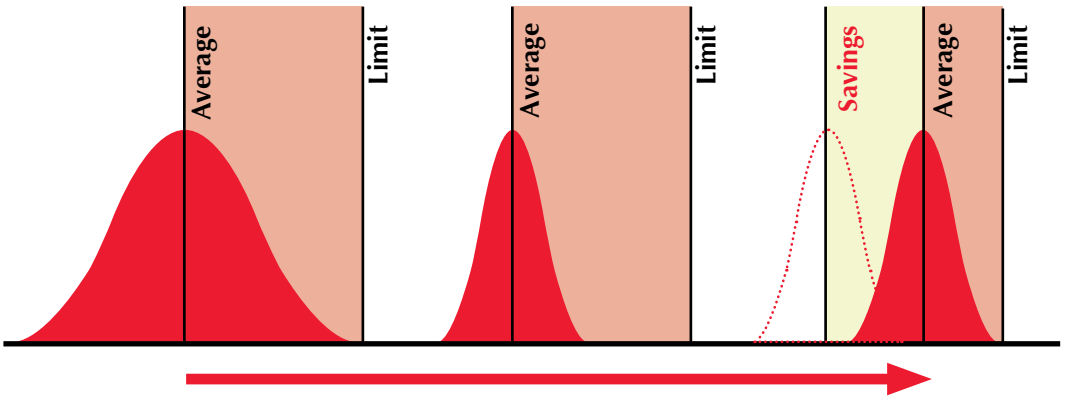
Calibrated to the preferred Primary Reference Method, the InfraLab At-Line Analyzer is designed to provide frequent, rapid analysis of these constituents.

Easy-to-use and robust enough for the processing environment, the versatile InfraLab is applied both in production and quality assurance, complementing on-line and laboratory measurement systems and providing non-skilled access to complex analyses in just a few seconds, with minimal or no sample preparation.

Connectivity via Ethernet to Management Information Systems, LIMS laboratory networks or to a PC, as well as extensive integral memory capacity, enable display or storage of vital quality data at point of need.

Improving the Process

Even a stable process may not be running optimally due to the spread of values about the average. Process insight gained through enhanced testing with the InfraLab helps process managers reduce variation and control the process average closer to the specification limits.



Achieving Consistent Product Quality through Improved Process Visibility...

InfraLab - the Viable Replacement for Lab Methods

Process Samples

Instant Access to Results

Calibrated to your primary reference methods, the InfraLab provides instant access to measurements - to laboratory accuracy

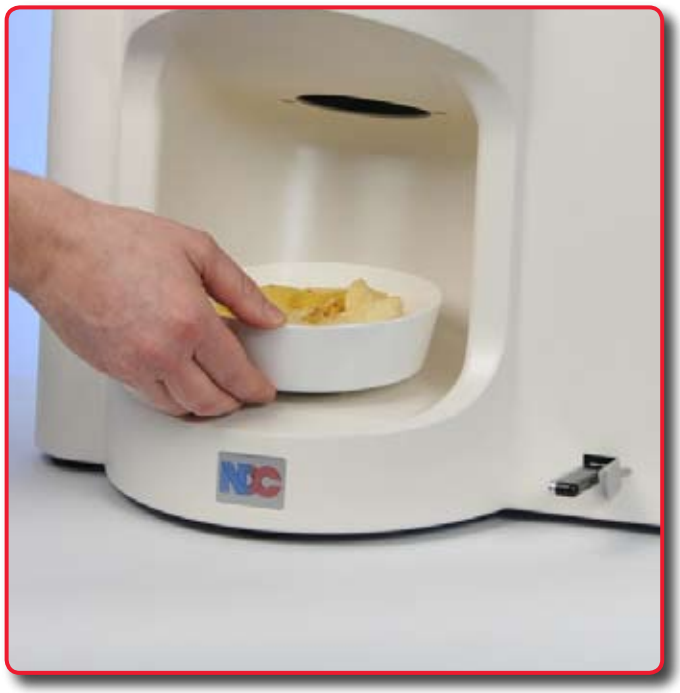
Protein

Moisture

Fat/Oil

Primary Reference Techniques

Fast, Accurate, Easy-to-Use



Display (3 component)


USB Data Port


Bar Code Reader (option)


External Reference Standard

Using the InfraLab

- user logs on
- selects product definition
- presents sample
- within 5 seconds, data is presented on screen and stored in the memory or transmitted via Ethernet


Standard Dish (rotating)


Shallow Dish (rotating)


Petri Dish (static)

Calibration

The initial calibration process of the InfraLab to the Primary Reference Method(s) is simplified by NDC's SpeedCal™ measurement algorithms. Each algorithm is already optimized over the specified range, and in most cases, only the offset (TRIM) value will require adjustment. InfraLab is delivered with InfraLabXL Calibration Management Software which facilitates the calibration adjustment process and provides access from a PC to data displays, trends, historian function and more. InfraLab's inherent long-term stability eliminates the need for any routine re-calibration.

InfraLab e-Series Key Features:

- Single or multi-component analysis with a measurement time of less than 10 seconds
- Ergonomic hygienic design
- InfraLabXL PC Software for data management and enhanced functionality
- Quarter VGA colour touchscreen with multi-lingual interface
- User security protocol with passcode protection for operator, supervisor and administrator levels for up to 200 users
- USB ports for data download to memory stick and barcode reader and printer connection
- Automatic window contamination monitor
- Internal (automatic) and external (manual) Reference Standards
- Capacity for up to 200 product definitions and 10,000 sample files
- History audit log (time & date) of calibration records and Reference Standard Values
- Ethernet networking for PC connectivity & LIMS capability
- Choice of 4 sample dish sizes, static or rotating

InfraLab Food Applications

KEY INFRALAB APPLICATION AREAS:

Product Group	M	O	P
Snack Foods	■	■	
Biscuits and Cookies	■	■	
Chocolate	■	■	
Meat	■	■	■
Breakfast Cereals	■	■	■
Cheese	■	■	■
Coffee	■		
Dairy Powders	■	■	■
Wheat, Grain and Seeds	■	■	■
Tea	■		
Food Ingredient Powders	■	■	

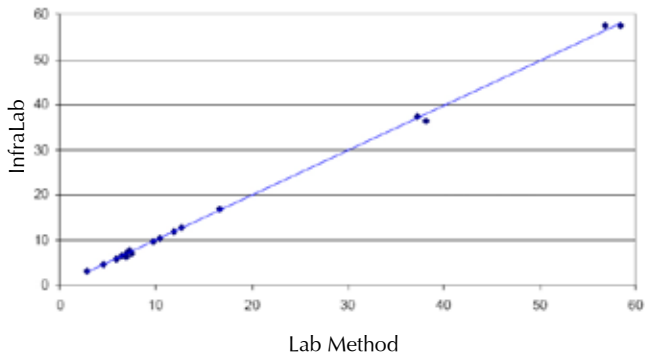
Key: **M** = Moisture, **O** = Oil or Fat, **P** = Protein

For application details, please refer to the relevant Application Notes or consult our Applications Technical Support Group

TYPICAL PERFORMANCE:

Optimized algorithms ensure linearity & repeatability right across the range for each component

Example: Moisture



Applications

Each InfraLab is optimized for the required applications and contains the relevant measurement algorithms for each constituent.

The InfraLab Application Notes for each Product Group detail available measurements and ranges.

Accuracy

It is NDC policy to express accuracy as *twice* the Standard Deviation of the differences between the values measured by the InfraLab and the values obtained for the same samples using the Primary Reference Technique.

Achievable accuracy is dependent on the product being measured, the Primary Reference Method and the range of measurement, but typical indicative accuracy values for the three components are:

- Moisture: 0.1 to 0.2% (2σ)
- Fat/Oil: 0.2 to 0.5% (2σ)
- Protein: 0.4 to 0.6% (2σ)

Stability

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, ensuring 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
- Factory Lighting

Maintenance

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

The Measure of Quality™

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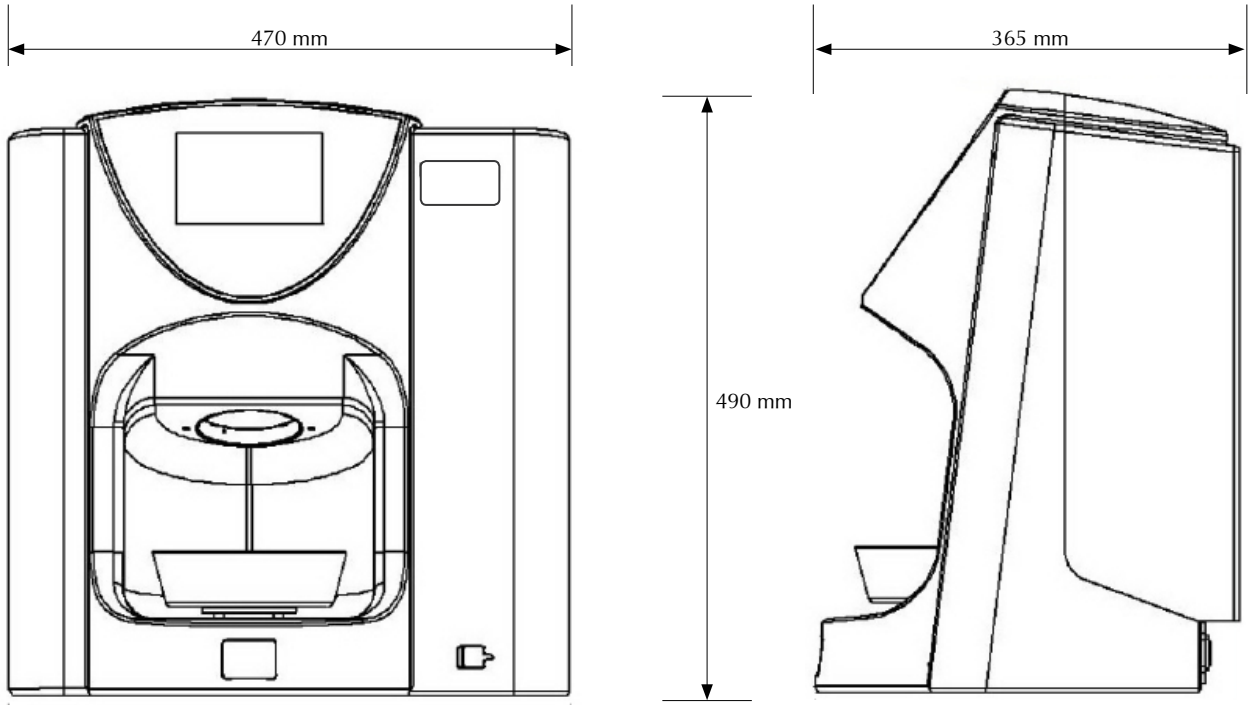
Technical Specifications

Dimensions:

Weight: 12kg



Technical Specifications:

Measurements
Moisture, % Solids, Moisture as % of Dry Weight, Fat, Protein, Starch, Sugars, Caffeine - depending on application.

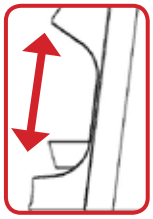
Sampling Period and Measurement Speed
Sampling Period: User-configurable, typically 5 - 10 seconds
Measurement Speed: 133Hz equivalent to one complete measurement, single or multi-component, every 7.5 milliseconds

Sample Preparation
See separate application notes for detail, but in most cases, samples are simply presented to the InfraLab in the appropriate bowl

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

Sample Size
Choice of Deep or Shallow Sample Bowl or (with optional adapter) 90 mm Ø Petri Dish
Measurement Area is a 50mm diameter circle

Product Height
Note that the height of the product within the sample bowl is not critical and there is no sensitivity to changes. The only important criterion is that the bottom of the sample bowl must be completely covered with 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, one rear
1 x Ethernet Port
1 x IEC Mains Socket

NDC is represented in over 60 countries worldwide

a spectris company

Reg. No Q06197
ISO9001:2008

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