



**No waste but taste: when only quality matters**

ZEISS Spectroscopy for the potato-processing industry

[www.zeiss.com/spectroscopy](http://www.zeiss.com/spectroscopy)



# Performance you can rely on

## Efficiency by ZEISS

The potato industry also makes challenging demands on measuring technology to ensure that optimum process efficiency and accuracy are achieved.

With Corona process, ZEISS offers you customized solutions for each of your applications in order to:

- optimize your process
- maximize your yield
- minimize waste
- guarantee constantly high quality.

Even under the toughest conditions Corona process can be easily integrated

into your process workflow and control all relevant parameters in-line. The data is evaluated and visualized on site (HMI).

Together with the InProcess software, Corona process ensures that your manufacturing process is reliable and efficient. Our many years of experience in process spectroscopy are incorporated in the system to guarantee your success.

**ZEISS measuring technology** delivers reproducible results quickly and reliably through non-contact Vis-NIR measurement. Simple to implement and easy

to use, it ensures that you can optimize your workflow in potato processing – and it offers you reliability at every position.



### French fries

Measuring point	Measurement parameters
Peeling	Starch content of washing water
Before the deep fryer	Starch and sugar
Deep fryer	FFA in deep-fryer fat
After the deep fryer	Moisture and fat content, color



### Chips

Measuring point	Measurement parameters
Peeling	Starch content of washing water
Before the deep fryer	Starch and sugar
Deep fryer	FFA in deep-fryer fat
After the deep fryer	Moisture and fat content, color
Flavoring	Salt content



### Culinaric

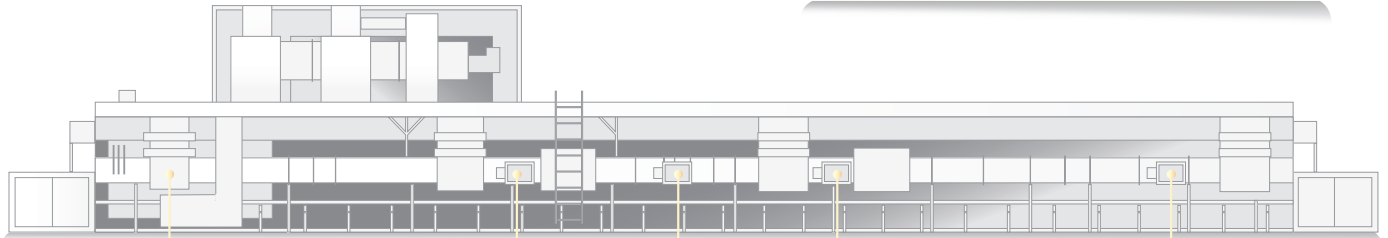
Measuring point	Measurement parameters
After dehydration	Bulk density, moisture
Mixer	Color, salt, moisture, bulk weight
By-products (animal feed)	Dry matter

# Process reliability you can trust

## Corona process

### You benefit from:

- ✓ Seamless in-line process inspection
- ✓ Fast reaction times to remedy process fluctuations
- ✓ Reduction of reject batches (waste)
- ✓ Constant product quality
- ✓ Enhanced efficiency
- ✓ Simple integration into your production line



#### Peeling

Starchy water after cutting of potatoes

Starch content

#### Deep-frying

Before the deep fryer

Moisture, starch and sugar

#### Deep-frying

Deep fryer

FFA in the deep-fryer fat

#### Deep-frying

After the deep fryer

Moisture, fat content and color

#### Flavoring

Addition of flavoring

Salt content

### Spectrometer

- Spectral range: 380 – 1,650 nm
- Internal referencing

### Probe head

- Optical design insensitive to distance
- Redundant halogen bulb

### Housing

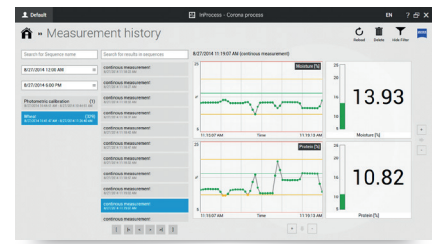
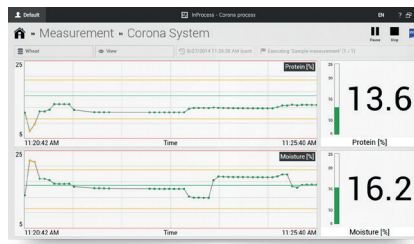
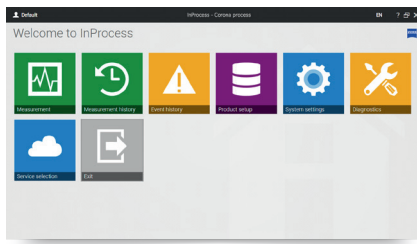
- Stainless steel housing conforming to hygiene standards
- IP 67, ATEX Zone 22

### Integration

- EtherNet/IP
- Profibus
- Modbus
- Digital and analog in/outs
- OPC
- SQL database
- Socket



# Simple, intuitive, efficient: **InProcess**



## General information

- Available in various languages (Chinese, German, English, French, Italian, Polish, Portuguese, Russian, Spanish)
- Simultaneous activation of more than one spectrometer possible
- Support of calibrations (chemometric models) created using standard chemometric software such as GRAMS, Unscrambler or UCAL
- Filter function for the elimination of implausible spectra

## User management

- Setup of own user groups with different access levels

## Measurement

- Display of measurement as spectrum, value or trend
- Automatic warning when limit values are exceeded (definition of limit values and warning levels)
- Automatic measurement start

## Integration

- Communication with customized field bus systems and industry standards
- Customizable measurement result display

## Measurement history

- Access to all historic measuring and referencing results
- Data export of spectra, measured values and sample information

## Diagnosis

- Implementation of a self-test for inspection of spectrometer's functionality
- Simple provision of all important information for servicing at the touch of a button

## Technical data for the Corona process spectrometer

Usable spectral range	380 nm – 1,650 nm
Spectral resolution (half tenth part width)	≤ 10 nm
Wavelength accuracy	≤ 1.0 nm
Measuring distance	90 mm – 600 mm
Measuring spot size	> 30 mm
Light source, life time	2 halogen bulbs (1 redundant), each 10,000 h
Dimension W x H x D	360 x 160 x 220 mm <sup>3</sup>
Weight	15 kg
Protection class	IP67, ATEX Zone 22
Operating temperature	– 10°C to +50°C
Warm-up time	< 30 min

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