POLY SCIENTIFIC

MERCK MILLIPORE

The MAS-100® Family
Leading solutions for air monitoring

Merck Millipore is a business of MERCK

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 part1 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 part1 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 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 completly validated system designed for the highest demands.

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 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 ± 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	Recharchable 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-100 NT® and MAS-100 NT® 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-100 NT® 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 ± 2.5 %, compared to others that can be as high as ±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 SQS function will allow for smaller sampling volumes over longer periods of time, up to 50 sequences over 24 hours.

The new MAS-100 NT® 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.

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.

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 to10 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 ± 1.0 %, the most accurate on the market. The display also shows temperature (°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.

Technical specifications for DA-100 NT®

Feature	Specification		
Accuracy at 100 litres/ min.	± 1.0 %		
Height	8.5 cm		
Diameter	11 cm		
Weight	0.8 kg		
Vane Bearing	Magnetic (patent pending)		
Material	Anodized aluminum		
Battery Pack	9 V Battery		
Display	Alphanumeric LCD display, 2 x 8 characters		
Temperature Display Resolution	increments		
Ambient Conditions	Temperature sensor: Pressure sensor:	Accuracy ± 0.3°C Accuracy ± 1.5 mbar	Resolution ± 0.1°C Resolution ± 0.1 mbar
	Ambient conditions: Humidity:	Temperature 0 to 40°C 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		

* NIST=National Institute of Standards and Technology

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 devise 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.

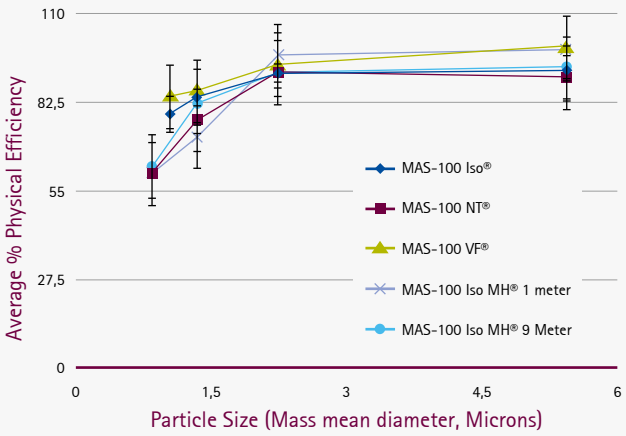
ICR and ICRplus Settle Plates

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 + Cephase – 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

Room temperature storage

- Storage at site of use
- Less cooling capacity needed

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

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 Profilbus	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
Flexable 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)	
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

We provide information and advice to our customers on application technologies and regulatory matters to the best of our knowledge and ability, but without obligation or liability. Existing laws and regulations are to be observed in all cases by our customers. This also applies in respect to any rights of third parties. Our information and advice do not relieve our customers of their own responsibility for checking the suitability of our products for the envisaged purpose.

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