

IQAir® New Edition

# Cleanroom Series

## Professional Control of Airborne Microorganisms and Particulate Matter



The IQAir Cleanroom Series offers a range of portable, self-contained HEPA air filtration systems designed to meet airborne infection control and particulate contamination challenges in critical indoor environments.

IQAir systems filter the air by recirculation or by creating true positive or negative pressure environments with special IQAir ducting adaptors.

Each Cleanroom model **AND** each HyperHEPA<sup>®</sup> replacement filter is individually tested and certified to guarantee actual filtration efficiency.

The superior filtration efficiency, versatility and mobility make the IQAir Cleanroom Series the most advanced and cost-effective line of mobile air filtration systems available today.



## Professional Control of Airborne Microorganisms & Particulate Matter

The IQAir Cleanroom Series consists of three high-performance air cleaning models (**Cleanroom 100, 250 and H13**). Each model is specifically designed for the removal of solid and liquid airborne particles and aerosols. Due to their certified and guaranteed high filtration efficiency, the systems are predominantly used for airborne infection control in health-care settings and for the control of particulate matter in cleanroom-type applications.



IQAir Cleanroom 250

While all 3 Cleanroom models focus on the filtration of airborne liquid and solid particulate matter, the Cleanroom 250 also removes a wide spectrum of gaseous contaminants and odours with its V5-Cell™ filter. The H13 is the largest of the 3 models, offering the largest pre-filter surface area (i.e. longest pre-filter life) and the highest air delivery rate. Each system features antimicrobial pre- and HyperHEPA® filters, as well as anti-tampering arm-locks that prevent the system from being opened by unauthorised personnel.

### Individually Tested and Certified

To guarantee superior performance, the Swiss manufacturers have taken an uncompromising approach: Each IQAir HEPA system is individually tested for filtration efficiency and air delivery. The actual test results are documented on a numbered test certificate supplied with each system.

### Positive and Negative Pressure Environments

Each IQAir Cleanroom system can clean the air by recirculation, or can be connected to special IQAir ducting adaptors to create positive and negative pressure environments. Pressure differentials are particularly beneficial when the containment of harmful microorganisms and particles or the protective isolation of immuno-compromised patients is required.



IQAir system connected to OutFlow™ and InFlow™ ducting adaptors for the creation of pressure differentials between adjacent areas.

### Advanced Controls

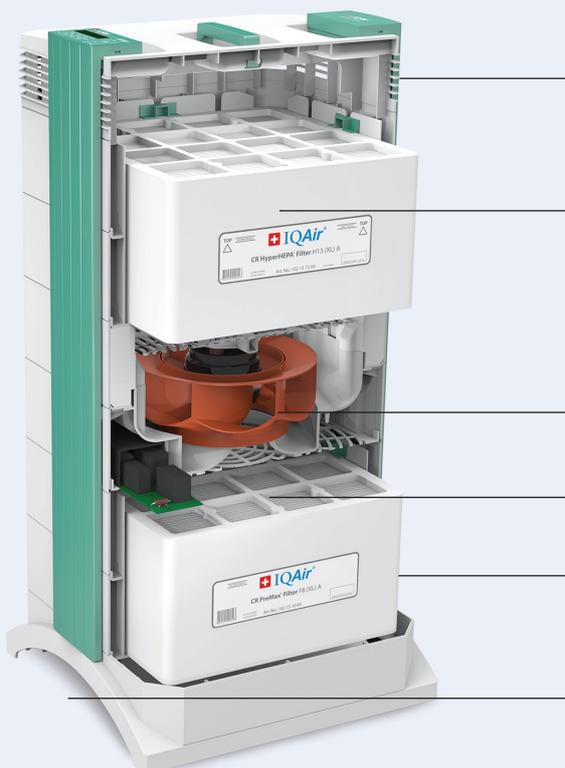
The sophisticated control features of IQAir systems include a microchip controlled filter-life monitor that calculates the remaining filter life, taking actual use and contamination levels into account. An integrated timer allows the system to be programmed to switch on and off at the desired times on the desired weekdays. The patented IQAir housing design permits quick and safe replacement of individual filter elements without any tools. For added convenience, each IQAir system can be operated via remote control. If floor space is limited, a special bracket (VMF™) is available that allows the IQAir system to be wall-mounted.

#### Medical Applications:

- Protective isolation rooms
- ICUs
- Burn units
- Minor surgery rooms
- Organ transplant wards
- Oncology wards
- Research, IVF & microbiology labs
- TB isolation & anterooms

#### Commercial Applications:

- FDA-required "controlled environments"
- Medical device manufacturing & packaging
- Food processing & packaging
- Air locks
- Cleanroom gowning rooms
- Critical data storage facilities
- Computer & server rooms



IQAir Cleanroom H13 cross-section

## IQAir® Cleanroom Series: Features

### Air Outlet Diffuser

- returns clean, low turbulence, low velocity air
- **optional:** various outlet adaptors to create positive and negative pressure environments or to direct the air flow (OutFlow™)

### Antimicrobial Certified HyperHEPA® Filter

- individually tested & certified for actual filtration efficiency
- guaranteed efficiency of  $\geq 99.97\%$  at  $\geq 0.3 \mu\text{m}$  (HEPA Class H13)
- large filter surface (H13:  $7.5 \text{ m}^2$ ) for long filter life (other models  $5.5 \text{ m}^2$ )
- individually tested & certified HyperHEPA® replacement filters

### High-Performance Centrifugal Fan

- air delivery with filters: up to  $530 \text{ m}^3/\text{h}$  (H13 model)
- sandwiched between double-walled housing and noise-absorbing filter elements

### Antimicrobial Pre-Filter

- fine dust filtration with mini-pleat 55% efficient media at  $\geq 0.3 \mu\text{m}$  (ASHRAE 90-95%, Class F8) prolongs life of HyperHEPA® filter
- large surface (H13:  $7.0 \text{ m}^2$ ) for long filter life (other models  $2.8 \text{ m}^2$ )

### Dual Air Intake

- maximum distance from air outlet prevents immediate re-intake of cleaned air (short-cutting)
- **optional:** various air intake adaptors to create positive/negative pressure environments (InFlow™ and VM InFlow™) or to provide source capture of contaminants (FlexVac™ and VM FlexVac™)

## **IQAir® - The World's No. 1 HEPA Air Cleaning Systems for Airborne Particle and Infection Control**

**For over 50 years, INCEN AG of Switzerland (a member of *The IQAir Group*) has been an industry leader for indoor air quality and hygiene. In the 1990s, the IQAir product line was developed which is now recognised as the world's premier range of mobile high-efficiency air cleaning systems. Leading institutions around the world are relying on IQAir to protect against airborne infectious diseases, toxic chemicals and particulate contaminants.**



IQAir's particular strength lies in providing cost-effective decentralised airborne infection control solutions for hospital and professional health-care applications. The IQAir Cleanroom Series is the dedicated IQAir product line for advanced airborne infection and particulate control. Here is a summary of the key reasons why IQAir systems are the No.1 choice of world leading medical and research institutions:

**1.** In an independent research study published in February 2010 in the **American Journal of Infection Control**, it was shown that IQAir HyperHEPA® systems reduced the rate of invasive aspergillosis infections by 50%. The research was conducted by a team of doctors and scientists at **Singapore General Hospital**. They concluded that IQAir systems are an effective and powerful tool for hospital infection control, and that the deployment of IQAir will enable hospitals to realise massive cost savings by reducing infection rates:

*"Compared with patients without IA [invasive aspergillosis], patients with IA have an average excess duration of hospitalization of 12.3 days and an excess cost of \$ 51'779. Thus, the deployment of [IQAir] portable HEPA units is a very cost-effective strategy."*

In view of the fact that invasive aspergillosis is often fatal, with mortality rates ranging from 30% to 95%, and the enormous costs associated with the treatment, IQAir systems can save lives as well as costs.

**2.** The HyperHEPA® filter of the IQAir Cleanroom models has been tested and classified in accordance with the world's most stringent filter test norm for HEPA filters - **European Norm EN 1822**. The awarded "H13" classification means that the IQAir Cleanroom systems have an absolute minimum efficiency of 99.95%, even for the tiniest and most infectious particles known to mankind.

**3.** The outstanding filtration efficiency of IQAir's HyperHEPA filter for removal of microorganisms (such as spores, bacteria and viruses) has been tested and verified by the British Government's **Health Protection Agency**.

**4.** In a British research study published in the **Journal of Hospital Infection** in April 2006, it was shown that the use of an IQAir Cleanroom system significantly reduced (by 75% to 93%) the environmental MRSA contamination within the patient rooms, thus reducing the risk of MRSA spreading and infecting other patients.

**5.** In response to the SARS crisis, the **Hong Kong Hospital Authority** selected IQAir as the only mobile air filtration solution for SARS patient rooms to protect staff, visitors and patients. Over 150 hospitals, clinics and health-care centres in Hong Kong have been equipped with IQAir systems since 2003.

**6.** Each IQAir model is individually tested and certified for actual filtration efficiency and actual air delivery. The individual test results are recorded on a hand-signed Certificate of Performance supplied with the IQAir system. This provides total quality assurance for critical applications. The HyperHEPA replacement filters of the IQAir Cleanroom models are also individually tested and certified to ensure continuing high-efficiency performance after filter replacement.

**7.** IQAir systems can be deployed as stand-alone air cleaners, or may be attached to optional *OutFlow™* and *InFlow™* ducting adaptors to create negative pressure (containment) or positive pressure (protective) isolation environments in a matter of minutes. The creation of pressure differentials is by far the most effective way to limit the airborne spread of infectious particles within buildings.

**8.** IQAir systems are registered with the **FDA (U.S. Food & Drug Administration)** as a Class II Medical Device.

**9.** The outstanding filtration efficiency of IQAir Cleanroom systems can be impressively demonstrated in real-life applications with the use of professional airborne particle counters (e.g. *ParticleScan*). These instruments objectively prove that IQAir Cleanroom systems actually remove all particles down to a size of 0.3 microns (i.e. 3 times smaller than *Mycobacterium tuberculosis*) with over 99.97% efficiency.

**10.** Every IQAir Cleanroom Series air cleaning system is equipped with antimicrobial PreMax™ and HyperHEPA® filter media for advanced infection control. The antimicrobial filter surface acts as a contact bactericide and thus provides an additional barrier against airborne microorganisms that are captured by the filter. The active component PHMB (polyhexamethylene biguanide) has been used successfully for more than four decades and is incorporated in a wide variety of disinfection products, such as liquid hard surface disinfectants, antimicrobial hand soaps, wound dressings and in disinfectants for medical device sterilisation. PHMB is active against a broad spectrum of microorganisms, including antibiotic resistant bacteria such as MRSA and VRE.

# The IQAir® Cleanroom Series – Model Comparison

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|   |  | Cleanroom 100  | Cleanroom 250 MG   | Cleanroom H13   |   |
|---|--|--|--|---|---|
|  |  |   |    |    |   |
| <b>Filtration Spectrum &amp; Efficiency</b>                                       | <b>Allergens</b><br>(pet dander, pollen, mould spores, etc.) | ✓✓✓✓✓  | ✓✓✓✓✓  | ✓✓✓✓✓   |   |
|   | <b>Odours***</b>   | ✓  | ✓✓✓✓   | ✓   |   |
|   | <b>Fine Dust and Particulate Matter</b>                      | ✓✓✓✓✓  | ✓✓✓✓✓  | ✓✓✓✓✓   |   |
|   | <b>Gaseous substances***</b>                                 | ✓  | ✓✓✓✓   | ✓   |   |
|   | <b>Bacteria</b>  | ✓✓✓✓✓  | ✓✓✓✓✓  | ✓✓✓✓✓   |   |
|   | <b>Viruses</b>   | ✓✓✓✓✓  | ✓✓✓✓✓  | ✓✓✓✓✓   |   |
|   | <b>Total System Efficiency for Particles</b>                 | ≥99.97% @ ≥0.3 µm (certified)  |  |   |   |
|   | <b>MPPS*-Efficiency</b> (according to EN1822)                | ≥99.95% at fan speeds up to 190 m³/h; ≥99.50% at fan speeds up to 475 m³/h   |  |   |   |
| <b>Filters</b>  | <b>Pre-filter</b>  | Type/Description   | <b>CR PreMax™ Filter F8 (S) A</b><br>Antimicrobial pre-filter (class F8)<br>for the control of coarse and fine particulate matter  | <b>CR PreMax™ Filter F8 (XL) A</b><br>High-capacity, antimicrobial pre-filter (class F8)<br>for the control of coarse and fine particulate matter   |   |
|   |  | approx. Filter Life †  | 9-15 months  | 21-27 months  |   |
|   |  | Surface area   | 2.8 m²   | 7.0 m²  |   |
|   | <b>Gas- &amp; Odour filter</b>                               | Type/Description   | n/a  | <b>V5-Cell™ Filter MG</b><br>Wide-spectrum MultiGas™ granular media mix<br>for the control of a broad range of<br>chemical pollutants and odours*** | n/a   |
|   |  | approx. Filter Life †  |  | 15-21 months  |   |
|   |  | Weight   |  | 2.5 kg  |   |
|   | <b>Particle Filter</b>                                       | Type/Description   | <b>CR HyperHEPA® Filter H13 (L) A</b><br>High-capacity, antimicrobial, hospital-grade HEPA filter (class H13)<br>for the control of fine & ultra-fine particulate matter and microorganisms<br>(incl. fungal spores, bacteria and viruses) |   | <b>CR HyperHEPA® Filter H13 (XL) A</b><br>High-capacity, antimicr., hospital-grade HEPA<br>filter (class H13) for the control of fine & ultra-<br>fine particulate matter and microorganisms<br>(incl. fungal spores, bacteria and viruses) |
|   |  | approx. Filter Life †  | 30-42 months   |   | 36-48 months  |
|   |  | Surface area   | 5.5 m²   |   | 7.5 m²  |
| <b>Technical Specifications</b>   | <b>Air Delivery per level (m³/h)**</b>                       | 1: 60, 2: 100, 3: 170, 4: 260, 5: 350, 6: 500 m³/h   | 1: 55, 2: 100, 3: 170, 4: 250, 5: 320, 6: 450 m³/h   | 1: 65, 2: 120, 3: 190, 4: 270, 5: 370, 6: 530 m³/h  |   |
|   | <b>Sound Pressure / Power Level per level**</b>              | L <sub>p</sub> 1: 22, 2: 33, 3: 41, 4: 47, 5: 52, 6: 57 dB(A); L <sub>w</sub> 1: 32, 2: 43, 3: 51, 4: 57, 5: 62, 6: 67 dB(A)   |  |   |   |
|   | <b>Dimensions</b>  | 61 x 41 x 38 cm  | 71 x 41 x 38 cm  | 82 x 41 x 38 cm   |   |
|   | <b>Weight (incl. Filter)</b>                                 | approx. 12 kg  | approx. 16 kg  | approx. 21 kg   |   |
| <b>Features &amp; Accessories</b>   | <b>Standard Equipment</b>                                    | Intelligent filter life monitor ● Filter replacement LED ● Advanced timer ● 6 fan speeds ● 4 display languages ● 4-key touch-pad with 2-line LCD display ● Anti-tampering arm lock ● Anti-tampering power cord lock ● High-performance centrifugal backward curved fan ● Individually tested & certified HyperHEPA® replacement filters ● Remote control (incl. battery) ● Power cord ● Certificate of performance |  |   |   |
|   | <b>Optional Accessories</b>                                  | Mobility Deluxe casters  |  | n/a   |   |
|   | <b>Origin / Guarantee</b>                                    | VMF (wall-mount bracket) ● PF40 (coarse dust pre-filter) ● InFlow, VM InFlow & OutFlow (positive/negative pressure duct connections) ● FlexVac & VM FlexVac (mobile & wall-mounted source capture kits) ● SMC (side-mounted control panel) ● Mobility 56 / Mobility Deluxe casters   |  |   |   |
| Made in Switzerland / 2 years (without filters)                                   |  |  |  |   |   |

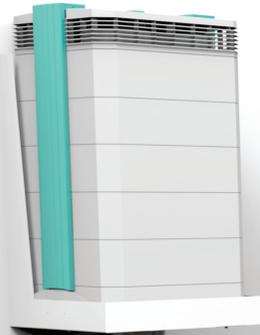
\* Most Penetrating Particle Size; \*\* measured at 230V, 50Hz; tolerance ±10% (± 10 m³/h); \*\*\* see IQAir Media Selection Chart for Gaseous Contaminant control; for replacement filters there is a choice of 5 media types available: MultiGas, VOC, ChemiSorber, AM, Hg

† The filter life estimate is based on the following assumptions: Average usage (12 hours/day), average fan speed (3) and average pollution concentrations. Actual filter life will depend on actual usage conditions.

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# Overview of professional IQAir® accessories

**VM FlexVac™**  
wall-mounted source capture kit



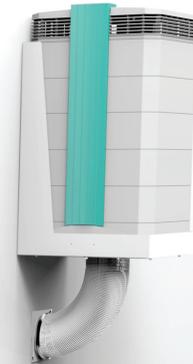
**VMF wall-mounted bracket**



**SMC\* side-mounted control panel and VMF wall-mount bracket**



**VM InFlow™ wall-mounted ducting adaptor**



**OutFlow™ ducting adaptor**



**InFlow™ ducting adaptor**



**FlexVac™ mobile source capture kit**