

BEST 2000

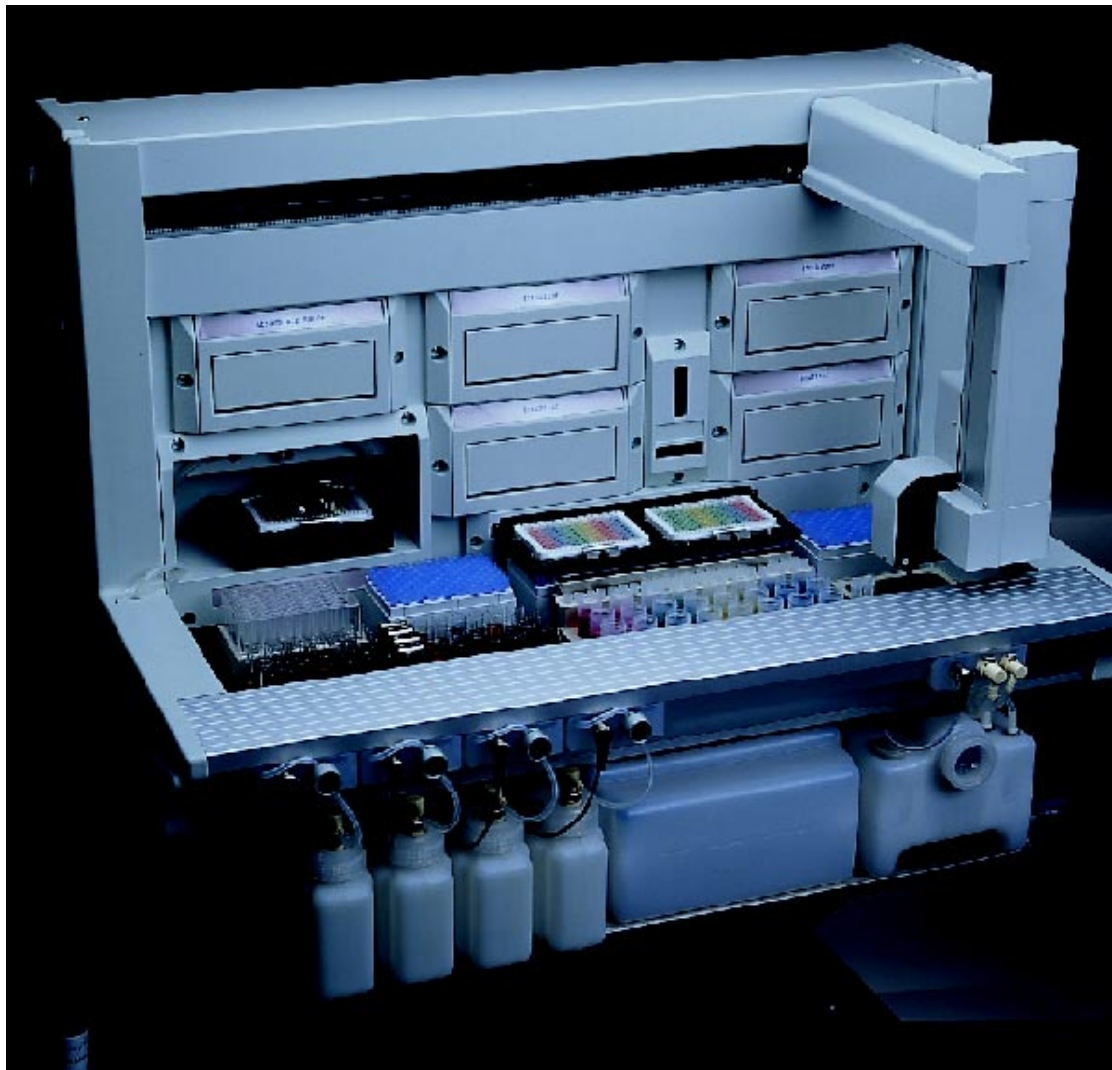
Characteristics

BEST 2000 (Biokit Elisa System) is a bench top analyser with capacity for 4 micro plates. Multiple assays can be performed per plate. BEST 2000 offers the user an easy to use sample-in / result-out processor.



The instrument automates all steps of the ELISA process:

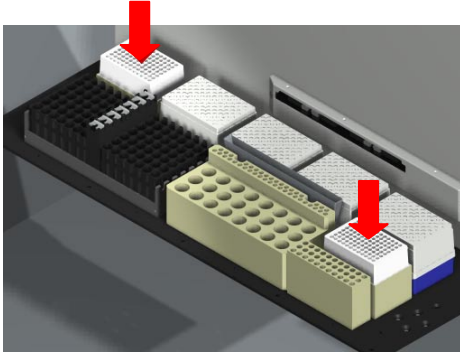
- Positive sample and plate barcode identification
- Sample, control and calibrator dilution and dispensing (disposable tip)
- Reagent dispensing
- Incubation (with or without shaking)
- Washing
- Reading
- Data reduction



System description

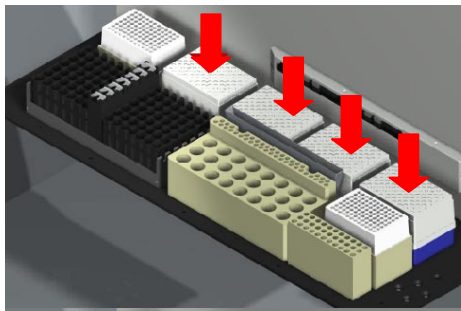
Sample preparation

The instrument can automatically dilute samples, controls and calibrators. Pre-dilutions can be performed into deep well plates. Two deep well plates are available for dilutions allowing the system to reach dilution ratios of up to 1:10000. Samples, controls and calibrators can be diluted as many times as replicates needed or only once for all replicates.



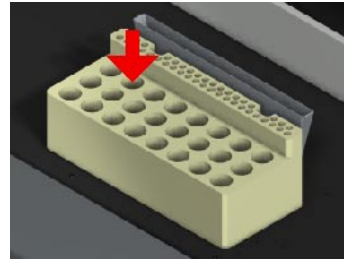
Sample tips

The working area holds 4 boxes for disposable tips with a capacity for 108 tips each. That means up to 432 tips can be loaded into the system before work starts. Tip reload during work is allowed when needed. Powerful and flexible assay programming allows assay definition to optimise precision/accuracy (serial sample dispensing and/or new tips), reduce cost (parallel sample dispensing), optimise speed (multi-shot dispensing).



Reagent rack

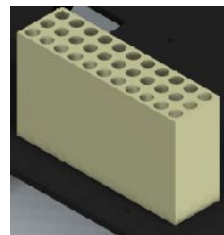
The reagent rack has 24 reagent positions. Specific standard 25 ml vials are used by the system to reduce the cost of consumables. The vials have a conical bottom to minimise dead volume. The system dispenses the reagents using 1300 µl disposable tips. The dispensing volume range is 25 to 1200 µl. The reagent rack also holds the disposable tips available for dispensing reagents.



vials
The
from
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Control and standard rack

The control and calibrator rack has 33 bottle positions. The vial used is a 2500-µl vial with a conical bottom to optimise the volume available. Pre-dilutions are performed in the deep well plates, the same as the samples.

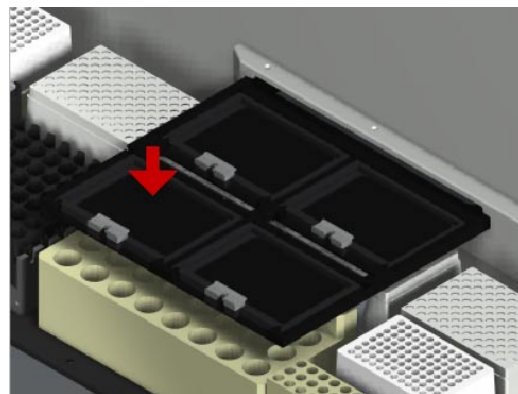


Incubator modules

Up to 4 incubation modules can be installed into the BEST 2000 instrument. All of them can be independently set to different temperatures. The software then uses them accordingly to the worklist requirements. The plates are automatically moved and positioned in the incubator by the robot arm. Shaking is also allowed, before and during incubation if required.

Ambient drawer

The ambient drawer is the stacker for the plates during the run, from plate loading and until the end of the plate processing. All dispensing steps are performed when the plate is on the drawer. Plates are also stored in the drawer during room temperature incubations. The drawer moves into the instrument to increase the work area when no dispensing is being performed on the plates or if second and third tip racks are requested.



Washer module

The washer module uses an 8 channel manifold. For incubation modules the robotic arm moves the plate to the washing area. Four different washing buffers can be loaded simultaneously into the system. The instrument has 4 bottles with a 2 litre capacity for buffers and all of them have sensors to detect low wash buffer levels. The instrument also incorporates an 8 litre bottle for waste with a waste full sensor. An advanced capability of the washer is X-axis and Y-axis plate movement. This capability, called super sweep, allows the washer to make aspiration of the well at different points of flat bottom wells.

Reader module

The absorbance reader module has a capacity for 6 filters in the range of 405-nm to 690-nm. The optical range of the reader is from 0 to 3.500 OD while the dynamic range is up to 3.000 OD. Typical reading times are less than 10 seconds for a single wavelength reading and less than 20 seconds for a dual wavelength reading. The robotic arm moves the plate from the working area of the incubator and washer module into the reader module. A short shaking can also be performed before reading for better homogenisation of reagents.

Software description

The instrument control software is the most important part of the system, not only because it is the interface with the user, but also because it defines the instruments real possibilities.

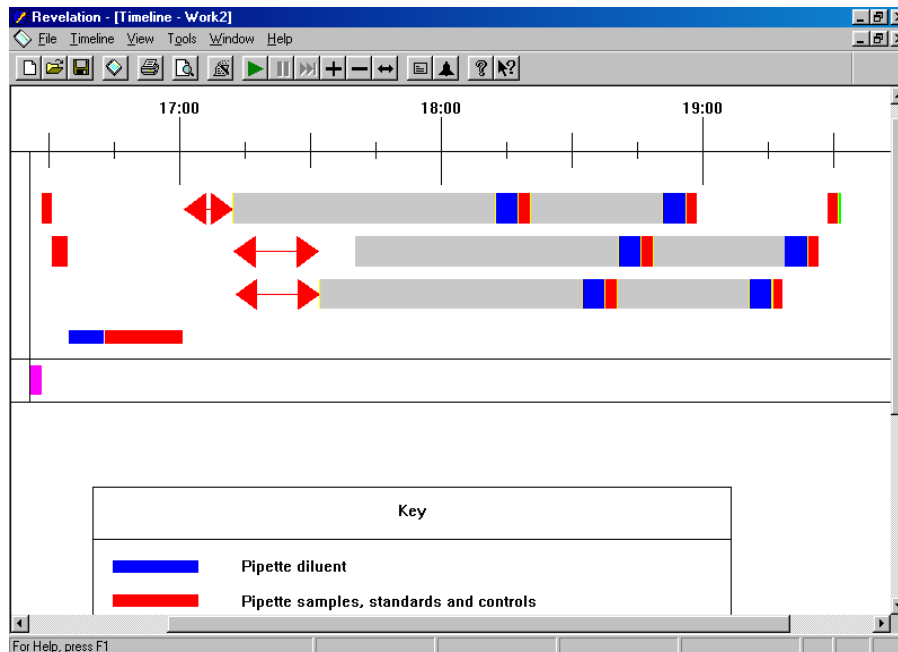
Revelation[®] software fulfils all user expectations. Ease of use and reliability have been the premises behind the development of this software. It is based on Windows and takes advantage of all the graphical capabilities of Windows to help the user perform the job. On-line help is also available at any point to clarify any doubts that may arise during routine processing.

Assay run

The worklist is created easily and quickly. Just follow the simple steps:

1. Select the assay or assays to be run
2. Select the number of samples to be run
3. Run the assay

After that, the worklist wizard will guide you through the loading of plates, reagents, controls, tips and buffers using a graphic interface. Reagent volume calculation is automatically performed by the system and displayed to the user during the loading procedure.



During the run, the software will control the whole procedure and, in the event of any error, the error recovery and learning procedure will help the user solve the problem and keep the work running. The user also can teach the software how to proceed in the event of an error, enabling the instrument to operate in walk away mode. The software requests user attention either by emitting a sound or sending an E-mail message to the selected address.

During the run, all events are logged into a file which the user can access at any time to determine exactly how the run is progressing.

At the end of the run, software can be programmed to automatically print out the result report.

Specifications BEST 2000

Dimensions and Weight

Depth <91 cm (35.8 in)

Width <106 cm (41.8)

Height <80 cm (31.5 in)

Weight <110 Kg (243 lbs)

Footprint 106 cm x 91 cm (41.8 in x 35.8 in)

Capacities

Samples 96

Reagents 24

Controls and/or Standards 33

Sample Pipetting Tips 432

Reagent Pipetting Tips 41

Wash Buffer Bottles 4 bottles, 2 liters each

Waste Container 8 liters

Operation

Ambient Drawer Module

Incubation Temperatures Ambient plus 5 °C

Incubator Module

Incubation Temperatures Ambient plus 7 °C to 50 °C

Assays

Blanking Air

Individual, paired or average wells

Whole plate or last plate

Row or column

Each well on the plate

Wavelength Modes Single (10 sec) or dual (20 sec)

Standard Curves Linear, quadratic, cubic, quartic, spline, polygon, sigmoid or Akima

Additional Data Analysis Threshold, ratio, QC equations

Flexible Template Up to eight different well types.

Power Requirements

Voltage Power Frequency

Main Unit 100 - 240 V 800 VA 50/60 Hz

Line Voltage Variation ± 10%

Line Frequency Variation ± 3 Hz

Environment

Operating Range 15° C to 30° C

15% to 85% relative humidity (non-condensing)

Altitude 2000 Meters

Computer Interface

Ports RS232 serial port

Baud Rate 19200. Character format.

Character Format 7 data bits, 1 stop bit, no parity

Standards

The instrument is designed in accordance with CSA 1010-1, CSA 1010-2-010, UL 3101-1, EN 61010-1, EN 61010-2-010 and