

# REVOLUTIONARY NS2400 NEWBORN SCREENING AUTOMATE



CE IVD

Fully integrated robotic high throughput system

**LABSYSTEMS**  
DIAGNOSTICS  
*speaking your language*

## LABSYSTEMS DIAGNOSTICS

### A Trend setter in Newborn Screening

Labsystems Diagnostics has been a pioneer in developing next generation diagnostic tests. The company manufactures complete range of newborn screening (NBS) system and tests. Labsystems diagnostics Oy is well known for its first microplate based fluorometric test for PKU in newborns. Labsystems NBS range of products is distributed worldwide with the help of strategic partnership in sales and distribution.

## UNIQUE FEATURES

### NS2400 Workstation

- **Fully automated walkaway system:** NS2400 System is a high end robotic platform which facilitates automatic processing of NBS assays.
- **High-throughput system:** NS2400 has a maximum capacity of 25 plates with a feature of simultaneous processing of multiple assays. System also facilitates continuous plate and reagent loading. Additionally NS2400 can be upgraded to perform new/advanced NBS assays.
- **Real time monitoring of workflow:** Each stage of the process or status of the assay including reagents consumption, plate location and reagent handling can be monitored. Furthermore, the assay run can also be monitored in real time, as NS2400 is a see through system.
- **Alarm activation facility:** In case of instrument errors or operator mistakes, NS2400 is capable to send an alarm signal either by acoustic or through email if configured with internet LAN connection.
- **NS2400 modules flexibility:** Possibility to use NS2400 integrated modules such as disc remover, washer and reader as standalone instruments in case of less sample load.
- **“Freedom EVOware plus” software:** Unique windows based operational software “Freedom EVOware Plus” for process controlling of NS2400.
- **Kit compatibility:** Labsystems FEIA based NBS kits are compatible for both NS2400 automate and modular system.

## ROBUST FEATURES

- **Unique liquid handling system (LiHa):** High precision pipetting with liquid level detection for the reagent aspiration.
- **Efficient system for biochemical assays:** Plate to plate transfer step for biochemical assays to overcome the interference due to floating discs. No additional measurement step required.
- **High precision robotic manipulator (RoMa):** Efficient transport of assay plates to different modules during the run with precise gripping and plate lid handling.



LiHa



RoMa

## INCUBATOR SHAKER



- **Systematic temperature control:** 24 shaking/heating positions with a maximum temperature upto 60°C.
- Maintains temperature uniformly across the whole plate to eliminate edge effect.

## DISC REMOVER

- **Automated smooth disc removal function:** Effective removal of sample discs and reagent waste from assay plates.
- Separate disposal of paper discs and reagent liquid wastes.



## WASHER



- **Consistent washing Feature:** Uniform dispensing of liquid and multipoint aspiration to achieve minimal residual volumes per well.
- HydroControl software provides platform to create 20 different wash programs.
- Ability to process both strip and solid microtitre plates.

## READER

- **Detection method:** Labsystems NBS kits are based on "Prompt fluorescence technology" and the reader is equipped with specific filter sets for sensitive fluorescence measurement.
- **User-friendly "Magellan™" Software:** Windows OS based software for evaluation of assay results. Supports plate to plate quality control making use of Westgard® multirole and Levy-Jennings graph.



## WORKFLOW

- **Reagent preparation and loading:** Simple reconstitution of kit reagents as per the assay protocol and loading in respective reagent racks.
- **Plate loading:** Easy loading of sample punched microtitre plates in respective hotels sites.
- **Prepare worklist:** The Sample ID worklist generated by barcode puncher can be automatically imported or can also be created manually in Magellan™ software.
- **Start Assay Run:** Hassle free selection of desired assays and the number of plates using EVOware plus software.
- **Result generation and analysis:** Intuitive interface design for the analysis of assay results and possibility to export multiple output format such as pdf, excel, ASCII and ASTM as per the user requirement.

## TECHNICAL SPECIFICATION

- **Physical Dimension**
  - Width(W) - 1224mm
  - Length(L) - 2500mm
  - Height(H) - 1200mm
  - Weight - 350Kg
- **Power Requirements**
  - Power consumption: 2400 V A max
  - Main voltage: 200-240V AC, Frequency - 50Hz
- **Samples**
  - Sample type: Dried blood spots in 96 well plates
- **Loading**
  - Continuous sample loading
  - Continuous reagent loading

## PERFORMANCE SPECIFICATION

- **Capacity**
  - Plate capacity: 25 plates (2400 wells)
  - Reagent capacity: 5 Racks 15 Positions
  - Incubator module: 24 Shaking/heating positions up to 60°C
- **Reagent pipetting**
  - Volume range: 10µl-1000µl
  - Precision: ≤ 0.5%
- **Measurement mode**
  - Prompt fluorescence

## SAFETY SPECIFICATION

This section describes the safety specifications for NS2400 system

- **NS2400 system bears the following markings**
  - CE mark for the European In Vitro Diagnostic (IVD) directive
- **NS2400 system conforms to the following requirements**
  - 2002/96/EC (waste of electrical and electronic equipment)
- **Safety performance**
  - IEC 61010-2-101:2015 (Ed.2) Particular requirements for In Vitro Diagnostic (IVD) medical equipment
- **The safety specifications are also met under the following environmental conditions in addition to or in excess of those states in the operating conditions:**
  - Temperature: +5°C to 40°C
  - Humidity: Maximum relative humidity 80%
  - Mains supply fluctuations: ~10% from nominal
- **EMC performance**
  - EN 61326-2-6:2012 - Product family standard - Electrical equipment for measurement control & laboratory use; In Vitro Diagnostic (IVD) medical equipment

## PRODUCTS REAGENTS

Cat. No	Product Name	Plate Type	Detection Method	Pack Size
7100100	NeoMass AAAC	Solid	MS/MS	960
7100110	NeoMass AAAC Plus	Solid	Fluorescence	960
6199850	Neonatal Galactose	Solid	Fluorescence	960
6199810	Neonatal GALT	Solid	Fluorescence	960
6199821	Neonatal Biotinidase	Solid	Fluorescence	960
6199860	Neonatal G6PD	Solid	Fluorescence	960
6199896	Neonatal Phenylalanine	Solid	Fluorescence	960
6199870	Neonatal 17-OH-Progesterone FEIA	Solid	Fluorescence	480
6199871	Neonatal 17-OH-Progesterone FEIA	Solid	Fluorescence	960
6199872	Neonatal 17-OH-Progesterone FEIA	Strip	Fluorescence	960
6199880	Neonatal hTSH FEIA Plus	Solid	Fluorescence	960
6199882	Neonatal hTSH FEIA Plus	Strip	Photometric	480
6199883	Neonatal hTSH FEIA Plus	Strip	Fluorescence	960
6199891	Neonatal hTSH EIA	Strip	Fluorescence	480
6199890	Neonatal T4 FEIA	Strip	Fluorescence	480
6199802	Neonatal Toxoplasma gondii IgM FEIA	Strip	Fluorescence	480
6199831	Neonatal IRT FEIA	Solid	Fluorescence	960
6190930	Neonatal Phenylalanine Controls	Reagents	Fluorescence	5 Sets of 3 Levels
6190940	Neonatal Phenylalanine Calibrators	Reagents	Fluorescence	5 Sets of 6 Levels
8100401	SCID-SMA Real time PCR Kit	NA	qPCR	96
8100402	SCID-SMA Real time PCR Kit	NA	qPCR	192
8100403	SCID-SMA Real time PCR Kit	NA	qPCR	480

## INSTRUMENTS

Cat. No	Product Name	Plate Type	Pack Size
5400200	NS2400 Newborn screening automate	Automate	1
5420100	NS Reader	Modular	1
5550400	NS96 Disc Remover (110 V)	Modular	1
5550300	NS96 Disc Remover (220 V)	Modular	1
5450300	NS496 Plus (Neonatal Disc Puncher)	Modular	1
5450500	NS Incubator Shaker (2 Plate capacity)	Modular	1
5410100	NS Washer	Modular	1
5600100	Hand Puncher	-	1



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