

The MAS-100[®] Family

Leading solutions for air monitoring



Improve your viable air sampling with the MAS-100®

The most complete and accurate line of microbial air monitoring systems available!



How the MAS-100® works

All MAS-100® Microbial Air Monitoring Systems are sieve impaction systems based on the Anderson impaction principle, accepted and proven worldwide. Air is aspirated through a perforated lid. A radial fan, controlled by a flow sensor, accurately regulates air flow real time at 100 litres/min. The air is impacted onto the surface of growth media in a 90 – 100 mm Petri dish or 55 – 60 mm Contact Plate. MAS-100® Microbial Air Samplers comply with the guidelines as specified in new ISO 14698 part 1 and part 2.

Sample collection accuracy

The MAS-100® Microbial Air Monitoring Systems provide the most accurate sample collection available. The MAS-100® systems (except the MAS-100 Eco®) utilize a state-of-the-art mass flow sensor to ensure a constant air flow rate of 100 litres/min. The MAS-100 VF® uses a state-of-the-art electronic flow control to ensure the same constant flow rate. The mass flow sensor continuously regulates the air flow rate during sample collection. This allows the MAS-100® to automatically adjust for differences in fill volume of Petri dishes, changes in air density and differences between individual perforated lids.

ICR* and ICRplus Settle Plates

The ICR Settle Plates are produced under aseptic conditions, gamma-irradiated and triple-bagged, making them optimal for passive air sampling in isolators and cleanrooms. Furthermore, they are also suitable for personnel monitoring, as well as active air monitoring with MAS-100® microbial Air Samplers.

* Isolators and Clean Rooms

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The MAS-100 Iso NT®

For Isolators

The MAS-100 Iso NT® is specifically designed for use in aseptic production and sterility testing isolators. It is available in an IP54 version for increased flexibility. The MAS-100 Iso NT® is produced by GAMP 4 specifications and is compliant with guidelines as specified in ISO 14698 part 1 and part 2. The MAS-100 Iso NT® uses an innovative

double valve system which enables the sampling heads and unit to be integrated into the decontamination process of the isolator or cleanroom. The valve system allows the vaporized hydrogen peroxide (VHP), to run through the sampling head and internal flow path without damage to the instrument.

The MAS-100 Iso NT®



The system operates with an integrated mass flow sensor and uses 90 – 100 mm Petri dishes. The sampling head mounts inside the isolator with the instrument portion on the outside. The MAS -100 Iso NT® utilizes a flexible communications package including Ethernet, Profibus and 9 digital inputs/outputs. The MAS -100 Iso NT® allows for remote activation via a computer or the PLS controlled on the isolator.

The new MAS -100 Iso NT® shares the same sampling accuracy and features as the rest of the MAS -100® Family.

For further information about our workshops and onsite services please have a look at page 15.



Technical specifications for MAS-100 Iso NT®

| Feature | Specification |
|---------------------------------|---|
| Nominal Airflow | 100 litres/min. ± 2.5 % |
| Dimensions | (L/W/H) 16 x 29 x 23 cm |
| Weight | 7.5 kg without sampling head |
| Power | 110 – 240 Volt, 1.5 A, 50 – 60 Hz |
| Power Input | DC 24 V/3.25 A/65 W Max |
| Max Current | 2.5 A |
| Display | Backlit liquid crystal display |
| Preset Sampling Volumes | 100, 250, 500, 750, 1,000 litres |
| User Definable Sampling Volumes | 1 to 2,000 litres |
| Material (Side Panels) | Anodized aluminum |
| Anemometer | Hot-wire anemometer, numeric control |
| | Alphanumeric liquid crystal display, 2 x 8 characters |
| RTC (Real Time Clock) battery | Good for approx. 10 years |
| Guidelines | 73/23/EEC, 89/336/EEC, DIN EN 61326-1:1997, DIN EN 61010-1:2001, GAMP 4.0:2001 |
| CE Approval | EN 61000-4-2; EN 61000-4-4; EN 61000-4-5; EN 61000-4-11; EN 61000-4-8; EN 61000-4-6; EN 61000-4-3 |
| Material (Side Panels) | Anodized aluminum |
| Valves Rigid | PVC/Viton/SS |
| New ISO 14698 | validated 98 % |
| Sampling Head | Specification |
| Weight | 1.5 kg |
| Material | Stainless Steel (316L) |
| Connector | 3/4" Tri-Clamp |
| Diameter | 10.9 cm |
| Height | 9 cm |

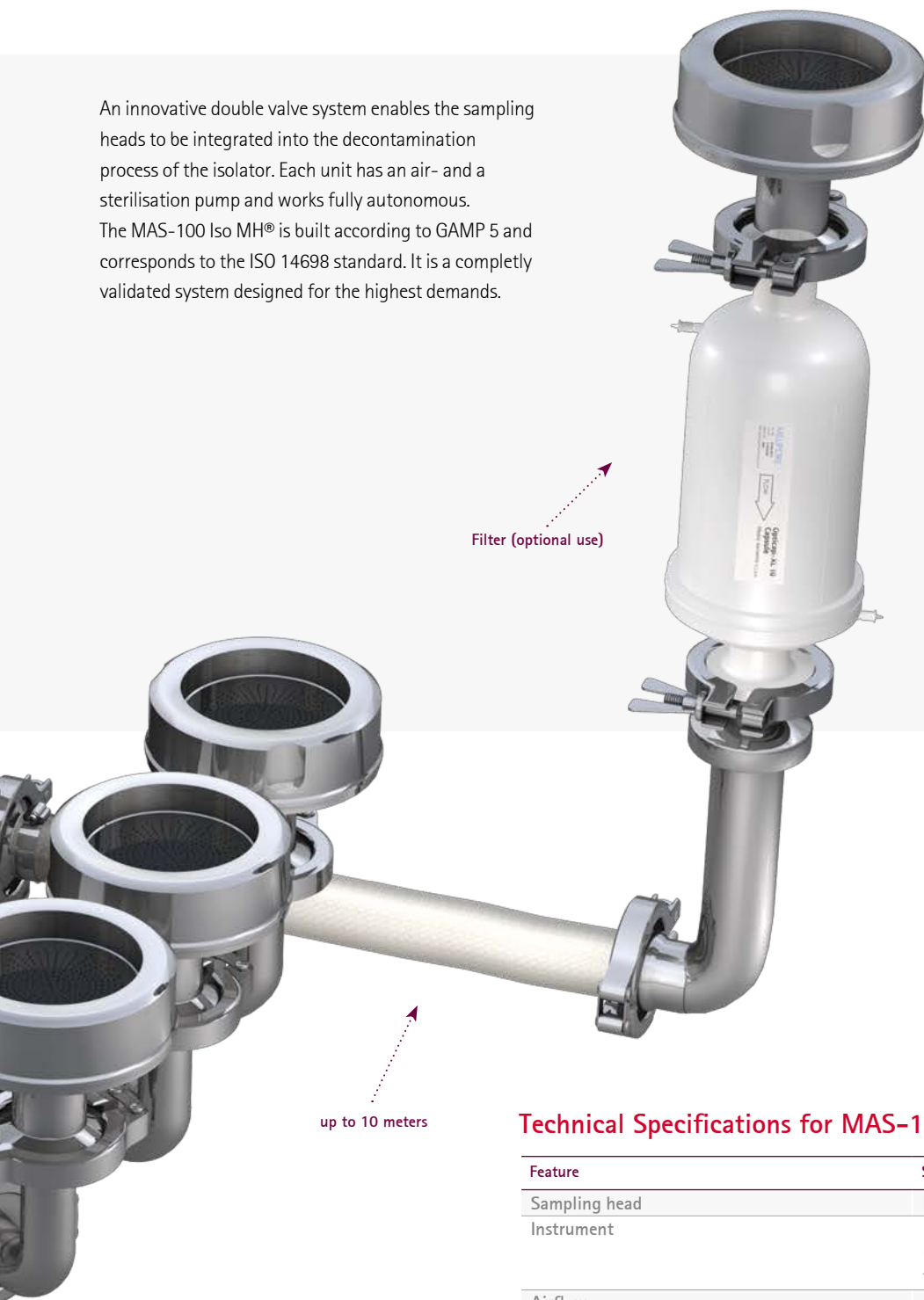
The MAS-100 Iso MH®

Innovation pure by Merck Millipore

The MAS-100 Iso MH® is used to control the microbiological contamination of the air in isolators. A unique security concept permits the installation of the sampling heads for standard 90 – 100 mm Petri dishes at the critical control points. All electronic and moving parts are outside the critical zone. The MAS-100 Iso MH® has an additional internal pump with flow control for automatic disinfection of the sampling head and the aspiration tube.



An innovative double valve system enables the sampling heads to be integrated into the decontamination process of the isolator. Each unit has an air- and a sterilisation pump and works fully autonomous. The MAS-100 Iso MH® is built according to GAMP 5 and corresponds to the ISO 14698 standard. It is a completely validated system designed for the highest demands.



Filter (optional use)

up to 10 meters

Technical Specifications for MAS-100 Iso MH®

| Feature | Specification |
|--|--|
| Sampling head | h x Ø 9 x 10.9 (1.5 kg) |
| Instrument | l x w x h 42.3 x 38 x 16 (9.1 – 16.6 kg depending on the configuration) |
| Airflow | 100 SLPM |
| Sampling volume | selectable from 1 – 2,000 litres |
| Impaction speed | approx. 20 m/sec |
| Sampling head | stainless steel |
| Operation | Direct access or over PC |
| Automatic calibration cycle | |
| Ethernet, USB, RS232 ports, Digital in/outputs | |
| Automatic in-line disinfection cycle | |

The MAS-100 VF®

The next generation of Air Samplers

The new MAS-100 VF® active Air Sampler was especially developed for controlled environments. Regulatory expectations require air monitoring in manufacturing facilities because microbial contamination may influence quality and reduce shelf life. The MAS-100 VF® uses 90 – 100 mm standard Petri dishes, is easy to handle and compact, while it is ideal for monitoring the quality of your environment. Its electronic speed control maintains an accurate flow rate.

Like all MAS-100® systems, the MAS-100 VF® samples at a flow rate of 100 litres per minute. The handle enables the sampler to be mounted onto an optional tripod, thereby allowing testing at different angles for fixed applications. The perforated lid is the same as on the standard MAS-100® sampler.

The MAS-100 VF®



The simple user menu is easily accessed and operated by a single touch slide control. Sampling volumes are programmable from 1 – 1,000 litres, with 5 preset volumes to assure reproducible results.



Technical Specifications

| Feature | Specification |
|----------------------------|--|
| Height | 179 mm |
| Diameter | 109 mm |
| Depth with handle | 148 mm |
| Weight | 1.75 kg (with sampling head) |
| Material | Anodized aluminum |
| Diameter of sampling head | 10 cm |
| Nominal airflow | 100 LPM \pm 4 % |
| Sampling volume | Preset values: 50, 100, 250, 500 and 1,000 litres Each volume can be preset to a value from 1 to 1,000 litres |
| Airflow regulation | Electronic |
| Petri dish support | For standard Petri dishes and contact plates |
| Tripod screw | 1/4" and 3/8" for use with optional tripod |
| Rechargeable batteries | Rechargeable Li-ion battery pack |
| Motor | 6 V |
| Display | Alphanumeric liquid crystal display, 2 x 8 characters |
| RTC battery | RTC (real time clock) battery - Lifetime: Approximately 10 years |
| Operating conditions | Temperature 5 to 40°C, humidity 0 to 80 % RH (non-condensing) |
| Control unit | Microprocessor |
| CE Approval | Emission: EN 61326:1997/A1:1998, EN 55022:1998 +A1:00 Immunity: EN 61326-1:1997/A1:1998, EN 61000-4-2:1995 +A1:98 +A2:01, EN 61000-4-3:1998 +A1:98 +A2:01, EN 61000-4-4:1995 +A1:01 +A2:01, EN 61000-4-5:1995 +A1:01, EN 61000-4-6:1996 +A1:01, EN 61000-4-8:1993 +A1:01, EN 61000-4-11:1994 +A1:98 +A2:01 |
| Power Unit/Battery Charger | 100 to 240 V AC/47 – 63 Hz |
| Output | 5 V DC/2000 mA |

The MAS-100 NT®

The industry standard for viable air sampling

The MAS-100NT® and MAS-100NT® Ex portable microbial airsamplers are the industry standard for use in critical environments. These compact yet sophisticated devices are the preferred choice for those demanding the highest quality in microbial air monitoring. The MAS-100NT® systems feature a new 300-hole perforated lid for increased collection efficiency and impaction speed. Both systems utilize standard 90 – 100 mm agar plates or can be adapted to fit 55 – 60 mm contact plates allowing for a low consumable cost and greater flexibility. Sampling at 100 litres per minute, these

systems have the highest airflow accuracy available at $\pm 2.5\%$, compared to others that can be as high as $\pm 10\%$. The integrated flow sensor allows the user to freely interchange the perforated lids without affecting the accuracy or the calibration of the unit. Sampling volumes are also easily configurable between 1 and 2,000 litres. The units have an impact velocity of 19.6 meters per second equivalent to Anderson 6 and isokinetic flow rate that will not produce turbulence in a laminar flow environment. The new SOS function will allow for smaller sampling volumes over longer periods of time, up to 50 sequences over 24 hours.

The new MAS-100NT® systems are controlled using a new menu driven, larger illuminated display allowing for quicker navigation. A programmable start delay of up to 60 minutes allows for personnel to be out of the sampling area when the sampling starts and a new audible alarm indicating the interruption of a sampling



The MAS-100 NT® Ex

Explosion proof

cycle. The MAS-100 NT® is powered by a new Lithium ion rechargeable battery with an intelligent charging program that assures long battery life without routine discharging. When fully charged, the battery pack provides 7 hours of continuous operation or about 42,000 litres of total volume. The MAS-100 NT® Microbial Air Sampler also features new USB data communication port. This allows for easy download of software upgrades and easy communication with database programs. The improved communications provides an interface to the new DA-100 NT® calibration standard for fully automated calibration. The MAS-100 NT® and MAS-100 NT® Ex are the first microbial air sampling systems with automated calibration, assuring absolute accuracy. The MAS-100 NT® Ex shares all of the same functions of the MAS-100 NT® system but is specially designed

for use in explosion proof areas. The MAS-100 NT® Ex has received ATEX Conformity and can be used in zone 2 and gas groups 11A, 11B and 11C in temperature classes T1 to T4.



The MAS-100 NT® Ex

Technical specifications for MAS-100 NT® and MAS-100 NT® Ex

| Feature | Specification |
|-----------------------------------|--|
| Height | 27 cm |
| Diameter | 11 cm |
| Weight | 2.3 kg |
| Material | Anodized aluminum |
| Diameter of Sampling Head | 10 cm |
| Nominal Airflow | 100 litres/min. + 2.5 % |
| Standard Sampling Volumes | 50, 100, 250, 500, 1,000 litres |
| Freely Definable Sampling Volumes | 1 to 2,000 litres |
| Battery Pack | Li-Ion, rechargeable battery, 7.4 V/6.9 Ah |
| Charging time | Full recharge time approx. 3.5 hours |
| Running time | Total running time approx. 7 hours |
| Total aspiration volume | approx. 42,000 litres |
| Motor | 6 V |
| Display | Alphanumeric liquid crystal display, 32 characters |
| Lifetime RTC Battery | RTC (Real Time Clock) battery; good for approx. 10 years |
| Driving Motor | PWM frequency for driving motor |
| Processor | Type 80C552 |
| Airflow Regulation | Hot-wire anemometer, numerical control, Temperature and Pressure sensors |
| CE Approval | Emission: EN 61326-1:2006, EN 55011:1998+A1:99 Immunity: EN 61326-1:2006, EN 61000-4-2:1995 + A1:98 + A2:01 EN 61000-4-3:2002, EN 61000-4-4:1995 + A1:01 + A2:01 EN 61000-4-5:1995 + A1:01, EN 61000-4-6:1996 + A1:01 EN 61000-4-8:1993 + A1:0 |
| Power Unit/Battery Charger | 110 – 240 Volt, 50 – 60 KHz |
| Data Exchange | USB Interface |

Note: Specifications for the MAS-100 NT® Ex are the same as above.

The MAS-100 Eco®

The MAS-100 Eco® offers an economical alternative to our highly acclaimed MAS-100® Microbial Air Samplers. This smaller, lightweight unit is ideal for applications in or out of the cleanroom. The MAS-100® Eco offers many

of the same features found on the standard MAS-100® Air Samplers, without the mass flow sensor. Like all MAS-100® systems, the MAS-100 Eco® samples at a flow rate of 100 litres per minute and uses standard 90 – 100 mm Petri dishes, providing a low operating cost. The handle doubles as a stand to allow different angles for testing and an optional tripod adapter attaches to the handle for fixed applications. The simple user menu is easily accessed and controlled using single touch "yes" or "no" responses. Sampling volumes are programmable from 1 – 1,000 litres with 5 preset volumes to ensure reproducible results. The unit is pre-calibrated at Merck Millipore but re-calibration on-site is easy with the addition of our DA-100® Digital Anemometer.



Technical specifications for MAS-100 Eco®

| Feature | Specification |
|-----------------------------------|---|
| Height (without handle) | 14 cm |
| Diameter | 11 cm |
| Height (with handle) | 18 cm |
| Weight | 1.4 kg |
| Material | Anodized aluminum |
| Diameter of Sampling Head | 10 cm |
| Nominal Airflow | 100 litres/min. ± 4.0 % |
| Standard Sampling Volumes | 10, 20, 50, 100, 200 & 500 litres |
| Freely Definable Sampling Volumes | 0 – 1,000 litres |
| Rechargeable Batteries | 2 NiMH rechargeable batteries, 1.2 V |
| Motor | 6 V |
| Display | Alphanumeric liquid crystal display, 2 x 8 characters |
| Lifetime RTC Battery | RTC (Real Time Clock) battery; good for approx. 10 years |
| CE Approval | EN 50081-1:1992 + EN 50082-1:1997 EN 50081-2:1993 + EN 50082-2:1995 + prEN 50082-2:1996 |
| Power Unit/Battery Charger | 110 – 240 Volt, 50 – 60 KHz |
| Output | 5V DC/500 mA |

The MAS-100 CG Ex[®]

Compressed Gas Microbial Air Sampler

The MAS-100 CG Ex[®] System samples at two constant flow rates, 100 L/min and 50 L/min for low flow applications. The system will sample gas at a pressure range between 1.5 bar to 10 bar. Compressed gas is directed through a perforated plate onto the 90 – 100 mm Petri dish. After sampling of the required volume of gas, a gradual decompression occurs automatically, preventing any sudden pressure change, avoiding possible damage to the microorganisms and improving recovery. The MAS-100 CG Ex[®] system is the only compressed gas microbial Air Sampler approved for use in Zone 2 explosion hazard areas. The unit is pre-programmed for compressed air, nitrogen, carbon dioxide and argon gas, and a total of 10 gas protocols can be programmed and stored in the unit. The automated collection process saves time and eliminates the awkward and risky manipulations required with manual methods.



The MAS-100 CG Ex[®]

Technical specifications for MAS-100 CG Ex[®]

| Feature | Specification |
|-----------------------------------|--|
| Height | 32.5 cm |
| Length | 37.0 cm |
| Width | 11.0 cm |
| Weight (without sampling head) | 10 kg |
| Material box | Coated aluminum |
| Nominal Flow Rates | 100 litres/min. + 10 % (over the pressure range) 1.5 bar to 10 bar (absolute) 50 litres/min. + 10 % over the pressure range of 1.5 bar to 10 bar (absolute) |
| Standard Sampling Volumes | 50, 100, 250, 500, 1,000 litres |
| Freely definable sampling volumes | 1 to 2,000 litres, volumes individually selectable between 0 and 2,000 litres. 0 volumes are not displayed |
| Pre-programmed gas types | Air, nitrogen, carbon dioxide, argon |
| Battery Pack | 20 cells NiMH, 3,800 mAh, voltage 24 V |
| Battery Charger | 110 – 240 Volt, 50 – 60 Hz |
| Charger Output | 36 V DC, 1.5 A |
| Display | Alphanumeric liquid crystal display, 32 characters |
| Lifetime RTC Battery | Approx. 10 years |
| Flow Valve | Proportional, 24 Volt |
| Processor | Type : 80C552 |
| Gas Regulation | Mass flowmeter and pressure sensor 0 – 10 bar and proportional valve |
| CE Approval | EN 61000-6-1;2001, EN61000-6-3;2001, EN61000-6-2;2001, EN61000-6-4;2001, EN61326-1 + A1, 1998 |
| Ex-Proof | SNCH 02 ATEX 3418, EN1127; 1997, EN 50021;1999 |

Technical specifications for Sampling Head

| Feature | Specification |
|-----------------------------|---|
| Head without Clamps, Height | 16.0 cm |
| Diameter | 10.0 cm |
| Weight | 1.5 kg |
| Material | Anodized aluminum, clamps of stainless steel |
| Autoclavable | 20 minutes at 121°C |
| Tubing | Length, 1.5 m ID = 10 mm OD = 19 mm, sterilize for 20 min at 121°C |
| Rapid Connectors | Chromium-plated brass |

The DA-100 NT®

Automatic calibration feature

The DA-100 NT® Digital Anemometer is a highly accurate transfer standard used to calibrate both MAS-100® and MAS-100 NT® instruments (cannot be used on the MAS-100 CG Ex®). This digital vane anemometer spins freely on a magnetic field bearing and the revolutions are counted by a laser diode.

The flow rate accuracy is $\pm 1.0\%$, the most accurate on the market. The display also shows temperature ($^{\circ}\text{C}$), velocity in m/sec and barometric pressure in mbar. The DA-100 NT® may be used in manual or automatic calibration modes for calibration of the MAS-100 NT® instruments.

The DA-100 NT® is calibrated at Merck Millipore laboratory using a critical venturi flow standard, SWISS traceable. Certification is provided for each instrument.



The DA-100 NT®

Technical specifications for DA-100 NT®

| Feature | Specification | | |
|--------------------------------|---|---------------------------------------|--------------------------------------|
| Accuracy at 100 litres/min. | $\pm 1.0\%$ | | |
| Height | 8.5 cm | | |
| Diameter | 11 cm | | |
| Weight | 0.8 kg | | |
| Vane Bearing | Magnetic (patent pending) | | |
| Material | Anodized aluminum | | |
| Battery Pack | 9V Battery | | |
| Display | Alphanumeric LCD display, 2 x 8 characters | | |
| Temperature Display Resolution | increments | | |
| Ambient Conditions | Temperature sensor: | Accuracy $\pm 0.3^{\circ}\text{C}$ | Resolution $\pm 0.1^{\circ}\text{C}$ |
| | Pressure sensor: | Accuracy $\pm 1.5\text{ mbar}$ | Resolution $\pm 0.1\text{ mbar}$ |
| | Ambient conditions: | Temperature 0 to 40°C | |
| | Humidity: | 0 to 80% r.h. | |
| CE Tested | IEC 61326-1 :2005, CISPR 11, Class B IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4 IEC 61000-4-5, IEC 61000-4-8, IEC 61000-4-11 | | |

Services & Support



Validation & Training Support

Merck Millipore aims to provide complete validation documentation to help you through the validation process. Our validation protocols are based on our internal product qualification test methods. These extensive protocols will enable the QC/QA Lab to quickly initiate your validation master plan and perform IQ, OQ and PQ (suitability of the test methodology) with ease. They follow international guidelines such as EP/USP and GMP. To confirm the availability of validation support for your needs, please contact your local sales representative.

Merck Millipore has experienced and trained validation engineers who are skilled to assist in validation protocol implementation within the QC microbiology laboratory, so the QC/QA departments do not have to allocate resources. A complete and technical training on your Merck Millipore air sampler is also provided during the validation engineer's visit. Having a Merck Millipore validation protocol and on-site service eliminates high costs, both apparent and hidden, and helps ensure the validation is completed quickly and economically and guarantee optimal performance over the equipment life time. Contact your local sales representative for the availability of training at your site.

Services plans: Preventative & Curative Maintenance

Merck Millipore has the most comprehensive preventative and curative maintenance program available for microbial air sampling.

The services provided include:

- Complete yearly visual, functional and performance "as found" and "as left" checks including calibration for all MAS-100® systems.
- Calibration certificate (traceability from GFW Switzerland) and complete service report is provided with every services.

In addition to the above services, additional verification, calibration or preventive maintenance (included verification & calibration) options are available. We offer several contract levels to give you the possibility to enhance the coverage of the equipment e.g. spare part and repair visit can be included in your contract.

Our certified service engineers can service your air sampler in our closest repair depot or directly in your lab. Contact your local sales representative for more information.

Traceability & Calibration Accuracy

The sample collection volume for each MAS-100® system is measured and adjusted with the DA-100 NT® System (except the MAS-100 CG Ex®), which is directly traceable to standards from GFW Switzerland. Traceability is not a guaranty of measurement accuracy, it is a chain of documentation between the last measurements made, linking it to the referenced standard. The uncertainty (accuracy) of a measurement is determined by the combined uncertainties of all measurements made by devices between the referenced standard and that device being calibrated, this is called the "chain of comparisons". With each link in the chain, additive uncertainty occurs. To minimize uncertainty and maintain accuracy the number of links in the chain of comparison must be minimized and the uncertainty for each link must be documented.

This is the highest level of flow accuracy available from any microbial air sampler manufacturer. You can have the confidence when monitoring critical environments that every sample volume collected is accurate.

ICR and ICRplus Settle Plates

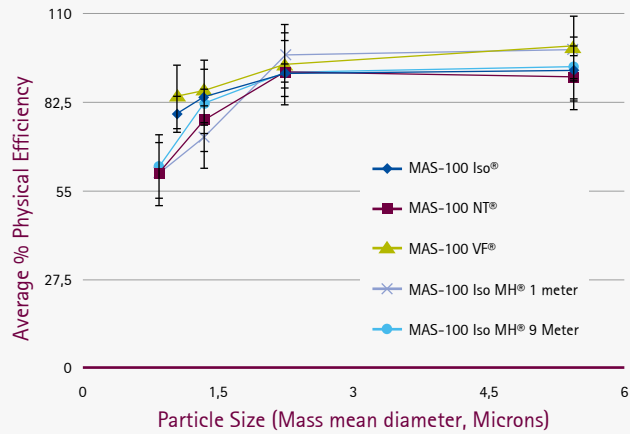
The ICR and ICRplus Settle Plates are produced under aseptic conditions, gamma-irradiated and triple-bagged, making them optimal for active air monitoring with MAS-100® Microbial Air Samplers. All of the MAS-100® Air Samplers have been validated according to ISO 14698 using ICR and ICRplus Settle Plates – they all showed the same reliable results in physical and biological efficiency testing.



| ICRplus Settle Plates (lockable) | Package size | Ord. No. |
|---|--------------|------------------------------|
| TSA + LTHTh – ICR+ (Tryptic Soy Agar with neutralizers lecithin, Polysorbate (Tween®) 80, histidine and sodium thiosulfate) | 20 120 | 1.46683.0020 1.46683.0120 |
| TSA + LT – ICR+ (Tryptic Soy Agar with neutralizers lecithin and Polysorbate (Tween®) 80) | 20 120 | 1.46684.0020 1.46684.0120 |
| TSA – ICR+ (Tryptic Soy Agar) | 20 120 | 1.46685.0020 1.46685.0120 |
| Chocolate Agar + LTH – ICR+ (Chocolate Agar with neutralizers lecithin, Polysorbate (Tween®) 80 and histidine) | 20 | 1.46686.0020 |
| ICR Settle Plates (triple-bagged, gamma-irradiated, non-lockable) | Package size | Ord. No. |
| Sabouraud Dextrose Agar – ICR | 20 120 | 1.46577.0020 1.46577.0120 |
| Sabouraud Dextrose Agar + LT – ICR (SDA with lecithin and Polysorbate (Tween®) 80) | 20 120 | 1.46081.0020 1.46081.0120 |
| Sabouraud Dextrose Agar + LTHTh – ICR 30ml (SDA with lecithin, Polysorbate (Tween®) 80, histidine and thiosulfate) | 20 120 | 1.46005.0020 1.46005.0120 |
| Sabouraud Dextrose Agar selective + LTHTh – ICR (SDA with lecithin, Polysorbate (Tween®) 80, histidine and thiosulfate and irradiation-resistant antibiotics for growth inhibition of accompanying bacterial flora) | 20 120 | 1.46016.0020 1.46016.0120 |
| Tryptic Soy Agar – ICR | 20 120 | 1.46001.0020 1.46001.0120 |
| Tryptic Soy Agar + LT – ICR (TSA with lecithin and Polysorbate (Tween®) 80) | 20 120 | 1.46050.0020 1.46050.0120 |
| Tryptic Soy Agar + LTHTh – ICR (TSA with lecithin, Polysorbate (Tween®) 80, histidine and thiosulfate) | 20 120 | 1.46069.0020 1.46069.0120 |
| Tryptic Soy Agar + LT + Cephas – ICR (TSA with lecithin and Polysorbate (Tween®) 80 and specific beta-lactamase mixture for inactivation of a broad spectrum of penicillins, cephalosporins and carbapenems) | 20 120 | 1.46076.0020 1.46076.0120 |
| Tryptic Soy Agar + LTHTh + Penase – ICR (TSA with lecithin, Polysorbate (Tween®) 80, histidine, thiosulfate and beta-lactamase for inactivation of penicillins) | 20 120 | 1.46013.0020 1.46013.0120 |
| Vegetable Peptone Agar + LTHTh – ICR (PSA (caseine peptone replaced by vegetable peptone) with lecithin, Polysorbate (Tween®) 80, histidine and thiosulfate) | 20 | 1.46658.0020 1.46658.0120 |



MAS-100® Physical Efficiency



For use in isolators and cleanrooms

- One product for all applications
- VHP-impermeable packaging

Recommended Casein Soya Bean Digest Agar (TSA) acc. to USP and FDA

- Formulations with neutralizers for the inactivation of disinfectant
- Add-On: Chocolate Agar + LTH – ICRplus for the detection of fastidious bacteria

Room temperature storage

- Storage at site of use
- Less cooling capacity needed

ICRplus Settle Plates – Secure your samples during transport with the innovative two way closure system

- CLOSED-position for safe transport and aerobic incubation
- VENT-position for anaerobic/ microaerophilic incubation



Close-up of the new two way closure system

Ordering Information



| | |
|--|---------------------|
| MAS-100 NT® Air Sampler with hard carrying case, battery, 300-hole perforated lid, dust cover, mains charger, USB cable, 3 mm allen key, and operator's manual on CD | 1.09191.0001 |
| MAS-100 NT® Perforated Lid, Aluminum, 300-hole | 1.09195.0001 |
| MAS-100 NT® Perforated Lid, Aluminum, 400-hole | 1.09088.0001 |
| MAS-100 NT® Perforated Lid, Stainless Steel, 400-hole | 1.09424.0001 |
| MAS-100 NT® Dust Cover, Aluminum | 1.09084.0001 |
| MAS-100 NT® Li-Ion Battery | 1.09208.0001 |
| MAS-100 NT® Mains Charger | 1.09200.0001 |
| MAS-100 NT® Ex Air Sampler, Explosion Proof with hard carrying case, battery, 300-hole perforated lid, dust cover, mains charger, USB cable, 3 mm allen key, and operator's manual on CD | 1.09194.0001 |
| MAS-100 NT® Ex Perforated Lid, Aluminum, 300-hole | 1.09195.0001 |
| MAS-100 NT® Ex Perforated Lid, Aluminum, 400-hole | 1.09088.0001 |
| MAS-100 NT® Ex Dust Cover | 1.09084.0001 |
| MAS-100 Eco® Air Sampler with hard carrying case, battery, 400-hole perforated lid, dust cover, mains charger, 3 mm allen key, and operator's manual on CD | 1.09227.0001 |
| MAS-100 Eco® Perforated Lid, Aluminum, 400-hole | 1.09088.0001 |
| MAS-100 Eco® Dust Cover, Aluminum | 1.09084.0001 |
| MAS-100 Eco® Mains Charger | 1.09128.0001 |
| MAS-100 Eco® Tripod Adapter | 1.09127.0001 |
| MAS-100 Eco® Dust Cover | 1.09084.0001 |
| MAS-100 CG Ex® Air Sampler with sampling head (50 L/min), hose, mains charger, operator's manual on CD | 1.09327.0001 |
| MAS-100 CG Ex® Sampling Head | 1.09237.0001 |
| MAS-100 Iso NT MH® Control unit, 1 head | 1.17174.0001 |
| MAS-100 Iso NT MH® Control unit with Profibus, 1 head | 1.17177.0001 |
| MAS-100 Iso NT MH® Control unit with Ethernet, 1 head | 1.17178.0001 |
| MAS-100 Iso NT MH® Control unit, 2 heads | 1.17118.0001 |
| MAS-100 Iso NT MH® Control unit with Profibus, 2 heads | 1.17144.0001 |
| MAS-100 Iso NT MH® Control unit with Ethernet, 2 heads | 1.17145.0001 |
| MAS-100 Iso NT MH® Control unit, 3 heads | 1.17146.0001 |
| MAS-100 Iso NT MH® Control unit with Profibus, 3 heads | 1.17147.0001 |
| MAS-100 Iso NT MH® Control unit with Ethernet, 3 heads | 1.17148.0001 |
| MAS-100 Iso NT MH® Control unit, 4 heads | 1.17149.0001 |
| MAS-100 Iso NT MH® Control unit with Profibus, 4 heads | 1.17155.0001 |
| MAS-100 Iso NT MH® Control unit with Ethernet, 4 heads | 1.17157.0001 |
| MAS-100 Iso NT® Isolator System | 1.09168.0001 |
| MAS-100 Iso NT® Control unit with Profibus | 1.09173.0001 |
| MAS-100 Iso NT® Control unit with Ethernet | 1.09174.0001 |
| MAS-100 VF® | 1.17103.0001 |
| MAS-100 VF® power supply | 1.17104.0001 |
| MAS-100 VF® Petri dish clamps, 3 | 1.17171.0001 |
| Quick Adaptor for Tripod | 1.09223.0001 |

Accessories

| | |
|---|---------------|
| MAS-100 Iso NT® IP54 Kit | 1.17159.0001 |
| MAS-100 Iso NT® Perforated lid, stainless steel, 300-hole edge protected | 1.09189.0001 |
| MAS-100 Iso NT® Perforated lid, stainless steel, 400-hole edge protected | 1.09222.0001 |
| MAS-100 Iso NT® Base for sampling head, stainless with Tri-Clamp and gasket | 1.09328.0001 |
| MAS-100 Iso NT® Easy clean base for sampling head, stainless steel, with 1 Tri-Clamp & 1 gasket | 1.17091.0001 |
| MAS-100 Iso NT® Perforated lid, stainless steel, 300-hole | 1.09329.0001 |
| MAS-100 Iso NT® Perforated lid, stainless steel, 400-hole | 1.09424.0001 |
| MAS-100 Iso NT® Tri-Clamp, stainless steel | 1.09440.0001 |
| MAS-100 Iso NT® Dust Cover, stainless steel | 1.09644.0001 |
| MAS-100 Iso NT® Remote Control | 1.17181.0001 |
| MAS-100 Iso NT® Elbow Joint with 2 Tri-Clamps | 1.17083.0001 |
| MAS-100 Iso NT® Power Supply | 1.17182.0001 |
| MAS-100 Iso MH® Power Supply | 1.09784.0001 |
| MAS-100 Iso NT® Silicone Gasket | 1.170.840.001 |
| MAS-100 Iso NT® Pressure Test Kit | 1.170.850.001 |
| MAS-100 Iso NT® Silicone gaskets for easy clean base | 1.170.990.001 |
| 4" Opticap XL 4 | KTGRA04TT3 |
| 5" Opticap XL 5 | KTGRA05TT1 |
| M Air T® Isolator Tubing 3 m | ATBTUBE01 |
| Flexible tube connector | PF01501 |
| Tripod | 1.09326.0001 |
| Tripod adaptor for MAS-100 Eco® | 1.09127.0001 |
| MAS-100® Mains Charger | 1.09085.0001 |
| MAS-100® Tube Adaptor | 1.09224.0001 |
| Contact Plate Adaptor | 1.09214.0001 |
| Perforated Lid for Contact Plates | 1.09213.0001 |
| MAS-100® NiMH Battery Pack (for Version 2.7x or higher) | 1.09229.0001 |
| MAS-100® Power supply | 1.09085.0001 |

Note: The 300-hole perforated lid is compatible with legacy systems, but a specific calibration is required

Validation Protocols (A4)

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|--|-----------|
| MAS-100 VF® Functional testing (A4) | MAVFA4FT1 |
| MAS-100 Iso NT® Validation Protocol (A4) | MAISA4VP1 |
| MAS-100 Iso MH® Validation Protocol (A4) | MAMHA4VP1 |
| MAS-100 NT® Validation Protocol (A4) | MANTA4VP1 |

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