Diode Array 7300

In-Line Analyzer

Whole Grains

Flour & Powders

Feed

Food

Reliable, Accurate, Real-time

Perten INSTRUMENTS

Ver 4.0 2014.08.26

Diode Array In-Line Analyzer

The DA 7300 is an advanced modern In-line NIR instrument, with built-in digital color camera, for use in Grain, Flour, Food and Feed processing. It performs continuous analysis of multiple parameters simultaneously, such as moisture, protein, fat/oil, ash and more. As the DA 7300 is easily integrated into process control systems, its continuous measurement enables automatic process control, leading to optimized production. The real-time monitoring also reduces scrap and re-work while improving product consistency and quality. A wide range of mounting options are available providing flexibility for use in many different manufacturing processes. The DA 7300 is installed and used at a large number of flour mills, feed mills and other agri & food production sites.

Feature and Benefits

Continuous Quality Measurements: Monitor, adjust and optimize your production processes in real-time to save costs, increase yield and improve product consistency.
Based on Proven NIR Technology: The DA 7300 is based on the highly successful DA 7200/7250 bench top instrument.
In-line and At-line: Calibrations transfer directly between the DA 7200/7250 and DA 7300, offering full agreement between in-process, at-line and lab analysis.
Integrated Digital Color Camera: Display snap-shots or streaming video of the production at your operator station. Camera application for color measurements and image analysis for speck counting.
OPEN Interface: Industry standard, open communications protocol enables true information integration with existing plant systems.
Ethernet Connectivity and Remote Access: The system can be accessed easily through TCP/IP to manage calibrations, settings and for system back-up. Remote diagnostics is carried out using standard Window tools.

Applications

The DA 7300 is designed to measure into a chamber or vessel, and can be installed in many different process points. The optical front end – a sapphire window – protrudes through the wall and into the product stream. This provides trouble-free operation with a minimum of external disturbances.

Flour Milling: Maximize flour extraction through accurate real-time ash measurements. Blend wheat and flour streams to reach target specification. Optimize gluten addition.
Grain and Oilseed Processing: Measure moisture, protein and oil in grain for pricing and binning. Monitor and optimize extraction and drying.
Feed Milling: Optimize moisture, protein and fat in the mixer, and throughout the process. Control drying to minimize moisture loss. Optimize fat coating.
Food: A wide variety of dairy and food products can be measured, enabling continuous process monitoring/control.

Specifications

Power Requirements: 24 V DC, 5 A
Dimensions (HxWxD): 220 x 230 x 340 mm (8.75" x 9" x 13.5")
Net Weight: 15 kg (33 lbs.)
Operating Temperature Range: -10 to 40°C, extended temperature range upon request
Ingress Protection: IP65
Measurements: NIR, Digital color camera
Communication: OPC over TCP/IP Ethernet, modbus ASCII, analogue output
Products: Grains, Meals, Flour, Pellets, Extruded products, etc
Parameters: Moisture, Protein, Fat/Oil, Ash, Starch, Sugar, Speck count, Color in the CIE L*, a* b* color space etc
Approvals: CE, Ex II 2/3 D Ex t IIIC T90°C Db/Dc IP6X
CPU: Intel ATOM, 1,6 GHz, 2GB RAM or higher
Data Storage: 32 GB SSD

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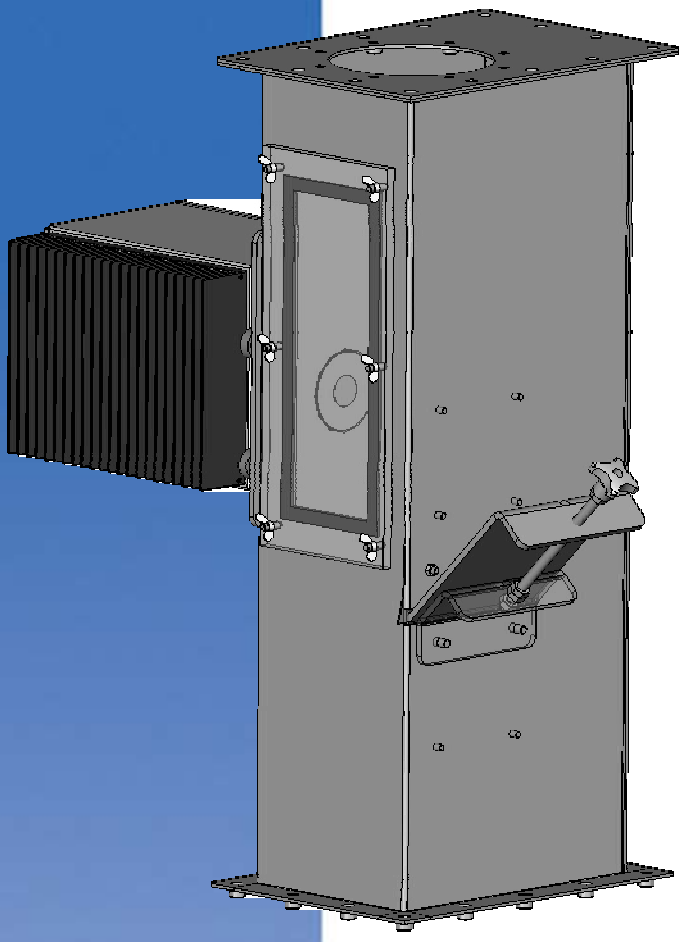
Diode Array 7300 OL

Whole Grain Measurement Chamber – 25 t/h



Benefits:

Reliable sample presentations
Easy mounting
Manual sampler
Access for cleaning

Perten INSTRUMENTS

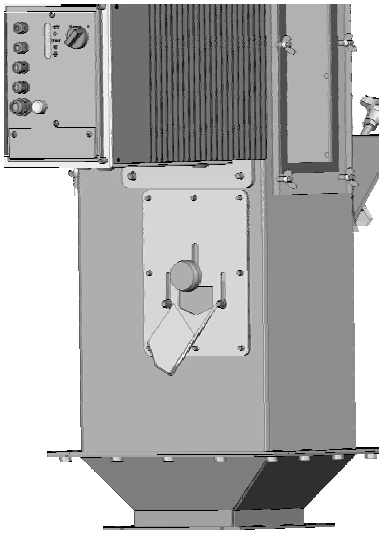
Ver 3.1 2009.03.03

Diode Array On-Line Analyser

The Diode Array On-Line NIR Analyser DA7300 OL is an advanced and modern NIR on-line analyser for use in Grain, Flour, Food and Feed processing. The analyser provides real time information about the process thus enabling automatic process control, and allows immediate manual intervention. The analyser is a version of the Perten Instruments DA7200 bench top analyser, which has been successfully deployed in a wide range of applications.

Measurement Chamber

The measurement Chamber 25t/h is suitable for installation in any grain processing process, such as a flour or feed mill. It presents the grains to the instrument in the reliable and repeatable way that is required for any NIR analyser, and ensures highly accurate and repeatable results.



Features and Benefits

Repeatable sample presentation: Ensures highly accurate and repeatable results.

Easy Instrument Cleaning: A view window on the side is easily removable for cleaning the instrument window without having to remove the instrument.

Manual Sampler: A sliding sampler mechanism allows a manual sample to be taken. By pressing a button, the instrument readings corresponding to the sample is tagged in the database for future reference.

Non-Blockage design: By design, the over-flow section can handle the entire product flow, ensuring there is no production interruption even if the measurement part is blocked.

Specifications

Drawing, Assembly: 706-599

Applications: Whole grain, wheat and barley.

Diode Array 7300 OL

Whole Grain Measurement Chamber – 120 t/h

Benefits:

Reliable sample presentations
Easy mounting
Manual sampler
Access for cleaning

Perten INSTRUMENTS

Ver 1,0 2009.05.19

Diode Array On-Line Analyser

The Diode Array On-Line NIR Analyser DA7300 OL is an advanced and modern NIR on-line analyser for use in Grain, Flour, Food and Feed processing. The analyser provides real time information about the process thus enabling automatic process control, and allows immediate manual intervention. The analyser is a version of the Perten Instruments DA7200 bench top analyser, which has been successfully deployed in a wide range of applications.

Measurement Chamber

The measurement Chamber 120t/h is suitable for installation in a grain silo or other grain intake. It presents the product to the instrument in the reliable and repeatable way that is required for any NIR analyser, and ensures highly accurate and repeatable results.

Features and Benefits

Repeatable sample presentation: Ensures highly accurate and repeatable results.

Easy Instrument Cleaning: A view window on the side is easily removable for cleaning the instrument window without having to remove the instrument.

Manual Sampler: A sliding sampler mechanism allows a manual sample to be taken. By pressing a button, the instrument readings corresponding to the sample is tagged in the database for future reference.

Non-Blockage design: By design, the over-flow section can handle the entire product flow, ensuring there is no production interruption even if the measurement part is blocked.

Specifications

Drawing, Assembly: 706-447

Applications: Whole grain, wheat and barley.

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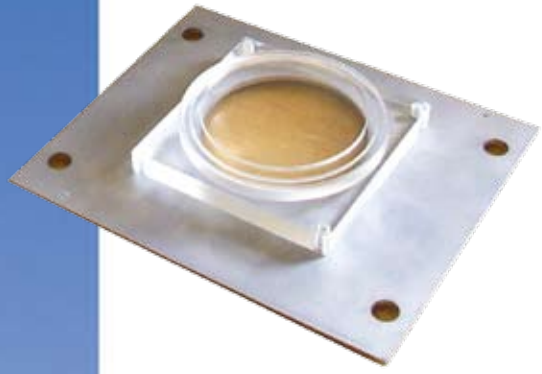
Diode Array 7300 OL

Mounting Panel



Benefits:

Easy mounting
Access for cleaning
Robust
Includes blind panel

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Diode Array On-Line Analyser

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Mounting Panel Accessory

The mounting panel is an accessory to the DA7300 On-Line NIR analyser. This facilitates mounting on a vessel, a conveyor side or any other location where the instrument is viewing the product from the side. The panel mounts on a frame that is to be welded on to the side of the measurement chamber in question.

From the back

Mounted on conveyor

With instrument mounted

Features and Benefits

Easy installation: Simply weld the frame on the vessel side and bolt the door with instrument on the frame.

Easy Cleaning: In the event the instrument window requires cleaning, simply open the door and wipe the window.

Includes a blind panel: In the event the instrument is to be removed, simply mount the blind panel and the production can continue without product spillage.

Stainless Steel Construction: Durable and robust for long life.

Specifications

Drawing, Assembly: 706-365

Drawing, Frame: 706-376

Diode Array 7300 OL

OPC Server

Benefits:

Connectivity
Information Integration
Real Time
Industry Standard

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Diode Array On-Line Analyser

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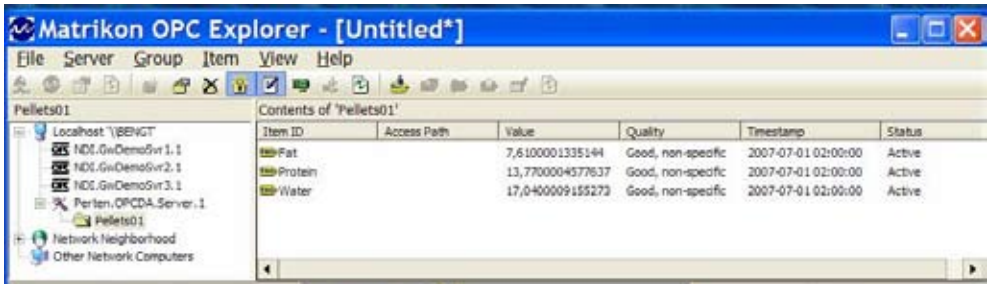
OPC Server

Installing an instrument in any process industry brings large potential benefits such as increased production, reduced waste, efficient raw material usage and improved quality. In order to realize these benefits efficiently, the information that the instrument provides should be seamlessly integrated with plant controls and information management systems. Using the Perten Instrument OPC Server, this integration is feasible and easily achieved.

Built on Microsoft® standards OLE, COM and .NET, the OPC server is a straight forward way to interact with the instrument. Measurement results and instrument status are read from the server using a set of pre-defined OPC tags. Likewise, writing information such as product codes and commands for starting and stopping measurements are send over the OPC interface.



Features and Benefits

Information Integration: By using OPC, all systems in a plant can access relevant data for process controls and keeping records.

Industry Standards: Using well-known industry standards ensures connectivity with all modern equipment at a minimum of efforts.

Optional additions

OPC Exchange: The standard OPC server is providing information for OPC clients to read and write. However, in the event an other OPC server is to communicate with the Perten Instruments OPC Server, an additional component is required, as two servers cannot communicate directly. This is know as the OPC Exchange.

OPC to PLC: PLC:s can not always read information from an OPC. In the event a measurement result is to be used by a PLC in a control loop, we need to make provisions for this to be possible. In such cases, we can write the relevant constituent value in to the PLC directly. That is, we do not require an intermediate OPC client to extract the data.

Specifications

As defined by OPC Foundation, OPC Data Access.