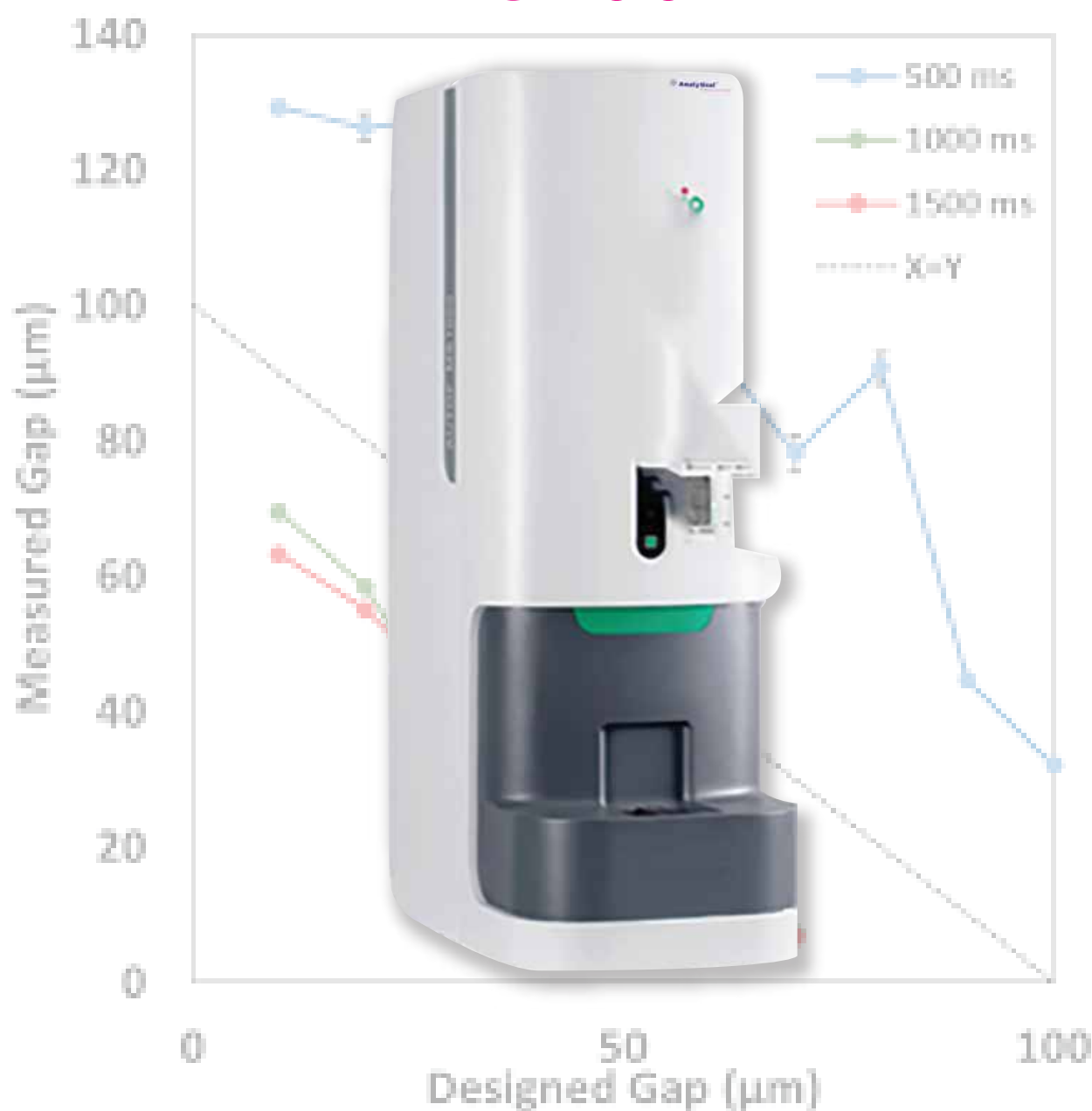# MALDI TOF
3100

EPC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

Analytical Technologies Limited

An ISO 9001 Certified Company

www.analyticalgroup.net

▶▶ Specification :

- TOF 3100 is a Matrix-Associated Laser Desorption/Ionization Time of Flight (MAL-DI-TOF) Mass Spectrometry (MS) developed by ATL TOF 3100 provide automated, high-speed and high-confidence identification and taxo-nomical classification of bacteria, yeasts, fungi and filamentous fungi based on pro-teomic fingerprinting. Numerous studies have demonstrated the higher accuracy, faster time-to-results and lower costs provided by MALDI TOF technology compared to classical methods.

- TOF 3100 was modular designed which enable upgrading of the system for new application, identification of Mycobacteria, potential bio-terroristic strains and spe-cies and creation of local database.

▶▶ Detailed specification :

1. Technical Data :

▶ Sample in/out :

- Fully automated sample introduction mechanism.

  Target slide moving control: XY stage (5 um each step,10 um repeatability) for precise target slide positioning.

  Target slide: Slim 96 spots target slide with reusable magnetic holder, can be divided into 2 individual parts to avoid cross-contamination and reduce cost.

▶ Sample viewing system :

- Monochrome CCD camera controlled by software

▶ Ion source :

- Matrix Assisted Laser Desorption Ionization.
  Delayed-extraction technology: 0 ~ 1000ns, under software control
  Variable ion source voltage: 0 ~ +20 kV
  No need cleaning

▶ Laser :

- 337 nm Nitrogen laser, fixed focus, 60 million times of shots
  Pulse width: 2.5ns
  Nominal energy: 120 uJ per laser shot.
  Frequency: 1-60 Hz, adjustable.
  Laser focus diameter and laser intensity are adjustable manually through optical, image system

▶ **Mass Analyzer :**

● Linear Fly Tube: 1050 mm

▶ **Detector :**

● Typical multiplier gain 106 at 2800kV.
  Pulse width for single ion event (FWHM): <2.35ns.
  Peak output current for linear operation: 10mA.

▶ **Filter :**

● 0.01µm high precision filter, 99.99% of pathogenic microorganisms can be filtered,
  more efficient and higher standard Bio-safety risk control.

▶ **Vacuum :**

● Up to 10-7mbar vacuum introduced by high-power mechanical pump and
  turbomolecular pump.
  During routine working condition, time cost from target slide put inside to well
  vacuumed only cost around 60 seconds, significantly reduce waiting time.

2. Performance Data :

Mass range	1 ~ 500 kDa
Resolution	>3600 FWHM (Angiotensin)
Sensitivity	50 fmol/µl (insulin, S/N≥60)
Mass Accuracy	< 60 ppm (with internal calibration)
Mass Stability	< 300 ppm
Mass Repeatability	CV<0.015%
Throughput	96 Test per plate, up to 1000 test per day

3. Technical Data :

● Unique Rapid identification function output identification result around 0.1 second
  for a single test.
● Average identification (acquisition and data analysis) time cost for 96 samples was
  17.5 minutes.
● Edit and identify samples in batch with one single software.
● Access to LIS system and release report automatically.
● Any objection identification results can be reconfirmed or recalibrated manually
  through optical, image system.

- Real-time image of target slide can be seen through a camera inside.
- Available to stop the measurement and changing of the sample slide in case of urgent samples by hand.
- Available to stop the measurement and changing of the sample slide in case of urgent samples by hand.
- Identification results will provide to Species level together with Latin name and score. Score 9.500—10.000, mark Green, refer to highly reliable species identification, Score 9.000—9.499, mark Green, refer to secure genus identification and probable species identification; Score 6.000—8.999, mark Yellow, refer to probable genus identification; Score 0.000—5.999, mark Red, refer to not reliable identification. See the given table below:

Range	Description	Color
9.500--10.000	Highly reliable species identification	Green
9.000--9.499	Secure genus identification, probable species identification	Green
6.000--8.999	Probable genus identification	Yellow
0.000--5.999	Not reliable identification	Red

4. Consumables :

- Ready to use Pre-treatment reagent with CE-IVD mark.
- Individual target slide surface and magnetic holder, continuous detection available, higher efficiency, lower cost and avoid cross-contamination.

5. Database :

- More than 2000 species and 9050 strains involved in our database
- Quality control and Standard strains with Clinic, food industrial and environment application included, ensure a high accuracy of identification.
- Covering groups like: Enterobacteriae, Gram negative non-fermenting bacteria, Gram positive Cocci, Gram positive Bacili, anaerobes, Legionella, Nocardia, Campylobacteria, HACEK bacteria and yeasts and moulds.
- Quality control and Standard strains with Clinic, food industrial and environment application included, ensure a high accuracy of identification.
- Data can download as EXCEL, TXT, etc. format for further analysis
- Available to create local database by user.
- Database stored in Cloud system, can access as long as internet service available.
- Database update online and free of charge.
- AMR database in research.

6. PC and assistant system :

- Remote control option
  Windows 7 or above operation system
  3.5 GHz CPU dual-core processor
  16 GB memory DDR3-1600
  1 TB hard disk, 7200rpm
  DVD recording driver: 16×SUPERMUTLTI
  LED monitor,
  Printer
  Barcode reader with possibility to connect to LIS
  UPS (uninterrupted power supply)

7. Installation Requirement :

▶ Dimensions :

- Size: 450 mm×705 mm×1280 mm
  Minimum distance to wall at back is 100 mm.
  Weight: 101 kg.

▶ Installation Requirements :

- Electrical: 100--240 VAC, 50/60 Hz, Max.750 VA single phase
  A clean, stable and continuous mains supply is required for reliable operation.
  PC: selectable 100 ~ 120 VAC, 50/60 Hz, 2.0 A single phase OR
  220 ~ 240 VAC, 50/60 Hz, 1.0 A single phase
  Monitor: auto-sensing 100 ~ 240 VAC, 50/60 Hz, 1.4 ~ 0.6 A.
  Temperature: ambient 10   ~ 30 .
  Relative humidity: less than 70% non-condensing.
  Vibration free, firm, horizontal table, at least 150 kg supported at four points.

Regulatory compliances

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HPLC Solutions   MultipleLabs   Analytical Bio-Med   Analytical Distributors   Analytical Foundation (Trust)

Corporate & Regd. Office:	T: +91 265 2253620	E: info@hplctechnologies.com	W. www.ais-india.com	Sales & Support Offices:
Analytical House, # E67 & E68,	+91 265 2252839	info@multiplelabs.com	www.analycalgroup.net	across the country :
Ravi Park, Vasna Road, Baroda,	+91 265 2252370	info@analyticalgroup.net	www.hplctechnologies.com	Distributors & Channel
Gujarat 390 015. INDIA	F: +91 265 2254395	info@analyticalbiomed.com	www.multiplelabs.com	partners World Wide

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