



sartorius stedim
biotech

AirPort MD8 The New Portable Air Sampler



turning science **into solutions**

AirPort MD8 – Portable, Reliable, Fast.



AirPort MD8 is the new air sampler for the pharmaceutical industry, biotechnology, food and beverage industry, for hospitals, and for measurements within the scope of environmental protection and occupational safety.

Benefits offered by Sartorius AirPort MD8:

- Battery operated and portable so it can be used everywhere.
- Battery power level clearly indicated so constant performance during sampling is guaranteed.
- Ergonomically designed and easy to clean.
- User friendly prompting with the option of four languages: English, French, German and Spanish.
- Flexible options for customized use including adjustable air throughput and air flow rate.
- Parameters last used are stored even after automatic shut-off.
- Can be calibrated on-site.

Utilizes Gelatin Membrane Filter Method, allowing for reliable and accurate results.

The Gelatin Membrane Filter Method offers:

- High retention rate for microorganisms and viruses.
- Protection of microorganisms sampled from drying out – for a relevant and meaningful sampling time.
- Use of a variety of nutrient media.
- The solubility of the gelatin membrane filter allows further applications (e.g. rapid microbiology, virus sampling and sampling of high bacterial concentrations).

AirPort MD8 can also be used with BACTair™ culture media plates.



Technical Specifications | Ordering Information

AirPort MD8

| | |
|---|--|
| Air flow control | by an integrated impeller wheel |
| Air flow rate adjustable in three steps | 30 l/min., 40 l/min., 50 l/min. and 125 l/min. (only when BACTair™ culture media plates are used) |
| Pre-set sample volumes | 25, 50, 100, 250, 500, 750 and 1000 liters |

Table of correlation of sampling volumes | sampling times at the given air flow rates

| Sampling volume in liters (l) | 25 l | 50 l | 100 l | 250 l | 500 l | 750 l | 1000 l |
|---|---|-------|-------|-------|--------|--------|--------|
| Sampling time in seconds (s) | | | | | | | |
| at 30 l/min. flow rate | 50 s | 100 s | 200 s | 500 s | 1000 s | 1500 s | 2000 s |
| at 40 l/min. flow rate | 37.5 s | 75 s | 150 s | 375 s | 750 s | 1125 s | 1500 s |
| at 50 l/min. flow rate | 30 s | 60 s | 120 s | 300 s | 600 s | 900 s | 1200 s |
| at 125 l/min. flow rate | 12 s | 24 s | 48 s | 120 s | 240 s | 360 s | 480 s |
| Additionally user-definable sampling volumes | from 10 to 2000 liters in 5-liter increments | | | | | | |
| Total sampling time with one battery charge | approx. 4.5 hours at 50 l/min., 4 hours at 125 l/min. | | | | | | |
| Power consumption | 5–14 Watt depending of filter pressure drop | | | | | | |
| Noise level | for gelatin membrane filters 48 dB (A) max. | | | | | | |
| Weight | approx. 2.5 kg | | | | | | |
| Dimensions (L×W×H) | 300×135×165 mm | | | | | | |
| Certified for compliance with the CE requirements | | | | | | | |

Battery

| | |
|--------------------------|--|
| Rechargeable battery | NiMH 16.8 volts/3800 mAh |
| Battery charger | input 100–240 V 47–63 Hz/600 mA; output 24 V/1000 mA |
| Charging time of battery | approx. 4.5 hours when completely discharged |
| Battery charger | with changeable plugs for worldwide use |

AirPort MD8 can be used during recharging⁴



Specifications of Gelatin Filter Disposables

| | |
|-----------------------------------|--|
| Materials | gelatin (water soluble) and Cyrolite holder |
| Nominal pore size | 3 µm |
| Filter diameter | 80 mm for standard 90 mm agar plates |
| Limiting operating conditions | max. 30°C at 85% relative humidity |
| Retention of bacteria and viruses | 99.9995% for Bac. sub. niger spores at 0.25 m/s inlet velocity 99.94% for phage T3 (coli phage) at 80% relative humidity and 0.3 m/s inlet velocity |

Specifications of BACTair™ Culture Media Plates

| | |
|---------------------------------------|---------------------------|
| Material | Polystyrene |
| Dimensions | 116×24 mm |
| Number of impaction holes | 400 holes, each Ø 0.47 mm |
| High particle retention for particles | > 0.65 µm |

Ordering Information

| Description | Order No. |
|---|-----------|
| Air sampler AirPort MD8 incl. adapter for gelatin filter disposables (17801) and battery charger (69898525) | 16757 |

Accessories for AirPort MD8

(further accessories on request)

| | |
|---|----------|
| Adapter for gelatin filter disposables | 17801 |
| Adapter for BACTair™ culture media plates | 17803 |
| Filter holder | 17655 |
| Filter stack (10 filter holders) | 17656 |
| Battery charger | 69898525 |

Gelatin filter disposables (sterile and individually packed)

| | |
|--|---------------|
| Pack of 10 disposables (single packed) | 17528-080-ACD |
| Pack of 10 disposables (triple packed) | 17528-080-BZD |
| Pack of 10 disposables, but label on innermost bag | 17528-080-VPD |

Gelatin disc filters for filter holder 17655

| | |
|------------------------------|---------------|
| Pack of 50 filters (sterile) | 12602-080 ALK |
|------------------------------|---------------|

Culture media plates

| | |
|--|------------------|
| BACTair™ culture media plate with TSA, 110 mm, sterile and individually packaged, 10 pcs. | 14320-110----ACD |
| BACTair™ culture media plate with Sabouraud Agar, 110 mm, sterile and individually packaged, 10 pcs. | 14321-110----ACD |
| Covers for BACTair™ culture media plates, 10×2 units individually, sterile packaged | 1ZPX-D0002 |

Volume 25L
F-rate 50.0L/min





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BACTair™



turning science into solutions

Big Impact.

A New Impact for Microbiological Air Monitoring

As regulations become more stringent, the microbial monitoring of ambient air is increasing importance in today's world. For example, microorganisms can have a major impact on product quality and the production process, and can even pose health hazards.

Air quality plays a key role in the pharmaceutical, biotechnological and food and beverage industries, hospitals and in the field of occupational and environmental protection.

The most frequently used method today for sampling airborne microorganisms is based on the Andersen principle, which traps particles on culture media plate by impaction. In this method, air is suctioned through a sieve, accelerated and directed against a culture medium plate. Due to their inertia, airborne organisms are prevented from

being swept away by the diverted stream of air and are impacted onto the culture medium plate. After sampling, the culture medium plate is incubated and the colonies grown are counted as colony-forming units/m³ of air (cfu/m³).

Sartorius Stedim Biotech has developed a new system for sampling airborne microorganisms that allows impaction onto culture media plates, where the plates function directly as collection heads. This means that the collection properties are integrated right into the culture media plates. Metal sieve plates or metal collection heads with slots, which have to be sterilized for routine samplings on a regular basis are eliminated. Now, non-sterile sieves or slots have become a thing of the past.

The geometry of the culture medium plate and the 400 holes in the sieve plate yield exceptional sampling efficiency, which is generally higher than that of other impaction samplers.



This new method uses the AirPort MD8 air sampler to pump the air stream.



BACTair™ culture medium plates are ready-to-connect to the AirPort MD8



BACTair™ culture medium plate prior sampling

Only 3 handling steps with BACTair™ provide you with an airborne microorganisms

1) Just connect your BACTair™ plate



2) Sample (Press START)



3) Remove your BACTair™ plate and incubate



BACTair™ Features

- Sterile
- Integrated disposable sieve
- Pre-filled with agar medium
- Individually packaged

BACTair™ Benefits

- No sterilization required
- No handling of re-usable sieves
- No preparation of media
- No desiccation effects

- Samples 1m³ in just 8 min
- Optimized geometry
- Filled with sufficient amount of media

- Fast sampling
- High recovery efficiency (details on page 6)
- No effects due to evaporation (details on page 6)

- Protection with covers
- And after incubation:
- Optimized geometry
- No correlated sampling head

- The agar surface is protected
- No colony overlapping means no correction factor (details on page 6)
- No complicated correlation of sampling heads and devices

The detection of airborne microbial contamination has never been so easy and so reliable!

exceptional recovery of

BACTair™ saves your labor-time and guarantees reliable results:

Preparation- and sterilization-free procedure reduce the risk of secondary contamination.

Culture media plate properties are maintained from purchase through to sampling.

Detects total viable airborne microorganisms in a very short sampling time.

Easy handling with no risk of secondary contamination.

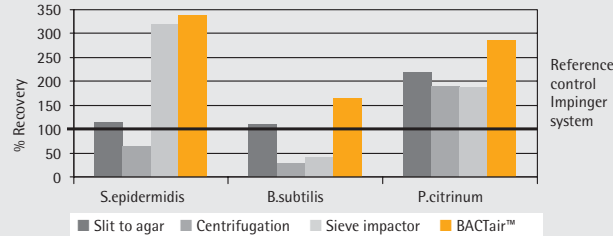
Results are easy to access and evaluate.

Makes your calibration and sampler management fast and easy.

BACTair™
culture medium plate
after sampling
and incubation



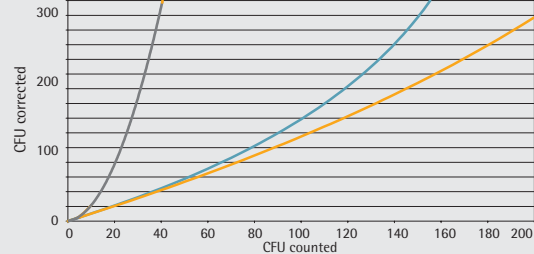
BACTair™ stands for optimized geometry



Recovery Comparison Study

Aerosols of three different bacteria suspensions are released into a sampling channel under defined conditions. At the end of the channel the aerosols are sampled using four different air monitoring methods.

As a reference method two parallel impinger systems were used (100 % recovery). BACTair™ culture medium plates show the highest recovery of bacteria due to optimized geometry and complete disposable design.

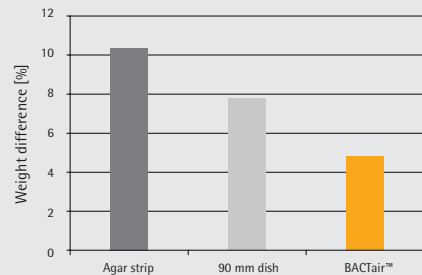


Correction Factors

The recovery of colony-forming units depends on the number of holes in the sieve plate onto which the air is impacted. The lower the number of holes, the higher is the risk that more than one microorganism will pass into one single hole (colony overlapping).

A correction factor (K) can be calculated mathematically: $K = x \cdot (\ln(x) - \ln(x-n))$
 x = number of holes in the sieve plate
 n = colony count.

BACTair™ culture medium plates provide 400 air impaction holes. A correction factor is only relevant with very high CFU counts.



Evaporation Effects

During the sampling period, agar media may dry out, thus inhibiting the growth of the collected microorganisms. The weight of several BACTair™ culture medium plates was measured prior to and after sampling and compared to other impaction agar plates or strips.

Because of its optimal design BACTair™ shows the lowest desiccation effects and enables viable microorganisms to grow under optimal conditions.

The number of impaction-holes and their optimal position in relation to the sampling area are the key to reliable results.

Ordering Information

| Description | Order Number |
|--|------------------|
| BACTair™ Culture Media Plates | |
| BACTair™ – culture medium plate Tryptic Soy Agar (TSA), 110 mm, individually, sterile packaged, 10 units | 14320-110----ACD |
| BACTair™ – culture medium plate Sabouraud agar (acc. USP), 110 mm, individually, sterile packaged, 10 units | 14321-110----ACD |
| Other BACTair™ culture medium types on request | |
| Air Sampler | |
| AirPort MD8 Air Sampler for BACTair™ incl. charger | 16757 |
| Accessories | |
| Adapter for BACTair™ on the AirPort MD8 air sampler | 17803 |
| Covers for BACTair™ culture media plates, 10 × 2 units individually, sterile packaged | 1ZPX-D0002 |



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