BT3000 PLUS

Technology Advanced Random Generation Analyzer System

SERVICE MANUAL

P/N: MS-04444-05-ING

Software Version 8
Rev. 0, September 9, 2004

This product conforms to the safety requirements of the Council Directives 98/79/EEC of 27 October 1998 (European Parliament) regarding the In-Vitro Diagnostic Medical Devices. This directive is in accordance with the Article 2, Paragraph 2 of the Directive 89/336/EEC, which ceases to apply to the products complying with the present directive. Refer to Paragraph 7, Article No.1 of the IEC Official Gazette No. L331 of Dec. 1998.
It also conforms to Italian Regulations CEI EN 61010-01 and CEI EN 61326-1 (EMC).

The conformity is attested when the equipment is installed in accordance with the conditions outlined in the manual

2-7. REAGENT REFRIGERATION

The purpose of reagent refrigeration is for optimal conservation and reagent performance. The temperature inside the reagent chamber is variable, based on the external ambience and the time inside the refrigerated chamber. A reagent bottle inside the chamber gradually reaches the minimum temperature within 2 hours. The temperature range may go from 10°C to 22°C with outside temperature of 20°C and 32°C, respectively.

2-8. DILUTER LINEARITY AND ACCURACY

A unique diluter system is used for the processing of chemistries and ISE testing. Technical Specifications for the Biotecnica dilutor are as follows:

Diluter:-

Volume F.S.:	470 µl
Linearity F.S.:	+/- 0.1% F.S.
Accuracy at 3 µl:	+/- 3%
Accuracy from 10 to 470µl:	+/- 1%
Reproducibility:	+/- 0.7% at 3µl; +/- 0.6% > 3µl
Life Expectancy:	3 million operating cycles
Maintenance:	Every 300,000 operating cycles (O-ring seal replacement)

Peristaltic Pump:-

Dispensation Volume:	Approximately 1ml per sec.
Average Life	>1 million cycles
Maintenance:	Every 50,000 cycles (Cartridge replacement)

Pinch-Valve:-

Average Life:	Approximately 1 million cycles
Maintenance:	Monthly replacement of valve tube

NOTE:
All declared values are approximate and are dependent upon work load of the components, inactivity, and observance of routine maintenance.

2-9. PHOTOMETER LINEARITY AND ACCURACY

Optical System	Solid state photometry, (patented by Biotecnica Instruments)
Detectors	10 UV/VIS photodiodes + reference channel

PRECISION AND ACCURACY

Spectral Response:	340, 380, 405, 436, 480, 510, 546 578, 630, 700 nm
Bandwidth:	+/- 5nm max
Linearity O.D.:	+/- 1% from 0 to 2,000; +/- 2.5% from 2,000 to 2.400
Resolution:	+/- 0.0005 Abs.
Drift:	+0.005 Abs. per hour (after warm-up)
Optical path length	7 mm

NOTE: The specification regarding drift applies exclusively to the photometer, excluding the drift related to the halogen lamp of the photometer.

SECTION - VIII

SAMPLING STATION

8-1. GENERAL

The removable sample plate is protected by a transparent dust cover with various apertures for the sampling needle entry during operation. The sample plate can be placed in any position because the home position will automatically be recognized once the reset has been activated.

The primary tubes can be inserted without removing the plate. Place the tube in the position indicated by the flashing red LED. An optical sensor will differentiate the primary tubes from the cups used for the samples. A barcode reader automatically identifies the position and the data concerning the sample.

The two sampling arms are located on the right side of the analyzer deck. On each sampling arm the stepper motor belt driven mechanism causes the needle to move in up and down linear motion. Another stepper motor drive a belt driven pulley mechanism which swivels the sampling arm to the right or left positions across the deck to position the sampling needle for the aspiration and dispensing procedures.

The left sampling arm can position the sampling needle for aspiration, dispensing, and mixing on the reagent chamber, serum plate, reaction cuvettes, the wash funnel, and the "home" position. The right sampling arm can position the sampling needle on the sample tubes of serum plate, ISE reagent bottles, ISE funnel, and the wash funnel and the "home". It also positions the sample needle over reaction cuvettes for aspiration, dispensing, or mixing.