COST-EFFICIENT SYSTEM FOR NEWBORN SCREENING

The semi-automated system for optimized newborn screening

Brochure not for distribution in the US
PerkinElmer is the global market leader in neonatal screening, currently serving customers in more than 90 countries. Almost 500 million babies have been screened with our products. Every day 65 babies around the world get a healthier start to life thanks to the early detection of a serious disorder.

Since 1999, the semi-automated system has been used in over 200 NBS laboratories all over the world. The large number of users is a testament to the quality and reliability of the platform: nearly 10 million newborns are screened with Victor™ 2D each year. The semi-automated system is a robust, cost-efficient solution for screening of seven NBS disorders: congenital hypothyroidism, phenylketonuria, congenital adrenal hyperplasia, galactosemia, cystic fibrosis, biotinidase deficiency and G6PD deficiency.

**Why choose the semi-automated NBS system?**

- Ideal solution for small to mid-size and start-up laboratories
- Fully expandable when needs in the laboratory change – adding new parameters or increasing sample volume is easy and cost-efficient
- Total solution guarantees excellent support and service throughout the whole workflow
- All instruments and assays are CE marked
- Over 200 satisfied NBS customers globally
PERKINELMER 226 SAMPLE COLLECTION DEVICE
- Dried blood spot collection card comprised of 100% pure cotton linter filter paper
- Validated for even and uniform sample distribution
- PerkinElmer can custom-print and manufacture a device format that meets specialized newborn screening requirements

DBS PUNCHER® INSTRUMENT
- Semi-automatic device for punching dried-blood spot samples into microtitration plates
- The 2-plate capacity puncher is easy-to-use
- Robust option for lower capacity screening
- Alternatively Panthera-Puncher™ 9

DELFIA® PLATE DISPENSE
- Automatic and precise addition of Enhancement solution
- Optimized for DELFIA reagents
- As an option DELFIA Dispense Unit can be ADDED allowing automatic dispensing e.g. buffer or tracer solution

DELFIA® WASHER-DISKREMOVE
- Automatically removes the eluated filter paper disks from the wells
- Performs all needed wash stages as specified in the assay protocol
- Overfilling of wells is avoided
- Up to 100 protocols can be stored
- Optimized for use with DELFIA neonatal assays

TRINEST™ INCUBATOR SHAKER
- A high quality, easy to use device for processing standard height microplates
- Accurate and uniform temperature assures highly repeatable results
- Capacity for 3 plates
- Up to 20 incubating and shaking programs can be stored
- Two preset shaking speeds optimized for DELFIA assays
- Fully adjustable shaking speed between 100-1350 rpm for general use
- With non-slip surface easy to load and easy to use
- Electronic feedback circuit ensures that shaking speeds remain constant

DELFIA® PLATESHAKE
- Two preset shaking speeds optimized for DELFIA assays
- Fully adjustable shaking speed between 100-1350 rpm for general use
- With non-slip surface easy to load and easy to use
- Electronic feedback circuit ensures that shaking speeds remain constant

MULTICALC SOFTWARE
For data evaluation and quality control
- Included with Victor™ 2D
- Can be connected to LIMS
- Automatic QC follow-up of assays
- Software includes all the protocols for PerkinElmer neonatal assays as default
- Results directly ready from the software

THE SEMI-AUTOMATED SYSTEM FOR YOUR SCREENING PROGRAM

- Sample collection device PerkinElmer 226 sample collection device
- Puncher Panthera-Puncher™9 or DBS Puncher (or Puncher from another supplier)
- Sample preparation TriNEST™ incubator shaker DELFIA® Plate dispenser DELFIA® Platewash DELFIA® Plateshake Reagents
- Measuring device VICTOR™2D fluorometer
- Software MultiCalc

All products and instruments are especially optimized for use with PerkinElmer kits. They may be supplied alone or as part of a complete semi-automatic system for performing DELFIA and other assays.

VICTOR™ 2D FLUOROMETER
- Easy to use and reliable measurement device
- Preset protocols for neonatal assays based on:
  - Time-resolved fluorescence (TSH, T4, 17-OHP, IRT)
  - Prompt fluorescence (PKU, GALT, TGAL, BTD, G6PD)
- MultiCalc software included for result calculation, QC control and communication with LIMS

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For data evaluation and quality control
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- Results directly ready from the software
INSTRUMENT SPECIFICATIONS

DBS® PUNCHER INSTRUMENT

Physical dimensions: Height: 130 mm
Depth: 65 mm
Length: 150 mm

Environmental conditions:
- Temperature: 4°C to 40°C
- Relative humidity: 20% to 85%
- Power requirements: 100-120 V / 220-240 VAC, 50-60 Hz
- Weight: 1.5 kg

VICTOR® 2D INSTRUMENT

Physical dimensions: Height: 274 mm
Depth: 184 mm
Width: 414 mm

Environmental conditions:
- Temperature: 15-35 °C
- Relative humidity: 15-85%
- Power requirements: 110-120 V / 220-240 V, 50/60 Hz
- Weight: 49 kg

TRINITY® INCUBATOR SHAKER

Physical dimensions: Height: 230 mm
Depth: 200 mm
Width: 340 mm

Environmental conditions:
- Temperature: 0-50 °C
- Relative humidity: 0-80%
- Power requirements: 100 VA
- Weight: 5.5 kg

DELFIA® WASHER-DISERMOVE

Physical dimensions: Height: 125 mm
Depth: 305 mm
Width: 270 mm

Environmental conditions:
- Temperature: 15-35 °C
- Relative humidity: 10-85%
- Power requirements: 110-120 V / 220-240 V, 50/60 Hz
- Weight: 10.3 kg

DELFIA® PLATESHAKE

Physical dimensions: Height: 230 mm
Depth: 210 mm
Width: 415 mm

Environmental conditions:
- Temperature: 0-50 °C
- Relative humidity: 0-90%
- Power requirements: 200-240 VAC, 50/60 Hz
- Weight: 5.5 kg

DELFIA® PLATE DISPENSE

Physical dimensions: Height: 85 mm
Width: 150 mm
Depth: 225 mm

Environmental conditions:
- Temperature: 0-50 °C
- Relative humidity: 0-80%
- Power requirements: 100 VA
- Weight: 2 kg

PERFORMANCE SPECIFICATIONS

DBS® Puncher

Punch diameter: 4.7 mm
Volume dispensed: 200 μl per well (preadjusted)

VICTOR® 2D

Shaking modes: Fast, Slow or Variable
Shaking duration: 0-60 min
Shaking interval: 0-180 s

TRINITY® Incubator Shaker

Incubation time: 0-48 h
Incubation time: 0-48 h

DELFIA® Washer-Dispense

Wash modes: Strip or Plate
Protocols: Up to 100 washing protocols, up to 75 volumes of bottles

DELFIA® Plateshake

Warming speed: less than 15 min from +24°C to +70°C
Washing speed: less than 20 s

DELFIA® Dispense Unit

Volume dispensed: 10 μl
Volume dispensed: 10 μl

INSTRUMENT SPECIFICATIONS

DBS® Puncher

DBS® Incubator Shaker

TRINITY® Incubator Shaker

DELFIA® Washer-Dispense

DELFIA® Plateshake

DELFIA® Dispense Unit

VICTOR® 2D

Incorporating a modular light source based on LED technology is the basis for high sensitivity and low assay variation.
HIGH QUALITY ASSAYS FOR OPTIMIZED SCREENING

DELFIA NEONATAL HTSH KIT
- Based on DELFIA technology
- The intended use is for the quantitative determination of human thyroid stimulating hormone (hTSH) in blood specimens dried on filter paper as an aid in screening newborns for congenital hypothyroidism
- Kit reagents for 10 plates (960 assays)
- Kit reagents for 4 plates (A005-204)
- Kit reagents for 10 plates (A005-210)
- Kit reagents for 50 plates (A005-001B)
- Kit reagents for 100 plates (A005-002)
- Kit reagents for 400 plates (A005-004)

DELFIA NEONATAL IRT KIT
- Based on DELFIA technology
- The intended use is for the quantitative determination of immunoreactive trypsin(ogen) (IRT) in blood specimens dried on filter paper as an aid in screening newborns for cystic fibrosis
- Two package sizes available: 4 plates (A005-204) and 10 plates (A005-210)
- Two package sizes available: 10 plates (A005-210)

NEONATAL PHENYLALANINE KIT*
- The kit makes use of a fluorescent ninhydrin method
- The intended use is for the quantitative determination of phenylalanine in blood specimens dried on filter paper as an aid in screening newborns for elevated levels of phenylalanine in the blood
- Two packages sizes available: 10 plates (NP-1000*) and 50 plates (NP-4000*)

NEONATAL GALT KIT
- The assay is an adaptation of the semi-quantitative enzymatic assay of Beutler and Baluda
- The intended use is for the (semi-quantitative) determination of galactose oxidase activity in blood specimens dried on filter paper as an aid in screening newborns for classical galactosemia caused by GALT deficiency
- Two packages sizes available: 10 plates (NG-1100) and 50 plates (NG-4100)

NEONATAL TOTAL GALACTOSE KIT
- Controls in DBS including both Gal and Gal-1-P
- The kit makes use of a fluorescent galactose oxidase method
- The intended use is for the quantitative determination of total galactose (galactose and galactose-1-phosphate) concentrations in blood specimens dried on filter paper as an aid in screening newborns for galactosemia
- Kit reagents for 10 plates (960 assays)

NEONATAL G6PD KIT*
- The assay involves the oxidation of G-6-P substrate to 6-PG by the G6PD enzyme present in the sample
- The intended use is for the quantitative determination of glucose-6-phosphate dehydrogenase activity in blood specimens dried on filter paper as an aid in screening newborns for G6PD deficiency
- Kit reagents for 10 plates (960 assays)

NEONATAL BIOTINIDASE KIT
- The assay is based on a semi-quantitative fluorometric assay
- The intended use is for the semi-quantitative determination of biotinidase activity in blood specimens dried on filter paper as an aid in screening newborns for biotinidase deficiency
- Two package sizes available: 10 plates (3018-0010) and 50 plates (3018-0018)

ORDERING INFORMATION

Instruments
- 1298-071 DBS® Puncher
- 1298-050 TiEST™ Incubator Shaker
- 1298-053 DELFIA® Plate shaker (220/240V)
- 1298-054 DELFIA® Plate shaker (110/240V)
- 1298-010 DELFIA® Washer-Disk remove
- 1298-041 DELFIA® Plate Dispense
- 1420-020 Victor™2D fluorometer, manual loading
- 1420-021 Victor™2D fluorometer, stacker model
- Victor™2D including PC, monitor, necessary filters, instrument software and MultiCalc.

Kits
- A032-310 DELFIA® Neonatal HTSH kit (10 plate)
- A035-110 DELFIA® Neonatal Thyroxine (T4) kit (10 plate)
- A024-104 DELFIA® Neonatal 17a-OH-progesterone kit (6 plate)
- A024-110 DELFIA® Neonatal 17a-OH-progesterone kit (10 plate)
- A005-204 DELFIA® Neonatal IRT kit (4 plate)
- A005-210 DELFIA® Neonatal IRT kit (10 plate)
- NP-1000 Neonatal Phenylalanine kit (10 plate)
- NP-4000 Neonatal Phenylalanine kit (50 plate)
- ND-1000 Neonatal G6PD kit (10 plate)*
- ND-0010 Neonatal Total Galactose kit (10 plate)
- NG-1100 Neonatal GALT kit (10 plate)
- NG-4100 Neonatal GALT kit (50 plate)
- 3018-0010 Neonatal Biotinidase kit (10 plate)
- 3018-0018 Neonatal Biotinidase kit (50 plate)

Options (sold separately)
- 1420-2210 Bar code reader
- 2011-0010 Laboratory laser printer (230 V)
- 2011-0040 Laboratory laser printer (115 V)
- 1298-043 DELFIA® Dispense Unit

Consumables (sold separately)
- 3033-0010 Clear, V-bottomed microplates (for Neonatal Phenylalanine kit)
- Bulk package of 100 plates
- 4090-0100 96-well plate covers
- 1420-450 ID-labels for 1-99, 10 sheets