DF2400 FACTS^2 ™

C-SAM® Automated Scanning

Another Step Forward in Automated Scanning!

Ensures Defect-Free Production without Sacrificing Throughput

The FACTS^2 model DF2400 delivers even faster automation inspection with maximized flexibility. Equipped with our industry preferred Sonolytics™ software platform, the DF2400 is the ideal solution for production environments.

Improved Flexibility and Throughput!

2x to 7x Faster Throughput
Dual optimized scanning zones.
Simultaneous scanning and drying.

Factory Friendly
SECS-II/GEM E30 and SMEMA.
Water quality management system.

Fully automated and also doubles as an analytical tool

Features

- Increased throughput:
  - Inertially balanced dual linear motor scanners for vibration free high speed scanning.
  - Simultaneously scans two (2) modules or JEDEC trays.
  - Continuously scans while parts are being dried in an isolated drying area.
  - Programmable customized scanning of specific areas, thus maximizing throughput.
- Flexible configuration:
  - In-line operation for high volume production environments.
  - Operates as a stand-alone analytical tool.
  - Thru-Scan™, reflection and non-immersion scan modes.
- Compatible with the Windows 11 Sonolytics software platform featuring:
  - Visual PolyGate™ technology with Multi-Gate™ and Probing-Gate™ - capable of single and multi-focus imaging.
  - Automated image analysis for accept / reject.

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FACTS^2 Features

- **Sonolytics™** for Windows 11® with multi-language operation: English, Japanese and Traditional Chinese.
- **Automatic Data Analysis Package** automatically determines results "Accept/ Reject" based on measured criteria.
- **Two Scanners with Region of Interest Scanning** more than doubles the throughput of our previous model.
- **Capable** of scanning a standard JEDEC Tray and Auer Boat compatible configuration.
- **PolyGate™** simultaneously captures up to 100 depths of interest (gates) with independent gains, color maps and waveform analysis.
- **TDI™** (**T**ime **D**omain **I**maging) includes A-Scan, B-Scan, C-Scan, Bulk Scan, Multi-Scan, Surface Scan, Interface Scan, Bulk Scan and Loss of Back Echo (LoBE).
- **Turbo Speed** improves scan rates 2.5X faster at the smallest resolution settings.
- **AutoScan™** automates alignment, gain, focus and field of view for multiple locations. Also integrates with data analysis tools.
- **Precision Focusing** adds focus precision 10X for applications that require critical focus.
- **Dual WaterFall™** is a non-immersion technique that minimizes components exposure time to water.
- **Dual Multi Stage Drying Unit** removes DI water from inspected components. Dries two trays or modules simultaneously.
- S**MEMA-9851** integrated interface for loading and unloading of trays.
- **Multiple Waveform analysis modes:**
  - **Amplitude** measures peak-to-peak signal and polarity.
  - **Profile** analyzes distance from front surface to interface of interest.
  - **Time Difference** evaluates distance between two interfaces.
  - **Integration Mode™** allows diminished signals to stand out.

System

- **Dual Ultra High Speed Scanning** mechanism is inertially balanced linear motor scanners provide the fastest image acquisition times and inhibits vibration; while simultaneously scanning two (2) trays with a precision of ±0.5 microns. Ref. U.S. Patent 7,584,664
- **High Frequency Pulser/Receivers** with 500MHz bandwidth delivers the power needed for transducers up to 230MHz.
- **Super High Resolution** of 286 Megapixels (16K) acoustic data points provide the most accurate imaging resolution.
- **95dB Gain** selectable in 0.5dB steps offers needed gain for the best image quality.
- **AIPD™** (**A**coustic **I**mpedance **P**olarity **D**etector) Simultaneously Displays both Polarity (i.e., Phase) and Amplitude Data. Ref. U.S. Patent 4,866,986
- **Probing-Gate™** automatically configures the parameters for imaging various depths of interest sequentially, downward, upward and expanding.
- **Pixel Pitch™** allows the operator to select the desired scan area size and data point spacing, thereby determining the C-SAM image resolution.
- **Movement Map™** offers an interactive graphical representation of the scan area.
- **Color Maps** for image enhancement using pre-defined or user defined color mappings.
- **C-SAM Interactive™** provides user application support - an intuitive interaction-based learning tool.
- **Image files** store scan parameters in every saved image and can be used to recall previous settings.
- **Image conversion** to GIF, PNG, JPG, TIF and BMP supported.
- **Clean room ready** with ESD Safe surfaces.
- **Safety enclosed cabinetry** with viewing ports and manufactured per **CE** and **SEMI** S2 and S8 Standards and clean room ready.

Optional

- **SECII/GEM E30** for total factory automation requirements.
- **Vacuum Hold-down** for small parts in scan region. Ref. U.S. Patent 6,357,136
- **Vacuum Hold-down** for drying.
- **Thru-Scan™** (Through-transmission imaging) displays material continuity and delamination or voids. Compatible with Vacuum Hold-down.
- **STaR™** (**S**imultaneous **T**hru-Scan and **R**eflection) generates TDI and Thru-Scan images in one pass.
- **SEMI F47** UPS for orderly shut-down.
- **Heated Air** during drying ensuring completely dry components.
- **Remote Water Temperature Monitor and Control System** maintains the ideal scanning conditions.
- **In-line DI Water Treatment** reduces water usage by recirculating DI while maintaining and monitoring conductivity level.
- **In-line Water Heater** decreases the attenuation loss of high frequencies.
- **In-line Degasification** eliminates gases from the water.
- **Water Filtration** eliminates particulates from the water.
- **UV Light** assists in the reduction of bacterial growth in water
- **Transducers** manufactured by SONOSCAN available from 50 – 400MHz.
- **Heat Exchanger** assists in maintaining a consistent water temperature.

Facility Requirements

- Main Unit Dimensions: L 97.4" x W 37.0" x H 88.8" (L 2.48m x W 0.94m x H 2.26m)
- 220-240VAC, Single Phase, 50/60 Hz.
- Main Unit – 15 amps.
- Additional amperage is required for vacuum hold-down & heating options. Max 80 amps.
- 32 cfm @ 80 psi of Clean/Dry Compressed Air.
- DI Water @ 20 psi max inlet for ~6 gallons (~23 liters) of Deionized Water for Recirculation Tank.
- Approximately 4,850lbs. 2,200 Kg.

For more information, speak with your Nordson representative or contact your Nordson regional office

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