

SOLUTIONS

PHARMACEUTICAL • HOSPITAL • MEDICAL DEVICE
ELECTRONICS • CHEMICAL • AUTOMOTIVE



TOGETHER WE CREATE SOLUTIONS

Benelux • France • Germany • Great Britain

PMT (GB) Ltd

PMT (GB) Ltd is an ISO 9001:2015 quality led company and is a UKAS ISO17025 Accredited Calibration Laboratory (0829) for Particle Counter Calibration and Air Sampler Calibration.

We are dedicated to the provision and service of Particle Counters, Facility Monitoring Systems, Microbial Air Samplers, Real Time Monitoring and Ionisation equipment.

The instruments we supply are used for particle counting, microbial air sampling, compressed gas sampling, ESD elimination, cleanroom monitoring, viable particle counting as well as other contamination control processes.

Our core areas of expertise are primarily focussed on the following industry sectors:

- Ç Pharmaceutical | Healthcare | Food | Cosmetics | Beverage | Semiconductor
- Ç Automotive | Aerospace | Environmental | Hospitals and Operating theatres
- Ç Research | Life Science | Medical Devices | Biomedical

PMT (GB) Ltd headquarters and the main accredited service laboratory is centrally located in Malvern, Worcestershire.

We also maintain a Scottish Service Centre located in Rosyth.

European Service

PMT (GB) Ltd is a member of a group of independent companies operating throughout France, Belgium, Netherlands, Ireland, Switzerland and Germany, all dedicated to contamination control within critically controlled industries, and all working together to provide total European expertise and support.

PMT as a group has more than 50 employees in 5 countries. We have developed diverse solutions in various applications in particle counting technology and microbial contamination control. Within the field of particle counting, we offer a wide range of particle counters for liquids and airborne particles to choose from, both for mobile use as well as facility monitoring system solutions. PMT stands for innovative solutions for the purest production (electrical, pharmaceutical, automotive, aerospace and life science, food, beverage and cosmetics industries).

These include:

- Ç Airborne Particle counters for all cleanroom monitoring requirements whether it is a mobile or a fixed solution you require.
- Ç Liquid particle counting and nano-particle counters for water and corrosive chemical applications.
- Ç Microbiological rapid methods with laboratory and online solutions with real-time viable counters for water and aerosols.
- Ç The most efficient and innovative system solutions in the field of classical air sampling for mobile and stationary applications using impaction or slit-to-agar.
- Ç Aerosol photometers and generators for HEPA Filter Testing
- Ç Certified Reference Materials (CRMs) for calibration and quality control.
- Ç Calibration with ISO 17025 accreditation for particle counters (according to ISO 21501-4, optical scattered light particle counters) and air samplers.
- Ç Particle measurement in accordance with ISO 14644-1 and GMP.

PMT Service and Calibration

PMT (GB) Limited was the first company in Europe to achieve ISO17025 (UKAS accreditation 0829) for Particle counter Calibrations. We have since extended our accreditation to cover Air Sampler Calibration.

PMT (GB) Ltd is an authorised calibration partner for Hyclas, Particles Plus, Micronview, Veltek, Rion, and Emtek.

Particle counter calibration and service on most particle counters manufactured by PMS, MET One, Light-house and Climet.

Some of the benefits of our service department are as follows:

- Ç UKAS ISO 17025 Accredited Laboratory No: 0829
- Ç On-Site ISO17025 Particle Counter & Air Sampler Calibration
- Ç Particle Counter Calibration to ISO 21501-4
- Ç ISO 17025 calibration on Air Samplers
- Ç Dedicated test and calibration laboratory in Malvern
- Ç Traceable reference units for Aerosol Particle Counters

PMT (GB) Ltd provides a high standard of service. This is achieved by having a fully equipped facility based in the UK to support our UK customers and our European partners.

PMT Shop

www.pmtgbshop.com offers you the ability to order some instruments and spare parts directly from the website, allowing for quicker processing and less paperwork at your end. If you know the part or instrument you are after, please visit the pmtgbshop.com website and order directly.



Real Time Viable Particle Counting

Portable and Remote BAMS from PMT®

BAMS offers the possibility to detect viable and inert particles in real time. Viable particles are detected by Laser Induced Fluorescence (LIF) with active compensation of non-biological signals by analysing multiple frequency ranges and minimising false positives. BAMS can be used as a stand-alone instrument (Portable BAMS) or integrated into a monitoring system of a plant or cleanroom (Remote BAMS). Cost effective continuous operation provides the option of real-time limit alerting, without the need of any additional reagents.

BAMS is available in a number of user options:

Portable BAMS (battery / mains operated), for investigations and monitoring outside Grade A.
Remote BAMS (with options of a touch screen, gelatine membrane holder and remote vacuum source / blower) for installation into a new or existing Isolator, RABS or Cleanroom.

- Ç Continuous, real-time detection and monitoring of microbial contamination
- Ç Active compensation of non-biological signals
- Ç Particle counter according to ISO 21501-4
- Ç 2.83 litres per minute flow rate
- Ç Range of BAMS to suit user requirements
- Ç EMC software solutions



High Flow Air Sampler

Hyclas High Flow Air Samplers

With flow rates at 100 LPM or 180 LPM, the range of HYCLAS active air samplers has been shown by an independent external test laboratory to conform to both ISO 14698 and the new BS EN 17141:2020 Cleanrooms and Associated Controlled Environments Standard, for both Physical and Biological Efficiencies. With a built-in pump in the head, the downward airflow is parallel to the sampling path and so does not cause any air turbulence, which can cause recirculation of particles. Built with 316L Stainless Steel and a screw-less design means easy cleaning and minimizing contamination.

The options of a portable instrument and a fixed isolator instrument means our air sampler is suitable for all applications. Having a fixed unit in a filling line with a tri-clover fitting, means an easy installation and no human interaction to swap out air samplers. Data can be downloaded onto a USB 2.0 flash drive that can be fitted inside the unit, the Data is then stored as secured PDF-file for report printing.

- Ç Models for 90 mm Petri Dish or 55 mm Contact Plate
- Ç 12 V Lithium battery-powered with integrated charge indicator
- Ç Electropolished 316L grade stainless steel
- Ç Portable (weight <2.5 kg)
- Ç Sampling flow rate up to 180 l/min
- Ç Removable rechargeable battery
- Ç Wide view colour display on Portable Instrument



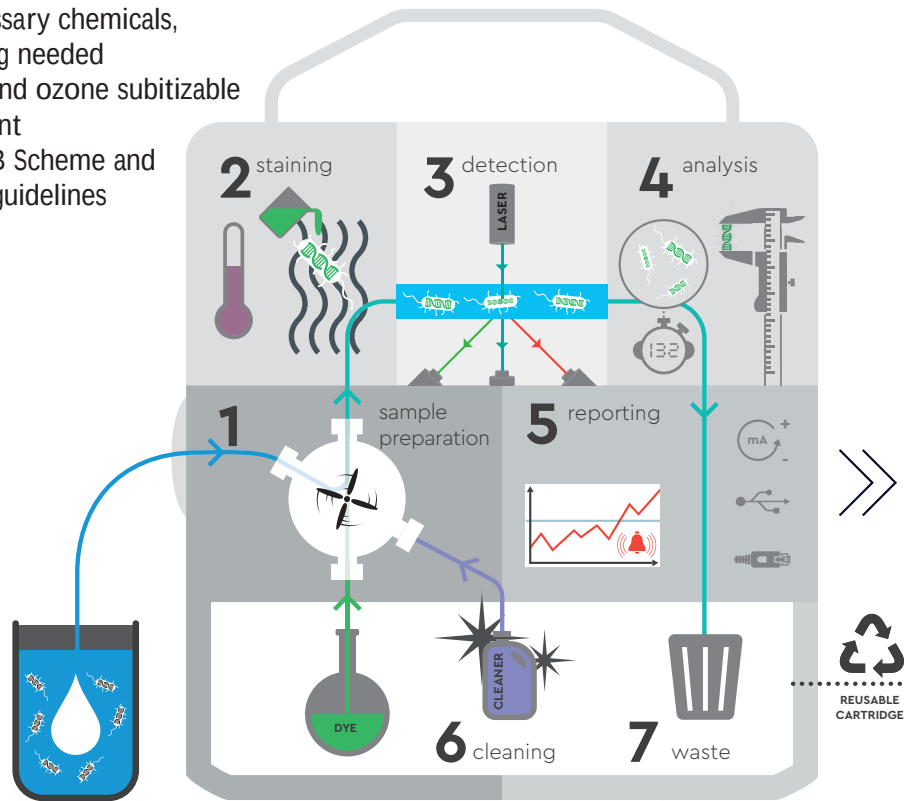
Continuous monitoring of bacteria

BWT AQU@Sense MB

The BWT AQU@Sense MB is an automated flow cytometer specifically adapted for the continuous monitoring of bacteria in low nutrient purified water (PW, WFI). The BWT AQU@Sense MB improves safety and promotes process control and understanding compared to the traditional plate counting. Flow cytometry is a batch process in which the sample is mixed with a DNA specific fluorescent stain. After an incubation period the sample flows through a thin capillary where a laser induces fluorescence in the DNA bound stain. The fluorescent activity and the side scatter (SSC) are recorded for each cell and particle. Inorganic particles are not counted, as no fluorescent stain is bound to them. The BWT AQU@Sense MB lowers cost by reducing cost intensive plate counting to a minimum. Plate counting may be replaced fully after a validation of the BWT AQU@Sense MB according to USP <1223> or Ph. Eur. 5.1.6. Further financial saving can be obtained by re-evaluating the temperature and interval of hot water sanitization. All necessary chemicals are contained in a securely sealed cartridge.

The replacement of the refillable cartridge is quick and clean and no handling of hazardous chemicals is required. A service of the cartridge is included in every refill. The measured sample and all chemicals used are directed back into the cartridge. Therefore, no contaminated wastewater is generated on-site. Each measurement is followed by a cleaning step to prevent biofouling and secure high quality results. Major timesavings can be achieved compared to plate counting, as the time-to-result is only 20min. The measuring interval can be adjusted manually from 30min to 6h, or may be controlled automated by the PLC of the BWT generation plant.

- Ç Robust, scientific method: unaffected by fluctuations in pressure, temperature and flow rate
- Ç Clear distinction between particles and bacteria
- Ç Can be controlled by the PLC via Modbus or DI/DO
- Ç Highly user-friendly and intuitive HMI with exceptional data export function
- Ç Cartridge containing all necessary chemicals, no chemical or waste handling needed
- Ç Sampling device is fully heat and ozone subitizable
- Ç FDA 21 CFR Part 11 compliant
- Ç Certified under the IECEE CB Scheme and compliant with UL and FCC guidelines



Microbial Airsampler

P100

The P100 portable air sampler can be operated at 28.3 LPM or 100 LPM by exchanging the sieve sampling plates, with the different air flow rates being automatically adjusted to sample 1 cubic metre of air. The lower flow rate of 28.3 LPM permits sampling of critical production areas accurately for a longer period of time, whereas the higher flow rate of 100 LPM samples 1 cubic metre of air in 10 minutes, if time is at a premium. At both flow rates, the P100 sampler complies with the requirements of both ISO 14698 and BS EN 17141: 2020 for Physical and Biological Efficiencies, with a d50 value of < 1 micron at each flow rate. Sampled air is impacted onto an agar plate and is exhausted via an integrated HEPA filter for controlled return to the room, without risk of back contamination or turbulence. Up to five units can be operated together via remote control (start/stop/pause/resume), or via a local network, if so required. The P100's sequence control allows the creation and storage of customer-specific sampling sequences. The P100 collects or stores the parameters of up to 500 samplings. The associated data control is in accordance with 21 CFR 11. The standard scope of delivery consists of a 5-channel IR remote control, a carrying case, a country-specific power supply, and storage media. Optional accessories include a thermal printer, a sampling unit for compressed gas, probes for sampling in hard-to-reach places, and an attachment for horizontal sampling.

- Ç Portable unit with touch screen
- Ç Selectable flow rate (28.3 LPM or 100 LPM)
- Ç Microbial collection on 90 mm agar plates
- Ç Validated d50 value of < 1 µm
- Ç Exhaust air flow through HEPA filter
- Ç USB and Ethernet interface



PMT BAS Air Samplers

The PMT Range of portable Microbial Air Samplers includes the BAS Eco, BAS Pro, BAS and MPBAS (compressed gas sampler). Flow rates of 28.3 LPM, 100 LPM and 200 LPM, with a battery life in excess of 7 hours running time. All Air Samplers are compliant to ISO14698-1 and BS EN ISO 17141: 2020 and meets the requirements of EU GMP Annex 1. The instruments have a highly efficient d50 value of 0.79 at 28.3 LPM, with an accuracy of plus or minus 2.5%. Instruments are constructed in 316L stainless steel to a clean room friendly design and can store up to 20,000 records.

- Ç 2 year warranty
- Ç 20,000 records storage
- Ç Long battery life
- Ç ISO 14698-1 & EU GMP Annex 1 compliant
- Ç Compressed Gas Testing

Model	Flow rate	D50
BAS Eco	100 l/pm	1.08 µm
BAS	28,3 l/min	0.79 µm
	100 l/min	1.08 µm
	200 l/min	1.15 µm
BAS Pro	28,3 l/min	0.79 µm
	100 l/min	1.08 µm
	200 l/min	1.15 µm
MPBAS	100 l/min	
	200 l/min	



Portable Air Particle Counters

Portable Airborne Particle Counter
PMT® mini APC

The new PMT® Mini APC is a portable particle counter that meets all the requirements of ISO 21501-4. Due to the large touch-screen interface and the clear firmware structure, operation of this particle counter is made simple without the need for an operator manual. The instrument is available in four models, 28.3lpm, 50.0lpm, 100 lpm & the NEW Dual Flow which can run at either 28.3 lpm or 100 lpm. The six channels of the Mini APC have a particle size range down to 0.3µm and up to 25µm. Cleanroom sensors for temperature, humidity and air velocity can be integrated into the particle measurement to enhance continuous environmental monitoring.

- Ç 10 year laser warranty
- Ç 2 years warranty
- Ç ISO 21501-4 compliant
- Ç Internal memory for 250,000 records
- Ç Easy integration into EMC software
- Ç Connection to external SCADA via Modbus TCP/IP possible

Model	flow rate	particle size channels
A230	28,3 l/min	0.3, 0.5, 1.0, 3.0, 5.0, 10.0 µm
A220	50 l/min	0.3, 0.7, 1.0, 3.0, 5.0, 10.0 µm
A210	100 l/min	0.5, 1.0, 2.0, 3.0, 5.0, 10.0 µm
A240	28.3 l/min or 100 l/min	0.5, 1.0, 2.0, 3.0, 5.0, 10.0 µm



Remote Particle Counters

PMT® 9000P Series

The PMT® remote particle counters with integral 0.1cfm pump are self-contained monitoring systems built into a compact and easy-to-clean 316L stainless steel housing. The integrated pump eliminates the need for an external vacuum source. Options for POE, Wifi, Modbus TCP/IP and optional TRH probes.

- Ç 5 years warranty
- Ç ISO 21501-4 compliant
- Ç Eliminates the need for a central vacuum system
- Ç 316L stainless steel housing, sample probe and shutter
- Ç Ethernet (TCP/IP), Modbus RTU serial communications.
- Ç Six channels as standard but upto 30 channels available

Model	flow rate	particle size channels
9301P	2,83 l/min	0.3, 0.5, 1.0, 2.5, 5.0, 10. µm
9510P	2,83 l/min	0.5, 0.7, 1.0, 2.5, 5.0, 10.0 µm



Remote Particle Counters with pump

PMT® RWP Series

PMT® remote particle counters with integrated pump are ideal for installation in locations where an external vacuum system is not available. With an internal pump and wireless communication technology, they reduce the complexity and cost of installation in facilities with limited infrastructure. It is easy to reposition them as manufacturing schedules change.

- Ç 10 years laser warranty
- Ç ISO 21501-4 compliant
- Ç Internal memory up to 5,000,000 records
- Ç Easy integration into EMC software
- Ç Connection to external SCADA via Modbus TCP/IP possible
- Ç Optional Enclosure available
- Ç With or without screen
- Ç Option without Pump

Model	flow rate	particle size channels
A530B	28,3 l/min	0.3, 0.5, 5.0 µm
A530BS (with Screen)	28,3 l/min	0.3, 0.5, 5.0 µm
A530 (without pump)	28,3 l/min	0.3, 0.5, 5.0 µm



Remote Particle Counters

PMT® 9000 Series

PMT® remote particle counters provide reliability and trouble-free operation when measuring a wide range of particle sizes. The space-saving design allows the units to be installed almost anywhere. Easy installation and reliable operation. Options of Wifi, POE, and TCP/IP. Optional TRH probe attachment.

- Ç 5 year warranty
- Ç 5 year laser warranty
- Ç ISO 21501-4 compliant
- Ç Easy integration into EMC software
- Ç Connection to external SCADA via Modbus TCP/IP
- Ç Stores 65,000 sample records
- Ç Measures up to 30 channels of simultaneous data

Model	flow rate	particle size channels
9510	28,3 l/min	0.5, 1.0, 2.5, 5.0, 10.0 µm
9301	2,83 l/min	0.3, 0.5, 1.0, 2.5, 5.0, 10.0, µm
9501	2,83 l/min	0.5, 0.7, 1.0, 2.5, 5.0, 10.0 µm



Handheld Particle Counters

PMT® Handhelds

PMT range of Handheld Particle Counters offer the most features and flexibility for customers interested in versatile handheld particle counters. The Models features a sturdy yet light-weight high-impact injection-molded plastic design for easy handling. The instruments are easy to configure using an intuitive keypad. The internal memory can store up to 45000 sample records of particle count data which can be conveniently viewed on screen or downloaded to our IMS Software. The instrument reports up to six particle sizes simultaneously. Uses include particle counting in pharmaceutical, healthcare, medical device, aerospace, automotive and many other applications.

- Ç PMT Range 0.3 to 25 µm
- Ç 0.1 CFM (2.83 L/min) flow rate
- Ç Up to six channels of simultaneous data
- Ç ISO 21501-4 compliant
- Ç USB serial output
- Ç Compatible with IMS download software
- Ç 45000 sample record storage
- Ç 1000 sample location
- Ç Large 4.3-inch (10.9cm) display
- Ç On screen data review
- Ç User selectable channels
- Ç Removable Li-ion battery
- Ç Intuitive keypad menus
- Ç High impact injection molded plastic
- Ç Lightweight - only weighs 1.0kg
- Ç Model flow rate
- Ç 5 year warranty

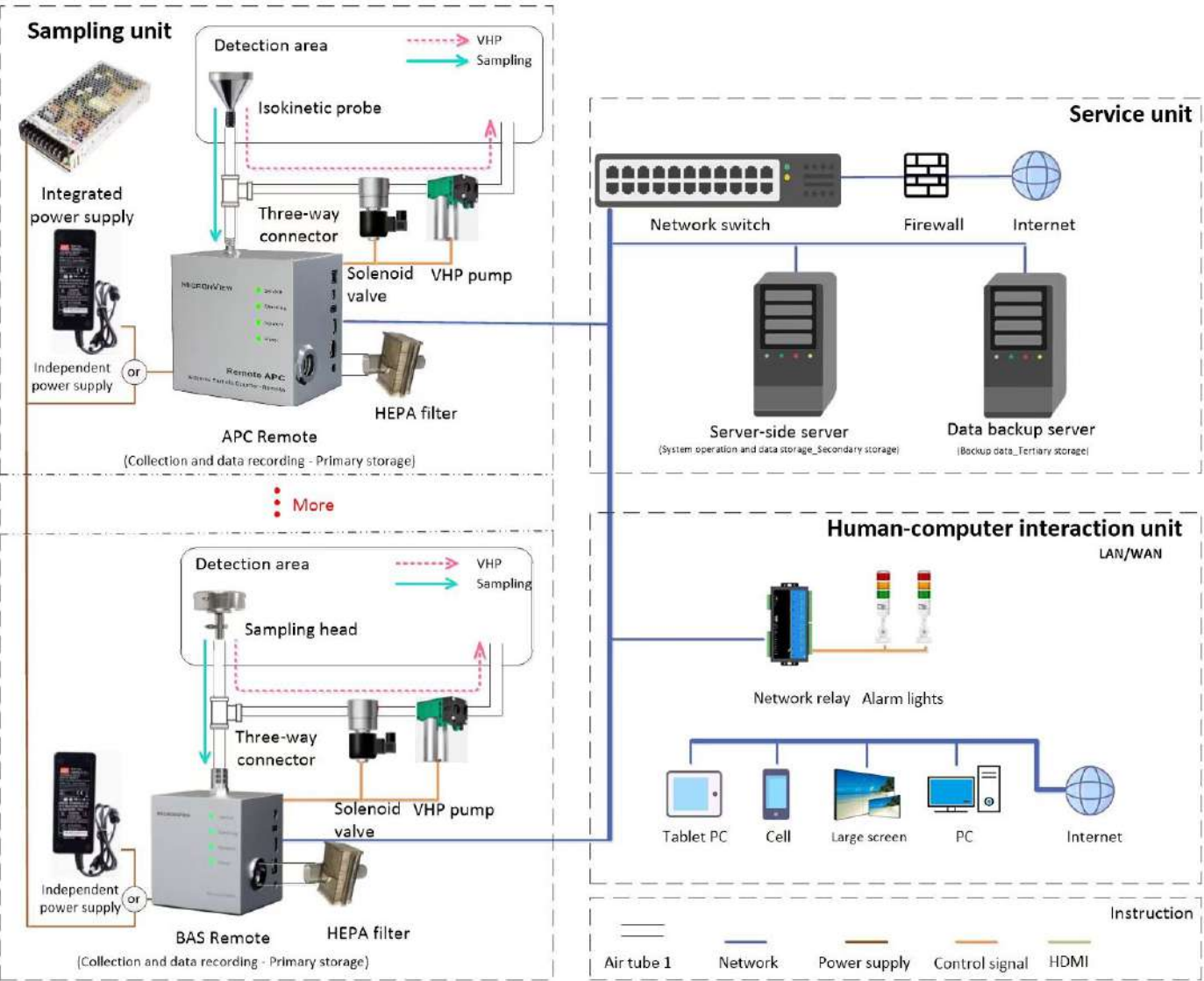
Model	flow rate	particle size channels
8303	2,83 l/min	0.3, 0.5, 5.0 µm
8306	2,83 l/min	0.3, 0.5, 1.0, 2.5, 5.0, 10.0 µm
8503	2,83 l/min	0.5, 1.0, 5.0 µm
8506	2,83 l/min	0.5, 0.7, 1.0, 2.5, 5.0, 10.0 µm
8506-30	2,83 l/min	0.5, 1.0, 2.5, 5.0, 10.0, 30.0 µm
8300	1.2 l/min	0.3, 0.5, 1.0, 2.5, 5.0, 10.0 µm



EMC – Environmental Monitoring Software

For contamination control in critical process environments such as clean rooms, isolators and RABS, the use of several stationary particle counters or microbial monitors is recommended. The measured data is output via a central facility monitoring software. By continuously monitoring critical process parameters, trends can be observed on the one hand, and on the other hand, it is possible to react directly when previously defined alarm limits are exceeded. Direct intervention in the event of an alarm enables rapid intervention, which leads to a reduction in reject products and thus costs. The monitoring system consists of a real time client interface and a secure database. Additional terminals can be used to display real time information. Due to its open design, EMC is also open for third-party sensors such as TRH, Pressure etc and alarm beacons and sounders.

- Integration of remotes, remotes with pump, BAMS, Portables & Microbial Air Samplers
- Additional monitoring of temperature, differential pressure and humidity with corresponding sensors possible
- User-friendly interface
- Integration of floor plans
- Creation of reports
- 21 CFR Part 11 compliant



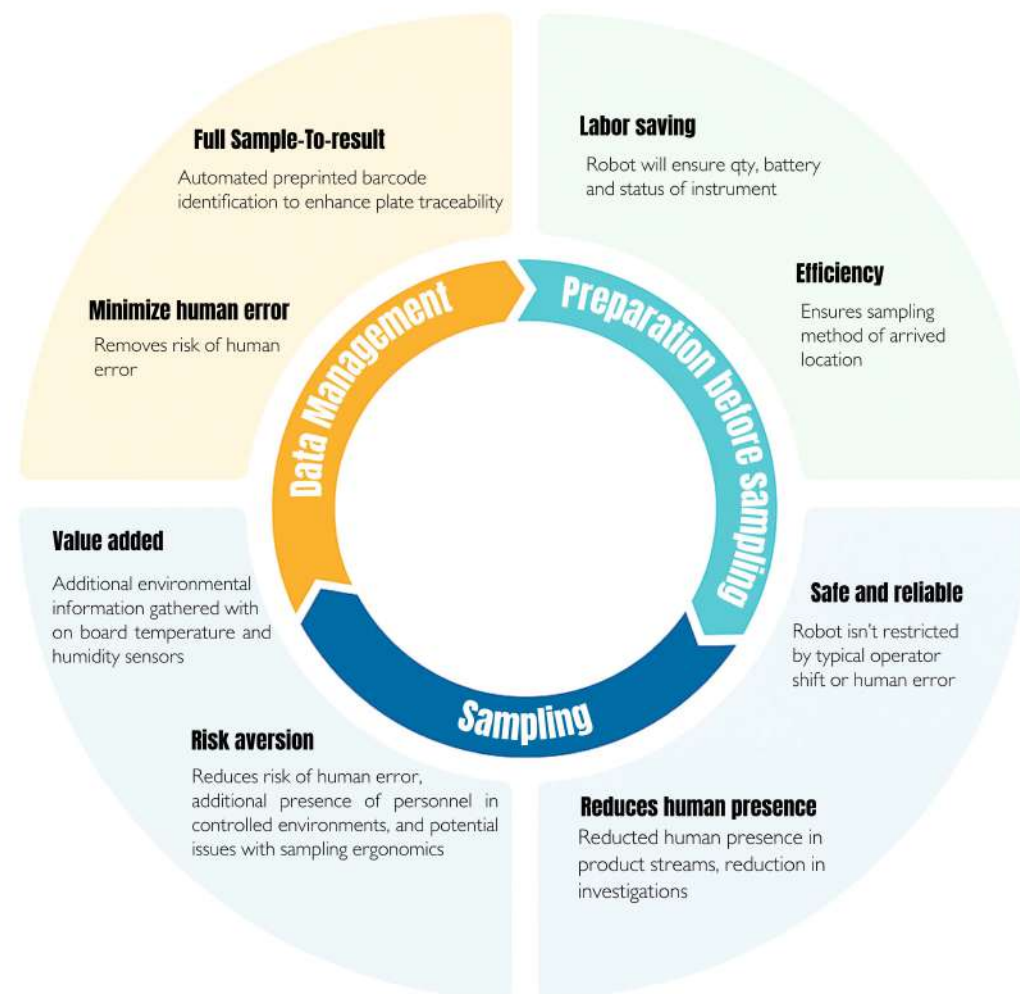
ROBOTIC ENVIRONMENTAL MONITORING

APC/BAS DUAL MODE ROBOT

Airborne Particle Counter & BioAerosol Sampler Dual Mode Robot

Airborne Particle Counter Sampler & BioAerosol Sampler Dual Mode Robot (APC/BAS dual mode Robot) enables automated sampling in cleanroom environments through a mobile active air sampler with robotic arm that can automatically place and remove agar plates. A SLAM* algorithm and LiDAR are used by the robot to ensure accurate site arrival and object avoidance. The unit can traverse designated areas, automatically open and close doors, autonomously ride elevators, and return to home base for charging at a low battery level. Through automated sampling, the environmental impact of operators and potential for human error can be minimized. The APC/BAS dual mode Robot is equipped with a high precision 6-axis robotic arm and PMT control software which is easy to configure and use. The PMT control software is available on tablets, smartphones and PCs. Through a wireless connection, the software is used to communicate with the APC/BAS dual mode Robot, schedule tasks and assign work plans for the automated active air sampling of your controlled environments.

*SLAM is an acronym for Simultaneous Localization And Mapping, which supports localization and map construction for EMC Robots in unknown environments.



Product Application

The unit's automated navigation and sampling lower the risk of contamination by reducing human presence in critical areas, and reduce the potential for error in sampling location and time. Resource allocation can also be optimized by automating routine functions and assigning personnel to other critical tasks. The APC/BAS dual mode Robot can also be equipped with a temperature and humidity sensor to collect and store ambient temperature and humidity information.

- Safe and Efficient - Automated active air sampling & particle counting
- Convenient Monitoring - Flexible adaptation to various scenarios
- Integrated Mechanical Arm - High accuracy, reliable, low risk
- 6-axis robotic arm and PMT control software
- IP54 protection class, designed to be sprayed, disinfected and sterilized directly
- Meets ISO 15066 and ISO 13849
- Repeatability of 0.02mm, great accuracy
- 6-axis articulated arm enables complex movements in a small working radius

Working Radius: $\Phi 626\text{ mm}$



ROBOTIC ENVIRONMENTAL MONITORING

BAMS ROBOT

BioAerosol Monitoring System Robot

The BioAerosol Monitoring System Robot (BAMS Robot) enables continuous and automated monitoring of viable and non-viable airborne particles. The results are shown in real-time without the need for reagents or extensive hands-on time.

The BAMS Robot identifies microorganisms by measuring the fluorescence emitted by cellular metabolites, such as NADPH and Riboflavin, when excited by the 405nm laser. Total particle and viable counts are instantly enumerated in a range of size bins between 0.5um and 10um.

A SLAM algorithm and LiDAR are used by the robot to ensure accurate site arrival and object avoidance. Sample locations and predefined motion paths in the facility are well evaluated. The unit can traverse designated areas, automatically open and close doors, autonomously ride elevators, and return to home base for charging at a low battery level.

- Evaluates particle size and biologic status simultaneously using one 405nm laser to measure both scattered and fluorescent light.
- Flexible and adaptable robot platform accomplishes multiple tasks, making it well suited for a variety of user requirements.
- Continuous monitoring compatible with Annex 1 requirements.



APC Robot

Aerosol Particle Counter Robot

The Aerosol Particle Counter Robot (APC Robot) enables the automated sampling of cleanroom environments using a SLAM* algorithm and LiDAR to ensure accurate site arrival and object avoidance. The unit can traverse designated areas, automatically open and close doors, autonomously ride elevators, and automatically return to home base for charging. Through automated sampling, the environmental impact of operators and potential for human error can be minimized.

The APC Robot can realize remote sample control and central data management, ensuring continuous real-time monitoring and data storage in dynamic and challenging manufacturing environments. All data is stored on the robot's monitoring management system, and data can be uploaded to the specified server or cloud via WIFI/LTE network according to customer requirements.

- Autonomous navigation - Fully automated environmental sampling
- Intelligent charging system - Wireless charging station
- Multi-task scheduling - Unattended operation
- Environmental Monitoring - Interface with different sampling modules



Particle Counting on surfaces

PartSens 4.0 and PartSens+ 4.0

The PartSens 4.0 device is a portable measuring system with a wireless measuring head for direct measurement of impurities on surfaces. The measurement result, including the recorded images, is transmitted in real time via WLAN and displayed on the screen. The PartSens+ 4.0 differentiate between metallic, non-metallic particles and fibers on surfaces. Mobile design and easy operation make this instrument the perfect solution for companies that want to verify the cleanliness of surfaces. The use of glancing light technology produces reproducible and highly accurate measurement results. Complex, multi-stage analysis methods (component rinsing followed by filtration with subsequent filter analysis) are no longer necessary. Data is stored in the particle counter for archiving or for later comparison measurements. Optionally, the measurement result can be output via an external printer. The live image allows the detection of type (metallic or non-metallic), position and morphologia of the particles. The system can be used on various surface materials such as stainless, silicon, glass and plastic.

- Ç Portable surface particle counter with wireless measuring head
- Ç Measuring principle according to ISO 14644-9
- Ç Particle measuring range: < 5 µm to > 3000 µm
- Ç Size and number of metallic and non-metallic particles and fibres
- Ç Particle size allocation according to VDA 19 and ISO 16232 possible
- Ç active measuring area 2.68 qcm (19.36 mm x 13.82 mm)
- Ç Measuring time < 10 seconds
- Ç Data output and live on 12.6 TFT touch screen
- Ç Instrument data-storage volume: 300 measurements
- Ç External datatransfer: USB-Typ-A-Interface
- Ç HDMI interface for connecting external monitors
- Ç Optional accessories TapeLift Pads, Particle Trap-Strips, Measuring device for Particle Trap-Strips

Description	Specification
Particle size allocation	VDA 19 Part 2, ISO 16232, ISO 14644-9 Customer-specific divisions possible
Metallic particles	> 25 µm bis > 3000 µm
Non-metallic particles	< 5 µm bis > 3000 µm
Fibres	> 50 µm bis > 3000 µm



TapeLift Pads

The TapeLift Pads, specially developed for the PartSens 4.0 Surface Particle Counter, are ideally suited for pro-duction-related monitoring of component cleanliness in accordance with ISO 16232 and VDA Volume 19. With the help of the TapeLift Pads, different surfaces can be scanned and then analyzed with the PartSens 4.0 Surface Particle Counter. The flexible TapeLift Pad consists of a hydrocolloid and gel-like material. Dirt particles can be efficiently picked up from straight or even curved surfaces and fixed on the TapeLift Pad. Analysis and evaluation is carried out promptly and directly on site using the mobile PartSens 4.0 surface particle counter. The time-consuming sealing, packaging and shipping of the TapeLift Pads to a test laboratory is no longer necessary and thus also the risk of possible cross-contamination. Within a very short time (<10 seconds), the number and size of the particles is output.

- Ç Hydrocolloid and gel-like TapeLift Pads
- Ç Dimension/surface area: ~ 36 mm
- Ç Cost and time saving
- Ç On-site evaluation
- Ç Packaging unit: 20 pieces TapeLift Pads

Particle strip



KS-42, KS-41 and KS-19 Series

PMT (GB) offers a wide portfolio for the measurement of particles in chemicals and water. The model series KS-42 is the standard instrument for particle measurement e.g. in H₂SO₄ or also in water. The models KS-42AF, KS-42BF and KF-19F are equip-ped with a sapphire glass measuring cell and allow also particle measurements in HF. The KS-41 model series is specially designed for par-ticle measurement in solutions.

- Ç Control unit KE-40B1 for operation necessary
- Ç Adjustment of up to 10 particle size channels
- Ç Optical and acoustical leakage warning
- Ç Communication interface PC (CSV format)
- Ç Communication interface 4-20 mA (optional)
- Ç Data storage on CF card
- Ç Data printout via integrated printer
- Ç Batch operation or inline/byline operation possible

Model	Size range
KS-42A	0.1 µm - 0.5 µm; 1.0 µm (optional)
KS-42B	0,2 µm ò 2,0 µm
KS-42C	0,5 µm ò 20 µm
KS-42D	2 µm ò 150 µm 150 µm (optional)
KS-41A	0,15 µm - 0,5 µm
KS-41B	0,1 µm ò 0,5 µm
KS-19F	0,03 µm ò 0,13 µm



Liquid particle counter

KL-05

The RION KL-05 liquid particle counter is used to check the load of insoluble particles in liquids with small volumes, such as injection solutions, infusions or WFI. The volume to be sampled is taken from the con-tainer by means of a syringe and then passes through the measuring cell at 10 ml/min (optionally 25 ml/min). The measurement is based on the absorbance of laser-induced light (semiconductor laser, 790 nm) by the particles contained in the liquid. The absorbance of the light is recorded by a photodiode during the measurement. The sampling process is fully automa-ted. Additional alarm thresholds can be set for quality assurance measurements. This allows the size and num-ber of dispersed particles to be determined. Further-more, user-defined reports can be created and subse-quently evaluated (e.g. as PDF or txt file). The KL-05 offers the possibility to measure volumes from 0.2 ml. Additional functions include the aAudit trail functionô to track device usage and the aOperator management functionô to limit device accessibility.

- Ç Compliant with USP <787>, FDA 21 CFR Part 11, Ph.Eur 2.9.19. and the aJapanese Pharmacopeiaô (JP)
- Ç Particle size range 1.3 µm ò 100 µm.
- Ç Liquid flow rate choice of 10 ml/min or 25 ml/min.
- Ç Customized SOPs
- Ç 20 different channels defined before measure-ment during evaluation with selectable Alarm limits
- Ç Integrated performance test



Ceiling emitter system

Ceiling emitters are used for the ionization of entire clean rooms. These are installed on the ceiling next to or directly below the FFUs (filter fan units). The formation of electrostatic charges in the entire room is prevented by the permanent, large-area ionization. Simco-Ion offers here the model 5515. This is a fully digital system. Monitoring of the emitters is therefore possible via the IonManager Pro software or also via a process control system.

- Effectively reduces the risk of ESD damage
- Reduces particle contamination in the cleanroom
- Improves product handling
- Low maintenance, durable system
- Lengths of emitter rods: 6 cm ÷ 168 cm

Model 5515

name	specifications
Operating modes	Pulsed DC, steady-state DC or Stand-by
Emitter	Single crystal silicon, replaceable
Dimensions	6,4 cm, 12,7 cm, 25,3 cm, 38,1 cm, 61,0 cm, 91,4 cm, 152,4 cm, 167,6 cm
Cleanliness	silicium: ISO 14644 Class 1 titanium: ISO 14644 Class 3
Alarm	LED, acoustic, software
Accessories	Control Unit 5522/5582, Infrared Remote operation 5572, handheld terminal 5571



AeroBars

AeroBars are used for ionization of larger work areas and for process tool ionization. There are different models in a wide range of lengths and configurations. All AeroBars require laminar air flow.

- Great flexibility in application areas
- Suitable up to ISO 14644-1 Class 1
- Emitter tips made of titanium, tungsten and silicon
- Tool integration possible
- Compressed air assisted model available
- Effectively protects against electrostatic charge and ESD damage
- Improves product handling

Stand-Alone AeroBar 5225S

The AeroBar 5225S is the perfect solution for individual work areas and flow boxes. A low installation effort characterizes this model series.

name	specifications
Parameters	On/Off-Time, Pause, Power (%)
Operating modes	Pulsed DC, steady state, Stand-by
Alarm	LED, open Collector
Emitter	Silizium, Titan
Cleanliness	ISO 14644-1 Class 1
Dimensions	53 x 30,5 x 569 721 907 1128 1412 1636 1918 2144 cm
Accessories	power supply 33-1432-01 Infrared remote control 5570



Models for integration in plants and machines

For the ionization of multiple work surfaces, the AeroBar 5225 is an alternative to ceiling emitters. However, it is usually installed in plants in the medical technology, automotive and semiconductor industries.

Typical discharge times are between 15 and 25 seconds. Shorter discharge times can be achieved by air-assisted models such as the Modulated Pulse AeroBar 5635.

AeroBar 5225

name	specifications
Balance	< 50 V
Connection	RJ-11
Parameters	On/Off-Time, Power [%]
Operating modes	Pulsed DC, steady state DC, standby
Alarm	LED, Software GUI
Emitter	Silizium
Compressed air support	ò
Cleanliness	ISO 14644-1 Class 1
Dimensions	53 x 30,5 x 569 721 907 1128 1412 1636 1918 2144 mm
Accessories	GUI IonMonitor, Interface Modul 91-5200-IM6T-V4.0, power supply 33-5200



Modulated Pulse AeroBar

The Modulated Pulse AeroBar 5635 offers various possibilities for integration into process tools. It is available in many different lengths. This makes this model very flexible to use.

Compressed air support enables very short unloading times. The special technology (Modulated Pulse) makes it possible to maintain low voltage fluctuations (balance < 20 V).

Furthermore, no particles are generated during ionization, so that this model even meets the strict requirements of ISO 14644-12.

The Modulated Pulse AeroBar 5635 is the device of choice for state-of-the-art machines in the semiconductor industry.

AeroBar 5635/5635M

name	specifications
Balance	< 20 V
Connection	RJ-45
Parameters	Voltage, Balance, Frequency
Frequency	1-33 Hz
Alarm	LED, Software
Emitter	Silizium
Compressed air support	CDA or N2
Compressed air parameters	max. 45 psi; 1-3,5 lpm/DÁse
Cleanliness	ISO 14644-1 Klasse 1, ISO 14644-12
Dimensions	78 x 34 x 500 600 850 1000 1150 1300 1450 1600 1750 1900 2050 2200 2350 mm



Overhead Blower

Overhead blowers are suitable for ionizing low-flow work areas. These are installed at a distance of approx. 80 to 150 cm above conveyor belts and above workstations. The handling of small, lightweight plastic components can thus be significantly improved and the attraction of particles minimized.

- Ç Easy installation
- Ç Discharge in seconds
- Ç Approved to ISO 14644-1 Class 4
- Ç Adjustable air flow
- Ç Improves product handling
- Ç Reduces particle contamination
- Ç Stand-alone and daisy chaining possible
- Ç Very low maintenance due to automatic
- Ç Emitter tip cleaning

Example of model: Model 5810i

name	specifications
Emitter	Titan
Heating	ò
Balance	Ô Ó3V (Ô Ó1V with Feedback System)
Cleanliness	ISO 14644-1 Class 4
Parameters	Fan speed (fast/slow)
Dimensions (H x W x L)	9,6 x 15,5 x 81,3 101,6 111,8 cm



Benchtop Blower

Handy benchtop units can be used to ionize smaller areas in a targeted manner. A benchtop blower is the ideal addition for an ESD workstation where ionization is to be carried out selectively.

With most devices, the fan speed can be adjusted. Some units also have an integrated heating function to counteract cold hands and drafts.

The special model 5802i is suitable for use in clean rooms up to ISO 14644-1 Class 4.

- Ç Simplest handling
- Ç Discharge in seconds
- Ç Adjustable air flow
- Ç Partially integrated heating function
- Ç Maximum flexibility in use
- Ç Very low maintenance

Example of model: Aerostat PC2

name	specifications
Air flow	129 cfm
Heating	✓
Cleanliness	ò
Parameters	On/Off switch, fan speed,
Dimensions (H x W x L)	23,1 x 17,3 x 8,4 cm
weight	1,25 kg



Extended Coverage Blower

If an overhead blower cannot be installed and the area to be ionized is too large for a tabletop blower, an extended coverage blower is an alternative. Even from a distance of 2 meters, the discharge time is <15 seconds.

Due to its light weight, the unit can be mounted directly over surfaces or on a wall.

The balance of < Ó 10 V allows the device to be used for the production of sensitive electronic components, such as displays and microchips.

Other features include a built-in emitter tip cleaner, a heating function and a 3-step fan speed setting. The unit can be used in cleanrooms up to ISO 14644-1 Class 6.

Example of model: Aerostat XC2

name	specifications
Air flow	95 - 150 cfm
Heating	✓
Cleanliness	ISO 14644-1 Class 6
Parameters	On/Off switch, fan speed, emitter tip cleaner
Dimensions (H x W x L)	18,3 x 35,9 x 16,6 cm
weight	3,2 kg



Ionization gun

Ionization guns, such as the TopGun 111 or the Model 6115, are best suited for precise, split-second ionization.

Within a few seconds, surfaces and components are electrostatically discharged and adhering particles are removed. Handling of plastic parts and foils is made easier and technical cleanliness is demonstrably improved.

- Ç Discharge in seconds
- Ç Removal of particles
- Ç Handy, flexible ionization solution
- Ç Operation in clean room possible depending on model
- Ç Operation by hand, foot pedal or optical sensor

name	specifications	TopGun III
Emitter	Wolfram	Steel
Air pressure	20-65 psi CDA or N2	100 psi max. CDA or N2
Gas connection	1/4" quick connector (male)	1/4" NPT (female)
Schallpegel	70 dBA @ 1 m, 30 psi	76/89/97 dBA @ 30/60/100 psi @ 60 cm
Cleanliness	ISO 4	ò
Filter	0.01 µm	0.01 µm
weight	341 g, console: 326 g	185 g



Models for plant engineering

Thanks to their compact dimensions, point-of-use ionizing units are suitable for integration into process tools.
The QuadBar and the Inline-FusION models are examples of these.

QuadBar

The QuadBar model can be operated with or without compressed air. The emitter tips are aligned in the direction of the air flow.

name	specifications
Voltage	24 VAC oder 35 mA
Discharge time	< 30 s @ 30 cm
Balance	< 0 50 V
Operation mode	pos./neg. simultaneously
Emitter	Silicium
Air flow	0.4 - 0.5 m/s (recommended), air-assisted model available
Cleanliness	ISO 1 (24 VDC), ISO 2 (24 VAC)
Accessoiries	Kontrolleinheit 4030 (für max. 4 Geräte)
Size (H x W x D)	3,3 x 3,3 x 11,4 cm
weight	100 g



Inline gas ionizer Inline-FusION

The dimensions of the Inline-FusION are similar to the QuadBar. The ionized air is passed through a hose and distributed in order to achieve the most homogeneous ionization possible despite the small installation space.

name	specifications
Voltage	24 VDC, 0,075 A
Emitter	Tungsten
Flow	22,6 lpm @ 5 psi - 100 lmp @ 50 psi (CDA oder N2)
Cleanliness	ISO 4
Size (H x W x D)	6,4 x 3,8 x 11,4 cm
weight	136 g



Novx MiniPuls ESD Event Monitor

The Novx MiniPulse ESD Event Detector is designed for monitoring process plants. Due to its space-saving design, it can be installed almost anywhere. With this system, ESD events are reliably detected and an alarm signal (open collector) is output, which can be processed e.g. with a facility monitoring software. Thanks to the alarm function, fast intervention is guaranteed. Special configurations and placement of the antenna enable the detection of ESD events exclusively from a specific direction.

name	specifications
Voltage	9 - 24 VDC, 30 mA
Alarm	LED, acoustic, software, Open Collector
Configuration	Rotary control for pulse length
Field intensity	1 1000 V/m, 0 20 V/m
Size (H x W x D)	5,3 x 5,0 x 1,9 cm

Measurement of electrostatic charge and ESD events

Ionizers are calibrated using a charge plate monitor and checked for optimal function. The discharge time from +/- 1000 V to +/- 100 V and the voltage fluctuation over 1 min are documented.

To meet the required performance parameters, ionizers must be calibrated or checked during commissioning and at regular intervals.

This process is part of the PMT service concept. Please contact us if you are interested.

name	specifications
Voltage	90 - 250 VAC, 50/60 Hz, 12 W or 12V battery
Operation mode	Discharge time (0 1000 V to 0 100 V); Balance: period 1 min
Size (H x W x D)	12,7 x 27,9 x 22,9 cm



The pocket-sized Model 775 Fieldmeter

The pocket-sized Model 775 Fieldmeter is designed to locate and measure static charge potentials on product, people, equipment and packaging. The 775 uses a non-contacting, chopper stabilized field sensor and a ranging light mechanism to ensure correct measurements of electrostatic fields in all areas even those using air ionization. The Fieldmeter is easily zeroed with the turn of a small knob and does not require re-zeroing between measurements. Powered by a 9V battery, the 775 features a conductive, impact-resistant case and a convenient Snap-On ground lead to facilitate grounding and increase accuracy.

- Ç Digital Display
- Ç Distance ranging lights
- Ç Chopper-stabilized circuit
- Ç Sample and Hold functions
- Ç Battery powered, pocket-sized meter
- Ç Analog output



Mobile Autonomous Air Handling Unit

R4000

Non-Thermal Catalysis Technology destroys and traps airborne micro-contaminants: The R4000 Mobile Autonomous Air Handling Unit can satisfy the most stringent standards currently in force in the hospital sector such as ISO 14644 and NFS 90-351. Our air handling units trap and destroy microbiological, particulate and chemical (VOC) contaminants and achieve particulate cleanliness classes ISO 8 to 5 and risk classes 2 to 4.

The design of our solution is based on innovative technology that has been developed and optimised on non-thermal catalysis. They satisfy needs for decontamination and destruction of particle, microbiological and chemical pollutants in accordance with the regulations currently applicable:

- Ç Standards EN 1886 and NF B44-200 relative to the design and performances of air handling units,
- Ç Bringing clean rooms, controlled environments and sensitive living spaces into compliance with standards ISO 14644 and NF S90-351 which govern the requirements relative to the control of airborne contaminants.

The decontamination unit is easy to set up.

The flow rate is 800 to 4000 m³/h and the volume of the zone to be treated is 50 to 400 m³.

The surface area of the zone to treat is 20 to 150 m².

The R4000 is very silent: 20 dB.

The catalysts regenerate thus ensuring long-lasting air handling efficiency.

The technology is also energy-efficient.

Description

- Ç Destruction of contaminants by non-thermal catalysis
- Ç Zone 3 and zone 2 compliant (ISO 7 and ISO 8)
- Ç Surface area of the zone to treat: 20 to 150 m²
- Ç Maintenance in less than 10 min
- Ç Easy biocleaning
- Ç Filters suitable for incineration
- Ç Very quiet

Technical characteristics

- Ç Flow rate: 800 to 4000 m³/h
- Ç Available pressure: 450 Pa
- Ç Volume of the zone to be treated: 50 to 400 m³
- Ç Double-skin panelling, thickness 40 mm.
- Ç Stainless steel, painted in RAL 9010
- Ç Mineral wool acoustic insulation 90 kg/m³
- Ç Electronically switched electric fan and dedicated pressure probe
- Ç Constant air flow control according to the clogging of the filters
- Ç G4 pre-filter and F8 fine filter mounted on rails
- Ç H14 terminal filter with tightening cam and pressure gauge



Air Purification

C300

We eliminate 99.4 %* of all airborne corona viruses in just a few minutes.

With COVID-19, clean and healthy air is more important than ever! Choose the innovative Calistair Technology now and enjoy the benefits of a personal decontamination system. Calistair Technology has a long history of successful use in many hospitals and has firmly established itself in this environment.

With the Calistair C300 you too can eliminate almost all air contaminants - including COVID-19*. Whether it's a medical practice, legal office, corporate or private premises, The Calistair C300 keeps corona and other viruses out*.

In contrast to conventional air purifiers, the underlying technology of the Calistair C300 is based on that of a professional decontamination unit and ensures effective disintegration of the captured contaminant particles within minutes. This is confirmed by tests conducted by a prestigious institute. In fact, the Calistair C300 fully complies with Class 2 of the stringent French standard for clean air in healthcare facilities (NF S90-351) when operating in a 40m² room.

Independent tests conducted by the most prestigious French microbiological laboratory demonstrate. Even just a small test device - equipped with the technology of the Calistair C300 - after only 10 minutes of operation attains elimination efficiency of 99.4% against corona viruses* released into the air of the test environment. This makes Calistair an unmatched technology that goes beyond the limits of traditional HEPA filters - especially when it comes to particle sizes below 0.3 microns. Furthermore: The Calistair C300 also efficiently removes from the indoor air traditionally dreaded bacteria and fungi, not to mention allergens, volatile organic compounds (VOC), gases and odours. Preventive healthcare for your premises has never been easier!

Standards and regulations - The legislative requirements

The HEPA filters are manufactured based on different standards and regulations, depending on their place of use. Customarily, the dependent variable is the air, which is analysed in a certain context, from which the requirements for the particle cleanliness class are derived. The maximum permissible number of airborne particles on a certain surface is classified. The experts categorise a total of nine ISO classes.

In hospitals, air quality of ISO classes 5 to 8 is recommended - depending on the area. For example, the international standard for air quality, ISO 14644, prescribes an ISO class 5 for operating theatres for orthopaedic surgery and neurosurgery.

*The institute that carried out the tests confirmed that the technology invented by Calistair destroys more than 99.4% of human airborne coronavirus of the HCoV-229E type within 10 minutes. The tests used a miniaturised prototype in a microbiological safety container with a volume of 0.54 m³. No other aids like filters were used, instead just the Calistair Technology. The coronavirus HCoV-229E is a coronavirus of the same family as SARS-CoV-2, the virus responsible for the COVID-19 disease.



RIGEL RI7001

The Rigel RI7001 digital photometer is the best choice for testing the integrity of HEPA & ULPA filters. Using the light scattering method, the Rigel RI7001 provides real-time integrity through detection of aerosol concentration upstream and downstream. The 3.5" LCD on the base unit provides an easy to read interface displaying sample concentration in real time and frequency modes. The scanning probe attachment not only focuses the capture of the sample but adds value by incorporating a 2.8" LCD screen, eliminating the need to look back at the main unit by displaying sample data conveniently within the operator's "line of sight" and the scanning probes point of application. Moreover, the included thermal printer gives you the opportunity to report your samples in order to complete your tests or validation documents. The Rigel RI7001 tests, monitors and validates clean rooms, laminar flow hoods, safety cabinets, glove boxes, HEPA vacuum cleaners, HVAC systems, HEPA filters, ULPA filters, filtration units, negative pressure operating rooms, nuclear filter banks, collective protection filters. Comes complete with heavy duty carry case.

RI7001	specifications
Type of device	Forward Light Scattering Photometer for aerosol concentration measuring
Field of use	HEPA/ULPA filter integrity/seal tests (ISO 14644-3)
Measurement type	Concentration measurement: -percentage from 0.0001% a 100.0%with respect to a reference value (5-100 µg/litre) -absolute with respect to a reference equal to 100 µg/litre
Alarm threshold	Visual and/or audio alarm which can be selected by the user; active when set threshold is exceeded
Output	RS232 connection
Reporting	-on internal memory (Save only mode) -on printer (Print only mode) -on printer and internal memory (Print&Save mode)
Scanning Probe	2.8" LCD Display, 2.5 m connection cable with Photometer
Light Source	Service life > 50,000 hours
Electrical supply	230 V (+-10%) 50-60 Hz single-phase 1A
Electrical protection	2 fuses 5×20 mm 250V F 2A
Ambient conditions during operation	Temperature from +1°C to + 40°C Relative humidity < 95% not condensing

Ambient storage conditions	Temperature from – 20°C to + 55°C Relative humidity < 95% not condensing
Dimensions (L x D x H)	260x370x160 mm
Weight	10 kg



RIGEL RI7002

The RI7002 Photometer is designed for integrity testing and leak detection in high-efficiency HEPA and ULPA filtration systems. Using the proven light scattering method, it provides real-time aerosol concentration measurements upstream and downstream of the filter to ensure reliable filter integrity verification. The instrument features a high-performance electro-optical scattering chamber with a dedicated light source and an advanced optical system that collects scattered light using a photomultiplier tube. The detected signal is processed by a linear electronic amplifier and a microprocessor, ensuring accurate and stable measurements. A built-in vacuum pump maintains a constant sampling flow rate of 1 CFM (28.3 L/min), while an integrated solenoid valve system allows users to conveniently switch between three sampling modes: CLEAR for zero reference through an absolute filter, UPSTREAM for aerosol concentration before the filter, and DOWNSTREAM for leak detection after the filter. The RI7002 is equipped with an intuitive touchscreen display for easy operation and includes configurable audible and visual alarms that notify the user whenever predefined concentration limits are exceeded. A reliable integrated power supply unit completes the system, making the RI7002 a comprehensive solution for professional HEPA and ULPA filter integrity testing. Comes complete with heavy duty carry case.

RI7002	specifications
Type of device	Forward Light Scattering Photometer for aerosol concentration
Field of use	HEPA/ULPA filter integrity/seal tests (ISO 14644-3)
Sampling capacity	28.3 L/min (nominal)
Measurement type	Concentration measurement: – Percentage from 0.0001% a 100.0% with respect to a reference value (10-80 µg/Litre) – Absolute with respect to a reference equal to 100 µg/Litre
Measurement Reproducibility	0,5% of reading for values between 0.01% and 100%
Dynamic range	Up to 600 µg/L
Reagents	PAO, DEHS, Ondina
Display	5" touchscreen display
Upstream stability	New function to control the stability of Upstream
Scanning Probe	2.8" LCD Display Flexible probe with 360° rotation 2.5 m connection cable and tube with Photometer
Light Source	Service life > 50.000 hours
Electrical supply	External AC/DC power supply 120W 24V – Input: 100-240V 50-60Hz single-phase 1.8A – Output: 24Vdc 5A

Ambient conditions during operation	Temperature from +1°C to +35°C Relative humidity <95% not condensing
Ambient storage conditions	Temperature from -20°C to +55°C Relative humidity <95% not condensing
Dimensions (L x D x H)	260x370x160 mm
Weight	11,32 Kg



HEPA FILTER TESTING

RIGEL RI820I

The Rigel RI820I Aerosol Generator is designed to be an “All-in-one” instrument. The built-in compressor makes the unit truly portable. Using Laskin nozzles placed within the tank of the instrument, the aerosol is vaporized. It is ideal for the certification of small and medium-sized areas, when low range of airborne concentration are required. The Rigel RI820I includes rugged stainless-steel construction, large fill port, individual nozzle control, and a 3 ” standard sanitary fitting outlet. An 3” hose adapter (included within the unit) is available for introducing the aerosol into positive pressure systems. RI820I gives its best in RABS, isolators and safety cabinets. Comes complete with heavy duty carry case.

RI820I	specifications
Type of device	Aerosol generator of cold atomized oil produced by Laskin nozzles
Field of use	High efficiency filtering systems integrity tests (ISO 14644-3 – Section 3.2.1) in the flow range 50 ÷ 2000 cfm (85 ÷3398 m3/h)
Aerosol type	Polidispersed (cold)
Atomizers	2 / 6 Laskin nozzles
Aerosol Concentration	Manual regulation: 100µg/l @ 200 cfm 10µg/l @ 2000 cfm
Compatible oil type (*)	In accordance with the types indicated in ISO 14644-3 (Section C.6.4): DOP (Diocetyl Phthalate) – PAO (Polyalphaolefin) – DOS (Diocetyl sebacate) – DEHS (di-2-ethylhexyl sebacate) – Shell Ondina EL
Oil tank capacity	2 Litres
Oil level	Check window
Power supply	230 V 50-60 Hz 3 A
Electrical protection	2 fuses 5×20 mm 250V F10A
Service compressed air	Pressure Max 3 bar (limited by safety valve)
Environmental conditions during operation	Temperature 0 °C ÷ + 40 °C Relative Humidity 10 ÷ 90%
Storage environmental conditions	Temperature – 20 °C ÷ + 55 °C Relative Humidity 10 ÷ 90% non condensing



RIGEL RI8303

The Rigel RI8303 Aerosol Generator is designed to be portable and versatile. Using Laskin nozzles placed within the tank of the instrument, the aerosol is vaporized. It is ideal for the certification of small and medium-sized areas, when low range of airborne concentration are required. The Rigel RI8303 includes rugged stainless-steel construction, large fill port, individual nozzle control, and a 3 ” standard sanitary fitting outlet. An 3” hose adapter (included within the unit) is available for introducing the aerosol into positive pressure systems. RI8303 gives its best in RABS, isolators and safety cabinets. Comes complete with heavy duty carry case.

RI8303	specifications
Type of device	Aerosol generator produced by cold atomized oil
Field of use	High efficiency filtering systems integrity tests (ISO 14644-3 – Section 3.2.1)
Aerosol type	Polidispersed (cold)
Atomizers	1 ÷ 6 Laskin nozzles
Produced Aerosol	Max 8000 cfm
Aerosol Concentration	Manual regulation: – 100µg/l @ 800 cfm – 10µg/l @ 8000 cfm
Compatible oil type (*)	In accordance with the types indicated in ISO 14644-3 (Section C.6.4): DOP (Diocetyl Phthalate) – PAO (Polyalphaolefin) – DOS (Diocetyl sebacate) – DEHS (di-2-ethylhexyl sebacate) – Shell Ondina EL
Oil tank capacity	5 Litres
Oil level	Check window
Service compressed air	Pressure Max 4 bar
Compressed air consumption	Min. 2.65 cfm/nozzle @ 1.33 bar
Environmental conditions during operation	Temperature 0 °C + 40 °C Relative Humidity 10 ÷ 90%
Storage environmental conditions	Temperature – 20 °C ÷ + 55 °C Relative Humidity 10 ÷ 90% non condensing

Case	Aluminum
Dimensions (L x P x H)	260 x 240 x 280 mm
Weight	8.5 kg (dry)



RIGEL RI840I

The Rigel RI840I Thermal Aerosol Generator is the perfect choice to test and validate all kinds of areas. This is the smallest and lightest aerosol generator on the market. Plus, having a easy-drainable tank due to a valve located at the bottom makes this unit the most practical unit you can work with. The RI840I has the ability to start the generation with a remote control (optional). The RI840I at a medium concentration can generate up to 8 hours of vapour. No need for special kind of oil to work with this unit: it generates perfectly with the most common fluid such Emery, Ondina, PAO4 and DEHS. This unit starts to generate a consistent amount of aerosol at very low pressures (5 PSI/0.35 bar), giving the possibility to work even in very small areas. RIGEL RI840I gives its best in cleanrooms , operating rooms, safety cabinets, isolators and rabs. Comes complete with heavy duty carry case.

RI840I	specifications
Type of device	Aerosol generator produced by condensation of oil thermally vaporised
Field of use	HEPA filter integrity tests (ISO 14644-3 – Section 3.2.1)
System flow rates	850 m3/h ÷ 119.000 m3/h (500 cfm ÷ 70.000 cfm)
Aerosol Concentration (at max oil output capacity)	10µg/l @ 70,000 cfm -100µg/l @ 7,000 cfm
Oil output capacity (typical) Oil consumption	Max 340 mg/sec @8 bar -Min 13 mg/sec @0.35 bar
Run time (Duration)	974 min @ Min output (Min oil consumption) -38 min @ Max output (Max oil consumption)
Compatible oil type (*)	PAO (**) – Durasyn 164 – Emery 3004 – Ondina L – Smoke Oil 180 – DEHS –Smoke Oil 135 – Ondina E L
Thermal chamber temperature	Programmable with thermal regulator (max 450 C) (the temperature to be set depends on the type of oil to be used)
Oil tank capacity	1 Liter
Compressed service gas	Type of gas: Nitrogen, CO2 -Max pressure: 8 bar -Type of coupling: quick coupling
Thermal chamber temperature	Programmable with thermal regulator (the temperature to be set (max 380° C) depends on the type of oil to be used)
Pre-heating time	Min 5 min (< 10 minutes)
Operating cycle (Duty cycle)	Continuous

Timer module	To set specific smoke on/off times or delay the start of smoke operation
Electrical supply	Selectable 110-120 V 50-60 Hz 10 A 220-240 V 50-60 Hz 5 A
Electrical protection	Internal fuse 250V 12.5 A (Appliance must be be earthed)
Ambient conditions during operation	Temperature from 0°C to + 40°C Relative humidity < 95%
Ambient storage conditions	Temperature from 20°C to + 55°C Relative humidity < 95% not condensing
Dimensions (L x D x H)	152 x 320 x 268 mm
Weight	8.9 kg (empty)



Accredited PSL particles

This premium Certified Reference Material (CRM) consists of a high-purity, fully spherical polystyrene particle suspension designed for the precise calibration and validation of particle-sizing instruments. Manufactured via a controlled emulsion polymerization process using a surfactant, this product guarantees a uniform, monodisperse distribution ideal for high-stakes nanotechnology applications and cleanroom monitoring systems. To ensure absolute accuracy and global reliability, its metrological traceability is rigorously secured through METAS in Switzerland. Every batch undergoes extensive three-month homogeneity and stability evaluations before final certification to guarantee stable, repeatable analysis. The product features an optimal concentration of approximately a 1% suspension with a tightly controlled uncertainty. For chemical integrity, each unit comes in a 15 ml volume packaged inside a specialized polystyrene dropping bottle. Because the container is crafted from the exact same material as the nanoparticles inside, it effectively eliminates cross-contamination risks and container-to-solution chemical interactions.

Product Sizes	•100nm • 150nm • 200nm • 250nm •300nm • 500nm • 700nm • 1000nm
Product Specifications	• 15 ml
Product Application	• Calibration and repair of particle counters • Calibration of particle size analysers • Filter testing • Sensor development
Standards	• ISO 17034 • ISO 13320 • ISO 15900





Particle Counting



Ionisation ESD Control



Microbial Monitoring



Decontamination



Environmental Monitoring



Service & Calibration



Hepa Filter Testing



Particle Counters Aerosol, Liquid, Surface



Static Elimination Room Ionisation, Bench Top, Static Detection



Environmental Monitoring Particle Counting, Microbial Monitoring, Environmental sensors



Microbial Monitors Air Samplers, Real Time Aerosol and RMM in water



Service & Calibration ISO17025 On-site & In-House Particle Counters Air Samplers, CRM Particle Standards



HEPA Filter Testing Aerosol photometers and generators

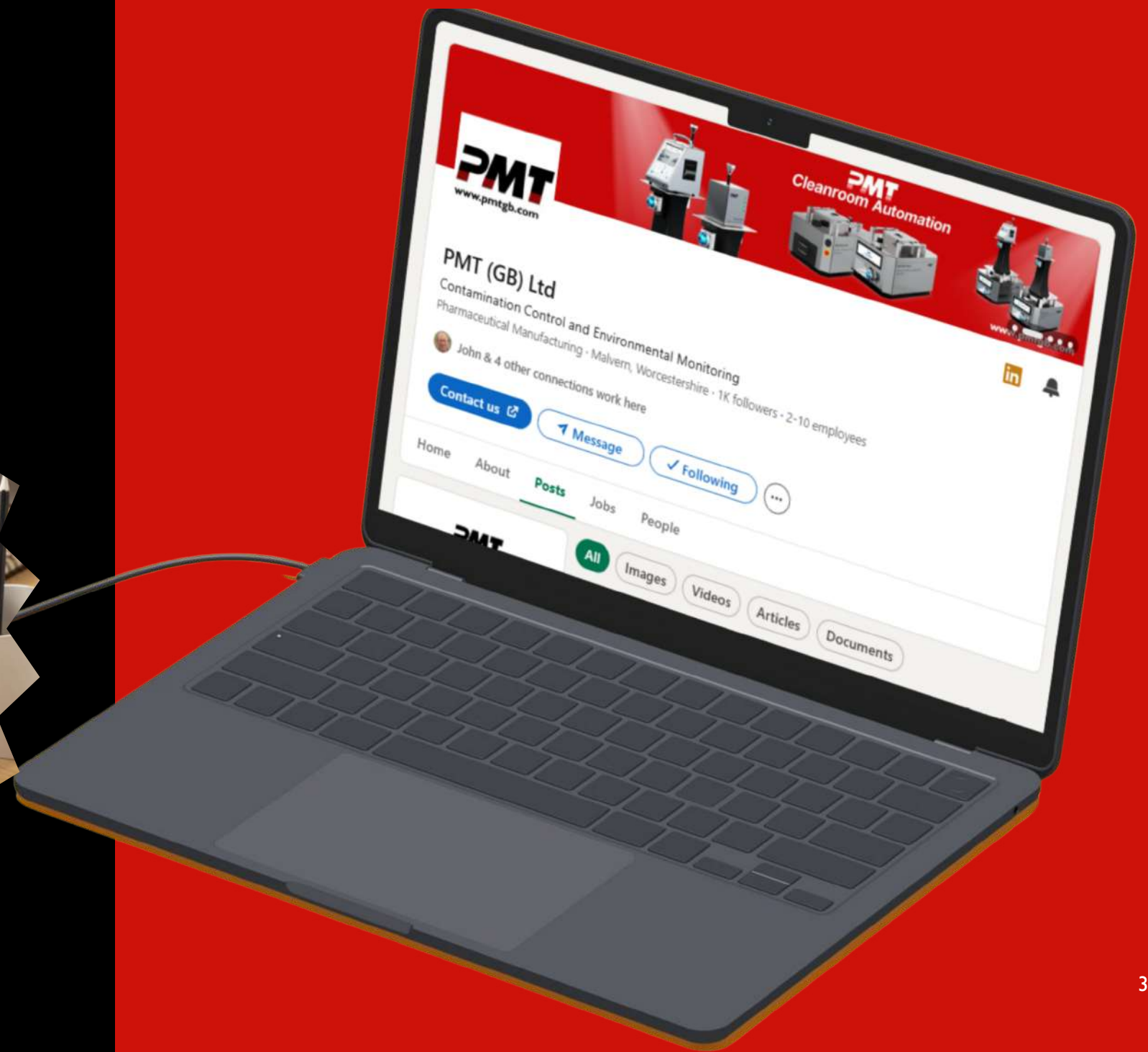
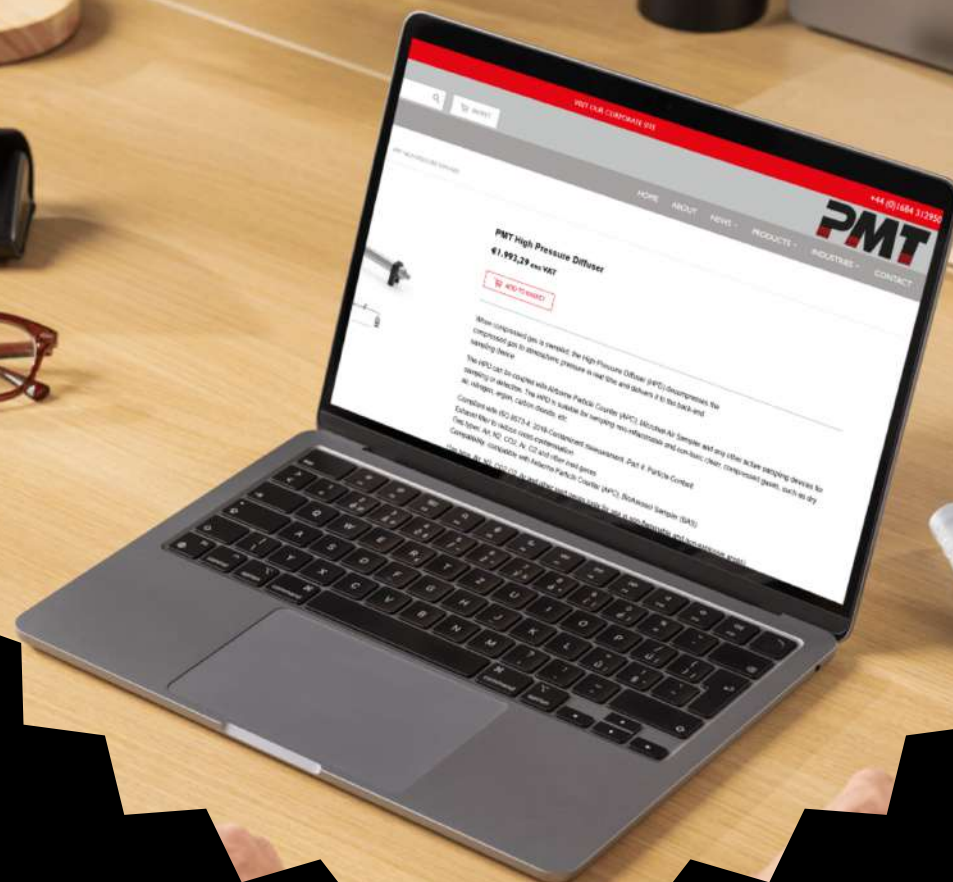


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