Cost efficient and reliable newborn screening.

VICTOR2™ D

The semi-automated system for optimized newborn screening

revvity

Effective detection for a healthier future

Trusted system for affordable and expandable newborn screening

VICTOR2™ D platform.

Revvity is the global market leader in neonatal screening, currently serving customers in more than 110 countries. Over 800 million babies have been screened with our products. Every day 85 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 an indication to the quality and reliability of the platform: nearly 10 million newborns are screened with VICTOR2™ D each year.

The semi-automated system is a robust, cost-efficient solution for screening seven NBS disorders: congenital hypothyroidism, phenylketonuria, congenital adrenal hyperplasia, galactosemia, cystic fibrosis, biotinidase deficiency and G6PD deficiency.

Why choose the semi-automated NBS system?

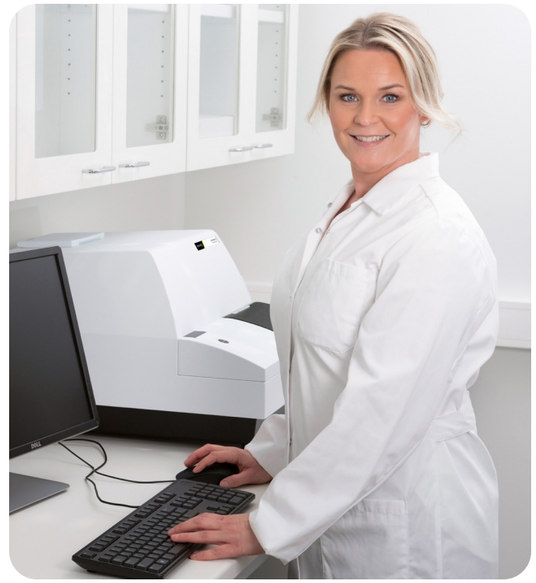
Ideal solution for different size laboratories

Fully expandable when needs in the laboratory change – add new parameters or increase sample volumn

Total solution guarantees excellent support and service throughout the whole workflow

VICTOR2™ D fluorometer

- Ideal measurement instrument for different size laboratories
- Easy to use and reliable measurement device
- Pre-set protocols for neonatal assays based on
  - Time-resolved fluorescence- DELFIA™ assays (TSH, T4, 17-OHP, IRT)
  - Prompt fluorescence (PKU, GALT, TGAL, BTD, G6PD)
- User friendly and comprehensive workstation software is included in the instrument
- Right balance of cost-effectiveness and control



Efficient workflow and quality management with workstation software

VICTOR2™ D Workstation Software comprises five modules, each module is designed to improve daily work and long-term follow-up

1 Kitlot editor

Easily enter new kit lot information and edit pre-defined cut-off limits. You can also determine the location of calibrators and controls on the plate maps.

2 Plate generator

Generate worklists if they are not created directly through connected punchers.

3 Instrument control

Start measuring the assay by selecting the worklist or setting the parameters to run. The plate image updates in real-time during the process.

4 Result viewer

View and effectively manage assay results. Customize the screen layout to meet your laboratory's specific requirements.

5 Quality control program

Support effective long-term management and follow-up of quality control data. Store and graphically review control results, and monitor the quality.

The semi-automated system for your screening program

Sample collection and preparation

Revvity 226 sample collection device

- Dried blood spot collection card is 100% pure cotton linter filter paper optimized for DBS sampling
- Revvity can custom-print and manufacture card format that meets your requirements

DBS Puncher™ Instrument

- Automated device for punching dried-blood spot samples into microtitration plates
- 2-plate capacity
- Easy-to-use and robust option for lower capacity screening
- Alternatively Panthera-Puncher 9 with 9-plate capacity

Sample processing

DELFIA Plateshake

- Two pre-set shaking speeds optimized for DELFIA assays
- Fully adjustable shaking speed (100 - 1350 rpm)
- Removable non-slip platetray
- Four plate capacity with plate specific timers

TriNEST™ Incubator Shaker

- A high quality, accurate and uniform temperature assures highly repeatable results
- Capacity for three plates
- Up to 20 incubating and shaking programs can be stored

DELFIA Trio

- Automatically removes the eluated paper disks from the wells
- Performs required wash stages as specified in the assay protocol
- Automatic and precise dispensing of enhancement solution
- Optimized for use with DELFIA neonatal assays with preinstalled protocols

Measuring result management reporting

VICTOR2™ D and Workstation Software

Optimized products for best results

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

Sample processing devices needed by assay

	DELFIA Plateshake	TriNEST Incubator Shaker	DELFIA Trio
TSH	×		×
T4	×		×
17-OHP	×		×
IRT	×		×
PKU		×	
G6PD	×		
BTD	×	×	
GALT		×	
TGAL	×		

DELFIA Neonatal hTSH assay workflow

Punch	Add Tracer dilution	Shake and incubate at room tempurature with slow shake	Remove the disks, wash and add Enhancement solution	Measure
DBS Puncher		**DELFIA Plateshake**	**DELFIA Trio**	**VICTOR2™ D**

Neonatal Phenylalanine assay workflow

Punch	Add extraction solution and incubate at room temperature	Add deionized water	Transfer to other microplate	Add PKU Reagent and incubate in and incubator + 60 °C	Add copper reagent and incubate at room temperature	Measure
DBS Puncher				**Trinest**		**VICTOR2™ D**

Complete range. Better screening.

Complate range of assays

- VICTOR2™ D manual platform covers a wide test panel for easy and cost-efficient analyte expansion.
- High accuracy and low repeat testing rate.
- Low lot-to-lot variation, means less cut-off resets.
- Immunoassay and enzymatic methods are widely used and allows for flexibility to screen just one or several diseases.

The reliability of chemistry

DELFIA technology – time-resolved fluorometry

- In TRF, measurement is delayed after excitation until background emissions have decayed.
- TRF detection together with the unique lanthanide-based DELFIA chemistry ensures high sensitivity, superior stability and low assay variation.

Validated kits

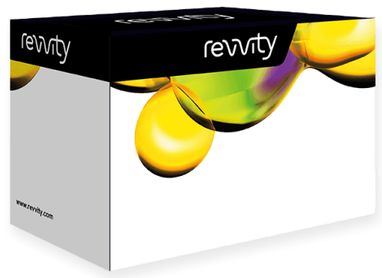
- Each VICTOR2™ D manual Neonatal kit contains all of the assay-specific reagents needed including plates, all reagents, calibrators and controls. Separated bulk reagents are not needed*.
- The assay-specific reagents come in easy to-store packs with contents for 960 tests (10 plates). To support lower/higher throughput needs other pack size are also available:
- Smaller 358 test (4 plates) available for 17-OHP and IRT
- Bigger 4800 tests (50 plates) available for PKU, GALT and Biotinidase

Calibrators and controls in DBS format

- Six lot-specific dried blood spot calibrators are supplied, to provide thorough coverage of the clinical area.
- Neonatal assays include controls to assure the validity of the results.

Revvity is a long standing provider and market leader in NBS - proof of our reliability and customer satisfaction

Revvity offers reagents, instruments, software, training and support



High quality assays for optimized screening

DELFIA Neonatal hTSH kit

A032-310 (10 plates)

- Based on DELFIA technology
- Intended use: 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 to screen just one or several diseases

DELFIA Neonatal Thyroxine (T4) kit

A065-110 (10 plates)

- Based on DELFIA technology
- Intended use: The quantitative determination of human thyroxine (T4) in blood specimens dried on filter paper as an aid in screening newborns for congenital hypothyroidism

DELFIA Neonatal17α-OH-progesterone kit

A024-104 (4 plates) and A024-110 (10 plates)

- Based on DELFIA technology
- Intended use: The quantitative determination of human 17α-OH progesterone in blood specimens dried on filter paper as an aid in screening newborns for congenital adrenal hyperplasia

DELFIA Neonatal IRT kit

A005-204 (4 plates) and A005-210 (10 plates)

- Based on DELFIA technology
- Intended use: The quantitative determination of human immunoreactive trypsin(ogen) (IRT) in blood specimens dried on filter paper as an aid in screening newborns for cystic fibrosis

Neonatal Phenylalanine kit

NP-1000 (10 plates) and NP-4000 (50 plates)

- The kit makes use of a fluorescent ninhydrin method
- Intended use: The quantitative determination of phenylalanine in blood specimens dried on filter paper as an aid in screening newborns for phenylketonuria

Neonatal G6PD kit

ND-1000 (10 plates)

- The assay involves the oxidation of G-6-P substrate to 6-PG by the G6PD enzyme present in the sample
- Intended use: The quantitative determination of glucose-6-phosphate concentrations in blood specimens dried on filter paper as an aid in screening newborns for G6PD deficiency

Neonatal Total Galactose kit

3029-0010 (10 plates)

- Controls in DBS including both Gal and Gal-1-P
- The kit makes use of a fluorescent galactose oxidase method
- Intended use: 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

Neonatal GALT kit

NG-1100 (10 plates) and NG-4100 (50 plates)

- The assay is an adaptation of the semi-quantitative enzymatic assay of Beutler and Baluda
- Intended use: the (semi-quantitative) determination of galactose-1-phosphate uridyl transferase (GALT) concentrations in blood specimens dried on filter paper as an aid in screening newborns for classical galactosemia caused by GALT deficiency

Neonatal Biotinidase kit

3018-0010 (10 plates) and 3018-001B (50 plates)

- The assay is based on a semi-quantitative fluorometric assay
- Intended use: The semi-quantitative determination of biotinidase activity in blood specimens dried on filter paper as an aid in screening newborns for biotinidase deficiency

Instrument specifications

VICTOR2™ D instument

Product Number: 1420-020
Instrument specifications

Physical dimensions

Height: 383 mm
Width: 485 mm
Depth: 590 mm
Weight: 49 kg

Power requirements

Power Consumption Max: 400 VA
Voltage/Frequency: 110 - 120 V/220 - 240 V, 50/60 Hz

Environmental conditions

Temperature: 15 - 35 °C
Relative Humidity: 10 - 85 %
Measurement Time: 1 s / sample, 3 min / plate
Noise of the Device in Function: Max 70 dB

Light sources

Continuous light source for fluorometric measurements:

1. Tungsten-halogen lamp, 75W, lifetime >300 h, Spectral range 340 - 700 nm.
2. Rotatable filter wheel A, provided with eight filter positions (Ø 15 mm). Standard high quality interference filters 340 nm, 355 nm, 390 nm, 485 nm, 544 nm. Changeable rotatable filter wheel B, provided with 4 filter positions (Ø25.4 mm)

Flash light source for TR-fluorometric Measurements:

1. UV xenon flash tube, L4642 or equivalent, spectral range 280 - 400 nm.
2. Filter slide, provided

Detection units

Fluorometry and TR-fluorometry:

1. Photomultiplier tube, R 1527
2. Emission filter slide A, provided with eight filter positions (Ø 25.4 mm) with the following filters: 405, 460, 486, 535, 590, 615 and 642 nm

VICTOR2™ D includes: PC, monitor, necessary filters, instrument software and workstation software
Changeable emission filter slide B, provided with eight filter positions (Ø25.4 mm)

DBS Puncher instument

Product Number: 1296-071
Instrument specifications

Physical dimensions

Height: 383 mm (510 mm with stackers)
Width: 485 mm
Depth: 590 mm
Weight: 49 kg (stacker model 60 kg)

Power requirements

Voltage/Frequency:
110 - 120 V/ 220 - 240 V, 50/60 Hz

Environmental conditions

Temperature: 15 - 35 °C
Relative Humidity: 20 - 80 %

Punch Diameter: 1.5 mm (1/16″)
3.2 mm (1/8″)
4.7 mm (3/16″)
6 mm

Plate Height: 1 96-well plates (normal height: 14.5mm, and deep well: 44mm) **Operational control:** 4 selection button for:
- operation mode selection
- plate movement
- barcode display
- operation guidance
- protocol editing

DBS Puncher

Includes: 3.2mm punch head, Floor switch, 2 adapters for standard height 96-well microplate.

Options (sold seperately):

1221-530:
Workstation option includes: workstation software, barcode reader and cable

1296-8020:
PC for DBS puncher includes: PC and monitor

TriNEST Incubator Shaker

Product Number: 1296-0050
Instrument specifications

Physical dimensions

Height: 223 mm
Width: 388 mm (plate carrier out)
Depth: 310 mm
Weight: 15 kg

Power requirements

Power consumption max: 160 VA
Voltage/Frequency: 110 - 120 V or 220 - 240 V, 50/60 Hz

Environmental conditions

Operating: 15 °C to +35 °C, RH 10-75 %

Performance specifications

General

Capacity: Three plates per unit, three units stackable 96-well and 384 well plates
Programmable: Up to 20 programs LCD graphics display. The three plates are processed with the same program but can be loaded at different times. Buzzer and LED lights indicate when incubation is complete

Incubation

Temperature range: From 3 °C above ambient to 70 °C in 1 °C increments
Precision: ± 0.5 °C
Variation across plate: < 0.6 °C
Warming speed: Less than 15 min from +24 °C to +70 °C
Incubation time: 0-48 h in increments of 1 min. Preheat function assuring incubation starts at precisely the specified temperature

Shaking

Shaking frequency: 400 - 1200 rpm (or 0 rpm) in 100 rpm increments
Precision: ± 2 %
Orbit: ~2 mm
Time: 0 - 48 h in increments of 1 min
Interval Shaking: Interval up to 60 min in increments of 1s or 1 min

DELFIA Plateshake

Product Number: 1296-0080
Instrument specifications

Physical dimensions

Height: 130 mm
Width: 230 mm
Depth: 285 mm
Weight: 5 kg

Power requirements

Power input: 15 W
Voltage/Frequency:
100 - 240V, 50 - 60 Hz

Environmental conditions

Protection class: IP40
Temperature: 15 - 35 °C
Relative humidity: 10 - 75 %
Suitable for use in gassing and incubating cabinets

Performance specifications

Shaking frequency: 100 - 1350 cycles/min (rpm) in increments of 50 cycles/min
Total Stroke/Orbit: 1.5 mm
The platform has a non-slip, removable moulded rubber pad for accommodating the microtitration plates.
Shaking modes: High, Low or variable
Timer: 1 min - 18 hours (in increments of 1 min)

DELFIA Trio instrument

Product Number: 1296-0070
Instrument specifications

Physical dimensions

Height: 336 mm
Width: 538 mm
Depth: 590 mm
Weight: 37 kg

Power requirements

Power consumption: 160 W
Voltage/Frequency: 100 - 240 VAC /50/60 Hz
Power cord: External universal PSU, cord according to region

Environmental conditions

Temperature: +15 °C to +30 °C
Relative humidity max: 10 % to 80 % relative humidity

Performance specifications

Manifold: 12 channels (two rows)
Vacuum: Flow rate in normal atmosphere 14.5 l/min, final vacuum 72 %
Volumes of bottles: Waste 5 L, Waste 2 L, Wash 2 L, Rinse 2 L

Software

Protocols: 14 ready-made factory protocols for manual DELFIA assays, possibility for custom protocols
Number of strips: 2, 4 ,6 or 8
Disk removal: yes/no
No. of wash cycles: 0 to 20
Dispensing: yes/no (200 µl)
Plates: Nunc 8x12 or Thermo 8x12 Immunostrips

Other features

Pressure analysis based monitoring of protocol completion status

Maintenance wizard

Possibility to inactivate modules

Instrument specifications

Instruments

Product number	Description
1420-020	VICTOR2™ D Instrument
1296-071	DBS Puncher™
1296-0050	TriNEST Incubator Shaker
1296-0080	DELFIA Plateshake
1296-0070	DELFIA Trio

Options (sold separately)

Product number	Description
2011-0010	Laboratory Laser Printer (230 V)
2011-0040	Laboratory Laser Printer (115 V)

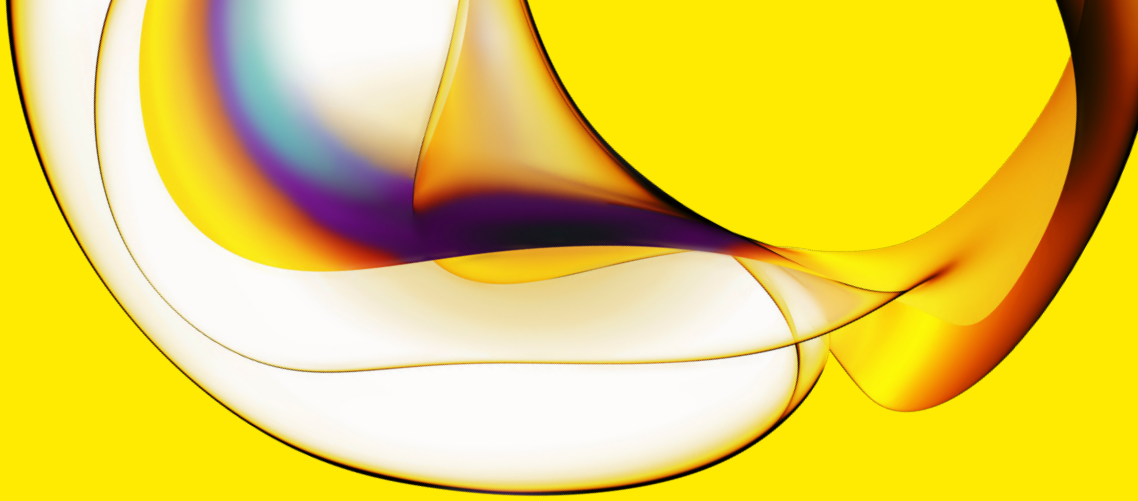
Consumables (sold separately)

Product number	Description
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

Kits

Product number	Description
A032-310	DELFIA Neonatal hTSH Kit (10 plate)
A065-110	DELFIA Neonatal Thyroxine (T4) Kit (10 plate)
A024-104	DELFIA Neonatal 17α-OH-progester-one Kit (4 plate)
A024-110	DELFIA Neonatal 17α-OH-progester-one 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)
3029-0010	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)
3018-001B	Neonatal Biotinidase Kit (50 plate)

* with Neonatal Phenylalanine kits need to order additional plates (3033-0010) and covers (4090-0100)



www.revvity.com

1636440_P